



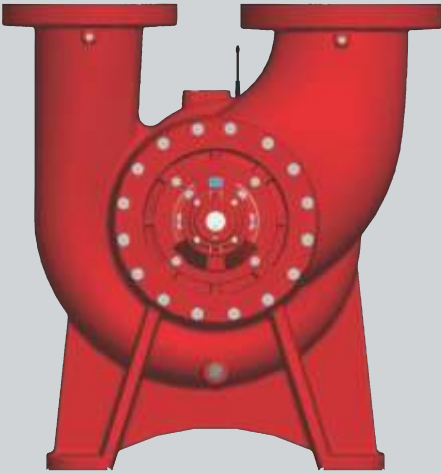
VSX

DOUBLE-SUCTION, SPLIT-CASE PUMPS

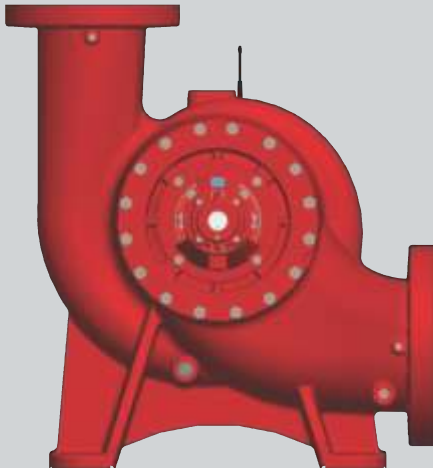
B-475D

 **Bell & Gossett**
a xylem brand

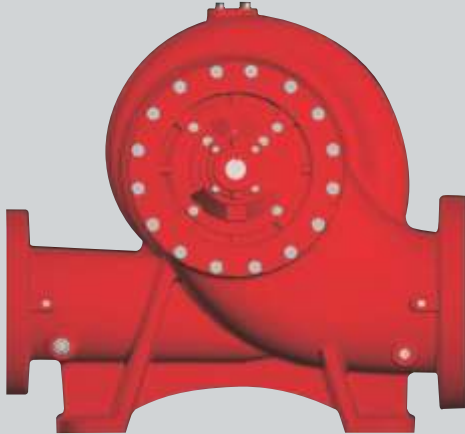
YOU ASKED FOR
THE IMPOSSIBLE.
SO WE BUILT IT.



VSC



VSCS



VSH

At Bell & Gossett, we have over 88 years of experience in designing pumps and knowing how they work in complex systems. But when it comes to the challenges specifiers and contractors face every day in the field, no one knows pumps better than our customers. So when we began designing our new VSX pump, we knew we needed to talk to the experts. [We needed to talk to you.](#)

We took a revolutionary approach to design. We listened to you.

You told us what you wanted: a truly innovative pump. One that saves space, is highly efficient and installs easily. You asked for total reliability and enough flexibility to suit nearly any application.

Our new VSX platform retains the innovative and time-proven space saving VSC design. The VSC model has reduced your pump room footprint by up to 40% when compared to traditional split-case and vertical inline pumps. The time-proven VSC design now becomes even better within the new VSX platform. The high-efficiency VSX hydraulic design and robust construction deliver proven Bell & Gossett reliability, and the unique platform design provides complete installation versatility. Simply select your hydraulic requirements and then pick any one of three different suction and discharge flange orientations that best suit your installation requirements. In short, VSX is everything you asked for, and then some.



Here's what you told us.

"Mechanical room space keeps shrinking. I need one pump that can provide me with the flexibility to meet my space challenges."

"We want a pump that was engineered using today's technology, not something that was designed 40 years ago and adapted for today's uses."

"Serviceability and minimal downtime are important to us in our operations. Simplicity of maintenance is absolutely our number one issue."

"Labor is the only item I can control, so installation time is critical to me."

"Hydraulic performance and efficiency are the key points that we look at when selecting the right pump to match up with the chillers and towers. Why can't we have a pump that runs at 1450 RPM but acts like it is at 980 RPM to match up with our real-world application requirements?"

You asked for a completely new hydraulic design. We gave it.

