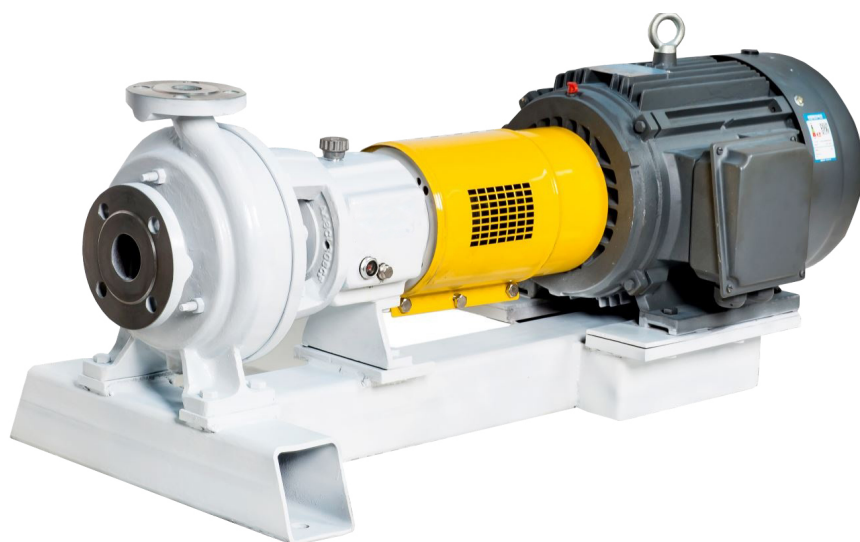


# ROTAMAC

ROTAMAC RCD Series

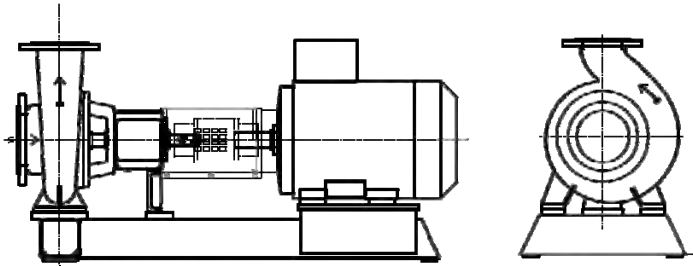
End suction process pumps acc. to ISO2858 / ISO5199

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## INTRODUCTION

The RCD series, comprised of the A, N, W and E ranges, has been designed in accordance with ISO 5199 and ISO 2858 international standards, and has been even further developed to surpass market standards and ensure excellent performance and reliability.



All pumps in our RCD range have been standardized, using common modules and components, for maximum interchangeability and easy installation and maintenance. Fewer parts means lower inventory costs and greater process reliability.

Our versatile selection of reliable, high-efficiency impellers for demanding applications reduce life-cycle costs, especially costs for energy, operation and downtime.

Common components and modules in RCD range types A, N, W and E with all options of gas separator, self-priming, as well as close coupled designs.

A type, For all normal pumping applications, with stocks up to 8%, e.g., liquors, water, chemicals, white water, condensate, etc.

N type, For applications where normal stock pumps cannot handle liquids due to plugging or abrasive wear. Suitable for unsorted stocks up to 8%, e.g., slurries, rejects, waste water, chips, or other liquids containing large solids and other particles.

W type, For the most abrasive and erosive pumping applications, such as lime milk and mud, and coating pigments. Specially designed wear resistant pumping hydraulics (W) with wear resistant materials deliver six to eight times longer life time than conventional pumps.

E type, Developed especially for pumping hot liquors such as in continuous and batch digesters (E hydraulics). Centerline supported design prohibits heat and pressure shock distortions.

Some size are available in close coupled design, no need for coupling alignment, making the installation even faster, simpler and more economical.

