



# Pumps, Controls and Pressure Boosting

BRGLCAR R5

 **GOULDS**  
WATER TECHNOLOGY  
a xylem brand

# Proven Performance Through The Power Of Experience.

Goulds Water Technology combines over 155 years of pump experience with the most modern design and manufacturing systems—deep drawn metal fabrication, laser cutting, laser welding, precision casting, and worldwide design systems—plus a total commitment to quality based on full performance testing of every pump we make.

Whether you need stainless steel, bronze, or cast iron, multi-stage verticals or horizontals, end suction centrifugals or submersibles, there's a Goulds Water Technology design that's proven itself through years of dependable service. For booster service, liquid transfer, spray systems, water circulation, dewatering, light chemical and industrial applications, there's a pump that's done long time duty. Horizontal and vertical multi-stage capacities from 5 gpm to 350 gpm. Submersible capacities from 5 gpm to 500 gpm. And end suction centrifugal capacities from 4 gpm to 5000 gpm. Goulds Water Technology—a brand offering the power of experience to more than 100 nations of the world. In addition to the standard pump designs shown here, we offer specialized O.E.M. pumps designed to meet the specifications of your particular needs.

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### A full range of end suction centrifugal pumps

- Cast iron, bronze, investment cast 316 stainless steel and 304 stainless steel pump-end materials of construction.
- 1 x 1¼-5 through 8 x 10-13 sizes
- Close coupled, frame mounted or engine drive configuration
- Capacities to 4500 USGPM (1000 m<sup>3</sup>/hr)
- Heads to 500 ft. TDH (152 m)
- Working pressure to 250 PSI
- Temperatures to 250° F (120° C)
- ANSI Flanged and NPT Connections
- Motors 1 and 3 phase. 50 or 60 hz ODP, TEFC or explosion proof enclosures 3500 and 1750 RPM.
- Standard John Crane mechanical seals with high temperature and chemical duty options.

# Single Stage End Suction

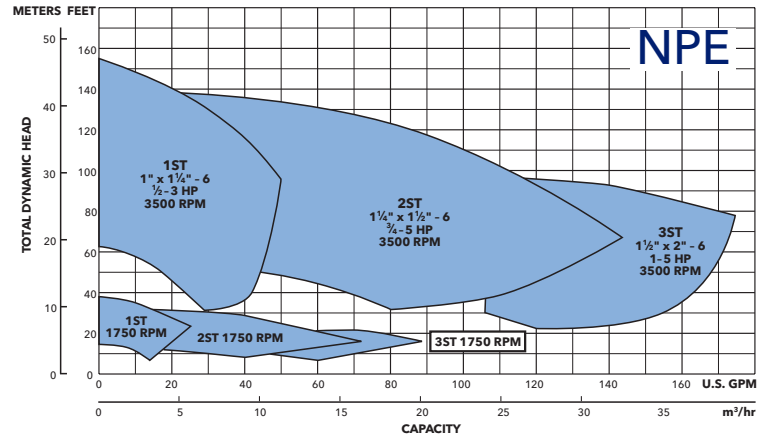
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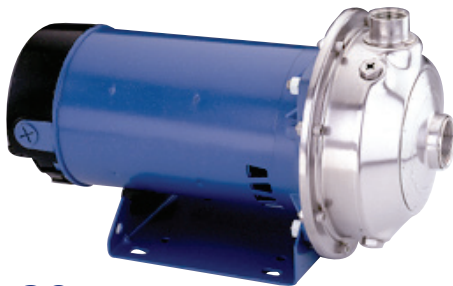
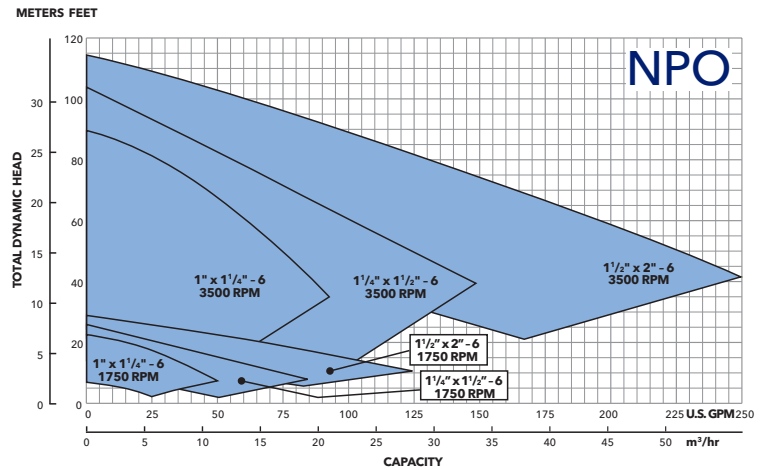
## NPE

