

MSC/MST **♦**

APPLICATIONS FOR CATERPILLAR®

SCRAPER-DRAWN WATER TANKS



EQUIPMENT •

PARTS **②**

SUPPORT **①**



THERE'S WORK TO BE DONE



For over 45 years, Mega has been providing specialty haulage equipment for use in construction and mining operations. Our water haulage equipment, service bodies, bottom-dump trailers, equipment transports and other products are designed and manufactured to be reliable and durable machines. The knowledge and experience that comes from delivering over 6,000 machines is built into every product we make.

Our employees take pride in their workmanship and Mega has developed a reputation for manufacturing quality products that are built to last. Our sales and product support staff are known for providing solutions and demonstrating integrity throughout the ownership experience. Our product's value is reflected in our industry-leading brand recognition and resale value - Genuine Mega products have become the standard by which others are measured.

Mega products, parts and service can be found at OEM construction and mining equipment dealers around the world. Our sales and product support departments at Mega are available to help answer your questions. For more information, please contact us @ +1 505.345.2661 or toll free in the USA at 1.800.345.8889 or on the web at www.megacorpinc.com.

There's work to be done - and, from all of us at Mega, we want to help you do it!

Jim Kunz **President Emeritus**

66 WE APPRECIATE YOU AND OUR PRODUCTS SHOW IT 55





> VALUE

- The water tank is essential to the operation of production tools
- Mega water tanks provide the highest levels of dependability and longevity
- The high quality Mega water tank provides a lower cost of ownership and more profit from production tools
- Mega water tanks compliment the premier brands of prime movers
- The superior longevity of Mega water tanks provides high resale value lowering the cost of ownership

DESIGN AND MATERIALS

- Mega works closely with OEM manufacturers to ensure our tanks properly fit, load, and interface with the prime mover resulting in a fully integrated machine
- Mega tanks meet or exceed applicable ISO/SAE/DOT recommended practices and requirements
- Materials and components used in the manufacture of Mega water tanks are chosen for high quality and durability rather than a low price point
- Mega water tanks feature the best interior baffling systems on the market resulting in a machine that is safe to operate with lower operating costs
- Key spray components are specifically engineered for severe duty heavy equipment service
- Mega spray system controls are designed to withstand the harsh corrosive environment of heavy construction and surface mining
- Mega water pumps are specifically designed for heavy equipment water tank service with features not found on standard off the shelf irrigation water pumps
- Mega spray heads (100% built in the USA) are the heaviest duty, most versatile, valve and spray fan nozzle on the market

PRODUCT SUPPORT

- Our dealer relationships and a fully integrated machine provide seamless support and the highest level of machine availability
- Mega is the most recognized and valuable brand of tank on the market
- Over 40 years of knowledge and experience with prime mover integration
- Every Mega water tank includes a full set of Operation and Service Manuals
- www.megacorpinc.com provides useful information and complete contacts for support
- Phone, online and on-site support for dealers and end users with 24 hr/day parts and advice to ensure seamless machine support
- Unsurpassed product warranties and dealer support



Mega manufactures a complete line of water tanks for Caterpillar® or Kress wheel tractor scrapers. Our scraper drawn water tanks can be built for either rigid hitch or drop tank configurations. These are available for dealer installation or with Mega factory installation.

Every tank includes a complete set of technical manuals detailing installation, operation, maintenance, inspection and replacement parts. Mega tanks are constructed with premium materials and are inspected throughout the manufacturing process to produce the best water tanks and spray systems available.

Available scraper-drawn water tanks include:

MST-Complete Units

The Mega MST class provides the customer with a complete new machine, with full manufacturer warranty, only requiring standard dealer pre-delivery inspection prior to being released for service.

MSC-Scraper Conversions

The Mega MSC class utilizes a customer owned scraper for conversion to water wagon. Mega will salvage the tractor, gooseneck and rear trailing wheel groups for use in the water tank conversion. This class is available both fully installed and tested as well as in kit form.

MSC-Retank

The Mega MSC retank class replaces an existing water tank with a new Mega tank. Mega will salvage the tractor, gooseneck and rear trailing wheel groups. This class is available both fully installed and tested as well as in kit form.

