

INSTALLATION AND USER GUIDE



MIST COOLING SYSTEMS

CENTRAL TEXAS #1 MISTING COMPANY SINCE 2003

ESTABLISHED 2003 LOCALLY OWNED AND OPERATED MADE IN AUSTIN, TEXAS

WWW.MISTCOOLINGSYSTEMS.COM



512-844-8498

ABOUT US

Mist Cooling Systems, a division of Mosquito and Cooling Systems, LLC., is a company with over a decade of experience in development, manufacturing and distribution of high pressure mist cooling systems. Based out of Austin, TX Mist Cooling Systems manufactures high quality innovative "Dry Misting" systems that provide no residual moisture and consistently lead the industry in environmental cooling. For conditions as harsh as the oil field or a place of serenity like your own backyard, MCS products have been designed with quality components to stand the test of time. Our systems are manufactured in our factory in Austin, TX. Since the creation of MCS in 2003, we have manufactured thousands of systems and have established ourselves as an industry leader in quality, experience, and pricing. We are the mist cooling company that you can depend on.

We stand behind our products because we know they are the best in the industry!

Our years of experience make us the best choice when it comes to choosing a reliable, results-driven product, and the support vendors need to be successful!

WE CAN TELL YOU ALL DAY ABOUT HOW GREAT OUR SYSTEMS ARE, BUT AFTER INSTALLATION WE THINK YOU'LL AGREE THE SYSTEMS SPEAK FOR THEMSELVES.



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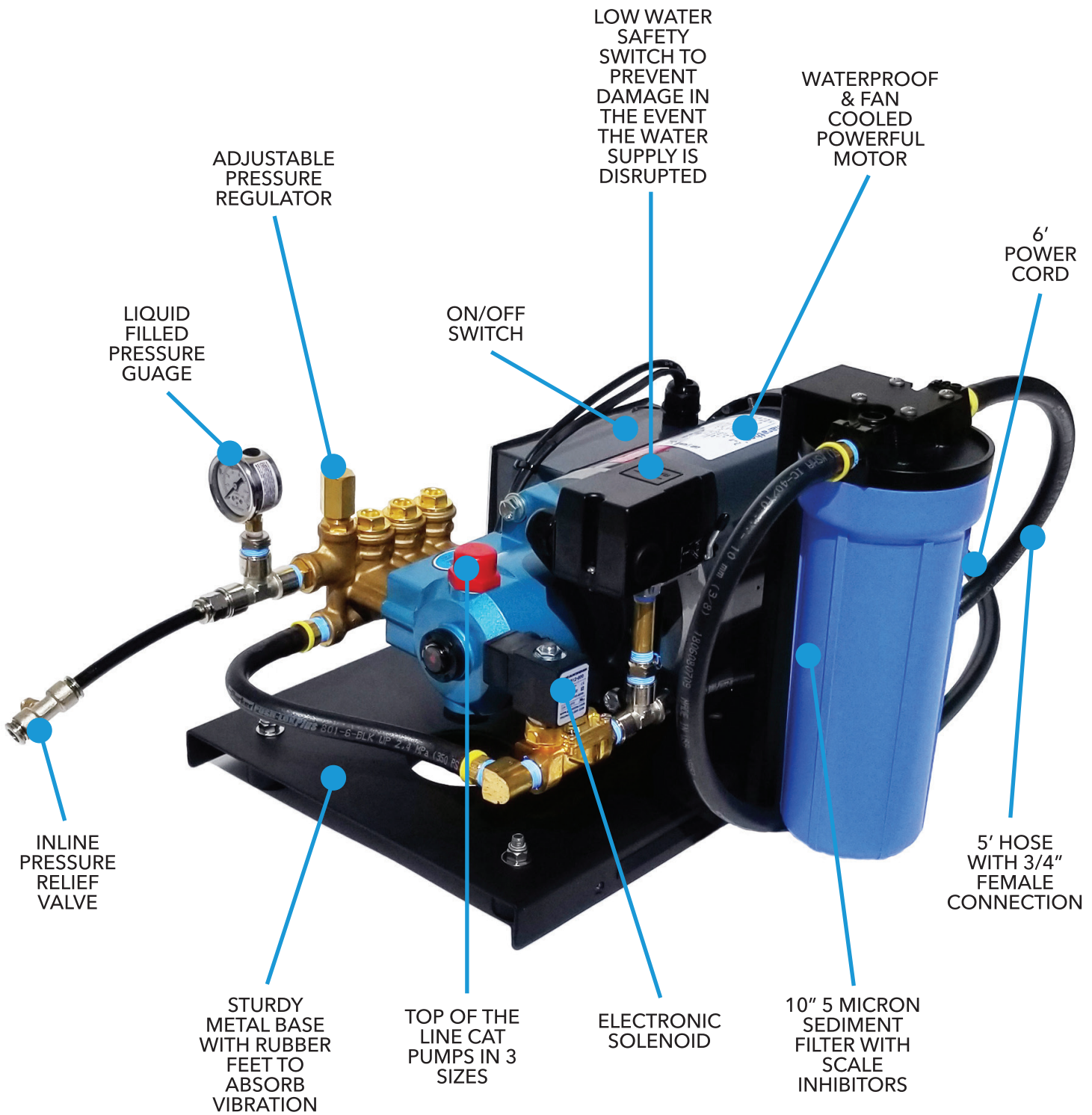
HIGH PRESSURE MISTING PUMP FEATURES