- 316L Stainless Steel Enclosed Impeller
- Optional Seal Flush



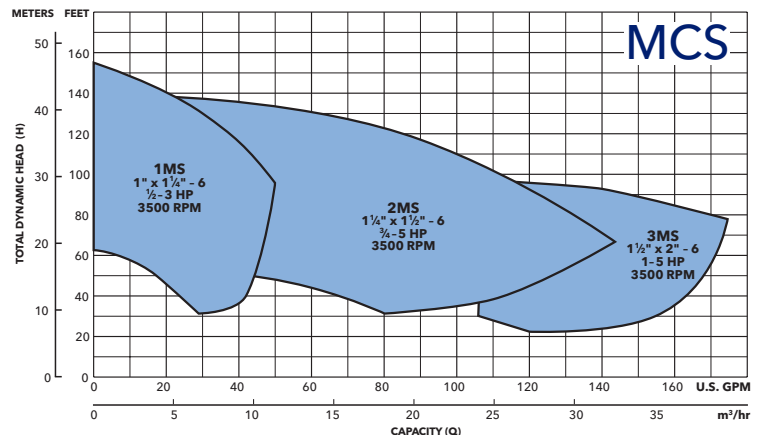
## NPO

- 316L Stainless Steel Open Impeller
- Optional Seal Flush

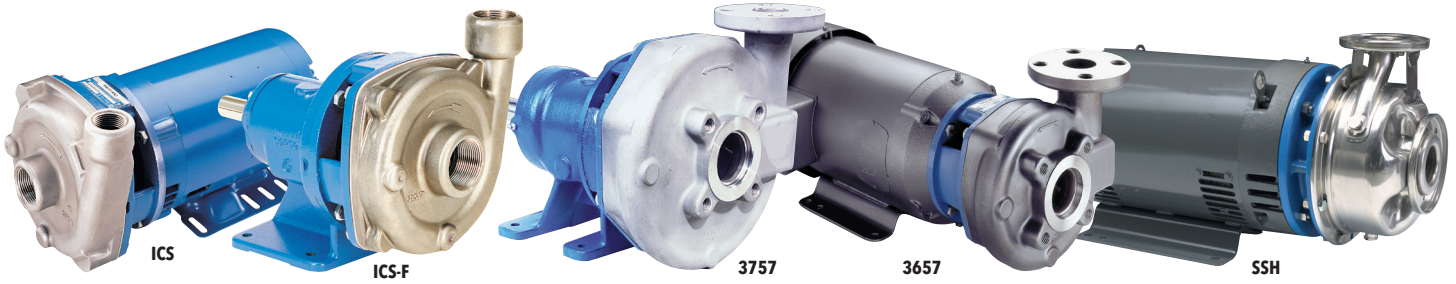


## MCS

- 316L Stainless Steel Enclosed Impeller



# Single Stage End Suction



## ICS/ICS-F

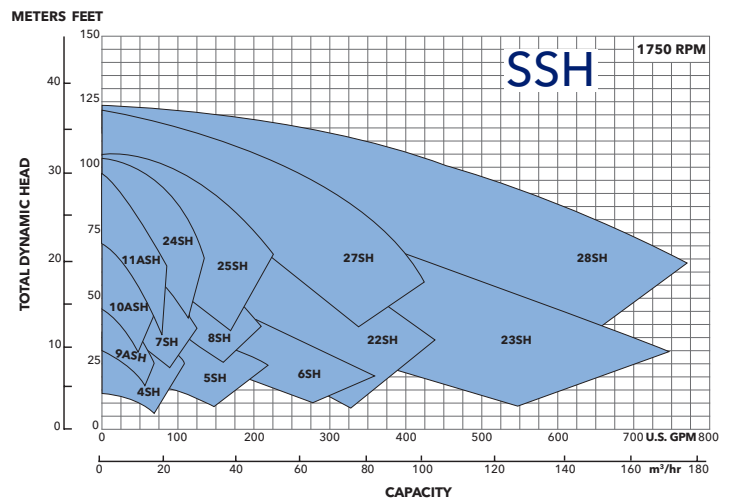
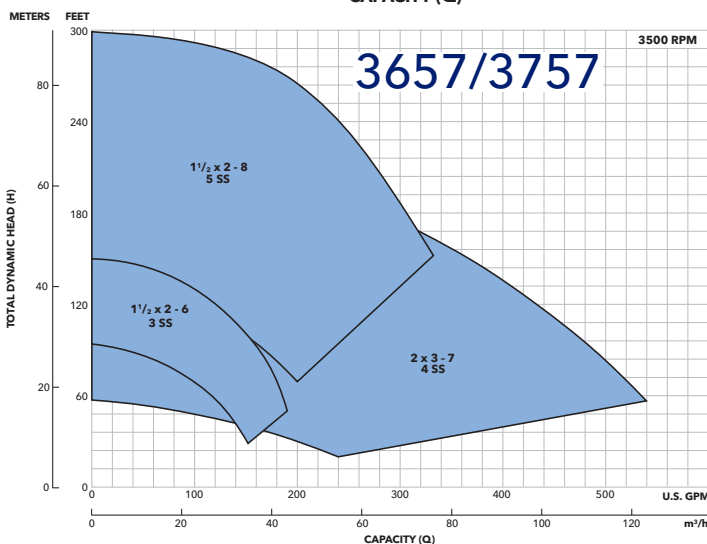
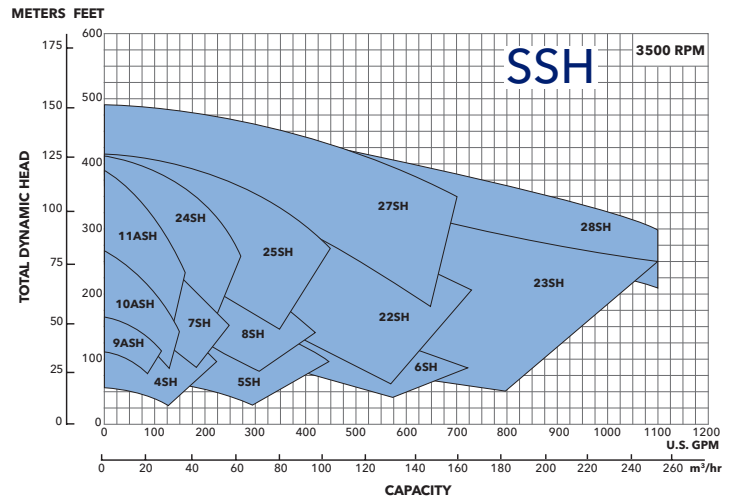
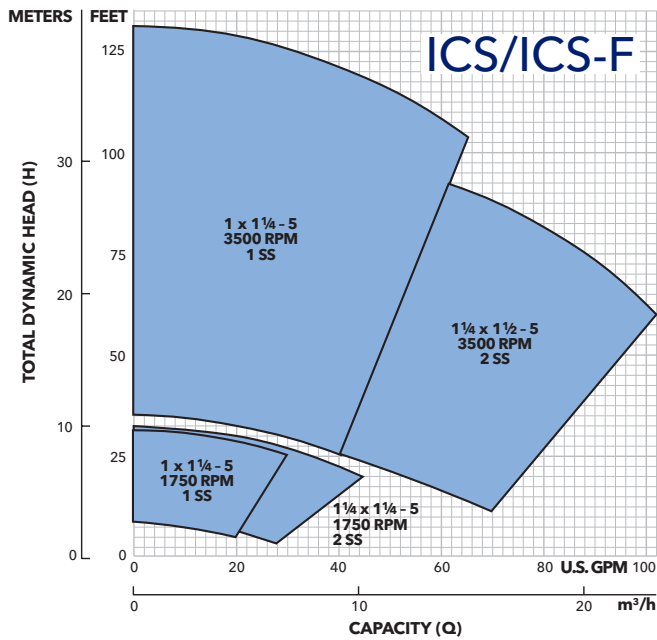
- Investment Cast 316 Stainless Steel Open Impeller

## 3657/3757

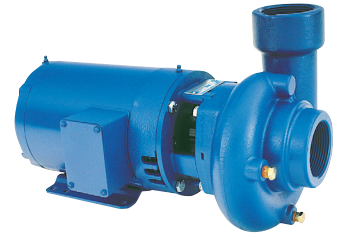
- Investment Cast 316 Stainless Steel Enclosed Impeller

## SSH

- 316L Stainless Steel Enclosed Impeller
- Available in frame-mounted or close-coupled design
- Cast iron power frame



# Single Stage End Suction



## LB

- 304 Stainless Steel Enclosed Impeller
- Economical boosting for heads up to 190 feet
- Engineered thermoplastic internal components

