



2015

# WATER SYSTEMS

PRODUCT GUIDE, AUSTRALIA

# WATER SYSTEMS PRODUCT GUIDE

## ONGA HISTORY...

Onga has been servicing the Australian and New Zealand markets with the highest quality water movement products for just over 47 years. Established in 1967, Onga has a product to meet your every water need. Starting out as a manufacturer of farm and domestic pumps, Onga's range now encompasses specialist pumps for commercial and chemical usage, filters, swimming pool pumps and filtration systems. From Rural water applications through to commercial or domestic pool equipment, you can be guaranteed that an Onga product will get the job done! Onga is a market leader ensuring it provides the best possible water solutions to cater for the Australian and New Zealand climate.

Now integrated into the Pentair group - Onga has access to a global product portfolio, expanding its range significantly to meet the demands of its local customers.

All products are sold through Urban Water Specialists, Tank Manufacturers, and Onga Pump and Pool shops across Australia and New Zealand.

## Pump-Select - Online Pump Selection Tool

Your one stop tool for pump sizing and selection:

Select the best pump for the job on every occasion & save time, energy and resources!

Pump-Select is our latest online pump sizing and selection innovation. Simply fill in your requirements and then press calculate. Pump-Select will then provide you with the best product option to meet your needs.

Just visit:

[www.onga.com.au](http://www.onga.com.au) or [www.pentair.com.au](http://www.pentair.com.au)



and **click** on Pump-Select button



Pump-Select (pump sizing / selection)

## Pentair Application Icons

Pentair's easy reference icons let you easily find the correct pump suited to your application.

These icons are only a guide -

Pentair recommends that you get advice from one of our valued retail partners. They've got the hands-on experience in your area to make the best use of your most precious resource - water.



Domestic



Water Transfer



Agricultural



Horticultural



Fire Fighting



Industrial



Mining

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# HOME PRESSURE SYSTEMS

Onga Homemaster - Household water pressure systems



## Jet-Assisted Automatic Pressure Systems

Onga's jet-assisted Homemaster pumps are designed for households where reliability, efficiency and ease of installation are important. There is a model to suit every situation. These Australian assembled pumps are mounted on a stable, moulded base for protection from corrosion and have totally enclosed, fan-cooled motors.

## Multistage Automatic Pressure Systems

Multistage pumps are perfect for providing great pressure in a compact package, and Onga has an unbeatable range for your home. From the high efficiency, cost-effective SMHP, or the SSHP designed for ultimate strength, to the submersible Dominators, your Onga dealer sells and services a wide range of quiet and powerful household pumps.

## Onga Submersible Pumps

Submerged in a tank or well, these household pressure systems are completely silent. The Dominator range and Tankbuddy are highly efficient, robust and reliable.



### PUMP PRESSURE

For over 40 years, Onga has provided Australian and New Zealand households with reliable water pressure. Onga's Homemaster range has a system for any application in any household.



### PRESSURE CONTROL

Three main options are available:

- Manual switching.
- Pressure switching (JSK, SMHK ranges).
- Presscontrol electronic pressure control (JSP, SMHP, SSHP ranges).

## APPLICATION

Small to average home / single storey / 1 bathroom



Average home / single storey / 2 bathroom



Large home / single or two storey / 2 bathroom



Large families / two storey / 2 bathroom



# JET PUMPS

## JMM100



- The JMM100 is an automatic pressure pump which includes the Minipress. The casing and internal parts consist of precision moulded components for high efficiency and reliability
- This is an economical household pressure system incorporating the high performance and reliability features typical of Onga
- The suction inlet is high on the pump body, enhancing self priming and air handling ability, while the totally enclosed, fan-cooled motor gives years of quiet and reliable operation

### Applications:

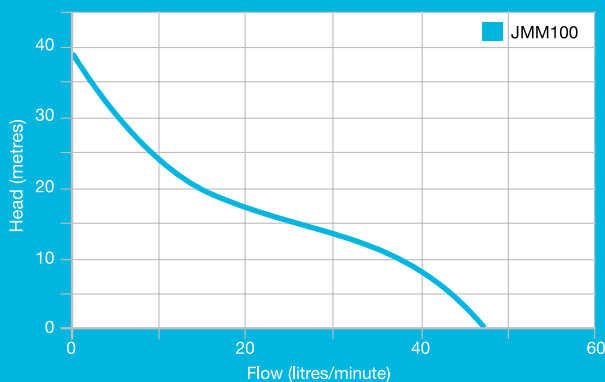
- Automatic domestic water pressure systems
- High suction lift situations

AS/NZS  
4020:2005 compliant

In-built thermal  
motor protection

Model	Application	Watts (P2)	Current (Amps)	Operating Pressure (kPa)	Suction Depth Capacity (Metres) (Litres per min)						Port Size (BSP)	
					0	1.5	3.0	4.6	6.1	7.6	Suction	Discharge
JMM100		300	2.65	140	30	27	24	21	17	12	1" M	1" M

• JMM Performance



## JSK Range



- The JSK range of pressure systems includes three pump and tank combinations to suit almost any home
- The JS range of pumps features a strong stainless steel pump casing, with precision-moulded internals
- The suction inlet is set high on the pump body to enhance self priming and air handling ability

### Applications:

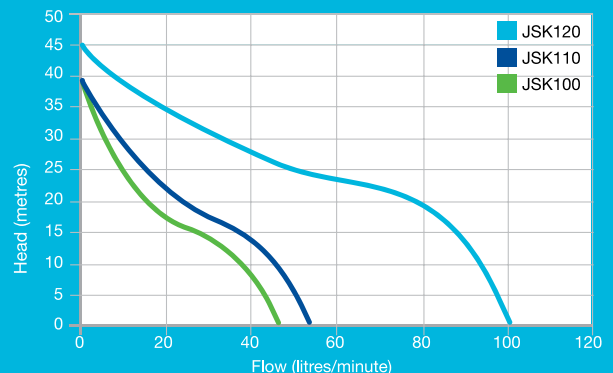
- Automatic domestic water pressure systems
- High suction lift situations

AS/NZS  
4020:2005 compliant

In-built thermal  
motor protection

Model	Application	Watts (P2)	Current (Amps)	Operating Pressure (kPa)	Suction Depth Capacity (Metres) (Litres per min)						Port Size (BSP)	
					0	1.5	3.0	4.6	6.1	7.6	Suction	Discharge
JSK100		300	2.65	140-275	30	27	24	21	17	12	1" F	1" F
JSK110		450	2.9	140-275	40	36	32	28	23	16	1" F	1" F
JSK120		750	4.8	210-345	76	69	61	53	43	31	1 1/4" M	1" F

• JSK Range Performance



# JET PUMPS

# MULTISTAGE AUTOMATIC PRESSURE SYSTEMS

## JSP Range

## SMHP Range



- Equipped with electronic pressure control, the JSP range is designed for situations requiring strong, constant pressure
- These pumps also have stainless steel casing and precision-moulded internals
- Loss of prime protection to prevent dry running

### Applications:

- Automatic, constant pressure household water supply, especially with high suction lift

- The SMHP range provides solutions for average sized homes right up to the largest applications
- Stainless steel motor shaft and pump casing for corrosion resistance and longer life
- Precision moulded components provide high efficiency and low noise
- Stainless steel pump foot helps to prevent corrosive sitting water and provides easy installation
- Loss of prime protection prevents dry running
- The dry run operation protection (D.R.O.P) system prevents costly pump damage.

### Applications:

- The perfect household pressure pump
- Coupled with electronic pressure control, these pumps give you a fantastic shower

AS/NZS 4020:2005 compliant

AS/NZS 4020:2005 compliant

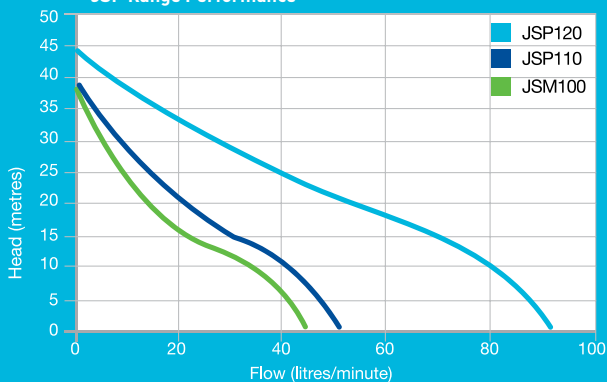
In-built thermal motor protection

In-built thermal motor protection

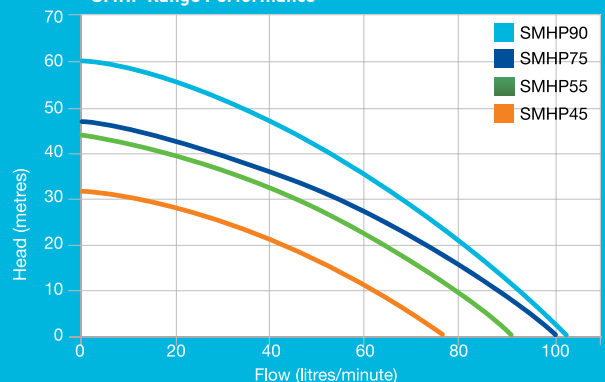
Model	Application	Watts (P2)	Current (Amps)	Operating Pressure (kPa)	Suction Depth Capacity (Metres) (Litres per min)						Port Size (BSP)	
					0	1.5	3.0	4.6	6.1	7.6	Suction	Discharge
JSM100	🏠	300	2.65	140	25	23	20	18	14	10	1"	1"
JSP110	🏠	450	2.9	140	35	32	28	25	20	14	1"	1"
JSP120	🏠	750	4.8	210	52	47	42	37	30	22	1 1/4"	1"

Model	Application	Watts (P2)	Current (Amps)	Operating Pressure (kPa)	Suction Depth Capacity (Metres) (Litres per min)			Port Size (BSP)	
					0	1.5	3.0	Suction	Discharge
SMHP45	🏠	450	3.2	140	55	50	44	1"	1"
SMHP55	🏠	550	4.0	140	73	66	59	1"	1"
SMHP75	🏠	750	4.6	210	72	66	59	1"	1"
SMHP90	🏠	900	5.8	210	80	72	64	1"	1"

### JSP Range Performance



### SMHP Range Performance



## SSHP Range



- The SSHP range offers the strongest construction available, using stainless steel and cast iron throughout for corrosion resistance and longer life
- Compact and extremely quiet. Coupled with electronic pressure control, these pumps provide strong constant pressure, eliminating temperature and pressure fluctuations
- Cast iron suction and discharge for high strength connections
- Compact for easy installation in small spaces
- Loss of prime protection

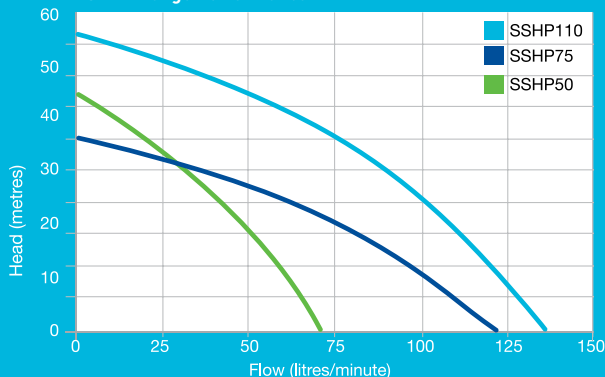
### Applications:

- The toughest household pressure pump

In-built thermal motor protection

Model	Application	Watts (P2)	Current (Amps)	Operating Pressure (kPa)	Suction Depth Capacity (Metres) (Litres per min)			Port Size (BSP)	
					0	1.5	3.0	Suction	Discharge
SSHP50		550	3.5	210	42	38	34	1" F	1" F
SSHP75		750	4.5	210	63	57	51	1 1/4" F	1" F
SSHP110		1100	7.7	210	105	94	84	1 1/4" F	1" F

• SSHP Range Performance



## Enviromaster



- The Onga Enviromaster is an energy efficient, variable speed, low noise pump that easily handles the demands of a rural or urban household
- Runs at low speed for energy efficiency and lower running costs
- Low speed running means silent operation
- Reduced running speed means minimised internal stress for longer life cycle
- Dry run protection to protect the pump and motor

### Applications:

- Pressure boosting
- Irrigation
- Industrial water washing
- Water distribution
- Building appliances

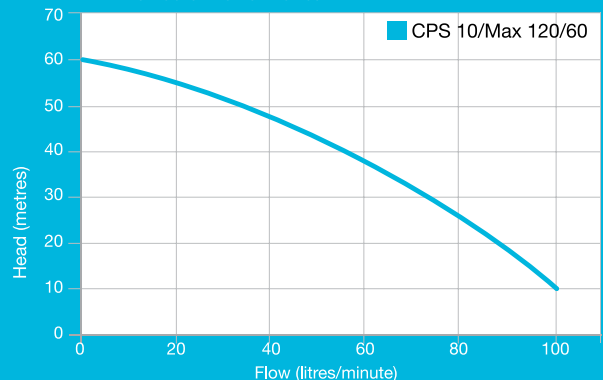
AS/NZS 4020:2005 compliant

In-built thermal motor protection



Model	Application	Watts (P2)	Current (Amps)	Operating Pressure (kPa)	Suction Depth Capacity (Metres) (Litres per min)			Port Size (BSP)	
					0	1.5	3.0	Suction	Discharge
P4700000		900	8.5	250	80	72	64	1" F	1" F

• Enviromaster Performance



# SUBMERSIBLE PUMPS

## Dominator



- Submerged in the tank or well, it is completely silent
- It shares its pump components with the highly respected Sta-Rite Signature 2000 submersible borehole pump range
- Coupled with electronic pressure control the Dominator becomes a complete home pressure system
- High efficiency moulded impellers means lower running costs and high performance
- Stainless steel suction, shaft and casing makes this pump corrosion resistant and tough
- Supplied with 20m cable and 20m drop cord
- Mechanical seal with oil chamber for high quality motor protection

### Applications:

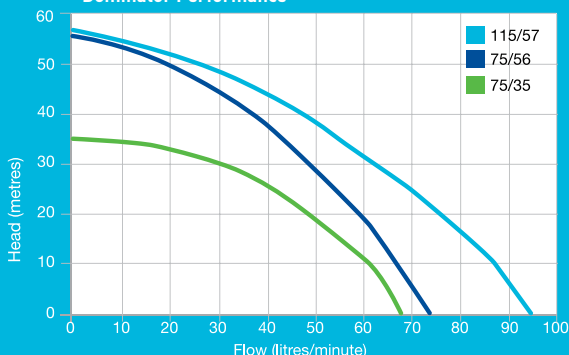
- The perfect household pressure pump
- Coupled with electronic pressure control, these pumps give you a fantastic shower

AS/NZS 4020:2005 compliant

In-built thermal motor protection

Model	Application	Watts (P2)	Current (Amps)	Operating Pressure (kPa)	Discharge Head Capacity (kPa) [Litres per min]					Port Size (BSP)
					140	210	280	350	420	
75/35		350	2.7	140	55	45	35	0	0	1 1/4" F
75/56		600	3.8	140	64	56	51	43	33	1 1/4" F
115/57		800	5.0	140	83	75	66	55	43	1 1/4" F

### • Dominator Performance



## Tankbuddy



- Specifically designed for treated water pump-out chambers and rainwater harvesting
- Based on the SMH range of multistage pumps, giving them the same reliability, efficiency, and high performance
- By using existing designs in an innovative way, Onga is able to offer a great submersible pump at a low cost
- Installed in the tank for silent operation

### Applications:

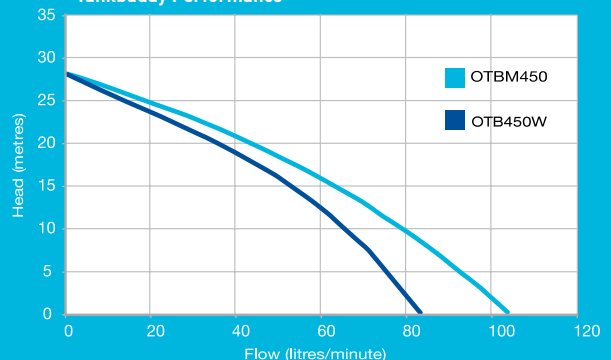
- Treated water pump-out chambers
- Noise sensitive urban rainwater installations

AS/NZS 4020:2005 compliant

In-built thermal motor protection

Model	Application	Watts (P2)	Current (Amps)	Discharge Head Capacity (kPa) [Litres per min]				Port Size (BSP)
				140	170	210	280	
OTB450W		650	4	70	56	47	16	1 1/4" F
OTBM450		650	4	52	46	31	0	1" M

### • Tankbuddy Performance





# RIVA-FLO HOUSEHOLD PRESSURE PUMPS

## GPP40



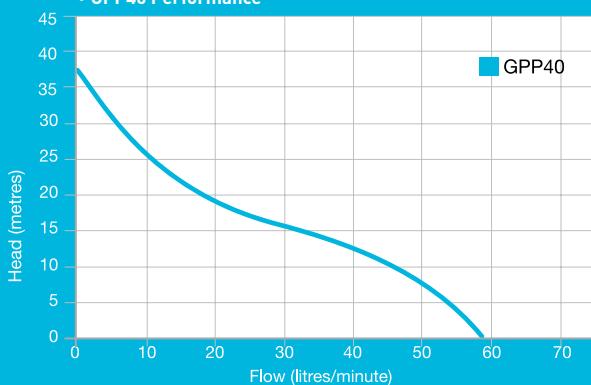
- This easy to install automatic pump helps you to put all of your precious tank water to good use
- Automatic control for water on demand at constant pressure
- Self-priming so that water can be lifted from below the pump
- Loss of prime protection to prevent pump from expensive damage if your water tank is empty
- Totally enclosed fan cooled motor for improved reliability and longer life
- Stainless steel pump casing makes this pump tough, durable and corrosion resistant

### Applications:

- Ideal for pumping rainwater from your tank for garden watering, washing cars, sprinklers and small irrigation systems

Model	Application	Watts	Current (Amps)	Pressure Switch Setting (kPa)	Suction Depth Capacity (Metres) (Litres per min)					Port Size (BSP)	
					0	1.5	3	4.6	7.6	Suction	Discharge
GPP40		450	2.8	140	37	33	29	25	12	1" F	1" F

• GPP40 Performance



## MF55



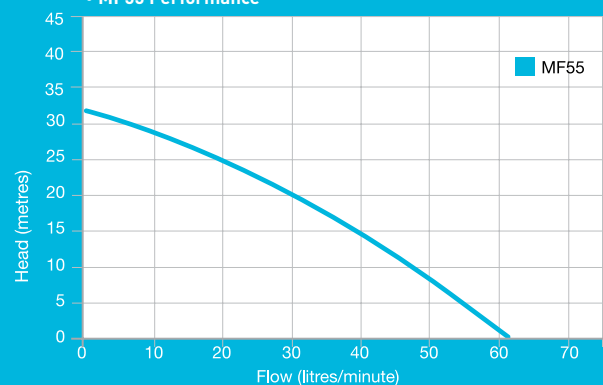
- The Riva-flo MF55 is a corrosion-resistant moulded shallow-well jet pump
- Add an Onga pressure tank and you have a household pressure system

### Applications:

- Used to draw water from a shallow source (up to 7.6m)
- A good general purpose pressure system

Model	Application	Watts	Current (Amps)	Pressure Switch Setting (kPa)	Suction Depth Capacity (Metres) (Litres per min)					Port Size (BSP)	
					0	2	4	6	7.5	Suction	Discharge
MF55		550	2.7	140-275	39	33	28	22	16	1" M	1" F

• MF55 Performance



# SOUTHERN CROSS DOMESTIC

Automatic water pressure systems



## **Automatic Jet Pressure Systems**

The Southern Cross jet pressure pumps are designed for automatic water pressure boosting in domestic applications, light industry, washdown, rural and stock watering, where reliability, efficiency and ease of installation are important.



