



VERDERFLEX PERISTALTIC PUMPS

Smart Tube Pumps

Any questions? You may still have questions and/or comments after reading this brochure. Please feel free to contact us on +44 (0)1924 221 020. You can also respond via email to info@verderflex.com. For more information about Verderflex please visit our website www.verderflex.com



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VERDER
 passion for pumps

Verderflex Smart Tube Pumps

The Heart Of The Process

The Verderflex® Smart series is an excellent, low dosage pump capable of handling viscous, abrasive and chemically aggressive media with total containment and leak free pumping.

The pump has an easy-fit saddle mechanism which has been developed to be operated with one hand and because the tube is top-loaded, changing the tubes on the Verderflex® Smart is much simpler than other tube pumps.

The range has four drive options allowing the pumps to be programmed with different functions.

This means the pump can be operated either manually, remotely or through a pre-programmed control system. Add to this a choice of four pump heads providing flow rates from 32 to 27,000 ml/min per channel and the capability of expanding up to two channels on a single drive.



Without any seals, or valves a Verderflex peristaltic pump is ideal for handling:

- Abrasive fluids
- Corrosive fluids
- Viscous fluids
- Shear sensitive fluids
- High density fluids
- High solid content fluids

Features and Benefits of Verderflex Smart Tube Pumps

Pump head

- Easy-fit tube saddle for rapid tube changes
- Easily adjustable tube clamps
- Saddle manufactured from chemically resistant polyoxymethylene (POM)
- Transparent front cover (Polycarbonate)
- Can be expanded to a maximum of two pump heads
- Pressure range 0 - 2 bar
- A choice of 3, or low-pulsation 6, roller heads
- Safety interlock to stop the drive when removing the saddle (SSD)
- In-line tube arrangement, providing a kink free tube solution

Drive

- Robust powder-coated aluminium housing (IP55)
- Ergonomic construction with a clear, accessible display for clockwise/anti-clockwise, On/Off and rpm control
- Illuminated display which is clearly legible

Unique Features

Illuminated Display

Easy to read from all angles, the operating system has been designed so that it is simple and logical to navigate.

User Friendly Keypad

Located above the drive allows easy access for both right and left handed users. Large keypad can be operated whilst wearing gloves.

Multiple Heads

Flexibility to add an additional head, doubling the productivity of the pump.

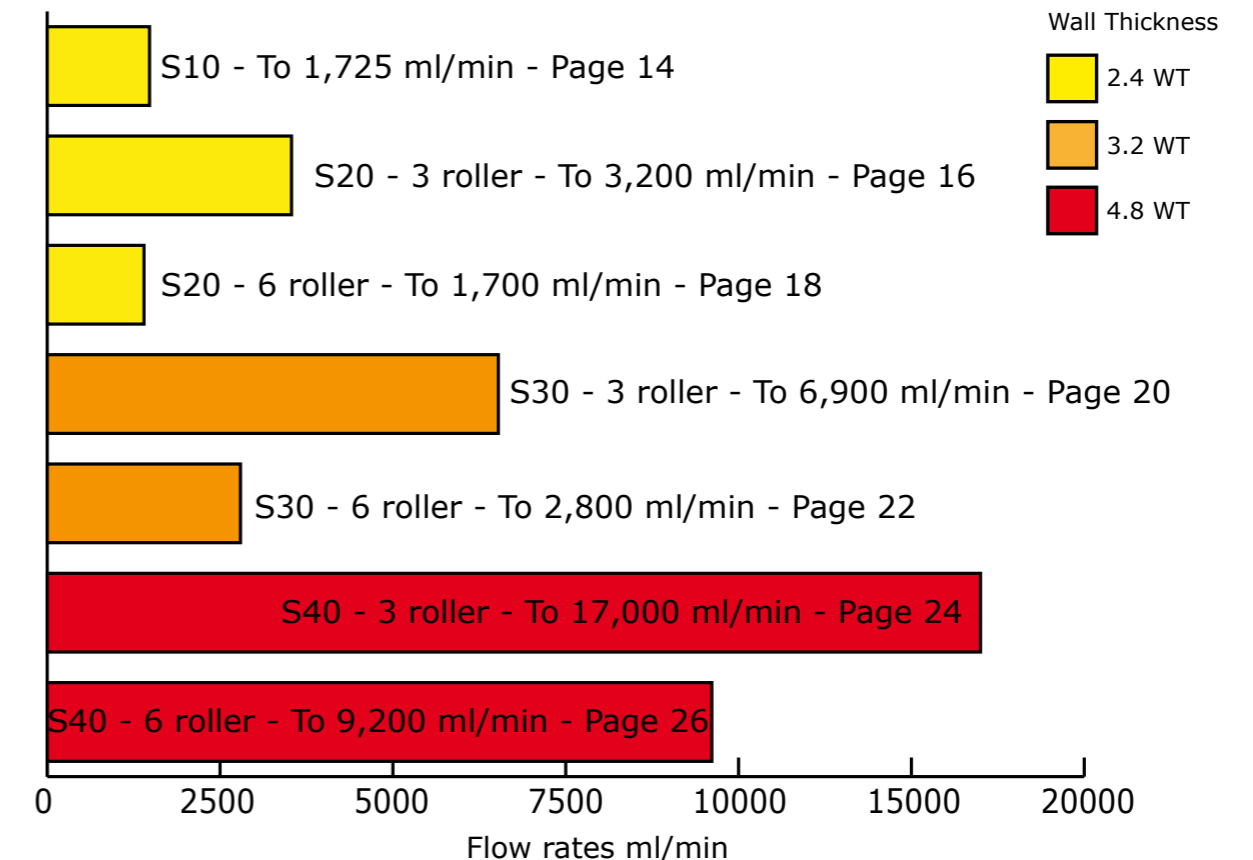
Pulse Free Operation

Low pulsation 6 roller pump heads are available for the Smart S20, S30 and S40 pumps.

Pulse free operation can also be achieved by splitting the flow between two channels.



Quick Pump Selector



Technical Overview

The drives are available in four options:

- B model — standard on/off, left/right functions
- C model — remotely controlled analogue operation
- L model — programmable & remote operation
- SCADA — specifically for use with SCADA

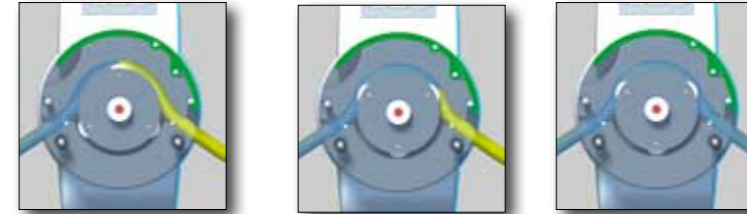
	B Model	C Model	L Model	SCADA Model
Speed	Max 240 rpm	Max 240 rpm	Max 240 rpm	Max 240 rpm
Turndown Ratio	24:1	24:1	24:1	24:1
Multi-channel	up to 2 channels	up to 2 channels	up to 2 channels	1 channel only
Analogue Remote Control	x	0-10v / 4 - 20mA	0-10v / 4 - 20mA	0-10v / 4 - 20mA
RS232 / 485	x	x	✓	x
Calibration	x	x	✓	x
Runback	x	x	✓	x
Protection Class	IP55 / NEMA 4	IP55 / NEMA 4	IP55 / NEMA 4	IP55 / NEMA 4
Keypad	✓	✓	✓	✓
Dosing	x	x	✓	✓

Description	Material			
	S10	S20	S30	S40
Backplate / Clampbase / Saddle	POM (Black)			
Rotor	POM (Black)	POM (Black)	POM (Black)	Alluminium Alloy
Handle & Catch	Aluminium			
Clamp / Block / Adjustment Screw / Nut	Stainless Steel (304)			
Drive Shaft / Coupling / Tiebar	Stainless Steel (304)			
Saddle / Handle / Roller Pins	Stainless Steel Grade (316)			
Roller	Stainless Steel (304)			
Frontplate	PMMA (Clear)			
Magnet	Neodymium			
Bearings	Stainless Steel EN1.4125 (440c)			
Weight (drive including head)	12.3kg (27.1lb)	12.5kg (27.6lb)	22kg (48.5lb)	23kg (50.7lb)
Voltage	115 / 230V			
Frequency	50 / 60 Hz			
Power Consumption	250W	250W	330W	330W

Working Principle

The principle of the peristaltic tube pump is based on alternating compression and relaxation of the tube within the pump head, operating in a similar way to our throat and intestines.

The medium to be pumped does not come into direct contact with any of the moving parts of the pump and is totally contained within a tube. The rollers of the pump head pass along the length of the tube compressing it totally closed and upon restitution of the tube a strong vacuum is formed which draws the product in and along the tube.



Each rotation of the pump displaces a constant quantity of product with high efficiency which allows a Verderflex® Smart to be suitable for accurate dosing applications.

Lightning Fast Tube Change



The easy-fit tube saddle is designed for single handed operation, allowing the tube to be loaded quickly and easily from above.

- Insert the tube on top of the rollers
- Fit the saddle to one set of dowels
- Open up the lever and fit the claw over the other set of dowels
- Push the lever down to lock the saddle into place

Features and Benefits

Peristaltic pumps are excellent problem solving pumps, ideal when the product is particularly abrasive, corrosive, shear sensitive or viscous.

Sterility by Design

Only the easy to sterilise tube comes into contact with the fluid, ideal for hygienic or aseptic pumping.

No Slip for Repeatable Dosing

The pumps have no internal backflow or slip giving accurate dosing.

Dry Running for Ease of Use

The tube runs on rollers and can run dry for short periods of time without an expensive service cost.

No Seals

Eliminates unsightly drips and minimises regular maintenance

Ideal for Off Gassing

Peristaltic pumps are a proven way to pump liquids containing trapped air or likely to off gas, such as many sterilising solutions.

With such features and benefits, it's no wonder that peristaltic pumps are one of the fastest growing pump types in the world.

Verderflex Smart pumps are suitable for a wide range of applications:

Vending Machines, Drink Dispensing, Food Preparation

Water, coffee, oils, dyes, dairy, cereals, confectionary, shear sensitive products

Printing and Packaging

Inks, paints and glue

Dishwashers, Battery Filling, Chemical Cleaning, Equipment Sterilising, Seed Coating

Biocides, hydrogen peroxide, sodium hypochlorite, caustic soda

Laboratory Sampling Systems

Biological broths to polluted streams

Air Conditioning and Condensates

Re-circulating fragrances and removing condensate

Gentle Action for Sensitive Liquids

Peristaltic pumps have a gentle pumping action, ideal for shear sensitive products such as live cell cultures.

Low Maintenance Costs

Peristaltic pumps are low ownership cost pumps with a tube or tube element that can be changed in seconds for minimal maintenance costs.

Accurate Dosing

Pump can have a repeatability of $\pm 0.5\%$ and metering capabilities of $\pm 2\%$ (dependant upon the size of dose).

Self Priming with High Suction for Easy Tank Changeovers

The pumps can self-prime to 8m or 26 feet of water, ideal for emptying bulk packs of liquids where self priming eases the process.

Control Functions Explained

0-10V

0-10V is one of the earliest and simplest electronic control systems; the analogue control signal is a DC voltage that varies between zero and ten volts. The controlled pump responds to a calibrated or scaled input from a device such as a sensor or flow meter which has a calibrated or scaled output so that at 10V it would run at 100% of its potential output, and at 0V it is at 0% output (i.e. "Off").

4-20mA

The 4-20mA current loop is a more robust analogue control system than 0-10V with an active zero that allows detection of a broken cable. 4 to 20mA is an extremely common analogue system being found as a scalable output on many pH sensors, chart recorders, flow meters and similar devices that can be used to vary the pump's speed and flow as the sensed parameters change making it ideal for variable flow dosing systems.

SCADA

SCADA (Supervisory Control and Data Acquisition) or remote I/O systems are based around 4 to 20mA signalling with an input that controls the pump's speed (and flow); a 4 to 20mA output that confirms the pump's actual speed with a number of voltage free contacts that allow control and monitoring of the pump's operational status. Smart SCADA pumps have easy access external cable connection units that ease the process of wiring the pumps into external systems and avoid the problems of connecting multi-core cables into restricted access enclosures.

RS-232

RS-232 is probably the original digital serial communications protocol, originating in telecommunications and is found on many common computers. It is ideal for short range control of a single pump such as might be necessary when the computer can be located alongside the pump.

RS-485

RS-485 is a more advanced digital protocol than RS-232, addressing limitations such as signalling distance and noise immunity. RS 485 has the advantage that a single master computer can be used to control a network of individually addressed pumps reducing cabling requirements and easing system integration concerns.



SPECIFYING A PERISTALTIC PUMP

There are many factors that influence which combination of pump head and tube is used on any particular application.

