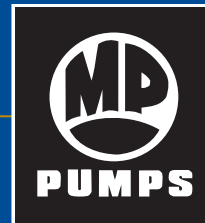


# the Primer



FALL ISSUE 2005

From **BILL PETERSEN:**

## Continuously Updating Keeps Us Ahead Of The Game!

There are two things you can do to get your customers to talk about you: do a good job or do a bad job. We don't like the second one, so we avoid it all together by delivering consistent quality products and unbeatable service.

We also provide the support system you need along the way, from knowledgeable sales representatives and engineers to an informative and

easy-to-use website. In fact, we've been making dynamic changes to the site again, continuously updating it as new things become available.

For instance, we've added a "New Product" section that highlights our newest products to general markets as well as for OEM

applications. We're also completing instruction manuals and product data sheets and adding them to the website for your convenience. You can even look up pricing and get an online quote at [www.mppumps.com](http://www.mppumps.com).

Most importantly, you can tell us how we're doing so we can better meet your needs. Take a moment to complete our online survey and you'll be entered into a drawing for a Starbuck's gift card.

If you're impressed with our efforts, feel free to talk about us all you want. In fact, tell all of your friends. And, if you're not impressed, please let us know. Given the opportunity, we can right any wrongs and work together to be your best business partner in pumps.

William Petersen  
Vice President, Sales and Marketing

## Two More Bronze Beauties Join The Flomax Family

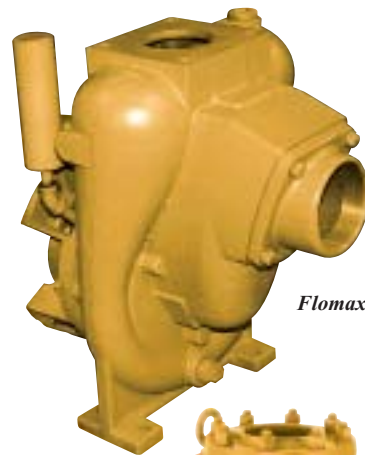
Katrina, Rita, and Wilma shocked us all with devastation and destruction. But hurricane or no hurricane, those who work on the water have to be prepared for anything the sea dishes out. And, in different waters, that can mean different things.

"The Gulf waters are warmer and have a higher salt content than the Atlantic or the Northern Pacific coastal waters, and these conditions can reduce the life of cast iron pumps," said Dave Lewandowski, MP Pumps product development manager. "Cast-iron centrifugal pumps in cooler waters are often used without the severe effect of corrosion that the Gulf water brings."

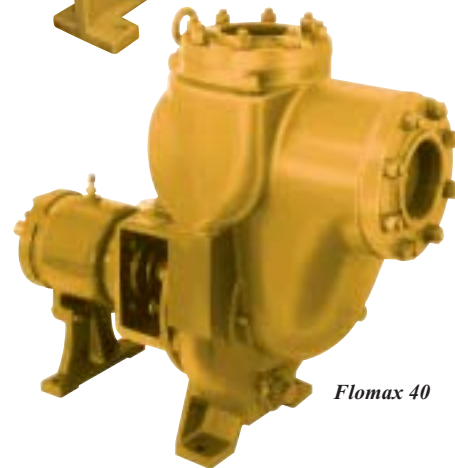
That being the case, MP Pumps released the Flomax 30 and 40 in an all bronze construction. Previously only available in cast iron, the new bronze pumps are built of lead-free bronze and all non-bronze wetted components are 316 stainless steel to ensure a long life.

Flomax 30 models are available in pedestal mounting, engine drive mounting, or close-coupled mounting to a 256TC frame electric motor. The largest model, the Flomax 40 is only available in pedestal mounting. Additionally, the bronze Flomax 30 and 40 pumps are not supplied with flanges, since these larger models are rarely in hose connected applications.

The new pumps are currently in stock and available for shipping. For pricing, go to [www.mppumps.com](http://www.mppumps.com) or contact sales at MP Pumps, 800-563-8006.



Flomax 30



Flomax 40

The Flomax self-priming centrifugal line consists of six sizes (models): Flomax 5, 8, 10, 15, 30 and 40. Now all models are available in cast-iron or bronze construction.

