

# Engine Room Pumps

Dolphin Range

Pump Systems



# Dolphin centrifugal pumps

reliability, accessibility and efficiency

The Hamworthy Dolphin range of marine centrifugal pumps have won wide acclaim for their reliability, accessibility and efficiency and are supplied to every shipbuilding and major industrial country throughout the world.

Dolphin pumps offer over 80 years of centrifugal pump design and manufacturing experience and meet the increasing need for alternative forms of pump construction. The design provides considerable flexibility to offer alternative forms of construction to match customer needs, with maximum use of common parts, maintaining the economy of manufacture.

The range is based on a single entry pump covering capacities from 10 to 500 m<sup>3</sup>/h and a larger capacity double entry pump which extends the capacity capability to 2500 m<sup>3</sup>/h, sufficient to cover any marine pumping duty likely to occur.

Hamworthy Dolphin pumps have a vast range of optional features to suit the particular needs of today's markets. The pumps are manufactured in Hamworthy's factory in Poole, where both design and production systems are approved to the standard ISO 9000.

## Benefits include

- Easy dismantling - overhaul without disconnecting suction and discharge pipes
- Alternative builds to suit customers' requirements
- Lubricated bearing and mechanical seal available for applications where long periods of dry running may occur
- Suited to alternative priming arrangements
- Minimum number of components
- Suitable for water, white oils and lubricating oils

# build flexibility

21 Different Constructions	Single Entry Pumps							Double Entry Pumps		
	VIK	HEC	VIB	VID	VIF	HEF	HEX	VIB	VID	VIF
Inline branches, vertical shaft	■		■	■	■			■	■	■
End suction, horizontal		■				■	■			
Bare shaft pump							■			
Rigid spacer coupling			■	■				■	■	
Flexible spacer coupling					■	■				■
Direct close coupled	■	■								
Soft packed seal				●					●	●
Mechanical seal	■	■	■	■	■	■	■	■	■	■
Oil lubricated sleeve bearing			■					■		
Product lubricated sleeve bearing				■						
External ball bearings					■	■	■		■	
Electric motor drive	■	■	■	■	■	●		■	■	■
Diesel engine drive			▼			●				
Belt or flexible shaft drive							■			
Liquid ring primer driven from pump			●	▼	●					
Hand or auto bladed primer			▼			●	●			
Constant running bladed primer						●	●			
Air Ejector primer	●	●	●	●	●	●	●			
Central priming system	●	●	●	▼	●	●	●	●	▼	●
Separate motor driven primer	●	●	●	▼	●			●	▼	●
Submersible			▼	▼				▼	▼	▼

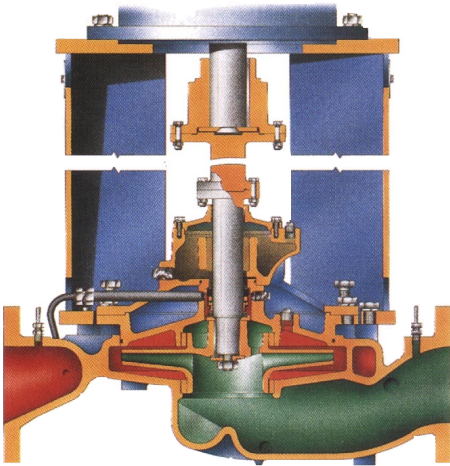
■ Standard features

● Options available

▼ Special variations - note others may be available to meet particular applications

# Single entry pumps

matching performance to your needs



## Spacer Coupled

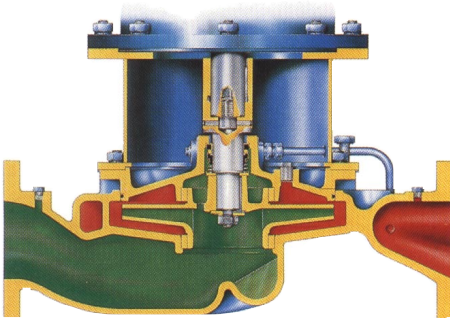
Capacities: 10-500 m<sup>3</sup>/h

Heads: 15-140 m

The vertical pump utilising either a rigid or flexible spacer coupling offers the user the advantage of being able to dismantle the pump for maintenance without the need to remove the driving motor.

