INSTAclamp[™] Lock Ring

INSTAclamp[™] is a next generation retention solution providing a safer and more reliable lock on roll neck assemblies. Differing from traditional locking mechanisms, Hyson's INSTAclamp[™] solution features an advanced single-action locking latch that requires no special tools to engage. This patented locking mechanism provides repeatable clamping force, optimizing the installation and removal process, and eliminates failures associated with thread and bolt style lock rings.



SAFER AND SIMPLER

resulting in time savings, a more repeatable process and a safer working environment for your team members.



(optional installation tools shown)

"The difference between a traditional lock ring and INSTAclamp is everything... from its materials to its latching system."

We reserve the right to add, delete or modify components without notification. All dimensions are stated in mm. All dimensions are nominal unless tolerance is stated.

Features

When compared to traditional lock rings, Hyson's INSTAclamp offers advanced clamping force that retains the chock, AND brings additional:

- Safety
- Simplicity
- Repeatability
- Time savings

The longevity of the clamping force, provided by the patented single-action locking latch, ensures that the roll stays engaged with the chock during rolling process and roll changes.

Reduces Risk

Advanced Retention System provides a pre-set consistent positive clamping force on the roll neck

- Efficient one-snap closure eliminates the need of wrenches and air tools to install or remove, subsequently removing the potential of retention failure due to operator variability
- · Hands-free mating surfaces reduce the risk of pinch points and the opportunity for injury

Increases Plant Safety

Smooth outer diameter provides ideal fit and reduces interference with lifting devices

· Eliminates the potential for damage to lifting straps or cables caused by protrusions on traditional bolt-on style rings

Improves Employee Health

Manufactured from Military Grade Aluminum offering 66% weight reduction

- · Easier handling improves efficiencies and reduces damage due to mishandling
- Reduces strain to employees during roll change
- · Reduces fatigue on operators

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· Reduces need of multiple operators for installation















Calculate Your Potential Savings

Typical installation time for the IC Series INSTAclamp is 15 seconds – how does that compare to your current install times?



Example: 8 Mill Stands x 4 Lock Rings per Stand x 4 Roll Changes per day = 128 Ring Changes per day



Example: With a 90 second installation time: (90-15) x 128 = 9600 seconds 160 minutes per day | 2 hours and 40 minutes per day

*Multiply x2 to include savings for removal



Example: With a \$75/ hour labor rate:

9600 / 3600 x \$75 = \$200 savings per day. Working 260 days per year = \$52,000

Hot Strip Mill

CASE STUDY

Looking for a safer, easier and sustainable solution for roll retention, a fully integrated steel mill partnered with Hyson to integrate INSTAclamp rings into 72 chock assemblies for their 8 finishing stands.

Hyson's INSTAclamp™ retention system was selected after initial try-out when they went from 90 second installation

time per ring to a mere 15 seconds! With 4 roll changes per day, the operators were fully supportive of the simplified process. Beyond the installation and removal time savings, the INSTAclamp ring provided an ergonomical, repeatable roll change process with relibale clamping force on their roll neck assemblies.

IC – Series

The INSTAclamp IC Series is predesigned for retention of chocks with roll neck groove diameters from 100 mm to 650mm. The IC Series is the most common mounting style, is designed with a precision fit and spins with the roll.

| IC Series Product Specifications | | | |
|----------------------------------|---------------------------------|--|--|
| Standard Material | Military Grade Aluminum 6061-T6 | | |
| Minimum ID – Standard | 100 mm | | |
| Primary Latching Feature | Spring Powered | | |
| Features and Material Options | See page 531 | | |

| Dimensional Information (mm) | | | | | |
|------------------------------|---------------|--------------|------------------|----------------|--|
| Model Number | ID +/-0.05 | OD +/-0.5 | Width +/-0.05 | Weight (kg) | |
| IC0100 | 100 | 200 | 30 | 2.0 | |
| IC0150 | 150 | 250 | 35 | 3.0 | |
| IC0200 | 200 | 300 | 40 | 4.0 | |
| IC0250 | 250 | 350 | 50 | 6.0 | |
| IC0350 | 350 | 450 | 50 | 8.0 | |
| IC0450 | 450 | 550 | 50 | 9.5 | |
| IC0550 | 550 | 650 | 50 | 13.0 | |
| IC0650 | 650 | 750 | 50 | 17.0 | |



Manufacturing Holes

Optional Features for the IC Series

Optional features can be added to our INSTAclamp Rings for ease of upgrading existing roll stands without modifications in addition to assisting with handling or proper alignment. A lock ring drawing identifying critical feature specifications is required.

01 - Handling Holes*

Often not necessary as INSTAclamp™ offers 66% reduction in weight compared to steel rings. Machined on face or edge of ring

02 – Face Keyways* Machined on the face of the ring

03 – Edge Keyways* Machined on the edge of the ring

04 – Dowel Holes* Machined anywhere on the face of the ring

05 – Threaded Holes* Machined on the face or edge of the ring

06 - Flange Mounted

Flange mounted to the chock set. Stays with the chock during roll change, enabling reduction in handling

07 – Material Option

†Standard













| Material | Tensile Strength (Yield) |
|-----------|--------------------------|
| †6061-T6 | 270 MPa (39,000 PSI) |
| 7075-T6 | 480 MPa (69,000 PSI) |
| A36 Steel | 290 MPa (40,000 PSI) |

08 - Latch Assembly

Replacement latch assemblies are available. Please reach out to your Regional Sales Manager for more information.

*Available in metric and imperial dimensions



Installation Tools

Hyson's INSTAclamp is designed to support installation and removal without the need for power tools. We offer the following hand tools for gaining leverage during the latching and disengagement processes:

Leverage Bar

Order Number: 11673-1

Provides the most leverage when opening and closing the latch, reducing the amount of operator force required.

Note: See page 1 for demonstration of use.



T-Handle Extender

Order Number: 11609-6T

Positively engages the latch via a ball detent handle, extending the handle to simplify the installation.

During disengagement process, provides ease of positioning and leverage for disengagement.

Note: See page 1 for demonstration of use.



Customized Solutions

In addition to our standard and mounted series, Hyson offers custom engineered lock rings to fit within your existing geometry constraints.

Customization can include, but not limited to:

- Multiple hinges (3-piece ring)
- Custom profiles
- Alternative materials
- Keys



| Product Specifications | | |
|--------------------------|-------------------------|--|
| Material | Military Grade Aluminum | |
| Minimum ID – Custom | 100 mm | |
| Primary Latching Feature | Spring Powered | |
| Optional Features | See page 531 | |

To facilitate development of customized solutions and begin design, the following information is required:

- Roll drawing
- Current retention ring drawing
- Roll and Chock assembly drawing
- · Any additional design considerations
- · Timing for requirement and anticipated quantity needed

A detailed application sheet is also available to aid in documentation of your application.



To develop your custom solution, Hyson application specialists are available, on-site, working directly with your roll shop to ensure a robust, mill-duty solution.