



Message from Mr. L&B

With a new year comes new challenges. Increase exposure. Expand market share. Improve leadtimes. Provide competitive pricing. The minute we get comfortable, the market changes and we must adapt to survive.

Layne / Verti-Line is positioned to take on the market. Our portfolio includes the largest hydraulic coverage ever. Vertical turbines range from 6" to 57" bowls. Propeller and Mixed Flow bowls range from 6" to 60" diameter. Our Engineering Department continues to develop new designs, optimizing efficiency and improving our line. We have a test facility capable of up to 5000 HP and 100,000 GPM. Our Quality Assurance Program is ISO 9001 Certified. In short, we can provide quality pumps, customized to meet a variety of applications.

In this issue, we have special focus on our propeller and mixed flow pump line. Layne/Verti-Line is one of only a few true low lift pump manufacturers. Therefore, we have a significant advantage in our capabilities to support customer needs.



Quick Ship Program

Need a pump fast and can't wait the standard lead time? Check out our quick ship program! Available bowl sizes range from 6" to 19" and can be delivered in as little as 2 weeks. Complete pumps may be ordered with up to 20 ft of open lineshaft threaded or flanged column assembly. 416 SS lineshaft comes standard. Cast iron discharge heads include a 175# stuffing box, with sole plates optional. Performance testing and special paint are also available, each adding a week to delivery.

Bowl assemblies are available in 2 weeks. Complete pumps with threaded column can ship in 4 weeks, while flanged column requires 6 weeks. The best part of the program is our guarantee on delivery. If your order does not ship within published leadtime, the premium is refunded. Check out the **GREEN** price pages for more information.



Website Updates!

We have numerous updates to announce, all of which to provide better service to our customers on new and existing installations. As a reminder, our website may be found by any one of these four links:

- <http://www.laynevertiline.com>
- <http://www.vertiline.com>
- <http://www.laynebowler.com>
- <http://www.lvpump.com>

New Multipliers

Price multiplier increases on vertical turbines went into effect January 1st. For standard vertical turbines, the Electronic Estimate Sheet Pricing Program has been updated and is available for download. The link to download may be found under the **Distributors Only** section.

Distributors Only

CSI Typical Specifications - click below to access the Layne/Verti-Line typical specs for vertical turbine pumps

- [Enclosed Lineshaft Construction - Oil Lubricated](#)
- [Enclosed Lineshaft Construction - Water Flush Lubricated](#)
- [Open Lineshaft Construction](#)

Turbine Pricing Program

Electronic Estimate Sheet Program

Intended for use only by Layne/Verti-Line authorized distributors, successful download of the electronic pricing program you are an authorized distributor and have forgotten your Individual Passcode, please contact the factory.

DOWNLOAD - Layne/Verti-Line Estimate Sheet Program, January 2007

Steps for Installation:

1. Click on "Download" above, and then "Run" to download the file to your local computer. You must have 50 MG of free space and installation process to be successful. If you have a dial-up connection, it is strongly recommended that you with high speed internet connection will experience about a 5 to 10 minute download time.

Firepump estimate sheets have also been updated and are now available. Contact the factory to receive the latest version for electric and diesel vertical turbine firepump pricing.

Laynews Online

The official Layne / Verti-Line newsletter is now available online for viewing. From our homepage, go to the **Literature** section and click on "LAYNEWS" to view current and past issues.

H2Optimize Download

A downloadable version of H2Optimize is now available! No longer will you need to stay connected to the internet for pump selection. The download link may be found in our **Software** section.

H2 Optimize Version 9.0

Layne/Verti-Line is pleased to offer the latest in pump selection software, our **H2 Optimize Version 9.0**. To configure pumps, view dynamic curves, with links to our catalog in PDF format, and to our CSI Typical Spec

New features include:

- ✓ Quick-view thumbnail curves
- ✓ Iso-horsepower lines displayed on the pump curve
- ✓ Total head calculator
- ✓ 125 Fluids Properties

To use H2 Optimize Version 9.0 online just **CLICK HERE**

CLICK HERE to download the program. Note: The download is approximately 17MB in size, based on your internet connection type. Before you commence using the program, please be sure to comply manually via fax.

Download H2Opt

Propeller & Mixed Flow Pumps



As previously stated, Layne / Verti-Line is one of the few true manufacturers of mixed flow and propeller pumps. Other manufacturer's merely brand name these pumps, and thus they are limited in their expertise and ability to customize to meet a specific application. Inquiries come in regularly for information on existing units that have operated for years, and customers always ask if we still manufacture these pumps. The answer to that question is "YES!"

