

## The Scrubber and Hose Cart

### Overview

The Scrubber™ pumping/filtration is a mobile 4-stage screening/pumping/filtration system, capable of delivering more than 44gpm (no hose and fresh media) of clear water source from nearly any heavily turbid ambient water source at high volume with NTU clarity of <1(crystal clear).

The hose cart carries up to 300ft of 1/1.25" hose and electrical cable in support of the MudChaser's mission. The hose cart also contains a booster pump for standalone operation.

### The Scrubber™ Pumping/Filtration System

For customers who do not have a ready supply of clear water to pump to the MudChaser™ or do not want to sacrifice their potable water.

- Easy to operate, high capacity, 4-stage, mobile filtration system removing particles from silt down to submicron at up to 30gpm.
- Mobile 30"x72" cart w/protection frame and crane lift provisions. All plumbing will be kept within the footprint of the cart.
- 1/3hp (120Vac) Intake + 1.5hp(120/240Vac) main pumps. (Adjustment made if Intake pump ordered as part of the Hose Cart).
- Electrical switch box control power to the 3 primary water pumps and 50ft power cord.
- Four pressure gauges and an output flow gauge to monitor performance of the system.
- Will take +1000NTU water and filter it to <1NTU at flow rates up to 30gpm.
- 60sft DE filter surface area for 4hr operation (min)

Warning – Any bio-hazard water that is pumped through this system will contaminate the system and must be



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avoided, if at all possible.

### Scrubber Options

- 12" wheels for easier mobility
- DE filter sizes: 80sft, 100sft
- Square tube frame construction

### Hose Rack Cart & Booster Pump (Baseline Config)

#### Features

- Rack and booster pump mounted on a 36"x72" cart w/10" wheels (min). All hoses will be kept within the footprint of the cart to ensure protection of the hose.
  - Crane liftable using standard lift points
  - Std Config: 200ft discharge hose and 30ft intake hose
  - Std Hose Rack capable of supporting 300ft of hose
  - 1hp booster pump. Big enough to handle up to 300ft of hose
  - Hose will be neutrally buoyant using flotation sleeves
- NOTE: The cart to the right is under-sized. All future carts will be sized to hold all hose within the foot print of the cart.



#### Options

- Intake pump – required when the water level is more than 3ft below the pump.
- 5um x 100sf cartridge filter for large particle filtering
- Longer hose available lengths in 100ft sections. Booster pump resized for total length longer than 300ft.
- Pallet-mounted with fork lift pockets

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### Applications

- On-site Crystal Clear Water Generation
- MudChaser™ Supply Source
- Diver and deck Wash-down
- Construction Site and equipment clean-up

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### Description

The Scrubber™ is a mobile multi-stage filtration and pumping approach that creates crystal clear water from any near-by particulate, dirty water source. This cost-effective and low maintenance design uses a mud separator at the start followed by cartridge, DE, and flocculation water processing. A simple inlet screener is also included as part of the system, to prevent sticks, fish, and other debris from entering the inlet. The Scrubber™, mounted on a mobile cart as shown here, provides a clear, reliable, guaranteed water source to the MudChaser™ and for other general purposes, such as diver and equipment wash-down.

The test water, with an visibility range of less than 6", was pumped through the Scrubber™ at 30gpm and filled the 3 buckets in ~5 seconds each.



In this mobile and space-saving configuration, a low-maintenance, mud separator sits atop a 1.5hp (standard) or 2hp (optional), motor/pump assembly removing the large/heavy mud particles and debris. The water is drawn from a local, ambient water source, and the forward flow rate and system pressure is controlled through the recirculation line. The water is then filter thru a 5um washable cartridge filter, then successive stages to remove sub-micron

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particles at up to 30 gpm metered at the system output. Turbidity readings of <1 NTU is achieved.

The system is designed to be quickly assembled/disassembled for ease of set-up, operation, and transport. The 200ft of hose is standard equipment with an optional 2hp and an additional 100ft of dive hose Scrubber™.

The hose rack will hold up to 300ft of dive hose and 50ft of intake hose.

### Applications

- **On-site Crystal Clear Water Generation**
- **MudChaser™ Supply Source**
- **Diver and deck Wash-down**
- **Construction Site and equipment clean-up**

### Features

- A multi-stage mobile, filtration, and pumping system.
- 20ft lift capability is made possible with the charge pump at the inlet for lifting and pre-charging the system.
- Applications include general purpose, clear-water needs and MudChaser™ supply-source. (Note: Does not create drinkable water.)
- Commercial, durable, corrosion-resistant components.
- 100-micron mud separator with a manual purge valve for cost-effective, continuous, heavy dirt removal during operations.
- Washable, 5-micron cartridge filter for next level water cleansing.
- Sequential filtration stages removes particles down to sub-micron level
- Base configuration includes a single-phase, 1.5HP, 115/230Vac pump, as shown, will support sectioned hose lengths of up to 200 feet while delivering the required output flow to the MudChaser™.
- Upgrade option: 2hp motor/pump + 100ft of dive hose. (Total: 300ft).
- Mounted on a mobile cart, the system sets up and breaks down for quick, easy transport and operation.
- With the flow rate gauge, the output can be monitored to ensure the proper flow to the MudChaser™ performing effectively from pump to diver.

