

ROTAMAC

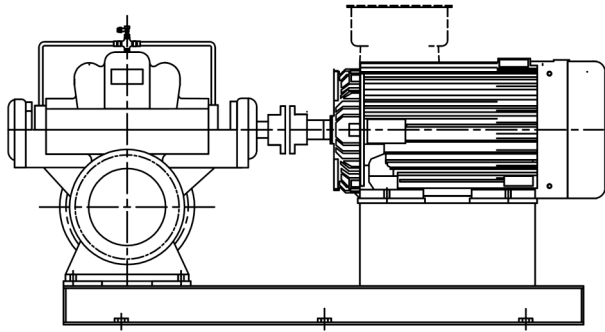
ROTAMAC RD series
Axially split, double suction pumps (BB1)



ROTAMAC

INTRODUCTION

This data booklet deals with RD series, horizontal axially split single stage, between bearings, double suction pumps. Designed pump in BB1 type.



- Pump casing: single or double volute depend on pump size, axially split, integrally cast pump feet and replaceable casing wear rings. Horizontal or vertical installation as per requested.
- Impeller: closed type, single stage, double suction, between bearings with high efficiency and low NPSHr, self-balanced axial thrust. Available in either cast iron, bronze or stainless steel (304 / 316).
- Shaft and supports: the carbon steel or AISI 420 stainless steel shaft is guided and supported by bearings both sides of impeller. The wide safety margin considered when sizing the support, the shaft and the bearings allows the pump to be coaxially coupled to both electric motors and internal combustion engines.
- Seal: the mechanical type or packing seal type and easily replaceable.
- Coupling to the motor: the pumps can be coupled to IP 55 standard electric motors with B3 motor mounting.
- Direction of rotation: clockwise or counter-clockwise, as per requested.

APPLICATIONS

The RD series delivers low NPSHr, high efficiency performance and low life-cycle costs with the highly reliable hydraulic designed for several applications, such as cooling, fire-fighting, water distribution, industrial water supply, irrigation, medium and large heating and air conditioning systems and water supply for both civil and industrial uses.

STANDARDISED

- Pump designed and manufactured as per BB1 structure.
- Balanced impeller according to ISO1940 grade G6.3, ensures smooth operation.
- Full compliance with ISO9908 / ISO5199 shaft run-out and ISO10816-7 vibration requirement.
- Performance test of pumps based on ISO9906 and ANSI/HI14.6 grade 2B

ADVANTAGES

- Improved efficiency and NPSHr by experimentally verified hydraulic design of impellers (vanes).
- Low vibration levels and excellent smooth running characteristics.
- Axially split casing design facilitates fast and easy to assembly and disassembly without any special tool.
- Flange dimensions comply with ISO7005 PN 10 / 16 / 25. The pump are also available with flanges drilled to ANSI or JIS standard.

WORKING CONDITION

- Liquid pumping temperature up to 80 deg C
Temperature above 80 deg C on request
- Maximum permissible pressure: 10 / 16 / 25 bar G, depend on pump sizes and materials
- Flow rate: 36 to 23000 m³/h
- TDH: 8 to 230 m
- Speed: 590 / 740 / 980 / 1450 / 2900 rpm for frequency 50 Hz, 710 / 890 / 1180 / 1750 / 3500 rpm for frequency 60 Hz