The original Verti-Line design mixed flows range from 6" to 30" bowls, while the propeller line range from 8" to 42" bowls. Both designs can be built in single or two stage configuration, yielding hydraulic coverage anywhere from 1,000 to 70,000 GPM.

Prop & Mixed Flow Pumps, Cont.

While our goal is to publish a new propeller / mixed flow catalog, it will not be ready in the immediate future because we are adding new bowl designs to further increase our hydraulic coverage. In the meantime however, curves and engineering data on the original Verti-Line propeller and mixed flow pumps can be found online at our website. In our **Literature** section, we have created a link titled **Old Catalogs**. In this you will find previously published data on our low lift pumps. If you have an application that can use a low lift pumps, simply contact the factory and we will be happy to provide a quote and answer any questions you may have.

OLD CATALOGS

Click below to view or print pages from old product catalogs.

Submersible Vertical Turbine Pumps

Section 2150, April 1994:

- [3600 RPM Curves](#)
- [1800 RPM Curves - 8"](#)
- [1800 RPM Curves - 10" thru 15"](#)
- [Engineering Data](#)

Propeller & Mixed Flow Pumps

Section 1150, April 1994:

- [Mixed Flow Pump Curves](#)
- [Propeller Pump Curves](#)
- [Engineering Data](#)

New Model - 54P

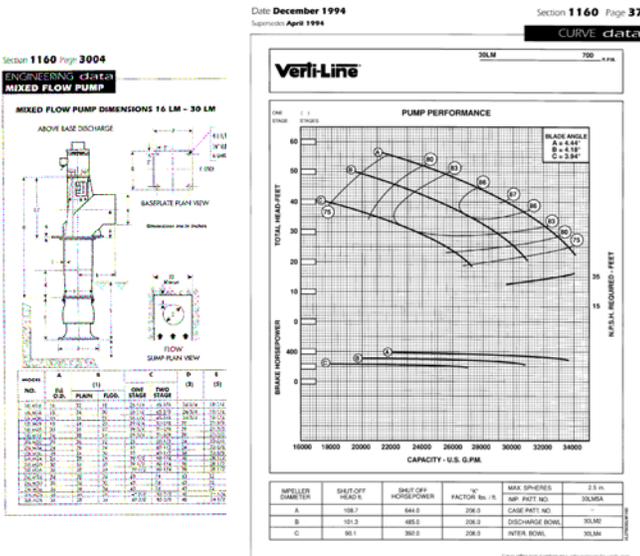


Many propeller pumps are used for drainage or flood control. Parson & Sanderson, who have represented Verti-Line for decades in Louisiana, sold two model 54P's. A new design for Verti-Line, they were driven by a diesel engine via right angle gear. These pumps help protect Ormond subdivision in Destrahan, LA, which is part of St. Charles Parish. Pictures courtesy of Jeff Leedy at Parson & Sanderson.

32 Years of Service



This Verti-Line 36P propeller pump was first installed in 1974 for Manitoba Water Stewardship in The Pas, Manitoba. Driven by a diesel engine via right angle gear, the pump operated until early 2006 when a rock was sucked into the impeller. Long time Verti-Line distributor National Process Equipment (formerly Wilron Equipment) in Canada pulled the pump for repair. Pictures courtesy of Mike McDonald at NPE.



Another 30 years



*Pictures courtesy
of Tom Callahan
at Wood Equipment*

In 1974, a project was proposed for a wastewater treatment plant in the city of Lorton, located Fairfax County, Virginia. The plant was to be known as the Lower Potomac Pollution Control facility (today it is referred to as the Norman Cole Water Pollution Control facility). Wood Equipment, our distributor at that time, won the project with a package of Aurora and Verti-Line pumps.

The plant materialized over the next few years. Submittal process took place in 1975, with installation of the equipment following in early 1976. Nine propeller pumps were supplied, ranging from 125 to 500 HP. Three of the larger pumps were assigned to the plant's ASE pump station, and incorporated below base discharge elbows.