The rigidly coupled version can be supplied with either soft packed gland or mechanical seal, or when fitted in locations where dry running can occur, with a mechanical seal and an oil bath lubricated sleeve bearing.

The flexible spacer coupled pump is fitted with a mechanical seal and external rolling bearings.



## Close Coupled

Capacities: 10-450 m<sup>3</sup>/h

Heads: 15-130 m

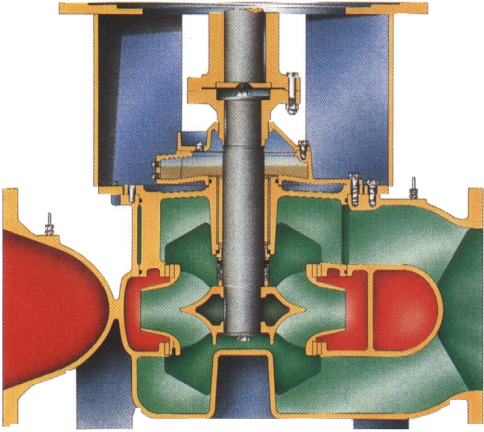
Available in either a vertical or an horizontal configuration, the close coupled pump provides an economic and compact alternative to the spacer coupled unit.

Dismantling of the close coupled pump entails removing the driving motor to permit removal of the pump cover, shaft and impeller as a single unit.

The rigid pump shaft incorporates an integral sleeve coupling with a unique method of transferring residual end thrust to the motor shaft in a manner that permits easy pump shaft replacement without the need to drill the motor shaft.

The vertical close coupled pumps are available with inline branches, whilst the horizontal pumps are available in the end suction version only.

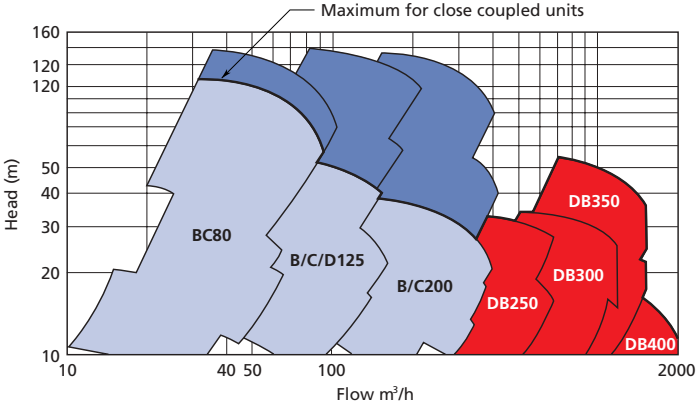
# Double entry pumps



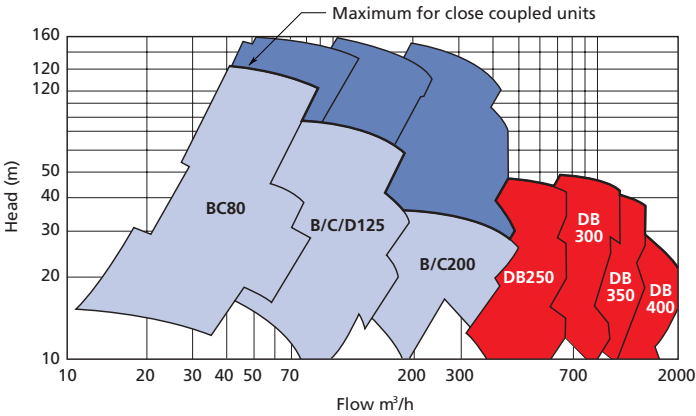
## Double Entry

The larger sizes of Dolphin pumps, those with branches above 200mm, are of the double entry impeller form. These units cover the capacity range from 400m<sup>3</sup>/h to 2500m<sup>3</sup>/h and are only available as vertical units. Pumps with branch sizes 250, 300, 350 and 400mm are available in rigid spacer coupling designs.

Like their smaller counterparts these larger Dolphin pumps are characterised by the robust simplicity of the design and their ease of maintenance, which on the largest sizes, includes "built in" dismantling equipment.