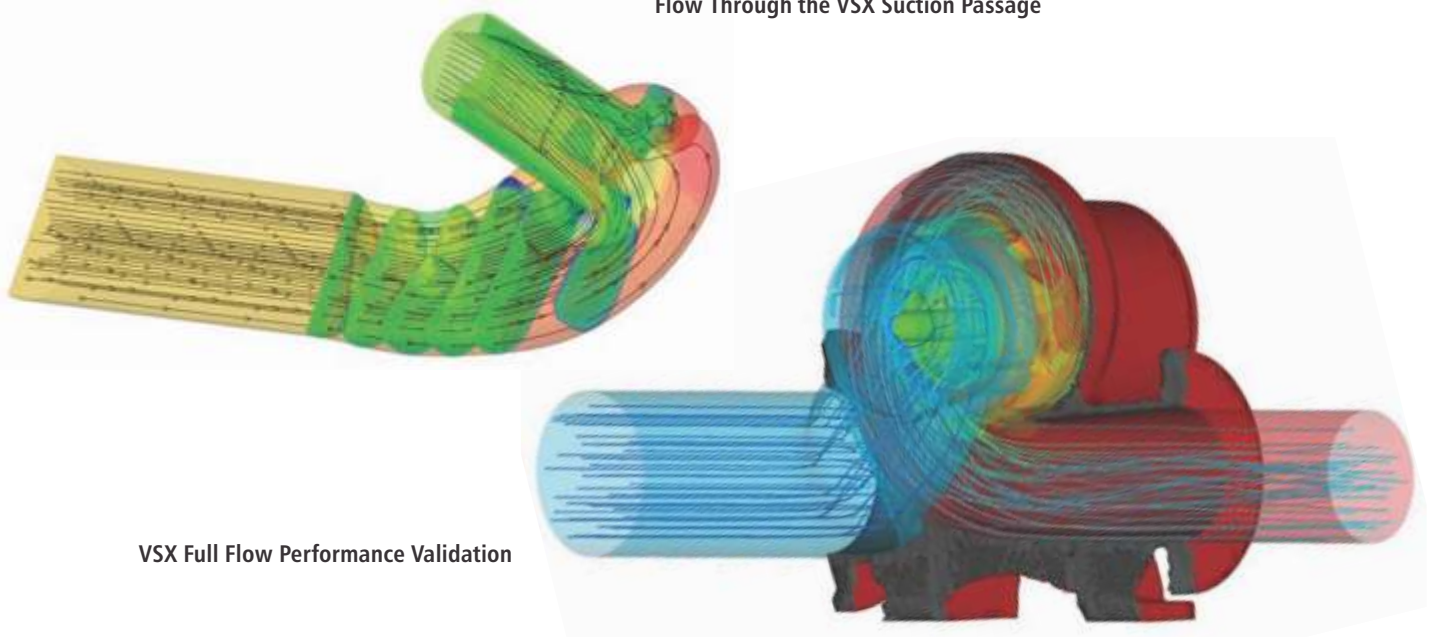
Until now, pump flow in traditional split-case pumps was maximized in the industry by pushing extreme velocities through the same 50-year-old pump volute.

Today, hydraulic design begins with the end requirements in mind. When we engineered the VSX platform, we started by identifying your chiller, cooling tower and general pumping requirements. We matched the best efficiency points (BEP) to common chiller and tower sizes, and normal industrially-specified flows and head conditions.

