



# **Triplex Systems Incorporated**

***World Class  
Precision Cleaning® and Cut-Off  
Technologies***

# Precision Cleaning®

Triplex Systems, Inc. has been manufacturing High Pressure Water Jet Casting Cleaning Centers since 1984. Our equipment is known worldwide as the benchmark for High Pressure Water Jet Casting Cleaning. Our equipment is used in investment casting foundries, including aerospace, defense, IGT, commercial, and medical implant foundries.

Triplex Systems, Inc., focus is on manufacturing and inventing new devices and technologies for increasing productivity, safety, ergonomics and environment for our investment casting customers. Our Standard Product Line covers the entire range of investment casting sizes.

All Standard Automatic "Precision Cleaning®" Centers feature our patented, Random Automatic Nozzle Movement and our patented Hydro-Clamp Technology.

All Standard Manual "Precision Cleaning®" Centers feature our patented Hydro-Clamp, electronic joystick controls and air-assisted safety lance for 5 axis Water Jet Casting Cleaning.

The patented Hydro-Clamp is designed to capture the pouring cup remnant of investment cast tree or sprues. The Hydro-Clamp can also clamp casting holding fixtures if there is no pouring cup remnant and the Hydro-Clamp also fixtures work holding tools for secondary cleaning operations. The compact rotary design of the Hydro-Clamp was designed specifically for investment cast trees and is the most universal and powerful clamping method for investment cast trees. The Hydro-Clamp has also been designed for a clamping speed of 1-2 seconds and for continuous duty in hostile environments.

Triplex Systems, Inc. innovations and expertise in the use of High Pressure Water Jet Technology, has advanced casting cleaning to the degree of reliability, second to none.

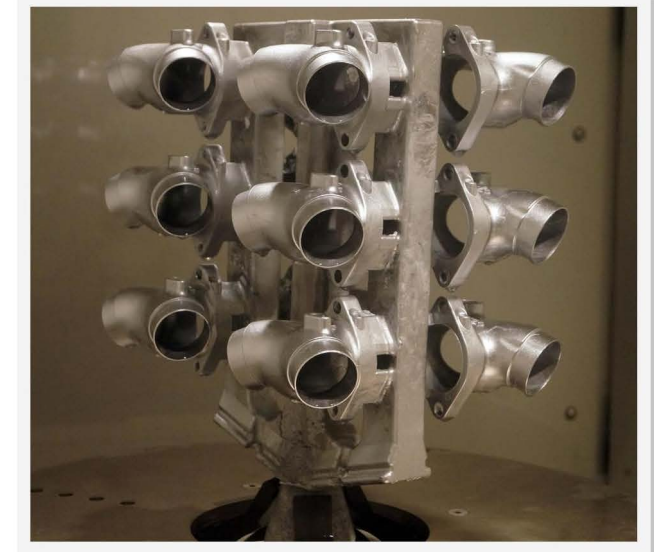
Triplex Systems' registered the trademark Precision Cleaning® to best describe its cleaning methods. Utilizing the patented Hydro-Clamp for holding and manipulating investment cast trees and the air-assisted safety lance for tracking the entire length of the casting, allows the cast tree to be at the optimum distance for cleaning. The Precision Cleaning® techniques apply to manual cleaning methods as well as our patented Random Automatic Nozzle Movement in our Automated Centers.

## Typical Cleaning Results using Triplex System's Advanced High Pressure Water Jet Casting Cleaning Technologies.

Before



After



## Benefits:

- Removes up to 90-100% of Investment.
- No damage to metal surfaces.
- No stress cracking.
- No damage to delicate edges.
- Eliminates airborne silica dust.
- Eliminates mechanical knock-out.
- Eliminates shot blasting for shell removal.
- Eliminates sand blasting for shell removal.
- Reduces or eliminates chemical leaching.
- Reduces operator fatigue and body stress.
- Can be used on all cast metallurgies.