MSC/MST 5	19,000 Liters/5,000 Gallons	CAT 613
MSC/MST 5	19,000 Liters/5,000 Gallons	KRESS K13
MSC/MST 6.5	25,000 Liters/6,500 Gallons	CAT 611/615
MSC/MST 8	30,000 Liters/8,000 Gallons	CAT 621, 623, 627
MSC/MST10	38,000 Liters/10,000 Gallons	CAT 631, 637
MSC/MST12	45,000 Liters/12,000 Gallons	CAT 651,657

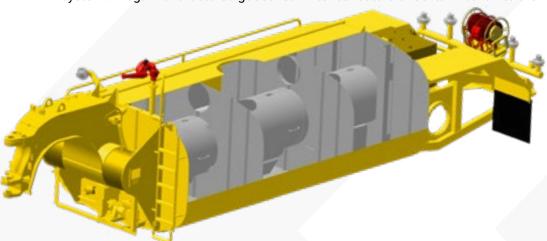
Our M.A.S.T. (Mega Anti Surge Tube) baffling provides the most stable, lowest profile, and longest-life tank on the market today. Chassis life is improved and maintenance decreased because our tanks are engineered in collaboration with Komatsu® to match their ROPS*, braking, and chassis load ratings. Mega tanks are designed with safety, performance, and durability in mind which ensures load stability, standard machine handling, and long chassis service life.

Mega tanks feature a proprietary baffling system that minimizes the effects of surging water while maximizing tank longevity. The tank mounting system utilizes line-bored rear pin mounts and flexible clamp front mounts that require no welding, making tank installation and removal simple. For more information on our rigid -frame water tanks please visit our website @ www.megacorpinc.com/equipment/water-scraper.asp

While Tanks May Look Similar On The Outside- It's What's Inside That Counts!

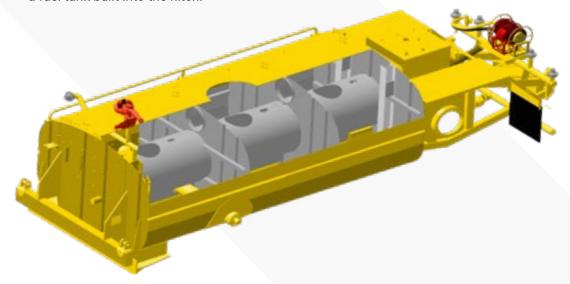
Rigid Scraper Tanks

The Mega rigid hitch version of MST and MSC tanks utilize either an existing Caterpillar or Mega manufactured and provided gooseneck hitch that is rigidly mounted to the water tank. This style of hitch does not allow for the tank to be lowered to the ground via the bowl lift system. Mega manufactured gooseneck hitches feature a fuel tank built into the hitch.



Drop Tank Scraper Tanks

The Mega drop type gooseneck hitch version of MST and MSC tanks utilize either an existing or Mega manufactured and provided gooseneck hitch with draft arms. The draft arms mount to trunions built into the water tank. The tank can be raised and lowered like a scraper bowl via the bowl lift system. Mega manufactured gooseneck hitches feature a fuel tank built into the hitch.







MEGA DIGITAL SPRAY CONTROL SYSTEMFLEXIBLE, SMART, RUGGED

There is a growing demand for precise application of water spray for dust suppression in surface mining, and construction applications to promote water conservation and operator safety. To address these issues Mega has designed the DiSCS®-Digital Spray Control System.

DiSCS® utilizes CAN Bus* technology to operate the spray control system controlling the water pump, water spray, and water actuation. When combined with our GPS, DiSCS® provides a method to automatically regulate the amount of water spray applied relative to vehicle ground speed or distance traveled.



The DiSCS® compact switchpad is based on CAN Bus protocol and is water and dust resistant. The LED switchpad lights up with the many different watering patterns and controls.

- Simple and rugged construction for heavy-duty operation
- Adjustable switchpad brightness
- RAM® mount (where applicable) is fully adjustable to any operator
- In-cab water level indicating system
- Total system pause function
- Work light and auxiliary controls
- Durable switchpad legend inserts

DISCS® SPRAY SYSTEM FEATURES AND BENEFITS

Distance-Based Spraying (Checkerboard)

Alternating intermittent watering patterns reduces water consumption and ensures one steering tire and one drive tire remain on a dry surface.