PUMP PERFORMANCE

Flow Rate

Any peristaltic pump's flow is related to the pump's flow per revolution and the pump speed. The flow per revolution is a function of the head design and the tube size. Each pump head has a speed-flow characteristic given as part of the pump head data.

Suction Lift

With any tube pump, flow rate decreases as suction lift increases. The lost flow varies with tube size and generally, the smaller the tube internal diameter the lower the suction loss. Additionally, the greater the suction lift the greater the reduction in tube life. Suction loss curves are included for each pump head.

Back Pressure

Increasing back pressure can also result in a minor variation in flow rate and for each size of tubing there is a maximum discharge pressure beyond which the tubing exceeds its elastic limit and permanently deforms. Data on each individual pump head includes appropriate discharge pressure performance curves along with maximum working pressure for each tube size.

PUMPED LIQUID

Chemical Composition

The liquid being pumped is a fundamental parameter as the tubing must be able to withstand any chemical attack associated with the liquid. Many plastics can be extruded into highly resistive tubing but at the expense of mechanical strength and possibly tubing cost. Verderflex's experience is this compromise can severely limit the real tubing material selected for use and separate pages detail the company's range of standard and special order tube materials.

Viscosity

Increasing viscosity reduces the capability of the tube to fill (prime) and consequently the pump head's flow rate will reduce.

Specific Gravity (SG)

A product's specific gravity (the ratio of a product's density to the density of water) can increase the required suction lift and consequently the flow loss can increase e.g. a product with an SG of 1.5 being lifted 4m has a lift equal to 6m of water and consequently the flow loss is higher than 4m of water. This may result in a larger pump being required combined with a smaller ID tube (smaller ID tubes have superior lifting capabilities than large ID tubes for a given wall thickness). Suction lift loss curves are scaled in metres and feet of water column i.e. they are normalised to water.

Particles/Solids

Solid size may be a fundamental block to any tube pump – if the solid size is too large the product may not flow through the tube and simply clog the tube so no liquid flows. If solids are relatively small then tube ID must be considered, but solids can be pumped.

Particle size should not exceed 15% of tube internal cross sectional area.



Temperature

Increasing temperatures affect the choice of tube in many ways; the tube may become more flexible as it softens with increasing temperature leading to poor tube recovery and a loss of flow, suction lift and discharge pressure capabilities.

There are normally several temperature limits

- The absolute maximum temperature the tubing can withstand but at this temperature the tubing is so soft it can't be used in a pump and splits
- The maximum temperature that an individual tube can withstand repeatedly e.g. When the tube is SIPed
- The maximum liquid temperature that a tube can withstand when it is in a pump
- The maximum ambient temperature that the pump's electronics will withstand

Typical values for Verderprene and Platinum Cured Silicone tubes are

SIP temperature	< 130°C or 266°F
Liquid operating temperature (which is actually the temperature of hot tea in a Vending Machine)	< 85°C or 185°F
Ambient temperature	< 45°C or 113°F

A chemical's aggressiveness may double for every 10°C/18°F above ambient.

OPERATING CONDITIONS

Duty Cycle (On/off time)

There are many different solutions to any pumping situation. Some, such as a 24 hour duty motor and reduced pump speeds may be appropriate when the pump is in continuous operation, whereas more economically specified components will be more appropriate when the pump is only running for a few seconds and then not running for a few minutes.

Environment

All pumps are driven by a motor which needs to be specified to suit its working environment. Factors to consider include the pump's physical location, the ambient temperature, any protective enclosure, cooling clearances and the likelihood of dirt and or moisture ingress.

Frequency of Tube Change

To change or not to change the tube is a vital question to ask when specifying pumps. On one hand, changing the tubing as part of an overall machinery maintenance schedule can maintain sterility in medical applications where meticulous observance of schedules is normal. On the other hand, it may be better to design a pump that runs for a short duration avoiding tube changes and provides a disposable pump with a life of several years, this is typical when the intermittent duty of vending machine applications is considered.

Verderflex Tube Selection

Choosing the best tube for your application

The tube is the heart and soul of any peristaltic pump: a poorly selected tube will result in frequent tube changes and increased overall cost of ownership of any equipment. Conventionally, tube size is stated as Internal Diameter (ID) x Wall Thickness (WT).

Key Tube Selection Issues Include

Chemical Compatibility

Verderprene is an economic, general purpose tubing that resists many chemicals whilst offering excellent dynamic resistance. Some materials have better chemical strength at the expense of mechanical life and material cost.

Life/Duty Cycle

Tubing life is related to the tube's mechanical strength, the number of compressions and the operating cycle. Again, Verderprene is the most economic solution with the best mechanical life.

Graph Demonstrates Relative Tube Life



Suction Lift

Suction lift is determined by a combination of the tube's ID and WT, ideally the smallest tube diameter should be combined with the thickest wall tube and the tube material's inherent restitution properties. Verderprene and Silicone have superior lift capabilities than similar sized materials such as Tygon® or Fluran®.

Cost

Most tubing is produced by thermoplastic extrusion, hence, tubing cost is related to the raw materials used. Highly chemical resistive materials like Tygon® and Viton® are more expensive to produce than Verderprene or Silicone.



Pressure

Increasing the tube's working pressure shortens the expected tube life. For the best tube life performance the smallest tube diameter should be combined with the thickest wall tube.

Safe Tube Working Pressures

WT	Tube ID	Verderprene Bar (PSI)	Silicone Bar (PSI)
2.4 (3/32")	3.2 (1/8")	2.0 (30)	1.2 (18)
	4.8 (3/16")	1.6 (24)	1 (14)
	6.0 (15/64")	1.2 (18)	n/a
	6.4 (1/4")	1 (14)	0.8 (12)
	8.0 (5/16")	0.9 (13)	0.75 (11)
	9.6 (3/8")	0.75 (11)	0.7 (10)

WT	Tube ID	Verderprene Bar (PSI)	Silicone Bar (PSI)
4.8 (3/16")	12.7 (1/2")	1.4 (20)	0.95 (14)
	15.9 (5/8")	1 (14)	0.8 (12)
	19.0 (3/4")	0.9 (13)	0.75 (11)
	25.4 (1.0")	0.75 (11)	0.7 (10)

WT	Tube ID	Verderprene Bar (PSI)	Silicone Bar (PSI)
3.2 (1/8")	3.2 (1/8")	2.3 (34)	n/a
	4.8 (3/16")	2 (28)	n/a
	6.4 (1/4")	1.3 (19)	1 (14)
	8.0 (5/16")	1 (14)	0.7 (10)
	9.6 (3/8")	0.9 (13)	0.6 (9)
	12.7 (1/2")	0.7 (10)	0.5 (8)
	15.9 (5/8")	0.5 (8)	0.45 (7)
	19.0 (3/4")	0.5 (8)	0.45 (7)

Verderprene - General Purpose Tubing

This opaque, cream coloured tube is the most popular choice for tube pumps having:

- Best mechanical strength for optimal lifespan
- Good mechanical recovery for optimal suction lift
- Wide chemical resistance including most oxidising agents
- Low gas permeability
- Temp. range: +10°C to +85°C (50°F to 185°F)
- Food grade, meets FDA, 3-A and NSF criteria
- Can be autoclaved, compatible with most CIP solutions and SIP



Tygon® - Chemical Fluids Tubing

Specifically designed for most fuels and industrial lubricants, Tygon resists the swelling and hardening caused by hydrocarbon based fluids, significantly reduce the risk of failure due to cracking and leakage.

- Temp. range: -37 to +74°C
- Yellow colour for positive identification
- Suitable for fuels, heating oils, glycol, coolants and cutting fluids

Platinum Cured Silicone - For Higher Purity

Platinum cured Silicone is a translucent, odourless tubing with low residuals.

- Autoclavable and is used in many applications
- Good mechanical recovery for optimal suction lift
- Medium gas permeability
- Temp. range: -20°C to +85°C (-4°F to +185°F)
- Medical/ food grade to FDA, USP Class VI and BGW/ BGA XV criteria

Fluran® - Agressive Chemical Tubing

Fluran® is strong, resilient and flexible tube resistant to corrosive chemicals, oils, fuels, solvents and most mineral acids. It can also handle corrosive chemicals at temperatures as high as 204°C.

- Temp. range: - 22 to +85°C (-8°F to +185°F)
- Resists ozone, sunlight and weathering
- Opaque black color helps protect light sensitive fluids

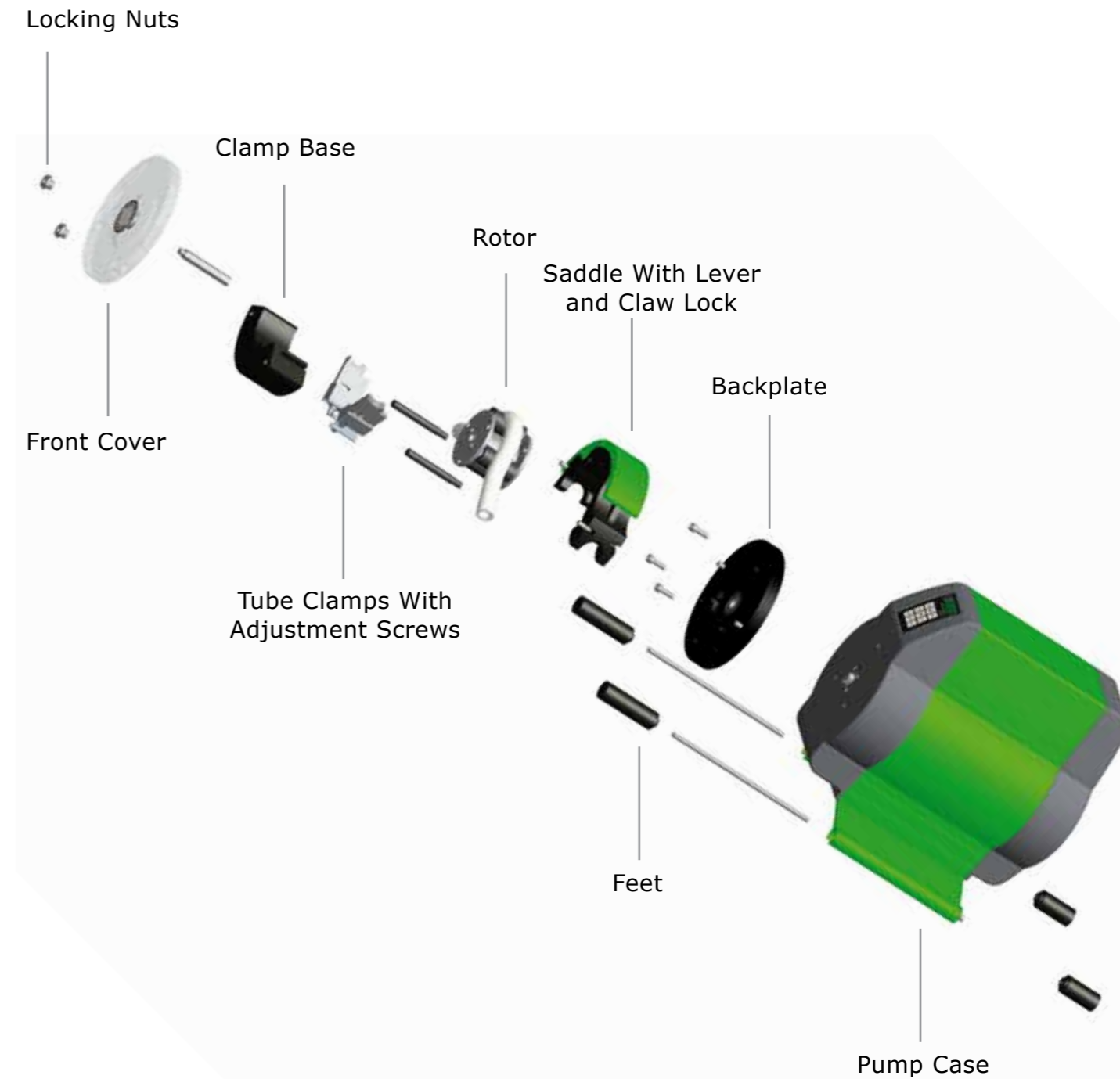
Immersion Testing

With many proprietary solutions chemical compatibility can be verified with an immersion test:

1. Immerse half a tube sample in a closed container for 48 hour.
2. Then compare against the remaining half for signs of attack, swelling, embrittlement or any other kind of deterioration – all of which indicate chemical attack or an unsuitable tube material.

Please contact Verderflex for samples of tubing materials.

