



OMEGA Productive Services, Inc.

2100 Coe Ct.

Auburn Hills, MI 48326

Tel: (248) 409-1062 Fax: (248) 409-0001

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Editor: Max Carthew

Associate Editor: Julie Wallis

Quote of the Month:

“Many of life’s failures are people who did not realize how close they were to success when they gave up.”

-Thomas Edison



? Ask Dr. Brush



Contributed by:
Max Carthew
C.E.O.

Optimizing Phosphate Machine Pump Horsepower

We often overlook liquid circulating pumps when we think of energy savings, but these seemingly efficient loads can be hiding wasted power and dollars being burned.

Liquid flows are as designed for the process so it must be right....Wrong!

In many cases that we have seen the customer may have closed off unwanted spray risers or plugged his nozzles. In this case, the pump is putting out more flow than is needed at the design impeller size and RPM so the operator has to close down the pump discharge valve to compensate...thereby wasting energy.

Here is an example of a real case we recently encountered:

Design GPM was 2,699 at 25 PSI.

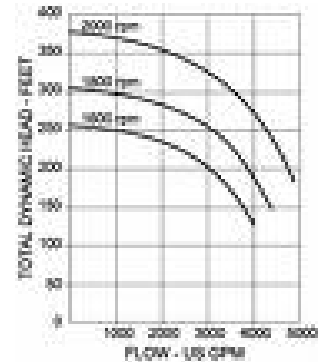
This took two 75 HP pumps in parallel, with a 13 inch impeller consuming 124 HP.

The customer had plugged many nozzles over time to get the ideal spray pattern and were down to 1100 GPM at 25 PSI. This duty can be provided by one pump with a 13 inch impeller consuming 60 HP.

So why was the customer still running two pumps each using close to 75 HP?

After investigation we found that the tank auto bypass valve was not closing properly causing a large quantity of liquid from the pump discharge to return to the tank.

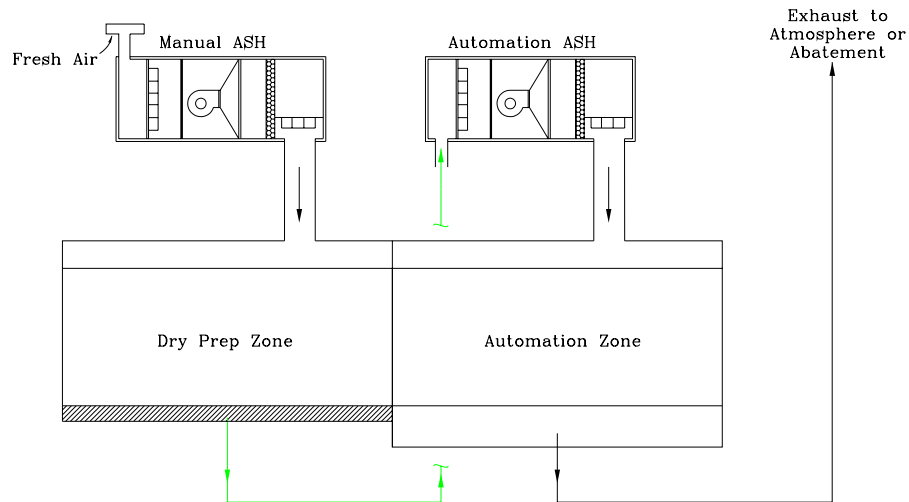
The savings from this stage alone was 90 HP for 6,500 hours per year. This equates to \$20,000 year in electrical savings, not to mention only having one pump to service, etc.



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Cascading Air in Spray Booths



“Cascading Air” is the process in which air is exhausted from one section of the booth, passed through a filter house where the air is filtered and heated, and then supplied air to another zone (typically automation). This supply air can be 100% cascaded air (as shown above) or a mixture of cascaded air and fresh air. This idea of cascading air is a relatively new idea that is being put into place in many of today’s paint processes. By cascading air, a considerable amount of utility usage is saved.

Typically, the “cascaded air” is air that is exhausted from a non-painting Prep’ Zone and fed to the filter house of an Automation Zone. Most often the zone exhaust being used is a Prep’ or Observation Zone. Inside the filter house is a series of filters and a heating device. If exhausted air is typically cool it must be heated up to around 80 deg F. The filters used in the filter house are made with a very high density material, used to block out paint particles from continuing with the air stream. By supplying solvent laden air that may have solvents in it to the Automation Zone, health and safety issues can be ignored because Automation Zones are not occupied by humans. In many applications, instead of using 100% “cascaded air,” the air is actually mixed with a small portion of fresh air. The typical mix is 75% cascaded air and 25% fresh air for these applications.