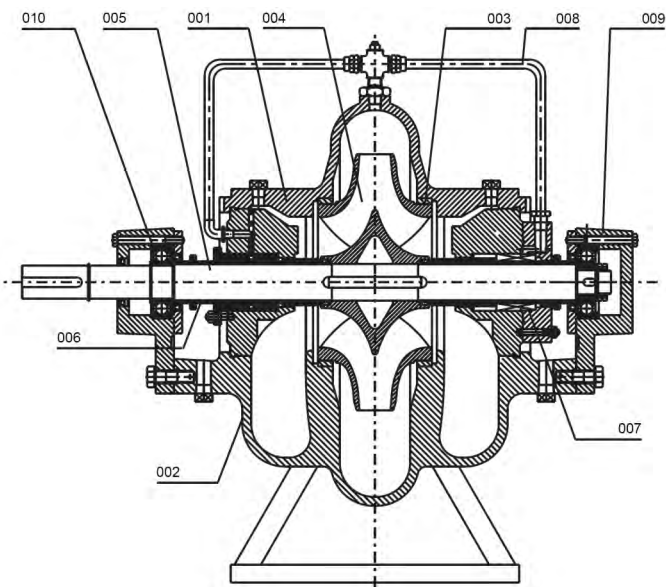
MATERIAL AND CONSTRUCTION

- Pump casing: cast iron / ductile cast iron / carbon steel / 304 / 316 or duplex stainless steel
- Impeller: cast iron / carbon steel / bronze / 304 / 316 or duplex stainless steel
- Shaft: 420 / 304 / 316 / duplex stainless steel, carbon steel
- Shaft seal: single mechanical seal, packing seal
- Lubrication: oil / grease

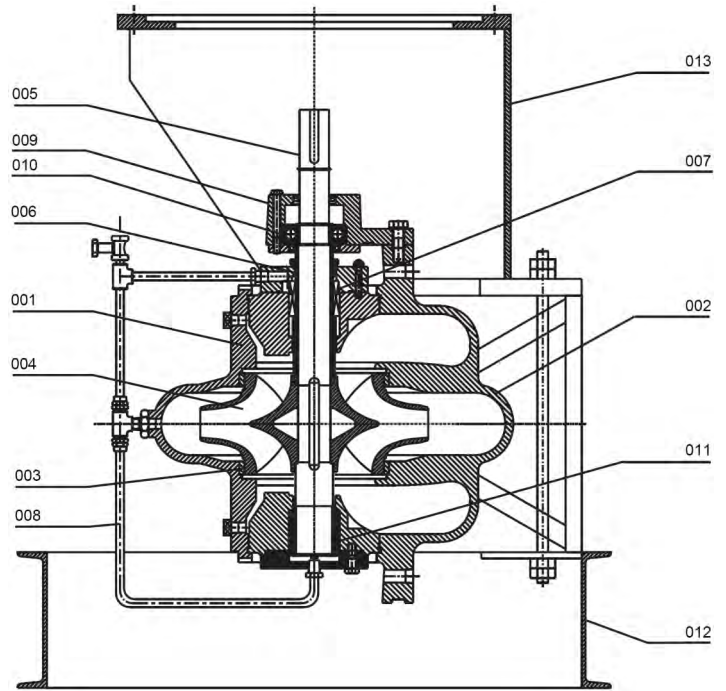
The pump is driven by a standard IEC foot mount motor or diesel engine. The power is transmitted through a standard or spacer coupling. The baseplate is fabricated from steel, drill and tap bases, secure pump and motor to base, made more rigid and pre-alignment before delivery.

PUMP SECTIONAL DRAWING AND PARTS LIST

Pump construction is a little different depending on size



Horizontal Installation



Vertical Installation

Item no.	Part name	Materials / Construction
001 002	Upper half casing Lower half casing	cast iron / ductile cast iron / carbon steel / 304 / 316 / duplex stainless steel
003	Casing wearing	depend on pump casing material
004	Impeller	cast iron / bronze / carbon steel / 304 / 316 / duplex stainless steel
005	Shaft	carbon steel / 420 / 304 / 316 / duplex stainless steel
006	Shaft sleeve	420 / 304 / 316 / duplex stainless steel
007	Shaft sealing	component single mechanical seal / cartridge mechanical seal / packing seal
008	Sealing pipe	depend on pump casing material
009	Bearing frame	cast iron
010	Bearing	ball bearing
011	Bearing bush	SiC
012	Base	steel
013	Motor stool	steel

RD Series, Split Casing Double Suction Pumps

OPTIONS

- The split casing pump can be designed in horizontal or vertical installation. Vertical pumps are available with intermediate shafting that enables the motor to be mounted at a high level, avoiding potential flooding.
- Performance enhancing coatings may be applied to internal casing surfaces to maximize pump efficiency. Corrosion- and erosion-resistant coatings also are available.
- The seal chamber design readily accommodates component or cartridge type mechanical seals and graphite non-asbestos packing with a lantern ring. The user can choose or convert to the sealing option most appropriate to the service.
- Completely integrated with vibration sensors, bearing temperature sensors used to accurately monitor the condition of pumps.
- Special versions for high temperature services can be supplied on request.