Exploded View Drawing



Smart 10 – 3 roller

Physical Properties

Weight	12.3 kg (27.1lb)
Voltage	115V/230V
Frequency	50/60Hz
Power Consumption	250W

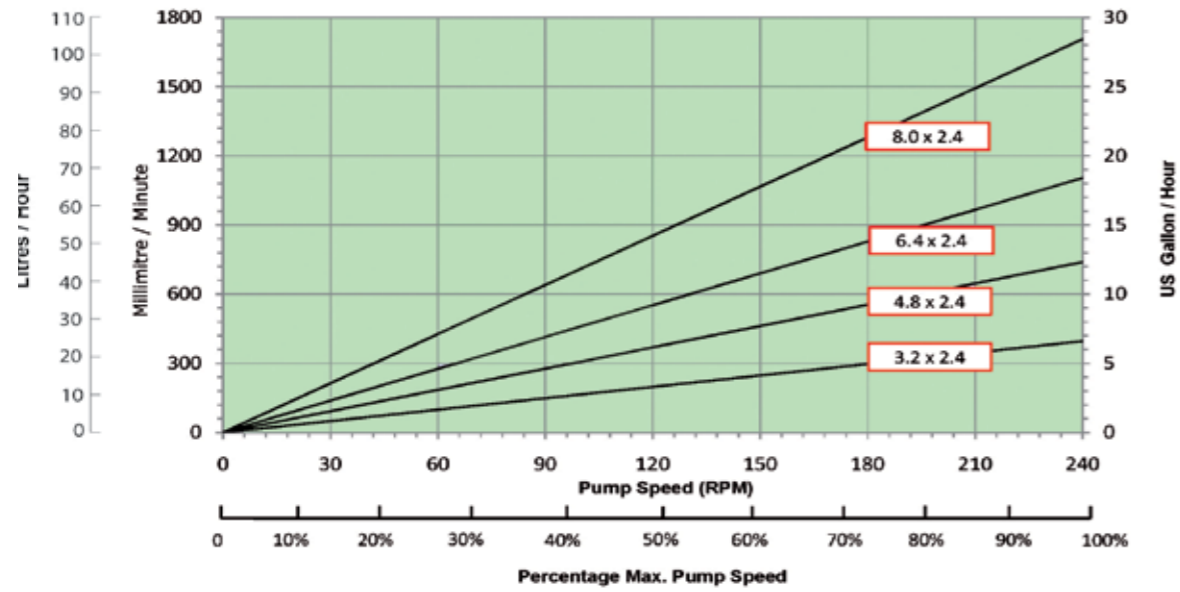
Capacity

Tube ID x Wall (mm)	Min ml/min	US GPH	Max ml/min	US GPH
3.2 x 2.4	32	0.5	450	7.1
4.8 x 2.4	45	0.7	770	12.2
6.4 x 2.4	70	1.1	1,167	18.5
8.0 x 2.4	105	1.6	1,725	28.4



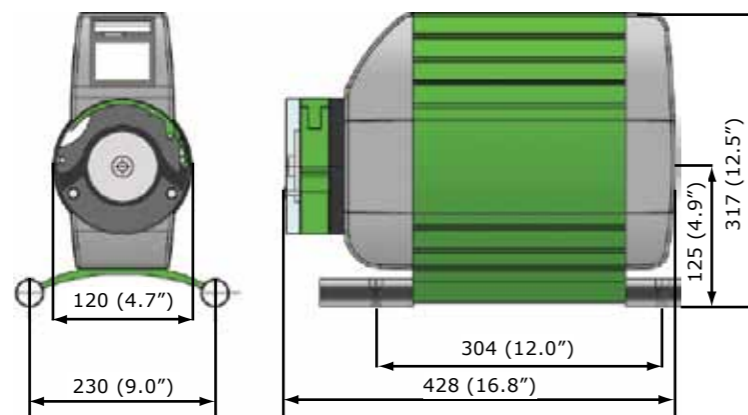
Free Flow Curve

Flow rates with water at 20°C (68°F)



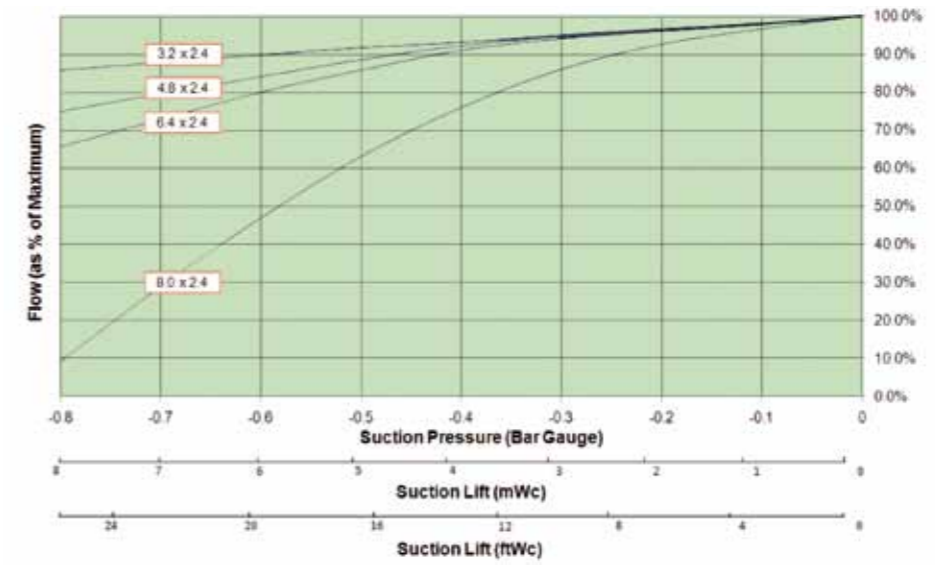
The S10 Pump Head is designed to use a 2.4 mm (3/32") wall thickness tube

General Arrangement Layout

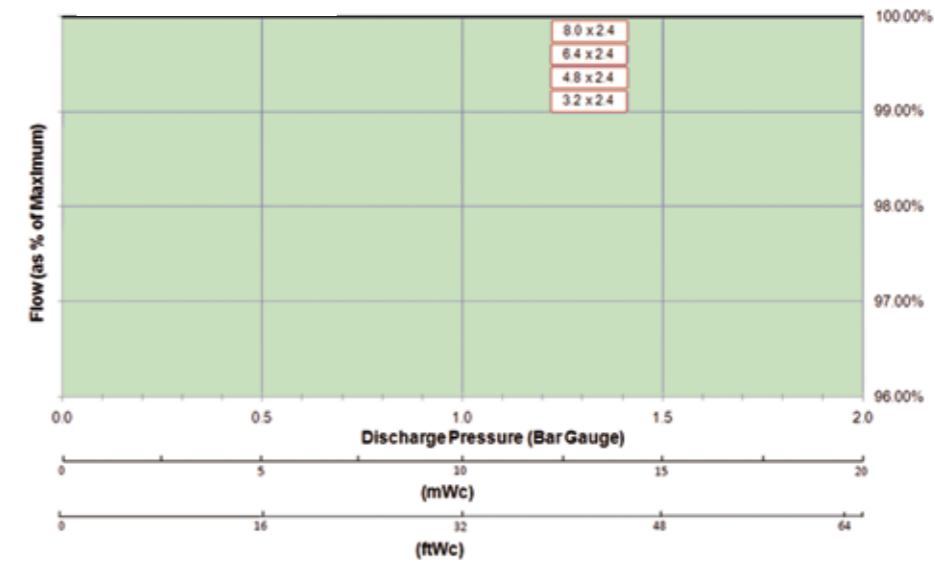


The drawings are for guidance only - all dimensions in millimetres and inches

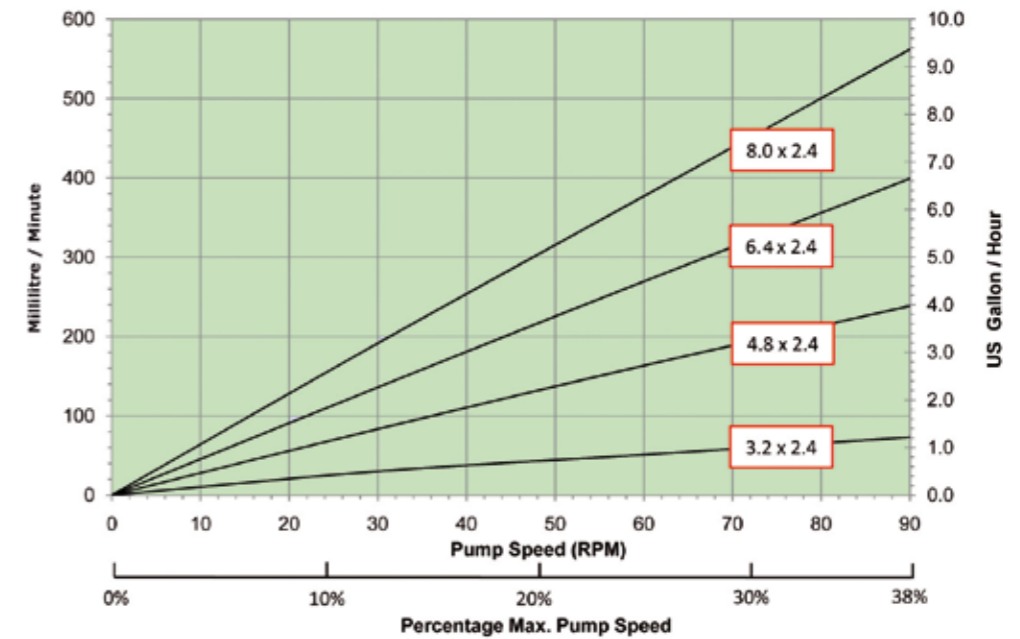
Suction Loss



Discharge



Viscosity



Viscous liquid 350 cps at 22°C

Smart 20 – 3 roller

Physical Properties

Weight	12.5 kg (27.6lb)
Voltage	115V/230V
Frequency	50/60Hz
Power Consumption	250W

Capacity

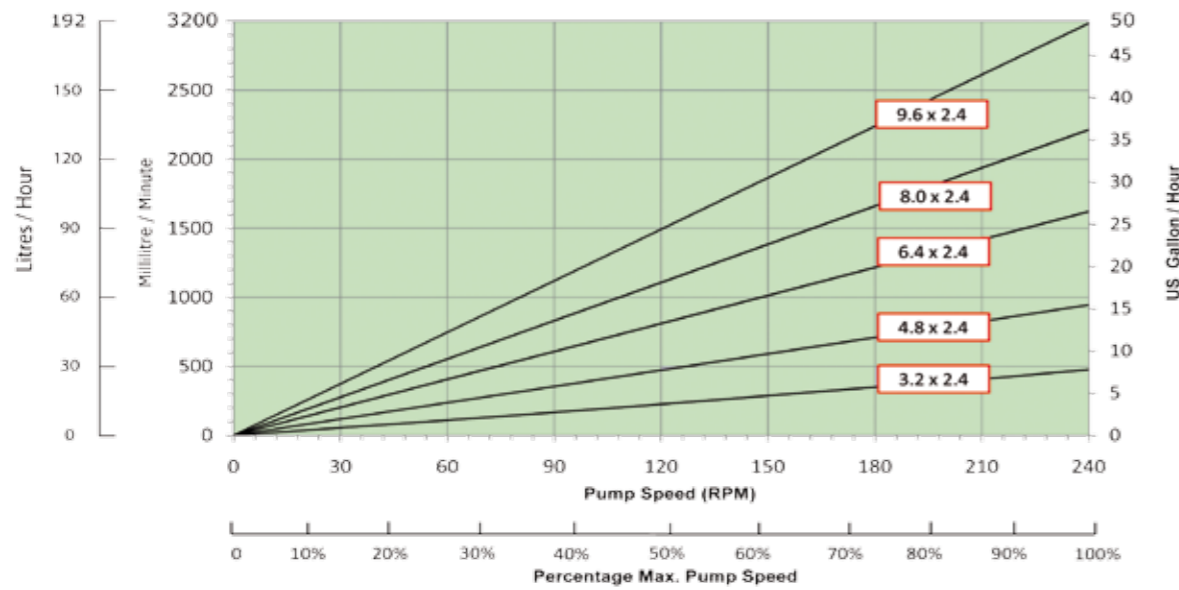
Tube ID x Wall (mm)	Min ml/min	US GPH	Max ml/min	US GPH
3.2 x 2.4	46	0.7	500	7.6
4.8 x 2.4	70	1.1	900	15.0
6.4 x 2.4	100	1.6	1,600	25.7
8.0 x 2.4	130	2.0	2,200	35.1
9.6 x 2.4	156	2.4	3,200	50.0