## MCC

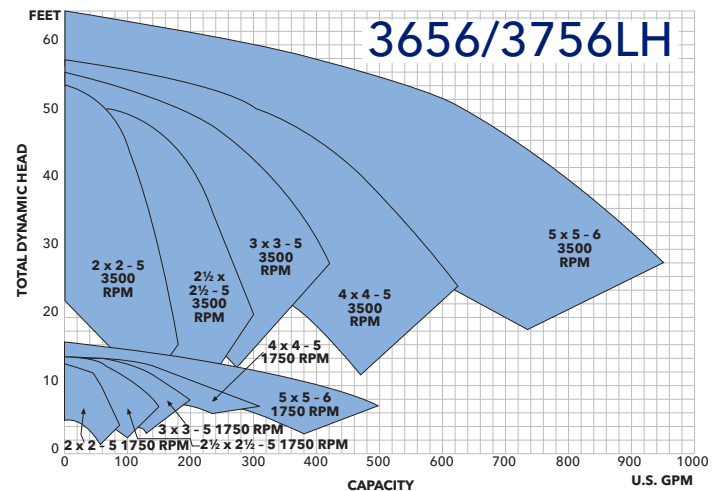
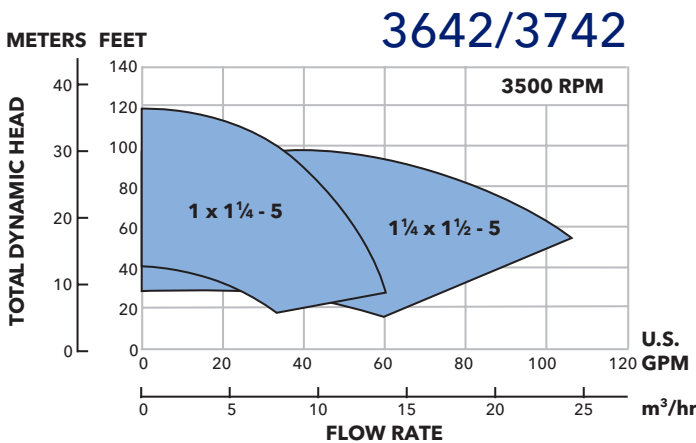
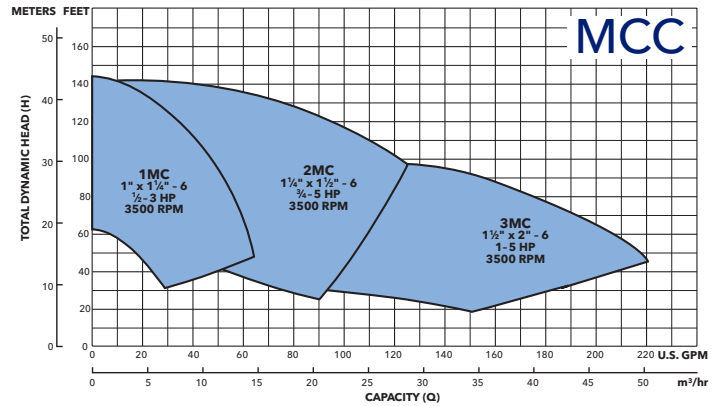
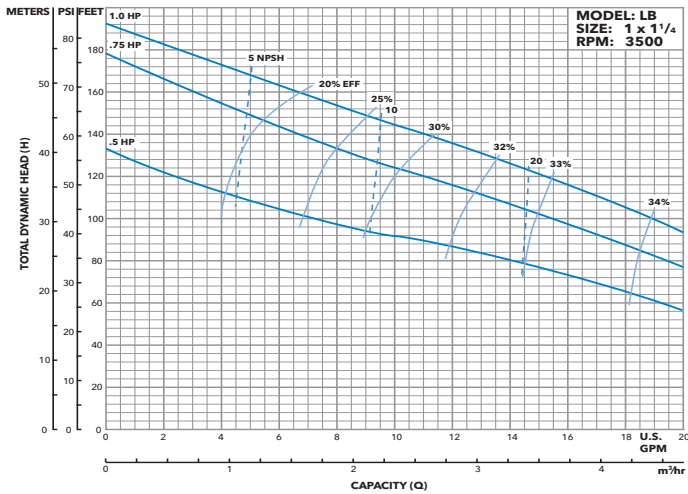
- Enclosed 316SS Impeller Iron Casing Stainless-Fitted
- Centerline connections

## 3642/3742

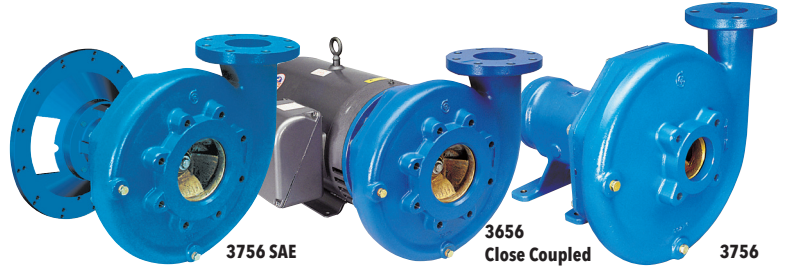
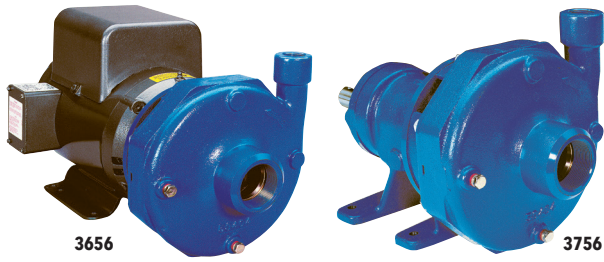
- Enclosed Impeller, Iron, Bronze or Bronze Fitted, Cast Iron Pump

## 3656LH/ 3756LH

- Enclosed Impeller Low Head, Bronze Fitted

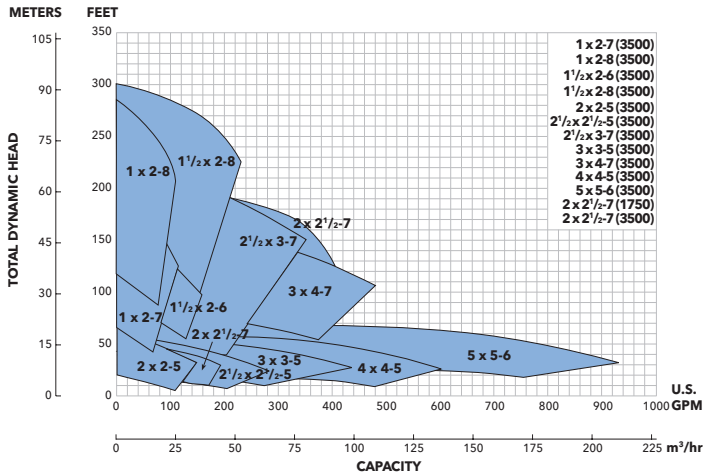


# Single Stage End Suction



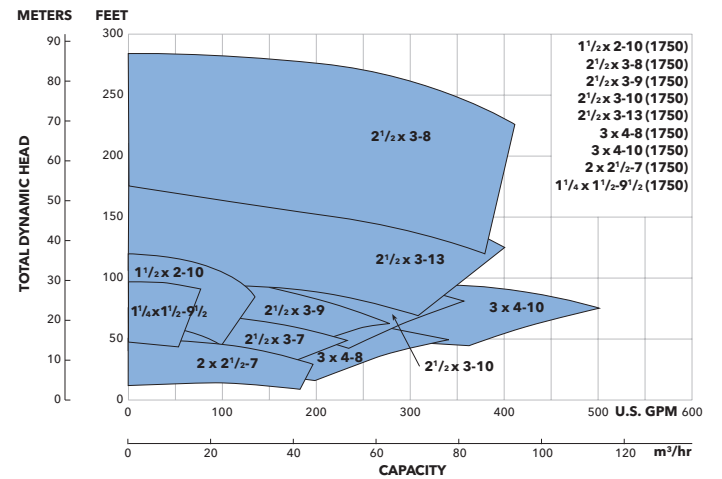
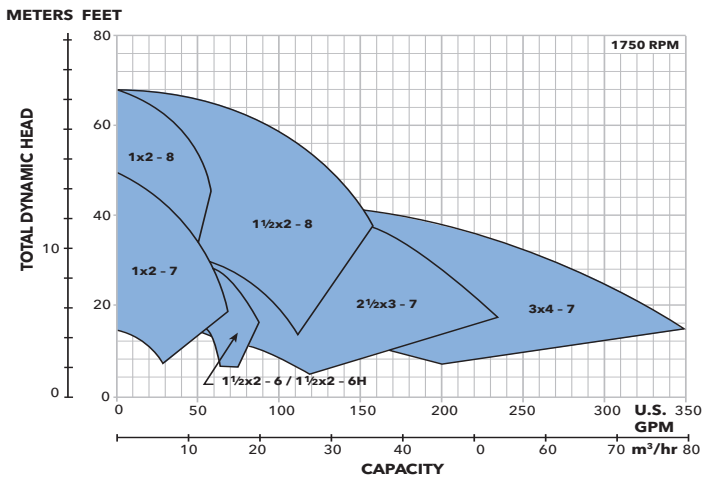
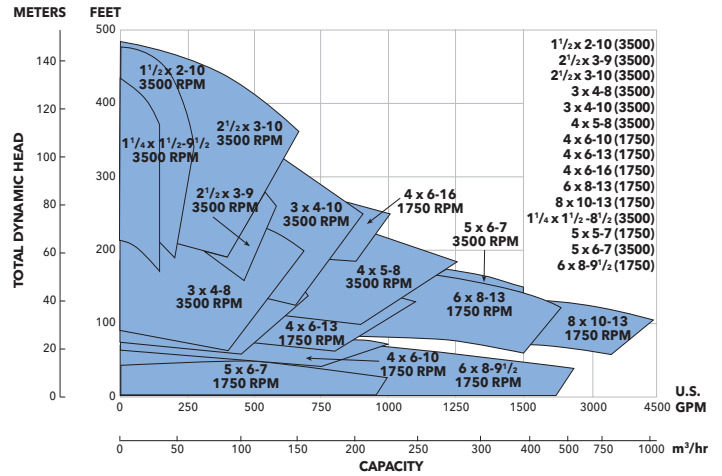
## 3656/3756 S GROUP