## What's Inside

Continuously Updating Keeps Us Ahead Of The Game . . . . .	1
Two More Bronze Beauties Join The Flomax Family . . . . .	1
RBS Beats Rotron - A Better Value By Far . . . . .	2

MP Pumps Heads South For The Winter With Denis Sullivan . . . . .	2
The S450-Making Better Machines For Less . . . . .	3
From Down Under To Down On The Farm . . . . .	3
Pump Performance Curves And Applications . . . . .	4

# RBS Beats Rotron – A Better Value By Far

Over the years, our nation's speed limits haven't changed much, but the pace behind the wheel is definitely faster. Nobody knows this better than those who work in the transportation industry. With new technology popping up all the time, choosing what's right for your company can be difficult.

Now, MP Pumps, the maker of heat circulator pumps for over 50 years, is introducing the RBS – the next generation in circulator pumps. Specifically engineered for today's bus and coach environment, the RBS pump is Rotorless, Brushless, Sealless and Magnetless. This maintenance-free concept doesn't have any of the parts that wear out or fail, ensuring a long, leak-free life.

With more than six years in development and extensive testing, the RBS pump has proven its performance - first in laboratories, but more importantly on the road.

"We've tested the daylights out of these pumps," said Ron Bisiewicz, regional sales manager for MP Pumps. "They were even tested by an independent laboratory, comparing the performance of the RBS with that of Rotron. The test proved that the RBS met or exceeded the performance of the competition. The real selling point, however, is the savings – in the initial buy and down the road in maintenance and service costs."

Designed to be a "drop-in" replacement to both MP Pumps' older pump models as well as competitive makes, the RBS cost is under \$350 - or about half the cost of most MAG drive pumps.

"These pumps are designed to last a long, long, time," Bisiewicz said. Eliminating the mechanical seal and magnets increases its reliability.

However you look at it, the RBS is a true value. If you'd like more information on the RBS Circulator Pump, contact sales at MP Pumps, 800-563-8006.

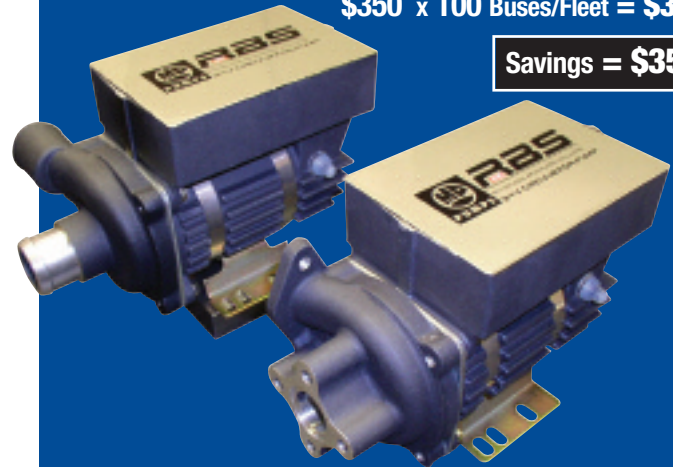
The other guys circulator pump could cost...

**\$700\* x 100 Buses/Fleet = \$70,000**

Our RBS Circulator Pump costs...

**\$350\* x 100 Buses/Fleet = \$35,000**

**Savings = \$35,000**



# MP Pumps Heads South For The Winter With Denis Sullivan

It started with six 160-year-old massive white pine timbers. With the help of more than 900 volunteers, these trees are now the masts and spars of "Wisconsin's Flagship" – the S/V Denis Sullivan, a 137-foot, three-masted Great Lakes schooner.

Every year about this time, the Denis Sullivan heads south to conduct an expeditionary learning program called, "Science Under Sail." Aboard ship, students and crew work together to bring the Denis Sullivan to life, studying marine life and learning navigation, math and science.

"The southern passage provides adventurers, educators, and would-be sailors the opportunity to become active crew members aboard a sailing schooner," said Captain John Lorenz.

Although traditionally rigged, the Denis Sullivan is a modern, U.S. Coast Guard-licensed and inspected educational sailing vessel. And because it is the first schooner in over a hundred years to be built in Milwaukee, this floating classroom mixes many old and new technologies in the ship's construction.