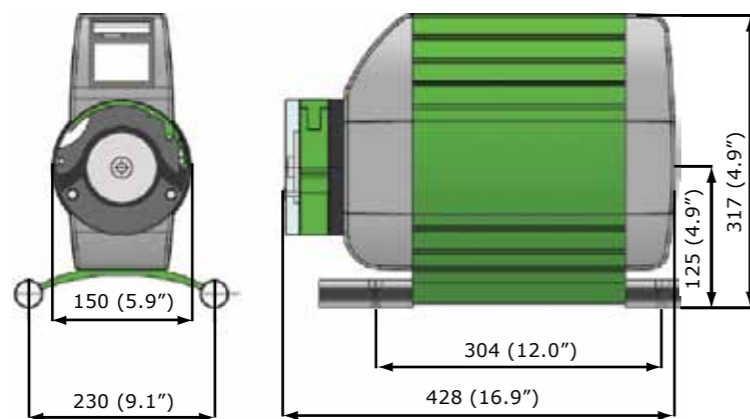
Free Flow Curve

Flow rates with water at 20°C (68°F)

The S20 Pump Head is designed to use a 2.4mm (3/32") wall thickness tube

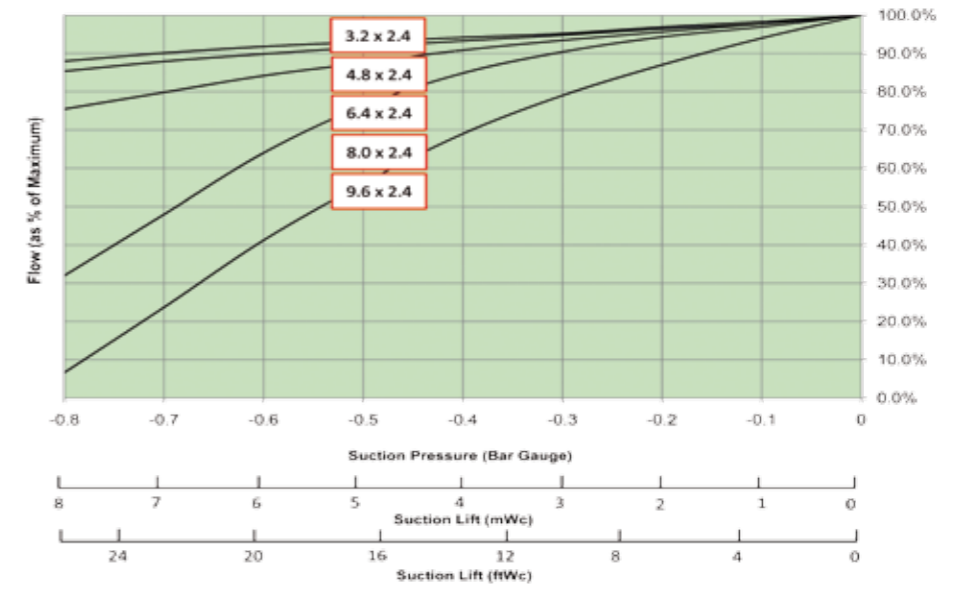


General Arrangement Layout

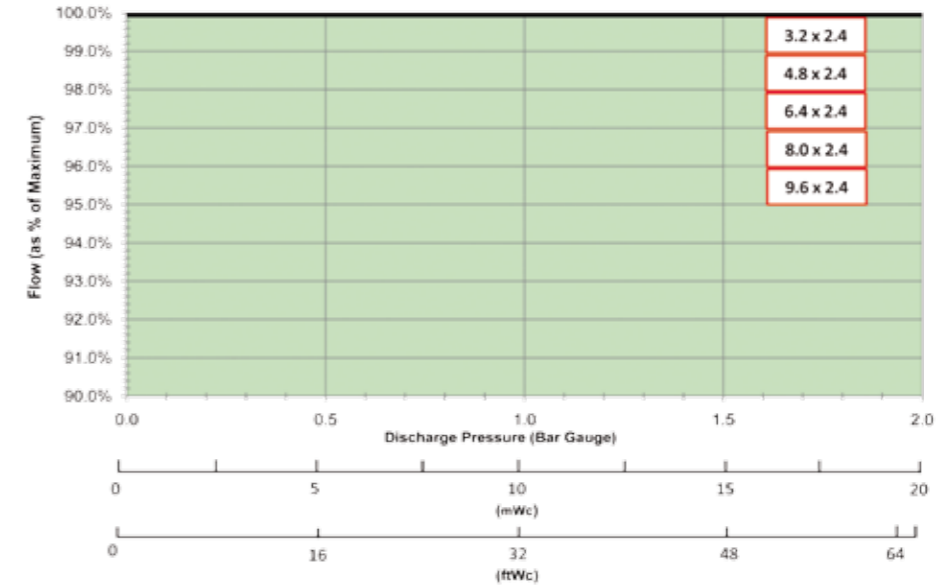


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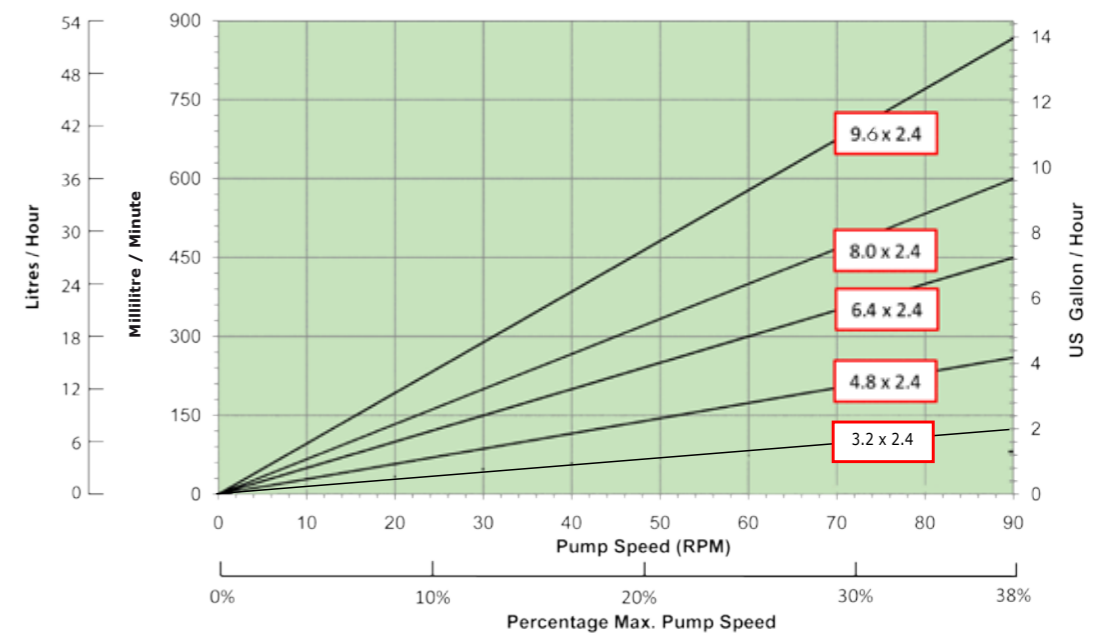
Suction Loss



Discharge



Viscosity



Viscous liquid 350 cps at 22°C

Smart 20 – 6 roller

Physical Properties

Weight	12.5 kg (27.6lb)
Voltage	115V/230V
Frequency	50/60Hz
Power Consumption	250W

Capacity

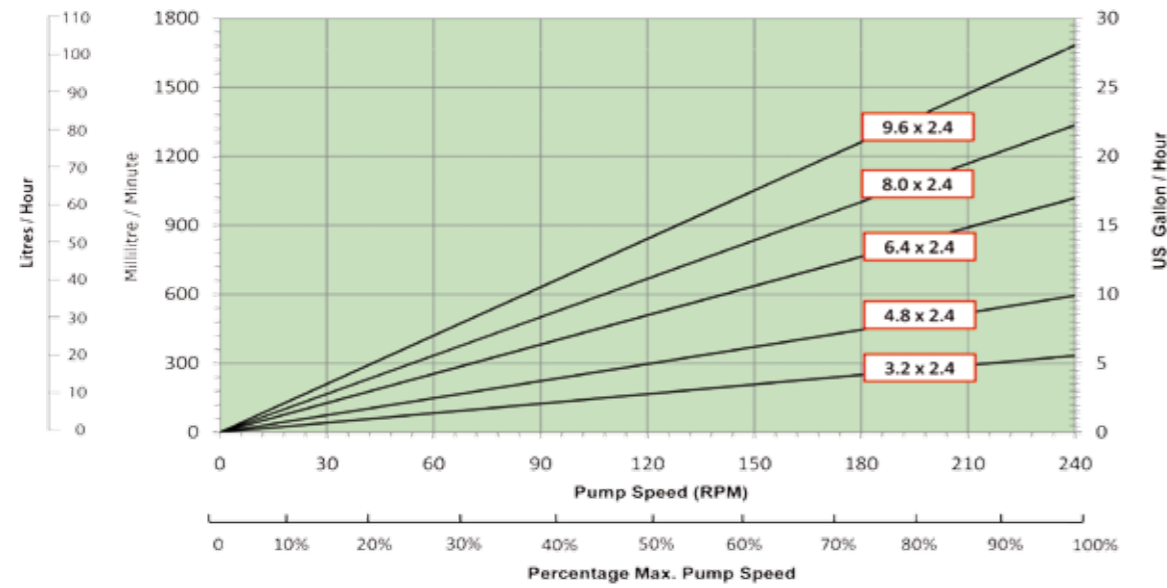
Tube ID x Wall (mm)	Min ml/min	US GPH	Max ml/min	US GPH
3.2 x 2.4	30	0.5	400	5.9
4.8 x 2.4	45	0.7	600	9.5
6.4 x 2.4	70	1.1	1,000	15.8
8.0 x 2.4	100	1.6	1,400	22.2
9.6 x 2.4	120	2.0	1,700	26.2



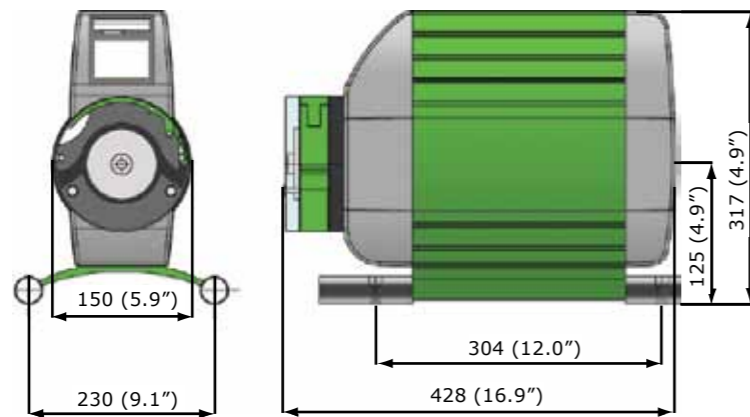
The S20 Pump Head is designed to use a 2.4mm ($\frac{3}{32}$ ") wall thickness tube

Free Flow Curve

Flow rates with water at 20°C (68°F)