## CBI PC Range



- Presscontrol systems (electronic hydraulic controller) for excellent pressure and flow control without a pressure tank
- All 304 grade stainless steel pump construction
- Brass suction line check valve supplied.
- High quality mechanical shaft seal
- Simple repair, servicing, maintenance and parts replacement

### Applications:

- Domestic
- Agricultural
- Light Industrial
- Pressure Boosting
- Heating and Cooling Systems
- Potable Water Supply

AS/NZS  
4020:2005 compliant

In-built thermal  
motor protection

Model	DISCHARGE PRESSURE (kPa)						
	150	200	250	300	350	400	450
CBI 2-30PC15	47	35	22	-	-	-	-
CBI 2-40PC15	54	46	39	27	15	-	-
CBI 2-50PC15	58	53	48	40	32	22	-
CBI 2-60PC22	61	57	52	48	42	36	29
CBI 4-40PC15	68	48	-	-	-	-	-
CBI 4-50PC22	75	60	42	25	-	-	-
CBI 4-60PC22	94	84	71	57	40	24	-

Model	Application	Watts (P1)	Pump Stages	Port Size (BSP)	
				Suction	Discharge
				25mm 1" F	
CBI 2-30PC15		480	3	25mm 1" F	25mm 1" M
CBI 2-40PC15		570	4		
CBI 2-50PC15		680	5		
CBI 2-60PC22		810	6		
CBI 4-40PC15		1020	4	32mm 1 1/4" F	
CBI 4-50PC22		1220	5		
CBI 4-60PC22		1450	6		

## CBI PT Range



- Pressure tank systems featuring 8lt and 18lt anti-corrosion tanks with fixed Butyl diaphragm that ensures permanent isolation of water and air cushion
- Special corrosion resistant coating for clean water supply and extended tank life
- All 304 grade stainless steel pump construction
- Brass suction line check valve supplied.
- High quality mechanical shaft seal
- Simple repair, servicing, maintenance and parts replacement

### Applications:

- Domestic
- Agricultural
- Light Industrial
- Pressure Boosting
- Heating and Cooling Systems
- Potable Water Supply

AS/NZS  
4020:2005 compliant

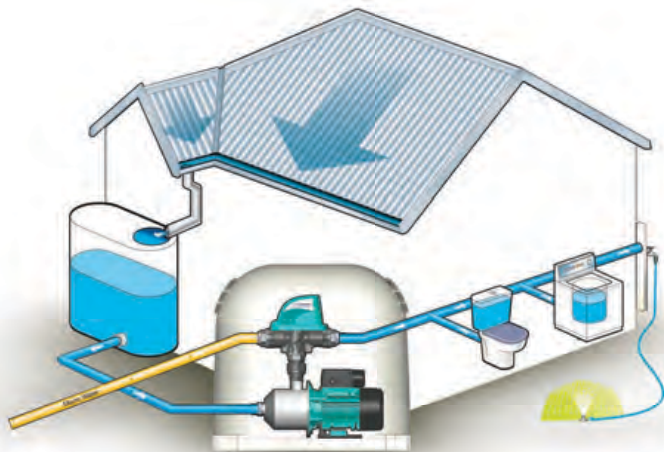
In-built thermal  
motor protection

Model	DISCHARGE PRESSURE (kPa)						
	150	200	250	300	350	400	450
CBI 2-30PT8	52	39	23	-	-	-	-
CBI 2-40PT8	59	53	42	31	14	-	-
CBI 2-50PT8	60	57	51	43	35	23	-
CBI 2-60PT8	62	60	57	52	45	38	30
CBI 4-40PT8	105	80	53	29	-	-	-
CBI 4-50PT8	126	110	92	72	50	24	-
CBI 4-60PT8	132	120	105	90	73	54	33

Model	Application	Watts (P1)	Pump Stages	Tank Size (Litres)	Port Size (BSP)	
					Suction	Discharge
					25mm 1" F	
CBI 2-30PT8		480	3	8	25mm 1" F	25mm 1" F
CBI 2-40PT8		570	4			
CBI 2-50PT8		680	5			
CBI 2-60PT8		810	6			
CBI 4-40PT8		1020	4	18	32mm 1 1/4" F	
CBI 4-50PT8		1220	5			
CBI 4-60PT8		1450	6			

# RAINWATER HARVESTING

Onga Waterswitch - Automatic rainwater controller



For illustrative purposes only. H2O informer not standard.

WaterSwitch provides the best possible solution for urban rainwater harvesting. The WaterSwitch provides automatic selection between rainwater from a tank and water from mains. A seamless supply of water (tank or mains) is delivered to household demands such as toilet cistern filling, washing machines, garden watering and car washing.

- Automatically saves water
- Seamlessly switches between mains and rainwater tank
- Upon activation, solenoid valve prevents mixing of mains and tank water so genuine water savings are achieved
- Easy installation





**Applications:**

- Use your rainwater for:  
The washing machine, flushing the toilet, washing the car, watering the garden

**• H2O Informer Special Feature:**

New state of the art, wireless interface module records water usage for both mains and tank water so you can see your actual water savings from up to a 20 metre range.

**H2O Informer display features:**

 Tank savings (in ltr)	 Mains savings (in ltr)
 Percentage savings	 Days of savings

# WATER SWITCH SYSTEMS - QUICK SELECTION GUIDE

This quick selection guide can help you to find the most suitable waterswitch product for you and your house needs.

The products listed are recommended for optimal performance and should be used as a guide only.

Seek advice from an Onga specialist before purchasing a waterswitch product.

**• STEP 1 – SELECT SINGLE OR DOUBLE STOREY HOUSE**  
 Typical set-up for in-ground and above-ground tanks.

**SINGLE STOREY HOME**

**DOUBLE STOREY HOME**

**• STEP 2 – SELECT POSITION OF TANK**

<b>Position A</b> (next to home)	<b>Position B</b> (away from the home)	<b>Position A</b> (next to home)	<b>Position B</b> (away from the home)
-------------------------------------	---	-------------------------------------	---

**• STEP 3 – SELECT NUMBER OF APPLICATIONS YOU WISH TO RUN**

Pump model best suited			Pump model best suited	
SMHW350	OTBW450 <sup>(sub.)</sup> JSW110		JSW110	DW7535 <sup>(sub.)</sup> JSW110
SMHW350	OTBW450 <sup>(sub.)</sup> JSW110		JSW110	DW7535 <sup>(sub.)</sup> JSW110
SMHW450	OTBW450 <sup>(sub.)</sup> SMHW450		SMHW450	DW7535 <sup>(sub.)</sup> SMHW450
SMHW450	DW7535 <sup>(sub.)</sup> SMHW550		SMHW450	DW7535 <sup>(sub.)</sup> SMHW550
SMHW450	DW7535 <sup>(sub.)</sup> SMHW550		SMHW450	DW7556 <sup>(sub.)</sup> SMHW550
SMHW550	DW7556 <sup>(sub.)</sup> SMHW550		SMHW550	DW7556 <sup>(sub.)</sup> SMHW550
SMHW750	DW11557D <sup>(sub.)</sup> SMHW750	<b>Larger Applications</b>	SMHW750	DW11557D <sup>(sub.)</sup> SMHW900



– For long pipework lengths, upsize to next model.  
 (sub.): Denotes submersible pumps, also suitable for below ground tanks.

# WATER SWITCH DOMESTIC PUMP KITS

## SMHW350 KIT



## JSW110FL KIT



## SMHW SERIES



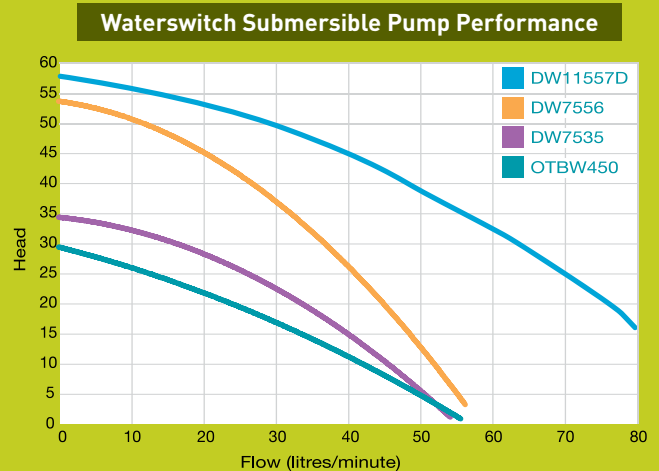
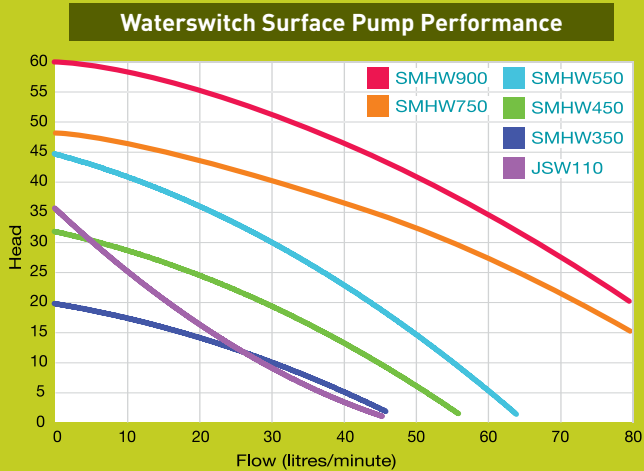
## JMM100FL



## DW SERIES



## OTBW450



# WATERSWITCH COMMERCIAL PUMP SYSTEMS

## SBI 5-10 SINGLE SPEED



## SBI 5-10 VARIABLE SPEED



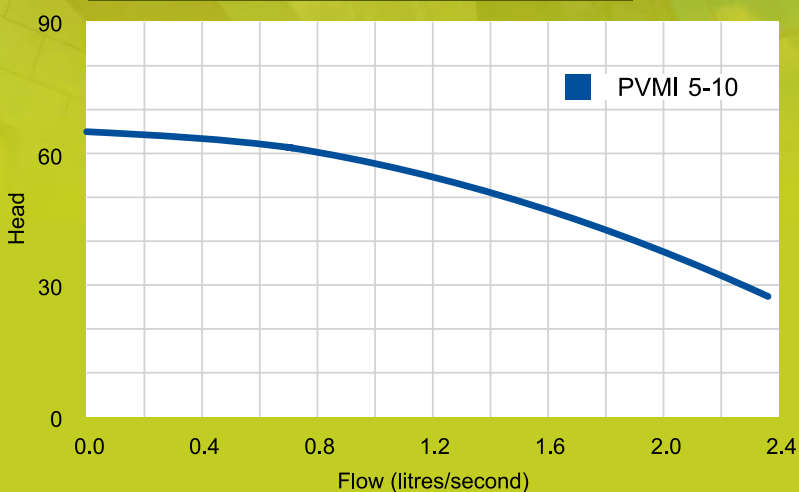
The Commercial Onga waterswitch systems incorporate the market leading waterswitch coupled with the reliable PVMI5-10 pump, in single speed and variable speed versions, 24L and 80L pressure tanks, ensuring the systems are both economical to run and take advantage of using rain water harvesting to the fullest, for both non-potable building services facilities and irrigation where required.

The benefit of the variable speed (VSD) system means it will slow the pump speed down to allow for low flow rates and then ramp the pump up to cater for higher demands when required. On a commercial site these features along with soft start and soft stop eliminate large flow rates and pressures causing water hammer on pipework and systems. VSD control also reduces the running cost of the pump by reducing the power consumption of the pump when lower flows are being supplied.

### Features:

- Onga waterswitch (25mm inlet/outlet)
- PVMI 5-10 Single Speed or Variable speed Pumps (Single phase 1.5kW)
- IQ Controller on Southern Cross motor (VSD unit only)
- APP80 80lt (Single speed system) or APP24 24lt (VSD system) pressure tanks
- 32mm 316 SS manifold
- 32mm Brass Y Strainer
- 25mm 316SS Fittings from Y Strainer to R2M
- Waterswitch offset to allow for easy connection mains supply.
- Waterswitch can be directed/rotated via the barrel union to allow for plumbing direction
- 25mm 316SS discharge from Waterswitch including lockable ball valve
- Top entry Float Switch with 10mt cable

Waterswitch Commercial Pump Performance



# FARM PUMPS

**Onga Farmmaster** - Shallow & deep well pumps



Onga's Farmmaster range of pumps has evolved with the needs of Australian farmers and landowners since Onga's beginning in 1967. They have benefited from over 45 years of outstanding pump engineering.

The Farmmaster Range offers precision engineered internals with coated cast iron construction for high performance, lower running costs and the ultimate in strength and longevity. Containing a totally enclosed fan cooled motor, you simply can't beat this range for reliability. Available in shallow and deep well configurations:

## **Shallow Well Pumps**

Onga offers a wide variety including the 500 series, JJ and OJ range of reliable shallow well pumps suitable for providing strong and constant pressure throughout.

## **Deep Well Pumps**

The Onga JJ & OJ Deep well range of farm pumps are suitable for supplying water from sources where the suction lift is greater than 7.6 metres. We can offer product solutions that can handle suction lifts down to 49 metres.

*Your Onga dealer can tailor these strong and versatile pumps to your particular requirements, using interchangeable internal components delivering you the efficiency you demand.*





## JJ RANGE



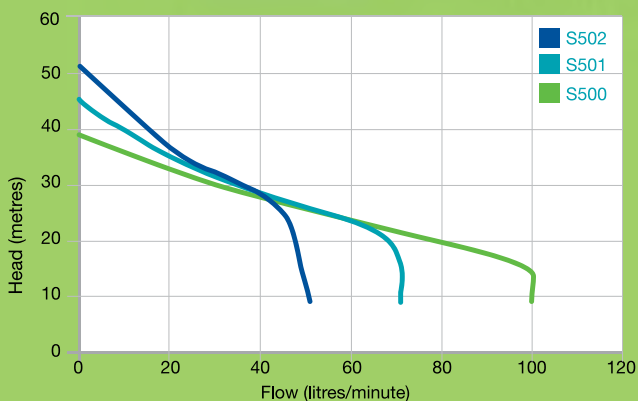
- The Farmmaster Junior Jet “JJ” range are compact and efficient pumps
- Constructed in cast iron with precision-moulded hydraulic components, they are built for many years of hard work

### Applications:

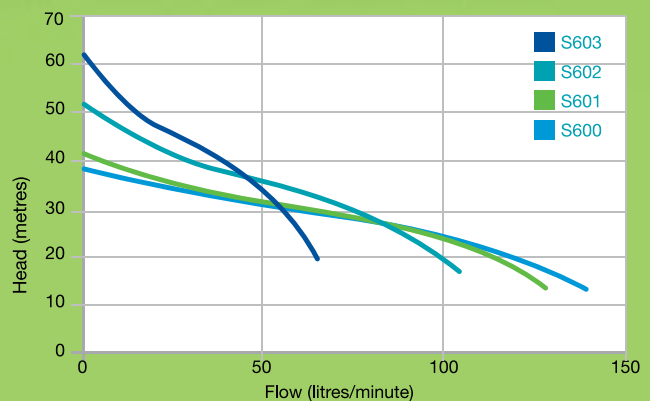
- Stock watering, irrigation and water transfer from dams, creeks, wells and bores

MODEL	Watts (P2)	Voltage (V)	Current (Amps)
JJ400	750	230	4.6
JJ600	1100	230	7.7
JJ600	1100	415	2.92

JJ400 PERFORMANCE



JJ600 PERFORMANCE



# SHALLOW WELL PUMPS & INJECTORS

## JJ RANGE



Model (Watts)	Injector Model	Pressure Switch Setting (kPa)	Suction Lift (M)	Discharge Head (Metres)						Maximum Pump Pressure (kPa)
				15	21	27	34	40	46	
JJ400	S500*	140-280	0	98	70	40				380
			3	78	56	32			350	
			6	56	40	23			320	
			7.6	39	28	16			305	
	S501#	210-350	0	71	66	42	21		440	
			3	57	53	34	17		410	
			6	40	38	24	12		380	
			7.6	28	26	17	8		365	
	S502*	280-420	0		47	42	24	14	505	
			3		38	34	19	11	475	
			6		27	24	14	8	445	
			7.6		19	17	10	6	430	

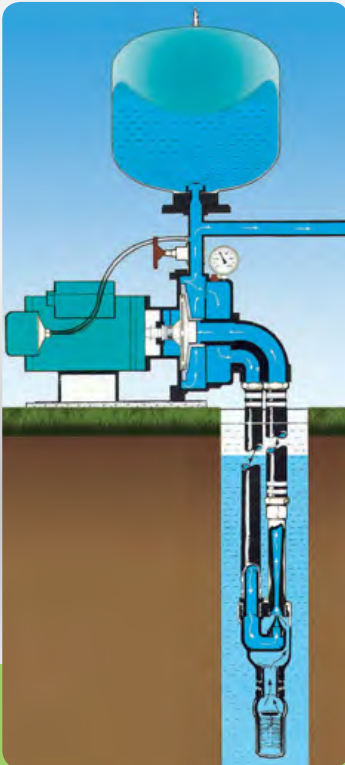
Model (Watts)	Injector Model	Pressure Switch Setting (kPa)	Suction Lift (M)	Discharge Head (Metres)						Maximum Pump Pressure (kPa)
				15	21	27	34	40	46	
JJ600	S600*	140-280	0	137	112	71	24		375	
			3	109	89	57			345	
			6	78	64	40			315	
			7.6	55	45	28			300	
	S601#	210-350	0	125	112	74	33		410	
			3	100	89	59	26		380	
			6	71	64	42			350	
			7.6	50	45	29			335	
	S602*	280-420	0		100	82	51	29	505	
			3		80	66	41	23	475	
			6		57	47	29	16	445	
			7.6		40	33	20	12	440	
S603*	350-560	0			62	48	34	22	615	
		3			50	38	27	18	585	
		6			35	27	19	12	555	
		7.6			25	19	14	9	540	

# Factory pressure switch setting (210-350 kPa).  
 \* Pressure switch adjustment needed.

Pump suction 1 1/2" BSP Female.  
 Pump discharge port 3/4" BSP female (pump), 1" BSP Female (pressure kit).  
 Model JJ600 may be purchased as single or three phase.

