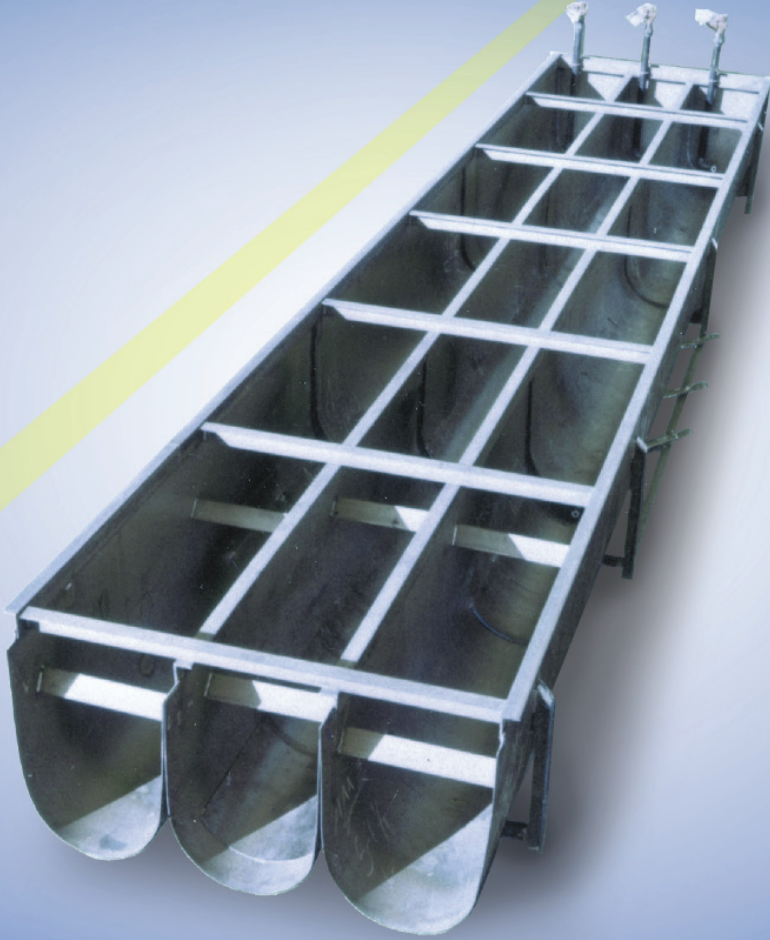


# Troughing Systems

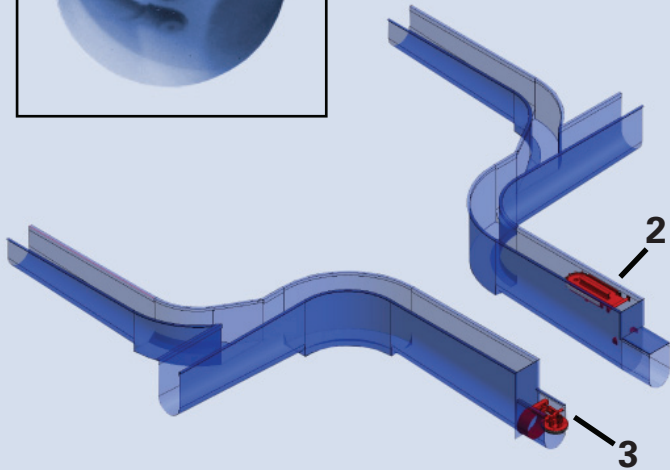


Ecoclean Trough



Ecoclean

# Engineered transport of fluid & chips



## Ecoclean Trough

1. Drop-in flush nozzle
2. Air lock through gate
3. Circle style trough gate

## Technology

Ecoclean troughing systems are engineered to transport all fluid, machining chips and grinding swarf from the machines to either the pumpback sump system or filtration unit. Designs include above-ground installations that are either free-standing or through-machine, while in-ground installations can be cast in concrete (single wall or dual wall) or placed in concrete tunnels. Each design is engineered to be the most efficient and cost effective method based on the specific application.

## Process

Chips and grinding swarf from each machine are deposited along with all flushing and tooling fluid into a collection trough. As this mixture of fluid and material is deposited, nozzles flush the mixture down the trough. This flushing moves the fluid and material at a specific velocity to keep all of the material in motion, eliminating build-up or blockage within the troughs.

# System benefits

## Customization

- Ecoclean produces multiple widths and several trough configurations
- Several wall thicknesses are available
- Multiple styles of cover plate are available
- Start-up supervision included for all troughing installations
- Special contouring for wet decks, foundations and machine bases



## Flush nozzle types

### Single-point flush nozzle

- One nozzle at the beginning of the trough run
- Single-point flushing dramatically reduces misting in plant environment and energy consumption

### Underslung flush nozzle

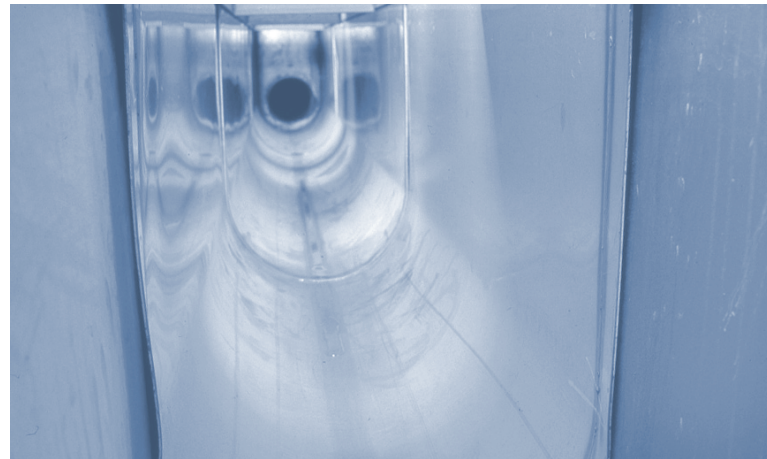
- Nozzle located beneath fluid flow
- Used for stringy chips which may get caught on drop-in nozzle designs

### Drop-in flush nozzle

- Staggered along through approximately every 25 feet
- Used for grinding and small chip applications

### Stepless nozzle (above-ground nozzle)

- Nozzle located beneath fluid flow
- Used for all types of machining and grinding applications



*Trough keeps chips moving to the filtration system*

## Standards & Customization

Available in standard widths from 6" to 36" wide

One piece fabricated depths up to 12 ft. deep

Wall thicknesses from 14 gauge to 1/4" plate

Preassembled sections shipped in lengths up to 40 ft. (based upon total handling weights)

Available with internal machine/flush supply piping or side mounted pipe chase to ease overall installations

## Options

- Air lock trough gate
- Circle style trough gate
- Radius turns:
  - "Straight Wall"
  - "Armadillo"
- Mitered turns
- Double containment
- Various flush nozzle designs
- Reinforced aisle covers

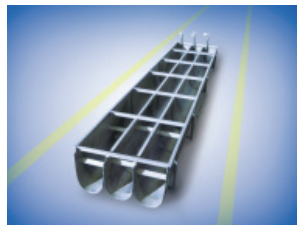
# Troughing Systems

## Features

- In-ground or above-ground systems designed to meet customer needs
- Multiple design standards for variety of applications
- Engineered to keep chips moving towards filtration system or sump systems
- Maintenance free
- Specialized software for trough design to improve and optimize performance
- Various trough flushing designs ranging from conventional velocity flushing (under-slung and drop-in) to high volume, low pressure single point flushing, to combinations of both for specific applications
- Double containment, fluid storage gates, and coverplate options available

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## Trough



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