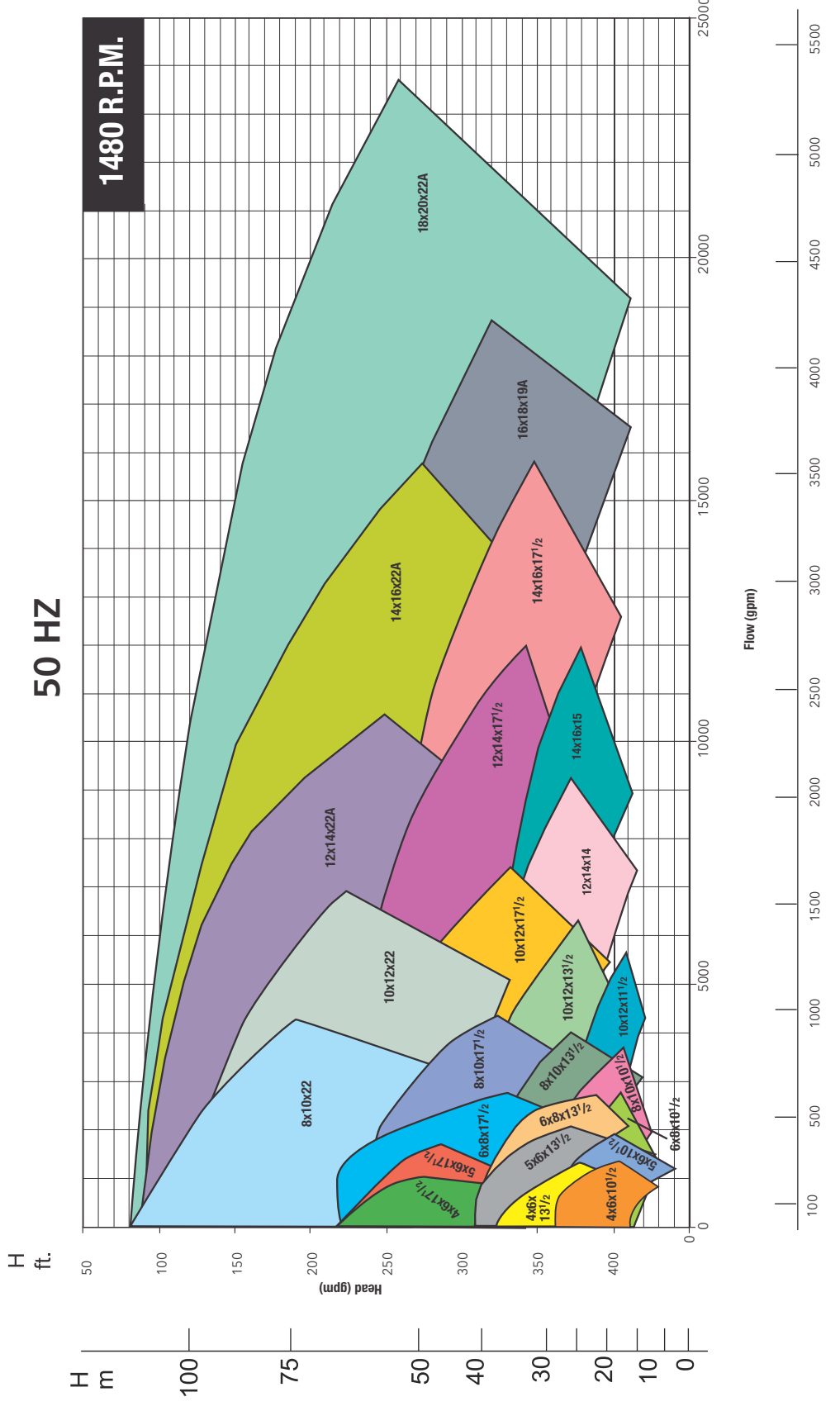
We took our tried-and-true design methods and digitized them by simulating the pumps using Computational Fluid Dynamics (CFD). CFD is no simple task; it takes a bank of 18 computers up to 30 hours to solve equations for just one hydraulic analysis. By using this technique, you can actually see the flows and pressures like never before. Where our engineers once relied solely on years of experience, CFD helps out by letting them see exactly what's going on inside the pump. They can analyze several different design ideas rapidly to bring the optimal design to the table for every pump, whether it is in the VSC, VSH or VSCS flange configuration.

- Hydraulic coverage to meet all your design requirements
- Max flow 23,000 GPM
- Max heads 360 feet
- Working pressures of 175 and 300 psig / 12 and 20 Bar
- ANSI flange ratings of 125# and 250#
- Temperature 0 to 300° F / -17 to 148° C

Flow Through the VSX Suction Passage



VSX Full Flow Performance Validation

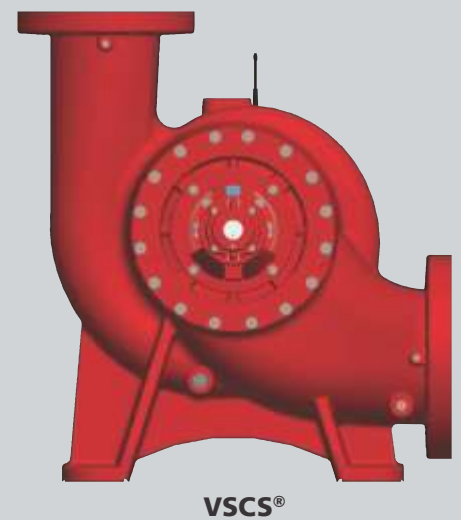
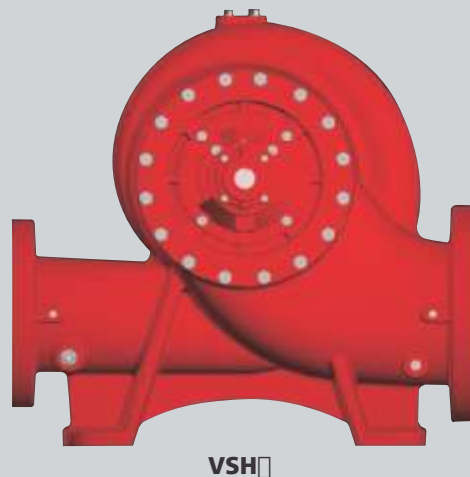
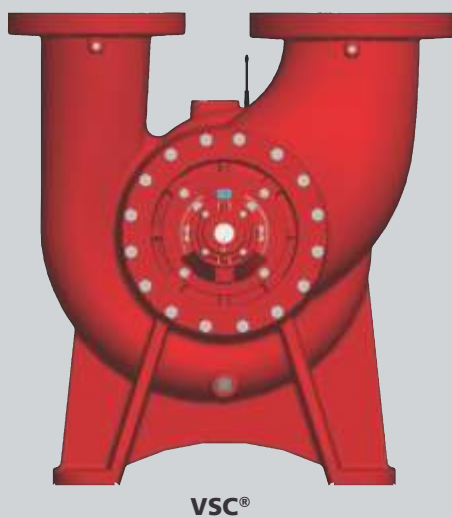


You said you needed one pump that does it all.