# DEEP WELL PUMPS & INJECTORS

## JJ RANGE



- The JJ pumps equipped with deep well injectors are ideal for supplying water from sources where the suction lift is greater than 7.6 metres
- Potential to draw water from any source down to 37 metres using deep well injectors
- If your source changes, they can easily be converted between shallow well and deep well applications – there is no need to buy another pump
- Non-corroding injector materials make it suitable for hard water areas
- Cast iron casing and other parts make it suitable for rugged conditions
- Heavy duty industrial totally enclosed, fan cooled motor provides long life
- Both single and three phase available in the JJ600 model

### Applications:

- Tank filling, irrigation and sprinklers, stock water and household water supply

Model	Pressure Switch Setting	Injector Size (Inch)	Injector Model	Max Pump Pressure (kPa)	Minimum Operating Pressure (kPa)	Bore Water Pumping Level or Suction Lift (Metres)														Suction Pipe	Pressure Pipe			
						6	9	12	15	18	21	24	27	30	34	37	40	43	46			49		
						Capacity (Litres per Minute)																		
JJ400	140-280	3 1/4	D411	400	95	60	45	35	25	18										1 1/4"	1"			
		3 3/8	D521	400	100	75	65	50	40												1 1/2"	1 1/4"		
			D511	385	100					25	20	18	13									1 1/2"	1 1/4"	
JJ600	140-280	3 1/4	D417	410	140	78	58	43													1 1/4"	1"		
			D413	430	140				30	25	18											1 1/4"	1"	
		3 3/8	D523	414	160	100	85	63	47													1 1/2"	1 1/4"	
			D513	400	165					40	30	20	15										1 1/2"	1 1/4"
		#4 3/8	D620	500	124					52	45	40	33	25	20	18	13						2"	1 1/2"

# Special injectors are available to fit down 4" PVC pipe.  
Maximum pump pressure = @ minimum suction lift per injector

# OJ RANGE



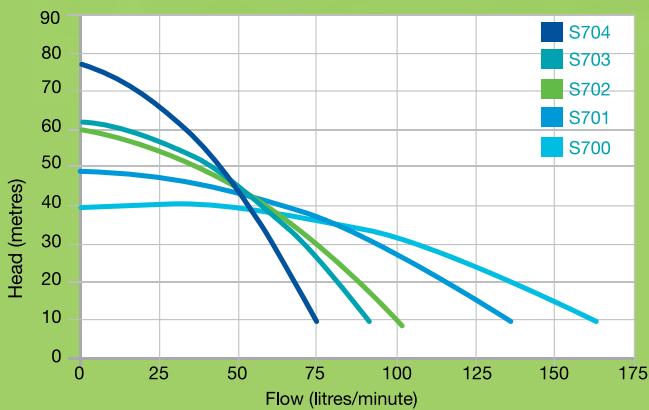
- The Farmmaster OJ range is the flagship of the Onga range, offering performance, efficiency and reliability in a solid cast iron casing
- The bottle shaped casing allows easy escape for air and aids the pump in priming suction lines

### Applications:

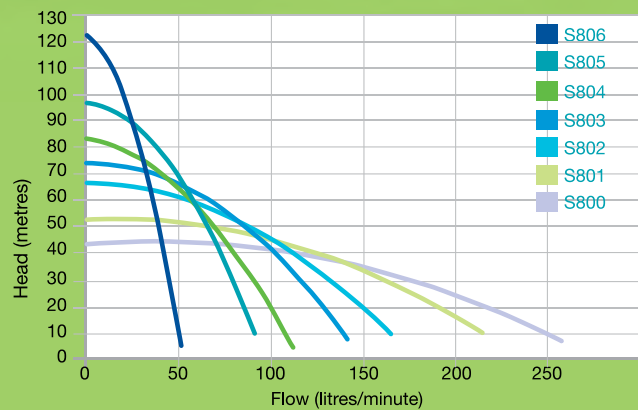
- Stock watering, irrigation and water transfer from dams, creeks, wells and bores

MODEL	Watts (P2)	Voltage (V)	Current (Amps)
OJ700	1500	230	8.9
OJ700	1500	415	3.57
OJ800	2400	230/480	14/7
OJ800	2400	415	5.5

OJ700 PERFORMANCE



OJ800 PERFORMANCE



# SHALLOW WELL PUMPS & INJECTORS

## OJ RANGE



Model	Injector Model	Pressure Switch Setting (kPa)	Suction Lift (M)	Discharge Head (Metres)											Maximum Pump Pressure (kPa)			
				15	21	27	34	40	46	52	58	64	70	76		82	88	95
OJ700	S700#	210-350#	0	162	159	138	80	27										430
			3	130	127	110	64											400
			6	92	91	79	46											370
			7.6	65	64	55	32											355
	S701*	280-455	0			114	94	61	31									540
			3			91	75	49	25								510	
			6			65	54	35	18								480	
			7.6			46	38	24	12								465	
	S702*	350-560	0				85	66	42	24								635
			3				68	53	34	19							605	
			6				48	38	24	14							575	
			7.6				34	26	17	10							560	
	S703**	420-630	0					69	50	35	22							690
			3					55	40	28	18						660	
			6					39	29	20	13						630	
			7.6					28	20	14	9						615	
	S704**	490-700	0					56	51	39	28	18	11					800
			3					45	41	31	22	14	9				770	
			6					32	29	22	16	10					740	
			7.6					22	20	16	11	7					725	

Model	Injector Model	Pressure Switch Setting (kPa)	Suction Lift (M)	Discharge Head (Metres)											Maximum Pump Pressure (kPa)			
				15	21	27	34	40	46	52	58	64	70	76		82	88	95
OJ800	S800#	210-350	0	245	241	218	156	72										430
			3	196	193	174	125											400
			6	140	137	124	89											370
			7.6	98	96	87	62											355
	S801*	280-455	0		215	204	160	116	66									525
			3		172	163	128	93	53								495	
			6		123	116	91	66									465	
			7.6		86	82	64	46									450	
	S802*	350-560	0			154	150	117	85	54	25							635
			3			123	120	94	68	43	20						605	
			6			88	86	67	48	31							575	
			7.6			62	60	47	34	22							560	
	S803*	420-630	0					112	88	64	42	25						730
			3					90	70	51	34	20					700	
			6					64	50	36	24	14					670	
			7.6					45	35	26	17	10					655	
	S804**	490-700	0					90	67	47	31	18						800
			3					72	54	38	24	14					770	
			6					51	38	27	18	10					740	
			7.6					36	27	19	12	7					725	
S805**	630-840	0						70	57	43	31	21					970	
		3						56	46	34	25	17				880		
		6						40	32	25	18	12				850		
		7.6						28	23	17	12	8				835		
S806**	770-1050	0									34	33	30	25	18		1145	
		3									27	26	24	20	14		1115	
		6									19	18	17	14	10		1085	
		7.6									14	13	12	10	7		1070	

# Factory pressure switch setting.

\* Pressure switch adjustment needed.

+ 700248 pressure switch needed for extra high pressure switching.

Pump suction 1 1/2" BSP Female.

Pump discharge port 1" BSP Male (pump), 1" BSP Female (pressure kit).

Both single and three phase models available.

# DEEP WELL PUMPS & INJECTORS

## OJ RANGE

- OJ pumps equipped with deep well injectors can handle suction lifts down to 49 metres
- Strong cast iron construction, industrial spec motors, and precision-moulded components work together to provide a rugged and reliable pump
- For all these pumps an offset flange can be used in place of the overbore elbows. This allows you to draw water from a river or other water service while the pump can be placed well above the flood line
- You get all the benefits of drawing water while still having an above ground, easily serviceable pump

### Applications:

- Tank filling, irrigation and sprinklers, stock water and household water supply



DEEP WELL JET PUMPS USING INJECTOR TAIL PIPE*		
Injector only total suction heads		Percentage of rated capacity
Feet	Metres	
(10)	3	100%
0	0	80%
10	3	64%
15	4.6	56%
20	6.1	46%
25	7.6	32%
28	8.5	20%
29	8.8	13%

\*Recommended length of tail pipe - 35 feet / 10 metres

DEEP WELL OFFSET TABLE								
Pump Model	Inj Model	Pipe Size Inch	Additional Suction Head (m) per Horizontal Offset (m)					
			30	60	120	180	240	300
OJ700	D611	2 x 1 1/2	3	6	9	12	15	17
	D612	2 x 1 1/2	2.5	4.5	7.5	10.5	13.5	15
	D613	2 x 1 1/2	2.5	4.5	7.5	10.5	12	13.5
OJ800	D618	2 x 1 1/2	6	12	18.5	23	26	29
	D619	2 x 1 1/2	4.5	9	15	18.5	21	23
	D616	2 x 1 1/2	3	6	12	17	20	23
OJ800	D617	2 x 1 1/2	3	6	10.5	15	18.5	21
	D618	2 x 2	3.5	7.5	13.5	18.5	21	24
	D619	2 x 2	3	6	10.5	13.5	17	18.5
	D616	2 x 2	2	4.5	7.5	10.5	13.5	15
D617	2 x 2	1.5	3	6	9	12	13.5	

Model	Pressure Switch Setting	Injector Size (Inch)	Injector Model	Max Pump Pressure (kPa)	Minimum Operating Pressure (kPa)	Bore Water Pumping Level or Suction Lift (Metres)														Suction Pipe	Pressure Pipe	
						6	9	12	15	18	21	24	27	30	34	37	40	43	46			49
						Capacity (Litres per Minute)																
OJ700	210-350	3 1/4	D414	455	186	90	78	60											1 1/4"	1"		
			D415	483	186				40	30	28	18	15							1 1/4"	1"	
		3 3/8	D514	469	179	120	105	75	63											1 1/2"	1 1/4"	
			D515	483	193					50	40	30								1 1/2"	1 1/4"	
		#4 3/8	D516	455	193								28	20	13	10				1 1/2"	1 1/4"	
			D611	462	179	135	120	113	90											2"	1 1/2"	
			D612	483	186					68	60	48								2"	1 1/2"	
OJ800	210-350* or 280-420	3 3/8	D613	518	193							54	35	25	25	15			2"	1 1/2"		
			D520	573	248	160	135	113	85										1 1/2"	1 1/4"		
		D518	690	262					63	58	43								1 1/2"	1 1/4"		
		D519	656	262								38	30	23	18	15			1 1/2"	1 1/4"		
		#4 3/8	D618	517	214	205	173	150												2"	1 1/2"	
			D619	600	242				125	100	85									2"	1 1/2"	
		D616	711	276							68	60	50							2"	1 1/2"	
D617	662	276										48	40	33	28	25	20	2"	1 1/2"			

\* Factory pressure switch setting.  
 # Special injector available to fit down 4" bore.  
 Maximum pump pressure = @ minimum suction lift per injector.

# MOULDED JET FARM PUMPS

## 500 SERIES



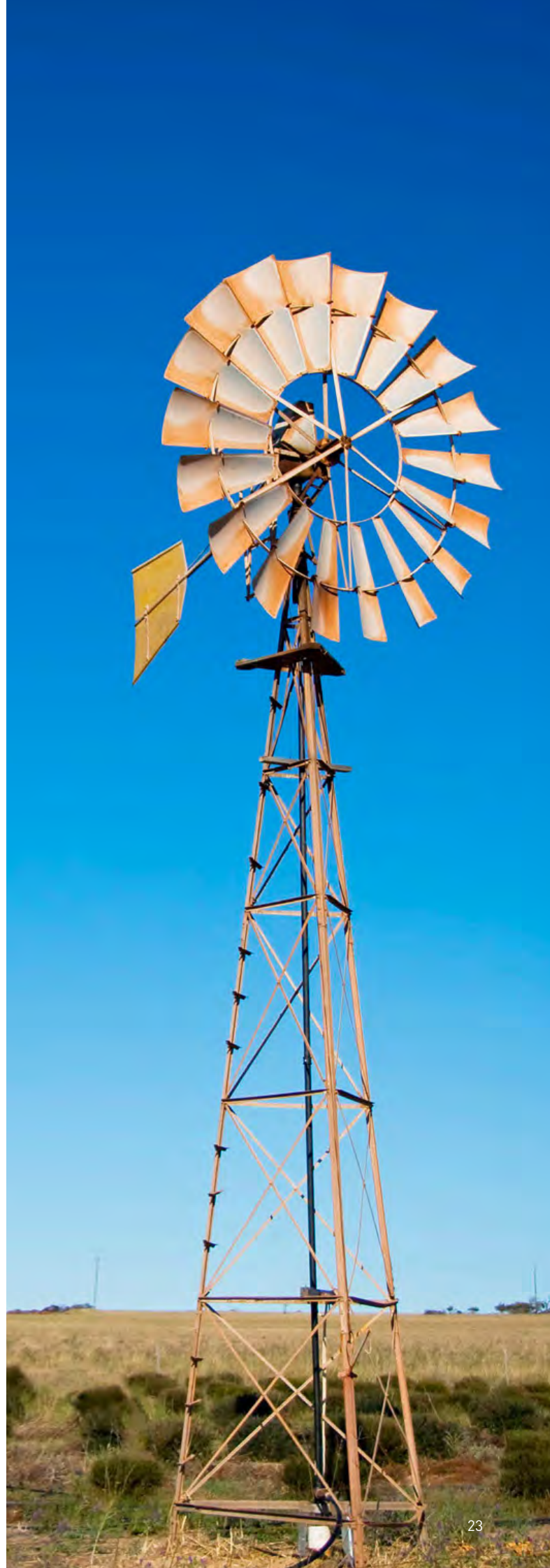
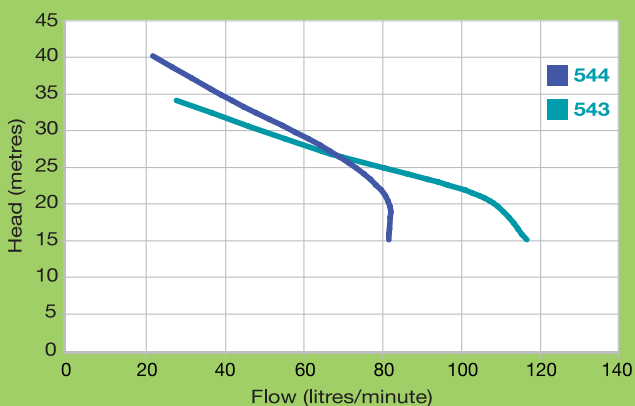
- The 500 series shallow well Farmmaster range is manufactured from industrial grade corrosion resistant thermoplastic, close coupled to the double award winning TEFC onga electric motor.
- The models and capacity range available are designed for both domestic and rural application.
- All models include a built-in checkvalve

### Applications:

- Tank filling, irrigation and sprinklers, stock water and household water supply

Model	Pressure Switch Setting	Total Suction Head (metres)	Discharge Head (Meters)					Maximum Pump Pressure kPa
			15	21	27	34	40	
543	210-350	0	117	105	65	28		390
		3	94	84	52	22		360
		6	67	60	37	16		330
		7.6	47	42	26	11		315
544	280-420	0	82	81	67	42	22	475
		3	66	65	54	34	18	445
		6	47	46	38	24	13	415
		7.6	33	32	27	17	9	400
<b>MODEL</b>		<b>Watts (P2)</b>	<b>Voltage (V)</b>		<b>Current (Amps)</b>			
543 / 544		1100	230		7.7			

500 SERIES PERFORMANCE



# PRESSURE TANKS

## Onga Aquapack & Pro-Source composite

Steel & fibrewound pressure tanks



You simply can't look past our comprehensive range of pressure tanks to meet a wide array of water reservoir and energy saving requirements.

### **Aquapack Plus**

The Onga Aquapack Plus range of steel diaphragm pressure tanks allow storage of more water and help to minimise energy costs and pump cycling.

### **NEW Pro-Source Composite Tanks**

The Pro-Source Composite fibrewound tanks are the ultimate in reliability and durability especially for farm and industrial applications that require the ability to withstand tough conditions.





# STEEL PRESSURE TANKS

## AQUAPACK PLUS



- A comprehensive range of steel diaphragm pressure tanks designed to meet various water reservoir and energy saving needs
- A durable and flexible diaphragm allows a consistent reservoir of water to be maintained during the life of the tank with minimal deformation
- An integrated liner ensures water does not come into contact with the metal shell; minimising the chance of corrosion to the tank shell making its lifecycle longer and the water potable (CE & NSF certified for use in contact with drinking water)
- Air valve is conveniently situated on the upper side of the tank, allowing easy access for testing and adjusting the pre-charge air
- Tank connections are stainless steel which are adaptable for either direct placement on the pump or stand alone units fitted independently to pipe work for versatile applications
- The three larger models (APP40, APP80, APP100) are supplied with bases for ease of installation

### Applications:

- Automatic controlled water supply

Pressure switch settings kPa	Draw off in Litres					
	AquaPack plus					
	APP8	APP12	APP24	APP40	APP80	APP100
100-200	2.5	3.8	7.6	12.7	25.3	31.7
140-275	2.7	4.1	8.1	13.6	27.1	33.9
210-340	2.2	3.3	6.6	11.0	22.0	27.5
275-415	2.0	3.0	6.0	10.1	20.2	25.2
275-450	2.4	3.5	7.1	11.8	23.6	29.5
345-550	2.3	3.5	7.0	11.6	23.3	29.1
410-620	2.1	3.2	6.4	10.7	21.5	26.8
480-690	12.0	2.9	5.9	-	-	-
Capacity (Litres)	8	12	24	40	80	100
Max rating (kPa)	690			600		
Diameter (cm)	19	22	30	38	38	38
Height (cm)	23	33	41	53	72	91
BSP	1" M					
Weight (kg)	2.35	3.2	5.5	10.4	14.3	20.0

# FIBREWOUND PRESSURE TANKS

## PROSOURCE



- The PRO-Source composite fibrewound tanks designed and manufactured with capabilities to match a wide range of fresh water applications.
- PRO-Source composite tanks will not rust, corrode, dent or scratch and require no painting or exterior maintenance.
- NEW seamless durable air cell constructed of heavy gauge engineered polymer.
- NEW Drain screen field proven and unobtrusive design flush mounted to bottom of the tank.
- PRO-Source composite tanks are the choice for lasting and durability

### Applications:

These pressure tanks are used in many farm and industrial water supply applications to store water at pressure and reduce pump cycling, especially where automated pump controls are used cycling, especially where automated pump controls are used.

Pressure switch settings kPa	Draw off in Litres						
	Pro-Source composite						
	APSC -14-4-01	APSC -20-6-01	APSC -30-9-01	APSC -48-14-01	APSC -60-20-01	APSC -85-25-01	APSC -119-35-01
138-275	18.7	25.5	38.1	60.5	77.2	111.5	154
207-345	16.5	22.5	33.5	53.5	68.1	98.5	135.9
275-414	14.3	19.5	29.1	46.3	59.0	85.3	117.8
Capacity (Litres)	55	75	112	178	227	328	453
Max rating (kPa)	690						
Diameter (cm)	41		61		53	61	
Height (cm)	71.6	86.6	117.6	112.8	166.4	145.3	191.5
BSP	1" M			1 1/2" M			
Weight (kg)	9.6	11.5	14	23.6	27.7	34.5	42.7

# WATER TRANSFER

**Onga Hi-Flo** - Centrifugal pumps



The Onga Hi-Flo range is made from high performance materials and is suited to a wide array of flow and pressure applications.

## **Hi-Flo Moulded Pumps**

Onga Hi-Flo Moulded pumps offer a very broad range of value-for-money centrifugal pumps to suit almost any water transfer, wash down or water circulation application.

## **Hi-Flo Cast Iron Pumps**

The Onga Hi-Flo range includes a wide variety of pumps fabricated from cast iron for ultimate strength and durability. From the smallest Model 252 up to the 18 series and 150 self primer, these pumps will take on the toughest jobs.

# CENTRIFUGAL PUMPS

## 400 SERIES

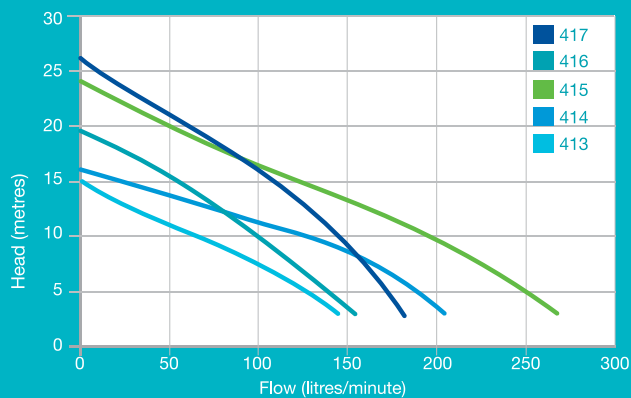


- The 400 series is constructed of high grade corrosion-resistant materials
- Provides water flows up to 270 litres a minute or maximum pressure up to 26 metres
- Model 413 is ideally suited to circulation duty in hydroponic greenhouses and water transfer
- Casings are moulded out of strong ABS, making them suitable for the harshest of conditions

### Applications:

- High flow water transfer, light industrial and animal hygiene stations.

• 400 Series Performance



MODEL	Watts (P2)	Voltage	Current (Amps)
HI-FLO 413	370	230	2.5
HI-FLO 414	370	230	2.6
HI-FLO 415	750	230	4.3
HI-FLO 416	370	230	2.6
HI-FLO 417	750	230	4.2

### Suction & Discharge

- 400 series: 1 1/4" male BSP suction & discharge.
- 413 model: 1" male BSP suction & discharge.