Dolphin Range Chart 50 Hz



Dolphin Range Chart 60 Hz

# Dolphin - the versatile pump

Eleven basic pump frame sizes make up the Dolphin range of single and double entry Dolphin pumps. The single entry pumps are available in a total of twelve different forms for each pump frame size. The double entry pumps are available in four alternative forms for each pump frame size. Each pump variant is described by the build code.

Materials of pump construction can be varied to suit the pump medium but for the standard sea water and fresh water applications they are:

## Sea Water

- Pump shaft - stainless steel
- Casing - bronze
- Impeller - aluminium bronze
- Wear rings - metallic

## Fresh water

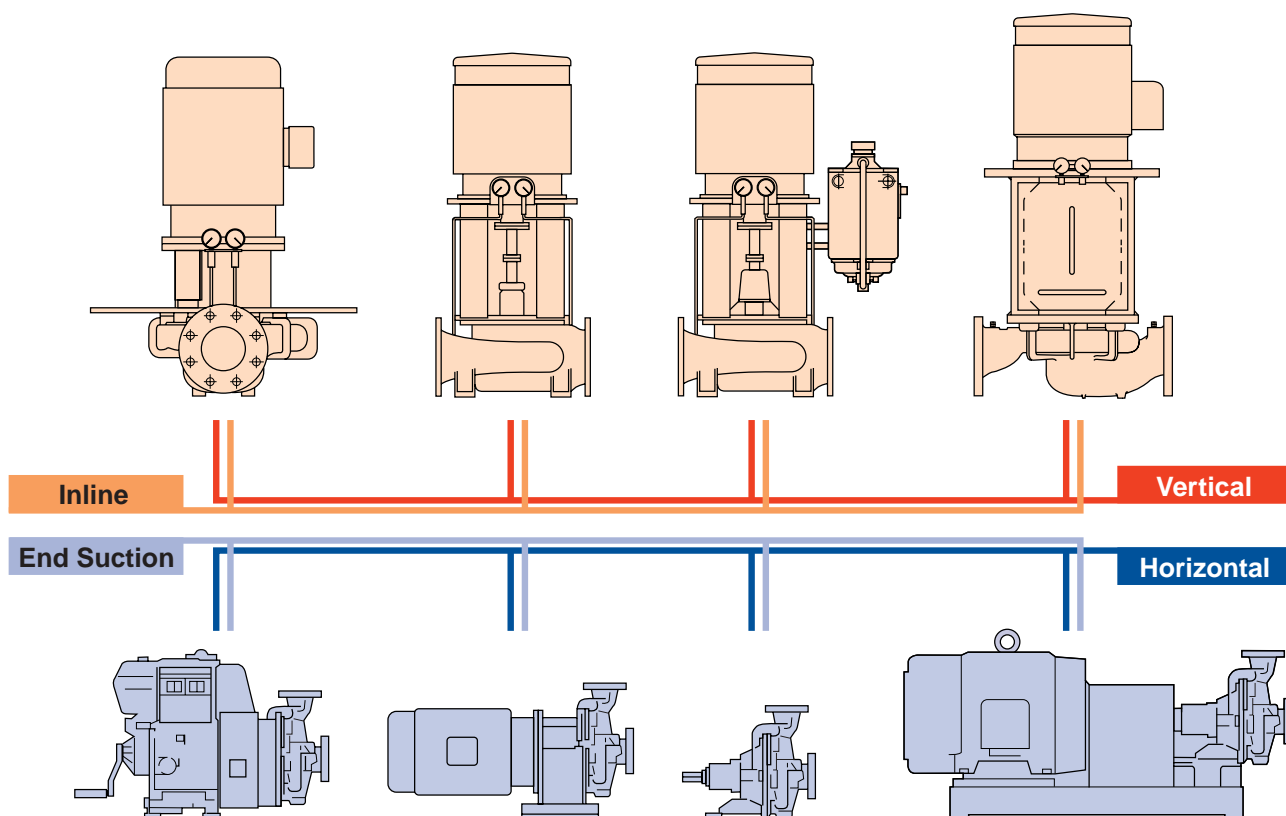
- Pump shaft - stainless steel
- Casing - cast iron
- Impeller - aluminium bronze
- Wear rings - metallic

## Primers

It is often necessary for a centrifugal pump to operate in situations involving a static lift of the pumped medium or where the pumped medium is a mixture of liquid and air/vapour. Under these circumstances the efficiency of the pump will depend on the effectiveness of the primer in removing the air/vapour.

