

ROTAMAC

ROTAMAC REP

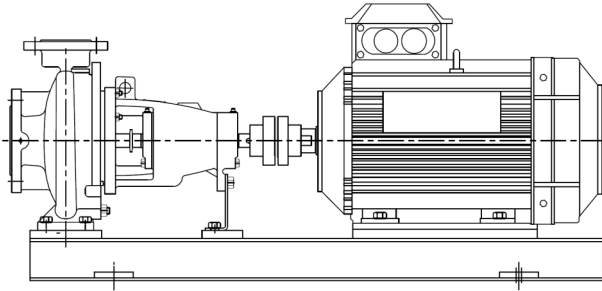
Centrifugal pumps according to EN733 (DIN24255)



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INTRODUCTION

This data booklet deals with REP model, horizontal centrifugal end suction pumps.



Single-stage horizontal shaft pumps with main dimensions and characteristics conforming to EN733 (DIN 24255) standards.

- Pump casing: volute type with flanged.
- Impeller: high efficiency closed type with balanced axial thrust. Available in either cast iron bronze or stainless steel (304 / 316).
- Shaft and supports: the AISI 420 stainless steel shaft is guided and supported by two ball bearings housed in the connecting support. 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.
- The back pull out constructional concept, connection to the motor with a flexible coupling, spacer coupling available on request. The wet end to be disassembled from the rear for inspection purposes and repairs without disconnecting the motor or the pump casing from the piping.
- Direction of rotation: clockwise viewed from drive side.

APPLICATIONS

The REP series standardized pumps have been designed for several applications, such as cooling, fire-fighting, industrial water supply, industrial uses, irrigation, medium and large heating and air conditioning systems and water supply for both civil and industrial uses.

STANDARDISED

- Pump designed and manufactured in accordance with EN733 (DIN24255)
- 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.
- Back pull out design facilitates fast and easy to assembly and disassembly without any special tool.
- Flange dimensions comply with ISO7005 PN10/PN16. The pump are also available with flanges drilled to ANSI or JIS standard.

WORKING CONDITION

- Liquid pumping temperature up to 105 deg C
- Maximum permissible pressure: 16 bar G, according to material of pump
- Flow rate: 3.3 to 1425 m³/h
- TDH: 2.5 to 156 m
- Speed: 1450 / 2900 rpm for frequency 50 Hz, 1750 / 3500 rpm for frequency 60 Hz

MATERIAL AND CONSTRUCTION

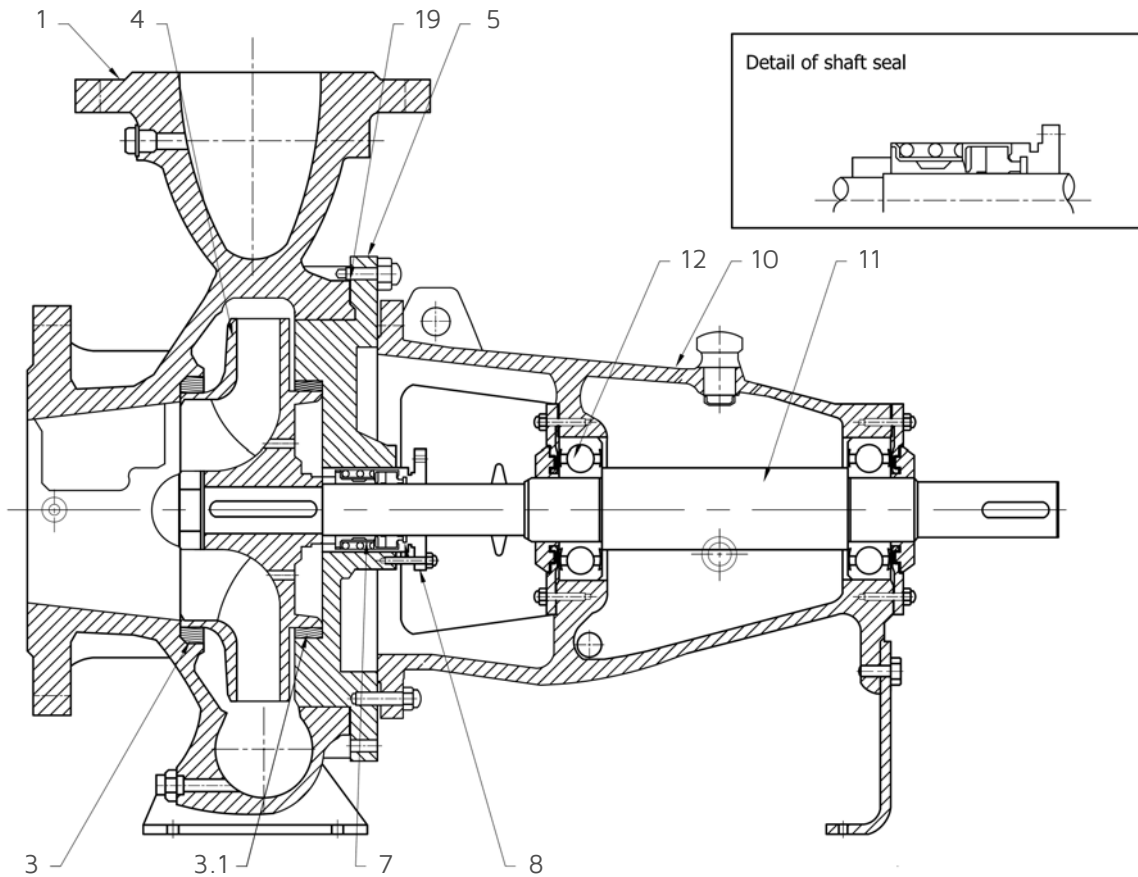
- Pump casing: cast iron / ductile cast iron / stainless steel 304 / stainless steel 316
- Impeller: cast iron / bronze / stainless steel 304 / stainless steel 316
- Shaft: stainless steel 420 / stainless steel 304 / stainless steel 316
- Shaft seal: single mechanical seal, packing seal
- Lubrication: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