Years later, another project in 1988 added two additional 300 HP two-stage propeller pumps to the ASE pump station. This brought the total to 5 units at this station:

30P 2-stage (2 x 500 HP, 1 x 400 HP)
24P 2-stage (2 x 300 HP)

Then in early 2005, plant personnel began requesting information on replacing these units given the fact that some of the pumps haven't been removed since 1976. Veteran distributor Wood Equipment secured an order with Fairfax County to replace all five units at the ASE pump station. Layne / Verti-Line subsequently provided complete duplicate pumps with new TEFC motors.



Discharge of the 500 HP two-stage 30P bowl assembly can be seen above. Once each bowl is complete, it is given a performance test. Then the rest of the pump including column, shafting, discharge elbow, and pedestal is assembled, painted, and ready for shipment. Pictured below are two-stage 24P and 30P bowl assemblies prior to testing.



Order Entry Department

Ever wonder what happens to your purchase order once it's sent to Layne / Verti-Line? We'd like to take a moment to introduce you to our Order Entry Department.

When a PO first arrives, it's reviewed by either Carol Hampton or "Fast" Eddie Fears. Carol handles all orders from the South, Midwest, and West regions. Orders from the East and Canada as well as all firepump orders across the country are handled by Eddie. They both will check orders for completeness and correct pricing. If something is missing or incorrect, an Order Correction Form is faxed or emailed back to the customer. This form must be returned before we will proceed with an order.

If an order includes a motor or requires our Engineering Department to select an impeller trim, then it is handed over to Connie Groves. Connie generates hydraulic requests for Engineering to review pump conditions and determine correct impeller diameter. When motors are necessary, Connie will ensure all required information is present, place the order, and establish a requested ship date for the motor vendor.

Customer service is another function of our Order Entry team. Once an order is released to manufacturing, contact Connie Groves and she can typically respond with an approximate scheduled ship date generally within 48 hours.

Upcoming Events - ASHRAE

Reminder that Aurora Pump will have a booth at the 2007 ASHRAE trade show. Aurora's booth number will be 3728. If you are attending the show, please stop by and visit with our Regional Managers and Aurora Pump engineers.

Jan 29th – 31st ASHRAE
Dallas Convention Center
Dallas, TX

Contact information for Order Entry is listed below. Territories correspond with your Aurora / Layne / Verti-Line regional manager.

South, West, & Midwest (Roger Hahn)

Carol Hampton
(913) 748-4224 phone

East & Canada (RJ Dausman) and All Firepump Orders

Eddie Fears
(913) 748-4282 phone

Order Status (US & Canada)

Connie Groves
(913) 748-4030 fax
LVDeliveries@pentairwater.com

To place pump orders, request submittal status, or provide shipping instructions:

Email: LVProduct@pentairwater.com
Fax: (913) 748-4030

When orders are sent in by email, Order Entry will respond within 24 hours acknowledging that the order has been received and is being processed.

Reminder on Firepump Orders – include a signed setting plan confirming the pump OAL on all orders released to manufacturing.

Newsletter

We're always looking for ideas on articles. Have something for our technical section? Or maybe a picture of a vertical turbine installation you've worked on. Let us know!

Contact: Chris Lula
3601 Fairbanks Ave.
Kansas City, KS 66102
(913) 748-4254 phone, 4030 fax
chris.lula@pentairwater.com

Pump Models Reviewed

Layne has manufactured pumps for over 100 years, and many of our current designs have been around for decades. Wear and tear on pattern equipment eventually becomes evident during performance tests when resulting efficiencies are lower than expected. Recently, price book bowl models were reviewed to identify performance deficiencies. Through a combined effort by marketing and engineering departments at the Kansas City plant, it was decided that the following bowls would be discontinued from regular production due to low performance and slow sales.

8TM and 8TH



Hydraulics overlap Verti-Line 8R's (L, M, and H impellers) and L&B 10RK's (LC, HC, EH)

10FHM and 10FHH



Usually a 12" pump requiring fewer stages is selected over the 10FH.

18GL



Most often the 'M' impeller is chosen over the 'L' for its wider hydraulic coverage.

Consequently, these models will be deleted from the catalog, price book, and H2Optimize. However, existing applications will still be fully supported regarding replacement parts, bowl assemblies, or complete units.

Of the remaining bowls in our line, several models were identified as possibly needing new pattern equipment. Until efficiency is restored on these models, performance curves will be issued with warning labels. Look for the statement "Consult Factory for Efficiency and Horsepower Guarantees" on the following models:

7CM
7CEH
8RM

12RM
12FHH



Technical Q&A

Question: What optional bronze materials are available and how do I chose which one to use?