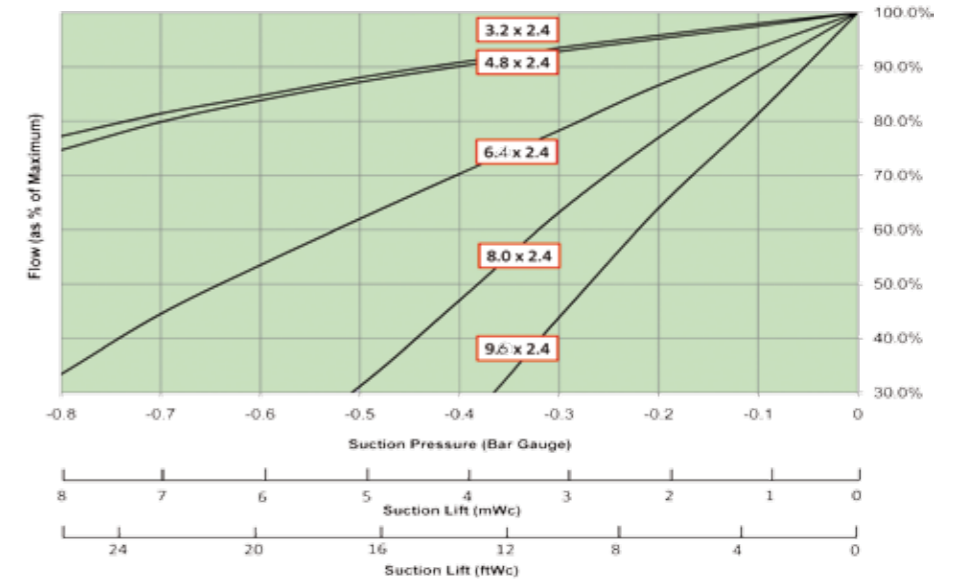


General Arrangement Layout

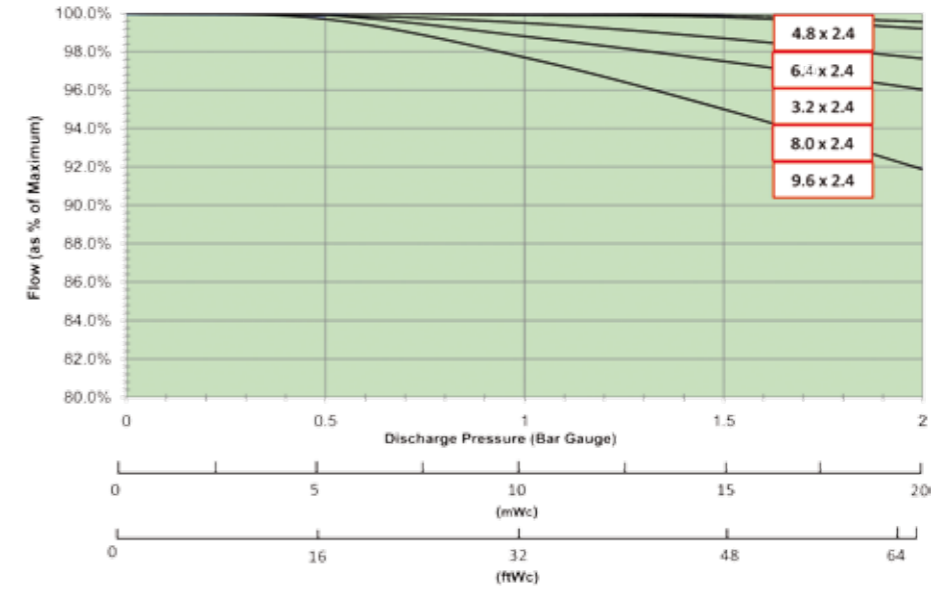


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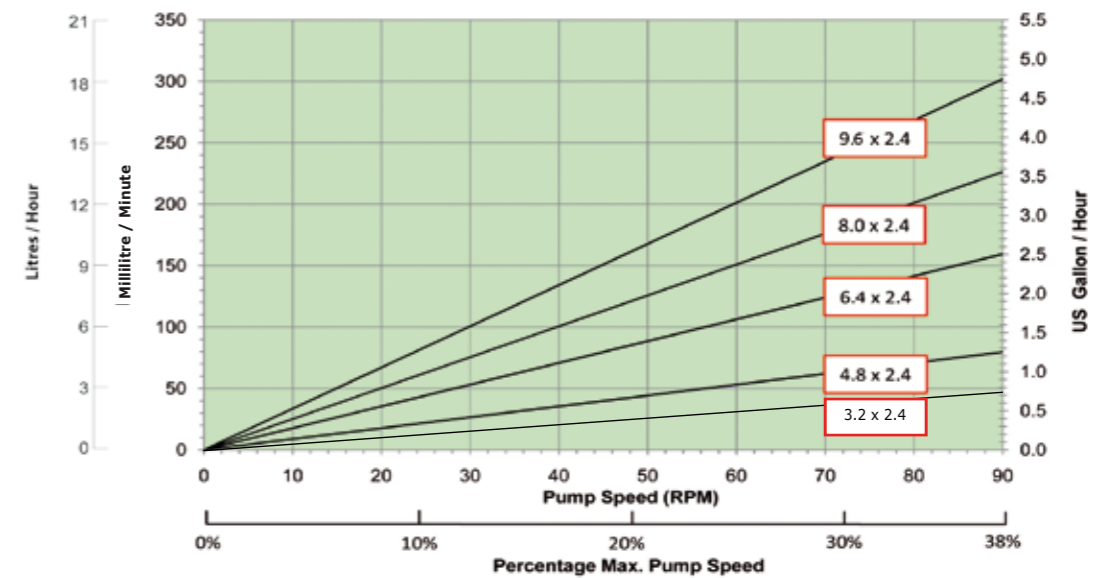
Suction Loss



Discharge



Viscosity



Viscous liquid 350 cps at 22°C

Smart 30 – 3 roller

Physical Properties

Weight	22 kg (48.5lb)
Voltage	115V/230V
Frequency	50/60Hz
Power Consumption	330W

Capacity

Tube ID x Wall (mm)	Min ml/min	US GPH	Max ml/min	US GPH
6.4 x 3.2	98	1.5	1,500	23.8
9.6 x 3.2	140	2.2	3,430	54.4
12.7 x 3.2	256	4.0	5,700	94.0
15.9 x 3.2	340	5.4	6,900	109.4

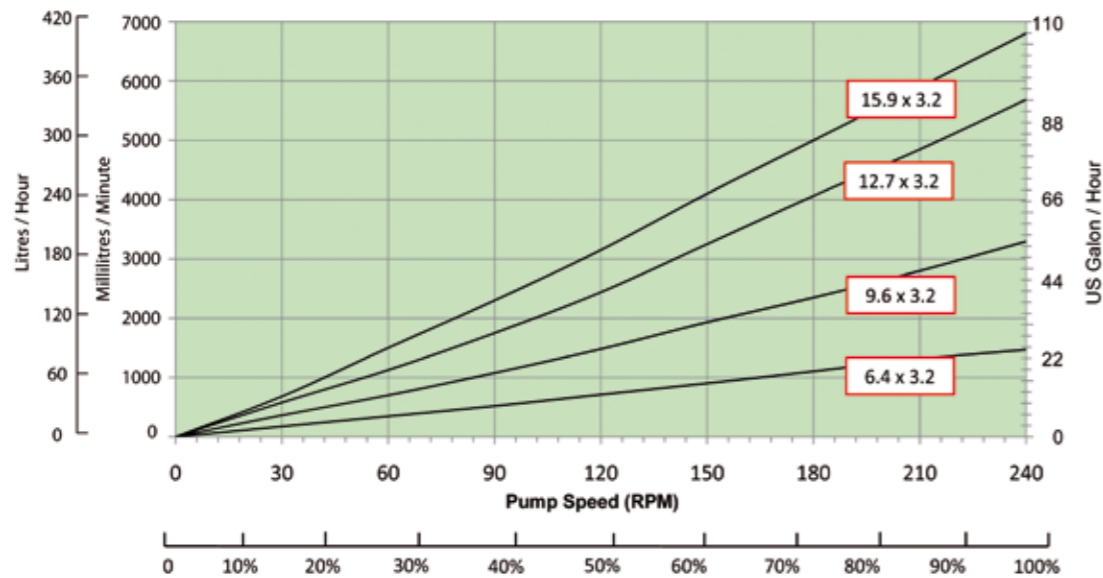
Measured with water at 20°C without suction or delivery pressure



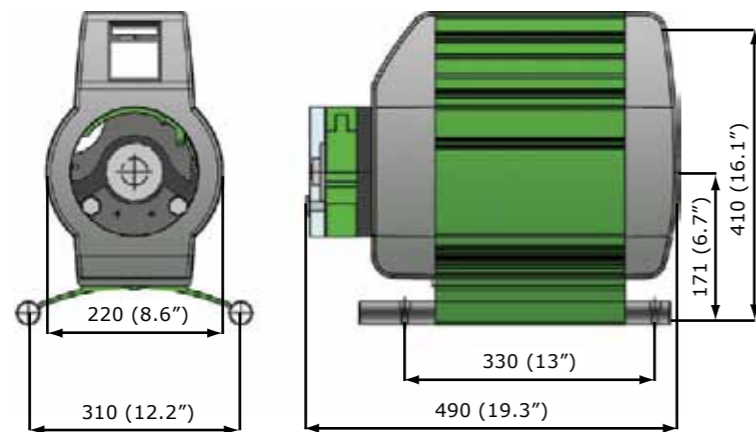
The S30 Pump Head is designed to use a 3.2mm (1/8") wall thickness tube

Free Flow Curve

Flow rates with water at 20°C (68°F)



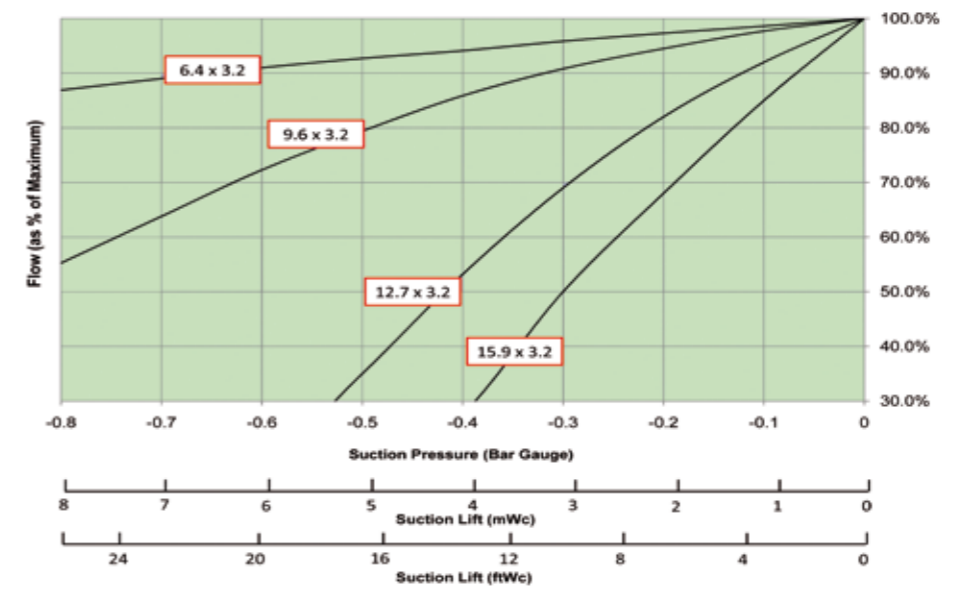
General Arrangement Layout



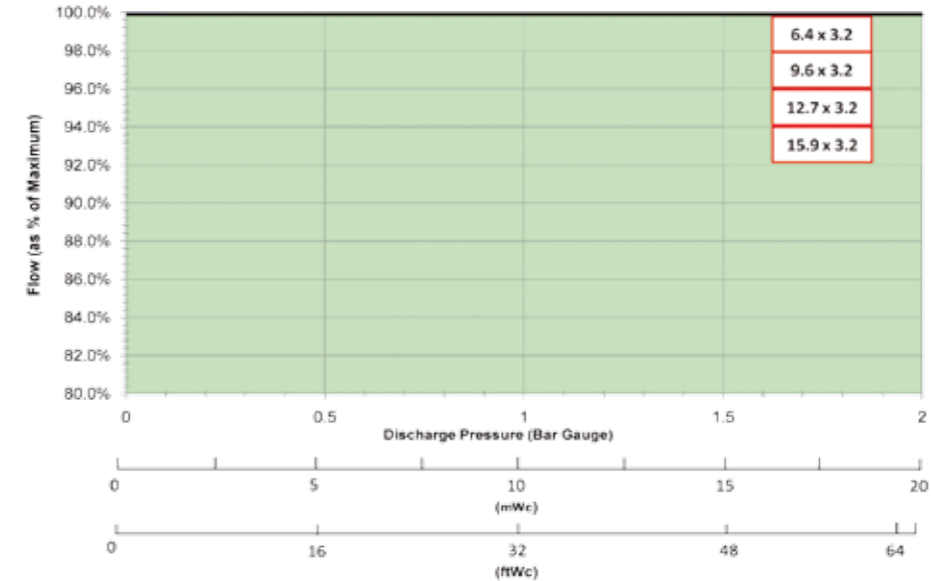
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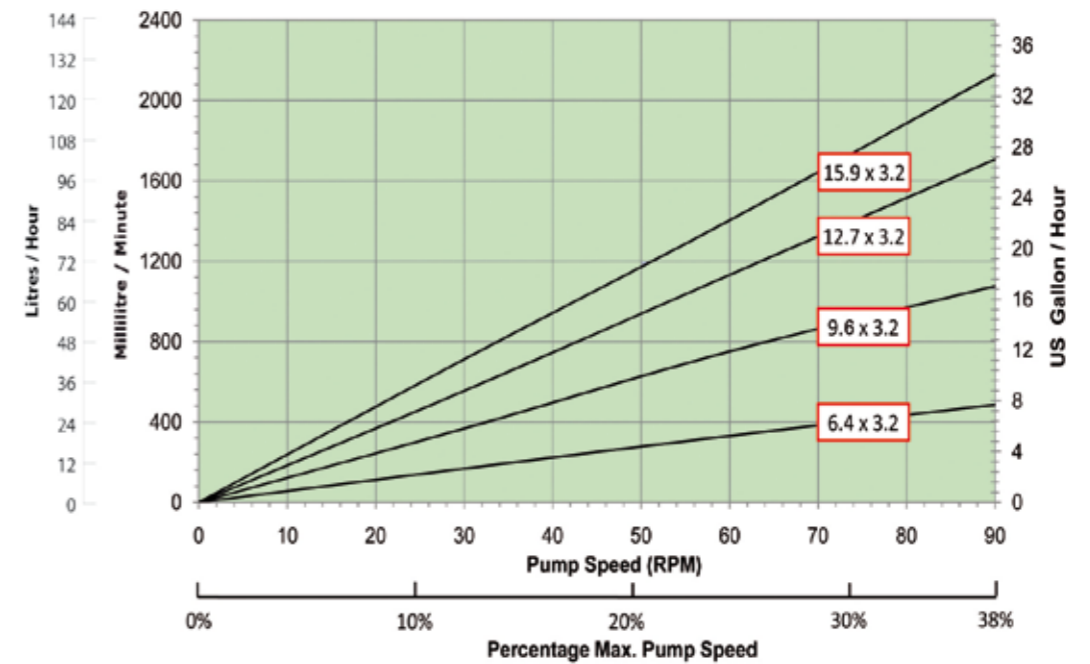
Suction Loss



