

# Johnson Pump

## Marine Catalogue 2013

pumps and accessories for marine applications



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No matter whether you are an experienced boater looking for a replacement pump or a manufacturer looking for any pumps for your marine application, we are prepared to provide you with the support you need. And no matter where you work or live, access to our products, services, spare parts and support are never far away. In fact, you will find SPX's Johnson Pump Marine Brand represented in every major industrial country of the world today and in more than sixty nations altogether.



Front page photo: Delta Powerboats





Photo: X-Yachts

# Water Pressure Systems & Wash Down Pumps



Quiet and pulsation-free even at low speeds, the Aqua Jet five chamber diaphragm pump provides the perfect water pressure or deck wash solution for both small and medium sized leisure and commercial boats. Efficient and compact, Aqua Jet pumps are particularly suitable where low amperage and sound levels in relation to water flow are placed at a premium - such as in shower and galley applications. Operates in fresh or sea water. Self priming.



CE marked according to following standards:

- EN55014: 1993/Radio disturbance
- ISO8846: 1990/Electrical devices – Protection against ignition of surrounding flammable gases
- ISO10133: 1994/Electrical systems – Extra-low voltage DC installations

# Aqua Jet Water Pressure Systems

The five chamber Aqua Jet WPS-series provides a reliable heart for small boat and recreational vehicle water pressure systems. Compared to conventional three or four-chamber diaphragm pumps, the Aqua Jet demonstrates a lower noise and water pulsation characteristics. It is recommended to install the WPS-pumps with an accumulator tank. Always use a PUMProtector inlet strainer.



## WPS 2.4

Diaphragm	Santoprene	Weight	1.6 kg/3.5 lbs
Valves	EPDM	Length	204 mm/8.02"
Body	PP/PPA	Width	197 mm/7.76"
Motor	85W	Height	110 mm/4.33"

Order No.	Description	Capacity	Pressure Cut Off*	Fuze Size	Connection**
10-24604-03	Aqua Jet WPS 2.4, 12V	9 l/min – 2.4 GPM	2.8 bar – 41 psi	10 A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"
10-24604-04	Aqua Jet WPS 2.4, 24V	9 l/min – 2.4 GPM	2.8 bar – 41 psi	5 A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"

## WPS 2.9

Diaphragm	Santoprene	Weight	1.6 kg/3.5 lbs
Valves	EPDM	Length	204 mm/8.02"
Body	PP/PPA	Width	197 mm/7.76"
Motor	85W	Height	110 mm/4.33"

Order No.	Description	Capacity	Pressure Cut Off*	Fuze Size	Connection**
10-13405-03	Aqua Jet WPS 2.9, 12V	11 l/min – 2.9 GPM	2.8 bar – 41psi	10 A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"
10-13405-04	Aqua Jet WPS 2.9, 24V	11 l/min – 2.9 GPM	2.8 bar – 41psi	5 A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"

## WPS 3.5

Diaphragm	Santoprene	Weight	2 kg /4.5 lbs
Valves	EPDM	Length	236,5 mm/9.31"
Body	PP/PPA	Width	210 mm/8.25"
Motor	85W	Height	116 mm/4.575"

Order No.	Description	Capacity	Pressure Cut Off*	Fuze Size	Connection**
10-13395-03	Aqua Jet WPS 3.5, 12V	13 l/min / 3.5 GPM	2.8 bar / 41psi	10A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"
10-13395-04	Aqua Jet WPS 3.5, 24V	13 l/min / 3.5 GPM	2.8 bar / 41psi	5A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"

Fitted with a built-in pulsation dampening by-pass valve

## WPS 4.0

Diaphragm	Santoprene	Weight	2 kg /4.5 lbs
Valves	EPDM	Length	240 mm/9.46"
Body	PP	Width	214 mm/8.42"
Motor	100W	Height	110 mm/4.33"

Order No.	Description	Capacity	Pressure Cut Off*	Fuze Size	Connection**
10-13406-03	Aqua Jet WPS 4.0, 12V	15 l/min / 4.0 GPM	2.8 bar / 41psi	10A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"
10-13406-04	Aqua Jet WPS 4.0, 24V	15 l/min / 4.0 GPM	2.8 bar / 41psi	5A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"

## WPS 5.2

Diaphragm	Santoprene	Weight	2 kg /4.5 lbs
Valves	EPDM	Length	240 mm/9.46"
Body	PP	Width	214 mm/8.42"
Motor	150W	Height	110 mm/4.33"

Order No.	Description	Capacity	Pressure Cut Off*	Fuze Size	Connection**
10-13406-07	Aqua Jet WPS 5.2, 12V	20 l/min/ 5.2 GPM	2.8 bar / 41psi	15A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"
10-13406-08	Aqua Jet WPS 5.2, 24V	20 l/min/ 5.2 GPM	2.8 bar / 41psi	8A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"

\*Cut off pressure 2.1 bar/30 psi and 1.4 bar/20 psi available on request

\*\* NPT-connection available on request

## Aqua Jet Uno WPS 3.5 & 5.2

Medium capacity unit with a single Aqua Jet WPS capacity 13 l/min or 20 l/min fixed on a base with PUMProtector inlet strainer and a 2 litres pre-pressurized accumulator tank.

Order No.	Description	Capacity	Pressure Cut Off*	Fuze Size	Connection
10-13408-01	WPS Uno 3.5, 12V	13 l/min – 3.5 GPM	2.8 bar – 41 psi	10 A	3/4" hose
10-13408-02	WPS Uno 3.5, 24V	13 l/min – 3.5 GPM	2.8 bar – 41 psi	5 A	3/4" hose
10-13408-03	WPS Uno 5.2, 12V	20 l/min – 5.2 GPM	2.8 bar – 41 psi	15 A	3/4" hose
10-13408-04	WPS Uno 5.2, 24V	20 l/min – 5.2 GPM	2.8 bar – 41 psi	8 A	3/4" hose

\*Cut off pressure 2.1 bar/30 psi and 1.4 bar/20 psi available on request



## Aqua Jet Duo WPS 10.4

High capacity unit with two parallel-connected Aqua Jet WPS capacity 40 l/min fixed on a base with PUMProtector inlet strainers and a 2 litres pre-pressurized accumulator tank.

Order No.	Description	Capacity	Pressure Cut Off	Fuze Size	Connection
10-13409-01	WPS Duo 10.4, 12V	40 l/min – 10.4 GPM	2.8 bar – 41 psi	25 A	3/4" hose
10-13409-02	WPS Duo 10.4, 24V	40 l/min – 10.4 GPM	2.8 bar – 41 psi	15 A	3/4" hose



## Aqua Jet Uno Max WPS 2.9 & 3.5

Medium capacity unit with a single Aqua Jet WPS with capacity 11 or 13 l/min fixed on a wooden panel for easy and efficient installation. The unit includes a PUMProtector inlet strainer and a 2 litres pre-pressurized accumulator tank.

Order No.	Description	Capacity	Pressure Cut Off	Fuze Size	Connection
10-13410-01	WPS Uno-Max 2.9, 12V	11 l/min – 2.9 GPM	2.8 bar – 41 psi	10 A	3/4" hose
10-13410-02	WPS Uno-Max 2.9, 24V	11 l/min – 2.9 GPM	2.8 bar – 41 psi	5 A	3/4" hose
10-13411-01	WPS Uno-Max 3.5, 12V	13 l/min – 3.5 GPM	2.8 bar – 41 psi	10 A	3/4" hose
10-13411-02	WPS Uno-Max 3.5, 24V	13 l/min – 3.5 GPM	2.8 bar – 41 psi	5 A	3/4" hose



## Aqua Jet Flow Master 5.0 WPS

The ideal choice for pressurizing water in a closed system. The digital controller adjusts water flow as the demand is increased and decreased while maintaining a very smooth flow. The unique variable flow feature of the Flow Master pump allows the pump to be mounted without an accumulator tank and still maintain an even flow regardless if one or multiple taps are being used.

**Dimensions** 239 mm/9.4" long x 209 mm/8.22" wide x 113 mm/4.49" high  
**Weight** 2 kg/4.5 lbs  
**Motor** WPS 5.0 – 150 W, 12/24V DC (with built-in thermal protection)

**Body** Nylon/Polypropylene  
**Valves** Santoprene/EPDM  
**Diaphragm** Santoprene



Order No.	Description	Capacity	Pressure Cut Off	Fuze Size	Connection
10-13329-03	WPS FM 5.0, 12V	19 l/min – 5 GPM	3.5 bar – 50 psi	15 A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"
10-13329-04	WPS FM 5.0, 24V	19 l/min – 5 GPM	3.5 bar – 50 psi	8 A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"

# Aqua Jet Wash Down Pumps

As a wash down pump, the Aqua Jet offers high pressure, making clean-up faster and easier than ever before.

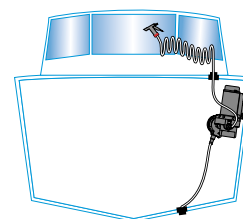


## Aqua Jet Wash Down Pumps 2.9, 3.5 & 5.2

Complete with trigger nozzle, PUMProtector inlet strainer and hose connections for 1/2" hose. Both BSP and NPT connections included in package

**Dimensions** See WPS 2.9, WPS 3.5 and WPS 5.2  
**Motor** WD 2.9 - 90 W, 12/24V DC  
 WD 3.5 - 120 W, 12/24V DC  
 WD 5.2 - 185 W, 12/24V DC  
 (with built-in thermal protection)

**Body** PA/PPA  
**Valves** Nitrile  
**Diaphragm** Santoprene



Order No.	Description	Capacity	Pressure Cut Off	Fuze Size	Connection
10-24728-03	WD 2.9, 12V	11 l/min – 2.9 GPM	2.8 bar – 41 psi	10 A	3/8" BSP / hose 1/2"
10-24728-04	WD 2.9, 24V	11 l/min – 2.9 GPM	2.8 bar – 41 psi	5 A	3/8" BSP / hose 1/2"
10-13399-03	WD 3.5, 12V	13 l/min – 3.5 GPM	5 bar – 70 psi	15 A	3/8" BSP / hose 1/2"
10-13399-04	WD 3.5, 24V	13 l/min – 3.5 GPM	5 bar – 70 psi	8 A	3/8" BSP / hose 1/2"
10-13407-07	WD 5.2, 12V	20 l/min – 5.2 GPM	5 bar – 70 psi	20 A	3/8" BSP / hose 1/2"
10-13407-08	WD 5.2, 24V	20 l/min – 5.2 GPM	5 bar – 70 psi	10 A	3/8" BSP / hose 1/2"



34-82004

## Aqua Jet Wash Down Pump Kit 5.2

20 l/min (5.2 GPM) wash down kit conveniently includes a high capacity Aqua Jet WD 5.2, 5 bar (70 psi), PUMProtector inlet strainer, spray nozzle, bulk head fitting with valve, 7.5 meters (25') of coiled wash down hose and an illuminated panel switch – all in one package.

Order No.	Description
32-64534	Aqua Jet 5.2 Wash Down Pump Kit, 12V
32-64534R-24	Aqua Jet 5.2 Wash Down Pump Kit, 24V

## Accessories

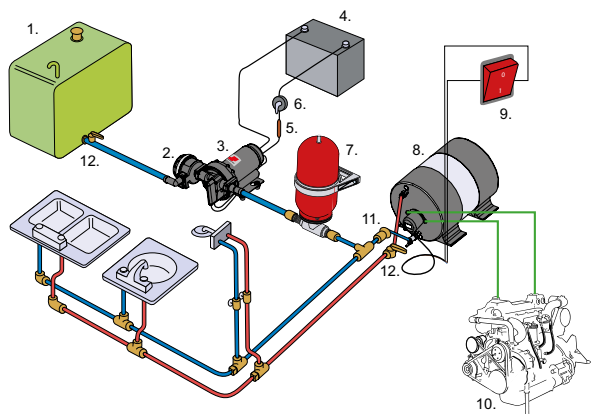


Order No.	Description
09-10616	Bulkhead fitting 3/4" hose
09-24653-03	Inlet Strainer 40 mesh
09-36012	Filter cover
09-10615	7,5 m black hose + spray nozzle
34-82004	WD Panel Switch 12V
34-82004-24V	WD Panel Switch 24V
80-47507	SS Bulkhead fitting

## Deck Wash 316 Stainless Steel Quick Connect Fitting

- Flush mount
- Connect and disconnect under full pressure
- Positive lock bayonet connector
- Double Viton O-ring seals
- Large flow capacity
- 316 Stainless steel housing with BSP 1/2" thread
- Nylon 66 connection with BSP 3/4" thread

## Fresh Water Handling



### Components included in a complete Water Pressure Systems

1. Water tank
2. PUMProtector inlet strainer
3. Aqua Jet water pressure pump
4. Battery
5. Fuse
6. Switch
7. Accumulator tank
8. Water heater
9. ON/OFF bipolar switch
10. Motor
11. Check valve
12. Shut-off valve

# PUMProtector™ Strainer

The PUMProtector™ inlet and universal strainers feature transparent covers for simple inspection, a wide variety of KlickTite™ port connectors for simple installation and removal, and high quality materials for simple maintenance. The connectors make it possible to remove the entire unit for thorough cleaning wherever it's most convenient.

## Universal Strainer

<b>Materials</b>	Strainer – Polyamide 66, black Cover – Acrylic, clear Screen – Stainless steel, 20 and 40 mesh O-rings – Silicone and EPDM	<b>Diameter</b>	80 mm / 3.15"
		<b>Height</b>	60 mm / 2.35"
		<b>Weight</b>	0.15 kg / 0.33 lbs
		<b>Mesh size</b>	20 or 40



Order No.	Description	Mesh	Max Liquid Temp.	Max Temp. for Drinking Water	KlickTite™ Connector
09-24652-01	Universal Strainer	40	+50°C – +120°F	+30°C – +85°F	2 x 1/2" hose / 3/8" BSP, 2 x 3/4" hose / 1/2" BSP
09-24652-03	Universal Strainer	20	+50°C – +120°F	+30°C – +85°F	2 x 1/2" hose / 3/8" BSP, 2 x 3/4" hose / 1/2" BSP

01-36012 Strainer cover

## Inlet Strainer

<b>Materials</b>	Strainer – Polyamide 66, black Cover – Acrylic, clear Screen – Stainless steel, 20 and 40 mesh O-rings – Silicone and EPDM	<b>Diameter</b>	80 mm / 3.15"
		<b>Height</b>	60 mm / 2.35"
		<b>Weight</b>	0.15 kg / 0.33 lbs
		<b>Mesh size</b>	40



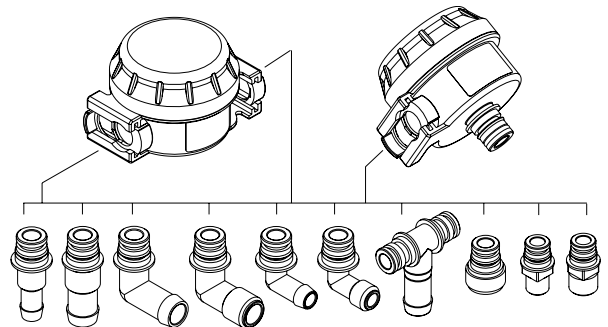
Order No.	Description	Mesh	Max Liquid Temp.	Max Temp. for Drinking Water	KlickTite™ Connector
09-24653-01	Inlet Strainer	40	+50°C – +120°F	+30°C – +85°F	Built-in KlickTite™ 1 x 1/2" hose / 3/8" BSP, 1 x 3/4" hose / 1/2" BSP
09-24653-03	Inlet Strainer	40	+50°C – +120°F	+30°C – +85°F	Built-in KlickTite™, Bulk pack w/o connectors

01-36012 Strainer cover

# KlickTite™ Port Connectors

KlickTite™ port connectors are available for virtually any hose diameter and make it possible to remove the entire unit for thorough cleaning wherever it's most convenient. They also make it possible to drain the system quickly for effortless winterizing without the use of any tools.

Order No.	pcs/package	KlickTite™ Connector
09-46783	2	2 x 1/2" hose and 3/8" BSP
09-46784	2	2 x 3/4" hose and 1/2" BSP
09-46939	2	2 x 90°, 3/4" hose
09-47087	2	2 x 90°, 1/2" BSP
09-46938	2	2 x 90°, 1/2" hose
09-47026	2	2 x 90°, 3/8" BSP
09-47096	2	2 x 3/8" BSP
09-47098	2	2 x 1/2" BSP
09-47092	1	1 x T-connection, 3/4" barb
09-47094	2	Garden hose adapter



## Inline Strainer



Total Length 230 mm / 9.05"  
Diameter 32 mm / 1.25"

Order No.	Connection
48-80035	Inline strainer, 1/2" hose
48-80036	Inline strainer, 3/4" hose

## Accumulator Tank

The use of an accumulator tank is recommended to ensure effective and reliable system function. With an accumulator tank incorporated in the system, the intervals between cut-in and cut-out will be longer when only small amounts of water are drawn off. Less wear and tear on the pump with fewer starts and stops. Pre-pressurized at 0.8 bar / 12 psi.



Volume 2 l / 0.5 gal.  
Port connections 1/2" or 3/4" hose  
Height 315 mm / 12.4"  
Diameter 160 mm / 6.3"  
Weight 1,2 kg / 2.7 lbs

Order No.	Connection
09-46839-01	1/2" hose connection
09-46839-02	3/4" hose connection





Photo: Buster

# Heavy Duty Submersible Bilge Pumps



SPX's Johnson Pump Marine Brand submersible pumps can handle most of the bilge pump applications. Heavy duty motors with stainless steel (SS2343) shaft and tough thermoplastic bodies provide for a long pump life. With an automatic switch installed, the pump automatically starts on when there is water in the bilge and shuts off when it is dry.



CE marked according to following standards:

- EN55014: 1993/Radio disturbance
- ISO8846: Small Craft – Electrical devices
  - Protection against ignition of surrounding flammable gases
- ISO8849: Small craft – Electrically operated bilge pumps
- ISO10133: Small Craft – Electrical systems
  - Extra-low voltage DC installations

## Cartridge Bilge Pumps L450 - L750 Series

L650 and L750 incorporate some of the most advanced features in the industry, features developed from service in a wide variety of uses including racing, cruising, sport fishing, and demanding commercial duties. For L450, L550, and L650, we have improved the design with easy-to-install Dura-Port discharge ports to eliminate stress cracking caused by over-tightened hose clamps. The pumps are delivered including both a straight and a 90° smooth elbow Dura-Port as well as a removable check valve.



### L450 – L650

Max Ø 70 mm – 2.75"  
Max height 112 mm – 4.4"  
Weight 0.27 kg – 9.6 oz.