When it comes to the VSX platform, our revolutionary approach to hydraulic design is just the beginning. This one-of-a-kind pump has what it takes to make your job easier, simplifying installation and minimizing service.

Multiple suction and discharge flange orientations.

Only the VSX platform offers so many installation options, thanks to its revolutionary design. Using CFD technology, we can deliver identical performance in any flange configuration. The result is that you can maximize your piping possibilities and meet a broad hydraulic range for chillers, towers, distributive and general pumping requirements.



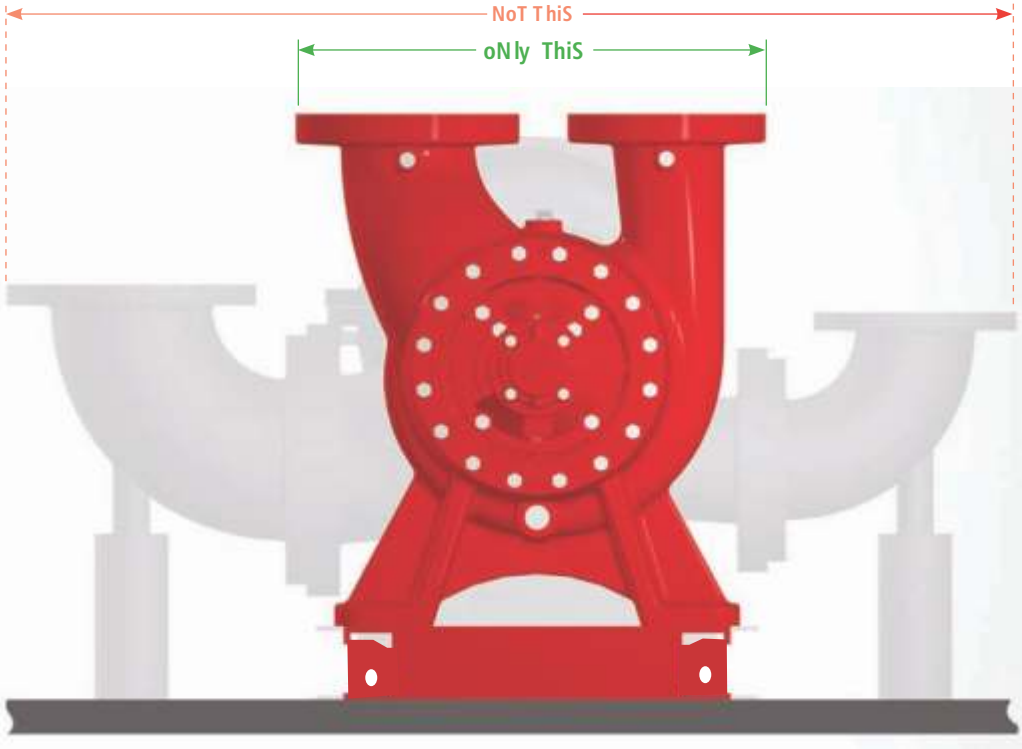
Vertical Static Flange Loading

The vertical split-case volute design of the VSX provides optimum nozzle loading capability that others just can't match. In the vertical flange configuration (VSC model), the pump flanges easily support the weight of heavy piping directly on its nozzles. The pump flanges sit directly under the load - right where it's needed the most - without impairing pump operation.