“Cascading Air” is a relatively new idea that makes sense in many paint applications today. This is a simple method for re-using air and reducing utility costs in the plant.

Contributed By: Kevin Dunbar – Project Engineer

Current Projects

- ❖ During the past quarter Omega has received engineering projects from General Motors, HM White, Design Systems Inc., Duckworth & Associates, Benham Inc, and Honda of America. Several of these projects are to do with process improvements, and energy optimization.
- ❖ Omega continues to manufacture the AIRSTAT PDA as well as providing repairs and calibration services for older GILL INSTRUMENTS that have been in service for several years.
- ❖ Ongoing service projects include Siemens/Auto alliance, and ACH Milan Plastics, where Omega is involved in monitoring and verification services.

BRAGGING CORNER

We celebrated moving to our new location with an Open House in September. As part of our celebration, we had a door prize drawing. Congratulations to Lillian Durham (of Griffin, Smalley & Wilkerson, Insurance & Bonds) on winning the prize!



Annick Hivert-Carthew and her sister Michele just completed their backpacking hike from Arles, in Provence, to Santiago de Compostela, Spain. It took them four years in slices of several weeks at the rate of six to eight hours of trudging on various terrains and weather each day to reach the cathedral of Santiago. The two were retracing the steps of medieval pilgrims on the third most popular Christian pilgrimage after Jerusalem and Rome. The last part of trek through Galicia was magical: beautiful landscape, hikers from all over the world, friendly and supportive Spanish people, and cool beer at odd watering holes (mostly in people's barns and garages) dotted on isolated mountain paths. See before, during, and after pictures.



Max attended the 2007 Hershey Classic Car Event in Hershey Pennsylvania this past month. Time had been set aside in his calendar for "Holy Week" as it is known to the classic car community. Max traveled with two veterans and learned a lot and met many interesting enthusiasts.

While there Max purchased a 1965 Pontiac Tempest Custom Sedan and returned it home to Pontiac Michigan where it had been built in December 1964.

This car spent its life in Eastern Ohio and, as you can see from the photo, it has survived well, in original condition. This is the model that was featured in the movie "My Cousin Vinnie".

Some of you may have heard that the car was damaged in a road accident soon after delivery. No one was hurt and the car is being repaired.

More news next edition.

Mich-Again



Harriet Quimby, America's first aviatrix



www.harrietquimby.org

At the dawn of the twentieth century, men got to test their mettle and daring-do with the invention of new machines, like the automobile and airplane, that were going faster and higher. Men were not the only ones to be attracted by adventure; women broke away from conventional jobs to embark in a quest of their own. Such a woman was Michigan-born Harriet Quimby, a talented professional journalist.

Harriet Quimby fell in love with airplanes at an air exhibition in 1912, and managed to convince Alfred Moisant, who owned an aviation school, to teach her the art of flying --the Wright brothers did not teach women. She quickly excelled and became the nation's first licensed aviatrix. With a wonderful sense of drama, she designed for herself a dashing purple satin flying suit with a hood that was her identifying trademark, but this was not enough for Quimby. March 1912 she went across to England to convince Louis Blériot to loan her a 50 horsepower monoplane to cross the Channel. A few weeks later, she flew over to France in a monoplane she was hardly used to, and became the first woman in the world to fly solo across the English Channel.

Quimby was to die a few months later when her plane suddenly pitched forward and she lost control, and was thrown out to her death. Her extraordinary flying had lasted a mere eleven months.

Contributed By: Annick Hivert-Carthew



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Autumn Oracle

“A sunset sky, and the west wind sighing, a threat of winter...the wild gulls crying; Swift flocks of birds to the southland winging; bare brown boughs in a frenzy flinging. Dying leaves that for long were holden, now drifting, dropping, crimson and golden. The fallen leaves, in uncounted number, are warmly quilting the wildflowers’ slumber; there are buds on the bough...a springtime presage...the birds will return with a lyric message: The wild gull’s cry holds a hint of mating, to conquer cold is the hearthfire waiting. The west wind’s sighs are of love, not sorrow, and the sunset sky is the sign for tomorrow.”

-Laura Lee Randall