### L750

Max Ø 70 mm – 2.75"  
Max height 112 mm – 4.4"  
Weight 0.32 kg – 10.4 oz.

Order No.	Description	Capacity 3 ft (0.9 m) head (13.6 V)	Capacity straight (13.6 V)	Amperage	Fuze Size	Connection
32-1450-01	L450 - 600 GPH, 12V	33 l/min - 525 GPH	40 l/min - 630 GPH	2.5 A	5 A	3/4"
32-1550-01	L550 - 800 GPH, 12V	44 l/min - 700 GPH	50 l/min - 800 GPH	3 A	5 A	3/4"
32-1650-01	L650 - 1000 GPH, 12V	50 l/min - 800 GPH	63 l/min - 1000 GPH	3.2 A	5 A	3/4"
32-1650-01-24	L650 - 1000 GPH, 24V	50 l/min - 800 GPH	63 l/min - 1000 GPH	2 A	3 A	3/4"
32-1750-01*	L750 - 1150 GPH, 12V	60 l/min - 952 GPH	73 l/min - 1150 GPH	3 A	5 A	1.1/8"
32-1750-01-24*	L750 - 1150 GPH, 24V	60 l/min - 952 GPH	73 l/min - 1150 GPH	2 A	3 A	1.1/8"

\*) Do not include Dura-Port connection

## Ultima Combo

Pump with automatic operation equipped with the Ultima switch. Voltage 12 V DC as well as 24 V DC for L650 UC and L750 UC. For L450 UC - L650 UC, we have easy-to-install Dura-Port discharge ports to eliminate stress cracking caused by over-tightened hose clamps. The pumps will be delivered including both a straight and a 90° smooth elbow Dura-Port as well as a removable check valve.



### L450 UC – L650 UC

Max Ø 100 mm – 3x4"  
Max height 112 mm – 4.4"  
Weight 0.4 kg – 14.4 oz.

### L750 UC

Max Ø 70 mm – 2.75"  
Max height 112 mm – 4.4"  
Weight 0.45 kg – 16 oz.

Order No.	Description	Capacity 3 ft (0.9 m) head (13.6 V)	Capacity straight (13.6 V)	Amperage	Fuze Size	Connection
32-1450UC-01	L450 UC - 600 GPH, 12V	33 l/min - 525 GPH	40 l/min - 630 GPH	2.5 A	5 A	3/4"
32-1550UC-01	L550 UC - 800 GPH, 12V	44 l/min - 700 GPH	50 l/min - 800 GPH	3 A	5 A	3/4"
32-1650UC-01	L650 UC - 1000 GPH, 12V	50 l/min - 800 GPH	63 l/min - 1000 GPH	3.2 A	5 A	3/4"
32-1650UC-01-24	L650 UC - 1000 GPH, 24V	50 l/min - 800 GPH	63 l/min - 1000 GPH	2 A	3 A	3/4"
32-1750UC-01*	L750 UC - 1150 GPH, 12V	60 l/min - 952 GPH	73 l/min - 1150 GPH	3 A	5 A	1.1/8"
32-1750UC-01-24*	L750 UC - 1150 GPH, 24V	60 l/min - 952 GPH	73 l/min - 1150 GPH	2 A	3 A	1.1/8"

\*) Do not include Dura-Port connection

## Cartridge Combo Series

Combines the line of cartridge bilge pumps with automatic operation. Equipped with a non-clogging electronic float switch.



Order No.	Description	Capacity 3 ft (0.9 m) head (13.6 V)	Capacity straight (13.6 V)	Amperage	Fuze Size	Connection
32-05503-00	500 GPH Cartridge Combo, 12V	33 l/min - 525 GPH	40 l/min - 630 GPH	2.5 A	5 A	3/4"
32-05703-00	750 GPH Cartridge Combo, 12V	44 l/min - 700 GPH	50 l/min - 800 GPH	3 A	5 A	3/4"
32-05903-00	1000 GPH Cartridge Combo, 12V	50 l/min - 800 GPH	63 l/min - 1000 GPH	3.2 A	5 A	3/4"

# Low Boy Bilge Pump

Low Profile pump design for ease of mounting and removal in tight bilge areas. Perfect for vessels with bilge pumps mounted beneath inboard or I/O engines. Removable cartridge style. For L550 LB we have easy-to-install Dura-Port discharge ports to eliminate stress cracking caused by over-tightened hose clamps. The pumps will be delivered including both a straight and a 90° smooth elbow Dura-Port.

Max length 146 mm – 5.75"  
 Width 81 mm – 3.2"  
 Height 72 mm – 2.82"  
 Wire size 1.3 mm<sup>2</sup> – 16 GA



Order No.	Description	Capacity 3 ft (0.9 m) head (13.6 V)	Capacity straight (13.6 V)	Amperage	Fuze Size	Connection
32-33703LB-01	L550 LB - 800 GPH, 12V	44 l/min - 700 GPH	50 l/min - 800 GPH	3 A	5 A	3/4"
32-33103LB-01*	L750 LB - 1150 GPH, 12V	60 l/min - 952 GPH	73 l/min - 1150 GPH	3 A	5 A	1.1/8"

\*) Do not include Dura-Port connection

# Ultima Bilge

Sleek, reliable and compact unit with integrated switch ready to install and run for years and years of unerring service. Available in 600-800-1000-1250 GPH versions. Voltage 12 V DC. For Ultima Bilge™ 600 GPH-1000 GPH, we have easy-to-install Dura-Port discharge ports to eliminate stress cracking caused by over-tightened hose clamps. The pumps are delivered including both a straight and a 90° smooth elbow Dura-Port and a removable check valve.

600, 800 & 1000 GPH

1250 GPH

Length 142 mm – 6"  
 Width 82 mm – 3.2"  
 Height 105 mm – 4.1"  
 Weight 0.66 kg – 23.3 oz.

Length 142 mm – 6"  
 Width 82 mm – 3.2"  
 Height 117 mm – 4.6"  
 Weight 0.66 kg – 23.3 oz.



Order No.	Description	Capacity 3 ft (0.9 m) head (13.6 V)	Capacity straight (13.6 V)	Amperage	Fuze Size	Connection
32-47258-008	600 GPH, 12 V	32 l/min - 500 GPH	38 l/min - 600 GPH	2.5 A	5 A	3/4"
32-47259-008	800 GPH, 12 V	38 l/min - 600 GPH	51 l/min - 800 GPH	3 A	5 A	3/4"
32-47260-008	1000 GPH, 12 V	44 l/min - 700 GPH	64 l/min - 1000 GPH	3.2 A	5 A	3/4"
32-47261-005*	1250 GPH, 12 V	51 l/min - 800 GPH	79 l/min - 1250 GPH	3 A	5 A	1.1/8" and 1.1/4"

\*) Do not include Dura-Port connection

# Heavy Duty Bilge Pump – L1600 - L4000 Series

Designed to meet and exceed the tough demands of commercial and recreational duty. This pump has a liquid cooled, 12-pole motor with double ball bearings for extended service life. The L2200 motor is sealed off by a mechanical seal design, while the L1600 model has lipseal. The impeller is carefully designed and tested to maximize head and flow. The L4000 features a robust motor design, mechanical shaft seal, high impact ABS plastic and unique threaded port design. Universal base plate and a choice of 1.1/2" or 2" ports makes for a simple installation. Removable check valve included.

L1600

L2200

L4000

Shaft SS2343  
 Wire size 1.3 mm<sup>2</sup> – 16 GA  
 Wire length 1.8 m – 6 ft  
 Max Ø 108 mm – 4.25"  
 Max height 149 mm – 5.86"  
 Weight 1.3 kg – 2.75 lbs

Shaft SS2343  
 Wire size 1.3 mm<sup>2</sup> – 16 GA  
 Wire length 1.8 m – 6 ft  
 Max Ø 108 mm – 4.25"  
 Max height 177 mm – 7"  
 Weight 2.7 kg – 6 lbs

Shaft SS2343  
 Wire size 2 mm<sup>2</sup> – 14 GA  
 Wire length 1.8 m – 6 ft  
 Max Ø 121 mm – 4.8"  
 Max height 216 mm – 8.5"  
 Weight 2.45 kg – 5.4 lbs



Order No.	Description	Capacity 1.0 m head (13.6 V/27 V)	Capacity straight (13.6 V/27 V)	Amperage	Fuze Size	Connection
32-1600-01	L1600, 12V	98 l/min – 1550 GPH	100 l/min – 1600 GPH	7 A	10 A	1.1/8" and 1.1/4"
32-1600-02	L1600, 24V	98 l/min – 1550 GPH	100 l/min – 1600 GPH	3.5 A	6 A	1.1/8" and 1.1/4"
32-2200-01	L2200, 12V	120 l/min – 1900 GPH	130 l/min – 2060 GPH	7.5 A	12 A	1.1/8" and 1.1/4"
32-2200-02	L2200, 24V	120 l/min – 1900 GPH	130 l/min – 2060 GPH	4.5 A	6 A	1.1/8" and 1.1/4"
32-4000-01	L4000, 12V	164 l/min – 2600 GPH	252 l/min – 4000 GPH	15 A	25 A	1.1/2" and 2"
32-4000-02	L4000, 24V	164 l/min – 2600 GPH	252 l/min – 4000 GPH	7.5 A	15 A	1.1/2" and 2"

# Bilge Mate

A low budget alternative designed as a choice for boat owners who still are looking for an unexpensive quality product.



Max Ø 115 mm – 4.5"  
 Max height 100 mm – 4"  
 Weight 0.35 kg – 12 oz.

Order No.	Description	Capacity straight (13.6 V/27 V)	Amperage	Fuze Size	Connection
32-1015-01	Bilge Mate, 12V	30 l/min - 400 GPH	2.5 A	5 A	¾"

# Multiple Port Shower Sump

This compact shower sump system is designed to meet the higher demands from today's boating industry where more and more equipment is used. This also includes the fresh water system onboard and involves showers, dish-washing machines, galley sinks, etc. The shower sump turns on/off automatically using our Ultima switch technology and has multiple inlet ports for handling waste water from more than one tapping point. The check valve on the outlet stops water from flowing back into the tank. The tank has a tight-fitting lid to minimize splashing and odors. To further aid in cleaning, the system includes an easily removable mesh filter.



LxW 290x210 mm – 11.42x8.26"  
 Max height 145 mm – 5.7"  
 Weight 0.9 kg – 2 lbs

Order No.	Description	Capacity 1.0 m head (13.6 V/27 V)	Capacity straight (13.6 V/27 V)	Amperage	Fuze Size	Intake connection	Discharge connection
32-57151-01	Multiple Port Shower Sump, 12V	53 l/min - 844 GPH	61 l/min - 972 GPH	3.4 A	5 A	1x¾", 1x¾" or 1x1"	¾"
32-57151-02	Multiple Port Shower Sump, 24V	53 l/min - 844 GPH	61 l/min - 972 GPH	2 A	3 A	1x1.1/8" or 1x1.1/2"	¾"
32-54304	Clear Sump Cover						

# Viking Compact

Full-capacity, hand-powered bilge pump perfect for installation in tight spaces.

This rugged, yet sleekly designed, single-chamber diaphragm pump provides first-rate performance and is a snap to install. It can be fitted in minutes from one side of the bulkhead with just four screws, self-sealing against the surface with a durable, watertight gasket. With the pump house recessed behind the bulkhead, only the handle is visible from the cabin or cockpit.

The Viking Compact's inlet and outlet ports can be swiveled 360° and are delivered in two sizes with every pump, Ø25mm (1") and Ø38mm (1.1/2"). Naturally, the Viking Compact has KlickTite™ connectors fitted as standard, literally making hose connections a snap!



Flow at 10 kPa head and 45 strokes/min  
 Ø25mm connections 34,5 liters/minute (9.1 US gallons/minute)  
 Ø38mm connections 45 liters/minute (11.9 US gallons/minute)

Body Polypropylene  
 Cover ABS  
 Diaphragm Nitrile rubber  
 Valves Nitrile rubber (1 leaf and 1 tricuspid valve)  
 Wetted parts Polypropylene, PA66GF30 plastics and nitrile rubber  
 Maximum lift 2.1 meters (7 feet)  
 Maximum head 1.2 meters (4 feet)  
 Combined head/lift 3.3 meters (10.8 feet)  
 Connection KlickTite™ connectors for 1" (25 mm) or 1.1/2" (38 mm) hose. Both options included  
 Max. liquid temp +60°C (140°F)  
 Weight 0.675 kg (1.5 pounds)

*Dependability in the grasp of your hand!*

Order No.	Description
10-24800-01	Viking Compact w. dia. 25 mm (1") and dia. 38 mm (1.1/2") ports.

# Viking Universal

Heavy duty, self-priming, hand-powered bilge pump for nearly any type of installation.

Viking Universal's mounting bracket allows for vertical or horizontal surface mounting. With the optional Through Deck kit the pump can be installed behind bulkheads or below the deck. To minimize required space the Viking Universal excels at adaption. The simple switching of the valves together with the connections allows you to choose flow direction. The included KlickTite™ straight and 90° hose connections can be used in combination. The hose connections and even the pump housing can be easily rotated for optimal positioning.

While designed as a powerful bilge pump, the Viking Universal's large Ø38 mm (1 1/2") valves enable the pump to also be used for pumping toilet waste.

Fasteners are included for stowing the handle and the safety clasp ensures that the handle cannot be lost while not in use or during an emergency situation. Viking Universal meets ISO 15083, "Bilge pumping systems".

At 45 strokes/min and a 1 m (3.28') head (10 kPa (1.45 psi) pressure) the Viking Universal has a flow of 60 l/min -16 GPM.

Body and cover	Polypropylene plastic reinforced with 30% fiberglass
Diaphragm and valves	Nitrile rubber
Wetted parts	PP30GF, PA66 GF30, POM, stainless steel, nitrile rubber
Maximum suction	3 meters (10')
Maximum head	4 meters (13')
Combined suction/head	7 meters (23')
Connection	KlickTite™ connectors 38 mm (1 1/2") hose. Both straight and 90° bends are included
Max. liquid temp	+60°C (140°F)
Weight	1,5 kg (3.3 lbs)



Order No.	Description
10-13530-01	Viking Universal with connection diameter 38 mm (1 1/2")
09-36250	Viking Universal ThruDeck kit



## Accessories

Order No.	Description	Connection
09-47493	Connection, 90° In/Out	Ø38
09-47495	Connection, 90° In/Out	Ø25
09-47543	Connection, straight In/Out	Ø38
09-47544	Connection, straight In/Out	Ø25



# Viking ThruDeck and Bulkhead

When the power is out you can always depend on the hand operated diaphragm bilge pump. The Viking pump can also be used for pumping toilet waste due to the large valve openings. The pump is available in two models for various installation alternatives. It can be mounted behind walls, through deck and under bulkheads.

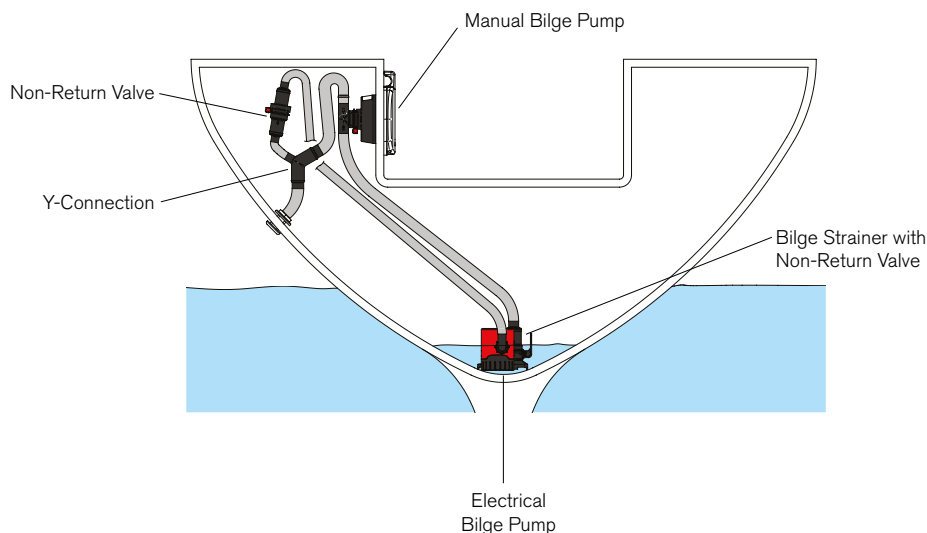
Viking ThruDeck for installation behind vertical wall or under deck with sealing boot, complete with a cover plate. Viking Bulkhead for surface installation with horizontal lever.

Capacity data	Diameter	164 mm – 6.45"
(At 1 m/3.28' suction height : 0.9 l/stroke)	Handle length	285 mm – 11.22"
60 strokes/min	Width	253 mm – 9.96"
80 strokes/min	Height	133 mm – 5.23"
100 strokes/min	Weight	2 kg – 4.5 lbs
Max suction height 4 m – 13 ft		

Order No.	Description
70-50005	ThruDeck 1.1/2"
70-50025	ThruDeck 1"
70-50007	Bulkhead 1.1/2"
70-50027	Bulkhead 1"



## Bilge Pump System, manual and electrical in combination



## Manual & Electric Bilge Pump Accessories



- Designed to install in-line
- Maintains prime in a suction or discharge line
- Easy to maintain and clean without any tools

### In-Line Non-Return Valve

Order No.	Description	Connection
09-24792	In-Line Non-Return Valve	25/38 mm (1" / 1.½")
09-24818	In-Line Non-Return Valve	19/32 mm (¾" / 1.¼")



- Designed to prevent bilge debris blocking the inlet suction line
- Reduce the risk of debris entering and blocking the pump
- Maintain prime in the suction line
- Easy to maintain and clean without any tools

### Bilge Strainer With Non-Return Valve

Order No.	Description	Connection
09-24794	Strainer	19/32 mm (¾" / 1.¼"), 25/38 mm (1" / 1.½")



- Y-connections enable two pumps to discharge through a single line. Diverter valve is not required.

### Y-connections

Order No.	Description
01-24814	Y-connection 38X38X25
01-24815	Y-connection 29/32X29/32X19

# Bilge Pump Control

Switch panel that gives full control of your equipment. Just push the button for manual or automatic bilge pumping. The automatic feature operates in combination with the automatic bilge switches or the electronic float switch. The three-position switch panel in matt black finish has an integrated fuse holder and operating light. Fuses included.

Size: 73 mm/2.99" x60 mm/2.17", 40 mm/ 1.57" depth.