| Item no. | Part name | Materials / Construction |
|----------|-----------------|---------------------------------------------------------------------------------------|
| 1 | Casing | cast iron, ductile cast iron, stainless steel 304 / 316 |
| 3 | Front wearing | cast iron, stainless steel 304 / 316 |
| 3.1 | Back wearing | cast iron, stainless steel 304 / 316 |
| 4 | Impeller | cast iron, bronze (65% copper), aluminum bronze, stainless steel 304 / 316 |
| 5 | Casing cover | cast iron, ductile cast iron, stainless steel 304 / 316 |
| 7 | Shaft sealing | single mechanical seal, packing seal (special versions can be supplied on request) |
| 8 | Seal cover | cast iron, stainless steel 304 / 316 |
| 10 | Bearing housing | cast iron |
| 11 | Shaft | stainless steel 420 / 304 / 316 |
| 12 | Bearing | single row ball |
| 19 | Casing gasket | fiber, PTFE |

REP Series, End Suction Centrifugal Pumps

PRESSURE / TEMPERATURE RATING

Casing design pressure:

- cast iron material: 10 barG
- ductile casing iron material: 16 barG
- stainless steel material: 16 barG

Hydrostatic test pressure:

1.5 times of design pressure, holding time at least 5 minutes

- cast iron material: 15 barG
- ductile casing iron material: 24 barG
- stainless steel material: 24 barG

Limits of pump suction pressure: max. 4 barG

Casing design temperature: 120 deg C

Limits of maximum pumping temperature:

- grease seal bearing: max. 85 deg C
- standard mechanical seal / packing seal: max. 105 deg C

Special versions for high temperature services can be supplied on request.