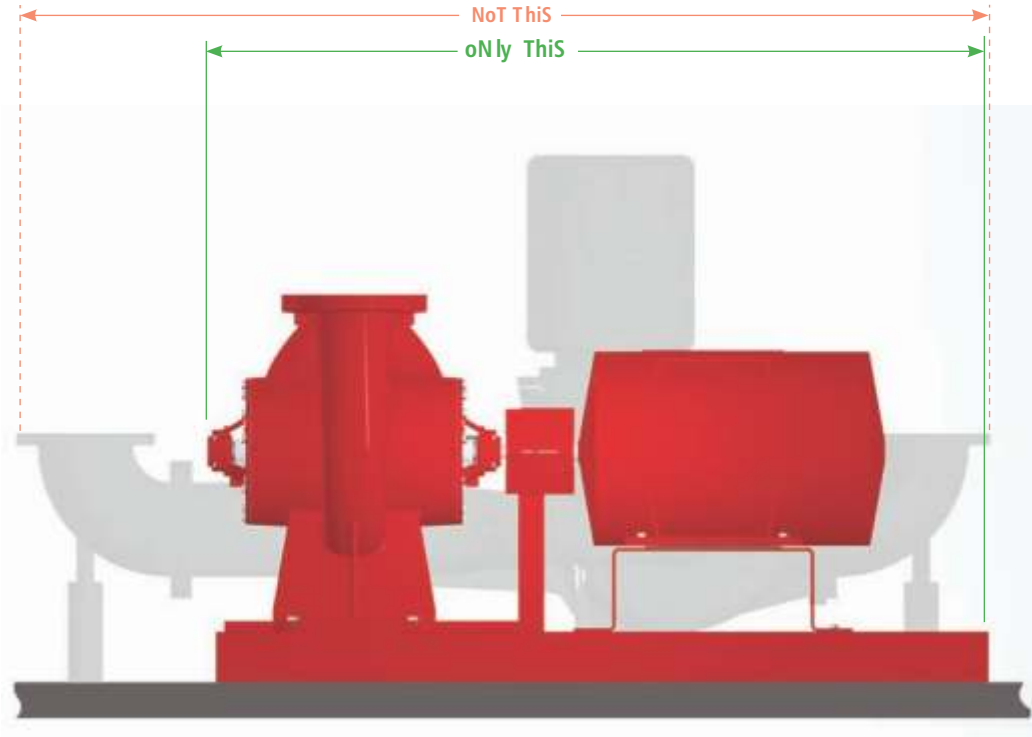


Space-Saving Footprint

VSX lets you reduce the overall equipment footprint by up to 40 percent over horizontal double-suction and large inline pumps with the VSC configuration. The VSX pump optimizes the advantages of vertical piping applications by eliminating the space-robbing elbows, protruding accessories and pipe supports.



VSC Versus Traditional horizontal Split-Case Pump



VSC Versus Traditional Vertical inline Pump

You were looking for simplicity. So we found it.



One of the most remarkable things about the new VSX pump is how easy it is to install and maintain. Based on your input, we looked at every component of our pumps with the goal of streamlining and simplifying. Our goal: to make your life easier.

Simplified Service

- A** No rigging or heavy-duty material handling equipment is necessary to gain access to the bearing, mechanical seals or shaft sleeves. Unlike older horizontal double-suction, split-case and larger vertical inline pumps, there are no heavy top casings or motors to lift off, saving cost, reducing risk and providing easy access to the rotating assembly. The VSX platform makes bearing, mechanical seal and shaft sleeve inspection easy. The VSX design makes these components readily accessible from both sides of the pump, so that you can service from the inboard* or outboard side without disturbing the piping or the motor. You can also replace just one bearing, mechanical seal or sleeve without disturbing the other side.

Maintenance-Free Bearings

- B** Our maintenance-free bearings eliminate the need for regular maintenance, documentation logs, over-greasing problems and the risk of mixing greases that can cause early failure. This design not only reduces maintenance time and costs, but also helps extend pump life.

New One-Piece Unitized Seal

- C** Bell & Gossett's new one-piece unitized seal eliminates multiple seal components and simplifies replacement. Because it uses a one-piece elastomeric bellows, it has fewer parts than competitive seals, resulting in significantly fewer installation errors.

Groutless Base Plate

- D** Another industry first! Our new groutless baseplate design saves valuable time and money to speed installation. Advanced finite element analysis and design provides a modern state-of-the-art baseplate that is rock-solid.

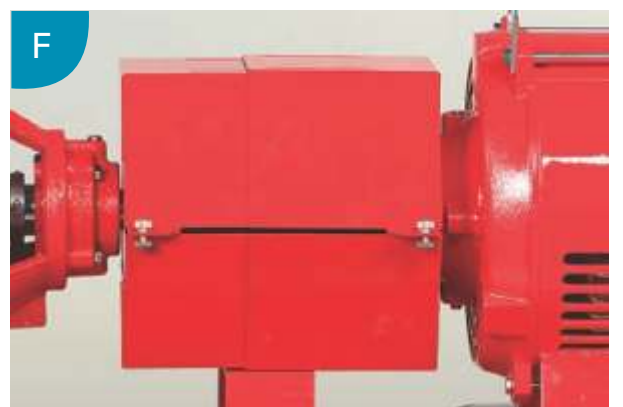
Alignment-Friendly Coupling

- E** Reduce installation time further by maximizing your alignment protection. Designed with finite element analysis to maximize performance and overall life. Easy split element design avoids movement of hubs during inspection or replacement. Moreover, an ANSI/OSHA coupling guard surrounds the coupling to protect personnel.

ANSI/OSHA Coupling Guard

- E** ANSI B15.1 and OSHA 1910.219 compliant coupling guard shields the coupler during operation. The VSX coupler guard is dual designed and contains viewing windows for inspection of the coupling. No more than .25 inch opening in the guard around the rotating assembly is visible.