## PUMP DESIGN AND TESTING STANDARDS

- Pump designed and manufactured in accordance with ISO2858 / ISO5199
- 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

## APPLICATIONS

RCD range have been designed to meet the most demanding hydraulic coverage requirements and for all types of liquid, making it the ideal range for challenging pumping operations :

- Clean and slightly contaminated liquids
- Viscous liquids
- Fibrous slurries
- Non-fibrous slurries
- Large solids containing liquids

## MATERIAL AND CONSTRUCTION

- Pump casing & impeller:
  - Cast iron ASTM A48 CL 35 B
  - Ductile cast iron ASTM A395 60-40-18
  - Carbon steel ASTM A216 WCB
  - Chromium iron ASTM A532 IIIA
  - Austenitic stainless steel ASTM A743 CF8
  - Austenitic stainless steel ASTM A743 CF8M
  - Austenitic stainless steel AVESTA 654 SMO
  - Martensitic stainless steel ASTM A747 CB7Cu-2
  - Duplex stainless steel ASTM A890 3A
  - Duplex stainless steel ASTM A890 1B
  - Duplex stainless steel ASTM A890 5A
  - Nickel alloy ASTM A494 CW-6M
  - Titanium ASTM B367 C-3
- Shaft seal: single and double mechanical seal, gland packing and dynamic seal
- Gasket and O-ring: FKM, EPDM, PTFE

Other corrosion resistant material available on request.

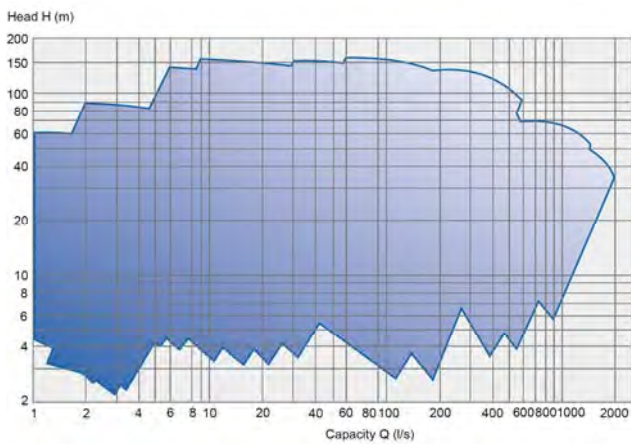
The pump is driven by a standard IEC foot mount motor or diesel engine. The power is transmitted through a standard or spacer coupling.

The baseplate is fabricated from steel, drill and tap bases, secure pump and motor to base, made more rigid and pre-alignment before delivery. T-frame baseplates also available on request.

# RCD Series, ISO 2858 - ISO5199 Pumps

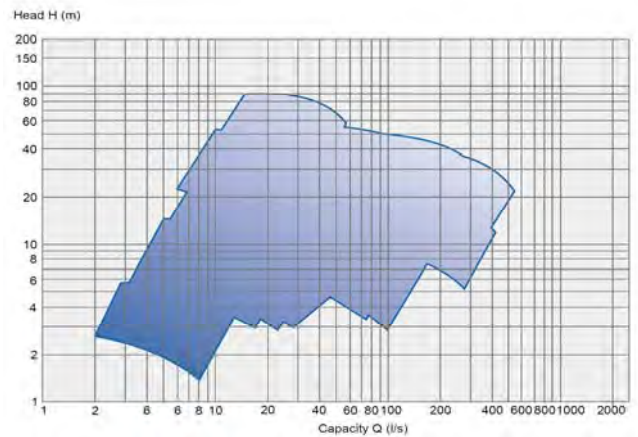
## A Performance

Head up to 160 m [525 ft]  
Capacity up to 2,500 l/s [40,000 USgpm]  
Temperature max. 180 °C [355 °F]  
Frequency 50 or 60 Hz  
Pressure up to 1.6/2.5 MPa [230/360 psi],  
depending on material and size.  
Closed, low flow, open, special open, low pulse  
high efficiency and vortex impellers.



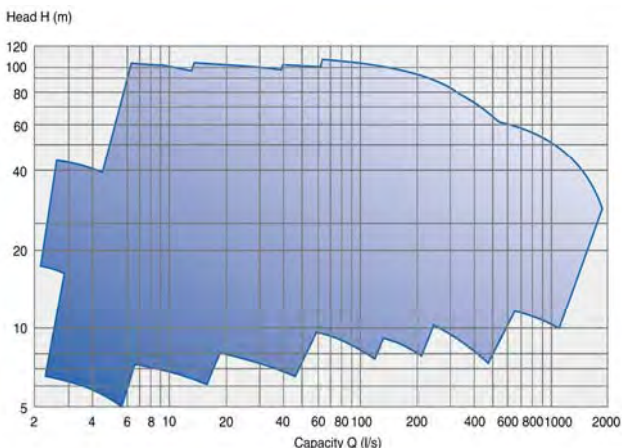
## N Performance

Head up to 90 m [295 ft]  
Capacity up to 550 l/s [8,700 USgpm]  
Temperature max. 180 °C [355 °F]  
Frequency 50 or 60 Hz  
Pressure up to 1.6 MPa [230 psi],  
depending on material and size.  
Non-clogging closed and vortex impellers.