## 111 / 252

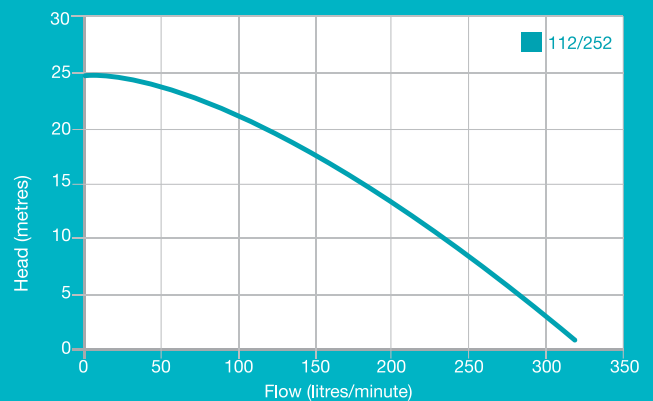


- Suited to those jobs involving rugged terrain where a compact water transfer pump is required
- Moulded pump casing for corrosion resistance
- Close coupled high efficiency TEFC motor makes it resistant to water ingress and vermin proof
- Inbuilt thermal overload protects the motor from overheating

### Applications:

Water transfer, tank filling and irrigation.

• Hi-Flo 112 / 252 Performance



MODEL	Watts (P2)	Voltage	Current (Amps)
HI-FLO 112	1100	230 / 415	7.2 - 3.5
HI-FLO 252	1100	230 / 415	7.2 - 2.6

### Suction & Discharge

- 112 model: 1 1/4" male BSP suction & discharge.
- 252 model: 1 1/4" female BSP suction & discharge.

# CENTRIFUGAL PUMPS

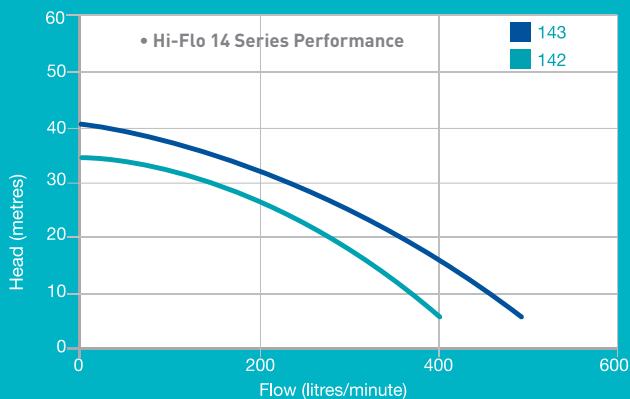
## 14 SERIES



- Flows of up to 500 litres per minute or heads over 40 metres are available from this range
- Award winning Hi-Flo impeller means high pressure, high flow and great efficiency with lower operating cost
- Moulded pump casing for corrosion resistance
- Close coupled high efficiency TEFC motor makes it resistant to water ingress and vermin proof
- Inbuilt thermal overload protects the motor from overheating

### Applications:

- Suitable for high head water transfer, tank filling and irrigation.



MODEL	Watts (P2)	Voltage	Current (Amps)
HI-FLO 142	1800	230 / 415	9.6 / 3.2
HI-FLO 143	2400	230 / 460	14 / 7
HI-FLO 143	2400	415	5.2

### Suction & Discharge

1 1/2" male BSP suction & discharge.  
\*143 model available in 3 phase.

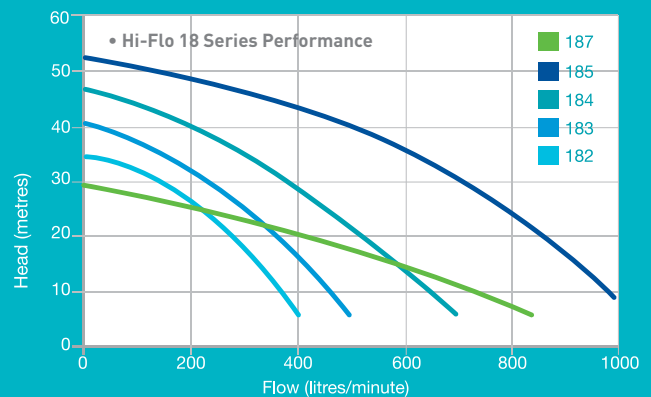
## 18 SERIES



- Available in cast iron
- Models are available with maximum flows from 400 to over 1000 litres per minute
- Maximum pressures from 35 to more than 50 metres of head
- The 184 is now available with a 3.7kW single phase motor for high pressure and flow
- Award winning Hi-Flo impeller means high pressure, high flow, great efficiency and lower operating cost
- Cast Iron casing for corrosion resistance
- Close coupled high efficiency TEFC motor makes it resistant to water ingress and vermin proof
- Inbuilt thermal overload protects the motor from overheating

### Applications:

- High flow water transfer, tank filling and irrigation.



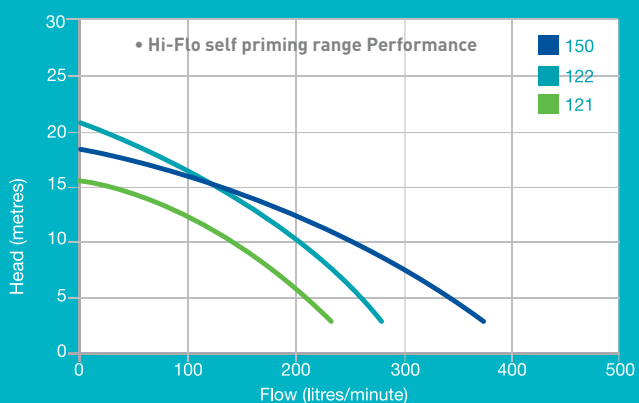
MODEL	Watts (P2)	Voltage	Current (Amps)
HI-FLO 182	1500	230	8.9
HI-FLO 182	1500	415	3.9
HI-FLO 183	2400	230 / 460	14 / 7
HI-FLO 183	2400	415	5.5
HI-FLO 184	3800	230 / 460	20.6 / 10.3
HI-FLO 184	3800	415	7.5
HI-FLO 185	6000	415	12.8
HI-FLO 187	2400	230 / 460	14 / 7
HI-FLO 187	2400	415	5.3

Suction & Discharge 2" female BSP

## SELF PRIMING



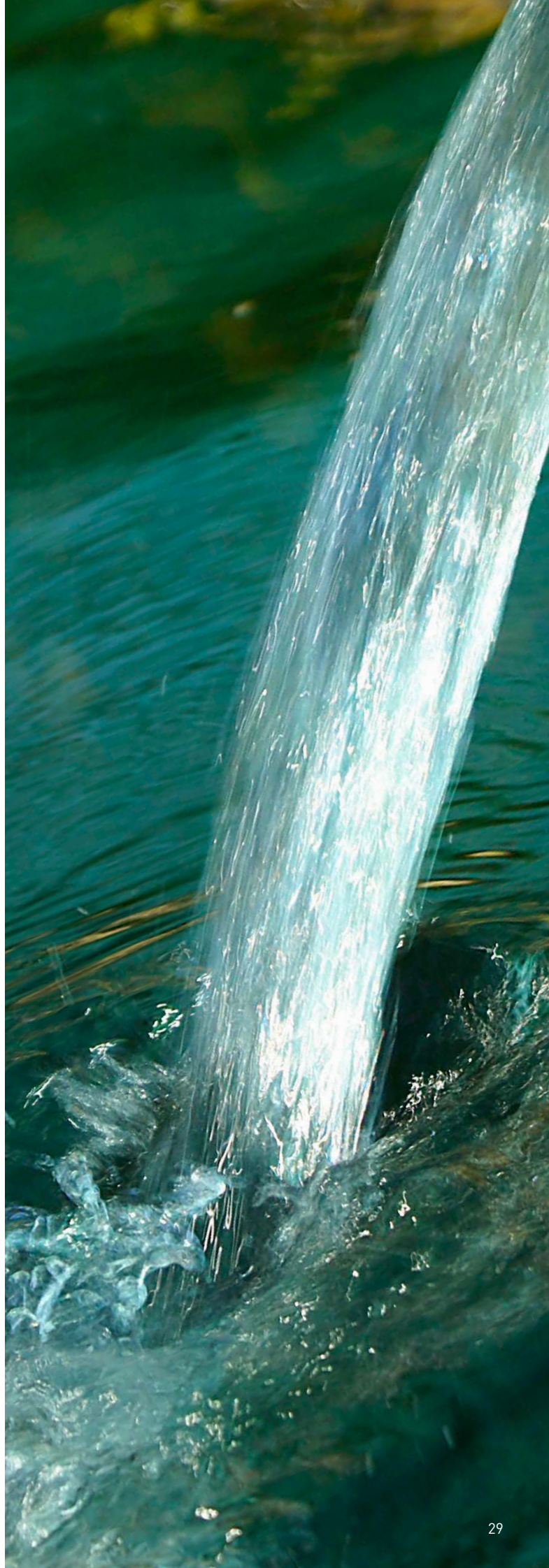
- The self-priming versions of the Hi-Flo range are suitable for pumping septic tank effluent
- Surface mounted for easy servicing
- Open impeller and built in check valve, for excellent self-priming characteristics
- Handles soft solids without clogging
- 150 has a Cast Iron casing with precision moulded internal. 12 series has a Moulded casing with precision moulded internal



MODEL	Watts (P2)	Current (Amps)230V	Current (Amps)415V
HI-FLO 121	750	4.2	-
HI-FLO 122	1100	6.1	2.6
HI-FLO 150	1100	7.0	2.6

### Suction & Discharge

- 12 series: 1 1/2" male BSP suction, 1 1/4" male BSP discharge.
- 15 series: 2" female BSP suction & discharge.



# INDUSTRIAL

## Southern Cross / Onga

Stainless steel multistage & centrifugal pumps



Southern Cross & Onga offer a wide array of dependable and robust product solutions for irrigation applications:

### Centrifugal Pumps

The **NEW** SSS and the CPS series of centrifugal pumps are manufactured from 304 Grade 18/8 stainless steel. They are coupled with a heavy duty industrial motor for continuous duty in difficult conditions. They are ideally suited to light industrial and agricultural applications.

### Southern Cross Vertical Multistage Pumps

The Southern Cross SBI range consists of high performance vertical multistage pumps built to meet the needs of many commercial, industrial and rural water supply applications.

### Onga Horizontal Multistage Pumps

Stainless steel and cast iron construction pumps designed for reliability and durability.



# VERTICAL MULTISTAGE PUMPS

## SBI SERIES



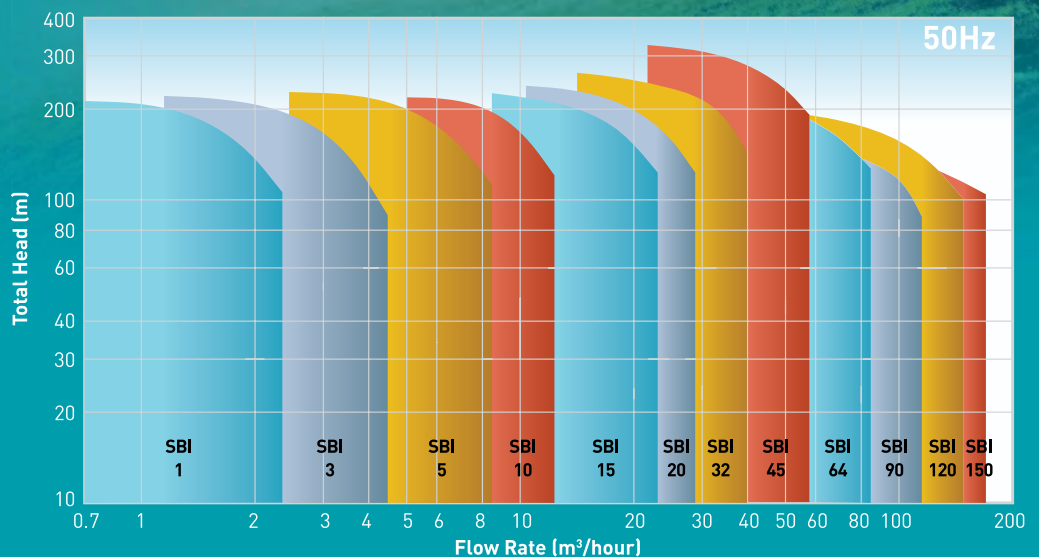
- All wetted parts 304 grade stainless steel (SBI).
- Available with all wetted parts 316 grade stainless steel (SBN).
- High efficiency, low maintenance.
- TEFC electric motors to IP55.
- Low noise operation.
- Vertical design with small footprint.
- Mechanical seal to DIN24960.
- Silicon Carbide, product lubricated bearings.
- High quality stainless steel cartridge type mechanical seal fitted as standard.
- Cast Iron flanges with drilling to DIN (ISO), ANSI Class 300, ISO2129 (Table D/E & Table F/H).



### Applications:

- Irrigation
- Domestic water boosters
- Sprinkler / Fire fighting
- Water treatment plants
- Seawater pumping
- Chemical / Processing
- Food processing

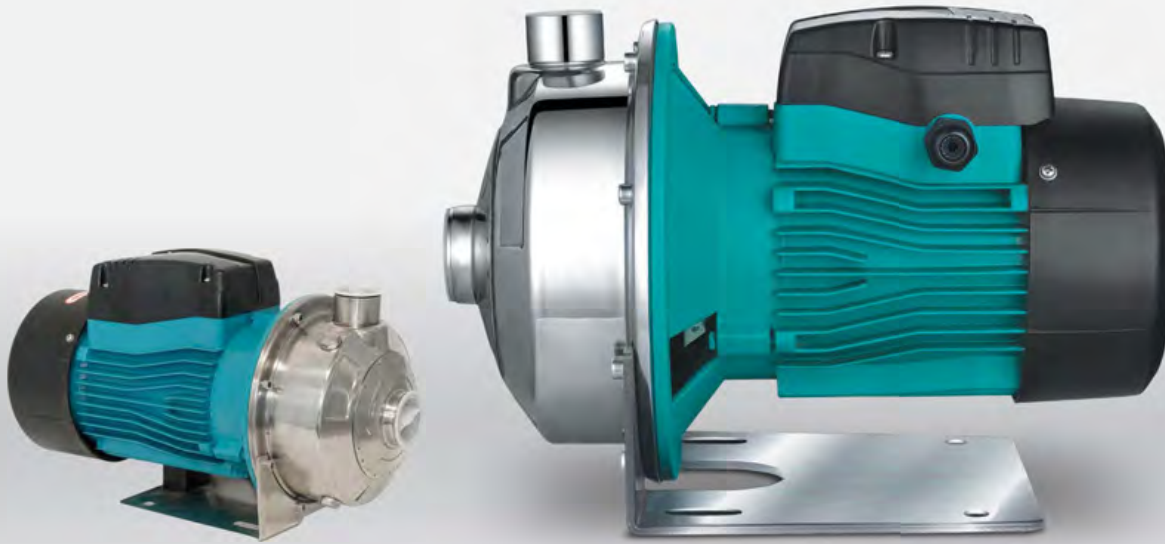
SBI Series Performance



# SINGLE STAGE CENTRIFUGAL PUMPS

SSS SERIES

NEW



- Designed by Pentair with the highest quality, performance and efficiency standards, the SSS range of stainless steel pressure pumps are suitable for a range of agricultural, commercial and industrial applications
- The all stainless steel construction makes the SSS ideally suited for most potable water pumping applications providing longevity and corrosion resistance
- Easy installation and operation
- Continuously rated
- In-built thermal protection (only for models SSS-702, SSS-2102)

In-built thermal motor protection

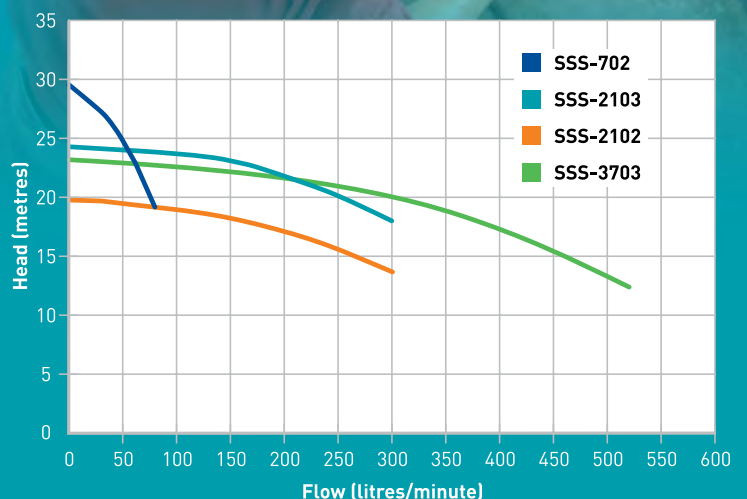
## Applications:

- Agricultural
- Commercial
- Industrial
- Irrigation
- Water Transfer
- Wash Down
- Mild Chemical use (Viton seal kits are available for mild chemical use)

Model	Inlet	Outlet	Water Temp Range	IP Rating	Electrical Supply	Current (Amps)	Max Ambient Temp	Motor (kW)
SSS702	1 ¼	1	0°C - 85°C	IPX4	230V 50Hz	4	55°C	0.55
SSS2102	1 ½	1 ¼	0°C - 85°C	IPX4	230V 50Hz	6	55°C	1.1
SSS2103	1 ½	1 ¼	0°C - 85°C	IPX4	230V 50Hz	8	55°C	1.5
SSS3703	2	1 ¼	0°C - 85°C	IPX4	230V 50Hz	12	55°C	2.2



SSS Series Performance





# HORIZONTAL MULTISTAGE PUMPS

# VARIABLE SPEED PUMPS

## SSH RANGE

## CPS 20



- Efficient, compact and ideal where higher temperatures (up to 90°C) may be specified
- Stainless steel casing, components, motor shaft & foot for corrosion resistance
- Cast iron suction and discharge for high strength connections
- Compact design for installation in tight spaces

### Applications:

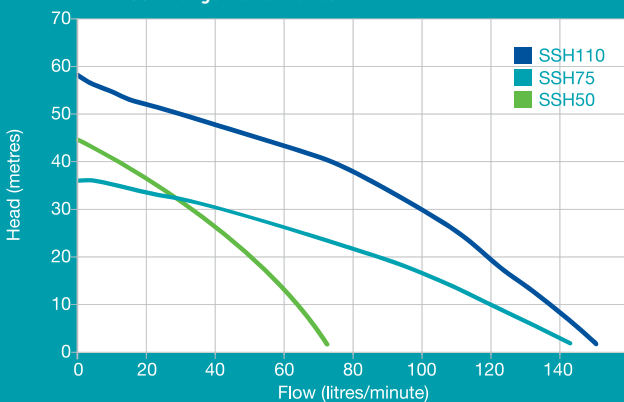
- The SSH pump range is ideal for large household pressure systems, small irrigation jobs requiring high pressure, and pressure boosting applications.

- The CPS 20 twin pump unit is an innovative constant pressure system for industrial and residential applications
- Each pump installed in the system is equipped with a variable speed module directly assembled on the motor
- The two CPS devices switch the starting order of the pumps at each working cycle maintaining constant pressure in the system

### Applications:

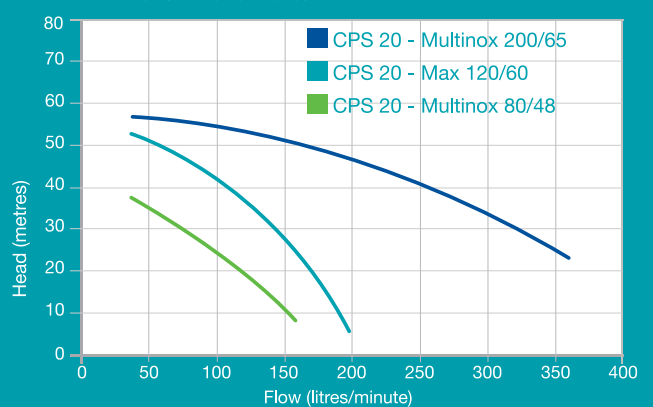
- Pumping of water in domestic systems, booster systems, industry, caravan parks, washing systems and irrigation.