She has 30 berths, twin 180 hp diesel engines, a scientific laboratory and modern communication and navigation equipment. She also has a few MP Pumps: model HHLF is used as a fire pump; and model 2CT is used as a solids handling trash pump.

"MP Pumps were chosen due to their capability to meet the hydraulic requirements; their proven success in marine pumping applications; and, their ABS type approval for ship service," said Bob Salentine, president of Salentine Pump & Equipment, Inc. in Waukesha, Wisconsin. "Since their installation in 2000, all of the



pumps have performed exceptionally well on voyages from the Great Lakes to the Caribbean."

For more information on the Denis Sullivan, go to [www.pierwisconsin.org](http://www.pierwisconsin.org). For more information on the pumps, go to [www.mppumps.com](http://www.mppumps.com) or contact sales at MP Pumps, 800-563-8006.

# The S450 - Making Better Machines For Less

In 1913, Henry Ford put the first assembly line in motion, training each worker to do just one of the 84 steps it took to build a Model T. Wouldn't he be amazed to see today's Ford assembly line, where one machine can crank out 300 exhaust manifolds in an hour?

Machinery like that can only come from Ann Arbor Machine in Chelsea, Michigan. Since 1985, Ann Arbor Machine has been developing innovative solutions to meet its customers' most challenging manufacturing problems. In order to help companies like Ford

maximize efficiency and minimize costs, however, Ann Arbor Machine must do the same. About four years ago, Jim Kaufman of Fluid Systems Engineering in Clinton Township, Michigan saw an opportunity to help them meet that goal.

"Ann Arbor Machine built ten units that each used a \$30,000 gusher vortex pump to pump coolant and metal chips back to a filter system that then removes the chips," said Kaufman. "I knew MP Pumps carried a more economical alternative – the S450 double grease seal pump. At \$2,000 each, we saved them

\$28,000 on each machine."

Ann Arbor Machine was happy to save the money, but they weren't sure the pumps would perform under pressure. So, Kaufman offered them a deal they couldn't refuse – he let them test one pump before committing to purchase anything.

"After a week of use, they purchased nine more pumps, and they've been using these pumps ever since. It turned out to be a great value for them."

## Cool Cash

Citizens Bank in Port Huron, Michigan is just one of many customers that has saved money and improved efficiency by working with Fluid Systems Engineering. Ten years ago, the bank purchased two MP Flomax 40 pumps from another distributor, but when they ran into a problem, Fluid Systems was the first to come up with a solution.

"The bank was expecting a lot out of the pumps given that were not installed correctly," Kaufman said. "The pumps are used to cool the main computer room at the bank, by pulling water up from the river through hundreds of feet of underground pipes that run under the bank, its parking lot and a boardwalk. It's a difficult installation: The long suction line creates a low NPSH condition at the pumps, so the pumps are working at the edge of cavitation, which reduces their life."

Fluid Systems fixed the problem and has since provided regular maintenance and quick response. And, now, even if one pump goes down, the second pump can run solo until repairs take place.

It's a good thing, too. Because if the temperature were ever to rise above a set point, the computer at this main branch would automatically shut down, taking down a number of Citizens branches in the region with it. Thanks to the problem-solving abilities of the Fluid Systems team, that's not likely to occur.

## From Down Under To Down On The Farm

For years, MP Pumps' Hydrasub has been known for its work underground – clearing ground water in manholes and utility vaults, providing a better home for the billions of wires that make up our worldwide communication network. You might be interested in knowing that the Hydrasub has recently proven to be a true performer above ground as well.

A compact, lightweight, hydraulically-driven submersible pump, the Hydrasub was recently put to work on the farm for irrigation, stock watering and miscellaneous dewatering.

"Driven off the tractor's PTO, the Hydrasub is extremely adaptable in this application," said Vice President Sales and Marketing William Petersen. "Because it ties up the tractor periodically, it's great for intermittent use. For instance, if it hasn't rained in a while, a farmer may use the Hydrasub to pump water out of a creek to water livestock or crops or to dewater wet ditches."

Whatever the case may be, the Hydrasub offers high flow rates at a low cost for sporadic agricultural use. It

features long-life stainless steel impellers and aluminum pump castings that are hard coat anodized for abrasive-wear resistance. The large cast strainer has a wide footprint to keep the pump upright and still has high flow rates when debris accumulate around the pump. In fact, its robust design allows the pump to handle minor debris without a reduction in performance.