PUMP SELECTION

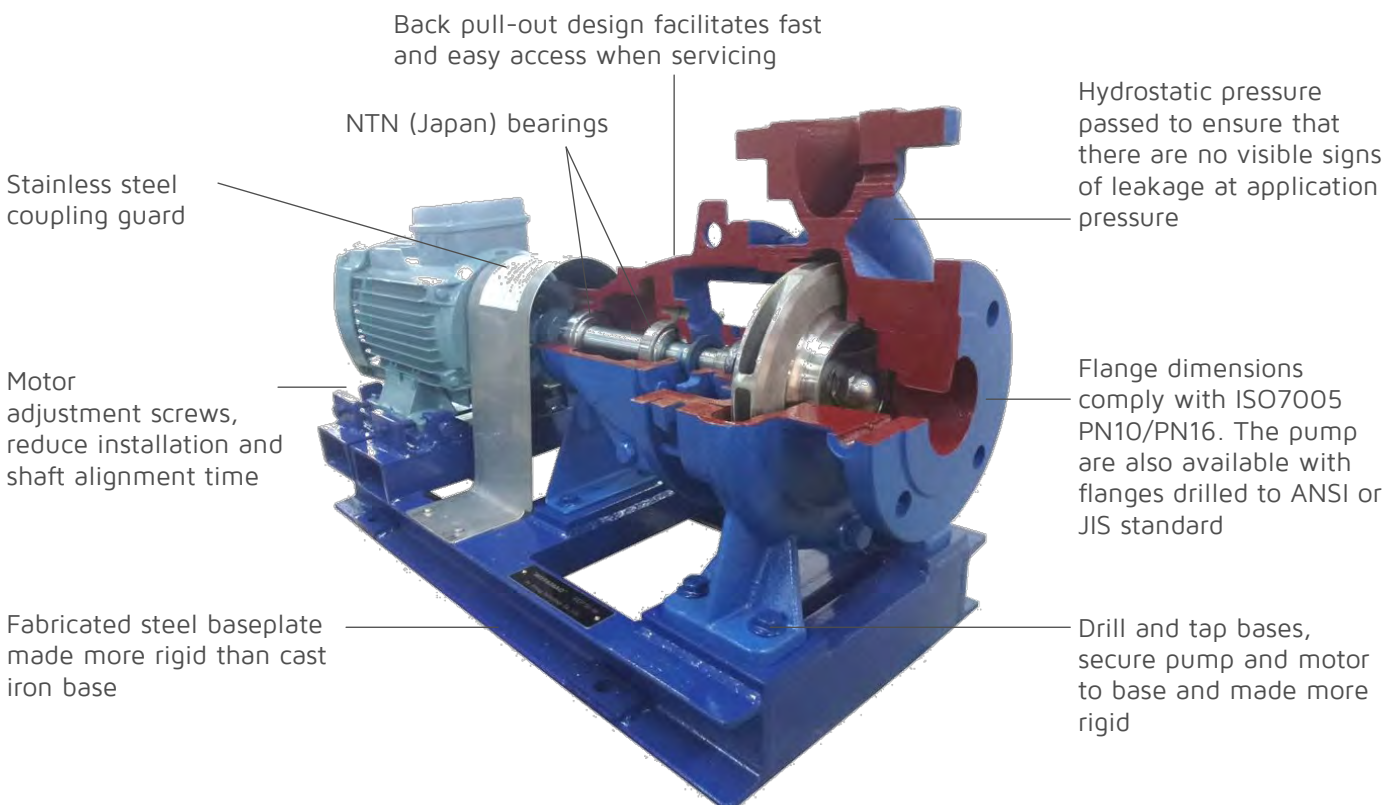
For pump selection the hydraulic performance curves should be used. These curves are based on water at 15 deg C, SG equal to 1.0 and viscosity equal to 1.0 cP

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 or internal flow recirculation. Please consult us with operation details if the pump cannot be operated in the preferred operating region.

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% |

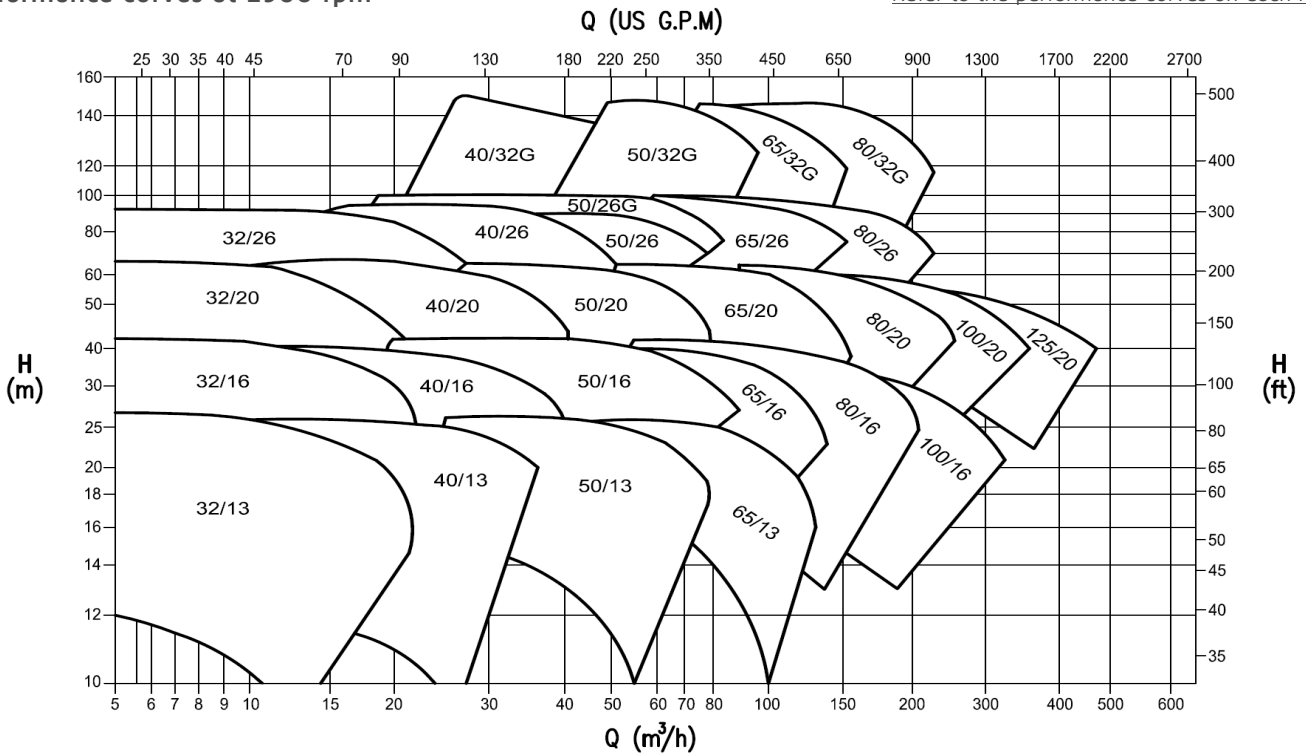
THE COMPLETE MOUNTED PUMP UNIT WITH BASEPLATE, COUPLING AND MOTOR