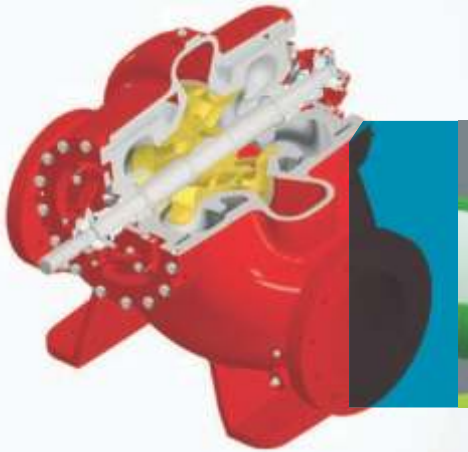
* Requires optional spacer-coupling
† Up to 1000 HP at 1750 RPM





VSX Operational Data

[Pump Size]	4x6x10.5	4x6x13.5	4x6x17.5	5x6x10.5	5x6x13.5
CASING DATA					
125# FF, ANSI Flanges Maximum 175 PSI Working Pressure Supplied with Unitized Seal					
Max. Suction pressure	175	175	175	175	175
Max. Working pressure	175	175	175	175	175
Max. hydrostatic test pressure	262	262	262	262	262
Casing material	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
250# FF, ANSI Flanges Maximum 300 PSI Working Pressure Supplied with Unitized Seal*					
*Max. Suction pressure	200	200	200	200	200
Max. Working pressure	300	300	300	300	300
Max. hydrostatic test pressure	450	450	450	450	450
Casing material	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
250# FF, ANSI Flanges Maximum 300 PSI Working Pressure Supplied with Balanced Seal					
Max. Suction pressure	300	300	300	300	300
Max. Working pressure	300	300	300	300	300
Max. hydrostatic test pressure	450	450	450	450	450
Casing material	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
MECHANICAL SEAL DATA					
Mechanical Seal on sleeve for 175 and 300 psi working pressure*					
Type	Unitized	Unitized	Unitized	Unitized	Unitized
Material	EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC
Min Temp - 0 deg. F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F
Max Temp - 300 deg. F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F
* Refer to max. suction pressure limitation for 300psi working pressure rating.					
Mechanical Seal on sleeve for max. 300 psi working pressure					
Type	Balanced	Balanced	Balanced	Balanced	Balanced
Material	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC
Min Temp	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F
Max Temp	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F
IMPELLER DESIGN DATA					
Number of vanes	7	6	5	6	5
Maximum Impeller Diameter	10.5"	13.5"	17.5"	10.5"	13.5"
Minimum Impeller Diameter	7"	9.5"	12.5"	7"	9"
Maximum Sphere	.63"	.82"	.845"	.55"	1.00"

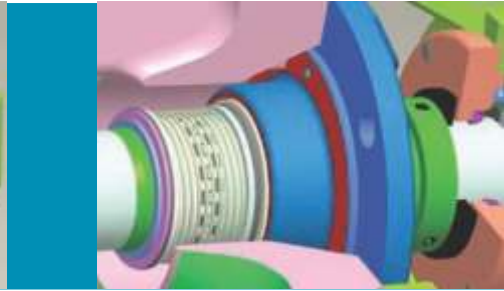
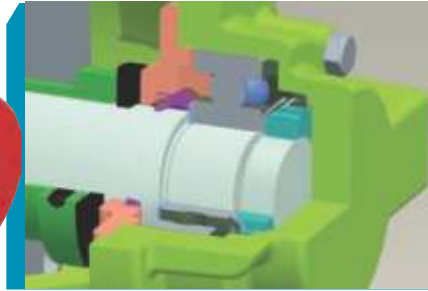
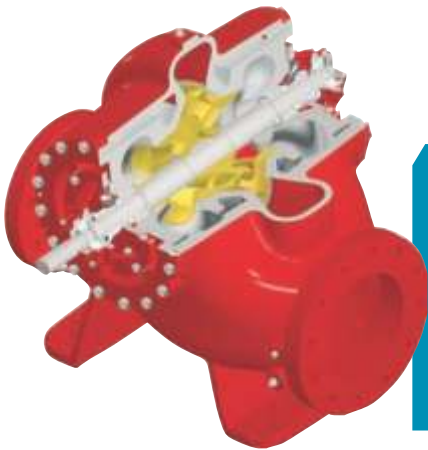