DIRECT DRIVE OPEN FRAME PUMP

- Cat Direct Drive Pump - Known Industry Wide as the Best Made Longest Lasting Pumps on the Market
- Totally Enclosed Fan Cooled Motor - Outdoor Rated and Quiet Operation
- Sturdy Metal Base with Rubber Feet
- Optional Heavy Duty Poly Molded Covers
- Outdoor Rated, Weather and Water Resistant
- 6' Grounded Power Cord
- 5' Inlet Hose, 3/4" Female Connection
- Optional Low Water Safety Switch
- Adjustable Pressure Regulator
- Inline Pressure Relief Valve
- Works with Standard 110V Power Outlet
- .5 and 1 gpm Models Require 12 amps
- 2 gpm Model Requires 15 amps
- 1000 psi Standard Operating Pressure
- Designed for Heavy Duty Use
- Glycerin Filled Pressure Gauge
- 3/8" Output Port Push to Connect Fitting
- 10" - 5 Micron Filter Element
- Electronic Solenoid
- Designed to be Easy to Service

When you select an MCS High Pressure Misting Pump, you've chosen a misting pump that is renowned for its quality and reliability. Engineered for high performance and efficiency, MCS Misting Pumps provide easy operation, low maintenance and 100% duty cycle for many years of reliable service.





CAT PUMP FEATURES

FEATURES

- Fits standard 56C face motors.
- Triplex plunger design provides a smooth liquid flow.
- Specially formulated Hi-Pressure Seals and concentric solid ceramic plungers assure true wear surface and extended seal life.
- Stacked stainless steel valve design for long life and easy servicing.
- Compact, direct-drive unit for maximum portability.
- Integral pressure regulator with built-in by-pass standard on all units to assure system pressure control and pump protection.
- Do not place nozzles higher than 12-13 feet.

COMMON SPECIFICATIONS

Max. Discharge Pressure	2000 psi	140 bar
Shaft Diameter	5/8"	15.8 mm
Inlet Pressure Range	Flooded to 60 psi	Flooded to 4 bar
Bore	.630"	16 mm
Max. Liquid Temperature	140°F	60°F

Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.

Crankcase Capacity	8.5 oz	0.25 l
Inlet Port (Standard)	3/8" NPT(F)	3/8" NPT(F)
Discharge Port (1)	3/8" NPT(M)	3/8" NPT(M)
Weight	10.7 lbs.	4.9 kg
Dimensions	7.99 x 7.75 x 6.29"	203 x 197 x 160 mm



DIRECT-DRIVE PLUNGER PUMPS ELECTRIC-BASE MODEL REQUIREMENTS

MODELS	FLOW		PRESSURE				RPM	STROKE
	U.S. gpm	lpm	psi 1000	psi 1200	psi 1500	psi 2000		
			bar 70	bar 85	bar 105	bar 140		
4DX10ER	1.0	3.8	0.68	0.82	1.03	1.37	3450	0.078"
4DX15ER	1.5	5.7	1.03	1.23	1.54	2.05	3450	0.118"
4DX20ER	2.0	7.6	1.37	1.64	2.05	2.74	3450	0.157"
4DX27ER	2.7	10.2	1.85	2.22	2.77	3.70	3450	0.220"
4DX30ER	3.0	11.4	2.05	2.47	3.08	4.11	3450	0.244"

Determining the pump RPM:
$$\frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{"Desired" gmp}}{\text{"Desired" rpm}}$$

Determining the required HP:
$$\frac{\text{gpm} \times \text{psi}}{1460} = \text{Electric Brake HP Required}$$

CAUTIONS AND WARNINGS

All High Pressure Systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. pop-off valve, relief valve). Failure to install such relief devices could result in personal injury or damage to pump or property. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

Read all CAUTIONS and WARNINGS before commencing service or operation of any high pressure system. The CAUTIONS and WARNINGS are included in each service manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed on-line at www.catpumps.com/cautions-warnings or can be requested directly from CAT PUMPS.