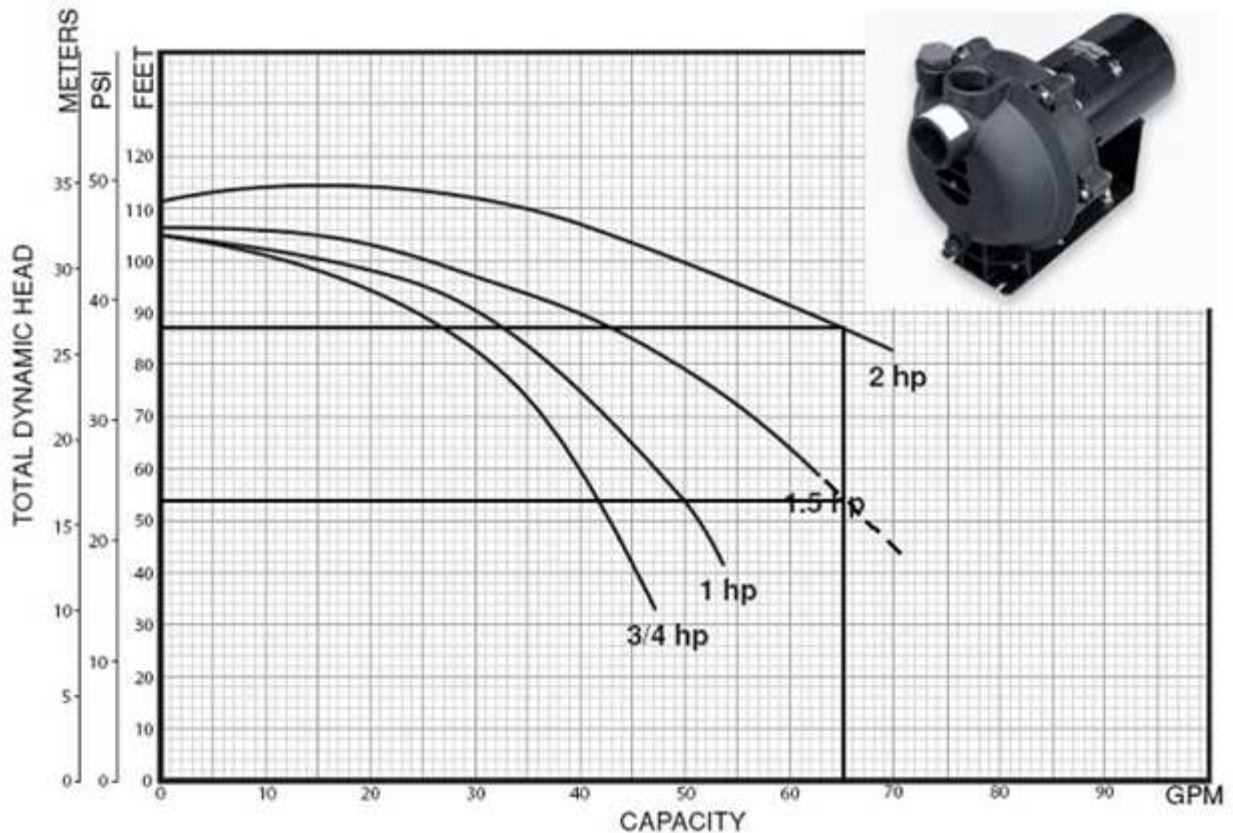
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- Additional hose and hose reel options available separately.
- Electrical Requirements: 5kW electrical power source required to handle the combined 1.5HP, 120V, 30A surge/15A continuous, the 1/3hp intake pump and the 1hp booster pump
- **Note:** Not intended for use with oily or biohazardous waters. Intake should be well below the surface to avoid any potential oils.

### Pump Performance

#### Hose Length vs. Flow Rate

Hose	Flow Rate (gpm) – with both charge & main pumps	Pressure (psi)
1.25" x 100ft	36.4	29
1" x 100ft	29.2	36
1"x100ft + 1.25"x100ft	25	39



## The Scrubber and Hose Cart

### Specifications and Options

Basic System Configuration	Specifications
Scrubber™ Pumping/Filtration System	Standard System
Output Hose(s) (Base configuration)	200ft: 100ft x 1.25" + 100ft x 1"
End Fittings: Cam & Groove	Polypropylene
Hose Material	200ft PVC, 100ft all-temp synthetic rubber
Temp Range	34°F to +150°F
Inlet Hose length	PVC/General Purpose: 50ft x 1.5"
Main circulation pump	Main: 1.5hp standard, 120V/240Vac, single phase, 30A surge/15A continuous
Priming/lift pump	1/3hp, 120Vac, single phase, 9A cont.
Digital Output flow gauge	0-50gpm
Hose Cart	Holds 300ft dive hose + 50ft or intake hose.
<b>Options:</b>	
300ft reach upgrade: 100ft additional dive hose and 2 HP motor	Optional/Upgrade
Replacement cartridge filters	
Additional Handi-carts	

### Scrubber Tutorials

- [Scrubber Setup & Startup](#)
- [Scrubber Processing](#)