Order No.	Description
34-1224	Bilge Pump Control, 12V - 3 way, on, auto, off
34-1225	Bilge Pump Control, 24V - 3 way, on, auto, off
34-82004	Bilge Pump Control, 12V - 2 way, on, off
34-82004-24V	Bilge Pump Control, 24V - 2 way, on off

# Ultima Switch™

Digital technology uses the patented Mirus field effect detector cells producing micro-electrical fields that detect disruptions caused by water and fluids. Detector cells are totally sealed and are never in contact with the water, will not corrode and are not affected by oil or foreign debris. No moving parts, totally sealed solid state electronics and field detectors, no mercury and no exposed sensors eliminate corrosion possibilities and makes the Ultima switch environmentally sensitive. Ultima activates at a 50 mm (2") fluid level and deactivates at a 20 mm (¾") fluid level. A 3 second delay prevents false starts. Ultima switch is rated to handle pumps up to 20 amps at 12 or 24 volts.



Order No.	Description	Max Amp.
34-36303	Ultima Switch, 12/24V	20 A

# Electronic Float Switch

Compact mechanical switch offers a combination of reliable solid state electronics and a sealed float switch. False start prevention, no mercury, high impact plastic and encapsulated electronics adds up to dependability. Activates pump at 2" water level, deactivates pump at ¾" water level. 12V. Handles up to 15 amps.



Order No.	Description	Max Amp.
34-1900B-12V	Electronic Float Switch, 12V	15 A
34-1900B-24V	Electronic Float Switch, 24V	8 A

# Automatic Switch AS888

For full automatic bilge pumping operation, connect the automatic switch to your bilge pump. The AS888 automatic switch has a time-proven micro switch without mercury. When water exceeds the acceptable level, the pump is turned on by a rolling steel ball, which changes the pressure on the micro switch. The AS888 attaches to any of SPX's Johnson Pump Marine Brand bilge pump through the clip on "T-slot" and can be used with 6, 12, 24 or 32 V systems. Use AS888 for a better and safer life afloat!



Order No.	Description	Max Amp.
34-888	Automatic Switch AS888	15 A

# Bilge Alert™

High water alarm featuring digital technology using the patented Mirus field effect cell. Totally sealed fluid detector are never in contact with water, will not corrode and are not affected by oil or debris. Bilge Alert detects water and sends a signal (3 seconds delay) to the alarm and switch conveniently mounted on a panel. Three way rocker switch allows alarm to be tested, turned off and armed.



Order No.	Description
34-72303-001	Bilge Alert, High Water Alarm, 12V
34-72303-002	Bilge Alert, High Water Alarm, 24V

# Side Mount Bracket

Gives opportunity to mount the pump on a wall. Suitable for Cartridge and Cartridge Duo.

Order No.	Description
34-900	Side Mount Bracket



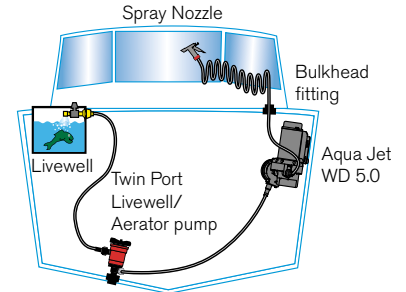
# Livewell Aerating pumps

## Twin Port Pumps

Offer the convenience of using only one intake for both the livewell and raw water wash down pump. The 3/4" tapered inlet connects directly to the sea cock and the upper outlet port provides a continuous flow of water through the 3/4" discharge to the livewell while the lower outlet port connects to the wash down pump through either a 1/2" or 3/4" ports. New high pressure inlet seal easily handles the higher pressures created by high speed pickups commonly used.



Order No.	Description
32-48503	500 GPH
32-48703	750 GPH



## Cartridge Aerator Pump

Livewell pumps in 500 GPH and 750 GPH capacities with two different intake configurations of straight and 90°. Smaller profiles to fit in more confined spaces. Easy to change motor cartridge.



Order No.	Description
32-2850	500 GPH straight
32-3850	500 GPH 90°
32-2870	750 GPH straight
32-3870	750 GPH 90°

## PRO SERIES 1600 GPH Livewell/Baitwell

Features heavy duty bronze bottom inlet, 1600 GPH of pumping power, dual port capability, mega torque motor, double ball bearings, quiet running design, 1" NPT female intake. Built for the serious fisherman!



Order No.	Description	Capacity straight (13.6 V)	Capacity 3 ft (0.9 m) head (13.6 V)	Amperage	Fuze Size	Connection
32-16004B	1600 GPH, 12 V	1600 GPH	1550 GPH	7 A	10 A	1.1/8" and 1.1/4"
32-16004B-24V	1600 GPH, 24 V	1600 GPH	1550 GPH	3.5 A	6 A	1.1/8" and 1.1/4"



### Ice Chest Aerator kit

Converts any good sized ice chest (Esky) into your own portable live bait tank. The Ice Chest Aerator will keep your live bait alive, or catch fresh, even during the heat of the day. Includes a sturdy Bilge Mate pump, hose, spray bar, press on clamp, battery clamps and clear-cut instructions. Since there are no holes to drill the chest can always be returned to its original purpose.

Order No.	Description
32-24052	Ice Chest Aerator kit



### In-well Aerator kit

The easiest way to add oxygen to your live bait well. Use it as your primary aerator, or to recirculate while you are making a long run across the bay, or if you are trailing the boat, you can stop for fuel and be aerating your catch while the boat is on the trailer.

A dependable 500 GPH forces water through the aerating head to provide vital oxygen for respiration ensuring your bait stays fresh longer. To empty the well at the end of the day, merely open the valve, activate the pump and water passes through a discharge fitting.

Order No.	Description
32-24014	In-well Aerator kit



### Aqua Jet WD /Livewell Pump Kit 5.2

A wash down kit including a high capacity Aqua Jet WD 5.2, 5 bar (70 psi) pump, a 500 GPH Twin Port livewell pump, PUMProtector inlet strainer, spray nozzle, bulk head fitting with valve, 7.5 meters (25') of coiled wash down hose and two illuminated panel switches all in one package. Aqua Jet wash down/livewell pump kit makes it easy to add a wash down and livewell pump to any boat.

Order No.	Description
32-64634	Aqua Jet 5.2 WD/ 500 Livewell Pump Kit, 12V
34-82054	Livewell Panel Switch 12V





Photo: Cranchi



# FIP DC Pumps for Bilge, Deckwash & Refueling



With their high level of flexibility, these pumps are ideally suited for use in boats as bilge and deckwash pumps, fresh water pumps, refuelling pumps for oil and diesel. These pumps may be combined with a vacuum switch for automatic operation. Capacities vary from max 14 l/min to 55 l/min, allowing the proper matching of the pump to the application. All motors are heavy duty to provide long service life even under heavy use. Available in 12 or 24 volts.

**CE** CE marked according to following standards:

- F2P10-19, F3B-19, F4B-19, F4B-11**
- EN50082-1: 1992/Generic EMS Standard
- EN55014: 1993/Radio disturbance
- IEC801-2: 1984/Electrostatic Discharge
- IEC801-3: 1984/Radiated Immunity Test
- ISO8846: Small Craft – Electrical devices – Protection against ignition of surrounding flammable gases
- ISO8849: Small Craft – Electrically operated bilge pumps
- ISO10133: Small Craft – Electrical systems – Extra-low voltage d.c. installations
- F5B-19 12/24 V**
- EN55014: 1993/Radio disturbance

# DC Driven Flexible Impeller Pumps

Pumps suited for use in boats as bilge and deckwash pumps, fresh water pumps, refuelling pumps for oil and diesel. Can be combined with a vacuum switch for automatic operation. Capacities vary from max 14 l/min to 55 l/min, allowing the proper matching of the pump to the application. All motors are heavy duty to provide long service life even under heavy use.

## F2P10-19 – Capacity 15 l/min

Fully equipped, self-priming multipurpose pump operating on a simple and uncomplicated principle. Ideal for pumping water, oils and chemicals.



Order No.	Description	Body	Impeller	Seal	Connection	Length	Width	Height	Weight
10-24180-1	F2P10-19, 12V	PTMT	09-1077B-9	Lip seal	1/2" hose	172 mm – 6.8"	117 mm – 4.6"	78 mm – 3.1"	1,6 kg – 3.5 lbs
10-24180-2	F2P10-19, 24V	PTMT	09-1077B-9	Lip seal	1/2" hose	172 mm – 6.8"	117 mm – 4.6"	78 mm – 3.1"	1,6 kg – 3.5 lbs

Contains Nitrile impeller

## F3B-19 – Capacity 21 l/min

Perfect for bilge pumping, deckwash, water circulation, oil and diesel refuelling at dockside service, etc.



Order No.	Description	Body	Impeller	Seal	Connection	Length	Width	Height	Weight
10-24516-01	F3B-19, 12V	Bronze	09-843S-9	Lip seal	3/8" BSP	170 mm – 6.7"	113 mm – 4.4"	82 mm – 3.22"	2 kg – 4.5 lbs
10-24516-02	F3B-19, 24V	Bronze	09-843S-9	Lip seal	3/8" BSP	170 mm – 6.7"	113 mm – 4.4"	82 mm – 3.22"	2 kg – 4.5 lbs

Contains Nitrile impeller

## F3B-19 Oil Change – Capacity 21 l/min

Reversible rubber impeller pump with integrated quick reversing switch. Designed to remove old oil from the engine/fill new oil back into the engine.



Order No.	Description	Body	Impeller	Seal	Connection	Length	Width	Height	Weight
10-24760-01	F3B-19 Oil change, 12V	Bronze	09-843S-9	Lip seal	3/8" BSP	170 mm – 6,7"	113 mm – 4.4"	115 mm – 4.5"	2,1 kg – 4.5 lbs
10-24760-02	F3B-19 Oil change, 24V	Bronze	09-843S-9	Lip seal	3/8" BSP	170 mm – 6,7"	113 mm – 4.4"	115 mm – 4.5"	2,1 kg – 4.5 lbs

Contains Nitrile impeller

## F38B-19 – Capacity 35 l/min

Perfect for bilge pumping, deckwash, water circulation, oil and diesel refuelling at dockside service, etc.



Order No.	Description	Body	Impeller	Seal	Connection	Length	Width	Height	Weight
10-24727-01	F38B-19, 12V	Bronze	09-824P-9	Lip seal	Hose 1" / 1/2" BSP	180 mm – 7"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs
10-24727-02	F38B-19, 24V	Bronze	09-824P-9	Lip seal	Hose 1" / 1/2" BSP	180 mm – 7"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs

Contains Nitrile impeller

## F4B-19 – Capacity 48 l/min

Perfect for bilge pumping, deckwash, water circulation, oil and diesel refuelling at dockside service, etc.



Order No.	Description	Body	Impeller	Seal	Connection	Length	Width	Height	Weight
10-24689-01	F4B-19, 12V	Bronze	09-824P-9	Lip seal	Hose 1" / 1/2" BSP	202 mm – 8"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs
10-24689-02	F4B-19, 24V	Bronze	09-824P-9	Lip seal	Hose 1" / 1/2" BSP	202 mm – 8"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs

Contains Nitrile impeller



### F4B-11 Ultra Ballast – Capacity 52 l/min

Designed to quickly fill or, when reversed, drain a ballast tank at a rate of more than 45 l/min (12 GPM). Capable of pumping fresh or sea water the pump's robust design can handle the rigors of continuous duty usage, is reversible, and has a built in thermal overload for added protection. Polarity reversing switch kit available as accessory. Care not to run dry for extended periods of time will increase the pump longevity and ensure reliable performance for many years. *Note! Only for waterhandling.*

Order No.	Description	Body	Impeller	Seal	Connection	Length	Width	Height	Weight
10-24690-01	F4B-11 Ultra Ballast, 12 V	Bronze	09-824P-1	Lip seal	Hose 1" / 1/2" BSP	202 mm – 8"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs
10-24690-02	F4B-11 Ultra Ballast, 24 V	Bronze	09-824P-1	Lip seal	Hose 1" / 1/2" BSP	202 mm – 8"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs

EPDM-impeller



### F5B-19 – Capacity 55 l/min

For bilge pumping, deckwash, water circulation, oil and diesel refuelling at dockside service, etc.

Order No.	Description	Body	Impeller	Seal	Connection	Length	Width	Height	Weight
10-24188-1	F5B-19, 12 V	Bronze	09-1027B-9	Mech. seal	3/4" BSP	258 mm – 10.15"	131 mm – 5.15"	120 mm – 4.72"	8kg/17.5lbs
10-24188-2	F5B-19, 24 V	Bronze	09-1027B-9	Mech. seal	3/4" BSP	258 mm – 10.15"	131 mm – 5.15"	120 mm – 4.72"	8kg/17.5lbs

Contains Nitrile impeller

### Gear Pump with Oil Change Kit

Light and compact oil change pump with pump body and gears made of PTFE. Complete with oil dip stick extraction tube 6 and 8 mm. 180 cm connection wires with battery clamps.

Port connection:	Outlet: 14 mm hose Inlet: 8 mm hose	Dimension:	140 x 80 mm
Self priming:	Up to 0,6 m	Weight:	1.1 kg
Capacity:	8 l/min	Fuse size 12V:	8 A
		Fuse size 24V:	6 A

Order No.	Description
80-47508-01	GP8-19 12V
80-47508-02	GP8-19 24V



### Pressure and Capacity Data (based on water at 20°C/68°F)

F2P10-19						Ampere Draw	
Bar	kPa	psi	l/min	GPM	12 V	24 V	
Count. Duty							
0	0	0	15.0	4.0	5.6	4.0	
0.1	10	1.45	14.5	3.8	5.7	4.0	
0.2	20	2.90	14.0	3.7	5.8	4.1	
0.3	30	4.35	13.5	3.6	5.9	4.1	
0.6	60	8.7	11.0	2.9	6.1	4.2	
Intermittent Duty							
0.75	75	10.8	9.6	2.5	6.5	4.3	
0.9	90	13.0	7.0	1.8	6.5	4.8	
Fuse Required						15 A	8 A

F4B-19						Ampere Draw	
Bar	kPa	psi	l/min	GPM	12 V	24 V	
Count. Duty							
0	0	0	48.0	12.7	12.2	6.5	
0.1	10	1.45	45.0	11.9	12.3	6.7	
0.2	20	2.9	44.5	11.7	12.2	6.8	
0.3	30	4.35	41.0	10.8	13.1	7.1	
0.6	60	8.7	34.0	9.0	14.9	7.5	
Intermittent Duty							
0.9	90	13.0	25.0	6.6	16.5	7.8	
1.2	120	17.4	11.0	2.9	18.3	8.8	
Fuse Required						15 A	8 A

F3B-19						Ampere Draw	
Bar	kPa	psi	l/min	GPM	12 V	24 V	
Count. Duty							
0	0	0	21.0	5.5	8.4	4.0	
0.1	10	1.45	20.5	5.4	8.5	4.0	
0.2	20	2.9	20.0	5.3	8.6	4.1	
0.3	30	4.35	19.5	5.2	8.8	4.1	
0.6	60	8.7	17.8	4.7	9.0	4.2	
Intermittent Duty							
0.9	90	13.0	15.6	4.1	9.6	4.3	
1.2	120	17.4	12	3.2	10.3	4.8	
Fuse Required						15 A	8 A

F5B-19						Ampere Draw	
Bar	kPa	psi	l/min	GPM	12 V	24 V	
Count. Duty							
0	0	0	55.0	14.5	23.2	11.9	
0.3	30	1.45	49.4	13.1	24.2	12.8	
0.6	60	8.7	39.9	10.5	25.1	13.3	
0.9	90	13.0	30.1	8.0	26.2	14.0	
1.2	120	17.4	19.3	5.1	28.0	14.7	
1.5	150	21.76	9.3	2.4	29.8	15.3	
Fuse Required						50 A	25 A
Recommended wire size						16 mm <sup>2</sup>	6 mm <sup>2</sup>

F38B-19						Ampere Draw	
Bar	kPa	psi	l/min	GPM	12 V	24 V	
Count. Duty							
0	0	0	35.0	9.2	10.9	5.0	
0.1	10	1.45	33.8	8.9	11.0	5.1	
0.2	20	2.9	32.2	8.5	11.0	5.1	
0.3	30	4.35	31.0	8.2	11.1	5.2	
0.6	60	8.7	25.5	6.7	11.9	5.4	
Intermittent Duty							
0.9	90	13.0	15.3	4.0	13.6	6.0	
1.2	120	17.4	2.0	0.5	15.8	7.1	
Fuse Required						15 A	8 A

### Accessories



Polarity Reversing Switch Kit for Ultra Ballast Pump F4B-11

Order No.	Description
09-47196	Polarity Reversing Switch Kit



Vacuum Switch see page 36

Order No.	Description
09-45053	Vacuum Switch



# Circulation Pumps



CM-series – a line of compact magnetic driven centrifugal pumps which combine high flow rates with very low electric current consumption. Suitable for fresh water and ethylene glycol.

C090 – mechanical sealed pumps with a motor designed for continuous operation. Suitable for fresh water and ethylene glycol circulation.



CE marked according to following standards:

**CM10P7-1, CM30P7-1, CM90, C090P5-1**

Recreational Craft Directive 94/25/EEC

ISO 8846: 1990/Small Craft - Electrical devices - Protection against ignition of surrounding flammable gases

(ISO 10133: 1994/Small Craft -Electrical systems - Extra low-voltage DC installations)

Electromagnetic Compatibility Directive 2004/108/EC

EN55014-1: 2006 Electromagnetic compatibility –

Requirements for household appliances, electric tools and similar apparatus – Part 1:Emission

EN55014-2: 1997 +A1: 2001 Electromagnetic compatibility –

Requirements for household appliances, electric tools and similar apparatus – Part 2:Immunity.

EN61000-6-3: 2007 Electromagnetic compatibility (EMC) –

Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments.

2004/104/EC: 2004 Annex1; paragraph 6.5, 6.6, 6.8 and 6.9.