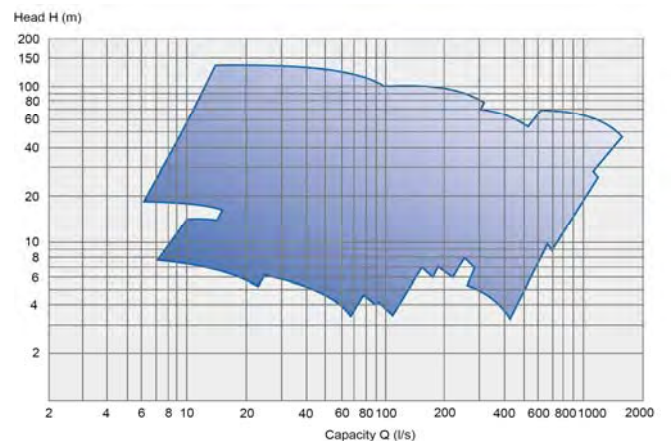
## W Performance

Head up to 110 m [360 ft]  
Capacity up to 2,000 l/s [32,000 USgpm]  
Temperature max. 180 °C [355 °F]  
Frequency 50 or 60 Hz  
Pressure up to 1.6 MPa [230 psi],  
depending on material and size.  
Wear-resistant closed, wear-resistant special open  
and wear-resistant vortex impellers.



## E Performance

Head up to 160 m [525 ft]  
Capacity up to 1,500 l/s [24,000 USgpm]  
Temperature max. 210 °C [410 °F]  
Frequency 50 or 60 Hz  
Pressure up to 1.6/2.5 MPa [230/360 psi],  
depending on material and size.  
High efficiency closed, open and  
specially open impellers



## DESIGN FEATURES AND BENEFITS

- 1 Reliable and efficient impellers to reduce life cycle costs, energy consumption, operation time and downtime. Improved efficiency and NPSHr by verified hydraulic design of impellers.

### Impeller Options



Closed Impeller



Open Impeller



Low Pulse Impeller

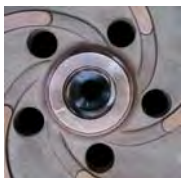


Non Clog Impeller



Vortex Impeller

- 2 Special oblique designed balancing holes to ensure efficient liquid circulation behind the impeller and in the seal chamber. Guarantee optimum shaft seal performance by reducing unexpected shutdowns and minimizing operation and maintenance costs.
- 3 Robust, reliable impeller mounting enables fast and simple dismantling and reassembly to help minimize maintenance costs.
- 4 Externally adjustable side plate allows fast and simple impeller clearance setting, thereby minimizing life cycle costs and ensuring continued high efficiency.