PUMP SELECTION

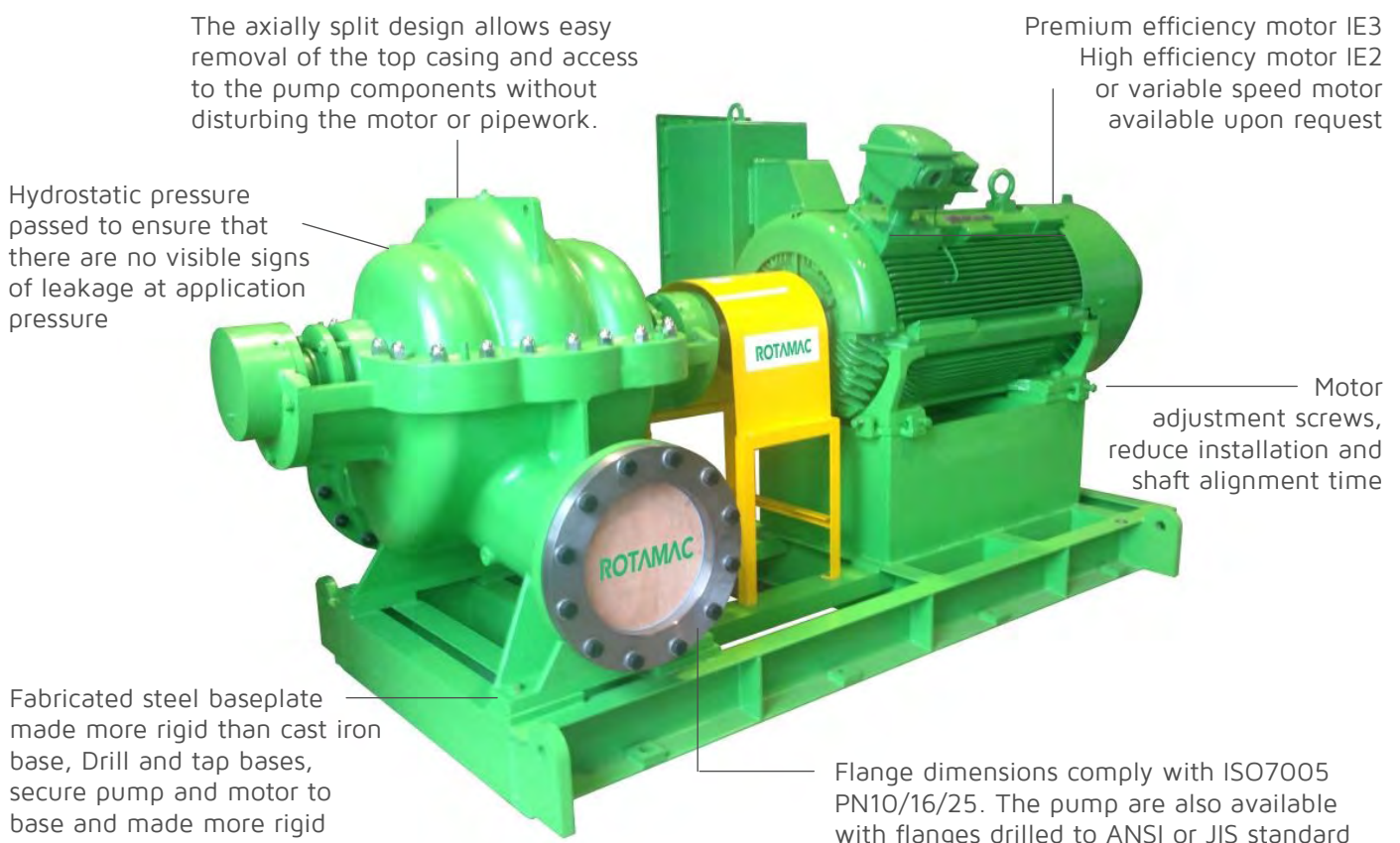
For pump selection the hydraulic performance curves should be used. These curves are based on water at 15 deg C, SG equal to 1.0 and viscosity equal to 1.0 cP