Discharge



Viscosity



Viscous liquid 350 cps at 22°C

Smart 30 – 6 roller

Physical Properties

Weight	22 kg (48.5lb)
Voltage	115V/230V
Frequency	50/60Hz
Power Consumption	330W

Capacity

Tube ID x Wall (mm)	Min ml/min	US GPH	Max ml/min	US GPH
6.4 x 3.2	80	1.3	1,100	17.1
9.6 x 3.2	120	1.9	1,700	27.3
12.7 x 3.2	140	2.2	2,300	36.8
15.9 x 3.2	195	3.1	2,800	45.2

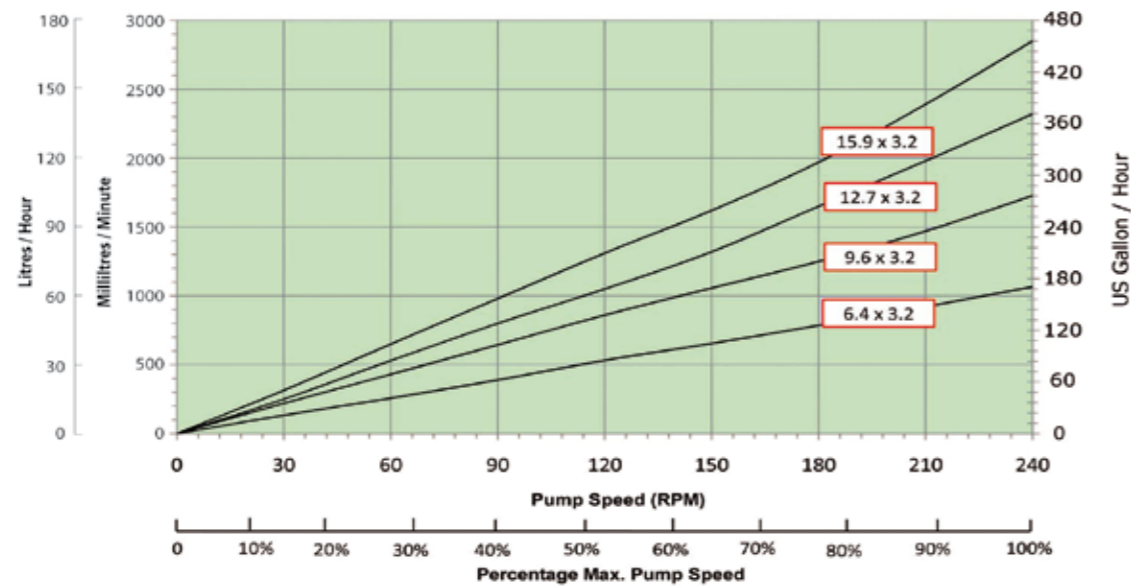
Measured with water at 20°C without suction or delivery pressure



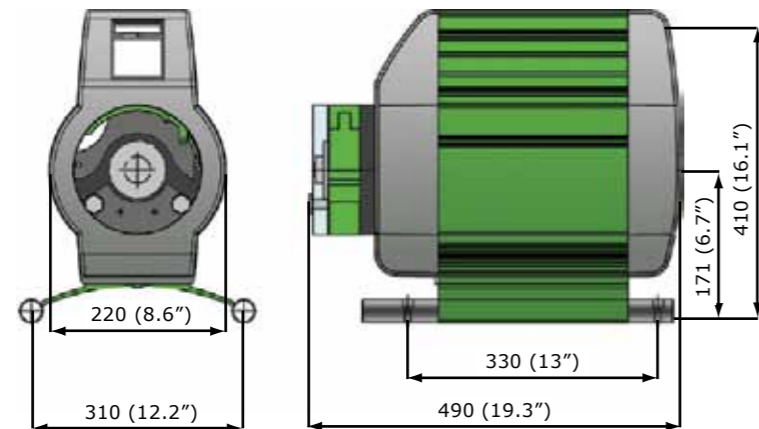
The S30 Pump Head is designed to use a 3.2mm (1/8") wall thickness tube

Free Flow Curve

Flow rates with water at 20°C (68°F)

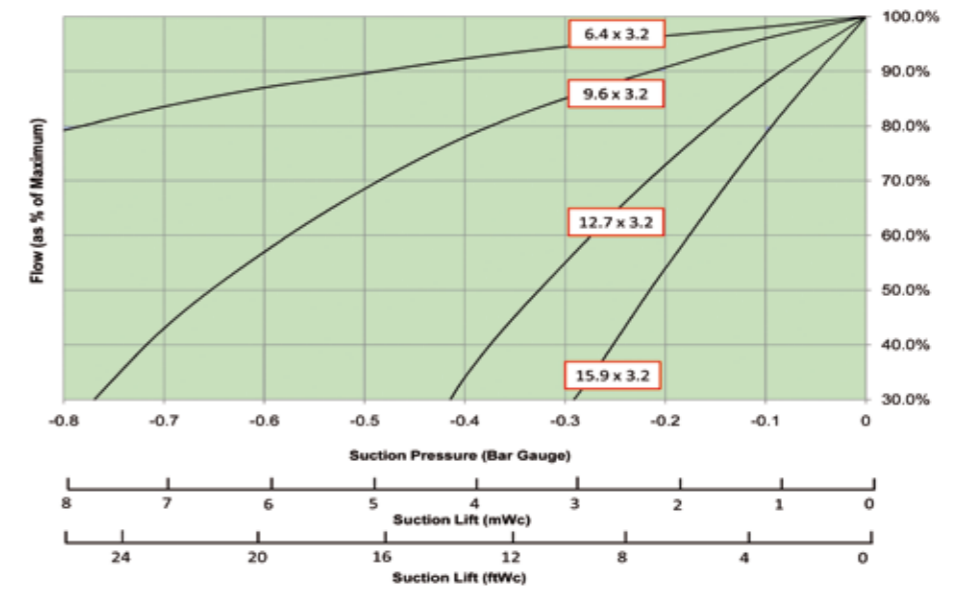


General Arrangement Layout

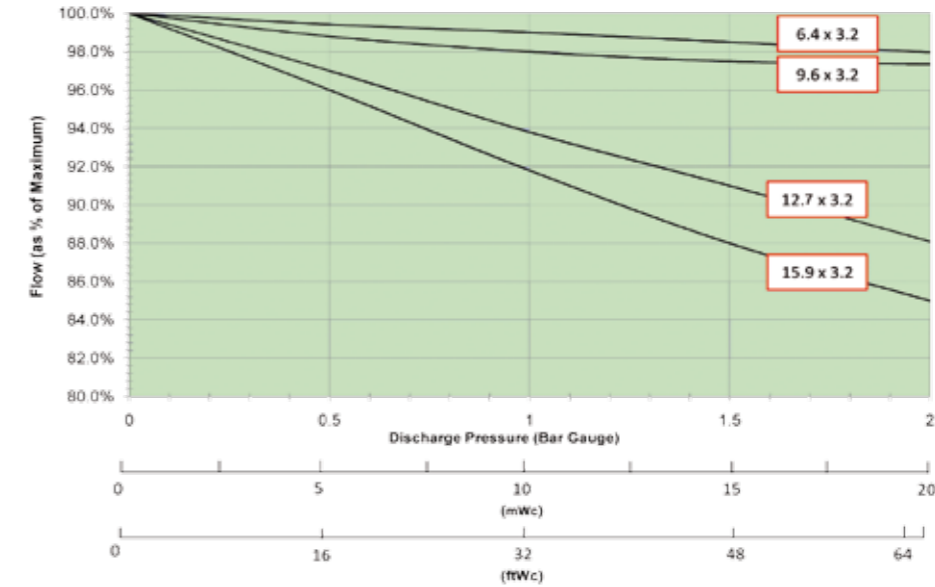


The drawings are for guidance only - all dimensions in millimetres and inches

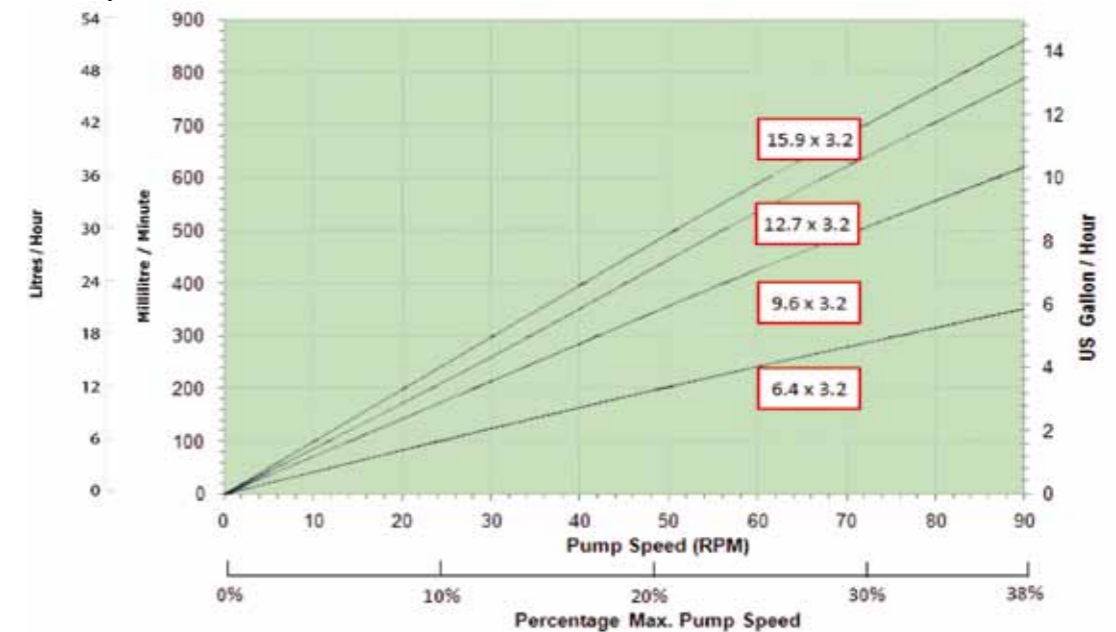
Suction Loss



Discharge



Viscosity



Viscous liquid 350 cps at 22°C

Smart 40 – 3 roller

Physical Properties

Weight	23 kg (50.7lb)
Voltage	115V/230V
Frequency	50/60Hz
Power Consumption	330W

Capacity

Tube ID x Wall (mm)	Min l/min	US GPH	Max l/min	US GPH
15.9 x 4.8	0.6	9.5	10.63	168.4
19.0 x 4.8	0.72	11.4	11.91	188.7
25.4 x 4.8	0.86	13.6	17	269