- Enclosed Impeller Iron, Bronze or Bronze Fitted Mechanical Seal or Packing
- Back pull-out design for easy maintenance
- Renewable wear rings

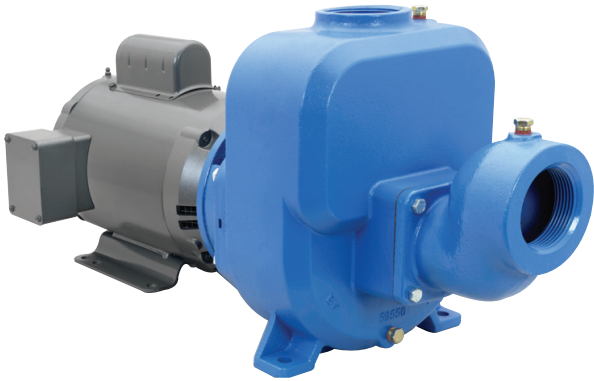


## 3656/3756 M & L GROUP

- Enclosed Impeller Cast Iron or Bronze Fitted Mechanical Seal or Packing



# Self-Priming End Suction

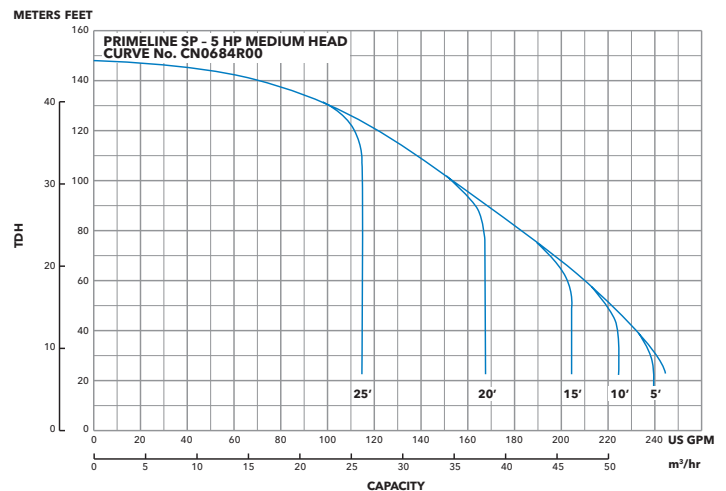
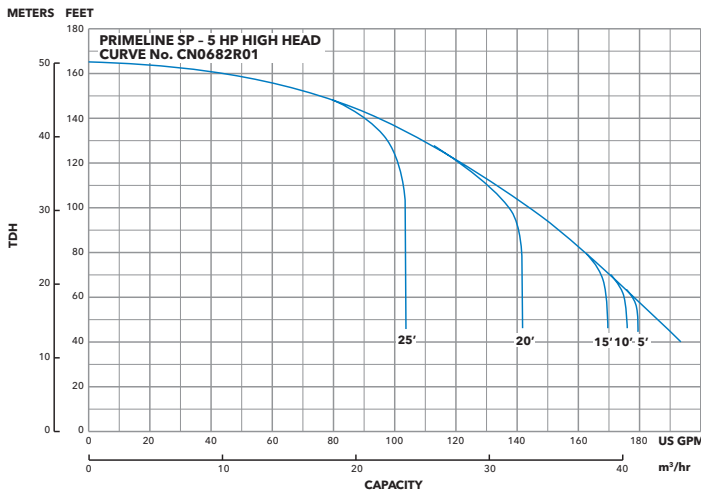
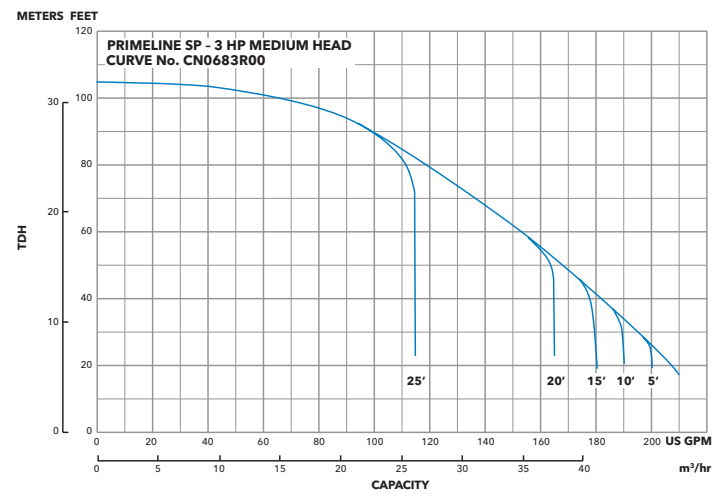
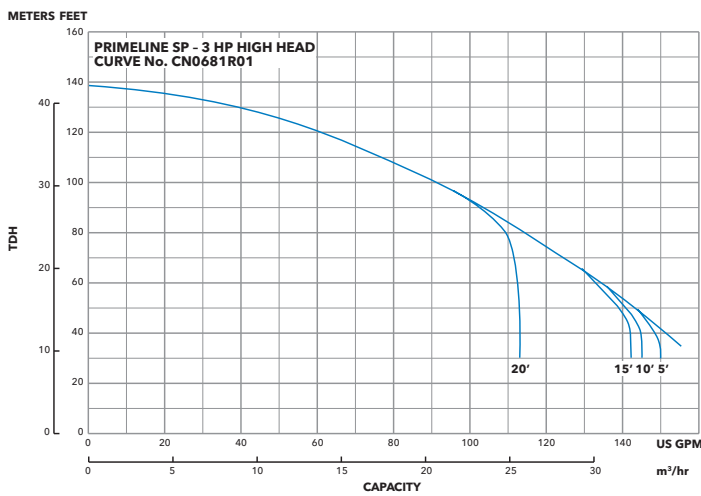


## General information on Self-Priming pumps

- General water handling in applications where the liquid level is below the pump.
- Models are available with electric motor, or bearing frame depending on installation requirements.
- Ideal for irrigation, emergency cellar draining and farm water supply.