5x6x17.5	6x8x10.5	6x8x13.5	6x8x17.5	8x10x10.5	8x10x13.5	8x10x17.5	8x10x22
175	175	175	175	175	175	160	125
175	175	175	175	175	175	175	175**
262	262	262	262	262	262	262	262
Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
200	200	200	200	200	200	160	125
300	300	300	300	300	300	300	300
450	450	450	450	450	450	450	450
Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
300	300	300	300	300	300	300	300
300	300	300	300	300	300	300	300
450	450	450	450	450	450	450	450
Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Unitized	Unitized	Unitized	Unitized	Unitized	Unitized	Unitized	Unitized
EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC
0 deg F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F
300 deg F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F
Balanced	Balanced	Balanced	Balanced	Balanced	Balanced	Balanced	Balanced
EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC
0 deg F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F
300 deg F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F
6	7	6	5	7	7	7	6
17.5"	10.5"	13.5"	17.5"	10.5"	13.5"	17.5"	22"
12.5"	6.5"	10"	12.5"	7"	9.5"	12.5"	16.5"
.82"	.70"	1.08"	.80"	.57"	1.00"	1.25"	1.35"



VSX Operational Data

[Pump Size]	10x12x11.5	10x12x13.5	10x12x17.5	10x12x22	12x14x14
CASING DATA					
125# FF, ANSI Flanges Maximum 175 PSI Working Pressure Supplied with Unitized Seal (Balanced Seal where noted) †					
Max. Suction pressure	175	160	160	125	160
Max. Working pressure	175	175	175	175**	175
Max. hydrostatic test pressure	262	262	262	262	262
Casing material	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
250# FF, ANSI Flanges Maximum 300 PSI Working Pressure Supplied with Unitized Seal* (Balanced Seal where noted) †					
*Max. Suction pressure	200	160	160	125	160
Max. Working pressure	300	300	300	300	300
Max. hydrostatic test pressure	450	450	450	450	450
Casing material	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
250# FF, ANSI Flanges Maximum 300 PSI Working Pressure Supplied with Balanced Seal					
Max. Suction pressure	300	300	300	300	300
Max. Working pressure	300	300	300	300	300
Max. hydrostatic test pressure	450	450	450	450	450
Casing material	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
MECHANICAL SEAL DATA					
Mechanical Seal on sleeve for 175 and 300 psi working pressure*					
Type	Unitized	Unitized	Unitized	Unitized	Unitized
Material	EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC	EPR/Car/SiC
Min Temp - 0 deg. F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F
Max Temp - 300 deg. F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F
* Refer to max. suction pressure limitation for 300psi working pressure rating.					
Mechanical Seal on sleeve for max. 300 psi working pressure					
Type	Balanced	Balanced	Balanced	Balanced	Balanced
Material	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC
Min Temp	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F
Max Temp	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F
IMPELLER DESIGN DATA					
Number of vanes	7	7	7	6	7
Maximum Impeller Diameter	11.5"	13.5"	17.5"	22"	14.1"
Minimum Impeller Diameter	9.25"	10"	12.5"	16.5"	10.875"
Maximum Sphere	.60"	.91"	1.35"	1.5"	.88"



12x14x17.5	12x14x22	14x16x15	14x16x17.5	14x16x22	16x18x19	18x20x22
Balanced Seal				Balanced Seal	Balanced Seal	Balanced Seal
125	175	160	125	175	175	175
175	175	175	175	175	175	175
262	262	262	262	262	262	262
Cast Iron	Ductile Iron	Cast Iron	Cast Iron	Ductile Iron	Ductile Iron	Ductile Iron
Balanced Seal				Balanced Seal	Balanced Seal	Balanced Seal
125	300	160	125	300	300	300
300	300	300	300	300	300	300
450	450	450	450	450	450	450
Cast Iron	Ductile Iron	Cast Iron	Cast Iron	Ductile Iron	Ductile Iron	Ductile Iron
300	300	300	300	300	300	300
300	300	300	300	300	300	300
450	450	450	450	450	450	450
Cast Iron	Ductile Iron	Cast Iron	Cast Iron	Ductile Iron	Ductile Iron	Ductile Iron
Unitized	Balanced	Unitized	Unitized	Balanced	Balanced	Balanced
EPR/Car/SiC	EPR/Graphite Loaded SiC	EPR/Car/SiC	EPR/Car/SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC
0 deg F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F
300 deg F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F
Balanced	Balanced	Balanced	Balanced	Balanced	Balanced	Balanced
EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC	EPR/Graphite Loaded SiC
0 deg F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F	0 deg F
300 deg F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F	300 deg F
7	7	7	7	6	7	6
17.5"	22"	15.0"	17.5"	22"	19"	22"
13"	16"	11.375"	12.5"	16"	13.85"	14.85"
1.12"	1.25"	.83"	1.46"	1.72"	1.47"	1.74"

** Applicable for 1480 RPM and slower speeds. 12x14x22, 14x16x22, 16x18x19 and 18x20x22 have balanced seals and ductile iron volutes, standard