Two models are currently available from stock: the Hydrasub 20 is designed for maximum flow rates of 300 GPM and the Hydrasub 25 offers flow rates up to 430 GPM. For more information, contact sales at MP Pumps, 800-563-8006.



## Did You KNOW ?

MP Pumps has updated its website and all literature is now available online. MP Pumps has also added a "New Products Section". Be sure to check it out to keep current on all of MP Pumps new products. Go to [www.mppumps.com](http://www.mppumps.com) for all of the latest information or contact your local sales representative.

# Pump Performance Curves And Applications

## Part 1



Dave DeClerck

**W**hat is Total Developed Head (TDH)? Is it the same as Differential Head? How is it different than Discharge Head?

It is important to understand how pump performance curves describe the data that is represented from an actual test and avoid applying a pump that does not meet the application. The term "Head" has been defined as (the pressure exerted by a fluid; "a head of steam"). We can use pressure and head as the same term.

Most pump curves have differential pressure described as TDH. This is both static and dynamic pressure differential. The static component is the gage difference between the discharge and the suction. If the suction pressure is less than atmospheric pressure it is negative and when subtracting a negative it is mathematically adding to the total. Most of us can grasp this quite easily

and have a good understanding that the pump is creating pressure where the two gages can be read to arrive at a differential pressure.

The dynamic component (velocity head) is basically derived from the fluid velocity difference at the outlet minus the inlet. If the pump has ports with the same size the dynamic component is zero. Velocity head can be greatest when a pump with extremely different port sizes is used at a high flow condition.

### EXAMPLE

A typical 3x1.5 pump flowing at 200 GPM has a velocity head component of 14.2 ft. (6.1 psi). If you are calculating the static discharge pressure using a pump curve the velocity head should be subtracted.

Velocity head = (Velocity (outlet) squared - Velocity (inlet) squared) / (2g)

Units are: Velocity is the velocity at the port in Foot/Second, g is the gravitational constant 32.17 Foot/second (squared), and the result is in Feet.

Some users consider velocity head as something that does not exist and deny its use. A pump performance curve is a complex energy equation that uses simple laws of physics. Ignoring velocity head will incorrectly show lower efficiency values.

Pump curves represent pressure in feet of liquid (ft) instead of pounds per square inch (psi) to keep specific gravity out of the calculations. Expressing the system losses in feet of liquid will allow the pump curve to be used without compensating the specific gravity of the liquid. Losses from elevation are easily expressed in feet of liquid without conversion.

Submersible pump performance curves represent discharge head instead of TDH partly because the inlet conditions are not measured and the use of the pump curve requires only static discharge pressure.

For more information or if you have questions, please contact Dave DeClerck.

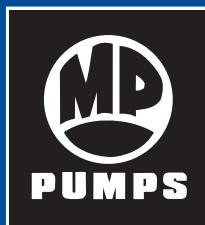
## What's Your STORY?

### Our Pumps Don't Need A Break! But You Do!

Most of us learned how to share at the innocent age of two years old. By the time we were three, we were swapping toys and candy. Well, it's time to put these lessons to good use. Share with us how your MP Pump product solved a unique problem and we'll give you an even better swap. If we publish it, you'll also receive a \$250 gift certificate from Marriott hotels.

*Now that's worth sharing!*

Send your favorite MP Pumps success story to William Petersen, MP Pumps, 34800 Bennett Drive, Fraser, MI 48026-1686.



*It is the policy of MP Pumps to satisfy customers by consistently supplying them with products that fully meet their requirements.*

*Customer Satisfaction Today, Tomorrow, Always.*

**Go to [www.mppumps.com](http://www.mppumps.com)  
and take the Customer Survey to  
become eligible to Win  
Starbucks Gift Certificates.**



For more information in the United States,

**call 800-563-8006**

Outside the United States, call 586-293-8240



# MP PUMPS, INC.

34800 BENNETT • FRASER, MI 48026-1686

(586) 293-8240 • FAX (586) 293-8469

(800) 563-8006 • [www.mppumps.com](http://www.mppumps.com)