Both Layne & Bowler and Verti-Line have a long history of providing alternate materials of construction for various applications. Recently, we've received a lot of inquiries on what optional bronzes are available and how to pick the right one for a given application. Therefore, we've created the following summary. Comments are based on historical field performance of existing Layne & Bowler and Verti-Line pumps.

Silicon Bronze alloy C87500

82% Cu, 14% Zn, 4% Si

This material has shown to only perform well in neutral water applications. No chlorine, salts, acids, or abrasives may be present. At one time it was the standard impeller material for Aurora Pump and Fairbanks Morse. Both manufacturers have now changed to SAE 40 Red Brass, which is far superior.

SAE 40 Red Brass alloy C83600

85% Cu, 5% Sn, 5% Pb, 5% Zn

Known throughout the industry as "85 triple 5", it has been the standard impeller material used by L&B and Verti-Line for over 100 years. SAE 40 has a very good performance record for probably 99% of the applications in existence. Aurora Pump has performed tests easily supporting its use for 2 ppm chlorine. General agreement among older pump experts is that SAE 40 will hold up to 5 ppm chlorine based on success of existing applications. We suggest upgrading from SAE 40 when encountering higher concentrations of chlorine, salt, acids, or abrasives. Examples would be sea water, river pumps, and water parks.



SAE 660 Leaded Tin Bronze alloy C93200**83% Cu, 7% Sn, 7% Pb, 3% Zn**

SAE 660 has been our standard bearing and wear ring material for over a decade. Though in the beginning standard bearing and wear ring material was SAE 40, Layne & Bowler began using SAE 660 interchangeably. Eventually, bearings and wear rings standardized on SAE 660 because its higher lead concentration provides slightly better wear properties.

SAE 63 Zincless Bronze alloy C92700**88% Cu, 10% Sn, 2% Pb**

This is known down south as “Layne Bronze” because of its wide success in Florida, Georgia, and Alabama well pumps where high salinity is present. SAE 63 also has an excellent history in seawater applications along the Gulf and in Hawaii. It is one of the approved materials for the Aurora vertical turbine seawater fire pumps. SAE 63 is used for castings as well as bearing material if the pumping fluid may be connected to potable water.



38HOH impeller cast in SAE 40 bronze

SAE 64 Zincless Bronze alloy C93700**80% Cu, 10% Sn, 10% Pb**

Arguably one of the best zincless bronzes for sea water applications and top bearing material due to its high lead content. However, this high lead content also exceeds NSF’s “no lead” definition, which is 8% or less. SAE 64 is only supplied for applications in which there can be no connection to potable water. It is one of the approved materials for the Aurora vertical turbine seawater fire pumps.

Ni-Al-Bronze alloy C95800**81% Cu, 9% Al, 5% Ni, 4% Fe**

This bronze became popular at the turn of the 21st century because it has no lead or zinc. However, good castings are difficult to obtain due to porosity issues. We limit offering Ni-Al-bronze castings on pumps up to 15” diameter. Ni-Al-bronze is one of the approved materials for Aurora vertical turbine seawater fire pumps.

Aluminum-Bronze alloys**C95300 - 89% Cu, 10% Al, 1% Fe****C95400 - 85% Cu, 11% Al, 4% Fe**

Slightly softer and less corrosion resistant, it is also cheaper than Ni-Al-bronze due to lack of nickel. However casting problems are similar to Ni-Al-bronze. Al-bronze can be used when specifications call for 50 BHN difference in hardness between case and impeller wear rings (SAE 660 for case wear ring).

Alternates to Bronze

Each bronze listed herein provides comparable hydraulic performance. On the other hand, other corrosion resistant materials such as stainless steel, ductile iron, or ni-resist are also available. These materials provide the benefit of additional abrasion resistance over bronze, however efficiency is typically lower due to casting roughness.

When changing impeller material, also remember to consider whether the bowl material also needs upgrading. Alternate materials include zincless bronze, Ni-Al-bronze, 316 stainless steel, Ni-Resist, and Ductile Iron to name a few. Ni-Resist and zincless bronze both have proven track records with Layne & Bowler. Ni-Al-bronze and 316 SS are also excellent corrosion resistant materials, but command higher costs and are troublesome to pour successfully. Porosity issues are of concern with both materials, and stainless steels tend to have high shrinkage rates, which can alter pump performance.

Each one of the materials discussed here has its place. If you encounter a questionable application, contact Layne / Verti-Line for more information.