## PRIME LINE SP®

- Enclosed Impeller, Bronze Fitted





# Self-Priming End Suction



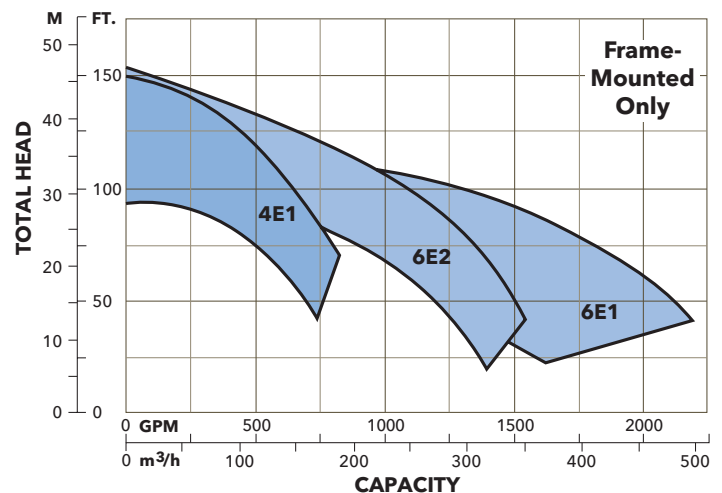
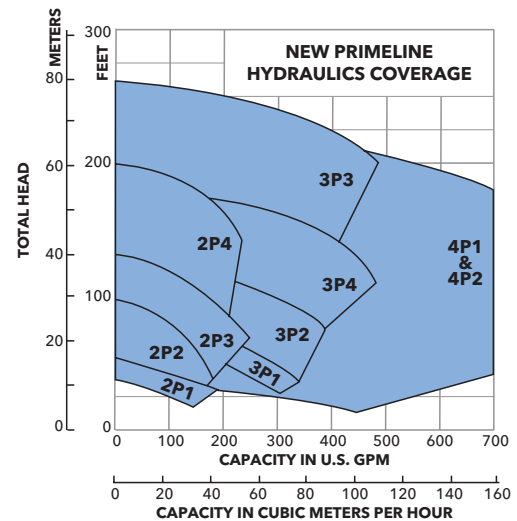
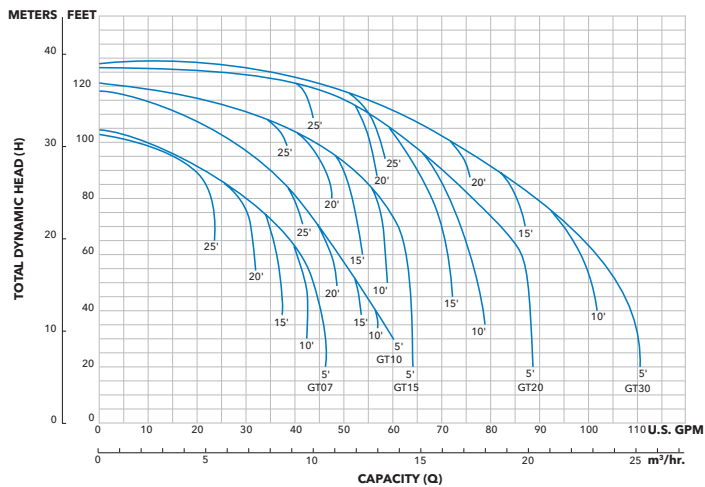
## IRRIGATOR® GT

- Self Priming design
- Field Serviceable
- Strong and Durable cast iron casing design
- Excellent corrosion and abrasion resistance materials
- Optional Silicone Brass Impeller



## PRIME LINE®

- Self-Priming Centrifugal Pumps
- Internal suction check valve
- Available in close-coupled and frame-mounted design

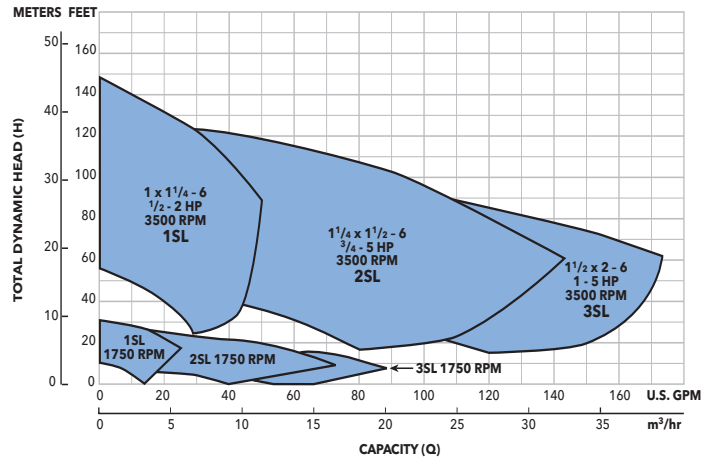


# Vertically Immersed End Suction



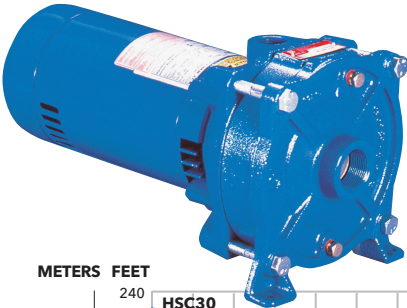
## NPV

- 304 and 316 stainless steel pumps for machine tool, wash system and tank mount applications.
- Pump head is immersed in pumped liquid. May be set at various depths depending on tank.
- Single stage and high pressure multistage versions are available.
- Available with both open and enclosed impellers



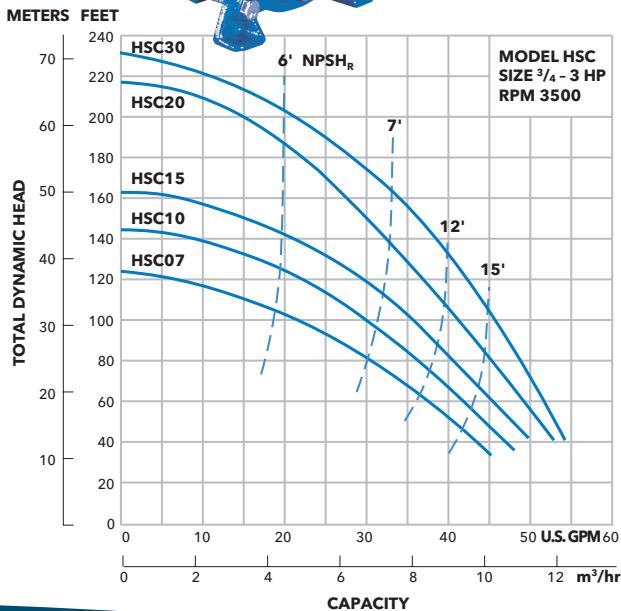
# High Pressure Multistage

- Stainless steel or cast iron pumps for pressure boosting.
- Applications: potable water, boiler feed, filtration, RO and Pure Water
- Broad coverage range • Increased efficiency
- Improved serviceability - fast easy seal replacement without removing the motor
- Compatible with the Hydrovar or Aquavar CPC Variable Speed Pump Controllers
- Flows to 750 GPM, Heads to 1150'