WARRANTY

View the Limited Warranty on-line at www.catpumps.com/warranty.



HIGH PRESSURE MIST FAN FEATURES

- 3 Speed Black or White Oscillating Fan
- Built in 5 Nozzle Mist Ring
- Quiet Operation
- Completely Sealed
- 30 Degree Tilt and 90 Degree Oscillation
- Includes Mounting Bracket

Our high pressure misting fan is a revolutionary oscillating 18" misting fan. Featuring a 5-nozzle hub that is built right into the grill of the fan! The 5 nozzles help to disperse the water vapor over a wider area of coverage to produce an evaporative mist and cool your patio or warehouse up to 30 degrees F. This fan will make a cooling addition to any outdoor area you wish to keep cooler. Add a misting pump to provide the best atomization and patio cooling.



PORTABLE COOLING SYSTEM FEATURES

- 1000 psi
- 16 Gallon Tank
- Variable-Speed Fan up to 5100 CFM
- Four Misting Cycle Modes
- Built-In Water Filter
- Covers About 300 sq ft
- Noise Level: 50db
- Tank Overflow Safety Switch
- Low Water Safety Switch
- Totally Enclosed Pump and Motor Prevent Shock From Water Splashes
- Control Features
- Splash Resistant
- Variable-Speed Fan Knob
- LED Indicators
- Four Misting Cycles:
 - Continuous Mist
 - 30 sec mist / 30 sec no mist
 - 40 sec mist / 40 sec no mist
 - 50 sec mist / 50 sec no mist

When you select an MCS Portable Cooling System, you've chosen a portable cooling system that is renowned for its quality and reliability. Engineered for high performance and efficiency, MCS portable cooling systems provide easy operation and low maintenance.

Heavy duty, durable shrouds focus the air stream for more efficient evaporation as well as keep the fans and individuals safe from accidental bumping. Combine satellites and pumps to cover larger areas, while saving money. Heavy steel framework provides a stable and lasting structure. Self-contained portable system with one fan and a 16-gallon tank. Fillable by filtered hose connection or directly into top of tank that will run for 4 hours. Powder coated shroud and stainless steel grill with integrated misting ring.



MIST COOLING SYSTEM USERS GUIDE

With proper care and maintenance, your misting pump will provide dependable service for many years. Read thoroughly and understand these instructions before beginning installation. Please call us if you have any questions at 512-844-8498 or toll free at 844-344-2069.

IMPORTANT:

Place pump on a secure level surface where it is reasonably protected from dust, dirt, mud, water, and impact shock. **PUMP IS FOR OUTDOOR USE ONLY!** Do not install pump in a location where failure or leakage can result in personal injury or property damage. We do not suggest and will not be liable for pumps or damage to buildings and/or its contents if pumps are installed indoors; and is not limited to attics, garages, basements, or other indoor locations. Shut off water supply to pump when not in use. Proper drainage area is necessary when using the drain valve or if pump has a failure. It is recommended to change the filter housing every 2-3 years, and pump oil (for 1000 psi) every 500 hours or 2 years whichever comes first.

Each MCS pump is tested and inspected prior to shipping from our facility in Austin, TX. The pumps are typically run at 1000psi. **Once your pump is installed, ensure the pressure regulator is adjusted so that you do not exceed 1000 psi.**

WINTERIZATION:

At the end of the misting season, disconnect the water source to the pump and empty the water from the filter housing. Store the pump in a place that will not be affected by a freeze. MCS is not responsible for parts damage due to a freeze or subsequently and property damage caused by said freezing. To winterize the mist line, remove all nozzles and drain water from all mist lines.



PRIMING THE PUMP

PRIMING THE PUMP (This must be done before running your system):

Priming your pump is a critical step that ensures all air is removed from the pump and will help in removing any debris in the lines that could clog the nozzles. This step should be done after the system is installed and before the nozzles are attached.

The pumps are shipped with a black cap on top of the pump to prevent the oil from leaking. This cap must be removed and replaced with a red breather cap before the system is run. Some systems may have a red cap with a black plug. On these caps simply remove the plug. Do not run your pump with the black cap or plug installed. Follow the below steps to properly prime your pump.