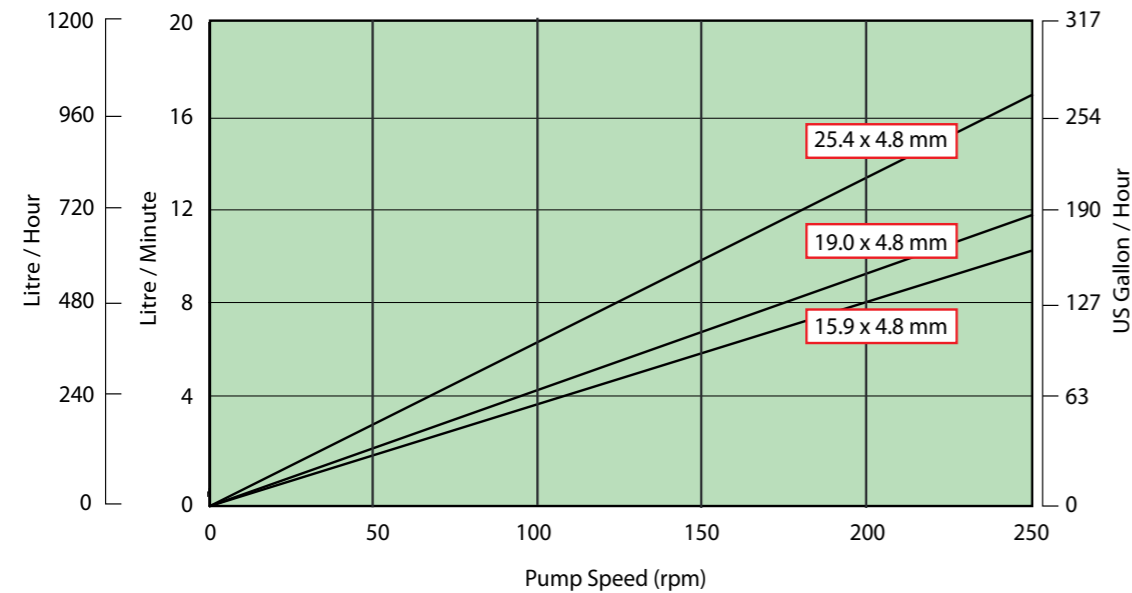


Measured with water at 20°C without suction or delivery pressure

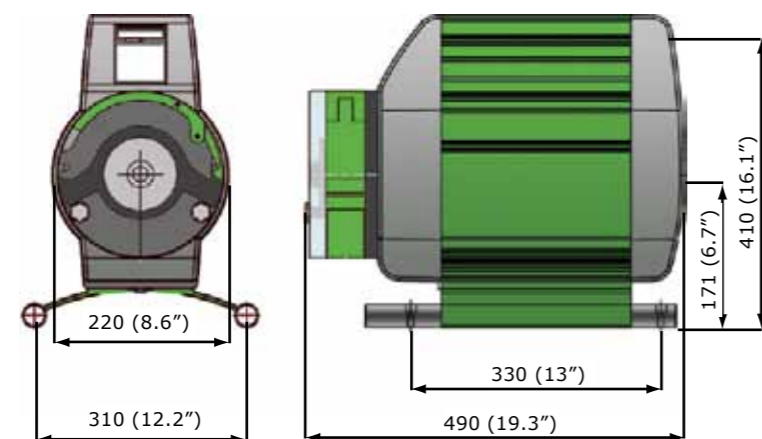
Free Flow Curve

Flow rates with water at 20°C (68°F)

The S40 Pump Head is designed to use a 4.8mm (³/₁₆" wall thickness tube

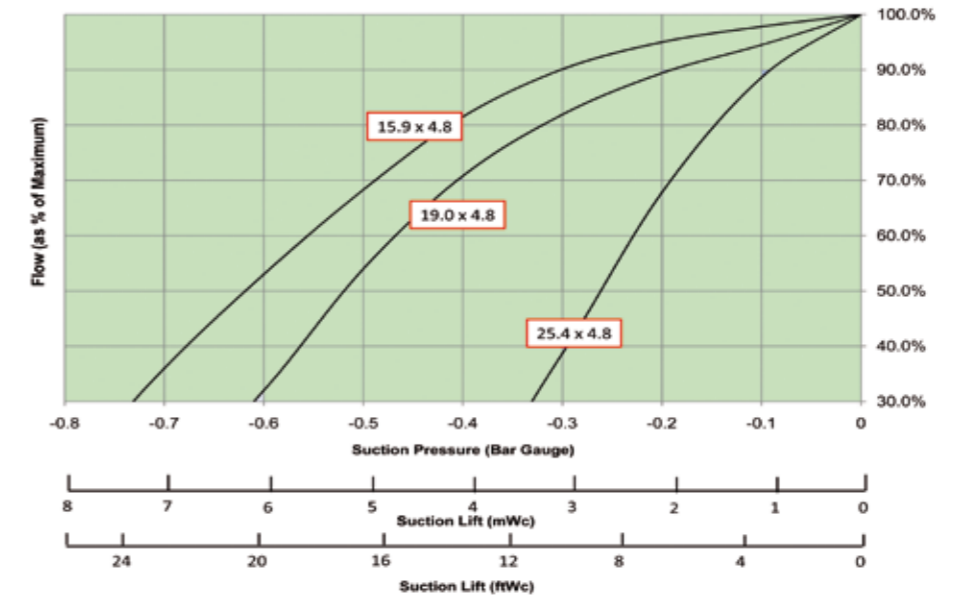


General Arrangement Layout

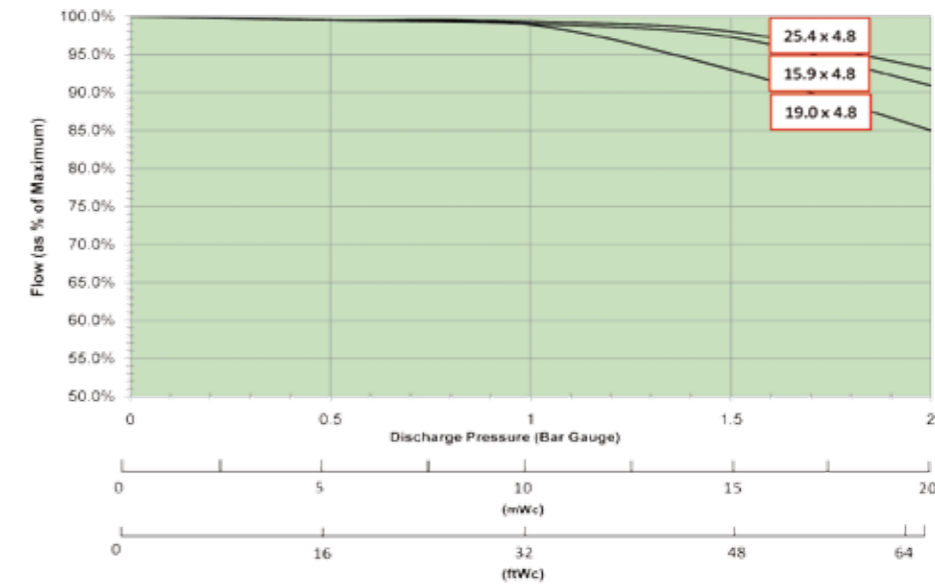


The drawings are for guidance only - all dimensions in millimetres and inches

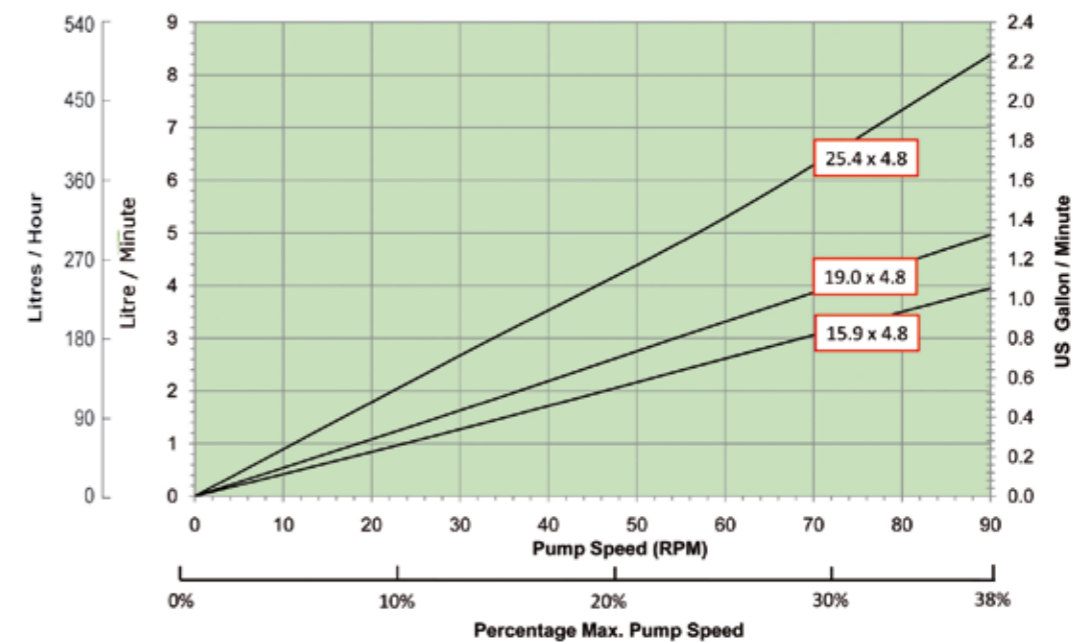
Suction Loss



Discharge



Viscosity



Viscous liquid 350 cps at 22°C

Smart 40 – 6 roller

Physical Properties

Weight	23 kg (50.7lb)
Voltage	115V/230V
Frequency	50/60Hz
Power Consumption	330W

Capacity

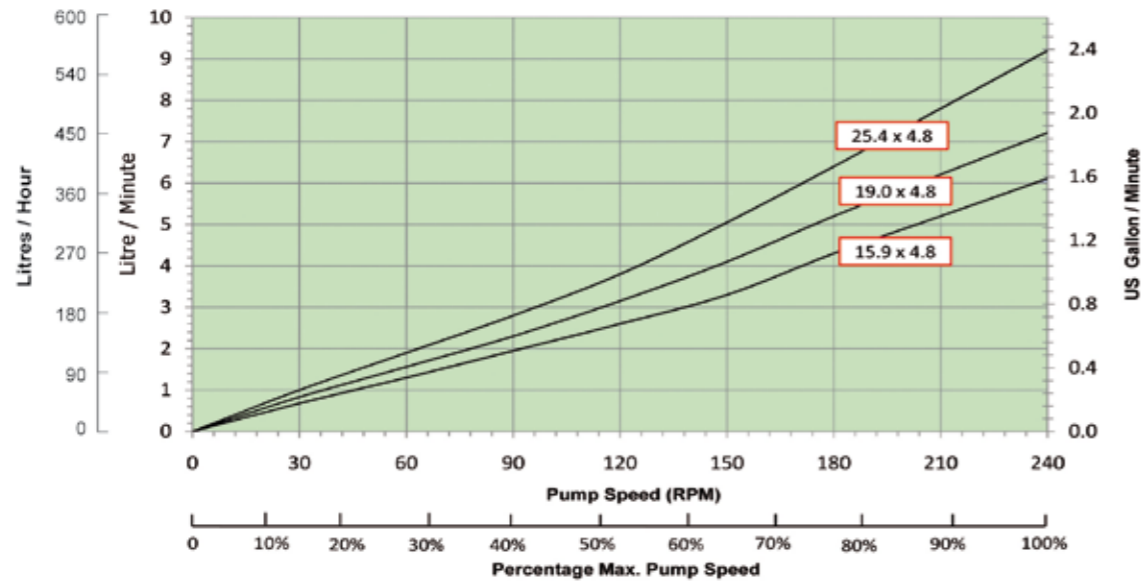
Tube ID x Wall (mm)	Min l/min	US GPH	Max l/min	US GPH
15.9 x 4.8	0.46	7.3	6.1	96.67
19.0 x 4.8	0.5	7.9	7.2	114.1
25.4 x 4.8	0.65	10.3	9.2	142.6



Measured with water at 20°C without suction or delivery pressure

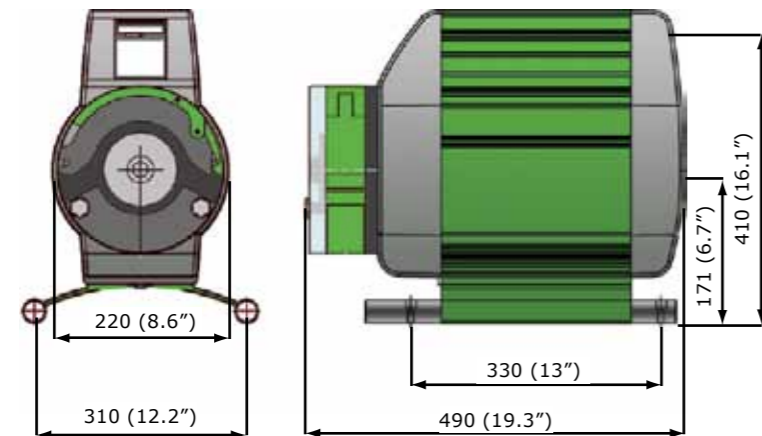
Free Flow Curve

Flow rates with water at 20°C (68°F)