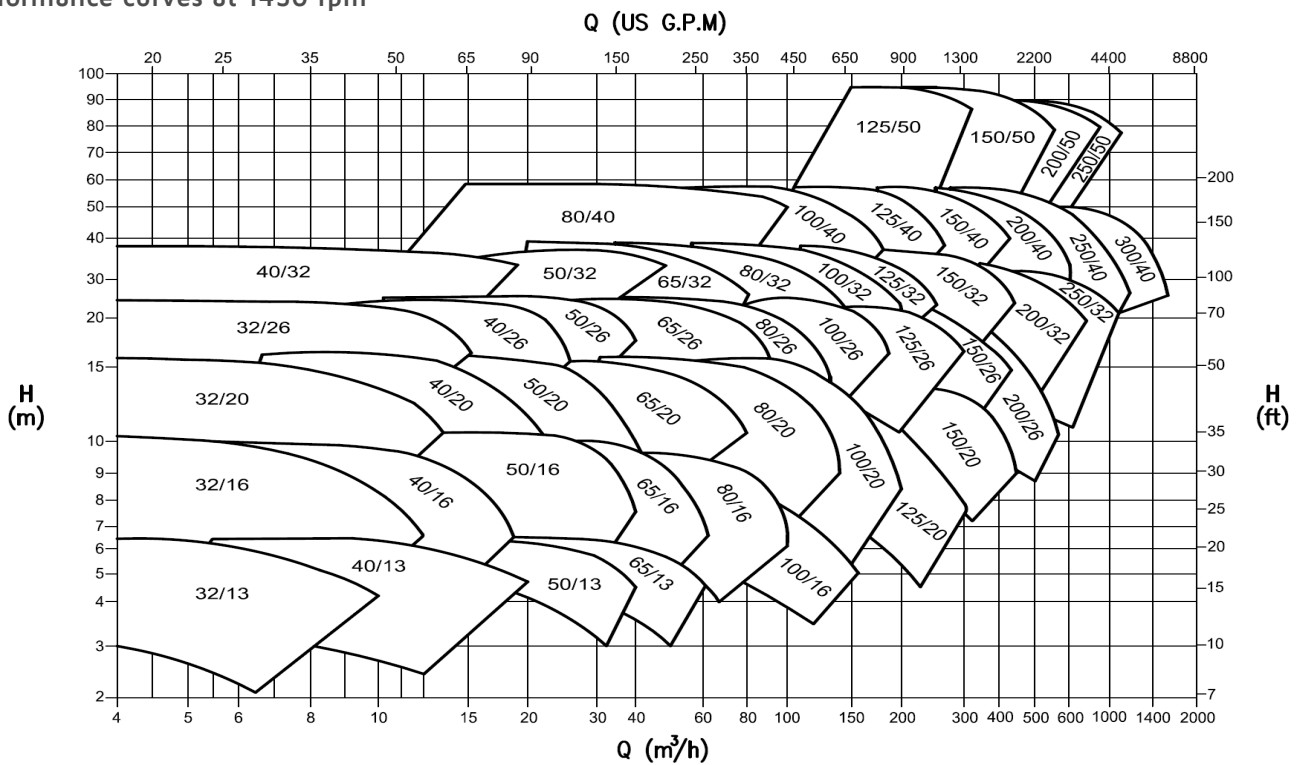
Selection Charts

Performance curves at 2900 rpm

Curves on this page are for guidance only.
Refer to the performance curves on each model.



Performance curves at 1450 rpm



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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