

**HAYER & BOECKER**



# **HYDRO-CLEAN®** HIGH-PRESSURE WASHING SYSTEM



A HAYER & BOECKER Brand



Before: sticky, raw material with adhering fine content and agglomerates



After: cleanly washed product

## HYDRO-CLEAN

The Hydro-Clean high-pressure washing system effectively cleans deleterious material from aggregates and minerals while reducing water consumption by as much as 75 percent and energy costs by up to 15 percent over traditional washing systems.

# HYDRO-CLEAN APPLICATIONS

The Hydro-Clean washing system increases the proportion of usable product, reducing the operating costs and increasing profit.

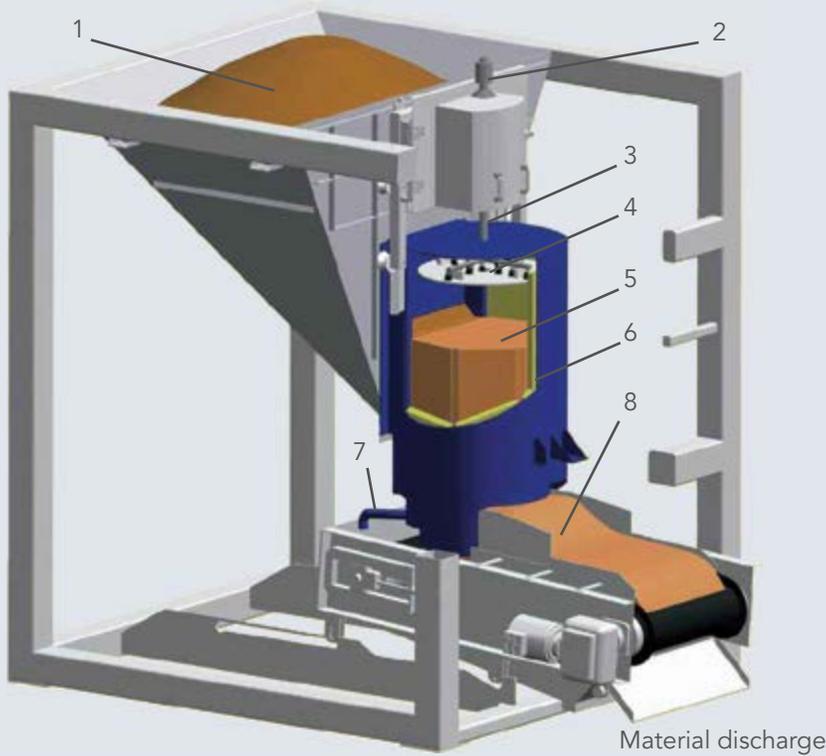
## Areas of application

- Mining
- Industrial minerals
- Reclamation of building materials
- Recycling
- Exploration



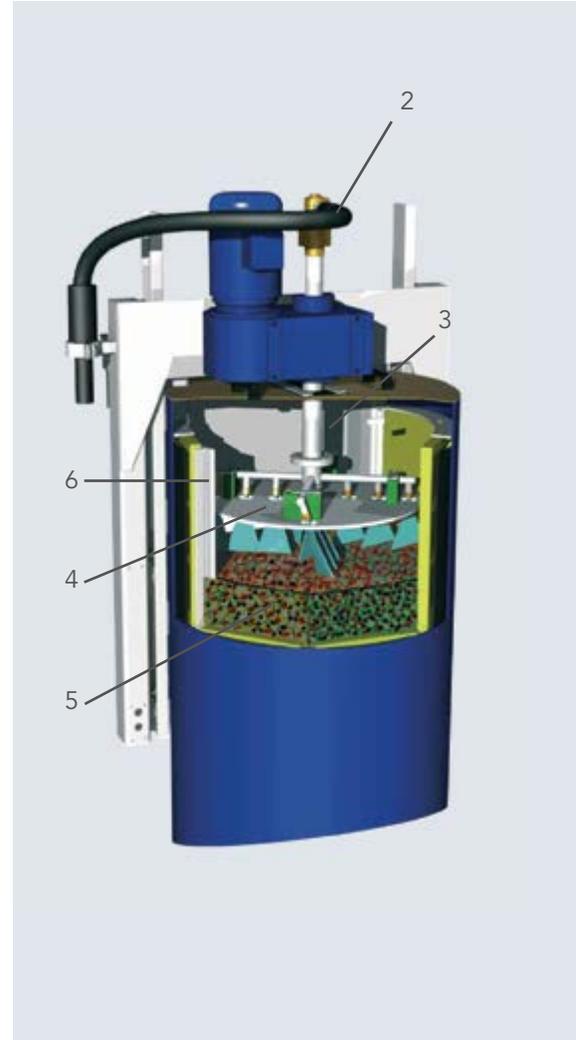
# HYDRO-CLEAN MATERIAL CLEANLINESS

Material feed



- 1. Feed hopper with raw material.
- 2. Rotary feedthrough for high-pressure water pipe.
- 3. Rotor drive shaft.
- 4. Washing rotor with high-pressure nozzles.
- 5. Material bed inside washing drum.
- 6. Polyurethane filter panel for waste water discharge.
- 7. Separate drain pipe for waste water.
- 8. Discharge belt.