GPS

Distance and speed-based operation modes utilize a GPS-based speed signal to automatically stop/start water flow when the vehicle stops/starts moving, while in GPS mode.



Speed-Based Spraying (Continuous Coverage)

Sequence-based intermittent spray system operation uses Pulse Width Modulation (PWM) to vary the amount of water flow while maintaining a continuous rate of water application, independent of speed.



Time Based Spraying (Banding)

Operator adjustable, full width, intermittent wet/dry pattern.



Manual Spraying

The system can be operated manually independent of GPS signal

*CAN Bus-Controller area network based on standard ISO 11898/SAE J1939.

Reliability

DiSCS® utilizes Mega water pump, hydraulic motor, Mega spray heads, and electro-hydraulic controls. There are no complex modifications to the vehicle's hydraulic systems or powertrain.



Versatility

DiSCS® is adaptable to most, if not all, pieces of water equipment found worldwide. DiSCS® can be easily installed in the field on machines originally equipped with a Mega spray system, or can be retrofit to many older models equipped with a competitor's spray systems.



DiSCS® Retro-Fit Kits

Mega DiSCS® spray control can be applied to virtually any older Mega or competitor's water distribution equipment offering these advantages:

- Standardized operator and maintenance training.
- Genuine Mega Product Support and parts (also available on-line, and documentation).
- Readily available repair and maintenance components, common to most Mega water distribution products.

STANDARD DISCS® SUPERBOX FEATURES

The DiSCS® Superbox is a water-tight, sealed compartment with weather-proof rating built for rugged use in the harshest environments for mining and construction.



Photo includes optional equipment, sold separately.

- The Superbox consolidates the hydraulic system solenoid logic controls in a weather-proof, easy-to-access enclosure that securely protects critical components.
- Externally-mounted system filter assembly to protect hydraulic control valves.
- Logic control modules include individual fusing and self-diagnostics to assist in troubleshooting.
- Durable wiring harness with Deutsch® connections throughout. Harness includes additional pre-wired functions for easy plug-and-play of additional functions.

WATER PUMP PROTECTION FEATURES

✓

Soft Start/Stop

System controlled soft starts/stops to protect against operator induced sudden starts and stops that can decrease drive motor and water pump service life.



Low water

Automatic soft-stop when low water level is detected which prevents the dry running of the water pump.

Overheating

Automatic soft-stop after extended water pump operation with spray heads and water cannon valves closed (no water flowing from the pump).

GPS SYSTEM FOR DISCS®

The DiSCS® Global Positioning System (GPS) works with existing DiSCS® 2.0 Mega spray system hardware which includes water pump, hydraulic motor, spray heads, and DiSCS® 2.0 electro-hydraulic controls. A self-contained GPS unit is used to determine ground speed.

GPS-Based Sensing



DiSCS® uses GPS data to determine ground speed, the GPS system is universal, there is no special application-specific engineering required and the system is not vulnerable to interference like radar-based systems.

Self-Contained



DiSCS® does not require connections to other vehicle systems to determine speed. Easily adaptable to a wide variety of machine applications.

Automatic Water Consumption Reduction



The DiSCS® system utilizes a pulsing strategy, to automatically limit the amount of water consumed, based on vehicle speed while maintaining road dust control coverage. Utilizing the pulsing strategy avoids the addition of complex and costly variable flow hydraulic systems and the resulting impact on machine reliability. Multiple application choices are available-continuous water layer, checker boarding and operator selectable.

STOP

Automatic Shut-off

In GPS mode the system automatically shuts off the flow of water as the vehicle comes to a stop to prevent puddling. Spraying automatically resumes as the machine begins to move again.







HOW MEGA CAN HELP YOU OPTIMIZE YOUR WATER APPLICATIONS

Over-watering of haul roads has been the subject of increased study by mine planning and safety personnel. Many mines have improved their efficiency, lowered resource and equipment maintenance costs, and improved the safety of their working conditions by employing water conservation practices.



SAFETY

Excessive watering of roadways decreases effective tire traction, increases braking distances, destabilizes fill slopes, and accelerates erosion. This places haulage truck operators at a higher risk of accidents.