Specifications

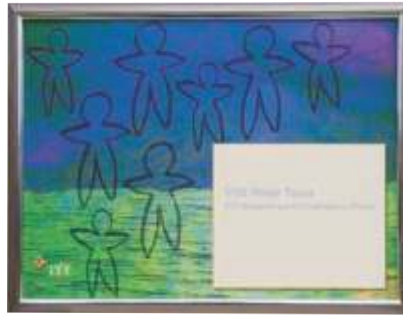
2.02 COMPONENTS

- A. The pumps shall be long coupled, base mounted, single stage, double suction, vertical split case design, in cast iron bronze fitted construction specifically designed for quiet operation. Suitable for standard operations at 300° F and 175 PSIG working pressure or optional operation up to 300 PSIG working pressure. Working pressures shall not be de-rated at temperatures up to 300F.
- B. The bearing housing shall supply support for heavy-duty single row permanently lubricated ball bearings, with provision for purging or flushing if desired. Polyurea grease, capable of handling both high and low temperatures and that is resistant to washout and condensation shall be provided. The bearings shall be capable of absorbing both radial and thrust loads and maintaining the rotating element in proper axial alignment. Bearings shall be capable of being inspected and repaired by removal of only a bearing bracket.
- C. The impeller shaft shall be of solid 416 stainless steel material; heat-treated to 80 KSI yield strength.
- D. Pump shall be equipped with internally flushed unitized mechanical seal assemblies, mounted on 304SS sleeves, installed in enlarged tapered seal chambers. Application of an internally flushed mechanical seal shall be adequate for seal flushing without requiring external flushing lines. As an option, pump may include a packing gland type seal arrangement.
- E. Mechanical seal assemblies shall be unitized, single spring, EPR elastomer bellows with drive ring, Carbon face rotating against a stationary Silicon Carbide face allowing for fast and easy installation and replacement. Seals shall be capable of being inspected and easily repaired.
- F. Impeller shall be of the enclosed double suction type made of low zinc silicon bronze, both hydraulically and dynamically balanced to ISO 1940-1:2003 balance grade G6.3 and keyed to the shaft.
- G. A coupling, capable of absorbing torsional vibration and of operating in variable speed applications, shall be employed between the pump and motor. An optional Spacer Coupler shall allow for removal of pump's wetted end without disturbing pump volute or movement of the pump's motor and electrical connections.
- H. An ANSI B15.1 and OSHA 1910.219 compliant coupling guard shall shield the coupler during operation. Coupler guard shall be dual designed and contain viewing windows for inspection of the coupling. No more than .25 inch opening in the guard around the rotating assembly shall be visible.
- I. Pump volute shall be of a cast iron ASTM A159 material (35,000 psi) design with an integrally cast pump discharge and an integrally cast pump suction. Flanges shall be extra heavy-duty design and will be of 250# thickness while capable of being drilled for 125# ANSI flat face use.

An award-winning pump

The VSX pump continues to receive major awards:

- Consulting-Specifying Engineer Product of the Year Silver Award in the HVAC Category
- AHR Innovation Award Honorable Mention in the Heating Category
- India Water Digest Water Award Best Water R&D and Technological Breakthrough
- HPAC Engineering Readers' Choice Award
- Plumbing Engineer – One of the Top Ten Products



Pump us for information

Our comprehensive Web site (www.xylem.com/brands/bellgossett) makes it easier for you to find, specify and understand the VSX pump, fluid handling systems, parts, specifications and applications.

Bell & Gossett.
We make the difference.
By design.



Xylem Water Solutions India Pvt. Ltd.

India Head Office
Ground & First floor
Vishnu Shivam Mall
Thakur Village, Kandivali [East]
Mumbai - 400 101
Tel: +91 22 4037 0370
Fax: +91 4037 0371

Delhi Office
H-20, Bali Nagar
New Delhi - 110015
Tel: +91 11 4555 2806
Fax: +91 11 2519 5007

Registered Office & Factory
Plot No. 731, GIDC Savli
Manjusar, Savli Road
Vadodara - 391770
Tel: +91 2667 265800
Fax: +91 2667 265802

Bengaluru Office
No. 7, Kumara Park East
Kumara Park East Extension
Bengaluru - 560001
Tel: +91 80 4281 6800
Fax: +91 80 4281 6801

www.xyleminc.com / www.xylemindia.in

Chennai Office
Ghatala Towers, 1st floor
19, Avenue Road
Nungambakkam
Chennai - 600034
Tel: +91 44 4043 5555
Fax: +91 44 4043 5550

Pune Office
Xylem Water Solutions India Pvt. Ltd.
2nd Floor, Anmol Pride Unit 3
Baner Road, Pune 411045
Tel: 020 4660 8200

Email: indiasales@xyleminc.com, indiaservice@xyleminc.com

The specifications and features may change before prior notice.