HYDRO-CLEAN Schematic drawing with one washing rotor



Washing drum in detail

UP TO 75%

# LESS WATER CIRCULATION

# HYDRO-CLEAN PROCESS

## HOW IT WORKS

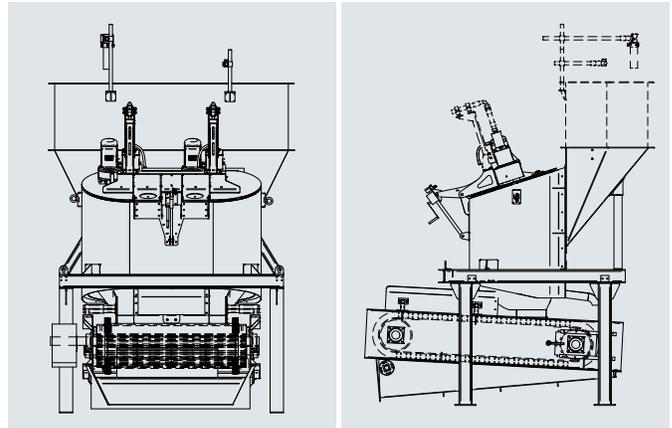
The Hydro-Clean processes as much as 400 tons per hour, removing impurities from deep crevices and pores on stones – areas traditional washing methods can't access. This helps get the most sellable material, reducing an operation's waste pile and increasing overall profits. Here is how it works:

1. The Hydro-Clean takes feed material as large as six inches (150 millimeters) into its vertical drum.
2. The system employs high-pressure nozzles, rotating at 90 rpm, to spray as much as 90 percent recycled water on the material with pressures as high as 2,000 psi (140 bars).
3. The water turns over the raw material, covering all angles and penetrating the deep pores and crevices. It effectively removes silt and clay particles as small as 63 microns from mineral mixtures. The adhering minerals and agglomerates are exposed, and the fine content is dispersed and separated with the waste water.
4. Washed particles are transported from the drum via the discharge belt to the rinse screen to remove the last of the disagglomerated particles and for classification.

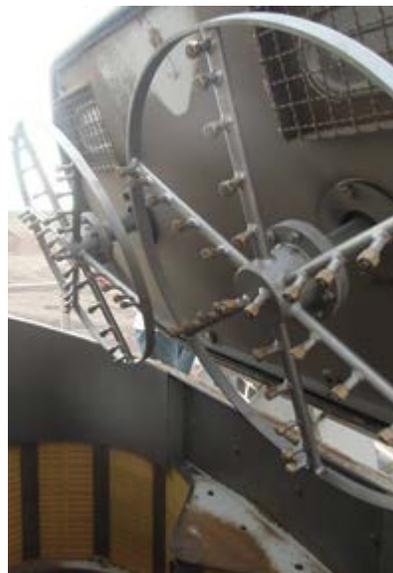
## Models

The Hydro-Clean comes in three models that process 18 to 400 tons per hour, depending on the model and application.

- HYDRO-CLEAN 350
- HYDRO-CLEAN 1000
- HYDRO-CLEAN 2000



HYDRO-CLEAN 2000 with two washing rotors



Washing rotor with rotating high-pressure water jets

# HYDRO-CLEAN COMPACT SYSTEM DESIGN



System technology: 1 Classifying screen – 2 HYDRO-CLEAN – 3 Bucket wheel

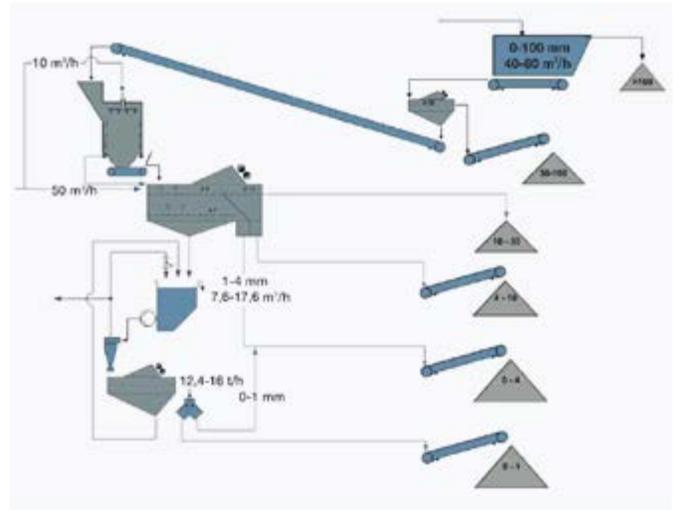
## COMPACT **SYSTEM DESIGN**

Due to its compact size and weight, overall operating and structural costs are considerably lower with the Hydro-Clean compared to traditional washing systems – which also require more equipment and a greater footprint. With a Hydro-Clean unit, the producer only needs an additional wash screen for the Hydro-Clean discharged material.

# HYDRO-CLEAN FEATURES & BENEFITS

## Features and Benefits

- Takes feed material as large as 6 inches (150 millimeters), while processing as much as 400 tons per hour.
- High-pressure nozzles rotate at 90 rpm at pressures as high as 2,000 psi (140 bars).
- Removes silt and clay particles as small as 63 microns.
- Minimal water consumption ranging from 27 to 211 gpm.
- Sensors detect the end of each washing cycle to limit wear to the machine from unnecessary use.
- Simplified maintenance with wear-parts easily accessible through the drum-lid.



Schematic diagram of the washing process

## Applications

- Sand and gravel processing
- Limestone
- Slag
- Lightweight aggregate
- Platinum
- Alluvial gold extraction
- Track ballast processing
- Diamond processing
- Bauxite processing
- Gypsum/anhydrite processing



HYDRO-CLEAN Mobile Test Plant is available for on-site washing demonstrations. Contact us today to book a test or demonstration.

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