



# Mechanical TRASH RAKE



## General Description

Mecan-Hydro's patented design, automatic double-armed telescopic intake cleaner consists of a specially designed head attached to the end of two telescopic arms which are mounted on a self-powered mobile trolley.

The cleaner head features a unique jaw type design that enables it to clasp any type of debris. The lower edge of the head serves as a scraper that can dislodge debris from the rack as it is collected by the head.

The telescopic arms are mounted on pivots and can be controlled hydraulically to vary the angle and rack surface pressure during the scraping cycle. In addition, full hydraulic power is available during the scraping down-stroke to dislodge all debris types.

The entire cleaner unit is a self-contained assembly that moves on two tracks mounted parallel to the intake grids (trash racks).



## Advantages of the Mecan-Hydro Design

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No conveyer system required

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Top-to-bottom cleaning cycle that prevents overloading and eliminates "disturbing" excess debris

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Jaw type cleaner head that grasps all types of debris for positive removal

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Changeable Jaw blades for best operation during specific seasons (straight blade for leaves, toothed blade for logs and branches, etc.)

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Automatic and manual operation

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Completely self-contained unit with low maintenance requirements

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Double arm telescopic construction for extra strength that will allow raking without reducing load on the turbine units

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## AUTOMATIC CYCLE

The cleaner is provided with a fully automatic cleaning cycle. A PLC based control system provides automatic control of all machine sequential movements as well as protection of the machine. The controls monitor the operation and will stop the machine and generate an alarm should any abnormality occur, indicating the need for operator intervention. At the cycle start, the machine travels from its parked location to the beginning of the grid. Once positioned, the arms extend downward towards the top edge of the intake grid. The cleaner head comes in contact with the top of the grid and the jaws of the head open. The arms continue to extend, applying both surface pressure and down stroke pressure, with the bottom edge of the head scraping the debris from the grid as it is collected within the jaws. When the head is full, or has reached the bottom of the grid, the jaws close and the arms are retracted bringing the debris to the surface. When the arms are completely retracted, the unit moves to one end of the rails to dump the debris into the trash collection cart. The unit then returns to the same exact location to complete the cleaning cycle for that grid section.

Once the grid section is completely cleaned, the unit traverses laterally a distance equal to the width of the head and repeats the cleaning cycle. This continues until the entire width of the grid is completely cleaned. The unit then parks itself and waits for the command to begin the next grid cleaning cycle.

## Manual Operation

The unit is also capable of being operated in manual mode. A set of operator controls is located at the unit's operator platform. These controls enable manual operation of all unit functions including the telescopic arm and unit travel. This mode is used to position, grab and remove unusual debris such as a tree limb or stump that becomes lodged in the grid.

## CONTROL PANEL

The unit control panel has been specially designed to facilitate the operational requirements of the intake cleaner. Industrial quality components are used and the panel is designed to meet applicable standards of UL508A and CSA C22.2, Nos.0, 04 & 14.

## OPERATING SYSTEM

Mecan-Hydro offers two types of operating systems: Hydraulic or Fully Electric. The operating system supplies the necessary power for all movements of the intake cleaner unit.

The central hydraulic system is located inside a steel cabinet for protection. Service access is provided for routine maintenance. The hydraulic logic utilizes cartridge type valves and components mounted within an integrated circuit valving manifold. This provides the maximum reliability, eliminates potential leaks, and enables service to be performed with greater ease.

The fully electric system uses racks and pinions powered by electric motors equipped with electronic drives. This provides maximum safety of operation and precise movements.

## UNIT MOUNTING

The Mecan-Hydro intake cleaner is mounted on two parallel rails that can be anchored directly to the concrete deck or mounted on a steel structure. The unit is placed on these rails and travels the full width of the intake structure. A power cord Festoon type system follows the unit travels. The cleaner follows the cycle as described above with the removed debris dropped into a debris container, on a conveyor or any other location.

## DEBRIS HANDLING

Mecan-Hydro's trash rake doesn't require a conveyor system. Debris are dumped directly from the rake to a debris container or any other location.

If required, we can supply a conveyer system. The system would consist of steel frame, rollers and rubber belt. Angled side plates will prevent debris from falling.



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