# Precision Cleaning® Centers

## Model TRX-750M Manual Precision Cleaning® Center



### Key Specifications

**Maximum Casting Size:** 20" Diameter x 24" Height (508 mm Diameter x 610 mm Height)

**Maximum Casting Weight:** 150 pounds (68 kg)

- HC-1000 or HC-1250 Hydro-Clamp
- 5 Axis of Movements
- Electronic Joystick Controls
- Uses Triplex Systems Safe Lance Assembly
- Exhaust Blower
- Automatic Window Rinse

## Model TRX-1250M Manual Precision Cleaning® Center



### Key Specifications

**Maximum Casting Size:** 30" Diameter x 30" Height (762 mm Diameter x 762 mm Height)

**Maximum Casting Weight:** 500 pounds (226 kg)

- HC-1250 or HC-1500 Hydro-Clamp
- 5 Axis of Movements
- Electronic Joystick Controls
- Uses Triplex Systems Safe Lance Assembly
- Exhaust Blower
- Automatic Window Rinse
- Overhead Loading

# Precision Cleaning® Centers

## Model TRX-1250CAM Combination Automatic and Manual Precision Cleaning® Center

### Key Specifications

**Maximum Casting Size:** 30" Diameter x 30" Height  
(762 mm Diameter x 762 mm Height)

**Maximum Casting Weight:** 500 pounds (226 kg)

- HC-1250 or HC-1500 Hydro-Clamp
- 5 Axis of Movements
- Automatic cleaning features Triplex Systems patented, Random Automatic Nozzle Movement.
- Uses Triplex Systems Safe Lance Assembly
- Electronic Joystick Controls
- Automatic Exhaust Blower
- Automatic Window Rinse
- Overhead Loading
- HMI Touch screen



Model TRX-1250CAM Combines the high pressure water jet cleaning power of both automatic and manual cleaning centers in one cabinet. This Triplex Technology allows for an automatic cleaning cycle, followed by a manual cleaning cycle if any ceramic remains. The touch screen allows the operator to choose the type of cleaning cycle, automatic or manual and only requiring one high pressure pump unit.



The carriage mounted Hydro-Clamp and Turntable Assembly allows for easy loading of castings by an operator or overhead lifting device.



The operator touch screen and manual cleaning cycle controls.