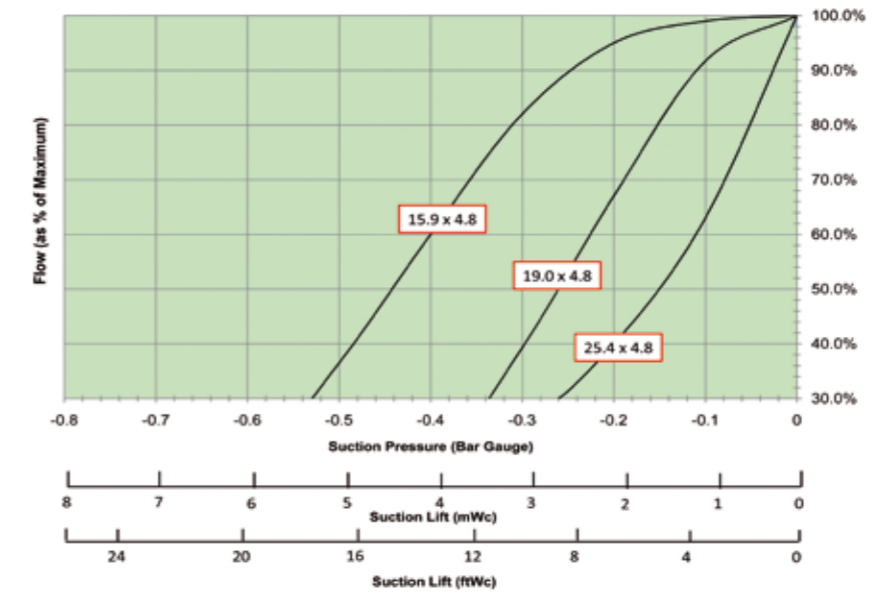
The S40 Pump Head is designed to use a 4.8mm (3/16") wall thickness tube

General Arrangement Layout

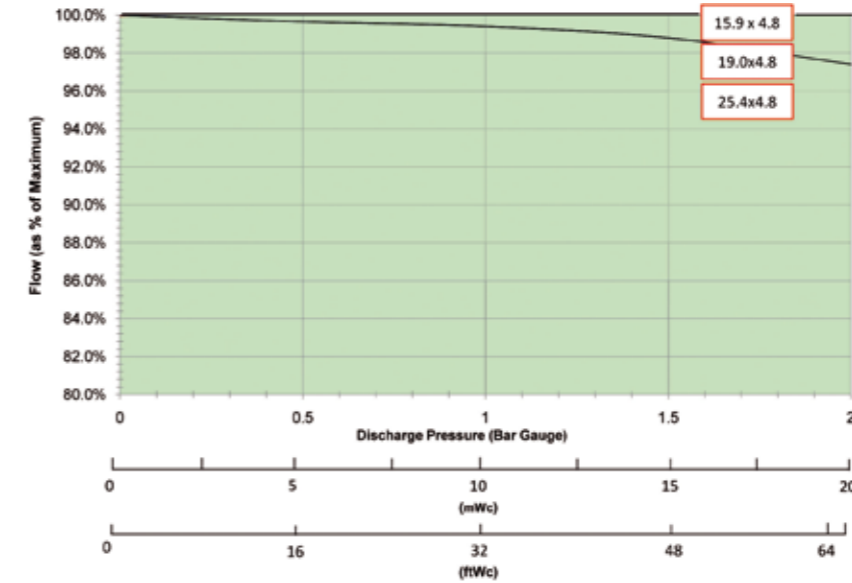


The drawings are for guidance only - all dimensions in millimetres and inches

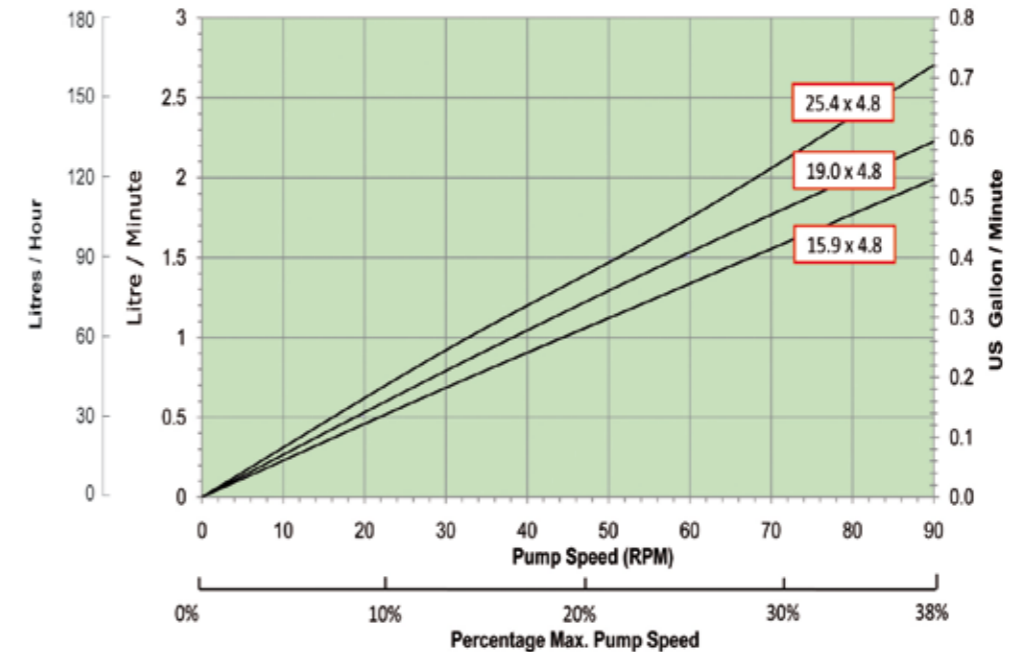
Suction Loss



Discharge



Viscosity



Viscous liquid 350 cps at 22°C

Applications

The unique design of Verderflex peristaltic pumps makes them ideally suited to a wide range of applications, for example:

Abrasive and highly corrosive products

abrasion is not a limiting factor for the hose and no seals or rotating parts are in contact with the product.

Shear sensitive applications

the very gentle pumping action does not damage the product.

Highly viscous products

the positive displacement action enables high viscosity liquids to be pumped.

Crystallising media

there are no valves or glands where crystals or product can build up and clog the pump.

Dosing requirement

the absence of product slip in the hose gives a 100% volumetric efficiency.

High maintenance situations

the hose is the only wearing part, and with a rapid changeover, downtime is minimal.

Self-priming applications

the pump can run dry without damage to the tube.

Potential blockages at suction port

pump can run dry and be reversed to unblock the suction line.

Market segments

Water treatment

Lime, Hypochlorite, Polymer, Ferric Chloride dosing; transferring sludges and filter press feeds

Chemical industry

corrosive acids, bases and hydrocarbons

Paints and coatings

Dosing of inks

Textile industry

Dosing of dyes

Ceramic industry

Paper and pulp

Pulp, dyes

Cosmetics

Recycling

Food and beverage

Breweries, wineries, dairies, sugar refining, bakeries, abattoirs and fish processing

Agriculture

Feed additives, animal vaccines and waste transfer.

Applications

Externally Controlled Dosing System

Eliminating waste and preventing overflow by highly accurate control of flow - The Verderflex® Smart offers a quick return on investment.

The Verder system, based on its smart technology series of peristaltic pumps, offers a flexible solution to most filling requirements.

Due to the modular design of the system, individual build configurations can be offered within a standard package. All pumps are glandless and leak-free, protecting the product from any external ingress of foreign material.

- All units are factory tested as a package
- Option for assistance with installation on site
- Commissioning and production testing service
- Training programs for operators

One of the main features of the unit for one customer, a food manufacturer, is the control system. Combining the Verderflex Smart's dosing technology with a tailored external system, driven through a visual touch screen interface; simple graphics show status updates and allow straightforward adjustment of recipes, rinse cycles and cleaning cycles, etc.

The use of multi-colored graphics specifically tailored to each application means production changes can be made quickly. Product changes are equally as quick to undertake using the unit's twenty-four recipe menu. Within each recipe each pump drive can be individually tuned for optimum weight accuracy, catering for any variance across the width of the production machine.

The panel also controls the fill and scavenge pumps as well as all the actuated valves. Rinse and cleaning cycles are therefore automatic and interlocked allowing all cleaning and hygienic requirements to be met.

The unit is suitable for a wide range of food products including egg mixture, sugars and syrups, milk, custards, glaze, gravy and yogurts.





Mother Earth Brewing

At the end of a long day, do you ever really stop to think about what goes into the making of a refreshing ice cold beer?

Verderflex does, as a Verderflex Smart unit was recently installed at Mother Earth Brewing (MEB) in Kinston, NC, USA through the US distributors VerderGPM. MEB had been using pressure tanks to transfer their yeast harvest, which was a lengthy process, costly due to the CO₂, and inconsistent relative to maintaining the quality of the yeast. Additionally, this process of transferring yeast had a very complicated set-up procedure.

The yeast is transferred from a vat into a keg for storage and cooled to be dosed into another batch, which under their current system required several coordinated valves opening and closing to ensure the proper vessels were pressurised, then relying on the pressurised/vessels to perform the harvest.

After discussing their application parameters and the advantages of a peristaltic pump to simplify their process, they purchased a Smart S30 Model B with 15.9 x 3.2mm Verderprene tubing.

The results were:

- 1) Transfer time for the yeast harvest was cut from three hours to one hour
- 2) Yeast quality was greatly improved due to the ability of the Smart pump to safely and gently handle sheer sensitive materials.

Josh Brewer, Brewmaster for MEB comments on the use of the Verderflex Smart:

"I purchased the Verderflex Smart Pump in an effort to minimize the labor costs associated with the lengthy process of harvesting yeast, and to improve the quality of the yeast harvest. Ultimately, these factors allow our brewery to yield more brews per week. To say I'm satisfied with the pump's performance is an understatement. Mother Earth Brewing has been in a constant growth spurt and the Verderflex Smart Pump is helping us save money, and increase output to meet demand, all while maintaining exceptional yeast handling sanitation. Breweries harvest yeast in all kinds of ways but I'm confident that with the use of our new Verderflex Smart Pump we are at the very cutting edge of yeast management."

Easily repeatable procedures over time have resulted in a dramatic reduction in man hours for the yeast harvest which can now be dedicated to other responsibilities. Additionally there are fewer hours required for set-up time as well as clean-up, as the tubing is the only thing to come in contact with the pumped fluid and can be replaced in a matter of minutes.

Ultimately, this correlates to greater profit from increased efficiency, which is reason enough to tilt back a frosty cold one.

Working With Verderflex

Verderflex peristaltic hose pumps and tube pumps are the ideal solution for pumping liquids. Ranging from smaller pumps for use in Original Equipment Manufacture (OEM) such as vending machines, benchtop and industrial tube pumps, up to the world's largest hose pumps for use in very heavy industrial applications.

These pumps are used in many industries including; water and wastewater, mining, food & beverage, chemical and pharmaceuticals, printing and packaging industries.

Peristaltic tube and hose pumps from verderflex solve the world's pumping problems on abrasive, highly corrosive, viscous, high density and shear sensitive products.

The advantages of working with us are clear, we offer you:

Single-source solutions: Verder's wide and complementary range of pumps allows you to source your entire pumping needs from one company, reducing your costs

Expertise: years of providing pumping solutions to industry have given us valuable expertise and knowledge which we are able to use to supply the most appropriate and reliable pumps

International affiliated company: our size gives you the confidence that you are dealing with a substantial pump company. If your project involves overseas work then you can benefit from our international network of companies.

In addition to the Verder Group operating companies, the Verderflex range is supported by a worldwide network of offices and distributors that provide local support and spares availability on all five continents.

Hose Pumps - Dura and VF

Verderflex hose pumps provide the perfect solution to the most demanding jobs. The VF range is capable of flow rates up to 90m³/hr or 390 US GPM and can handle highly viscous fluids.

The innovative Dura hose pump has a smaller footprint and a design that gives you the best possible performance from a peristaltic hose pump.

Both are suited for heavy duty applications such as water and wastewater slurry transfer and applications where there is a high solid content. Enhanced hose design ensures that Verderflex hose pumps handle the toughest jobs with the minimum downtime.

Panel Mounted Peristaltic Pumps - OEM Pumps

A selection of tube and hose pumps intended for use in Original Equipment Manufacture (OEM). The Industrial range provides a balanced selection of simple to operate peristaltic pumps. They provide flow rates up to 1,620 l/hr or 426 GPH. The panel mounted tube pumps can fit almost any application and are found dosing detergents, chemicals and medicines, accurately filling bottles or in drinks vending machines.

Tube Pumps - Scientific, Industrial and Smart

Tube pumps are perfect when you require a much more gentle pumping action. The Smart and Scientific range are both fully programmable with the option for multiple heads. These tube pumps provide the most accurate dosing and repeatability possible. Capable of handling viscous and chemically aggressive liquids as well as shear sensitive products, tube pumps are a hygienic pumping solution for chemicals, inks, food & drinks.

Hoses, Tubing and Lubricant

Verderflex offers a variety of hoses and tubes so that you can get the best product for the job. This ensures a longer hose life and a better pump for you.

Verderlube and the silicone oil Verdersil are specifically designed lubricants which are used to keep your pump working at peak performance. The unique formula allows you to get maximum use out of your hose