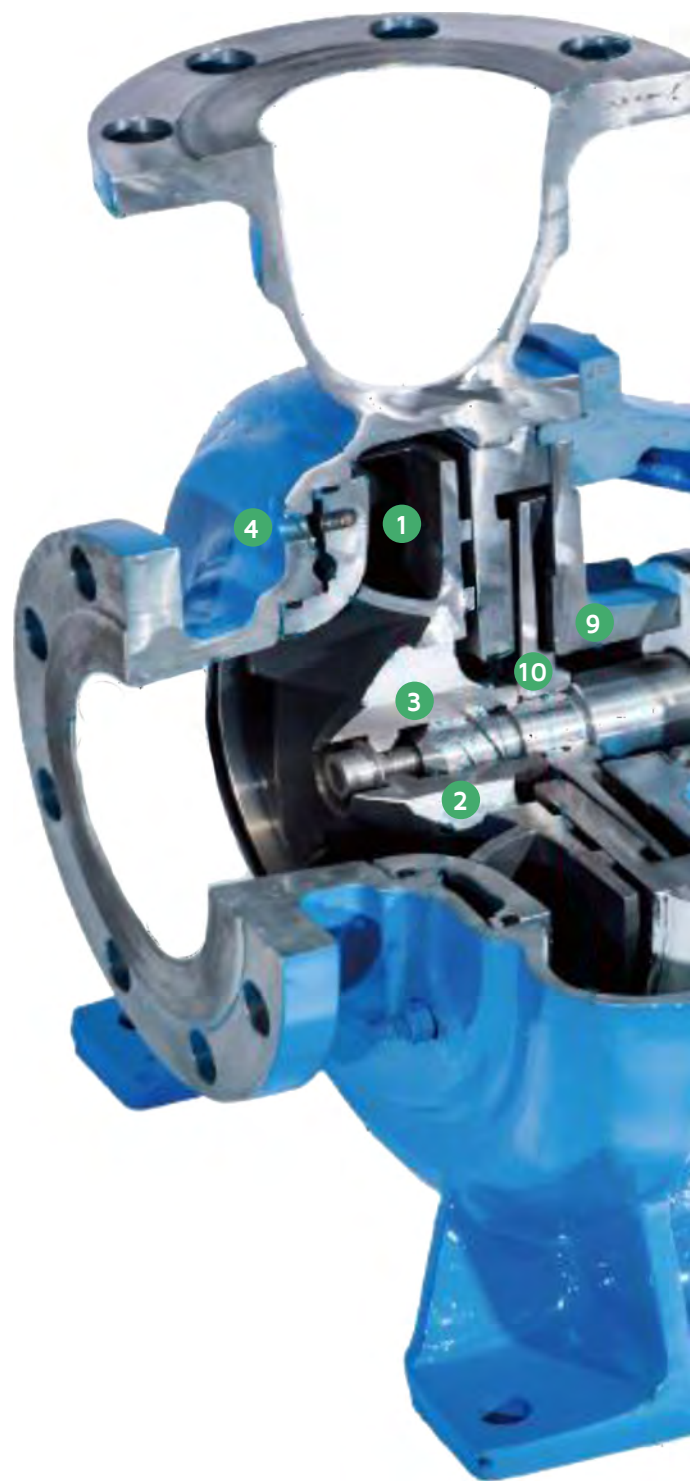
Balancing Holes



Impeller Mounting Screw



Externally adjustable side plate



# RCD Series, ISO 2858 - ISO5199 Pumps

**5** Heavy-duty shaft. Reduces deflection at stuffing box to <math><0.05\text{ mm}</math> / 0.002 in. Helps extend shaft seal lifecycle and reduces unexpected shutdowns and maintenance costs.

**6** A robust bearing bracket ensures only minor deflection on the shaft and a long working life for the bearings and the mechanical seal.

Back pull out design facilitates fast and easy to maintain without any special tool.

**7** Reliable, simplified, heavy-duty bearing unit minimizes unexpected shutdowns and reduces maintenance costs.

**8** Innovative, non-contacting bearing isolators at the both ends of the bearing house have three elements: deflector, lip seal and labyrinth. This triple bearing protection prevents lubricant leaks from the bearing house and keeps contaminants out. Because the lip seal does not contact the shaft when pump is rotating there is no wear.

**9** The RCD ranges can be fitted with the degassing units to start the pump with the inlet pipe empty, or to help the pump operate with liquid containing high gas content, where the normal centrifugal pumps fail to pump. Innovative and reliable integrated degassing and self-priming units for a variety of applications with difficult liquids. Designed to help the pump start quickly when the liquid level is below the pump in self-priming applications.

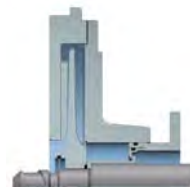
**10** A variety of standard and customized seals can be configured, depending on the fluids being transported, the safety requirements and applications help minimize downtime costs by reducing operation costs and unexpected shutdowns. Such as gland packing, single and double mechanical seal and dynamic seal.



Gland Packing



Single and Double Mechanical Seal



Dynamic Seal



Degassing Unit

# ROTAMAC

- 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