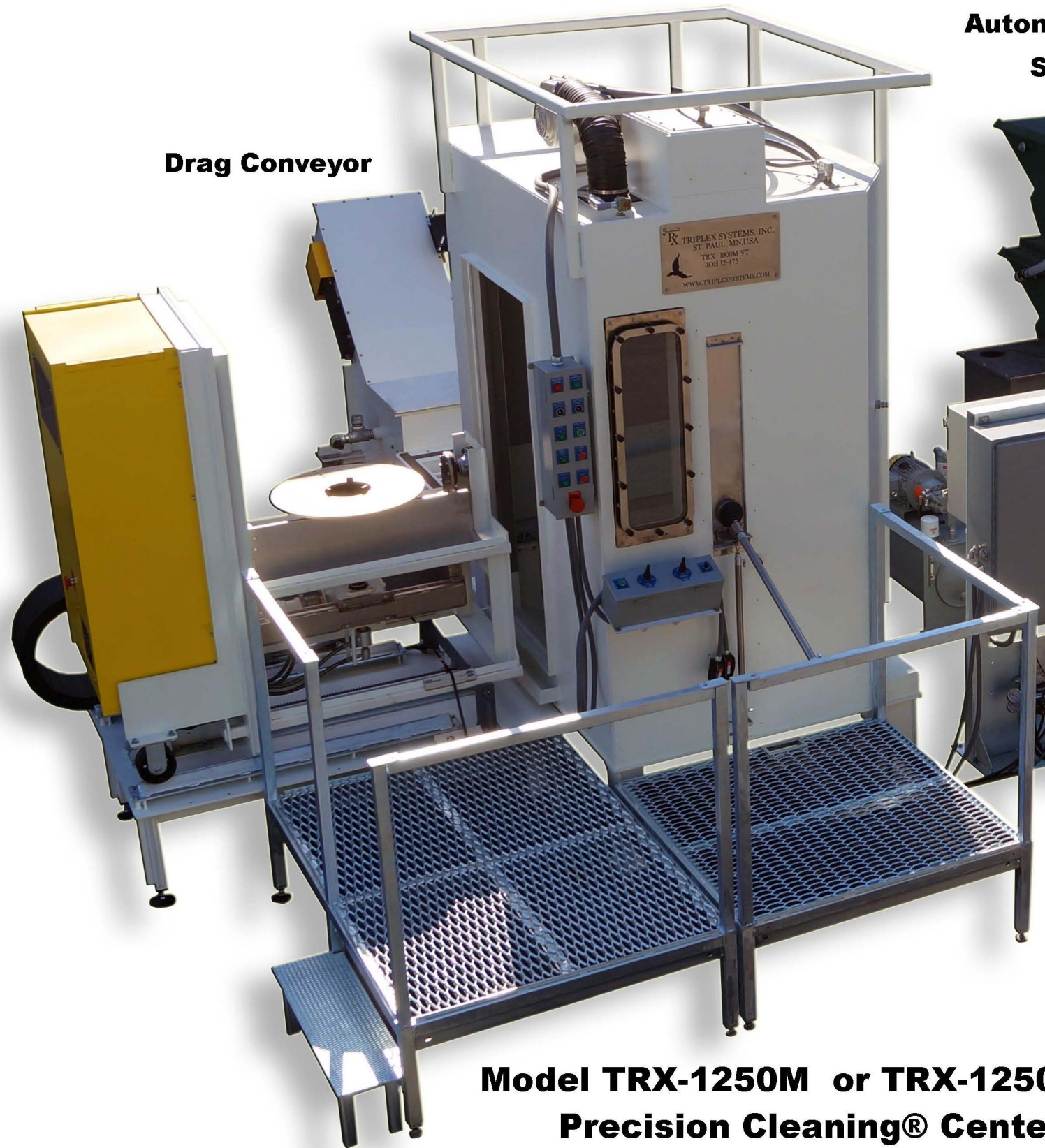
# Typical Foundry Layout

Designed for Operator Safety, Ergonomics and Productivity

**Drag Conveyor**

**Automatic 4-Stage Stage  
Sump Assembly**

**Triplex Water Reuse  
System**



**Model TRX-1250M or TRX-1250CAM  
Precision Cleaning® Center**

**High Pressure Pump,  
Filter and Tank Unit**

Precision Cleaning® Components can be located to meet your foundries floor plan and space requirements.

# Precision Cleaning® Center Components

## Hydro-Clamp Technology

For Positive Clamping, High Productivity and Reliability.



The patented Hydro-Clamp is a compact and powerful rotary clamping device, designed for handling and manipulating entire investment cast trees. The Hydro-Clamp is designed to capture the pouring cup remnant of the investment cast trees. The proper presentation and manipulation of the cast tree is necessary for productive cleaning and ergonomic loading and unloading of the cast trees.

## Triplex Automatic 4-Stage Sump Assembly



**Triplex Automatic 4-Stage Sump Assemblies** are designed to allow suspended solids time to settle, prior to discharge to customer's drain or to Triplex Systems, Inc. Water Reuse System.

## Triplex Water Reuse System



**The Triplex Water Reuse System** is designed to filter process water from casting cleaning centers or industrial process filtration systems. The process water to be reused originates from Triplex Systems Fourth Stage Sump and is pumped through a high capacity, high efficiency pleated cartridge filter followed by two filter vessels in parallel, each with high efficiency pleated filter cartridges. The filtered process water is collected in a 500 gallon (1887 liters) holding tank with liquid level controls. The filtered process water is then pumped through a side loop filtration/disinfection system that runs continuously 24 hours per day. The side loop filtration is made up of two filter vessels in parallel, each with high efficiency pleated filter cartridges and a Ultra-Violet disinfection system. The Ultra-Violet disinfection system is used to prevent microbial and algae growth in this 90% closed loop Water Reuse System.

The Triplex Water Reuse System is a stand alone system that functions independently from the Casting Cleaning Center. This Water Reuse System can be added to new or existing casting cleaning operations.

# Precision Cleaning® Center Components

## Triplex Systems, Inc. Drag Conveyors



**Triplex Systems, Inc. Heavy Duty, Zero Leakage Drag Conveyors** are designed to handle two process waste streams. The solid waste is dispensed into a container and the process water is drained by gravity from the Drag Conveyor reservoir into the first stage of the Automatic 4-Stage Sump Assembly.

The Drag Conveyor reservoir is designed to allow suspended solids time to settle, prior to discharge to the Automatic 4-Stage Sump Assembly. The drag conveyors are made from heavy plate steel to withstand the abrasive environment. Standard and custom drag conveyors are available.



Solid waste being dispensed into a self-dumping hopper.