### CM10 & CM30

**Pump body** PPA thermoplastic  
**Impeller** PPS thermoplastic  
**O-ring** EPDM  
**Shaft** Stainless steel  
**Magnet housing** PSU  
**Motor** 12/24V DC enclosed (as per IP67)  
 permanent magnet, ball bearing mounted motor, designed for continuous operation water/glycol mixture; max. 60% glycol, fresh and salt water  
**Liquid**  
**Liquid temp.** Min -40°C Max +100°C  
**Hose connection** Ø 16 mm (5/8") or 20 mm (3/4") hose.  
 Note! CM30P7-1 with Ø 16 mm (5/8") available on request

#### Dimensions and weight

	CM10P7-1	CM30P7-1
<b>Length</b>	177 mm – 6.97"	177 mm – 6.97"
<b>Width</b>	68 mm – 2.68"	68 mm – 2.68"
<b>Height</b>	85 mm – 3.35"	85 mm – 3.35"
<b>Weight</b>	0.53 kg – 1.2 lbs	0.6 kg – 1.3 lbs

#### Ø 16 mm (5/8")

Order No.	Description	Capacity
10-24501-03	CM10P7-1, 12V	15 l/min at 0.1 bar (4 GPM at 3.3 ft)
10-24501-04	CM10P7-1, 24V	15 l/min at 0.1 bar (4 GPM at 3.3 ft)
10-24503-03	CM30P7-1, 12V	20 l/min at 0.1 bar (5.2 GPM at 3.3 ft)
10-24503-04	CM30P7-1, 24V	20 l/min at 0.1 bar (5.2 GPM at 3.3 ft)

#### Ø 20 mm (3/4")

Order No.	Description	Capacity
10-24502-03	CM10P7-1, 12V	18.5 l/min at 0.1 bar (5 GPM at 3.3 ft)
10-24502-04	CM10P7-1, 24V	18.5 l/min at 0.1 bar (5 GPM at 3.3 ft)
10-24504-03	CM30P7-1, 12V	26 l/min at 0.1 bar (6.9 GPM at 3.3 ft)
10-24504-04	CM30P7-1, 24V	26 l/min at 0.1 bar (6.9 GPM at 3.3 ft)



### CM90

**System pressure** -0.3 to +3.0 bar; stationary max. 4.0 bar  
**Liquid** water/glycol mixture; max. 60% glycol, fresh and salt water  
**Motor service life** More than 5,000 hours at nominal voltage  
 10,000 start/stops. Interchangeable motor.  
**Motor, voltage** Nominal 13.6V DC for use between 10-16V  
 Nominal 27.2V DC for use between 20-32V  
**Input power** Max. 125W  
**Dry running** 30 minutes  
**Dimensions** 255 mm long x 120 mm wide x 140,5 mm high  
 253 mm long x 120 mm wide x 149,5 mm high  
**Ports** Ø 20 mm (3/4") & Ø 38 mm (1.1/2")  
**Weight** 3.0 kg (6.6 pounds)  
**Body** PPA, glass-fiber reinforced  
**Mounting** Separate universal bracket for flat surfaces

#### Ø 20 mm (3/4")

Order No.	Description	Capacity
10-24750-01	CM90P7-1, 12V	50 l/min (17.2 GPM) at 0.25 bar
10-24750-02	CM90P7-1, 24V	50 l/min (17.2 GPM) at 0.25 bar

#### Ø 38 mm (1.1/2")

Order No.	Description	Capacity
10-24664-01	CM90P7-1, 12V	90 l/min at 0.25 bar (23.7 GPM at 8.4 ft)
10-24664-02	CM90P7-1, 24V	90 l/min at 0.25 bar (23.7 GPM at 8.4 ft)



### C090

**Pump body** PA66 thermoplastic  
**Impeller** PA66 thermoplastic  
**Shaft** Stainless steel  
**Shaft seal** Mechanical seal  
**Motor** 12/24 V DC enclosed (as per IP31)  
 permanent magnet, ball bearing mounted motor, designed for continuous operation water/glycol mixture; max. 60% glycol, fresh water  
**Liquid**  
**Liquid temp.** Min -30°C Max +100°C  
**Hose connection** Ø 38 mm (1.1/2") hose

#### Dimensions and weight

<b>Length</b>	211 mm – 8.3"
<b>Width</b>	117 mm – 4.6"
<b>Height</b>	110 mm – 4.56" from baseplate (totally 116 mm – 4.8")
<b>Weight</b>	1.75 kg – 3.8 lbs

Order No.	Description	Capacity
10-24190-1	C090P5-1, 12V	100 l/min at 0.1 bar (26.4GPM at 3.3 ft)
10-24190-2	C090P5-1, 24V	100 l/min at 0.1 bar (26.4GPM at 3.3 ft)



Photo: Hallberg-Rassy by Rick Tomlinson

# Waste Water Handling & Marine Toilets



From a name you can trust, the AquaT™ toilet provides the comfort and convenience of a land-based lavatory at sea — a marine toilet that flushes as quietly as a toilet on land.

In combination with the Viking Power 16 or 32 and a Grey Water Tank you will have a complete waste water handling system.

**CE** CE marked according to following standards:

- Viking Power**
- Recreational Craft Directive 94/25/EEC
- ISO8846: Small Craft – Electrical devices – Protection against ignition of surrounding flammable gases
- ISO10133: Small Craft – Electrical systems – Extra-low voltage d.c. installations
- ISO8849: Small Craft – Electrically operated bilge pumps

Electromagnetic Compatibility Directive 89/336/EEC  
EN55014: 1993/Radio disturbance

- AquaT Silent Electric, Standard Electric & Premium**
  - Recreational Craft Directive 94/25/EEC
  - ISO8846: Small Craft – Electrical devices – Protection against ignition of surrounding flammable gases
- Electromagnetic Compatibility Directive 89/336/EEC  
EN55014: 1993/Radio disturbance

## Viking Power 16

A modern, single-chamber, self-priming diaphragm pump that can be set up in several different pump/motor configurations. It is easy to install anywhere after the drain outlet in the wastewater system or as a bilge pump in any leisure craft – new or used.

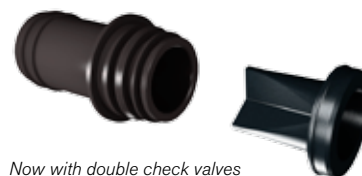
Its non-choke valves mean that no in-line filters are necessary. The pump can be run dry, and it can also handle a mixture of air and water without difficulty. The Viking Power 16 is self-priming up to a height of 3 meters.

With its low pulse and muffled rubber bracket, this pump offers quiet operation. Specifically designed to pump waste water, the Viking Power 16 has been built to last, and engineered for easy maintenance. When it comes time to replace the premium grade reinforced nitrile rubber diaphragm, you can put in a spare without even removing the pump from the system. Delivered with 1" hose and 3/4" hose 1/2" BSP KlickTite™ XL connectors. 90° KlickTite™ XL connectors available as extra accessory.



### Viking Power 16

<b>Motor</b>	2.3 amp (12V), 1.2 amp (24V) at 0.1 bar 12/24V DC (with built-in thermal protection)
<b>Body</b>	Nylon, glass-fiber reinforced
<b>Valves</b>	Nitrile rubber
<b>Diaphragm</b>	Reinforced nitrile rubber
<b>Length</b>	186 mm – 7.3"
<b>Width</b>	235/181 mm – 9.3"/7.1"
<b>Height</b>	118/204 mm – 4.6"/8"
<b>Weight</b>	2.6 kg – 5.7 lbs



Now with double check valves for improved pumping action

Order No.	Description	Capacity, open flow	Capacity at 0.1 bar	Max lift	Max head	Connection
10-13350-03	Viking Power 16, 12V	16 l/min – 4.2 GPM	15 l/min – 4.0 GPM	3 m – 9.8 ft	3 m – 9.8 ft	KlickTite™ XL connectors for 1" hose or 3/4" hose and 1/2" BSP threads; straight and 90° (optional)
10-13350-04	Viking Power 16, 24V	16 l/min – 4.2 GPM	15 l/min – 4.0 GPM	3 m – 9.8 ft	3 m – 9.8 ft	KlickTite™ XL connectors for 1" hose or 3/4" hose and 1/2" BSP threads; straight and 90° (optional)

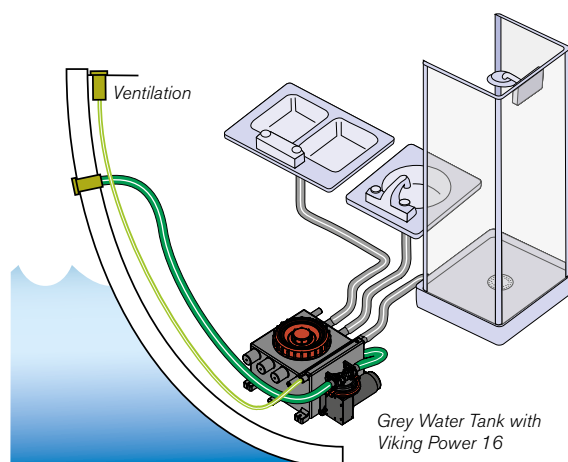
## Grey Water Tank

The Grey Water Tank is designed to be used as collection tank for waste water from showers, sinks, dishwashing machines, etc with 19 mm, 25 mm and 38 mm inlet ports, and 19 mm and 25 mm outlet ports. The tank includes an Ultima Switch for automatic operation and is easy to connect to any 12V/24V pump up to 20 amp. The tank is prepared for Viking Power 16, with pre-drilled holes for the pump.



Dimensions 185x280x340 mm

Order No.	Description
09-13384	Grey Water Tank, excl. Viking Power 16



Grey Water Tank with Viking Power 16



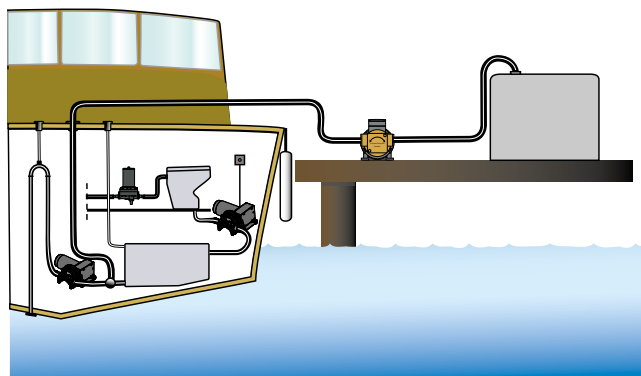
## Viking Power 32 & Viking Power Vacuum

The Viking Power 32 and Viking Power Vacuum diaphragm pumps have been designed to meet the rigorous demands of the world's leading manufacturers of boats, recreational vehicles and busses.

Thanks to its single-chamber design and non-choke valves, the Viking Power 32, can be used to pump un-macerated sewage to a holding tank or transfer it onwards to a septic tank.

The Viking Power Vacuum has double check-valves and can therefore also be used in vacuum toilet systems. Naturally, pumping ordinary shower or sink drain water or bilge water is no problem for either pump.

Like the Viking Power 16, this pump has been engineered with a ball-bearing supported transmission for long service life. The pump cannot only be run dry, it can also handle a mixture of air and water without difficulty. The Viking Power 32/Vacuum provides maximum flow of 32 l/min and is self-priming up to a height of 2.5 m for VP 32 or 5 m for VP Vacuum. Although powered by an electric motor, this pump can also be cranked by hand in case of an emergency.



### Viking Power 32

<b>Motor</b>	3.3 amp (12V), 1.6 amp (24V) at 0.1 bar 12/24V DC (with built-in thermal protection)
<b>Body</b>	Nylon
<b>Valves</b>	Nitrile rubber
<b>Diaphragm</b>	Reinforced nitrile rubber
<b>Length</b>	277 mm – 10.9"
<b>Width</b>	264 mm – 10.4"
<b>Height</b>	192 mm – 7.6"
<b>Weight</b>	5.0 kg – 11.0 lbs



Crank for manual handling

Order No.	Description	Capacity, open flow	Capacity at 0.1 bar	Max lift	Max head	Connection
10-13373-03	Viking Power 32, 12V	32 l/min – 8.5 GPM	30 l/min – 7.9 GPM	2.5 m – 8.2 ft	4 m – 13.1 ft	38 mm / 1½"
10-13373-04	Viking Power 32, 24V	32 l/min – 8.5 GPM	30 l/min – 7.9 GPM	2.5 m – 8.2 ft	4 m – 13.1 ft	38 mm / 1½"

### Viking Power Vacuum

<b>Motor</b>	3.3 amp (12V), 1.6 amp (24V) at 0.1 bar 12/24V DC (with built-in thermal protection)
<b>Body</b>	Nylon
<b>Valves</b>	Nitrile rubber
<b>Diaphragm</b>	Reinforced nitrile rubber
<b>Length</b>	357 mm – 14"
<b>Width</b>	271 mm – 10.7"
<b>Height</b>	192 mm – 7.6"
<b>Weight</b>	5.1 kg – 11.2 lbs



Crank for manual handling

Order No.	Description	Capacity, open flow	Capacity at 0.1 bar	Max lift	Max head	Connection
10-13373-07	Viking Power Vacuum, 12V	24 l/min – 6.3 GPM	22 l/min – 5.8 GPM	5 m – 16.4 ft	4 m – 13.1 ft	38 mm / 1½"
10-13373-08	Viking Power Vacuum, 24V	24 l/min – 6.3 GPM	22 l/min – 5.8 GPM	5 m – 16.4 ft	4 m – 13.1 ft	38 mm / 1½"

# Macerator Pump

The TA3P10-19 macerator pump takes care of toilet waste. A rotary cutter shreds waste before it is pumped into or out from the holding tank. The pump should be connected as close as possible to the holding tank discharge outlet or the bowl discharge outlet. Note! Use unbleached lavatory paper only.



## TA3P10-19

Motor	12/24V DC (with built-in thermal protection)	Length	230 mm – 9.06"
Body	Phenol Plastic (PF)	Width	108 mm – 4.25"
Impeller	Nitrile	Height	82 mm – 3.23"
Housing	Thermoplastic Polyester (PET)	Weight	1.9 kg – 4.2 lbs
Shaft	Stainless Steel		
Seal	Lip Seal		

Order No.	Description	Capacity at 0.2 bar (6.7 ft)	Inlet Connection	Outlet Connection
10-24453-04	TA3P10-19, 12V	37 l/min – 10 GPM	1.½" (dia 38 mm) hose or 1.½" BSP	1" (25.4 mm) hose
10-24453-05	TA3P10-19, 24V	37 l/min – 10 GPM	1.½" (dia 38 mm) hose or 1.½" BSP	1" (25.4 mm) hose



# AquaT™ Marine toilets

Available in a wide variety of different versions marketed under four basic models — standard, silent and premium electric-powered or manual — the AquaT™ marine toilet has been designed to meet virtually every conceivable lavatory installation situation onboard.

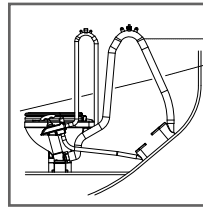
Priced competitively, the fine finish and well thought-through design of these toilets is remarkable. Made from white vitreous porcelain, and with corrosion resistant parts throughout, the AquaT™ marine toilet, is quiet, robust and easy to clean.

Most models can be ordered with standard, bevelled or low profiles in order to fit almost any hull and bulkhead configuration, and all are available in either compact or comfort versions so you can outfit your marine lavatory with the perfect-sized toilet, no matter what the layout.

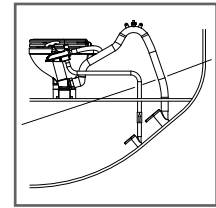
The standard electric model is equipped with a combined pump unit for disposal and flushing. It is easy to install and an economical choice of electrical toilet.

The silent and premium electric models are shipped with well-proven Aqua Jet diaphragm pumps in either 12V or 24V versions, and the manual version incorporates an ergonomically designed, hand-powered piston pump that can be mounted for either left-hand or right-hand use.

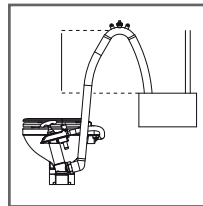
It is probably fair to think of most toilets as commonplace products, but look at the features and you are sure to see that the AquaT™ is far from ordinary. Quiet, hygienic and reliable, the AquaT™ marine toilet is perfect for almost any marine toilet room.



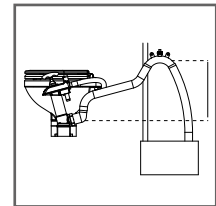
Toilet mounted below the waterline and discharging overboard.



Toilet mounted above the waterline and discharging overboard.



Toilet waste discharging into holding tank, discharging elbow below top of the holding tank at any time.



Toilet waste discharging into holding tank, discharging elbow always above top of the holding tank.



Manual Compact  
80-47229-01



Manual Comfort  
80-47230-01



Standard Electric Compact  
80-47435-01, 12V  
80-47435-02, 24V



Standard Electric Comfort  
80-47436-01, 12V  
80-47436-02, 24V



Silent Electric Compact  
80-47231-01, 12V  
80-47231-02, 24V



Silent Electric Comfort  
80-47232-01, 12V  
80-47232-02, 24V



Smart Standard Electric  
80-47505-01, 12V  
80-47505-02, 24V



Smart Silent Electric  
80-47506-01, 12V  
80-47506-02, 24V



Premium Low  
80-47233-01, 12V  
80-47233-02, 24V



Premium Low, Bevelled  
80-47234-01, 12V  
80-47234-02, 24V



Solenoid Low, Bevelled  
80-47234-03, 12V  
80-47234-04, 24V



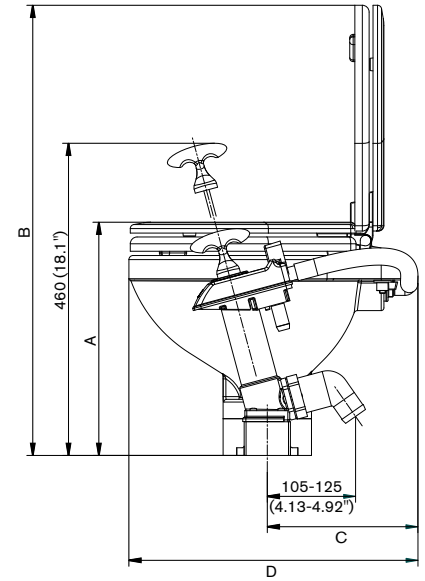
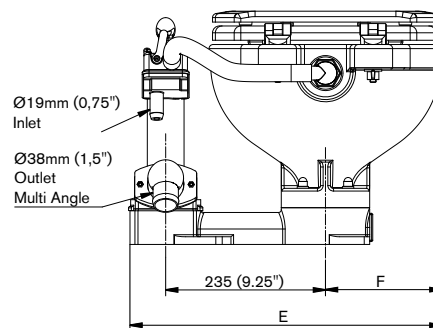
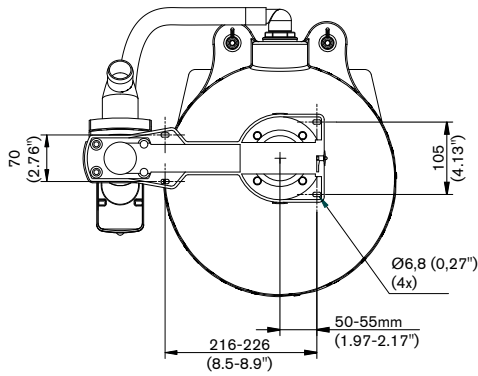
Premium Std.  
80-47235-01, 12V  
80-47235-02, 24V