> WATER WASTE

Water conservation is extremely important, particularly in drier climates where water is already a scarce and precious resource. Many governments have implemented strict regulations concerning water usage, and require mines to develop and adhere to a water conservation plan.



➤ LABOR AND RESOURCES Over-watered, eroding haul roads must be serviced and repaired more frequently. When using too much water, trucks are required to return to water fill stations more often. This wastes both fuel and man-hours as well as subjecting the over-watered roads to heavier traffic.



> TIRE WEAR

Well-maintained haul roads will have a compacted top layer of fine-cushioning particles protecting tires from the larger coarse, sharp rocks below. Over-watering erodes this protective top layer, subjecting tires to severe wear by the exposed coarse rocks. This is costly in terms of tire replacement, lower production rates and higher labor hours.



We understand that our most precious natural resources are limited. Water conservation is essential for reducing waste and for safe road conditions, which is why we emphasize efficient water usage methods and equipment.



MEGA SPRAY HEAD VALVES

Mega Hydraulic Spray Heads

The Mega hydraulic spray head valve utilizes a custom-made, high quality, heavy-duty, double-acting hydraulic cylinder to open and close the valve portion of the spray head. This spray head is suitable for any heavy equipment prime mover, and requires a hydraulic spray control system.



Mega Pneumatic Spray Heads

Air pressure produced by the prime mover's pneumatic system opens and closes the pneumatic spray head valves. Air pressure forced into the valve closes the spray head. Release of air pressure from the top spray head cavity allows the valve to open. This spray head is suitable for any heavy equipment prime mover with a pneumatic system, and requires a pneumatic spray control system. *Note: Available on older models of scrapers only.*

We Offer Complete STAINLESS STEEL Spray Heads

Our complete stainless steel spray heads are best suited to resist corrosion and abrasion by the harsh waters often found in mining and construction environments. Stainless steel's resistance to corrosion and durability along with low maintenance make Mega stainless steel spray heads the ideal spray head for the toughest environments. This is an optional feature.



Mega Spray Heads Valves are FULLY Adjustable!

Mega spray heads are adjustable and can be fine tuned to provide the optimal water distribution for a specific application. This allows for high efficiency, reduced water consumption, and prevention of roadway over watering.







MEGA ELECTRO-HYDRAULIC CAB CONTROL

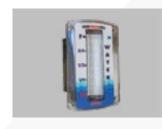
The in-cab spray control module provides independent control of each spray head, water valve, and optional accessories. Included in the cab control module is an LED water level indicator. Our control module is built for rugged use in the harshest environments of mining and construction.

Electro-Hydraulic Spray Control System

For the most demanding mining and construction environments we provide the Mega electro-hydraulic spray control system. The cab control module operates our Mega proprietary hydraulic solenoid spray control module that individually actuates all spray head valves and water valves. The spray control system operates independently from the water pump drive circuit. The solenoid module is housed in a weather tight steel housing. Mega fully supports these systems with spare parts and full time Product Support.



MEGA Cab Control



Water Level Indicators

There are two electronic water level indicators, one in the cab control module inside the cab and the other on the solenoid control module mounted on the tank for easy viewing while filling.

MEGA WATER PUMPS

The heart of the Mega spray system is the water pump. The water pump is powered by the vehicle's hydraulic system. Mega spray controls ensure proper integration with the chassis' hydraulic system and ECM.

The Mega M3 series heavy-duty water pump features a direct bolt-on hydraulic motor mount and steel splined coupling to simplify drive motor connection. Heavy-duty shaft and dual bearing design provide long life and high water output for superior spray pattern and water cannon performance.

The Mega M4 series high performance water pump also features direct bolt-on hydraulic motor mount and steel splined coupling to simplify drive motor connection. The vented frame cavity prevents damage from over-greasing and allows the use of an auto lubrication system. The M4 pumps are available in both standard cast iron as well as corrosion-resistant models with stainless steel waterways and fully stainless steel.