Rated flow shall be within the region of 50% to 110% of capacity at the best efficiency point to avoid the problems caused by vibration, cavitation, internal flow recirculation.

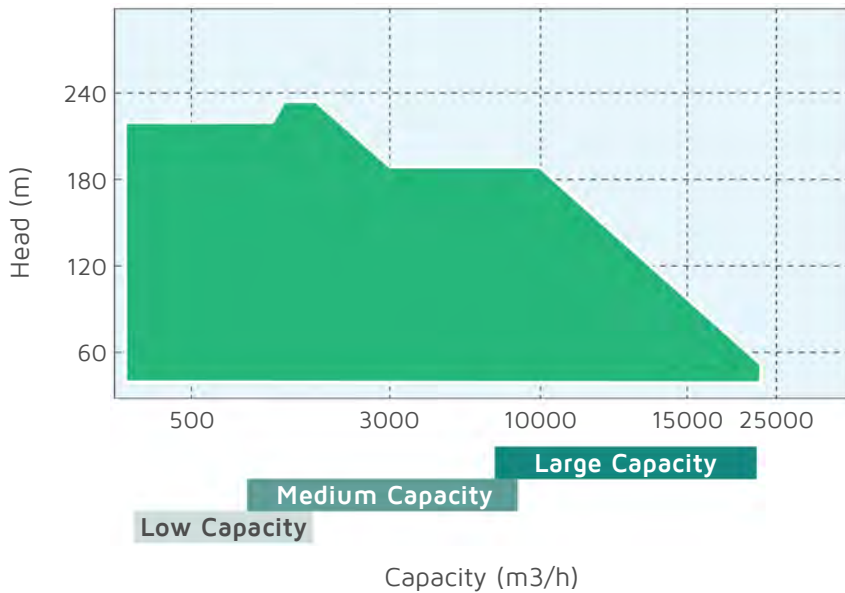
NPSH values are indicated on the performance curves. At least 1.0 m should be added as a safety margin. To overcome variations between actual and design system requirements, it is recommended that the driver power exceeds the absorbed pump shaft power.

Motor nameplate rating (kW)	% of rated pump power
up to 7.5	125%
11 to 18.5	120%
22 to 37	115%
45 and above	110%

THE COMPLETE MOUNTED PUMP UNIT WITH BASEPLATE, COUPLING AND MOTOR



Performance Range



Low Capacity

- Pump size : DN80 to DN250
- Capacity : up to 1500 m³/h
- TDH: up to 210 m

Medium Capacity

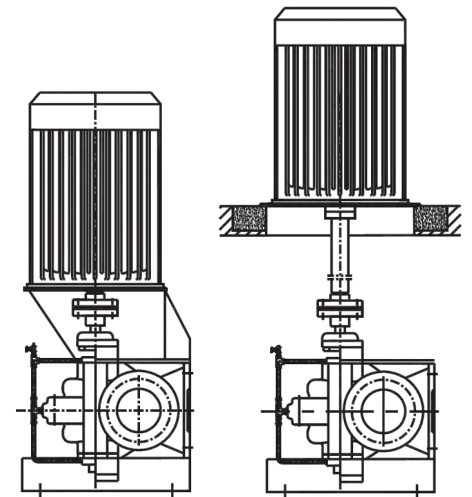
- Pump size : DN300 to DN 600
- Capacity : up to 6000 m³/h
- TDH: up to 230 m