• SSH Range Performance



MODEL	Watts (P2)	Current (Amps)	Operating Pressure (kPa)	Port Size (BSP)	
				Suction	Discharge
SSH50	550	3.5	210	1" F	1" F
SSH75	750	4.5	210	1 1/4" F	1" F
SSH110	1100	7.7	210	1 1/4" F	1" F

• CPS20 Performance



MODEL	Voltage	P1			l/min M/h	Head Pressure								
		kW	HP	A		2.4	4.8	7.2	9.6	12	16.8	21.6		
MULTINOX 80/48	230	2x0.8	2x1.1	2x6.5	37	29	20	9						
MAX 120/60	230	2x1.2	2x0.9	2x8.5	53	46	36	25	4					
MULTINOX 200/65	230	2x2.7	2x2.0	2x14	57	56	54	49	46	37	22			

# IRRIGATION

## Southern Cross - End suction ISO pumps



The Southern Cross range of ISO end suction pumps are non-self-priming, single-stage, centrifugal volute pumps with axial suction port, radial discharge port and horizontal shaft.

Southern Cross ISO pumps are suitable for a variety of applications from pumping potable water to pumping aggressive chemicals.



# END SUCTION ISO PUMPS



## ISO-PRO CENTRIFUGAL PUMP

### WORLD LEADING HEAVY DUTY CENTRIFUGAL END SUCTION PUMPS

- Superior hydraulic design and manufacturing methods for significantly higher efficiencies and reduced maintenance.
- High efficiency double curvature impeller vanes.
- 32 to 200mm discharge.
- Cast iron, zinc free bronze or stainless steel construction.
- Wide range of options.
- AS2129 Table "E" flanges as standard with optional drillings available.
- Back-pullout design does not require the disconnection and removal of motor or suction and discharge lines for maintenance.
- Heavy duty oil lubricated double row ball bearings in drive end and single row roller bearings in wet end.
- Taper mounted and keyed impeller.
- Horizontal or vertical pump discharge mounting.



## ISO SOVEREIGN CENTRIFUGAL PUMP

### BENCHMARK CENTRIFUGAL PUMPING PERFORMANCE AND RELIABILITY

- Superior hydraulic design for higher efficiencies and reduced operating cost.
- High efficiency double curvature impeller vanes.
- 32 to 200mm (1 1/4" - 8") discharge.
- Cast iron, zinc free bronze or stainless steel construction.
- Wide range of options.
- AS2129 Table "E" flanges as standard with optional drillings available.
- Back-pullout design allows removal of the pump rotating element without the removal of motor or suction and discharge lines for maintenance.
- Heavy duty sealed for life grease packed ball bearings.
- Taper mounted and keyed impeller.
- Horizontal or vertical pump discharge mounting.



## STARLINE CENTRIFUGAL MOTORPUMP

### RELIABLE SPACE SAVING END SUCTION CENTRIFUGAL MOTORPUMPS

- Compact close coupled motorpump design.
- Superior hydraulic design and manufacturing methods for significantly higher efficiencies and reduced maintenance.
- High efficiency double curvature impeller vanes.
- 32 to 200mm discharge.
- Cast iron, zinc free bronze or stainless steel construction.
- AS2129 Table "E" flanges as standard with optional drillings available.
- Back-pullout design does not require the disconnection and removal of suction and discharge lines for maintenance. Choice of high quality WEG TEFC IP55 motors with sealed for life (11kW and under) or regreasable (15kW and over) motor bearings.
- Taper mounted and keyed impeller. Horizontal or vertical pump discharge mounting.



## STAR-PRO CENTRIFUGAL MOTORPUMP

### EFFICIENT AND RELIABLE GENERAL-PURPOSE WATER TRANSFER

- Space saving design
- Superior hydraulic design and manufacturing methods produce significantly higher efficiencies for lower running costs and reduced maintenance.
- Australian designed and manufactured.
- Up to 250 litres per second discharge.
- Australian wide service and backup.
- ISO 9001 quality assured.
- 32 to 200mm discharge.
- Wide range of options.
- Heads to 160 metres.

# ENGINE DRIVE

## Onga Blazemaster & Centrifugal

Fire fighting & water transfer pumps



### ONGA FIRE POD

**A SELF CONTAINED FIRE FIGHTING RESOURCE  
OR WATER TRANSFER AID**

The ONGA Fire Pod is a fully portable and completely equipped four stroke petrol engine and pump combination with both suction and discharge hoses fitted that will provide a first line of attack to control ember attacks or spot fire outbreaks, as well as affording a general purpose portable water supply, transfer or irrigation source.

Onga has a vast range of Fire Fighting Pumps to accommodate your requirements.

#### Single stage

Onga's single stage pumps are designed to move more water, more economically.

#### Twin stage

The Twin stage Fire Fighting pump provides higher pressure, allowing you to fight fires from a safer distance.

Often getting power to a site near a bore, creek, river or dam is difficult or even impossible. For all those situations, Onga offers the engine driven versions of its dependable cast iron jet and centrifugal pumps.

Coupled to shallow or deep well injectors, these pumps can be adapted to almost any job, and deliver water where and when you need it without the exorbitant cost of running electrical lines.

**The Engine Drive range is available in a wide range of petrol, diesel, recoil and electric start models.**

POWERED by  
**HONDA**



**YANMAR**

**KOHLER**



# BLAZEMASTER

## SINGLE STAGE

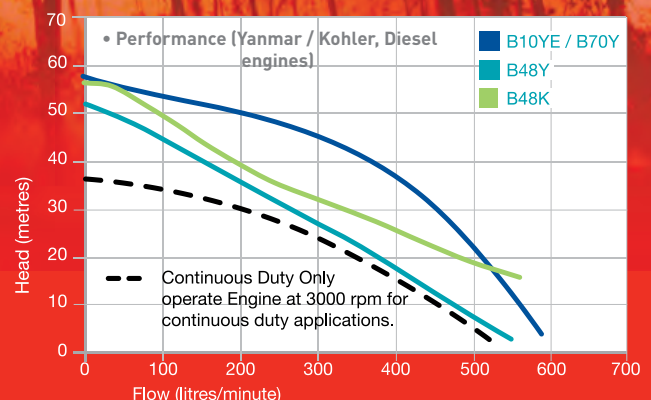
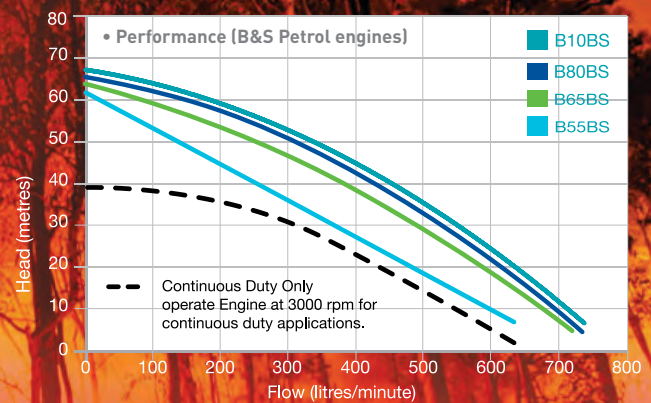
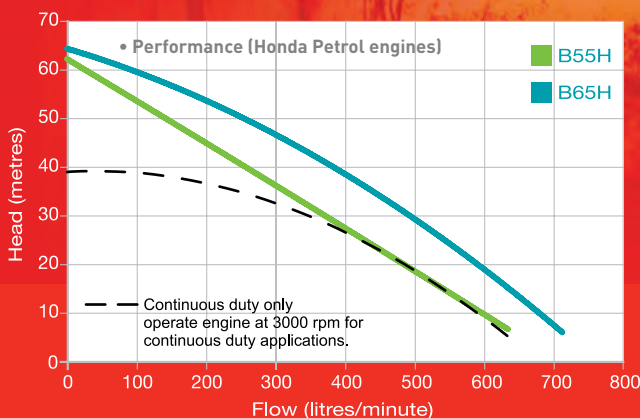


- The Blazemaster is a single-stage pump designed to move more water, more economically
- As the world's largest engine manufacturer, Honda offers more engine experience than anyone. A well-earned reputation for engine quality and performance
- Honda GX Series engines have long been recognized as the industry leader in providing reliable, easy-starting and fuel efficient small engines
- Honda's automatic mechanical decompression system is designed to give you quicker, easier starts. The system consists of an oil level sensor inside the crankcase. When the oil reaches a level that is too low for safe operation, the engine warns you or stops automatically.

### Applications:

- Firefighting
- Tank filling
- Water transfer
- Boom spraying
- Irrigation
- Travelling irrigators

- Briggs and Stratton Intek™ I/C race-bred series engine for reliability, durability and performance
- Manual and electric start options for versatility
- Fuel tap with sediment bowl and sight glass for greater ease when checking fuel and servicing
- Dual element air filter for cleaner operation
- Polyethylene fuel tank for impact / corrosion resistance
- 'Run sense' low oil protection to protect the engine from low oil failures and engine damage



# BLAZEMASTER

## TWIN STAGE

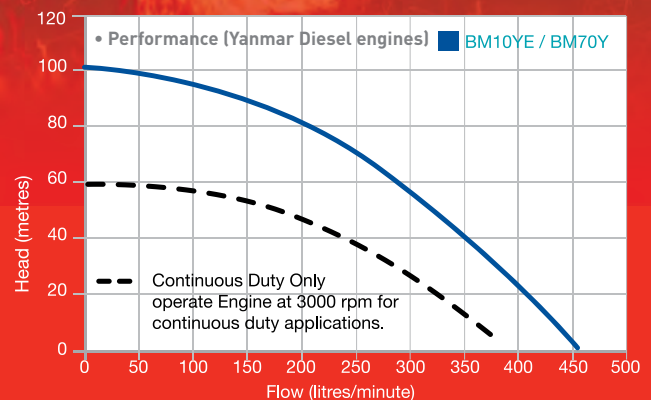
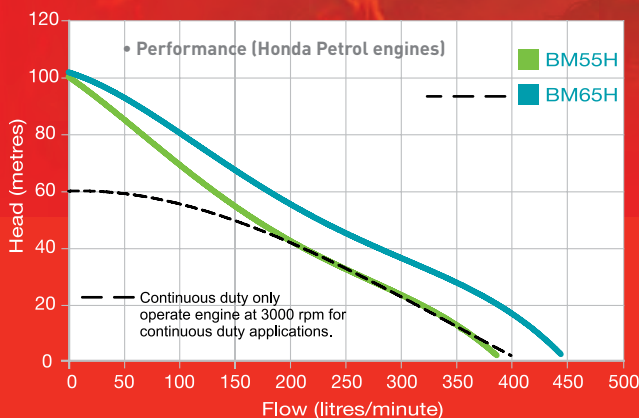
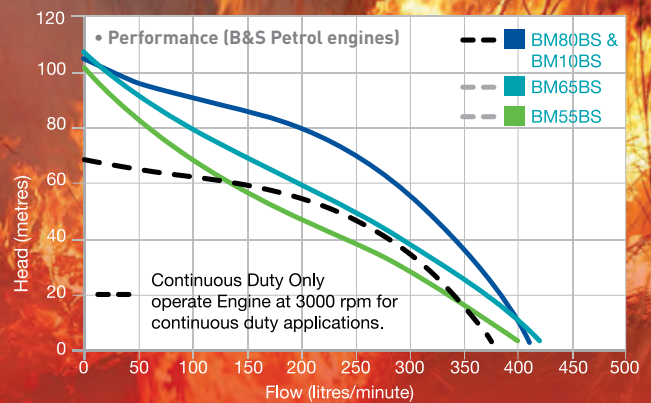


- Cast aluminium construction means strength, durability and lightweight portability
- The Blazemaster Twin series are dual-impeller pumps designed to give you more pressure while delivering more water
- Big pump body with raised suction port for better priming capability
- Larger diameter impellers providing higher discharge head
- CFD (Computational Fluid Dynamics) designed hydraulic components means higher performance and efficiency

- Honda's inner-vent carburettor places the float bowl vent on the "clean side" of the air filter elements so that the air/fuel ratio remains more constant as the elements become dirty. This allows the length of the service interval for air filter maintenance to be more than doubled.

### Applications:

- Firefighting
- Tank filling
- Water transfer
- Boom spraying
- Irrigation
- Travelling irrigators



# MINIBLAZE

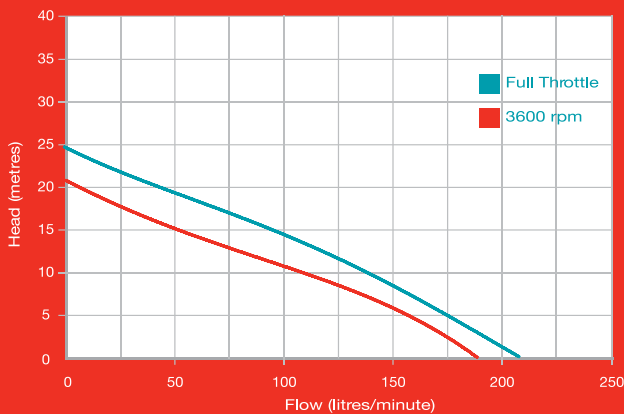


- MiniBlaze is perfect in situations where there is isolation from electrical power preventing electrical pumps being used
- The MiniBlaze is equally at home helping plumbers and tradesman to evacuate water from work sites
- Versatility of the MiniBlaze is endless, from the handyman to river camp sites

## Applications:

- Suitable applications include stock watering, ute packs and spray units as well as evacuating water from work sites.

### • MiniBlaze Performance



MINIBLAZE MB25LK  
UTE PACK



# CENTRIFUGAL PUMPS

## MODEL 384



**YANMAR**

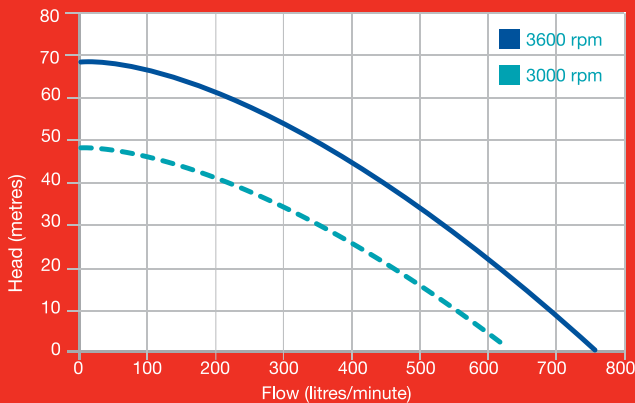


- Hi-Flo centrifugal pump coupled to a Yanmar 7HP diesel or Honda / B&S 8/10HP petrol engines.
- Both engines are available in manual or electric start
- Large 2" suction and discharge enables high head and high flow
- Rugged cast iron construction for long life and durability

### Applications:

- High flow water transfer.
- Tank filling.

• 384 Performance



Model	Engine	Re-prime (M)	Suction (BSP)	Discharge (BSP)	Priming Port (BSP)
384	7 HP diesel or 8/10 HP petrol	4.5	2" F	2" F	3/4" F

## GP960



POWERED by **HONDA**

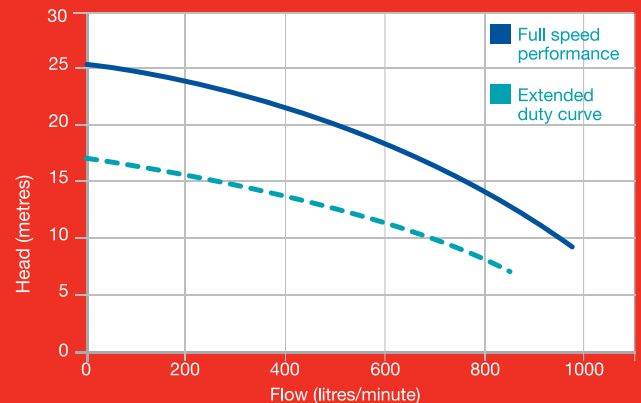


- The Onga Enginemaster GP960 is a high volume 3" unit that can pump more than 1000 litres per minute
- Available with Honda, B&S and Yanmar engines.
- Standard with 3" nylon nuts and tails for hose connection
- Aluminium construction for strength and corrosion resistance
- Cast iron open impeller providing excellent priming ability
- Rotatable discharge port makes it adaptable to your site
- Built-in non-return valve aids quick priming
- Electric start options available

### Applications:

- High flow water transfer and flood water evacuation.

• GP960 Performance





# JET ASSISTED PUMPS

## OJ RANGE



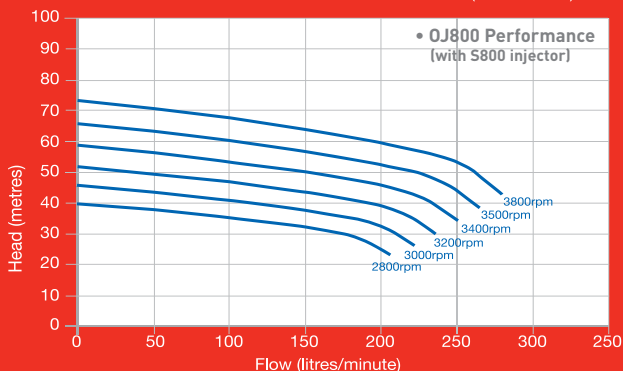
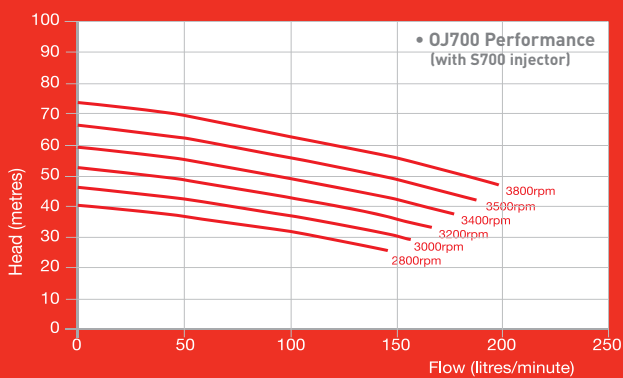
POWERED by  
**HONDA**



- A serious jet-assisted pump independent of electrical supply, able to be located anywhere
- Cast iron to stand up to the extreme pressures common in engine driven jet pumps
- Combining the best jet pumps with the most reliable petrol engines produces Onga OJ700E & OJ800E
- A jet pump gives you the flexibility to draw water from any source
- Versatility – available in shallow well or deep well with over 40 injector combinations for the Onga Farmmaster range, there's a setup to suit almost any application

### Applications:

- High suction lifts from dams, bores & rivers.



### Petrol Engine Drive

Model	Engine options	HP
OJ700E	Honda / B&S	5.5 / 6.0
OJ700ES		
OJ800E	Honda / B&S	9.0 / 8.0
OJ800ES		

### Diesel Engine Drive

Model	Engine options	HP
OJ700E	Yanmar L-48	4.8
OJ800E	Yanmar L-70	7.0
OJ800ES	Yanmar L-70 e/start	7.0

**IMPORTANT NOTICE !**  
Warranty periods shown in the 'engine drive' section are for pumps only and do NOT represent engine warranty periods. -- Engine warranty as per manufacturer's warranty.

# GROUNDWATER PUMPS

**Sta-Rite Signature 2000** - Submersible borehole pumps  
**Pentek** - Motors & controls



## Sta-Rite

Our range of Submersible Borehole Pumps continues to set the highest standard for this category. They incorporate unique features that set them apart for use even in rough or aggressive water.