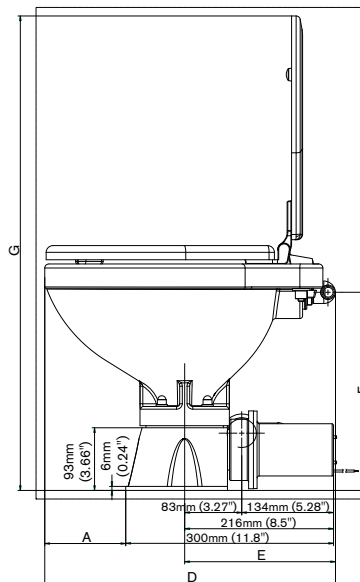
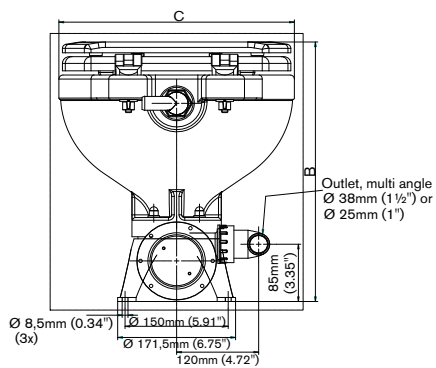
Premium Std. Bevelled  
80-47236-01, 12V  
80-47236-02, 24V

# AquaT™ Manual

Order No.	Description	Net Weight	A	B	C	D	E	F
80-47229-01	Compact	9,6 kg	345 mm	650 mm	215 mm	425 mm	450 mm	170 mm
		21 lbs	13.6 inch	25.6 inch	8.5 inch	16.7 inch	17.7 inch	6.7 inch
80-47230-01	Comfort	11 kg	340 mm	705 mm	275 mm	490 mm	470 mm	185 mm
		24 lbs	13.4 inch	27.8 inch	10.8 inch	19.3 inch	18.5 inch	7.3 inch

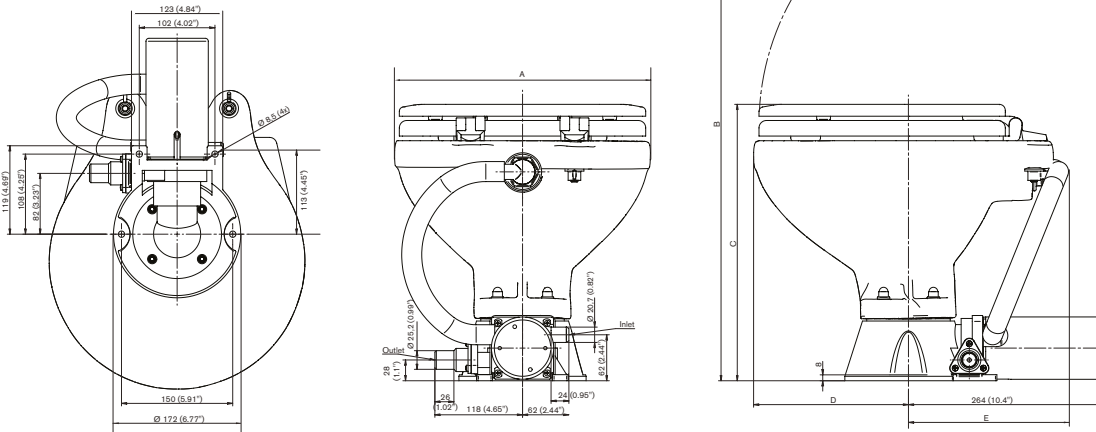


# AquaT™ Silent Electric



Order No.	Description	Net Weight	A	B	C	D	E	F	G
80-47231-01	Compact, 12V	9,6 kg	120 mm	390 mm	335 mm	420 mm	215 mm	290 mm	700 mm
		21 lbs	4.7 inch	15.4 inch	13.2 inch	16.5 inch	8.5 inch	11.4 inch	27.6 inch
80-47231-02	Compact, 24V	9,6 kg	120 mm	390 mm	335 mm	420 mm	215 mm	290 mm	700 mm
		21 lbs	4.7 inch	15.4 inch	13.2 inch	16.5 inch	8.5 inch	11.4 inch	27.6 inch
80-47232-01	Comfort, 12V	11 kg	190 mm	385 mm	365 mm	490 mm	275 mm	280 mm	755 mm
		24 lbs	7.5 inch	15.2 inch	14.4 inch	19.3 inch	10.8 inch	11.0 inch	29.7 inch
80-47232-02	Comfort, 24V	11 kg	190 mm	385 mm	365 mm	490 mm	275 mm	280 mm	755 mm
		24 lbs	7.5 inch	15.2 inch	14.4 inch	19.3 inch	10.8 inch	11.0 inch	29.7 inch

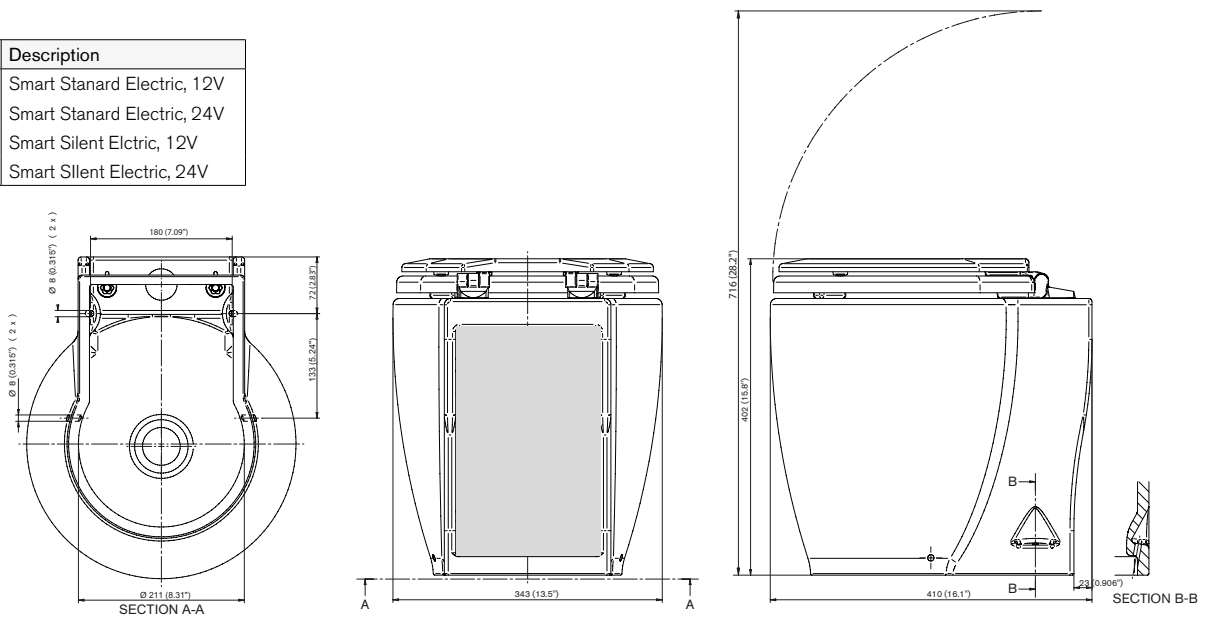
## AquaT™ Standard Electric



Order No.	Description	A	B	C	D	E
80-47435-01	Std. electric compact, 12V	345 /	692 /	373 /	209 /	216 /
80-47435-02	Std. electric compact, 24V	13.6\"	27.2\"	14.7\"	8.23\"	8.5\"
80-47436-01	Std. electric comfort, 12V	366 /	747 /	380 /	220 /	275 /
80-47436-02	Std. electric comfort, 24V	14.4\"	29.4\"	15\"	8.66\"	10.8\"

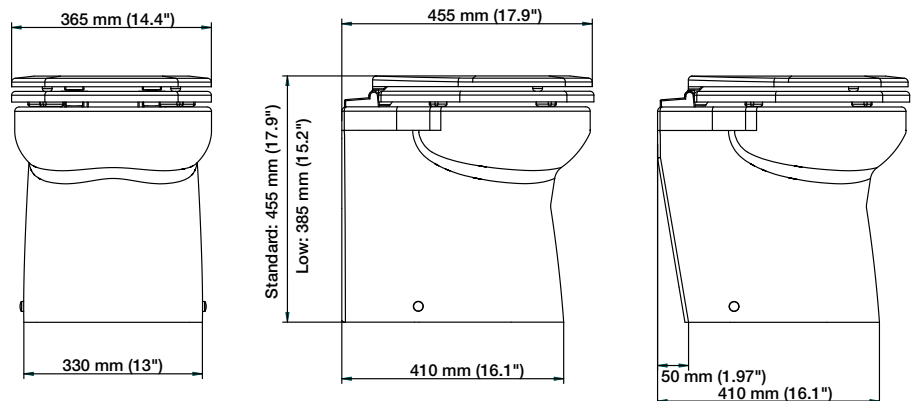
## AquaT™ Smart Standard Electric/Smart Silent Electric

Order No.	Description
80-47505-01	Smart Stanard Electric, 12V
80-47505-02	Smart Stanard Electric, 24V
80-47506-01	Smart Silent Electric, 12V
80-47506-02	Smart Silent Electric, 24V



## AquaT™ Premium

Order No.	Description
80-47233-01	Low, 12V
80-47233-02	Low, 24V
80-47234-01	Low, bevelled, 12V
80-47234-02	Low, bevelled, 24V
80-47234-03	Solenoid, Low, bevelled, 12V
80-47234-04	Solenoid, Low, bevelled, 24V
80-47235-01	Std., 12V
80-47235-02	Std., 24V
80-47236-01	Std. bevelled, 12V
80-47236-02	Std. bevelled, 24V



# Accessories

## Vented Loop

Order No.	Description
81-47237-01	Vented Loop, 3/4"
81-47237-02	Vented Loop, 1"
81-47237-03	Vented Loop, 1.1/2"



## Vacuum valve - Siphon breaker

Order No.	Description
09-47316-01	Siphon Breaker, Spud Size 12 mm
09-47316-02	Siphon Breaker, Spud Size 16 mm
09-47316-03	Siphon Breaker, Spud Size 19 mm
09-47316-04	Siphon Breaker, Spud Size 22 mm
09-47316-05	Siphon Breaker, Spud Size 25 mm
09-47316-06	Service Kit



## Y-valve

Order No.	Description
81-47238-01	Y-valve



## Standard Electric Control Panel

Order No.	Description
81-47520-01	Std Electric Control Panel, 12V & 24V



## Control Panel

Order No.	Description
81-36105-01	Control Panel, 12V & 24V



## Conversion Kit Silent Electric

Order No.	Description
81-47240-01	Conversion kit, 12V
81-47240-02	Conversion kit, 24V



## Flush 2.4 Pump

Order No.	Description
10-24677-01	Flush 2.4 Pump, 12V
10-24677-02	Flush 2.4 Pump, 24V



## Solenoid

Order No.	Description
81-47301-01	Solenoid valve, 12V
81-47301-02	Solenoid valve, 24V



## Conversion Kit Standard Electric

Order No.	Description
81-47442-01	Conversion kit, 12V
81-47442-02	Conversion kit, 24V



## Viking Power 32

Order No.	Description
10-13373-03	Viking Power 32, 12V
10-13373-04	Viking Power 32, 24V





# Radial Blowers & Marine Water Heaters



**CE** CE marked according to following standards:

**AirV – Extra Heavy Duty Radial Blowers**  
 ISO 9097:1991 Marine (Small craft, Electrical fans)  
 ISO 8846:1990 (Ignition protection)  
 ISO 10133: 2000 (Electrical systems)  
 EN 55014-1:2006 (2004/108EC)

**AquaH - Marine Water Heaters**  
 LOW VOLTAGE (LVD) DIRECTIVE 2006/95/EC  
 • EN 60335-1 (2008):  
 • EN 60335-2-21 (02-2004) + A1 (07-2005) + EC (01-2008):  
 ELECTROMAGNETIC COMPATIBILITY (EMC) DIRECTIVE - 2004/108/EC  
 • EN 55014 – 1 (1999) + A1 (2000) + A2 (2003)  
 • EN 55014 – 2 (1998) + A1 (2002)

AirV extra heavy duty radial blowers for marine engine compartment ventilation prior to start up. The blowers are made for continuous duty and can therefore be used for air intake or extraction in bilges, galleys, accommodation and other compartments.

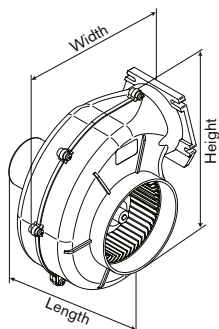
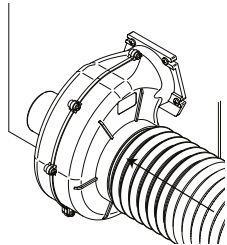
AquaH is an innovative series of AISI 316 stainless steel water heaters, with a storage capacity of 22 up to 80 litres (5.3 to 19.3 gal.). Dual heating as standard - electrical heating and indirect heating based on a second heat source, for example the cooling system from the Marine engine or generator set.

## AirV – Extra Heavy Duty Radial Blowers

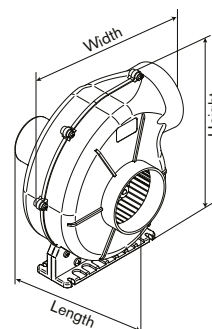
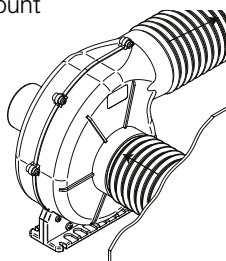
Marine radial blowers designed for engine compartment ventilation prior to start up. Made for continuous duty and is therefore suitable for air intake or extraction in bilges, galleys, accommodation and other compartments. Flange Mount and Flex Mount design with double ball bearing motor, high-impact anti-shock ABS body for AirV 3 and Nylon, glass-fiber reinforced body for AirV 4. Shaft and screws in Stainless steel.



Flange Mount



Flex Mount



Order No.	Description	Capacity	Dimensions H x W x L	Port Connections		Current [Amp]
				Inlet	Outlet	
80-47416-01	AirV 3-280 Flange Mount, 12V	280 m <sup>3</sup> /h, 163 cfm	175 x 160 x 195 mm / 6.89 x 6.3 x 7.68"	Ø75 mm	92 x 80	3,9
80-47416-02	AirV 3-280 Flange Mount, 24V	280 m <sup>3</sup> /h, 163 cfm	175 x 160 x 195 mm / 6.89 x 6.3 x 7.68"	Ø75 mm	92 x 80	2,5
80-47417-01	AirV 4-550 Flange Mount, 12V	550 m <sup>3</sup> /h, 324 cfm	277 x 256 x 168 mm / 10.91 x 10.08 x 6.61"	Ø110 mm	146 x 118	12,5
80-47417-02	AirV 4-550 Flange Mount, 24V	550 m <sup>3</sup> /h, 324 cfm	277 x 256 x 168 mm / 10.91 x 10.08 x 6.61"	Ø110 mm	146 x 118	7
80-47418-01	AirV 4-750 Flange Mount, 12V	750 m <sup>3</sup> /h, 441 cfm	277 x 256 x 171 mm / 10.91 x 10.08 x 6.73"	Ø150 mm	146 x 118	14,5
80-47418-02	AirV 4-750 Flange Mount, 24V	750 m <sup>3</sup> /h, 441 cfm	277 x 256 x 171 mm / 10.91 x 10.08 x 6.73"	Ø150 mm	146 x 118	8,5
80-47419-02	AirV 4-1000 Flange Mount, 24V	1000 m <sup>3</sup> /h, 589 cfm	277 x 256 x 208 mm / 10.91 x 10.08 x 8.19"	Ø150 mm	146 x 118	15,5
80-47420-01	AirV 4-550 Flex Mount, 12V	550 m <sup>3</sup> /h, 324 cfm	295 x 256 x 168 mm / 11.61 x 10.08 x 6.61"	Ø110 mm	Ø110 mm	12,5
80-47420-02	AirV 4-550 Flex Mount, 24V	550 m <sup>3</sup> /h, 324 cfm	295 x 256 x 168 mm / 11.61 x 10.08 x 6.61"	Ø110 mm	Ø110 mm	7
80-47421-01	AirV 4-750 Flex Mount, 12V	750 m <sup>3</sup> /h, 441 cfm	295 x 256 x 168 mm / 11.61 x 10.08 x 6.61"	Ø150 mm	Ø110 mm	14,5
80-47421-02	AirV 4-750 Flex Mount, 24V	750 m <sup>3</sup> /h, 441 cfm	295 x 256 x 168 mm / 11.61 x 10.08 x 6.61"	Ø150 mm	Ø110 mm	8,5
80-47422-02	AirV 4-1000 Flex Mount, 24V	1000 m <sup>3</sup> /h, 589 cfm	295 x 256 x 208 mm / 11.61 x 10.08 x 8.19"	Ø150 mm	Ø110 mm	15,5

## AquaH – Marine Water Heaters

Stainless steel water heaters with dual heating as standard - electrical heating and indirect heating based on a second heat source, for example based on the cooling system from the Marine engine or generator set. AquaH is an innovative series of AISI 316 stainless steel water heaters, with a storage capacity of 22 up to 80 litres (5.3 to 19.3 gal.). The heaters are cased in AISI 304 stainless steel and is provided with a sturdy compact plastic end cover which also includes the mounting brackets.

Electrical heating elements are available in Incoloy at 500 & 1200 Watts allowing hot water production when engine heat is not available but when 230 volts AC is. Delivered with an adjustable safety thermostat for temperature adjustment while on electrical heating.