MEGA M3 Series



MEGA M4 Series

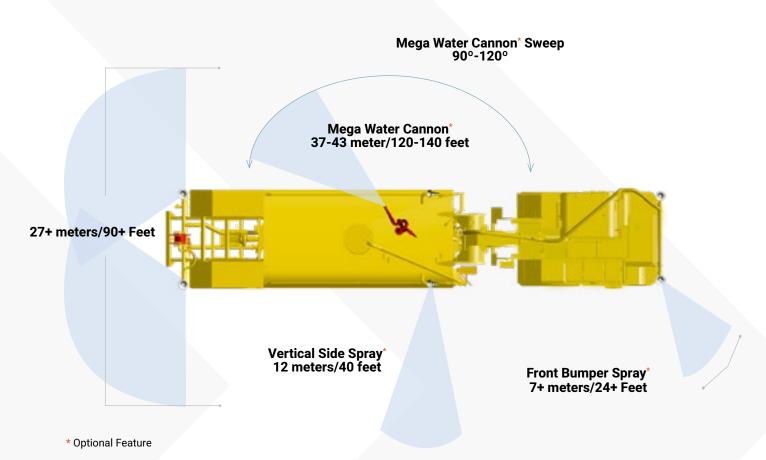


MEGA M4 Series Complete Stainless Steel

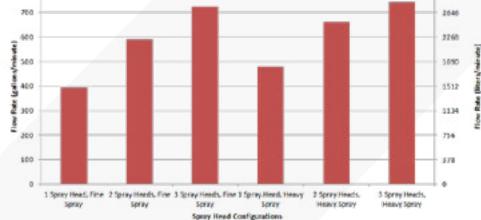
SPRAY CAPABILITY

Mega spray head valves are fully adjustable for fan width, fan volume, and fan direction. When combined with swivels (see optional features) on the spray bar, fan direction can be adjusted on two axis. Mega spray heads provide a consistent flat fan spray over a very wide area. One or two spray heads are capable of suppressing dust on a road up to 27 meters (90 feet) wide.

2 Mega Spray Heads

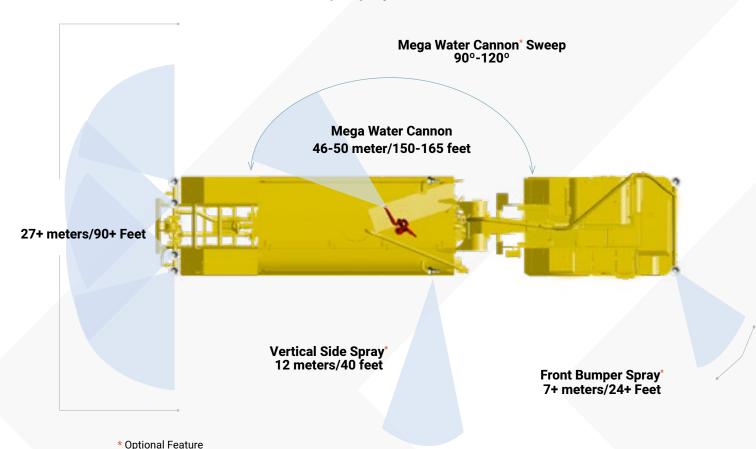


Spray Head Configuration Flow Rates - Mega M3 Water Pump

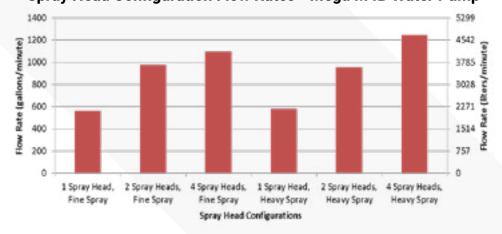


Total flow rates of different spray head configurations. The approximate total flow rates in gallons/minute (left vertical axis) and liters/minute (right vertical axis) of three possible spray head configurations. The "fine spray" opening is ½ inch in height, and the "heavy spray opening" setting is ¾ inch in height.

4 Mega Spray Heads



Spray Head Configuration Flow Rates - Mega M4B Water Pump



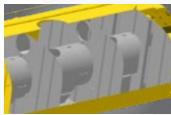
Total flow rates of different spray head configurations. The approximate total flow rates in gallons/minute (left vertical axis) and liters/minute (right vertical axis) of four possible spray head configurations. The "fine spray" opening is ½ inch in height, and the "heavy spray opening" setting is 3/8 inch in height.