Our HighFlo Submersible Borehole Pumps are designed to move more water further. They are reliable and efficient under the toughest of conditions.

## Pentek

The Pentek range of 4" 2-wire and 3-wire motors and the Pentek Intellidrive for intelligent variable frequency control completes our extensive range of borehole products.



# SUBMERSIBLE BOREHOLE PUMPS

S2000



- The impeller stack is of a floating design, so that individual impellers can move vertically to allow small solids to pass through, rather than locking up the pump
- Large hexagonal shaft transmits power without wear or flex
- Heavy gauge outer shell makes it strong, rigid and long lasting
- Superior ceramic wear surface reduces problems running in sandy or abrasive water
- Floating impeller design reduces sand lock up problems and ensures a longer motor life and trouble free operation

### Applications:

- Residential, irrigation, water transfer and stock watering.

20 Litre pump			
The 20 litre pump range are manufactured to a special TRIMLINE OD of 3.75" and features bronze ends for corrosion protection. Discharge 1 1/4" BSP.			
MODEL	HP	kW	Stages
20S4FTL	1.5	1.10	29
20S4ETL	1.0	0.75	22
20S4DTL	0.75	0.55	15
20S4CTL	0.5	0.37	11

30 Litre pump			
Glass reinforced engineering plastic ends for corrosion protection. Discharge 1 1/4" BSP.			
MODEL	HP	kW	Stages
30S4GT	2.0	1.5	30
30S4FT	1.5	1.1	20
30S4ET	1.0	0.75	16
30S4DT	0.75	0.55	12

50 Litre pump			
Glass reinforced engineering plastic ends for corrosion protection. Discharge 1 1/4" BSP.			
MODEL	HP	kW	Stages
50S4GT	2.0	1.5	22
50S4FT	1.5	1.1	17
50S4ET	1.0	0.75	12
50S4DT	0.75	0.55	9

70 Litre pump			
Glass reinforced engineering plastic ends for corrosion protection. Discharge 1 1/4" BSP.			
MODEL	HP	kW	Stages
70S4HT	3.0	2.2	26
70S4GT	2.0	1.5	17
70S4FT	1.5	1.1	13
70S4ET	1.0	0.75	10

90 Litre pump			
Glass reinforced engineering plastic ends for corrosion protection. Discharge 1 1/4" BSP.			
MODEL	HP	kW	Stages
90S4HT	3.0	2.2	18
90S4GT	2.0	1.5	12
90S4FT	1.5	1.1	10

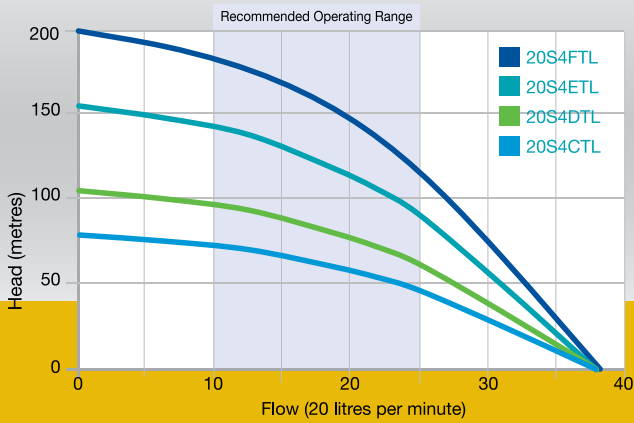
150 Litre pump			
Glass reinforced engineering plastic ends for corrosion protection. Discharge 1 1/4" BSP.			
MODEL	HP	kW	Stages
150S4KT	7.5	5.5	30
150S4JT	5.0	3.7	20
150S4HT	3.0	2.2	12
150S4GT	2.0	1.5	8

# SUBMERSIBLE BOREHOLE PUMPS

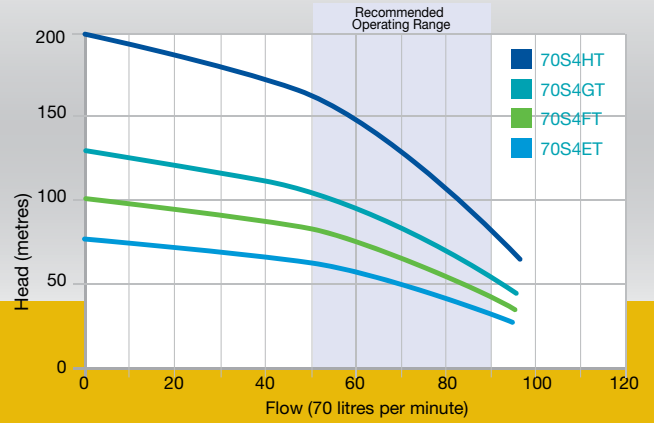
S2000



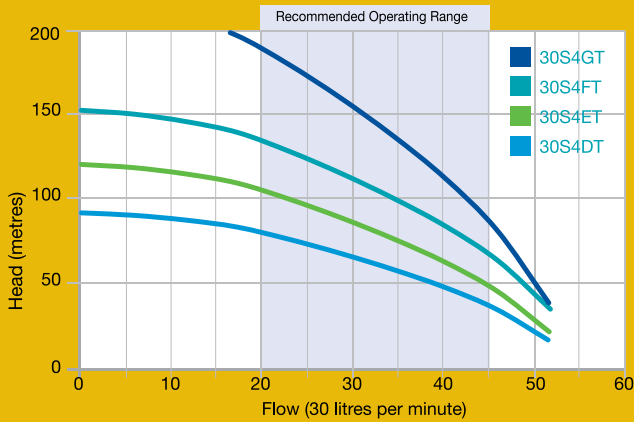
20S4 Range Performance



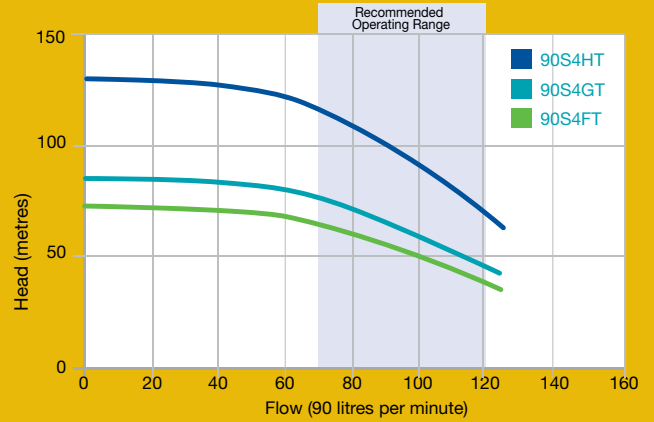
70S4 Range Performance



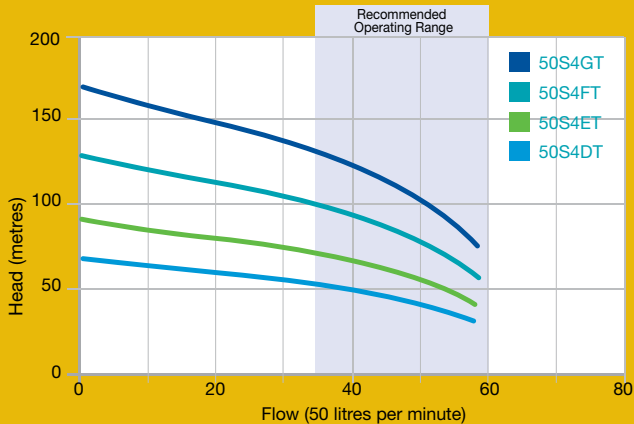
30S4 Range Performance



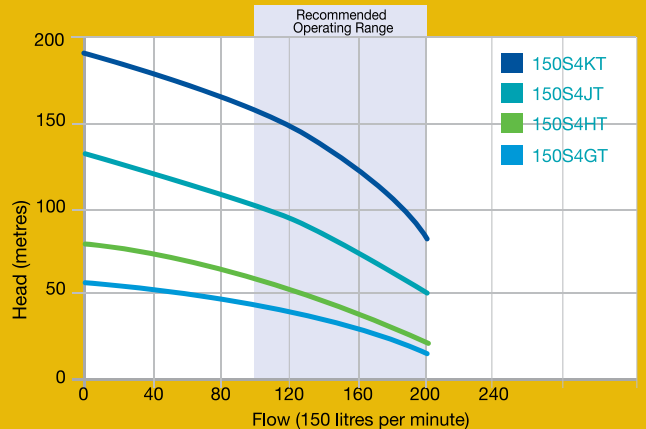
90S4 Range Performance



50S4 Range Performance



150S4 Range Performance



# SUBMERSIBLE PUMPS

## HIGHFLO RANGE



- Impellers are moulded from polycarbonate and reinforced with glass fibre to ensure smooth water passage for minimum friction loss, and at the same time provide resistance to abrasive materials
- For high-yielding bores, the best available pump is the Sta-Rite HighFlo

### Construction features

- Upthrust washer: Phenolic washer at each stage for wear resistance. Positioned between 2 stainless steel inserts, one at the top of the impeller and one at the bottom of the diffuser
- Impeller: 20% glass filled polycarbonate. 300 series stainless steel flange ring for radial wear resistance at the impeller eye
- Cup: Glass-filled noryl (GFN-2, 20%). Full floating stack design

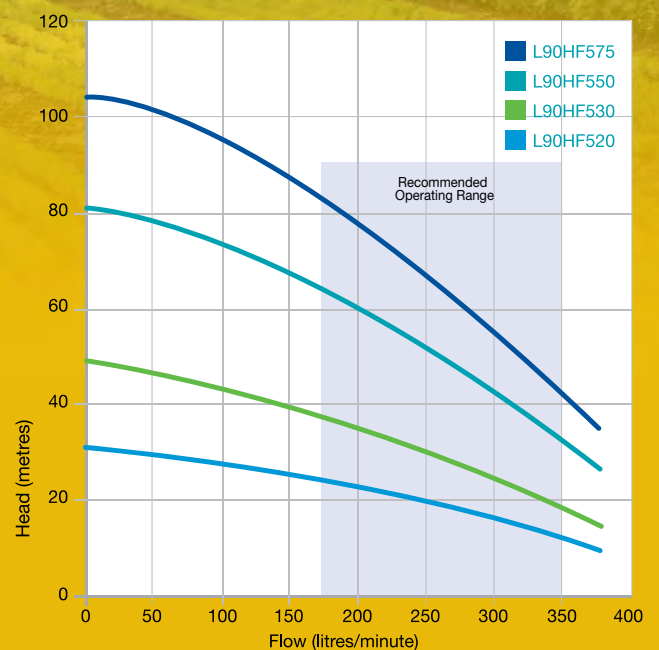
### Internal components

- Impeller eye seal: Urethane material provides protection and allows sand particles to pass through the intake area without enlarging the disc eye or the impeller eye
- Diffuser: 20% glass filled polycarbonate. Includes 300 series stainless steel insert for radial protection. Each stage also includes a urethane bearing. Inside each urethane bearing is a 300 series stainless steel bearing
- Top bearing: Acetal – enclosed top bearing with seal
- Heavy-duty cast stainless steel discharge enables smooth water passage through 2" port
- Large wrench flats make for easier installation for torquing up to column
- Sealed and lubricated top bearing keeps abrasives out for longer operational life
- 2mm thick heavy gauge shell means ultimate strength



250 Litre pump			
Glass reinforced engineering plastic ends for corrosion protection. Discharge 1 1/4" BSP.			
MODEL	HP	kW	Stages
L90HF575	7.5	5.5	23
L90HF550	5.0	3.7	18
L90HF530	3.0	2.2	11
L90HF520	2.0	1.5	7

### • Highflow Range Performance



### Applications:

- Irrigation and water transfer.

# PENTEK SUBMERSIBLE MOTOR RANGE

## 4" MOTORS



- Pentek submersible motors are unique in providing the industry with innovative and robust design features that will extend the life of your installation
- Equipped with lightning and surge arrestors
- Professional-grade class B-compliant motor insulation – allows for long serviceable life
- Superior performance using the Pentair SMC5 motor controls. 3-Wire Motors will also operate with other compatible single-phase control boxes
- 650lb rated thrust bearing design – large high-performance bearings are standard on all motors, providing many years of trouble-free service
- All stainless steel exterior
- CSA and UL approved

4" Pentek motor data					
2 - Wire					
kW	HP	Voltage	Frequency	FLC	LRC
0.37	0.5	230	50	3.5	15.6
0.55	0.75	230	50	4.3	18.6
0.75	1.0	230	50	5.9	23.5
1.1	1.5	230	50	7.8	32.6
3 - Wire					
kW	HP	Voltage	Frequency	FLC	LRC
0.75	1.0	230	50	6.4	24.9
1.1	1.5	230	50	9.4	36.6
1.5	2.0	230	50	12.4	49.4
2.2	3.0	230	50	17.4	69.5



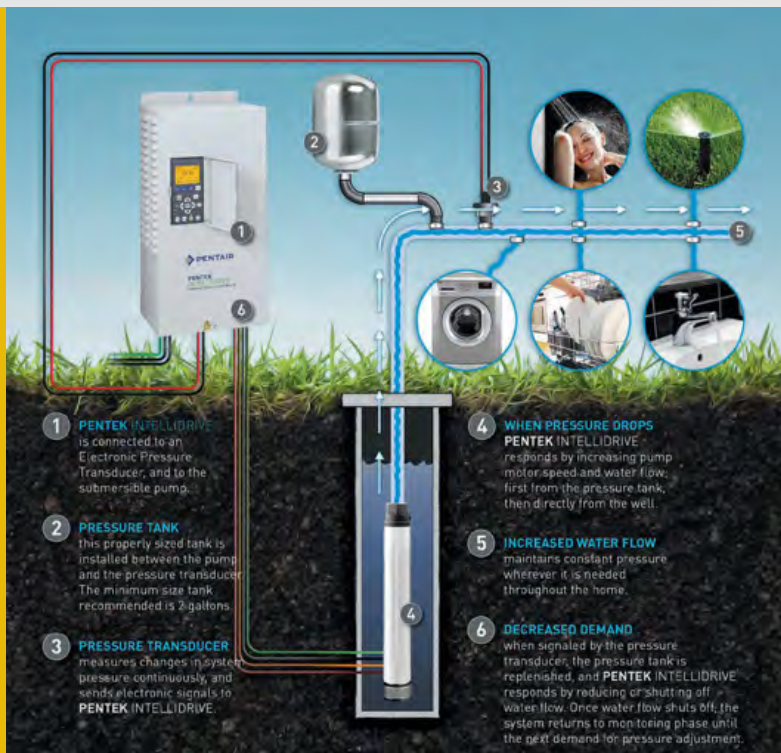
# PENTEK VARIABLE SPEED CONTROLLER

## INTELLIDRIVE

### The benefits of our Intellidrive Variable Speed Controller.

- Maintains constant water pressure for submersible pump systems
- Automatically adjusts motor speed to meet changes in water demand
- Instantaneous feedback from an electronic pressure transducer instructs the drive to change the submersible pump motor speed to maintain constant pressure throughout the system
- Energy savings from managed speed
- Pentek Intellidrive with LED displays written faults clearly on the screen to avoid any confusion – no flashing lights or guessing required

Pentek Intellidrive performance data			
Motor	Input	Output	kW Range
3 - Wire	1 - Phase	1 - Phase	0.75 - 1.5



### ADVANCED TECHNOLOGY. SUPERIOR PERFORMANCE.



- Backlit LCD Display** Status indication and diagnostic messaging
- Fault Log** Stores 15 faults with timestamps
- Keypad Lockout** Provides operational security from unintended adjustments
- Multi-Lingual Options** Choose English, French or Spanish
- LED Status Indication**
- Auto-Start** With automatic line-fill functionality

**On-Screen diagnostics indicator**  
Self-diagnostic messaging for ease of service

- Our diagnostic features and built-in protection include:
- Over Current
  - Over Voltage
  - Under Voltage
  - Rotor Jam
  - Dry Run
  - Ground Fault
  - Over Temperature
  - Pipe Break
  - Jam Warning
  - Lightning Arrester

# SUBMERSIBLE SUMP PUMPS

Onga / Jung Pumpen - Submersible Sump Pumps



## Onga

A wide range of submersible sump pumps to suit almost any drainage application.

The moulded and stainless steel submersible sump pumps are a high quality, versatile submersible pump, built to withstand the most testing of conditions.

You can't look past our cast iron and stainless steel submersible sump pumps for durability and reliability across dewatering, drainage, water treatment and sewerage applications.

## Jung Pumpen

Jung Pumpen is a quality German manufacturer of pumps for wastewater and dewatering applications. For over 85 years Jung Pumpen has been a reliable partner for sewage and wastewater disposal across the globe. Producing high-quality pumps and pumping stations for both small-scale domestic house and land drainage to large-scale industrial and community wastewater treatment



**HEBEFIX**  
ABOVE FLOOR TANK  
Install items which require drainage but there is no drain pipe available.

**FLUTBOX**  
EMERGENCY KIT  
Helps people who are affected by flood water, to react quickly and efficiently.



# JUNG PUMPEN SUBMERSIBLE SUMP PUMPS

U3-U5-U6



0°-35°  
intermittently  
up to 60°



Proven millions of times over, handling domestic waste water is no trouble at all for the UK series of submersible pumps. Special design features make these pumps extremely versatile.

A flushing device which can be activated to keep chambers clean, the integrated low level pumping feature offers great advantages when emptying flooded rooms and the EIP technology provides

enhanced operational reliability where there are solid particles in the pumping medium. The variable discharge branch allows great freedom when installing the pump and the swing-type check valve provided for mobile operation prevents unintentional emptying of the hose.

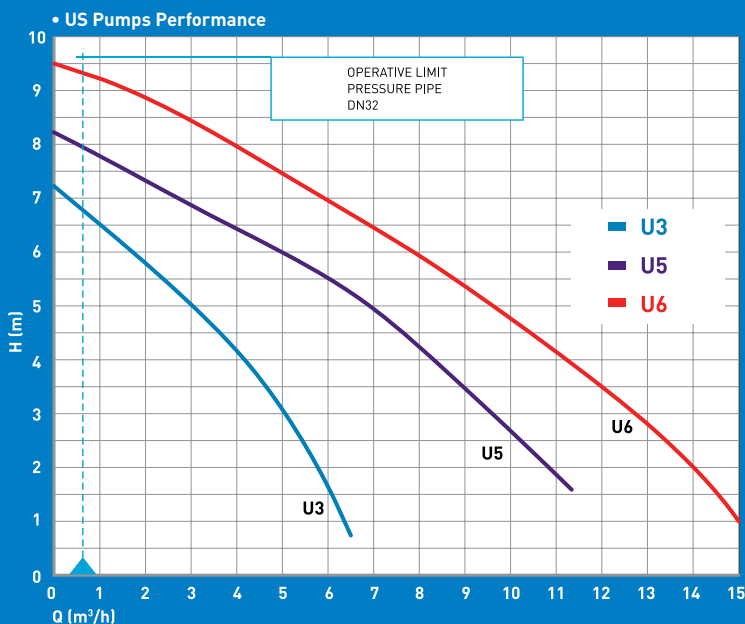
All components which come into contact with the pumping medium are made of stainless steel or plastic.

Installed as stationary units in a sump or collecting chamber, they reliably dispose waste water and prevent backpressure. But they also come into their own in mobile applications, such as in the garden or when flooding occurs.