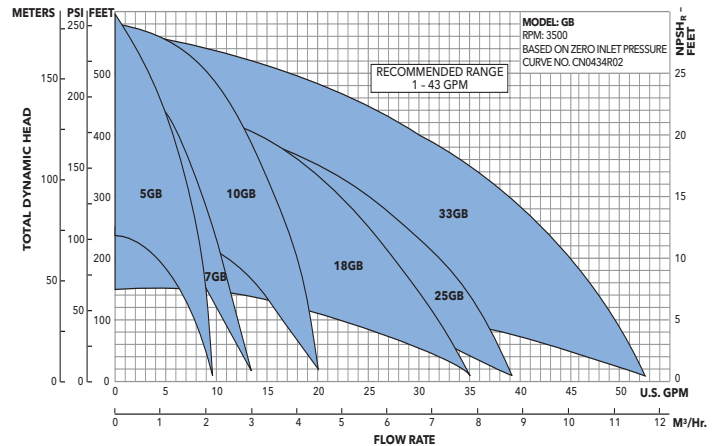
## HSC

- Cast Iron



## GB

- Cast Iron or 304 Stainless Steel



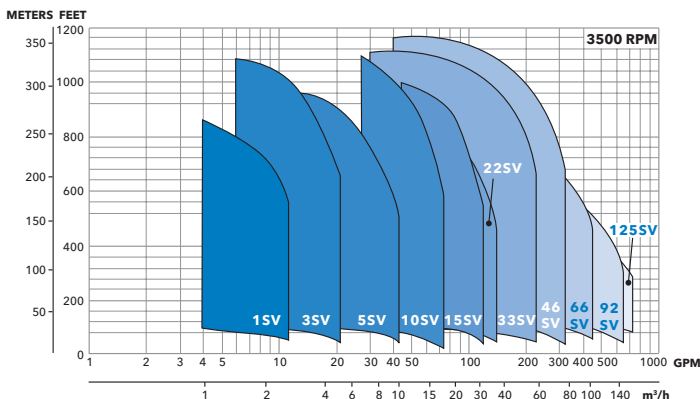
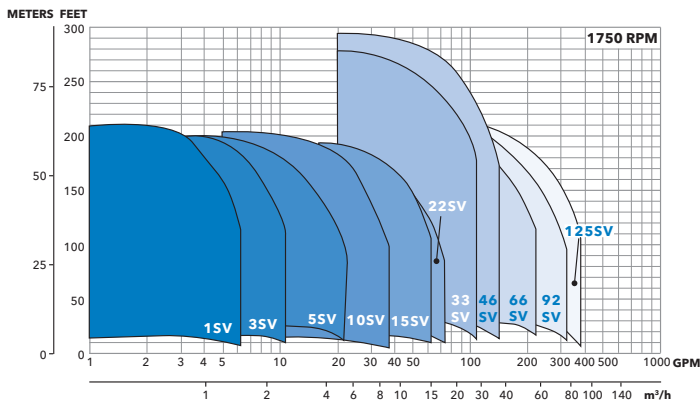
# High Pressure Multistage



## e-SV

### Vertical Multistage Pumps

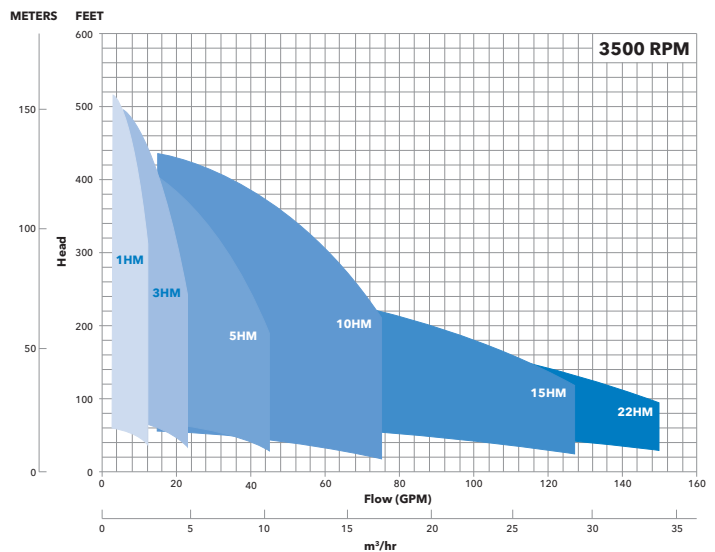
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- Broad coverage range
- Increased efficiency
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- Flows to 750 GPM, Heads to 1150'



## e-HM

### Horizontal Multistage Pumps

- The best solution for most buildings; from family houses up to 10 floor apartment buildings
- Thick metal casing, high-quality bearings and stainless steel guarantees a long service life.
- High-efficiency hydraulics, motor and thick metal pump body keep the noise level to a minimum.
- State-of-the-art hydraulics with best-in class efficiency mean the lowest possible operating costs.
- Flow rate: up to 127 GPM, Heads: up to 525 feet

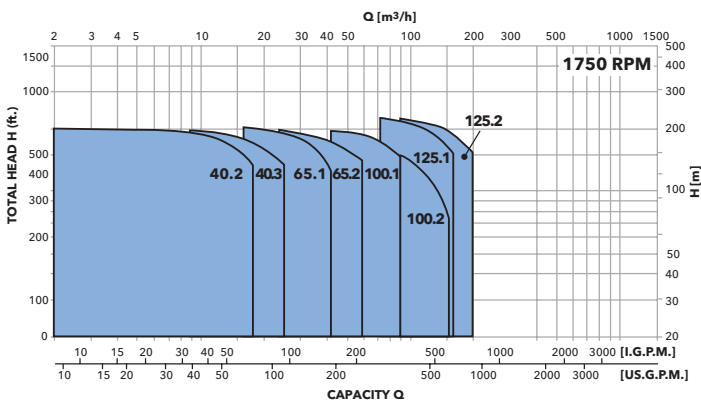
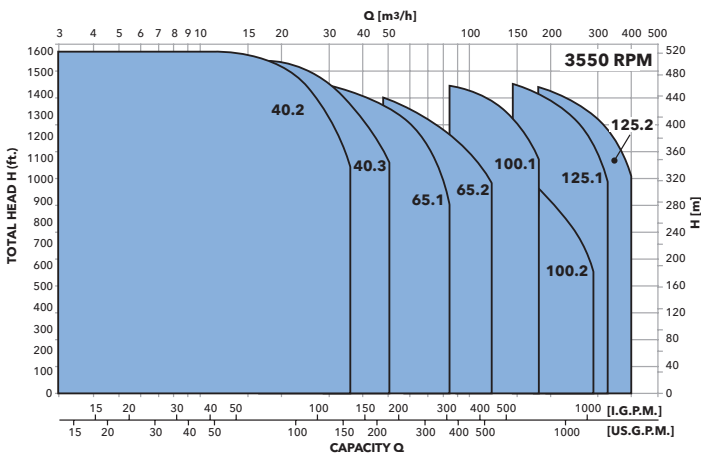


# High Pressure Vertical Pumps



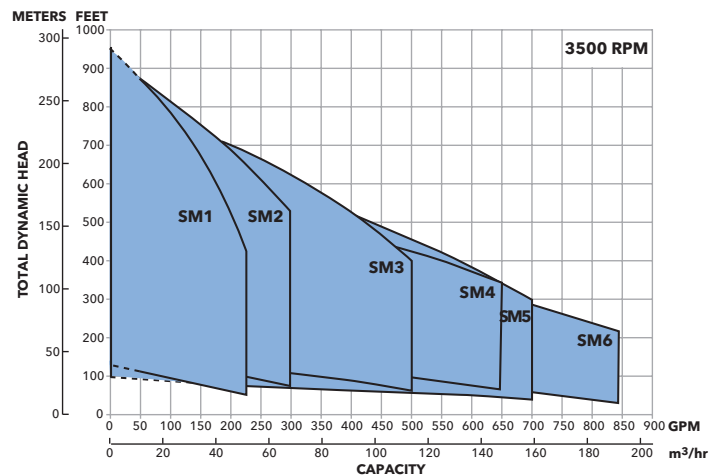
## MPVN

- Vertical High Pressure Multistage Pump
- Rugged vertical segmented ring construction.
- Available in all iron, stainless fitted or all stainless for fluid compatibility.
- Recommended for a wide variety of industrial, commercial, municipal and building trades pressure boosting applications.