## High Pressure Pump, Filter and Tank Unit



**Triplex Systems, Inc. High Pressure Pump Units** are designed to operate continuously and are sized to the cleaning application. The high pressure pump units are specially fitted to meet Triplex Systems, Inc. specifications and the Hydraulic Institute Standards for operation of triplex plunger pumps.

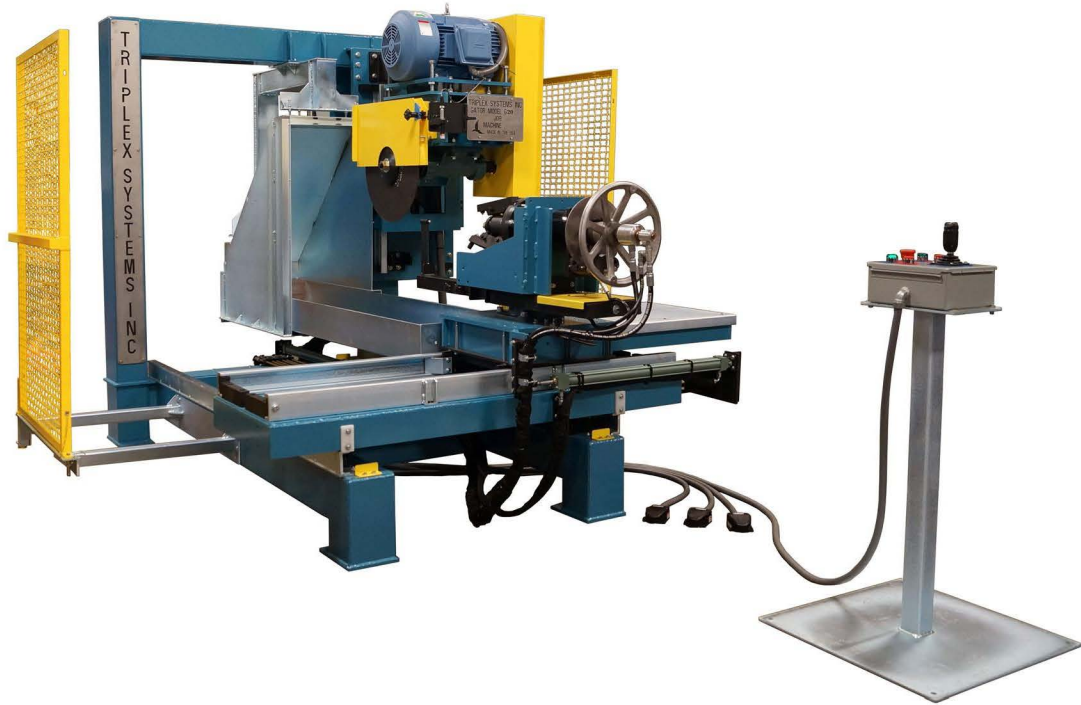


Triplex Systems, Inc. Model TRX-750AM Automatic and Manual Cleaning Centers with common drag conveyor and sound enclosure to meet European CE Sound Standards. Sound enclosures are available as an optional feature.