### Features:

- For saline solutions up to 10% salinity (*U3KS special*).
- 10mm / 20mm free passage.
- Flushing device.
- SiC mechanical seal.
- Continuous operation.
- Moisture sealed cable inlet.
- Low level pumping.
- Replaceable sealed cable inlet

Type	H max	Q max	Free passage	Voltage	P1	P2	Current	Motor protection
U3KS	7m	110l/m	10mm	230V	0.32	0.20	1.4A	Integrated
U3KS Special	7m	110l/m	10mm	230V	0.32	0.20	1.4A	Integrated
U5KS	8m	190l/m	10/20mm	230V	0.52	0.38	2.3A	Integrated
U6KS	9.5m	260l/m	10/20mm	230V	0.75	0.49	3.3A	Integrated



# JUNG PUMPEN SUBMERSIBLE SUMP PUMPS

US



0°-40°  
intermittently  
up to 60°



The submersible drainage pumps of the US range provide a reliable solution for all types of faecal-free waste water.

These pumps use high-performance motors, hydraulics which are specially adapted to the pumping medium and high-quality materials. The US62 to US152 pumps have a stainless steel housing which means that they can also be easily carried in portable use.

The US62 to US102 pumps offer a free passage of 10 mm particle size to convey waste water from dishwashers or washing machines.

The submersible drainage pump US103 is used when a larger free passage of up to 30 or 40 mm particle size is required.

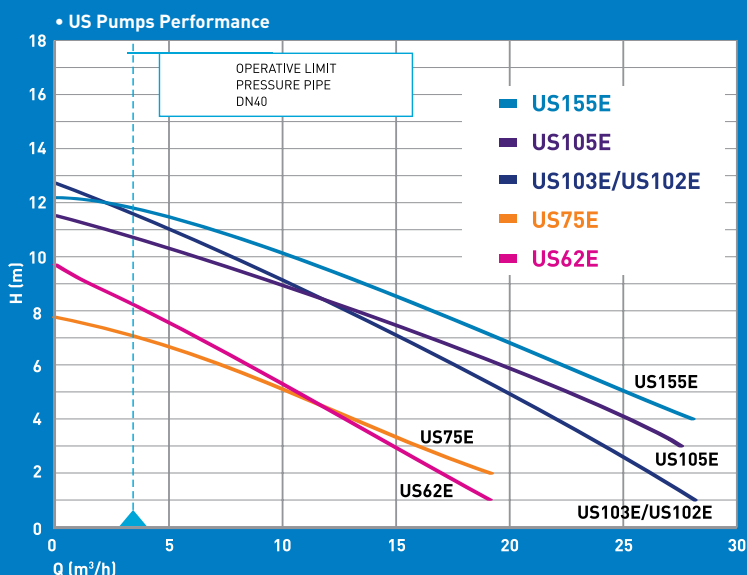
The range is rounded off with the US75 to US155 range with a free passage of 50 mm particle size.

Standard features of the dry running safe pumps are a controllable oil chamber, a wear resistant silicon carbide mechanical seal and a permanently lubricated roller bearing to ensure a long service life.

### Features:

- 10mm / 30mm / 50mm free passage.
- Controllable oil chamber.
- SiC mechanical seal independent of rotation direction.
- Replaceable sealed cable inlet.

Type	H max	Q max	Free passage	Voltage	P1	P2	Current	Motor protection
US 75 E/ES	7.5 m	20 m³/h	50 mm	1/N/PE-230	0.83 kW	0.50 kW	3.9 A	integrated
US 102 E/ES	12.5 m	28 m³/h	10 mm	1/N/PE-230 V	1.37 kW	0.98 kW	6.0 A	integrated
US 103 E/ES	12.5 m	28 m³/h	30 mm	1/N/PE-230 V	1.37 kW	0.98 kW	6.0 A	integrated
US 105 E/ES	11.5 m	28 m³/h	50 mm	1/N/PE-230	1.37 kW	0.98 kW	6.0 A	integrated
US 155 ES	12.0 m	29 m³/h	50 mm	1/N/PE-230	1.60 kW	1.21 kW	7.5 A	integrated



-Optional-  
Guide rail system GR40  
or GR50 where the  
pumps are needed to be  
easily taken out of the  
sump for servicing or  
visual inspection.



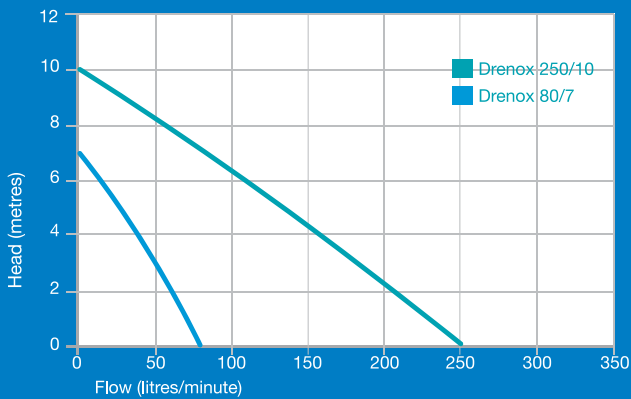
# SUBMERSIBLE SUMP PUMPS

## DRENOX RANGE



- The Onga Drenox range 250/10 is constructed entirely of 304 grade stainless steel, including a cast stainless steel impeller. 80/7 is 304 grade stainless steel with a plastic impeller.
- Includes a heat exchange chamber to cool the motor for long periods of unsubmerged operation, and an oil chamber for lubrication of the seal.
- Suitable for continuous operation.  
Drenox 80/7 drains down to a level of 3mm.

• Drenox Range Performance



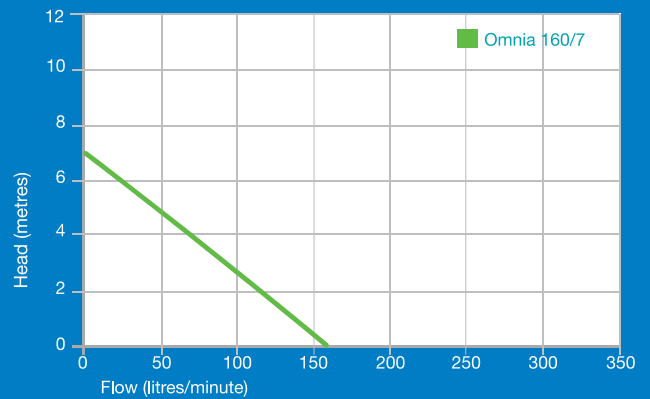
MODEL	Product code	Free Passage	Voltage	kW	
				P1	P2
DRENOX 80/7	P1031020	3mm	230V	0.30	0.20
DRENOX 250/10	P1031400	6mm	230V	0.90	0.55

## OMNIA 160/7



- The Onga Omnia 160/7 includes all the great features of the Drenox and includes a vortex impeller so that it can pass larger solids.
- Dual oil-lubricated NBR70 lip seal on a hard ceramic shaft.

• Omnia 160/7 Performance



MODEL	Product code	Free Passage	Voltage	kW	
				P1	P2
OMNIA 160/7	P2081010	20mm	230V	0.90	0.37

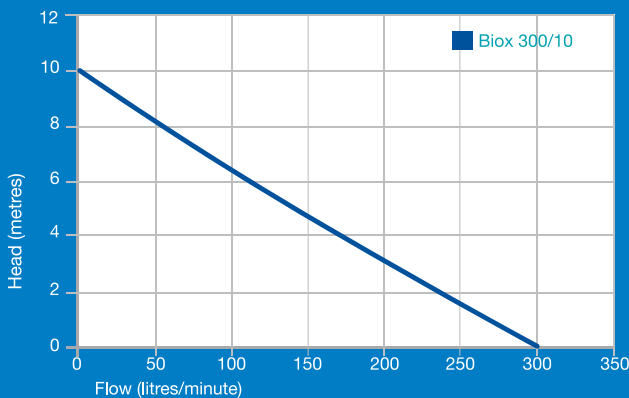
# SUBMERSIBLE SUMP PUMPS

## BIOX 300/10



- The Onga Biox is a submersible vortex pump that includes both a lip seal with sand guard and a carbon-ceramic mechanical seal
- 2" discharge connection enables soft solids up to 40mm in diameter
- Suitable for continuous use
- Motor must remain submerged for cooling

• Biox 300/10 Performance



MODEL	Product code	Free Passage	Voltage	kW	
				P1	P2
BIOX 300/10	P2091010	40mm	230V	0.90	0.60

## VF150

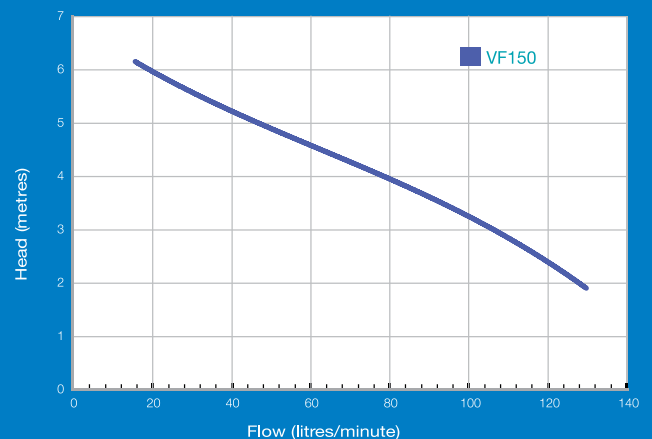


- The VF150 is a single phase drainage pump with cast iron construction making it durable and providing a longer life cycle
- Contains a vortex impeller capable of handling soft solids up to 15mm
- Optimum performance reaches 80 litres per minute at 4 metres head
- Automatic float switch operation protects pump against dry running
- Lip seal and dual mechanical seal for improved service life

### Applications:

- Septic effluent disposal, water transfer, grey water and sump pumping liquid including grey water (of neutral pH with soft solids up to 15mm at a 10% content or fine solids at 1% concentration).

• VF150 Performance



MODEL	Watts (P2)	Nominal Current (Amps)	Full Load Current (Amps)
VF150	180	1.4	2.0

# SUBMERSIBLE SUMP PUMPS

## CSM RANGE



### Cast iron sump pump nomenclature

CSM	240	V	F
Cast iron submersible pump with dual mechanical seals	Max flow rate at open discharge (litres per minute)	V - vortex C - cutter XG - grinder	F - float switch, 1 ø S - single phase T - three phase

- This range of rugged cast iron submersible pumps is suitable for many dewatering, drainage, water treatment and wastewater applications
- Available in 3 broad types:
  - VORTEX** —→ [suitable for dewatering where some solids may be present]
  - CUTTER** —→ [suitable for draining water where stringy materials may be present]
  - GRINDER** —→ [suitable for wastewater applications and where more soft solids are present]
- Cast iron construction making them solid, durable and rugged, with high abrasion resistance to suspended particles
- Dual mechanical seals in oil bath with lip seal for motor protection to provide longer life combined with low friction for low power consumption
- Epoxy cable - motor connection for preventing water ingress through the cable
- Dry motor design with cap start/cap run provides superior motor protection with maximum starting torque
- Continuous Duty rating [40°C] [Intermittent Duty 50°C] designed to handle the largest and toughest jobs
- 30 metre maximum submergence will deal with the deepest pit dewatering
- Stainless steel fasteners for corrosion protection for long life
- Dual cutter design in stainless grade 440C, hardened to 55 Rockwell C<sup>3</sup> for long service life
- Grinder assembly replaceable without disassembling pump<sup>8</sup> for very short repair downtime
- Optional Guide Rails available - no need to enter the pit
- Stainless steel shaft with dual ball bearings and short overhang making them corrosion resistant, smooth running and reducing deflection to prolong seal and bearing life.

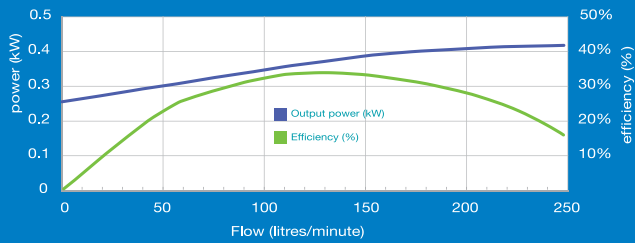
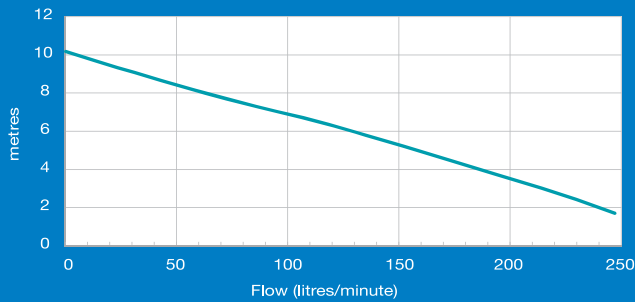
MODEL	P1		Voltage	Rated FLA (A)	Starting	Speed	Cable Length	Cable Type	Insulation Class	Start Cap	Run Cap	Power Factor	Max temp. Rating		Motor Protection
	HP	kW											Int °C	Cont °C	
CSM-240VF*	1/2	0.4	230-1-50	2.7	PSC	2 pole / 2850rpm	10m	H07RNF	B	8µF	-	0.98	50	40.6	Auto Cut out switch (ACOS)
CSM-500VF*	1	0.75	230-1-50	5.3	PSC	2 pole / 2850rpm	10m	H07RNF	B	12µF	-	0.98	50	40.6	
CSM-500VT	1	0.75	415-3-50	2.0	DOL	2 pole / 2850rpm	10m	H07RNF	B	-	-	0.86	50	40.6	
CSM-650VS	2	1.5	230-1-50	9.6	CS/CR	2 pole / 2850rpm	10m	H07RNF	B	15µF	100µF	0.89	50	40.6	
CSM-650VT	2	1.5	415-3-50	3.4	DOL	2 pole / 2850rpm	10m	H07RNF	B	-	-	0.87	50	40.6	
CSM-850CS	2	1.5	230-1-50	9.6	CS/CR	2 pole / 2850rpm	10m	H07RNF	B	15µF	100µF	0.89	50	40.6	
CSM-850CT	2	1.5	415-3-50	3.4	DOL	2 pole / 2850rpm	10m	H07RNF	B	-	-	0.87	50	40.6	
CSM-160XGS	2	1.5	230-1-50	10.2	CS/CR	2 pole / 2850rpm	10m	H07RNF	B	12µF	100µF	0.97	50	40.6	
CSM-160XGT	2	1.5	415-3-50	3.6	DOL	2 pole / 2850rpm	10m	H07RNF	B	-	-	0.86	50	40.6	
CSM-300XGT	3	2.2	415-3-50	5.3	DOL	2 pole / 2850rpm	10m	H07RNF	F	-	-	0.86	50	40.6	

PSC: Permanently Split Capacitor CS/CR: Capacitor start, Capacitor run [centrifugal switch] DOL: Direct on line  
 \* models include float switches - should you require floats with any other model please contact our Customer Service team

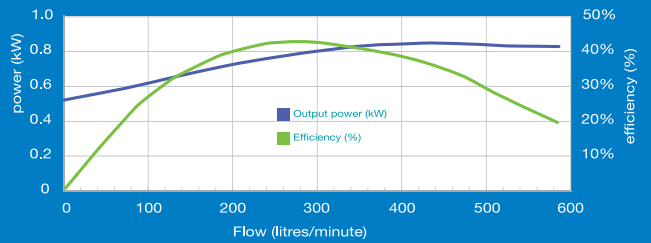
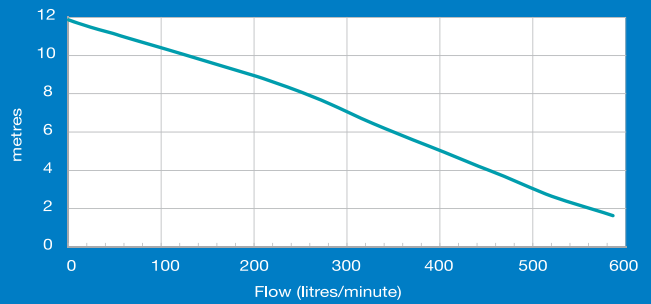
# SUBMERSIBLE SUMP PUMPS

## CSM RANGE

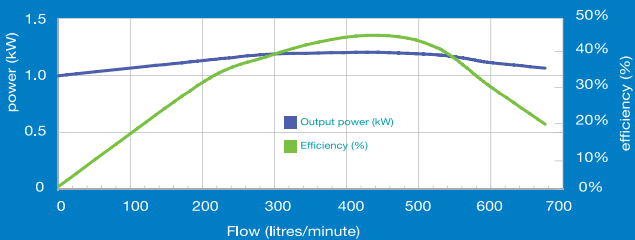
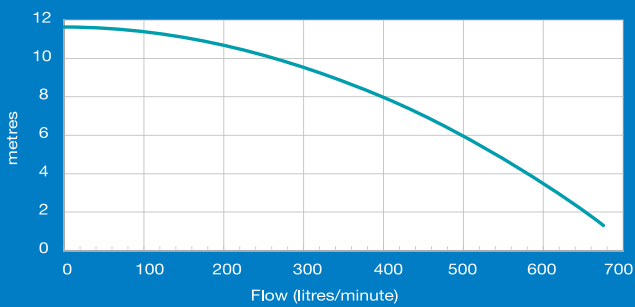
CSM240VF



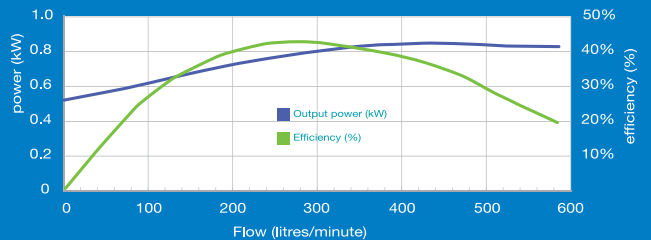
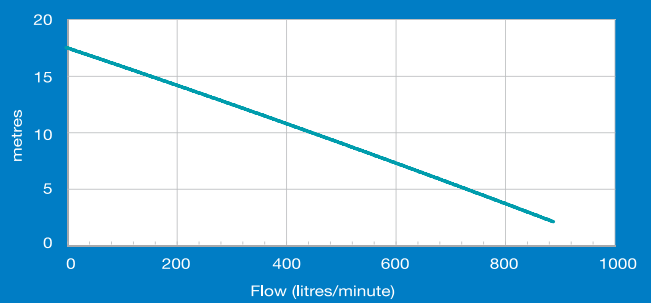
CSM500VF / CSM500VT



CSM650VS / CSM650VT

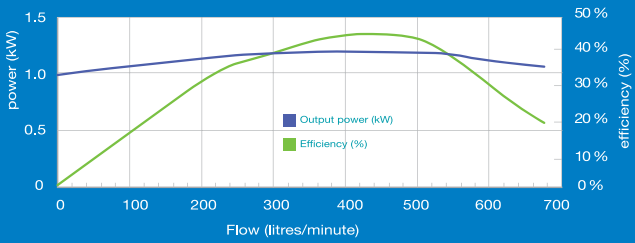
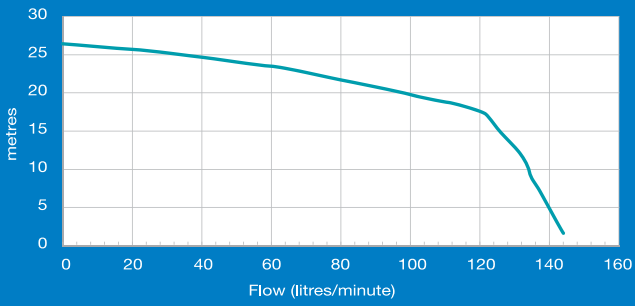


CSM850CS / CSM850CT

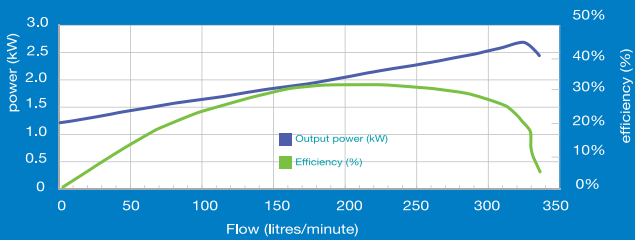
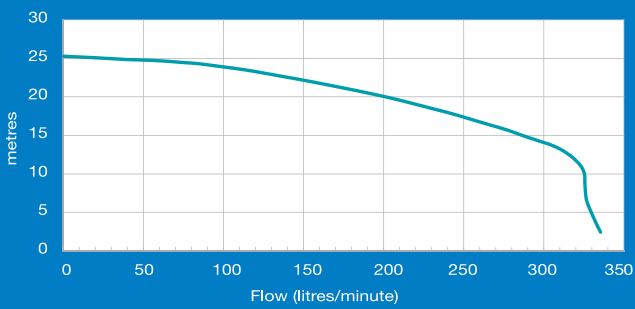


APPLICATIONS	MODELS	CSM240VF	CSM500V	CSM650V	CSM850C	CSM160XG	CSM300XGT
Ponds and fountains		•	•	•			
Dairy pit drainage				•	•	•	•
Water treatment circulation		•	•	•	•		
Pit drainage (few small hard solids)		•	•	•	•		
Raw sewerage disposal						•	•
Low pressure sewerage						•	•
Dewatering (clean water)		•	•	•			
Water with stringy material					•	•	•
Grey water (hair, small soft solids)		•	•	•	•	•	•

### CSM160XGS / CSM160XGT



### CSM300XGT



# ENGINEERING

## Conversion factors - Friction loss

### Pressure & Liquid Head

psi	Foot of Water	kPa	Kilogram per Square cm	Atmosphere or Bar	Metre of Water	Millimetre of Mercury	Inch of Mercury
1	2.31	6.895	0.0703	0.68	0.704	51.87	2.042
0.433	1	2.986	0.0305	0.03	0.305	22.45	0.884
0.145	0.335	1	0.0102	0.01	0.102	7.52	0.296
14.223	32.85	98.09	1	0.98	10	737.9	29.05
14.5	33.50	100	1.02	1	10.21	752.1	29.61
1.42	3.281	9.797	0.1	0.098	1	73.66	2.900
0.019	0.044	0.131	0.0014	0.0013	0.014	1	0.039
0.491	1.134	3.377	0.034	0.0339	0.345	25.4	1

1mm Hg is known by the name "tor". (1 kPa = 1kN/m<sup>2</sup>).  
 The international standard atmosphere (1 atm) = 101 325 pascals or 1.013 235 bar.  
 This is equal to 1.033 23 kgf/cm<sup>2</sup> or 14.6959 lbf/in<sup>2</sup>.  
 In meteorology 1 millibar = 100 pascals (1 mb = 100Pa).