## SMVT

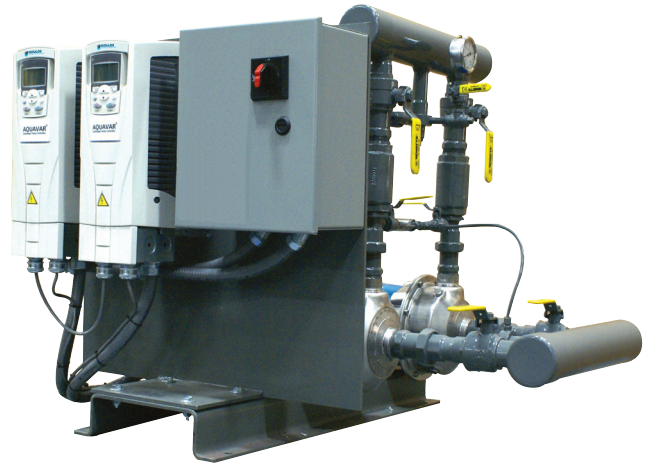
- Surface mounted, multistage vertical turbine pumps. Turbine hydraulics, in-line configuration.
- High efficiency, high pressure design.
- Heavy duty cast iron stainless steel fitted bowl assembly.
- Motor coupling is precision balanced for vibration-free operation.
- Ideal for limited space environments, packaging, and water booster applications.
- Flows from 50 to 850 GPM. TDH up to 880 feet.
- Pre-engineered product with construction options such as stainless steel flanged casing, 50 Hz and horizontal configurations.
- Unit can be serviced without disturbing system piping arrangement.
- Mechanical cartridge-type seal can be replaced without removing motor.



# Variable Speed Pressure Booster Packages



AquaBoost VS Simplex



AquaBoost VS Duplex

## AquaBoost VS

Specifically designed as a compact, easy to install and maintain package for applications where sufficient main pressure is not available or elevation is a problem. Typical installations include residences, apartment buildings, condominiums and light commercial applications.

- All systems are UL listed as packaged pumping systems.
- Compact Footprint - Ideal for retrofit installations and new construction.
- 115V, 208V, 230V, 380V, 460V, 575V models available.
- Each system is fabricated with Goulds Water Technology 316L stainless steel centrifugal pumps.
- Standard TEFC Premium Efficiency Motors
- System protection from overvoltage, undervoltage, blocked suction, cavitation, NPSHa, phase loss, short circuit (protection capabilities vary for AquaBoost VS and AquaBoost CS), transducer failure and motor current overload.
- Liquid temperatures up to 105° F
- Ambient temperatures up to 104° F
- Flow up to 220 GPM. Maximum boost of 55 PSI
- Pump run-out protection
- Dry running protection
- Programmable lead/lag alternation (duplex)
- Programmable system pressure starting (VS)
- Fault detection and alarm notification
- Motor Run Relay (CPC)
- Isolation valves (duplex systems)

The AquaBoost VS is available in both one and two pump packages. Simplex capacities range from 20 to 110 GPM at a boost of up to 55 psig. Duplex capacities are up to 220 GPM.

**All Aquabooast Packaged Systems are certified ANSI/ NSF-61/NSF-61 Annex G**

# Variable Speed Pressure Booster Packages



AquaForce XL  
(2-4 pumps and max 75 HP)



AquaForce e-MT  
(2-4 pumps and max 75 HP)



AquaForce e-HV  
(2-4 pumps and max 15 HP)

## AquaForce®

- Engineered Pump Stations
- All systems are cUL Listed
- NSF/ANSI 61 and 372 certified for potable water
- Maximum footprint, on most sizes, allow systems to fit through standard doorways.
- Power: 3 x 208, 230, 460, 575V
- e-SV stainless steel multistage pumps or NPE or SSH 316L stainless steel end suction pumps.
- Premium efficiency "off the shelf" motors by Baldor or USEM Motors
- System protection from over voltage, under voltage, blocked suction, cavitation, NPSHa, phase loss, short circuit, transducer failure and motor overload.
- Liquid temperatures up to 212° F
- Maximum operating pressures up to 300 psi
- Pump run-out protection
- Dry running protection
- Programmable lead/lag alternation.
- Programmable system curve/ friction loss compensation
- Programmable system pressure starting
- Fault detection and alarms relay
- Motor run relay
- Programmable soft start
- 304 S.S. manifolds
- Isolation valves

# Variable Speed Control

## Packaged Hydrovar

**NOTE:** Pressure Transducer, fused disconnect, complete wiring and conduit included.



Pump Mounted Variable Speed Controller

## HYDROVAR®

The Hydrovar variable speed controller matches performance to system demand. The Hydrovar is easily mounted directly on the motor of the pump and will fit on any standard TEFC NEMA motor. This makes the Hydrovar an excellent choice for retrofitting and upgrading of fixed speed systems. There's no need for an external control panel when using Hydrovar.

### APPLICATIONS

For centrifugal pump systems requiring constant pressure, flow control or differential pressure in commercial and municipal applications.

### FEATURES

#### Easy Set-up and Commissioning

- Install directly on any TEFC motor without running new power to a wall-mounted control system
- Quick start-up guide and intuitive menu system
- Advanced programming features to optimize for almost any application.
- Large LCD display with easy to read pump language - pump on, system pressure, fault codes and system conditions

#### Control

- Control up to 8 pumps in parallel
- Constant pressure
- Constant flow
- Via 4-20mA or 0-10 V external signal

#### Safety

- Embedded THDi filter to reduce harmonic interference
- Stops the pump at zero flow
- Integrated soft start/stop: no water hammer and lower starting current
- Dry relay contacts available for pump run and fault.
- Built-in protection
  - Over / under voltage
  - Overcurrent / output short protection
  - Low water level
  - Sensor failure
  - Motor over temperature
  - Inverter over temperature
  - Minimum threshold / conveyor limit

# Variable Speed Control



## AQUAVAR® IPC

### Optimized for Pumps

- Wide range of standard and permanent magnet motors with power up to 90 kw / 600 hp
- Developed by pump experts and optimized for controlling pumps
- Submersible and above ground applications

### Quick set up and ease of use

- Easier start-up and programming with Start-Up Genie
- Two wire multi-pump connection for faster installation
- Hand on, Off, and Auto-On buttons available for easy pump operation at the keypad. No toggling between local and remote operation

### Helping to Improve Your Performance

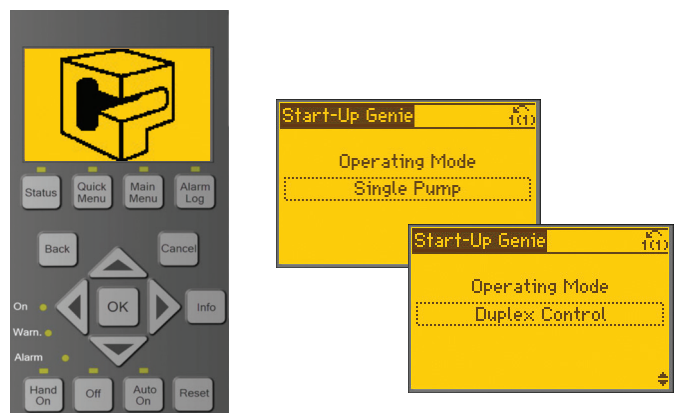
- Multi-pump configuration for up to four (4) pumps - no need for PLC
- System redundancy with multi-master control in case of drive failure

### Standard for every drive

- Wide range of voltage and enclosure options
- True 208V coverage
- Dedicated single phase input
- Remote commissioning and monitoring with USB Connectivity and software
- In-panel or handheld keypad with backlit display
- Alarm Log for last 5 alarms and maintenance events
- EMC/RFI filters and Dual DC-link reactors to reduce drive noise emissions and interference
- I/O expansion cards, factory installed or field configured

## It's an easy start with the Aquavar Genie

The Aquavar Controller Genie quickly and easily guides you through setup in as little as 15 minutes. Asking for only the required parameters, the Genie will automatically configure your set up to the optimal settings for the specific application - eliminating the guesswork in set up. The Aquavar controller can be further customized through the Genie for those applications with pump protections, I/O options, and multi-pump operation to get your pump system working just the way you need.