Order No.	Description
56-47455-01	AquaH Marine Water Heater 1200W / 22L 220V
56-47455-03	AquaH Marine Water Heater 500W / 22L 220V
56-47456-01	AquaH Marine Water Heater 1200W / 30L 220V
56-47456-03	AquaH Marine Water Heater 500W / 30L 220V
56-47457-01	AquaH Marine Water Heater 1200W / 45L 220V
56-47457-03	AquaH Marine Water Heater 500W / 45L 220V
56-47458-01	AquaH Marine Water Heater 1200W / 60L 220V
56-47458-03	AquaH Marine Water Heater 500W / 60L 220V
56-47459-01	AquaH Marine Water Heater 1200W / 80L 220V
56-47459-03	AquaH Marine Water Heater 500W / 80L 220V

### Accessories

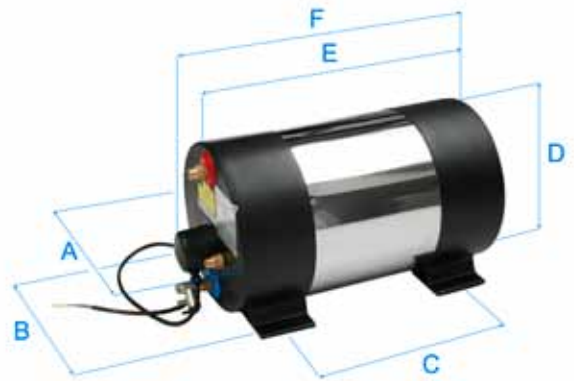
Order No.	Description
56-47464-01	AquaH Thermostat Water Mixer Kit



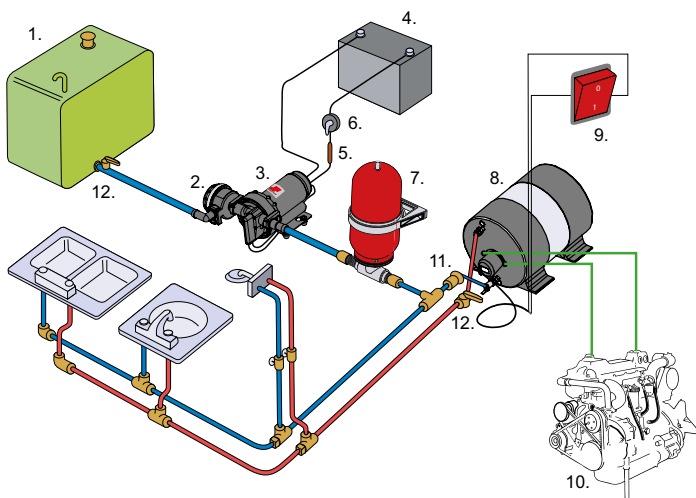
## Dimensions

Order no	Electrical supply	Storage capacity	Weight empty	A	B	C	D	E	F
	w	lt (gallons)	kg (lbs)	mm	mm	mm	mm	mm	mm
56-47455-01	1200	22	10	322	290	235	325	410	485
56-47455-03	500	(5.81)	(22)	12.7"	11.4"	9.25"	12.8"	16.1"	19.1"
56-47456-01	1200	30	11,5	322	290	370	325	545	620
56-47456-03	500	(7.93)	(25.4)	12.7"	11.4"	14.6"	12.8"	21.5"	24.4"
56-47457-01	1200	45	15	322	290	625	325	805	880
56-47457-03	500	(11.9)	(33.1)	12.7"	11.4"	24.6"	12.8"	31.7"	34.6"
56-47458-01	1200	60	17,3	322	290	810	325	990	1065
56-47458-03	500	(15.9)	(38.1)	12.7"	11.4"	31.9"	12.8"	39"	41.9"
56-47459-01	1200	80	20	322	290	1090	325	1270	1345
56-47459-03	500	(21.1)	(44.1)	12.7"	11.4"	42.9"	12.8"	50"	53"

Electric supply 220-240 V ~ 50 Hz  
Water connections 1/2"



## Typical Application



1. Water tank
2. PUMProtector inlet strainer
3. Aqua Jet water pressure pump
4. Battery
5. Fuse
6. Switch
7. Accumulator tank
8. Water heater
9. ON/OFF bipolar switch
10. Motor
11. Check valve
12. Shut-off valve

## Heating time

### 1200W

Order no	Electrical supply	Storage capacity	Water temperature in °C (°F)							
			20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	45 (113)	50 (122)	55 (131)
56-47455-01	1200	22 (5.81)	6	12	19	25	31	38	44	51
56-47456-01	1200	30 (7.93)	8	17	26	34	43	52	61	69
56-47457-01	1200	45 (11.9)	13	26	39	52	65	78	91	104
56-47458-01	1200	60 (15.9)	17	34	52	69	87	104	122	139
56-47459-01	1200	80 (21.1)	23	46	69	93	116	139	162	186

Initial temperature 15°C

### 500W

Order no	Electrical supply	Storage capacity	Water temperature in °C (°F)							
			20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	45 (113)	50 (122)	55 (131)
56-47455-03	500	22 (5.81)	15	30	46	61	76	92	107	122
56-47456-03	500	30 (7.93)	20	41	62	83	104	125	146	167
56-47457-03	500	45 (11.9)	31	62	94	125	156	188	219	251
56-47458-03	500	60 (15.9)	41	83	125	167	209	251	293	334
56-47459-03	500	80 (21.1)	55	111	167	223	279	334	390	446

Initial temperature 15°C



# Impeller Pumps



Flexible impeller pumps provide an efficient solution to most raw water pumping needs. The pumps are self-priming and can pass fairly large solids without clogging or damaging the pumps. Designed for a number of applications on board.

# Self-Priming Flexible Impeller Pumps

## Operating Principle



A vacuum is created as the flexible impeller vanes straighten upon leaving the cam, drawing liquid into the pump.



The rotating impeller carries liquid from the inlet to the outlet port. As a consequence of their design, flexible impeller pumps can pass fairly large solids.



When the flexible impeller vanes regain contact with the cam, they bend and the liquid is discharged from the pump in a uniform flow. Liquids can be pumped in the opposite direction by reversing the rotation of the pump.

## Heavy Duty Impeller Pump

A range of multipurpose bronze pumps. Compact design, raw water resistant pumps at an attractive price – with the renowned SPX's Johnson Pump Marine Brand quality. These pumps are designed for a number of applications on board.

With excellent self-priming capability, these pumps are ideal as cooling water pumps for marine engines, bilge pumps, deckwash pumps, fresh water pumps, fuel transfer pumps and other applications. Also ideally suited on shore to empty septic tanks, to flush clean and to fill water tanks. Available in sizes from 3/8" to 1.1/2" (4 l/min to 279 l/min).

Vacuum switch (see page 36) as extra accessory for F8B-8 only.

### Technical Specifications, Heavy Duty Impeller Pumps

Pump body	Bronze
Shaft	Stainless steel
	The shaft is mounted with permanently lubricated double ball bearings
Seal	Mechanical seal
Cam	Full or reduced
Connection	BSP or NPTF



### Heavy Duty Impeller Pumps



Order No.	Description	Impeller	Connection	Length	Width	Height	Weight	Drive Shaft Ø
10-24569-01	F35B-8	09-808B-1	3/8" BSP	109 mm – 4.29"	80 mm – 3.14"	30 mm – 1.18"	0,5 kg – 1.2 lbs	3/8"
10-24570-01	F4B-8	09-810B-1 09-810B-9	3/8" BSP	111 mm – 4.37"	80 mm – 3.15"	50 mm – 1.97"	0,8 kg – 1.8 lbs	3/8"
10-24571-01	F5B-8	09-1027B-1 09-1027B-9	3/4" BSP	151 mm – 5.95"	106 mm – 4.17"	50 mm – 1.97"	1,6 kg – 3.5 lbs	5/8"
10-24572-01	F7B-8	09-1028BT-1 09-1028B-9	1" BSP	170 mm – 6.69"	120 mm – 4.72"	50 mm – 1.97"	1,9 kg – 4 lbs	5/8"
10-13021-1	F8B-8	09-819B 09-819B-9	1.1/2" BSP	217 mm – 8.54"	160 mm – 6.3"	65 mm – 2.56"	5,9 kg – 13 lbs	1"

## Extra Heavy Duty Impeller Pumps

Whenever you need greater strength or service from a pump, use an extra heavy duty flexible impeller pump with separate bearing housing and mechanical seal for less wear and longer life. These pumps cover the entire range of marine applications and may be used as cooling water pumps, bilge pumps, deckwash pumps, emergency and fire fighting pumps, etc. Available in sizes from ¾" to 2 ½" (13 l/min to 625 l/min). Wearing parts are easily replaceable and service kits are available for all standard models.

Vacuum switch as extra accessory, see page 36.



### Technical Specifications, Extra Heavy Duty Impeller Pumps

Pump body	Bronze. Connection for vacuum switch
Shaft	Stainless steel
Seal	Mechanical seal
Cam	Full or reduced
Pedestal	Cast iron with permanently lubricated double ball bearings
Connection	BSP or NPTF

### Extra Heavy Duty Impeller Pumps

Order No.	Description	Impeller	Connection	Length	Width	Height	Weight	Drive Shaft Ø
10-24210-1	F5B-3000	09-1027B-1	¾" BSP	195 mm – 7.68"	106 mm – 4.17"	88 mm – 3.46"	2,9 kg – 6.5 lbs	17 mm
10-24209-1	F7B-3000	09-1028BT-1	1" BSP	213 mm – 8.38"	120 mm – 4.72"	93 mm – 3.66"	3,1 kg – 6.9 lbs	17 mm
10-13024-1	F8B-3000 VF	09-819B	1.½" BSP	255 mm – 10.04"	152 mm – 5.98"	154 mm – 6.06"	7,6 kg – 16.5 lbs	24 mm
10-13026-1	F9B-3000	09-802B	2" BSP	282 mm – 11.1"	192 mm – 7.56"	157 mm – 6.18"	9,3 kg – 21 lbs	24 mm
10-13175-01	F8B-3000 TSS	09-819B	1.½" BSP	255 mm – 10.04"	198 mm – 7.79"	151 mm – 5.94"	7,6 kg – 16.5 lbs	24 mm
10-13225-01	F9B-3000 VF	09-802B	2" BSP	282 mm – 11.1"	152 mm – 5.98"	175 mm – 6.89"	9,3 kg – 21 lbs	24 mm
10-13177-01	F9B-3000 TSS	09-802B	2" BSP	282 mm – 11.1"	200 mm – 7.87"	151 mm – 5.94"	9,3 kg – 21 lbs	24 mm

### Extra Heavy Duty, High Flow, Impeller Pumps



Order No.	Description	Impeller	Connection	Length	Width	Height	Weight	Drive Shaft Ø
10-13121-01	F95B-3000	09-820B	2.½" BSP	354 mm – 13.93"	246/295 mm 9.68"/11.61"	226/201 mm 8.89"/7.91"	17,2 kg – 38 lbs	24 mm

### Vacuum Switch

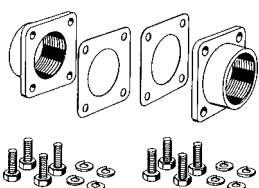
For automatic shut off operation to prevent pump damage.

The vacuum switch works with all self-priming impeller pumps and should be used for e.g. bilge pumping/emptying of tanks to prevent the pump from dry running. The vacuum switch automatically shuts the pump off when the bilge/tank is dry. With the switch fitted, you can start the pump by remote push button or manually by depressing lever on the switch.



Order No.	Description
09-45053	Vacuum Switch

### Port adaptor kit



Order No.	Description
09-43112*	1.½" BSP for F8B-3000/5000-VF, F8B-3000/5000-TSS
09-46557-01*	2" BSP for F9B-3000/5600-VF and F9B-3000/5600-TSS

\* NPTF available on request

# Automatically Controlled Clutch Pumps

With an electro-magnetic clutch you will have pumping power whenever needed, at a push of a button, without being at the pump. Combined with a vacuum switch (recommended for bilge pump application), the clutch will automatically disengage whenever the pump starts priming air, thereby preventing dry running and pump damage. Automatically controlled pumps are available in sizes from 1" to 2 1/2" (20 l/min to 625 l/min), with clutches in 12 or 24 volts. Wearing parts are easily replaceable and service kits are available for all standard models. Vacuum Switch as extra accessory, see page 36. Clutch to be ordered separately.

## Technical Specifications, Clutch Pumps

<b>Pump body</b>	Bronze Connection for vacuum switch	<b>Clutch</b>	Electro-magnetic 12/24 V DC
<b>Shaft</b>	Stainless steel The shaft is mounted with permanently lubricated double ball bearings	<b>Pulley</b>	2xA or 1xB-groove
<b>Seal</b>	Mechanical seal	<b>Pulley dia</b>	ø178 mm / 7"
<b>Cam</b>	Full or reduced		
<b>Connection</b>	BSP or NPTF		



## Heavy Duty Electro-Magnetic Clutch Pumps

Order No.	Description	Impeller	Connection	Length	Width	Height	Weight
10-24577-99	F7B-5001	09-1028B	1" BSP	156 mm – 6.14"	120 mm – 4.72"	93 mm – 3.66"	5.8 kg – 12.7 lbs
10-13022-99	F8B-5001	09-819B	1 1/2" BSP	225 mm – 8.85"	160 mm – 6.29"	124 mm – 4.88"	9.9 kg – 22 lbs



## Extra Heavy Duty Electro-Magnetic Clutch Pumps

Order No.	Description	Impeller	Connection	Length	Width	Height	Weight
10-24116-99	F7B-5000	09-1028B	1" BSP	226 mm – 8.9"	120 mm – 4.72"	93 mm – 3.66"	6.9 kg – 15 lbs
10-13025-99	F8B-5000 VF	09-819B	1 1/2" BSP	265 mm – 10.43"	152 mm – 5.98"	154 mm – 6"	11.9 kg – 26 lbs
10-13176-99	F8B-5000 TSS	09-819B	1 1/2" BSP	265 mm – 10.43"	198 mm – 7.79"	151 mm – 5.94"	11.9 kg – 26 lbs
10-13027-99	F9B-5600	09-814B 09-802B	2" BSP	290 mm – 11.42"	192 mm – 7.56"	157 mm – 6.18"	13.2 kg – 29 lbs
10-13226-99	F9B-5600 VF	09-814B 09-802B	2" BSP	290 mm – 11.4"	152 mm – 5.98"	175 mm – 6.88"	13.2 kg – 27 lbs
10-13178-99	F9B-5600 TSS	09-814B 09-802B	2" BSP	290 mm – 11.4"	200 mm – 7.87"	151 mm – 5.94"	13.2 kg – 27 lbs

## Extra Heavy Duty, High Flow Electro-Magnetic Clutch Pump

Order No.	Description	Impeller	Connection	Length	Width	Height	Weight
10-13143-99	F95B-5000	09-820B	2 1/2" BSP	358 mm – 14.09"	246/295 mm 9.68"/11.61"	226/201 mm 8.89"/7.91"	21 kg – 46 lbs

Flange with 2 1/2" BSP port adaptors (NPTF available on request)  
The port adaptors can be fitted either vertically or horizontally



## Choice of Clutch

Order No.	Description
0.3454.001	Electro-magnetic clutch, 12 V 2xA pulley
0.3454.002	Electro-magnetic clutch, 24 V 2xA pulley
0.3454.003	Electro-magnetic clutch, 12 V 1xB pulley
0.3454.004	Electro-magnetic clutch, 24 V 1xB pulley

Electro-magnetic clutch, 12/24 V



# Bronze Impeller Pump Performance Tables

Note! Reduced cam - 30-40% lower capacity  
Impeller of nitrile - adjust total head approx. 30% down

F35B			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm			2500 rpm		
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.06	5.2	1.4	0.09	6.8	1.8	0.13	11.2	3.0	0.16	14.0	3.7	0.18	16.0	4.2	0.18	20.5	5.4
0.6	60	20.1	0.09	4.6	1.2	0.09	6.2	1.6	0.13	10.6	2.8	0.16	13.7	3.6	0.18	15.8	4.1	0.18	19.6	5.2
1.0	100	33.5	0.09	4.0	1.1	0.09	5.6	1.5	0.18	9.2	2.4	0.18	11.8	3.1	0.18	13.6	3.6	0.18	17.0	4.5

F4B			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm			2500 rpm		
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.06	12.0	3.2	0.09	15.0	4.0	0.13	23.0	6.0	0.17	27.0	7.1	0.18	30.5	8.1	0.18	34.5	9.1
0.6	60	20.1	0.09	11.0	2.9	0.09	14.0	3.7	0.13	21.0	5.4	0.17	25.0	6.6	0.18	28.0	7.4	0.18	33.0	8.7
1.0	100	33.5	0.09	9.0	2.4	0.09	11.0	2.9	0.18	18.0	4.8	0.18	22.0	5.8	0.18	25.0	6.6	0.18	29.5	7.8
1.5	150	50.3	0.09	4.5	1.2	0.09	7.0	1.8	0.18	13.5	3.6	0.18	17.0	4.5	0.18	20.0	5.3	0.24	25.0	6.6

F5B			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm					
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.13	16.0	4.2	0.18	21.0	5.5	0.37	33.0	8.7	0.37	41.0	10.8	0.37	46.0	12.2	0.37	46.0	12.2
0.6	60	20.1	0.13	15.0	4.0	0.18	20.0	5.3	0.37	32.0	8.5	0.37	39.5	10.4	0.37	45.0	11.9	0.37	45.0	11.9
1.0	100	33.5	0.13	14.0	3.7	0.18	19.0	5.0	0.37	30.0	7.9	0.37	37.0	9.8	0.37	42.0	11.1	0.37	42.0	11.1
1.5	150	50.3	0.13	13.0	3.4	0.18	17.0	4.5	0.37	27.0	7.1	0.37	33.5	8.9	0.37	38.0	10.0	0.37	38.0	10.0
2.0	200	67.1	-	-	-	-	-	-	0.37	22.0	5.8	0.37	28.5	7.5	0.37	33.0	8.07	0.37	33.0	8.07

F7B			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm					
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.37	36.0	9.5	0.37	46.0	12.2	0.75	74.0	19.6	0.75	98.0	25.9	0.75	107.0	28.3	0.75	107.0	28.3
0.6	60	20.1	0.37	34.0	9.0	0.37	44.0	11.6	0.75	72.0	19.0	0.75	96.0	25.4	0.75	104.0	27.5	0.75	104.0	27.5
1.0	100	33.5	0.37	29.0	7.7	0.37	40.0	10.6	0.75	67.0	17.7	0.75	87.0	23.0	0.75	98.0	25.9	0.75	98.0	25.9
1.8	180	60.4	0.37	21.0	5.5	0.37	30.0	7.9	0.75	57.0	15.1	0.75	73.0	19.3	0.75	84.0	22.2	0.75	84.0	22.2
2.5	250	83.8	-	-	-	-	-	-	0.75	37.0	9.8	1.1	52.0	13.7	1.1	63.0	16.6	1.1	63.0	16.6

F8B			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm					
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.37	87.0	9.5	0.75	114.0	30.1	1.1	188.0	50.0	1.5	241.0	63.7	1.5	279.0	73.7	1.5	279.0	73.7
0.6	60	20.1	0.37	80.0	9.0	0.75	107.0	28.3	1.1	180.0	47.6	1.5	233.0	61.6	1.5	270.0	71.3	1.5	270.0	71.3
1.0	100	33.5	0.37	73.0	7.7	0.75	101.0	26.7	1.1	177.0	46.8	1.5	228.0	60.2	1.5	264.0	69.7	1.5	264.0	69.7
1.8	180	60.4	-	-	-	1.1	70.0	18.5	1.1	148.0	39.1	2.2	203.0	53.6	2.2	242.0	63.4	2.2	242.0	63.4
2.5	250	83.8	-	-	-	-	-	-	1.1	108.0	28.5	2.2	166.0	43.9	2.2	208.0	55.0	2.2	208.0	55.0