STANDARD Features **1**



Access Ladder With Hand Rails

Mega tanks include an access ladder to the top of the tank. Our standard ladder features tread grip rungs for a sure-footed grip and hand rails at the top of the ladder allowing safe access to the top of the tank. Optional customized safety railing is available upon request to meet your exact requirements.



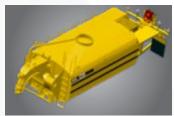
Access Manways

Access through the main compartments of the interior of the tank is provided through manways in the main transverse baffles.



Camera Relocation Mounting Provision

A camera mounting bracket to relocate the camera from the truck to the water tank.



Exterior Paint

Mega tanks are abrasive blasted prior to application of anti-corrosive primer. The exterior top coat is color matched to the current manufacturers color. Custom graphics are available upon request.



Fill Port with Safety Grate and Anti-Skid Walkway

The standard fill port includes a bolt-in safety grate. For safer access to the fill port, an antiskid walkway is provided. The walkway extends from the access ladder on the front bulkhead to the fill port.



Gooseneck With Fuel Tank

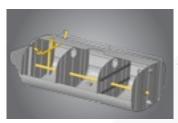
The Mega gooseneck includes a fuel tank with ground-level fill capability.



LED Lighting with Backup Alarm, Clearance & Utility Lights

All clearance, stop, and tail lights on Mega tanks are LED for long life and low maintenance. A backup alarm is also installed on the rear light bar. Two work lights are mounted on the rear bulkhead of the tank.





Internal Water Lines

Internal piping supplies water to the water cannon and other water distribution functions.



Mud Flaps

Mud flaps fore and aft of rear drive tires are standard equipment on all Mega scraper tanks.



One-Year Warranty

Mega protects your investment by providing a one-year warranty against defects in materials and workmanship. Extended warranties are available for purchase.



Rear Spray Bar With Spray Head Valves

The rear spray bar is designed to fully utilize the capability of the water pump and features two or four spray head valves. The four spray head configuration does not swivel. The standard rear spray bar is constructed of carbon steel pipe. Optional stainless steel spray bars and spray heads are available.



Technical Manuals

Mega water tanks include a complete set of technical manuals detailing installation, operation, maintenance, inspection and replacement parts. Additional manuals are available for purchase.



Factory Installation

Mega offers complete factory installation for some models (size dependent) of articulated truck tanks for both customer-supplied and Mega-supplied chassis. Factory installation includes complete testing prior to delivery.



Additional Technical Manuals

Additional sets of manuals are available for purchase. Mega water tanks include a complete set of technical manuals detailing installation, operation, maintenance, inspection and replacement parts.



Anti-Siphon Fill Pipe

The anti-siphon fill pipe is used with any pressurized water source. It is specifically designed to accommodate municipal water systems and fire hydrants requiring an air gap to prevent water siphoning back into the supply.



Camera Relocation Cable

An extension cable to relocate your camera from the truck to the water tank.



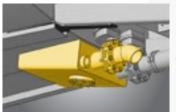
Conical Fill

The Conical Fill allows for easier positioning of the water fill source over the main fill port of the tank.



Cutting Edge

The custom-fit cutting edge can be used as a finishing tool to reduce small windrows.



Drain Valve

The quick dump drain valve option is a large drain located at the bottom rear of the tank. This option is available with manual or hydraulic remote actuation.



Dump Bar

Mega offers two hydraulically-actuated dump bars. Mega's pressurized dump bar sprays penetrating jets of water directly onto the ground. The gravity dump bar is fed directly from the bottom of the water tank and may be used with the water pump turned off to reduce water flow and pressure.



Front Bumper Spray

The front bumper spray is commonly utilized to "sweep" a surface with high pressure fans of water. Spray heads are mounted to spray from both sides of the tractor. The spray heads are mounted on swivel couplings for adjustability. The location of the spray bar allows the cab hood to fully tilt and open for engine service. *This item is available by special request.*



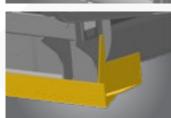
Hose Reel

Hose reels installed on Mega tanks include a high quality water hose and an adjustable fog to stream nozzle. Hose reels come in various sizes and are available with manual, spring, or hydraulic rewind. Sizes vary by model.



Magnesium Anodes

Magnesium anodes are placed in each tank compartment to reduce corrosion of tank interior



Moldboard

The moldboard assembly integrates with the skid plate to provide mounting for a cutting edge.