- Connect the garden hose adapter to your water source and turn the water on.
- Connect the inline pressure relief valve to the output of your pump. **Note: The inline pressure relief valve will look like a union with a nozzle attached. This is not a misting nozzle and will be properly labeled to avoid confusion.**
- Connect your high pressure tubing to the inline pressure relief valve.
- Make sure the nozzles are not installed and plug in your pump to the proper outlet. Switch your pump to on.
- The motor will turn on and water will start flowing through the system. Within a few seconds you should notice water running out of the nozzle ports. **Note: The pump will not fully pressurize until all the nozzles have been installed.**
- Turn the pump off and install the first 5 nozzles closest to the pump. Turn the system on and let water run through the nozzle ports for a few seconds, then power off the pump. Continue this process until all the nozzles have been installed except the last one on the line.
- Turn the system on and let the water run through the last nozzle port for about a minute to ensure all air and debris has been flushed from the line. Then turn the system off.
- Install the last nozzle and turn the system on. The pump should fully pressurize. Be sure to check your pressure gauge and adjust the pressure regulator so that your pump does not exceed 1000 psi.

Note: The inline pressure relief valve will release pressure from the line when the system is turned off. This will keep the nozzles from dripping after the system is turned off. Seeing water spray from the pressure relief valve for a few seconds after the system is turned off is normal.

Now your pump has been properly primed and is ready to use.



SYSTEM LIMITED WARRANTY

MCS, LLC, as a manufacturer shall warrant manufactured misting components, excluding nozzles, to be free of defects in workmanship for one (1) year to the original purchaser, and each new direct drive pump or other product of its own manufacture, for a period of one (1) year and pulley pumps for a period of two (2) years from the date of shipment from the factory, to be free from defects in material and workmanship under normal use and service. "Normal use and service" means not to operate in excess of recommended maximum speeds, pressures, temperatures (140° F) or handling fluids not compatible with component materials. This warranty does not apply to any pump or other product which has been repaired or altered to affect the performance or reliability of the pump or other product.

NEITHER THIS WARRANTY NOR ANY IMPLIED WARRANTY APPLY TO DAMAGE OR HARM CAUSED BY ANY OR ALL OF THE FOLLOWING:

- Freight damage
- Damage from freezing or cavitation, by accident, fire natural disaster, chemicals, improper installation, or unusual characteristics of water supply, such as mineral and calcium buildup.
- Damage caused by parts and/or accessories or components not obtained from or approved by MCS.
- Any consequential or incidental damages, other than injury to the person arising from the use of any pump or other product manufactured by MCS, except in states that do not allow the exclusion or limitation of incidental or consequential damage.
- Damage due to misapplication and/or misuse. The use of solution greater than 140° F or a fluid with a pH less than 7 or greater than 9 could be a misapplication of our pumps. **CONSULT FACTORY** specific material compatibility recommendations for applications outside of this pH range. Numerous coating choices for aluminum and stainless steel components as well as various elastomer choices are available at extra cost.
- Normal wear of moving parts or components affected by moving parts.
- **USE WITH FLAMMABLE MATERIALS IS ABSOLUTELY FORBIDDEN.**



The liability of MCS, LLC under the foregoing warranty is limited to the repair or replacement (at MCS) without charge for labor or materials of any parts upon return of the entire pump or other product or of the particular part to the MCS factory within the warranty period, at the sole expense of the purchaser, which part shall upon examination appear to MCS's satisfaction to have been defective in material or workmanship.

MCS, expressly warrants its pumps and other products as above stated. There are no other express warranties. Any implied warranties, including implied warranty of merchantability or of fitness for a particular purpose, are limited in duration to one year from the date of the purchase by the original purchaser except in states that do not allow time limitations for a particular purpose or merchantability when this product is put to an industrial, commercial, or rental use.

No person including any dealer or representative of MCS is authorized to make any representation or warranty concerning MCS products on behalf of MCS or to assume for MCS the obligations contained in the warranty. MCS, LLC reserves the right to install the same upon its existing products or products then in process of manufacture.

This warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state.



TROUBLESHOOTING GUIDE

PROBLEM	REMEDY
No water flow	<ul style="list-style-type: none">■ Make sure water is on■ De-press relief valve to release air pocket in pump
Loss of pressure	<ul style="list-style-type: none">■ Check mist lines for leaks■ Are all of the nozzles in place?
Erratic Pressure	<ul style="list-style-type: none">■ Air in water line – remove last nozzle and flush line again■ Remove piston caps and flush pump head
Motor Stopped	<ul style="list-style-type: none">■ Check breaker■ Motor or pump froze – need repair■ Motor damage and over amping – need repair



PRODUCT REGISTRATION

TO REGISTER YOUR SYSTEM, FILL OUT THE FORM BELOW AND MAIL IT TO:

Mosquito and Cooling Systems, LLC
13200 Pond Springs Rd Suite A-106
Austin, TX 78729

NAME _____

ADDRESS _____

CITY _____

STATE _____

ZIP _____

PHONE _____

EMAIL _____

PRODUCT SERIAL NUMBER _____

PURCHASE DATE _____





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