### Reduction of capacity with centrifugal pump suction

Total Suction Head		Percentage of Rated Capacity
(Feet)	(Metres)	
10	3.0	80%
15	4.6	70%
20	6.1	57%
25	7.6	40%
28	8.5	25%
29	8.8	17%

### Water Requirements

Application	Litres
Shower	15 per min.
Lawn Sprinkler	15 per min. @ 140 kPa
Cattle	35 - 60 per day
Milking Cows	70 - 100 per day
Horses	50 - 60 per day
Sheep	4 - 9 per day
Pigs	9 per day
100 Chickens	23 per day
1/2" Tap	45 per min. @ 140 kPa
3/4" Tap	75 per min. @ 140 kPa

#### Minimum Operating Pressure

This is the pressure at which the pump duties are given.  
 Should the pressure drop below the minimum operating pressure, deep well injector pumps could lose prime.  
 Minimal operating pressure should always be set for maximum expected drawdown.

### Flow

Gall per Minute	Galls per Hour	Litres per Second	Litres per Minute	US Galls per Minute	Cubic Metre per Hour	Cubic Metre per Minute	Cubic Feet per Minute
1	60	0.076	4.546	1.2	0.2728	0.00455	0.1605
0.01667	1	0.00127	0.07578	0.02	0.004547	-	0.00268
13.2	792	1	60	15.84	3.6	0.06	2.119
0.22	13.2	0.0167	1	0.264	0.06	0.001	0.0353
0.833	50	0.063	3.787	1	0.227	0.0038	0.1337
3.666	220	0.278	16.667	4.400	1	0.0167	0.5886
220	13200	16.68	1000	264.0	60	1	35.31
6.23	373.8	0.472	28.32	7.48	1.699	0.0283	1

### Volume

Imp Galls	Litres	US Galls	Cubic Feet	Lbs Water	Cubic Metre	Acre Feet	Cubic Inch
1	4.546	1.2	0.1605	10	0.00455	-	277.34
0.22	1	0.264	0.0353	2.2	0.00100	-	61.02
0.833	3.785	1	0.1337	8.333	0.00379	-	231.06
6.23	28,317	7.48	1	62.3	0.02832	-	1728
0.1	0.4546	0.12	0.0161	1	0.00046	-	27.820
220	1000	264	35.32	2200	1	0.00081	61.032
271,378	-	325,828	43,560	2,713,788	1234	1	-

### Weight

lbs	oz	gms	Kg	Ton	Tonne	cwt	Stone
1	16	453.6	0.4536	0.0004464	0.0004535	0.008929	0.07143
0.0625	1	28.35	0.02836	-	-	-	-
0.0022	0.03527	1	0.001	-	-	-	-
2.205	35.274	1000	1	0.000984	0.001	-	-
2240	35,840	1,016,064	1,016	1	1.016	20	160
2204.6	35,274	1,000,000	1000	0.9842	1	19.684	157.47
112	1792	50,803	50.8	0.05	0.0508	18	-
14	224	6350	6.35	0.00625	0.0064	.125	1

### Length

Inch	Foot	Yard	cms	Metre	Mile	Km	Chain
1	0.0833	0.02778	2.54	0.0254	-	-	-
12	1	0.3333	30.48	0.3048	0.000189	0.0003048	0.01515
36	3	1	91.44	0.9144	0.0005681	0.0009144	0.04545
0.3936	0.0328	0.010931	1	0.01	-	-	-
39.37	3.2808	1.0936	100	1	0.00052	0.001	0.0497
63.360	5.280	1760	160,934	1609.4	1	1.6093	80
39.371	3280.9	1093.6	100,000	1000	0.6214	1	49.71
792	66	22	2011.68	20.116	0.0125	0.0201	1



# CONVERSION FACTORS

## Length Equivalents:

1 league	=	3 miles
1 mile	=	8 furlongs
1 furlong	=	40 poles
1 chain	=	4 poles
	=	66 feet
	=	100 links
1 fathom	=	6 feet

## Fluid Equivalents:

1 gallon	=	4 quarts
	=	10 lbs (water)
1 quart	=	2 pints
1 pint	=	4 gills
1 gill	=	5 ozs

## Water Catchment Volume:

Sq. metre x 1mm	=	1 litre
Aq. foot x 1 inch	=	0.52 gall

## Temperature:

Water boils at 100°C, or 212°F	
Water freezes at 0°C, or 32°F	
Centigrade	= (F -32) x 5/9
Fahrenheit	= (C x 9/5) + 32

## Power:

1 HP	=	746 watts
	=	33,000 ft. lbs per min
	=	550 ft. lbs per sec.

## Heat and Energy:

1 kW/hour	=	3.6 Meg Joule
	=	3412 BTU/hour

## Square Measure:

1 Sq mile	=	640 acres, 259 hectare
1 Sq km	=	247 acres, 100 hectare
1 Acre	=	4,840 sq. yards
	=	43,560 sq. feet
	=	4 roods
	=	0.4047 hectare
1 Rood	=	40 perches, rod, pole
1 Perch	=	30.25 sq. yards
1 Hectare	=	10,000 sq. metres
	=	2.471 acres
	=	107,640 sq. feet
1 Sq feet	=	10.764 sq feet

## Circle Formulas:

Circumference of circle	=	$\pi D$
Area of circle	=	$\pi D^2 \div 4$
Surface area sphere	=	$\pi D^2$
Volume of cylinder	=	$\pi D^2 H \div 4$
Volume of sphere	$\pi D$	= $1/6 \pi^3$
D = diameter	H =	height
$\pi = 3.142$	I =	Impeller

## Pump Affinity Laws:

Pressure varies as RPM <sup>2</sup> or I <sup>2</sup>
Power varies as RPM <sup>3</sup> or I <sup>3</sup>
Volume varies as RPM

## 4" MOTOR ELECTRIC CABLE SELECTION CHART

Motor Rating			Metric cable size, square Millimetres - Metres length					
Volts	KW	HP	1.5	2.5	4	6	10	16
230V 50Hz	0.37	1/2	120	200	320	480	810	1260
	0.55	3/4	80	130	220	320	550	850
	0.75	1	60	100	170	250	430	670
	1.1	1 1/2	40	70	120	180	300	470
	1.5	2	30	60	90	130	230	360
	2.2	3	20	40	60	90	150	230
	3.7	5	0	20	40	60	100	160
415V 50 Hz	0.75	1	410	680	1090	1640	2780	4330
	1.1	1 1/2	300	500	810	1210	2060	3200
	1.5	2	220	370	590	880	1500	2340
	2.2	3	150	250	400	600	1030	1600
	3	4	110	190	310	460	790	1230
	3.7	5	90	150	240	370	630	980
	4	5 1/2	80	140	230	340	590	920
	5.5	7 1/2	60	110	170	260	440	690
7.5	10	50	80	130	200	340	530	

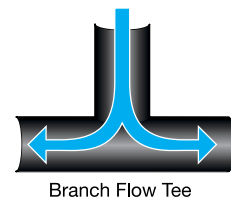
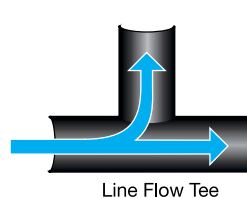
## FRICTION LOSS

### Pipe Fittings Friction Loss

Size (mm)	Foot Valve or Check Valve	Reducer D/d=2/1	90 Degree Elbow	90 Degree Bend	Gate Valve	Line Flow Tee	Branch Flow Tee	Size (mm)
	Head Loss							
20	9	0.23	0.5	0.4	0.13	1.4	2.4	20
25	10	0.28	0.8	0.5	0.17	1.8	3.1	25
32	12	0.36	1	0.6	0.22	2.2	3.8	32
40	15	0.46	1.3	0.8	0.28	2.8	4.8	40
50	20	0.57	1.6	1	0.35	3.5	6	50
80	31	0.8	2.5	1.6	0.56	5.5	9.4	80
100	40	1.2	3.3	2	0.7	7	12	100

**Quick Method:** Calculate the friction loss using pipe only and add 20%

**Normal Method:** Establish the number of pipe fittings and their equivalent pipe lengths, add this to pipe from the table, determine the friction loss. Standard practice is to add 5%



# FRICTION LOSS

**Polythene pipe rural. Based on AS 2698.2-2000. Based on nominal bore.**

Flow Rate			19mm	25mm	32mm	40mm	50mm	63mm	75mm
			3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
lps	lpm	gpm	Friction Loss (*m/100 meters of pipe)						
0.1	6	1	1.18	0.31	0.11				
0.2	12	3	3.92	1.01	0.35	0.15			
0.3	18	4	7.97	2.05	0.71	0.30	0.08	0.04	
0.5	30	7	19.62	5.02	1.74	0.72	0.18	0.11	0.05
0.7	42	9	35.67	9.09	3.15	1.30	0.33	0.19	0.09
0.9	54	12	55.87	14.20	4.91	2.03	0.51	0.30	0.13
1	60	13		17.13	5.92	2.44	0.52	0.36	0.16
1.2	72	16		23.71	8.19	3.37	0.85	0.50	0.22
1.4	84	18		31.24	10.77	4.43	1.12	0.65	0.29
1.6	96	21		39.69	13.67	5.62	1.41	0.83	0.36
1.8	108	24			16.88	6.94	1.74	1.02	0.45
2	120	26			20.38	8.37	2.10	1.23	0.54
2.5	150	33			30.43	12.48	3.13	1.83	0.80
3	180	40			42.26	17.31	4.33	2.53	1.10
3.5	210	46				22.84	5.71	3.33	1.45
4	240	53				29.06	7.25	4.23	1.84
4.5	270	59				35.95	8.96	5.22	2.28
5	300	66				43.50	10.83	6.31	2.75
5.5	330	73					12.86	7.49	3.26
6	360	79					15.04	8.76	3.81
7	420	92					19.87	11.56	5.03
8	480	106					25.31	14.72	6.40
9	540	119					31.34	18.21	7.91
10	600	132					37.95	22.05	9.57
11	660	145						26.21	11.37
12	720	158						30.70	13.31
13	780	172						35.52	15.39
14	840	185							17.61
15	900	198							19.96

**Polythene pipe metric PN12.5 (PE100). Based on AS 4130-2009**

Flow Rate			OD 25mm	OD 32mm	OD 40mm	OD 50mm	OD 63mm	OD 75mm
			PN12.5	PN12.5	PN12.5	PN12.5	PN12.5	PN12.5
			PE100	PE100	PE100	PE100	PE100	PE100
lps	lpm	gpm	Friction Loss (*m/100 meters of pipe)					
0.1	6	1	0.74	0.23				
0.2	12	3	2.44	0.76	0.26	0.09		
0.3	18	4	4.96	1.53	0.52	0.18	0.06	
0.5	30	7	12.18	3.75	1.28	0.44	0.15	0.06
0.7	42	9	22.11	6.79	2.30	0.79	0.26	0.11
0.9	54	12	34.60	10.59	3.59	1.22	0.41	0.18
1	60	13	41.77	12.78	4.33	1.47	0.49	0.21
1.2	72	16	57.89	17.68	5.98	2.03	0.68	0.29
1.4	84	18	76.36	23.29	7.86	2.67	0.89	0.38
1.6	96	21		29.57	9.98	3.39	1.13	0.48
1.8	108	24		36.53	12.31	4.18	1.39	0.60
2	120	26		44.15	14.87	5.04	1.68	0.72
2.5	150	33		66.00	22.18	7.51	2.50	1.07
3	180	40			30.79	10.41	3.46	1.48
3.5	210	46			40.66	13.73	4.55	1.94
4	240	53			51.76	17.46	5.78	2.47
4.5	270	59			64.07	21.59	7.14	3.05
5	300	66				26.12	8.63	3.68
5.5	330	73				31.03	10.25	4.37
6	360	79				36.33	11.99	5.11
7	420	92				48.05	15.84	6.74
8	480	106					20.17	8.58
9	540	119					24.97	10.61
10	600	132					30.23	12.84
11	660	145						15.26
12	720	158						17.87
13	780	172						20.66

**Galvanised steel pipe. Medium. Based on AS 1074-1989. Based on nominal bore.**

Flow Rate			20mm	25mm	32mm	40mm	50mm	65mm	80mm
			3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
lps	lpm	gpm	Friction Loss (*m/100 meters of pipe)						
0.1	6	1	0.77	0.24					
0.2	12	3	2.77	0.85	0.22	0.10			
0.3	18	4	5.95	1.81	0.45	0.21	0.07		
0.5	30	7	15.85	4.75	1.17	0.55	0.17	0.05	
0.7	42	9	30.44	9.05	2.20	1.02	0.32	0.09	
0.9	54	12	49.73	14.70	3.54	1.64	0.50	0.14	
1	60	13		18.04	4.33	2.00	0.61	0.17	0.08
1.2	72	16		25.73	6.15	2.83	0.86	0.23	0.11
1.4	84	18		34.77	8.28	3.80	1.15	0.31	0.14
1.6	96	21			10.72	4.91	1.48	0.40	0.18
1.8	108	24			13.48	6.16	1.85	0.50	0.22
2	120	26			16.55	7.55	2.26	0.61	0.27
2.5	150	33			25.60	11.64	3.47	0.93	0.41
3	180	40			36.60	16.61	4.93	1.31	0.58
3.5	210	46				22.46	6.65	1.76	0.78
4	240	53				29.19	8.62	2.27	1.00
4.5	270	59				36.79	10.84	2.85	1.25
5	300	66					13.32	3.49	1.53
5.5	330	73					16.05	4.20	1.84
6	360	79					19.03	4.97	2.17
7	420	92					25.77	6.71	2.93
8	480	106					33.51	8.70	3.79
9	540	119						10.96	4.77
10	600	132						13.47	5.85
11	660	145						16.24	7.05
12	720	158						19.27	8.36
13	780	172						22.56	9.78
14	840	185						26.11	11.31
15	900	198						29.92	12.95

**PVC pipe metric. PN9 PN12. Based on AS 1477-2006. Based on nominal bore.**

Flow Rate			25mm	25mm	32mm	32mm	40mm	40mm	50mm	50mm	65mm	65mm	80mm	80mm	100mm	100mm	
			PN9	PN12	PN9	PN12	PN9	PN12	PN9	PN12	PN9	PN12	PN9	PN12	PN9	PN12	PN9
lps	lpm	gpm	Friction Loss (*m/100 meters of pipe)														
0.1	6	1	0.13	0.14													
0.2	12	3	0.42	0.47	0.14	0.16											
0.3	18	4	0.86	0.96	0.28	0.32	0.15	0.17									
0.5	30	7	2.10	2.34	0.69	0.78	0.36	0.42	0.12	0.14							
0.7	42	9	3.79	4.23	1.25	1.41	0.65	0.75	0.22	0.26							
0.9	54	12	5.91	6.60	1.94	2.20	1.02	1.17	0.35	0.40	0.12	0.14					
1	60	13	7.12	7.96	2.34	2.65	1.22	1.41	0.42	0.48	0.15	0.17					
1.2	72	16	9.85	11.01	3.23	3.66	1.69	1.95	0.58	0.66	0.20	0.23					
1.4	84	18	12.96	14.49	4.24	4.81	2.22	2.56	0.76	0.86	0.26	0.30	0.12	0.14			
1.6	96	21	16.46	18.40	5.38	6.10	2.81	3.24	0.96	1.09	0.33	0.38	0.15	0.17			
1.8	108	24	20.32	22.72	6.64	7.53	3.46	4.00	1.18	1.35	0.41	0.47	0.19	0.21			
2	120	26	24.54	27.44	8.01	9.09	4.18	4.82	1.43	1.63	0.49	0.56	0.22	0.26	0.07	0.08	
2.5	150	33			11.94	13.55	6.22	7.18	2.12	2.42	0.73	0.84	0.33	0.38	0.10	0.11	
3	180	40			16.56	18.80	8.62	9.95	2.93	3.35	1.01	1.16	0.46	0.53	0.14	0.16	
3.5	210	46			21.86	24.81	11.37	13.13	3.86	4.41	1.33	1.53	0.60	0.69	0.18	0.21	
4	240	53			27.81	31.57	14.45	16.69	4.91	5.60	1.69	1.94	0.76	0.88	0.23	0.26	
4.5	270	59					17.87	20.64	6.06	6.92	2.09	2.39	0.94	1.08	0.28	0.32	
5	300	66					21.61	24.96	7.33	8.37	2.53	2.89	1.14	1.31	0.34	0.39	
5.5	330	73					25.67	29.66	8.70	9.93	3.00	3.43	1.35	1.55	0.40	0.46	
6	360	79							10.18	11.62	3.50	4.01	1.58	1.81	0.47	0.54	
7	420	92							13.44	15.35	4.62	5.29	2.08	2.39	0.62	0.71	
8	480	106							17.11	19.54	5.88	6.72	2.64	3.03	0.79	0.90	
9	540	119							21.18	24.19	7.27	8.32	3.27	3.75	0.97	1.11	
10	600	132							25.64	29.29	8.79	10.06	3.95	4.54	1.18	1.35	
11	660	145									10.45	11.96	4.69	4.54	1.40	1.60	
12	720	158									12.23	14.00	5.49	6.30	1.63	1.87	
14	840	185									16.18	18.52	7.26	8.33	2.16	2.47	
16	960	211									23.45	26.86	10.46	12.03	3.08	3.53	
20	1200	264											15.56	17.90	4.57	5.24	
24	1440	317												21.56	24.79	6.32	7.25



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