Hamworthy manufacture a number of different types of primers suitable for use in conjunction with the Dolphin pumps. These range from the liquid ring type, driven either by belt from the pump shaft or independently by a separate electric driven motor to a venturi type air driven ejector.

Alternatively a customer may wish to make his own arrangements to prime a pump, using equipment from another source.



Basic Pump Size	
Single Entry	B80
Single Entry	C80
Single Entry	B125
Single Entry	C125
Single Entry	D125
Single Entry	B200
Single Entry	C200
Double Entry	DB250
Double Entry	DB300
Double Entry	DB350
Double Entry	DB400

Shaft Axis	
Vertical	V
Horizontal	H

Pump Casing Options	
Inline	I
End Suction	E

Pump Build	
Close-coupled to prime mover, no pump bearing	C
Close-coupled to prime mover, no pump bearing, steel mounting foot	K
Close-coupled to prime mover, product lubricated, sleeve bearing	G
Close-coupled to prime mover, oil bath lubricated, sleeve bearing	H
Rigid spacer coupled to prime mover, product lubricated sleeve bearing	D
Rigid spacer coupled to prime mover, oil bath lubricated sleeve bearing	B
External roller bearings. Flexible spacer coupling to prime mover	F
External roller bearings. Bare shaft extension	X
Other special build not allocated individual code	O

Priming Options	
Non self-primed	1
Air injector primed	2
Liquid ring LRP50B belt driven	3
Central priming system	4
Hand operated rotary bladed primer	5
Automatic rotary bladed primer	6
Constant running rotary bladed primer	7
Separate motor-driven primer	8
Other special priming arrangements	O

## Typical Modular Construction Code

**B200 V I B 2**

# Total service support

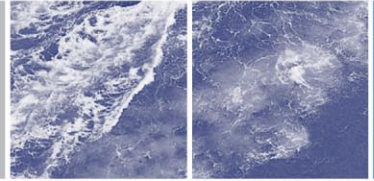
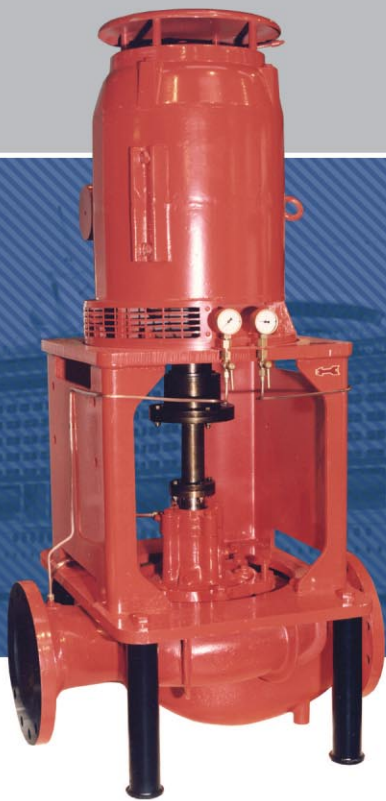
With worldwide service support we are even better placed to offer you effective maintenance back-up on your Hamworthy pumping system. With our close connection with the marine industry over many years, our spares organisation is capable of responding to breakdown in a matter of hours. Where we are supplying a new pump, we can quote fixed price service contracts, allowing you to budget for your maintenance and ensure you obtain the best possible use from your installation.

## Installation

No pump will give its best performance if badly installed. Typical installation errors such as lack of ventilation and poor foundations will affect the day-to-day performance of the pump and will shorten its operational life. We are prepared to advise you on installation work, which will, at an early stage, include assisting you with pump site selection.

## Commissioning

Even if you install the pump (or you may have a portable system) we will undertake full commissioning for just a small charge. The commissioning service would include approval of the installation or corrective advice, filling-up with correct lubricants, full running checks and detailed operator training.



#### Worldwide sales and service network

Our global network of sales and service centres ensures that we can provide first class technical, spares and service support to our customers wherever they are around the world. In addition to our sales and service locations, we are supported by agent representatives in all major shipping areas.

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The manufacturers reserve the right to alter the specification and data to incorporate improvements in design. Certified drawings will be issued on request.

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