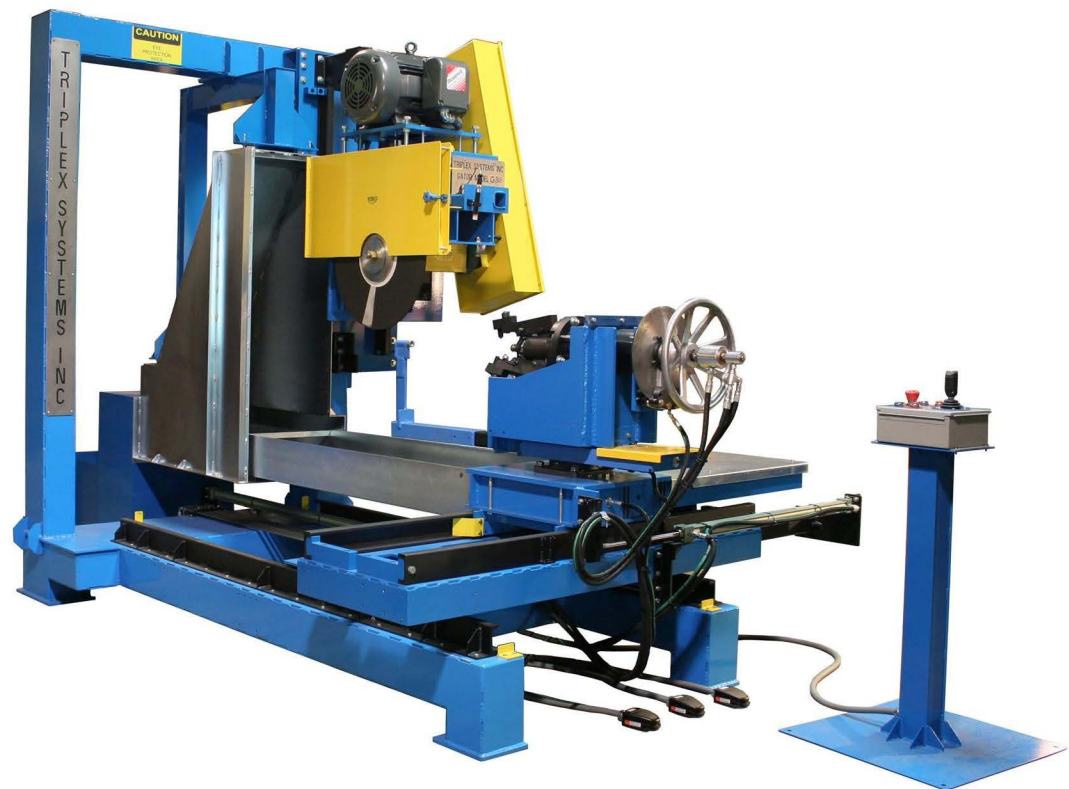
# Triplex Systems, Inc. Abrasive Wheel Cut-Off Machines

*Designed for Operator Safety, Ergonomics and Productivity*

## G20 Abrasive Wheel Cut-Off Machine



## G30 Abrasive Wheel Cut-Off Machine



The Patented **G20** and **G30** are 5 axis remotely controlled abrasive wheel cut-off machines that feature Hydro-Clamp Technology. The patented Long Reach Hydro-Clamp takes the place of the operator's hands for holding castings. The G20 and G30 with Hydro-Clamp technology mimics the motions required to cut castings. Axis 1 the Hydro-Clamp assembly rotates manually 360 degrees, clockwise or counterclockwise. Axis 2 the Hydro-Clamp assembly pivots 180 degrees to the left or right. Axis 3 the abrasive wheel arbor raises and lowers for wheel height adjustment. Axis 4 the Hydro-Clamp upper carriage moves left and right. Axis 5 the Hydro-Clamp lower carriage moves in and out.

**Safety:** Using Hydro-Clamp Technology for de-gating castings keeps the operator out of harms way with Hands-free, Cut-off.

**Ergonomics:** The ease of loading, manipulating and de-gating castings greatly reduces body stresses including; repetitive movements, physical and mental fatigue associated with manual cut-off processes.

**Productivity:** Using the G20 or G30 will improve productivity by reducing the physical demands and stress elements, improving cutting performance and reducing scrap. The G20 or G30 "Gator" allows the operator to set-up and remotely control the cutting process bring machining techniques to the cut-off process.



### Features:

- Patented Cut-Off Technology.
- Patented Hydro-Clamp Technology.
- Easy Hydro-Clamp Tool Interchangeability.
- Five Axis Movement.
- Inline, Perpendicular, and Diagonal Cutting.
- Joystick Control.
- Laser Guide Line.
- Traveling Spark Chute Catches Parts
- Safety Machine Guards and Machine Labeling.
- Steady Rest for Aligning tree for Cut-Off.

### Benefits:

- Hands-Free Cut-Off.
- Operator is out of Harms Way.
- Safe Cutting of Castings.
- Precision Gate Removal.
- Ergonomic Methods.
- Reduces Mental Fatigue.
- Reduces Repetitive Movement.
- Reduces Scrap Parts.
- Improves Abrasive Wheel Life.
- Increases Productivity.

Model	HP	Wheel Diameter	Maximum Casting Size
G20	20 (14.9 kw)	20" (508 mm)	18" Diameter X 27" (457.2 mm Diameter X 685.8 mm)
G30	30 (22.4 kw)	24" to 30" (609.6 mm to 762 mm)	24" Diameter X 27" (609.6 mm Diameter X 685.8 mm)



# ***Your Finishing Department's Total Solution Since 1984***

***Technology for Improving Productivity,  
Ergonomics, Safety & Environment.***



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