F9B-5000			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm					
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.75	129.0	34.1	0.75	170.0	44.9	1.5	268.0	70.8	1.5	331.0	87.5	2.2	388.8	102.7	2.2	388.8	102.7
0.6	60	20.1	0.75	124.0	32.8	0.75	161.0	42.5	1.5	260.0	68.9	2.2	323.0	85.3	2.2	383.1	101.2	2.2	383.1	101.2
1.0	100	33.5	0.75	118.8	31.4	1.1	156.0	41.2	1.5	255.6	67.5	2.2	315.2	83.3	3.0	379.2	100.2	3.0	379.2	100.2
1.8	180	60.4	1.1	105.0	27.7	1.1	140.0	37.0	1.5	235.0	62.1	2.2	286.1	75.6	3.0	351.3	92.8	3.0	351.3	92.8
2.5	250	83.8	1.1	83.7	22.1	1.5	102.0	26.9	2.2	208.0	55.2	3.0	266.0	70.3	3.0	304.1	80.3	3.0	304.1	80.3

F9B-5600			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm					
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.75	129.0	34.1	1.1	170.0	44.9	1.5	270.0	71.3	1.5	331.0	87.5	2.2	376.0	99.3	2.2	376.0	99.3
0.6	60	20.1	0.75	126.0	32.8	1.1	165.0	43.6	1.5	266.0	70.3	2.2	323.0	85.3	2.2	368.0	97.2	2.2	368.0	97.2
1.0	100	33.5	0.75	123.0	32.5	1.1	161.1	42.6	2.2	260.0	68.7	2.2	314.0	83.3	3.0	361.0	95.4	3.0	361.0	95.4
1.8	180	60.4	0.75	110.0	29.1	1.5	153.0	40.4	2.2	242.0	63.9	2.2	291.0	76.9	3.0	340.0	89.8	3.0	340.0	89.8
2.5	250	83.8	1.1	90.0	23.8	1.5	130.0	34.3	2.2	218.0	57.6	3.0	269.0	71.1	3.0	312.0	82.4	3.0	312.0	82.4
3.0	300	100.6	1.5	61.0	16.1	2.2	102.0	26.9	3.0	190.0	50.2	3.0	242.0	63.9	3.5	284.0	75.0	3.5	284.0	75.0
3.5	350	117.4	-	-	-	-	-	-	3.0	160.0	42.3	3.5	205.0	54.2	3.5	235.0	62.1	3.5	235.0	62.1

F95B			700 rpm			900 rpm			1400 rpm			1750 rpm			2500 rpm					
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.5	50	16.8	0.75	182.6	48.2	1.1	236.5	62.5	1.5	384.2	101.5	2.2	483.6	127.8	4.0	626.7	165.5	4.0	626.7	165.5
1.0	100	33.5	1.1	172.7	45.6	1.1	231.3	61.1	1.5	372.0	98.3	3.0	472.9	124.9	5.5	617.9	163.2	5.5	617.9	163.2
1.5	150	50.3	1.1	160.1	42.3	1.5	214.5	56.7	2.2	350.4	92.6	3.0	444.1	117.3	5.5	583.8	154.2	5.5	583.8	154.2
2.0	200	67.1	1.1	132.3	35.0	1.5	181.0	47.8	3.0	315.4	83.3	3.5	406.2	107.3	5.5	553.1	146.1	5.5	553.1	146.1
2.5	250	83.8	1.5	79.5	21.0	2.2	137.8	36.4	3.0	267.6	70.7	4.0	361.3	95.5	7.5	506.4	133.8	7.5	506.4	133.8

# Engine Cooling – Raw Water Handling

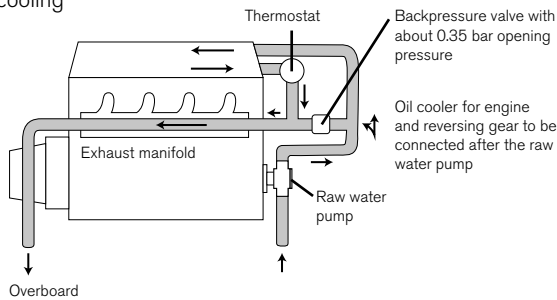
Flexible impeller pumps, F-series, provide an efficient solution to most raw water pumping needs. The primary advantage of a flexible impeller pump is its self-priming ability. As the vanes of the impeller are depressed and rebound, they create their own vacuum drawing fluid into the pump. A dry pump can lift water up to as much as 3 meters. Thus a flexible impeller pump being used for engine cooling needs not be located below the water line or manually primed. An added feature of flexible impeller pumps is that they can pass fairly large solids without clogging or damaging the pump. This reduces the need for filtering the incoming fluid.

For general raw or fresh water applications, the standard long lasting neoprene rubber impeller is used.

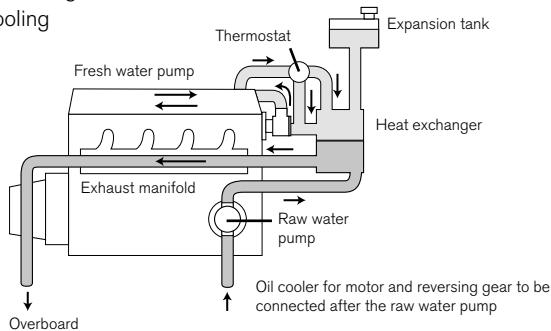
A general feature of all flexible impeller pumps is that they cannot be permitted to run dry for more than 30 seconds. Both the impeller and the seals depend upon the water for lubrication and will soon burn out if run dry. Wearing parts are easily replaceable, and service kits are available for all standard models.

## Different types of cooling systems

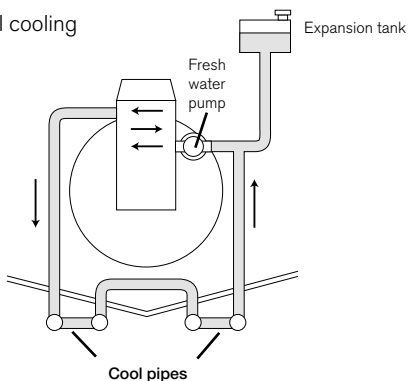
### Direct cooling



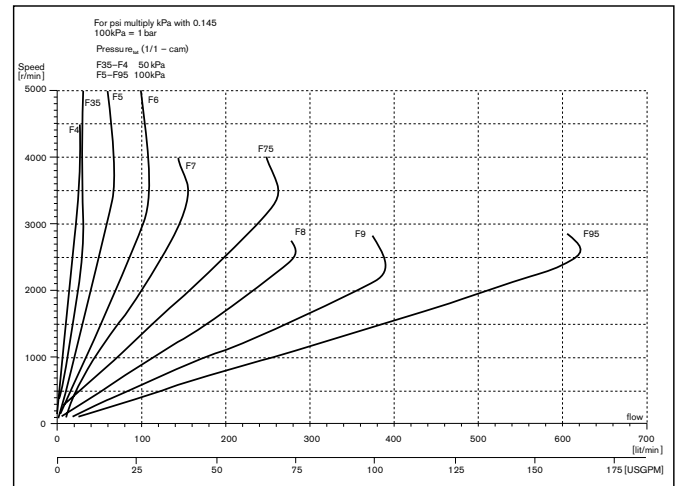
### Indirect cooling Inter cooling



### Keel cooling



## Capacity Range (based on water at 20°C/68°F)



## Fresh Water Handling

For circulation of the internal, closed, fresh water circuit of the cooling system SPX's Johnson Pump Marine Brand can offer a number of alternatives in its DC driven CM- and C0-series (see page 22 for further information). It is also common to use a flexible impeller pump for this purpose if it is located on the cold side of the system (max. 55°C). Other types of belt-driven centrifugal pumps may also be useful. The closed circuit normally transfers heat from the engine to the heat exchanger. The liquid is water and anti-freeze.

## Cooling Capacity

The required output of the cooling pump – raw water as well as fresh water handling – is related to

- engine size and type (gasoline or diesel)
- type of cooling system (size of heat exchanger)
- water cooled engine oil, reverse gear, exhaust system

Contact your local dealer for more information, or for indirect cooling systems your supplier of heat exchangers.

## Pump Mounting

Engine cooling pumps, the F-series, are available in several different styles and sizes to satisfy different cooling system needs. Flanged pumps which mount directly to the engine and crank shaft pulley mounted pumps are available for a wide variety of engines. SPX's Johnson Pump Marine Brand is one of the original equipment pump supplier to the largest manufacturers world-wide of inboard engines. Both flange mounted and pulley driven pedestal pumps can be used to provide cooling with a maximum of ease and flexibility. Pump ports are available in sizes from 3/8" to 2 1/2".

## Flange Mounted Pumps

Flanged pumps are normal pumps produced in high volumes, customer designed for flange-mounting at a power take off of the engine. Different types of drives can be used but mainly gears or any type of driving members are used.

## Crank Shaft Pulley Mounted

These pumps are designed for direct installation on the engine crank shaft pulley. Max. revs. 5.000 per minute.

To prevent the pump from rotating, a torque bracket from the fastening point on the pump body to a suitable point on the engine has to be used.

## Pedestal Mounted Pumps

Pulley driven pedestal mounted pumps are used when a free driving pulley is available on the engine.

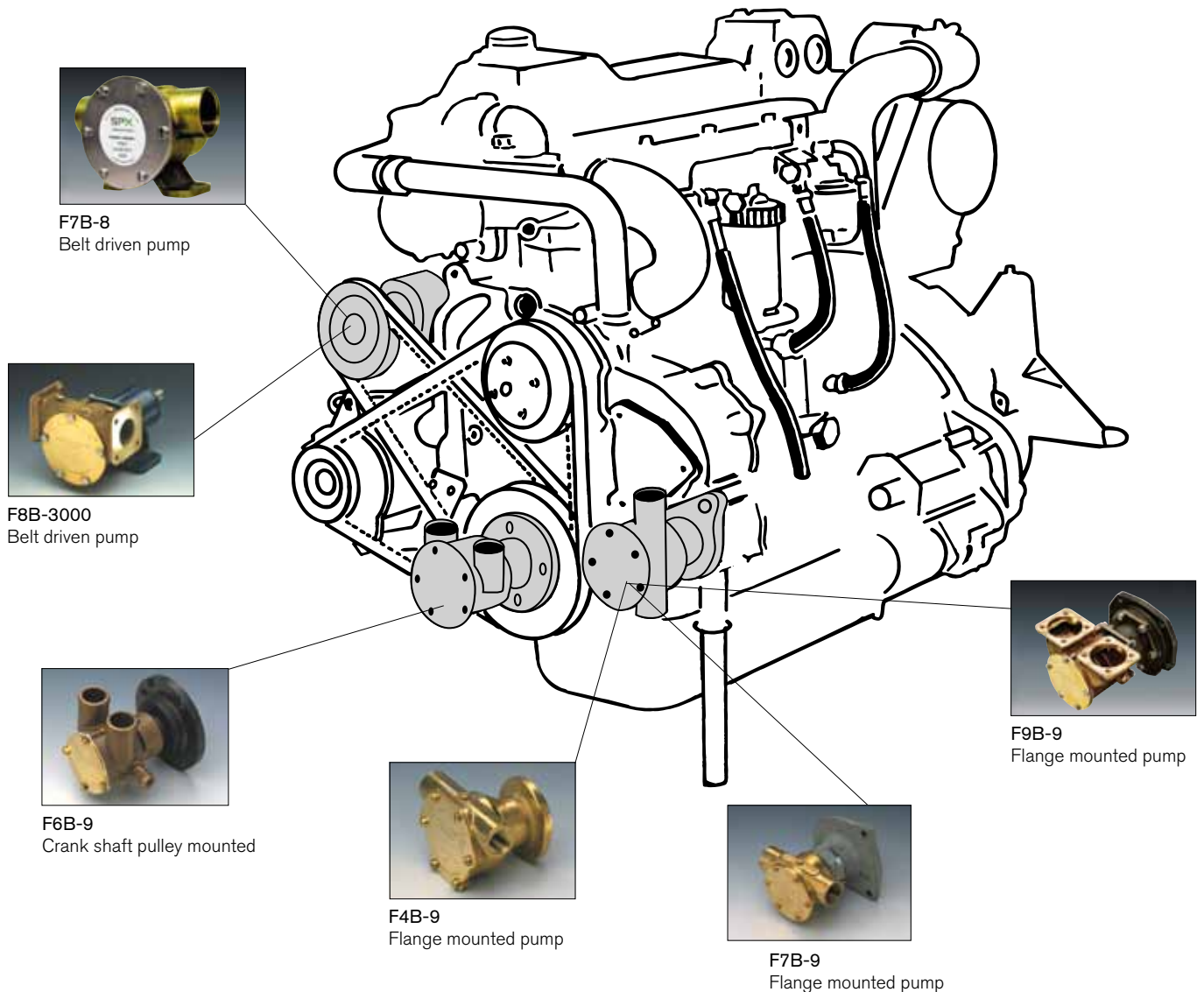
Two different types of pedestal mounted pumps are supplied:

### FB-8

A range of bronze pumps in compact design. Ideal as cooling water pumps in marine engines. Available in sizes from 3/8" to 1 1/2", all with permanently lubricated double ball bearings and mechanical seal.

### FB-3000

A range of extra heavy duty pedestal mounted pumps excellent for cooling purpose in commercial vessels. The design means separate bearing housings with permanently lubricated double ball bearings, mechanical shaft seal for extended service life. Wetted parts as wear plate, cam and endcover are easily replaceable.





## Vacuum valve - Siphon breaker

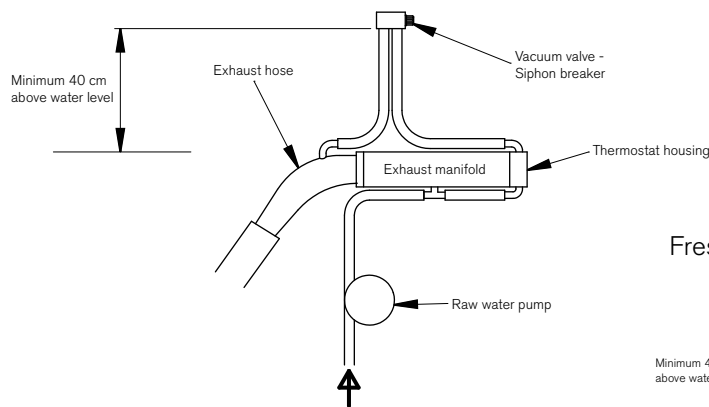
A vacuum valve is a cheap insurance against water intrusion in a engine with expensive repairs as a consequence. The maximum ambient temperature should not exceed 60 °C. The valve opens at a pressure which is equivalent to 3-5 cm Water Column. The materials which are used are resistant to sea water and fresh water, and to glycol compounds in appropriate concentrations. Avoid exposing the valve to oil and grease. If it has been in contact with such substances, please clean or replace it.



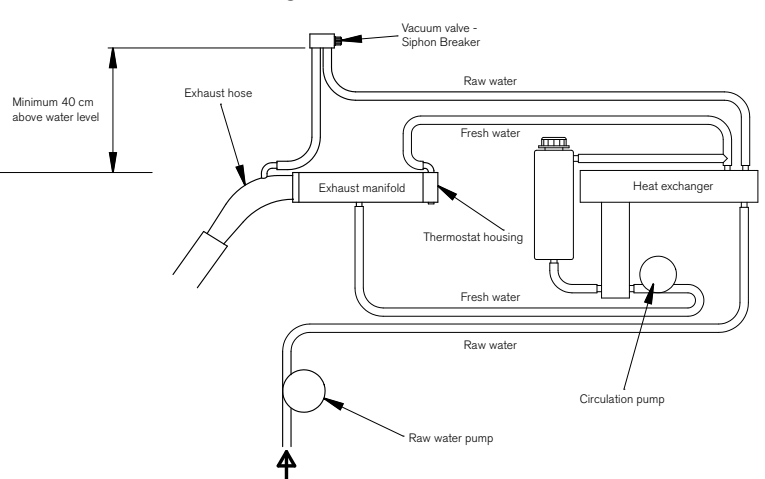
Order No.	Description
09-47316-01	Siphon Breaker, Spud Size 12 mm
09-47316-02	Siphon Breaker, Spud Size 16 mm
09-47316-03	Siphon Breaker, Spud Size 19 mm
09-47316-04	Siphon Breaker, Spud Size 22 mm
09-47316-05	Siphon Breaker, Spud Size 25 mm
09-47316-06	Service Kit

- Non corrosive
- Easy to install
- Does not leak
- High quality plastic
- 5 spud sizes

## Raw Water Cooled Engine



## Fresh Water Cooled Engine



## Take good care of the cooling system – change to a new impeller every year!

The impeller is a very important security device. Its task is to pump the water through the cooling system of the engine. But remember that the impeller should be replaced every year. And always make sure you get a Johnson Pump Brand original impeller. Then you'll know that it matches your pump exactly.

Remove the impeller with a slip joint plier or an Impuller.