On-site Assistance

The Mega Product Support team offers on-site technical assistance, service advice and training to facilitate implementation and help reduce field assembly and component repair time.



Suction Loading

Suction loading provides tanks with self-loading ability via the discharge pump priming reservoir or a separate, self-priming water pump. Suction loading is used to fill the tank from a natural or man-made reservoir. Discharge pump configurations include an auxiliary manual priming pump, and require customer-provided suction hose. Self-priming pump configurations include storage tubes and hose.



Vertical Side Spray

Two spray head valves are mounted on the front quadrant of the tank for spraying vertical fans of water.

16 GENUINE MEGA



SOLUTIONS FOR CORROSIVE ENVIRONMENTS

The Corrosion Resistant package protects against tank and component corrosion caused by the harsh waters often found in mining, construction and landfill environments. Protecting your tank against corrosion adds longevity and dependability to your tank and spray system. Corrosion resistant package not available on MAC 5 and 6 models.

The package consists of:

- Stainless steel spray bar
- Stainless steel spray head valves
- Corrosion resistant Mega M4 water pump with stainless steel waterways
- Stainless steel internal piping
- Stainless steel solenoid control module enclosure mounted on front bulkhead of tank



STAINLESS STEEL SPRAY HEAD

The Mega stainless steel hydraulic spray head valve is engineered for use in the most severe environments. The stainless steel hydraulic spray head valve is interchangeable with the Mega aluminum hydraulic spray head valve. Mega hydraulic spray head valves are actuated by a stainless steel, double-acting hydraulic cylinder.



CORROSION RESISTANT MEGA WATER PUMP

The Mega M4 series corrosion resistant water pump features a centrifugal pump manufactured with a stainless steel volute case, packing mount, and impeller. All surfaces that are in continuous contact with water utilize stainless steel construction.



COMPLETE STAINLESS STEEL MEGA WATER PUMP

The Mega M4 series complete stainless steel water pump features a centrifugal pump manufactured with a stainless steel frame, volute case, shaft, and impeller. It is designed for maximum life in corrosive applications.



INTERIOR COATINGS (EPOXY AND URETHANE)

Mega tanks are abrasive blasted prior to the application of the interior coating. The epoxy lining is well suited for harsh, acidic, alkaline, and salty waters. Urethane lining is very effective in normal to salty waters. Coating data sheet and MSDS available upon request.



MEGA WATER CANNONS

OPTIONAL Features

Mega's water cannons are designed and built to perform in the most severe environments of mining and construction. Capable of water pressures and flows required for the mobile water equipment industry, Mega's water cannons are ideal for fire suppression, high pressure equipment washing, and most applications that require long-distance, and/or concentrated spray.

Specialty Nozzles

Mega's hydraulic water cannons can be fitted with a variety of adjustable nozzles to customize the spray pattern and distance. In addition to the standard straight bore nozzle, Mega offers fan to stream, fog to stream with foam eduction, and fog to stream nozzles. For more nozzle options please visit our website or ask your Mega sales representative for more information.

Adjustable Stream Nozzles (Fan or Fog)

Remote control hydraulic fan or fog stream nozzles allow adjustable stream patterns for use with Mega water cannons. This option requires the purchase of the Mega Water Cannon.



Foam Agent System

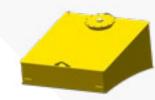
The foam agent system is compatible with any class of foam that can be nozzle-aspired. This system can be used for fires suppression or other air-aspirated foam applications. The system consists of a stainless steel (316 grade) foam concentrate tank, water cannon, and foam eduction nozzle. Our medium-expansion nozzles allow for adjustable foam percentages of 1%, 3%, 6%, and 10%, and possible flow rates of 350, 500, and 750 GPM.



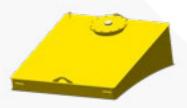
The Mega foam tank is mounted externally on the water tank and is available in the following gallon sizes: 60, 120 and 200. Mega's foam agent system can be ordered as an option on a new Mega water tank or be purchased as a retro-kit installed to on an existing water tank.



60 gallon External Foam Tank



120 gallon External Foam Tank



200 gallon External Foam Tank