Large Capacity

- Pump size : DN700 to DN1200
- Capacity : up to 23000 m³/h
- TDH: up to 190 m

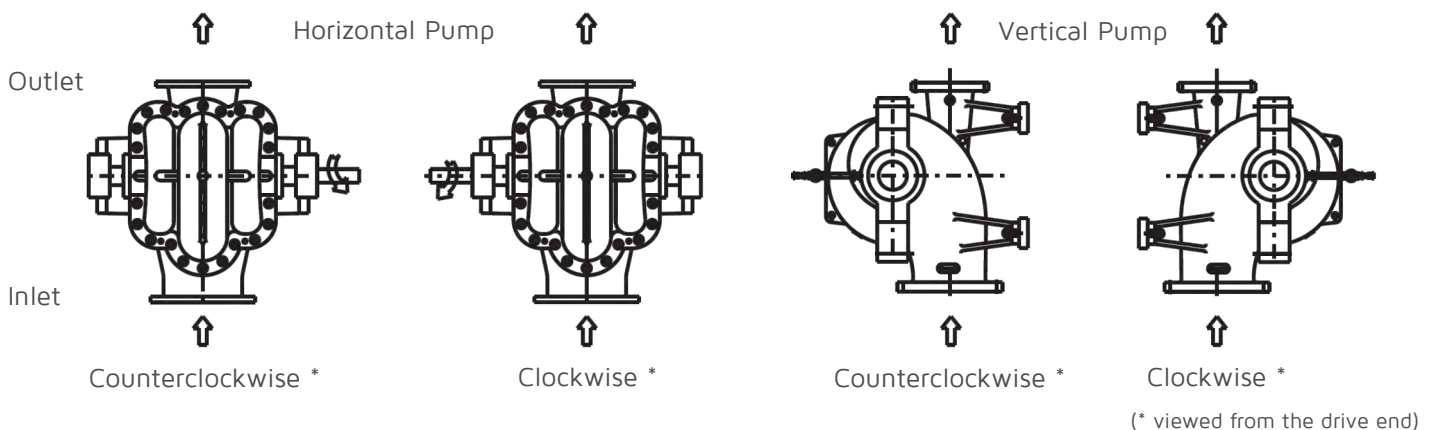
VERTICAL INSTALLATION

For vertical installations the motor can be mounted on a tripod and driven via a cardan shaft to the stool mounted pump. The pump can also be mounted on a stool and driven via a cardan shaft.



DIRECTION OF ROTATION

In standard manufacture the direction of rotation of pump is clockwise when viewed from the motor side. Upon request, the direction of rotation can be manufactured in counterclockwise direction. In this case, the location of the suction-discharge flanges changes.



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- Standardized End Suction Pumps
EN733/DIN24255, ISO2858/ISO5199
ASME B73.1, API610
- Split Casing Double Suction Pumps
- Solid Handling Pumps
Slurry/Vortex/Semi-open/Open/Non clog
- High Pressure Multi-Stage Pumps
- Self-Priming Pumps
- Submersible Pumps
- Close Coupled Pumps
- Vertical Multi-Stage / Immersible Pumps
- Vertical Sump Pumps
- Vertical Turbine Pumps
- Mixed / Axial Flow Pumps
- Liquid Ring Vacuum Pumps
- Chemical Process Plastic Pumps
- Fire Fighting Pump Packages (NFPA20)
- Booster Pump Packages
- Trailer Mounted Pumps

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ROTAMAC can help relieve the stresses and reduce the life cycle costs associated with the most important aspects of plant operation.

Dedicated to delivering the highest quality support, ROTAMAC services and solutions integrates hydraulic, mechanical and materials engineering knowledge with creative solutions to improve equipment reliability and system performance, reduce energy consumption and improve the safety and environmental impact of operations.

Pump Services and Repair



Capabilities Overview

Design

- Equipment Selection and Optimization
- Material Selection
- System Design
- System Optimization

Start-up

- Equipment Installation
- Laser Alignment
- Commissioning and Running test
- Operator Training
- On-site Project Supervision
- On-site Troubleshooting

Operation and Maintenance

- Equipment Inspection
- Repair & Overhaul
- Advanced Diagnostics
- Service Maintenance Contracts