# Variable Speed Control



## AQUAVAR® CPC Wall Mounted Version

The Aquavar CPC is a variable frequency drive and pump specific PLC in one compact unit, that will vary the speed of the motor to maintain a consistent pressure, flow, temperature or level.

- Start-up "wizards" expedite the programming process.
- Removable control panel/display.
- Fully backlit display with large text makes the control pad easy to read.
- Transducer assembly (0-300 psi) included for constant pressure.
- Protect the pump from cavitation, dead head and blocked suction.
- Protect the motor from short circuit, phase loss, overload, undervoltage, overvoltage.
- Input choke reduces harmonics and provides 3-5% impedance line reactor.
- EMC/RFI filters reduce drive noise emissions and interference.
- MODBUS® compatible. MODBUS is standard protocol with SCADA networks.

- Capable of controlling up to 3 fixed speed pumps, with one drive.
- Multipump control for up to 4 pumps, without additional PLC's or control panels.
- Auto lead/lag and switching control built in.

### Ratings and Enclosures

- NEMA 1 (indoor use) standard. Other enclosures available upon request.
- 1 - 200 HP (frame R1 - R6) wall mounted, 250 - 550 HP (frame R7 and R8) floor mounted.
- Ambient temperature 5° F - 104° F. Higher temperatures can be achieved using optional enclosure upgrades and derating factor for up to 122° F.
- At altitudes from 0 to 3300 feet rated current is available, for every 328 feet above 3300 feet the current must be derated 1%. Maximum 6600 feet (consult factory above 6600 feet).
- Relative humidity lower than 95% without condensation.
- UL 508C compliant. UL, cUL, CE approved.

### Electrical Characteristics

#### Input Power

- 3 phase 380 V to 480 V +10%/-15%
- Frequency 48 to 63 Hz
- 1 phase 208 V to 240 V +10%/-15%
- .98 power factor
- 3 phase 208 V to 240 V +10%/-15%

#### Output Power

- 3 phase from 0 to  $V_{supply}$   
(All motors must be 3 phase)
- 0 to 60 Hz frequency

# Variable Speed Controls



## AQUAVAR® SPD Simplex Variable Speed Pump Controller

### Easy Set-up

Pre-set for surface motor characteristics. Pre-wired and tested transducer. Touch button pressure setting. No complicated menus or electrical jargon to cope with. Total set up time including wiring is less than 30 minutes.

### Dual Phase

The same drive can be used for either three phase or single phase input (de-rated). Both configurations are UL/CUL approved for inventory flexibility.

### Transducer

The pressure transducer is included with the drive so there is no need for separate sourcing and compatibility checks. The transducer is pre-wired and tested.

### Full Diagnostics

In addition to typical electrical protection and diagnostics, it has a full range of pump protection features such as bound pump or motor shut down, low water or loss of prime shut down. These added features require no added input devices.

### Program Security

The flashing LED status indicator will not fade in outdoor use the way LCD screens do, and the internal single push button discourages tampering by untrained operating or maintenance personnel.

### Hand/Auto Option

Allows the drive to be run full speed for longer periods of time as in the case of system start up. Turning the control back to auto resumes the automatic pressure tracking and control.

### Remote on/off

Permits external control by timers (irrigation), float or pressure switches (tank draining) or manual control. Reduces the need for separate patch panels.

### Remote Monitoring

External monitors may be connected to the drive for pump running speed (Hz), pump on, and system fault. The fault indicator can also be connected to devices like an auto-dialer. This enables control of pumps and drives in un-manned locations.

### Dual Set Point

The SPD has the capability to be programmed with two pressure set points. An external contact such as a timer can be used to change between them, so that a booster pump serving both a building and an irrigation system can do both jobs without manual resets.

# Variable Speed Controls





## AQUAVAR® ABII

### Variable Speed Constant Pressure Systems

#### 1151AB2, 1AB2 and 2AB2

- Input Power\* – 1151AB2 115V +/- 15%, 50/60Hz  
1AB2, 2AB2 230V +/- 15% 50/60Hz  
(controller only)
- Output Power – Up to 230V three phase (based on input voltage). Motor rated for 208-230V, ±10%.
- Maximum Output Current – 4.2 amps - 1151AB2 and 1AB2; 6.9 amps - 2AB2
- Input Controls – Up and down buttons to set pressure.
- Signal Lights – Power on, pump running, inverter stopped, pump stopped, standby, faults/errors.
- Electrical Efficiency – Over 95%

- Protection Against – Short circuit, under voltage, overload, motor temperature, dead heading, run out, suction loss, sensor fault, bound pump, over voltage, static discharge.
  - Ambient Temperature – 34° F to 104° F
  - Maximum Humidity – 95% at 104° F, non-condensing
  - Air Pollution – Avoid mounting in areas with excessive dust, acids, corrosives and salts.
  - Approvals –  
  - Controller Enclosure – NEMA 3R, IP 43 (Rain-tight)
  - Mounting – Wall mount with mounting hardware.
  - Cooling – Convection with heat sink.
  - Transducer – 0.5 - 4.5 VDC with 5 VDC power supply, 100 psi range, 80-inch 3-core cable.
  - Input Wire – 5 feet of 14 gauge cable. Cable is pre-wired to controller and junction box.
  - Output Wire – 10 feet of 14 gauge cable. Cable is pre-wired to controller and pump motor (when provided).
- \* Low input voltage may affect motor operation.

#### Pressure Range

Nominal Range – Field adjustable from 20 - 85 psi, total system pressure.

**⚠ WARNING DO NOT SET REQUIRED SYSTEM PRESSURE ABOVE 85 PSI. SEVERE DAMAGE TO PLUMBING COULD RESULT.**

- Available as a complete booster system with several pump options.



## Distributor Information

Xylem Inc. manufactures professional grade pumps, controls and accessories for commercial and residential sump, effluent and wastewater applications. Our nationwide distribution and U.S.-based manufacturing facilities can get you the products you need quickly. Backed by over 160 years in the pump business and the Goulds Water Technology customer support and service that is second to none.

Xylem Inc. is a global leader in the water technologies market. The Goulds Water Technology product portfolio includes submersible and line shaft turbine, 4" submersible, jet, wastewater and centrifugal pumps for residential, agriculture and irrigation, sewage and drainage, building services, commercial and light industrial use.

**For more information visit [www.gouldswatertechnology.com](http://www.gouldswatertechnology.com) or [www.centripro.com](http://www.centripro.com).**



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