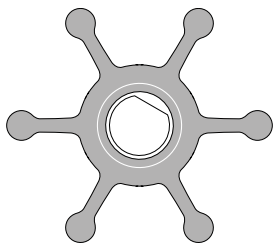
Order No.	Description
09-47165-01	Puller for 09-1028BT
09-47163-01	Puller for 09-821BT
09-36166-01	Puller for 09-820B

Order No.	Description
09-950-9300	JP Impuller

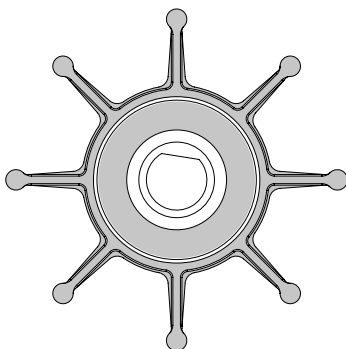


# SPX's Johnson Pump Marine Brand Original Impellers

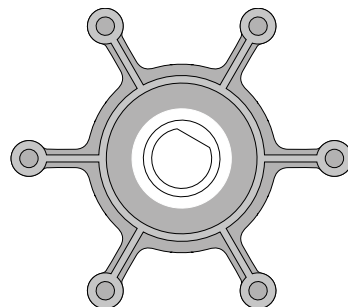
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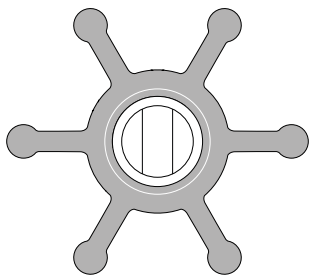
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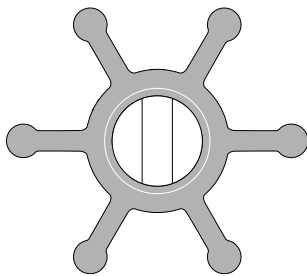
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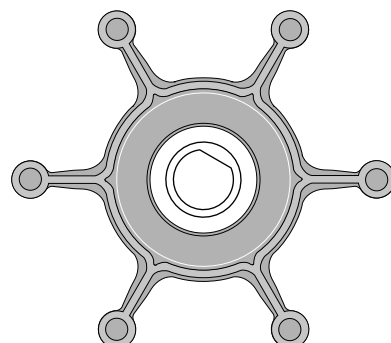
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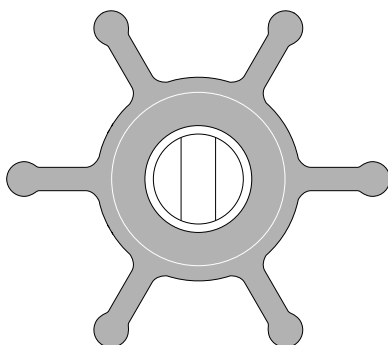
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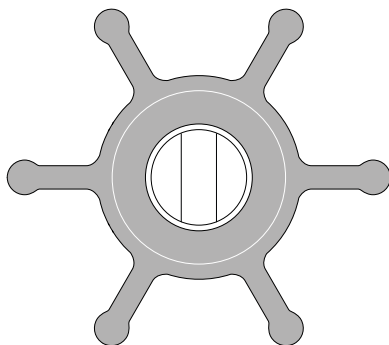
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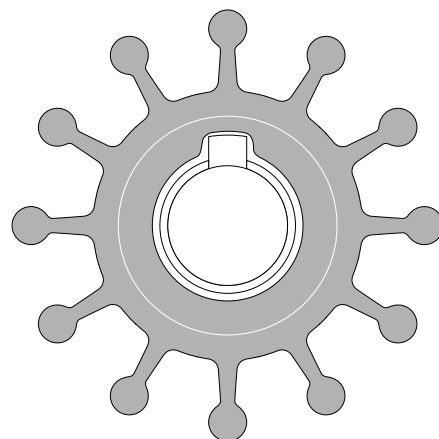
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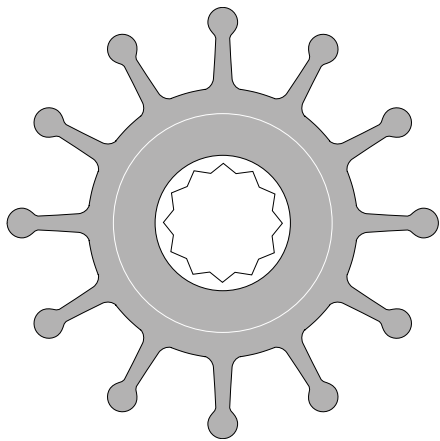
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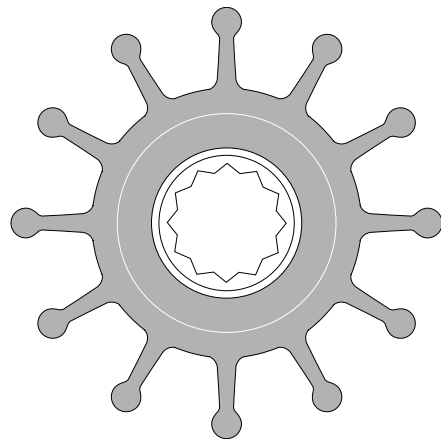
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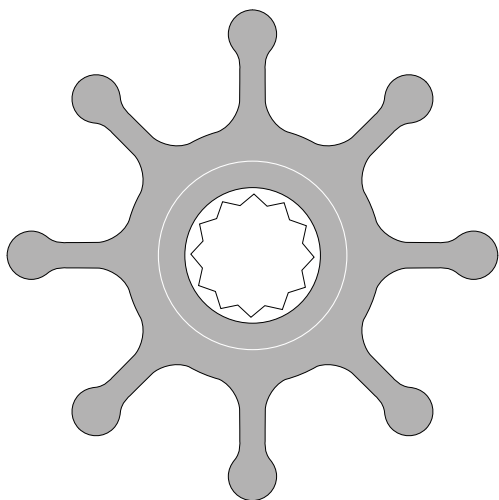
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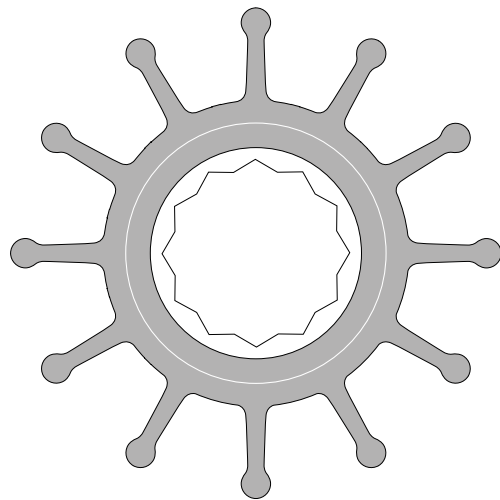
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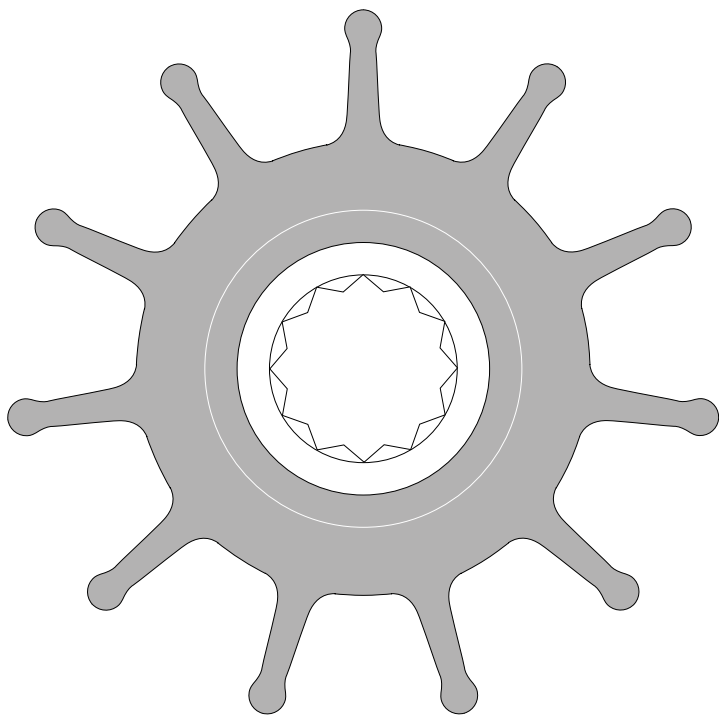
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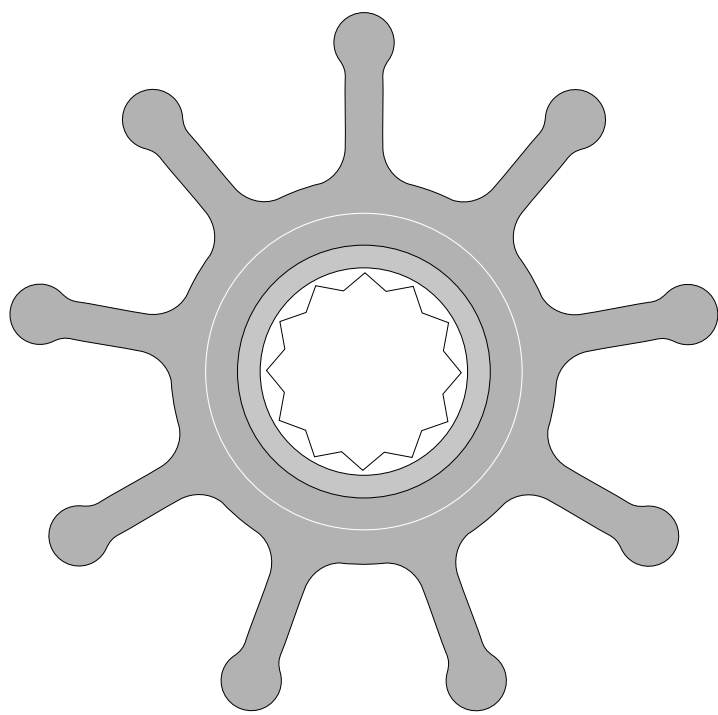
12



13



14



15

SPX's Johnson Pump Marine Brand Original Impellers Kits

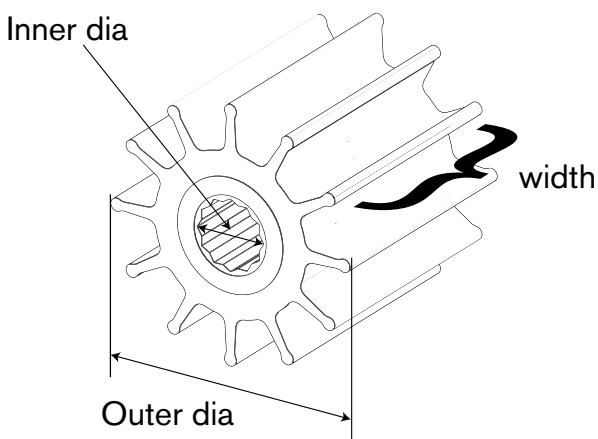
Ref.	Pump	Impeller	Material*	Outer dia		Inner dia		Width		Replaces Jabsco No	
				mm	inch	mm	inch	mm	inch	Europe	USA
1	F2	09-1077B-9	Nitrile	35.2	1.29	8.0 / Flat	0.31 / Flat	12.7	0.50		
2	F3	09-843S-9	Nitrile	45.2	1.78	8.0 / Flat	0.31 / Flat	12.8	0.50		
3	TA3P10	09-1052S-9	Nitrile	45.2	1.78	8.0 / Flat	0.31 / Flat	12.8	0.50		
4	F35	09-806B-1	MC97	40.0	1.58	9.5	0.37	19.0	0.75		4528-0001
5	F35	09-808B-1	MC97	40.0	1.58	12.0	0.47	19.0	0.75		22405-0001
6	F4	09-824P-1	MC97	50.8	2.00	8.0 / Flat	0.31 / Flat	22.0	0.87		
6	F4	09-824P-9	Nitrile	50.8	2.00	8.0 / Flat	0.31 / Flat	22.0	0.87		6303-0003
7	F4	09-810B-1	MC97	50.8	2.00	12.0	0.47	22.0	0.87		18653-001
7	F4	09-810B-9	Nitrile	50.8	2.00	12.0	0.47	22.0	0.87		
8	F4	09-1026B-1	MC97	50.8	2.00	12.7	0.50	22.0	0.87		673-0001
8	F4	09-1026B-9	Nitrile	50.8	2.00	12.7	0.50	22.0	0.87		673-0003
9	F5	09-801B	Neoprene	57.1	2.25	15.9 Key	0.63 / Key	31.5	1.24		4568-0001
10	F5	09-1027B-1	MC97	57.1	2.25	Splines		31.5	1.24		1210-0001
10	F5	09-1027B-10	MC97	57.1	2.25	Splines		31.85	1.24		
10	F5	09-1027B-9	Nitrile	57.1	2.25	Splines		31.5	1.24		1210-0003
11	F6	09-812B-1	MC97	57.1	2.25	Splines		48.2	1.90		13554-0001
12	F7	09-1028BT-1**	MC97	65	2.56	Splines		50.2	1.98		17937-0001
12	F7	09-1028B-9	Nitrile	65	2.56	Splines		50.2	1.98		17937-0003
13	F75	09-821BT-1**	MC97	65	2.56	Splines		80	3.15		
14	F8	09-819B	Neoprene	95	3.74	Splines		63	2.48	836-0001	17935-0001
14	F8	09-819B-9	Nitrile	95	3.74	Splines		63	2.48	836-0003	17935-0003
14	F8	09-1029B <sup>1)</sup>	Neoprene	95	3.74	Splines		63	2.48	836-0001	17935-0001
14	F9	09-814B	Neoprene	95	3.74	Splines		88.5	3.48	21676-0001	17936-0001
14	F95	09-820B	Neoprene	95	3.74	Splines		130	5.12		
14	F98	09-842B	Neoprene	95	3.74	Splines		180	7.09		
15	F9	09-802B	Neoprene	95	3.74	Splines		88.5	3.48		6760-0001

\* MC97 and Neoprene - for cooling, Nitrile - oil resistant <sup>1)</sup> Alternative impeller 09-819B

\*\* BT-1 replaces B

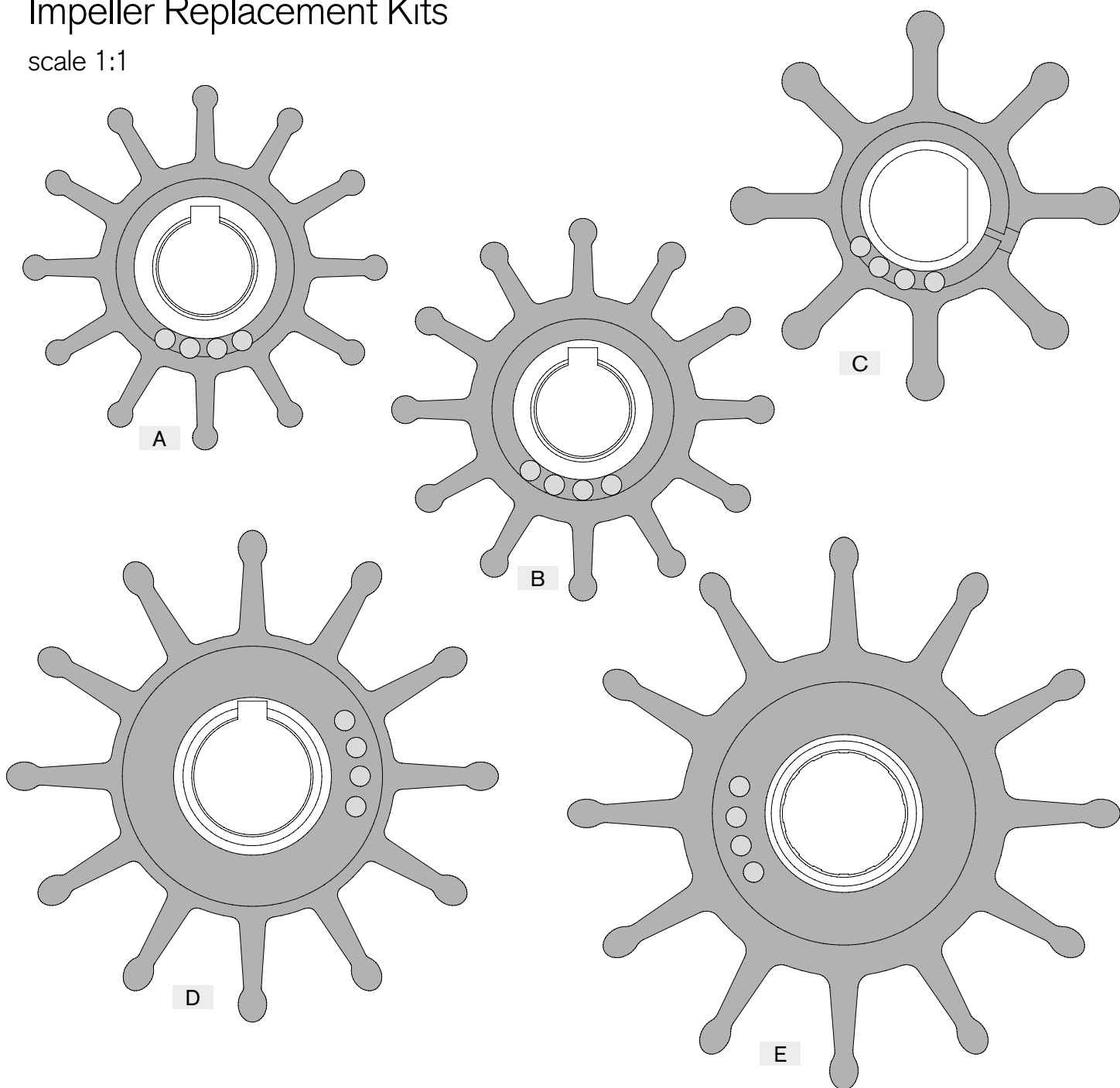
Replacement Impeller Kits

Ref.	Impeller	Material	Outer dia mm	Outer dia inch	Inner dia mm	Inner dia inch	Width mm	Width inch	Replaces Jabsco No
A	09-701B-1	MC97	62,3	2,45			31,8	1,25	18838-0001
B	09-702B-1	MC97	65,4	2,57			41,4	1,63	18948-0001
C	09-703P-1	MC97	66,7	2,63			51	2,01	17954-0001
D	09-704BT-1	MC97	84,1	3,31			73,4	2,89	18958-0001
E	09-705BT-1	MC97	94,5	3,72			101,6	4	-



# Impeller Replacement Kits

scale 1:1



Impeller Replacement Kits

Ref.	SPX Johnson Pump part no.	Sherwood part no.	Mercruiser part no.	Jabsco part no.	Engines / Pumps
A	09-701B-1	9959K	-	18838-0001	Chris Craft; Chrysler Marine; Commander; Crusader; Glastron Boat Co.; Gray Marine; Interceptor; Onan; OMC; Pathfinder VolksWagon Eng.; Perkins Eng. U.S.; Plesurecraft Marine; Universal Medalist; Volvo Penta; Yamaha; Westerbeke 24102; Sherwood 11353; Pleasure Craft 302&351; Chris Craft 350; Onan MDL3,4
B	09-702B-1	10615K	-	18948-0001	Chris Craft; Chrysler Marine; Commander; Crusader; Escort (Skiltec); Gray Marine; Isuzu; Lenco; Marine Power; North American Engine; Onan; Osco Motors; OMC; Perkins Engine U.S.; Plesurecraft Marine; Volvo Penta; J.H. Westerbeke Corp; Crusader 97179; Chrysler 3675763; Chrysler 4142878; Cummins 4B; Onan MDL6; Chris Craft 454; Pleasure Craft 454
C	09-703P-1	-	47-59362T	17954-0001	Pump Quicksilver Model 46-72774 A32
D	09-704BT-1	17000K	-	18958-0001	Cummins 6B 300Hp B Series; Cummins C Series; CAT 3208; CAT 3116; CAT 3126; Deere 6076; Sherwood Pump P17 series
E	09-705BT-1	18000K	-	-	Sherwood Pump P18 Series