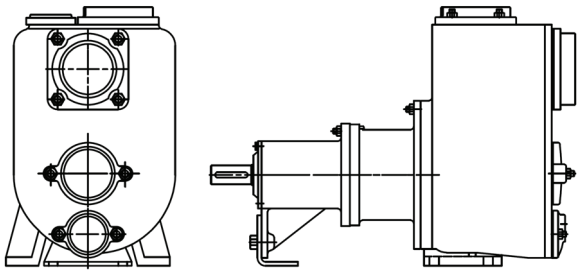
ROTAMAC

ROTAMAC RPE , RPEC
Self-Priming Centrifugal Pumps

ROTAMAC

INTRODUCTION

This data booklet deals with RPE/RPEC model, horizontal self-priming end suction centrifugal pumps for general industries.



The RPE is cast iron centrifugal pump, single stage, tangent discharge. Rapid self-priming without foot valve. Once filled with water, the pump is automatically primed.

Certain sizes of the RPE are available in a close coupled configuration, RPEC which saves space, requires less maintenance and needs no alignment.

SELF-PRIMING PRINCIPLE

The air is drawn into the pump due to the negative pressure created by the moving impeller and is emulsified with the liquid contained in the pump casing. The air-liquid emulsion is forced into the priming chamber where the lighter air is separated and leaves through the discharge pipe; the heavier liquid drops back down into circulation. Once all of the air has been expelled from the suction pipe, the pump is primed and works like a normal centrifugal pump. The pump can also work with an air-liquid mixture.

The non-return valve has a dual function: it prevents the suction pipe from emptying when the pump is off; in the event of accidental emptying of the suction pipe, this holds a sufficient amount of liquid in the pump casing to prime the pump. The discharge pipe must be free to expel the air coming from the suction pipe.

APPLICATIONS

The RPE/RPEC self-priming pumps have been designed for several applications, such as irrigation, dewatering, wastewater treatment, water circulating, clean or dirty liquid contain air, be abrasive and compatible with cast iron.

STANDARDISED

- 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, below 10kW acc. to paragraph 4.4.2

ADVANTAGES

- Automatically self-primed up to the physical limit of 7 meters, depend on pump size, running speed and working conditions.
- Improved efficiency and low NPSHr.
- Low vibration levels and excellent smooth running characteristics.
- Semi-open/Open impeller allowing the passage of wide solid bodies and easy inspection.
- The wear plate is easily replaceable.
- Axial mechanical seal lubricated from the outside (oil chamber), no leaks or infiltration of air along the shaft.

WORKING CONDITION

- Liquid pumping temperature: up to 80 °C
- Maximum permissible pressure: up to 6 barg
- Flow rate: up to 460 m3/h
- TDH: up to 55 m
- Frequency 50/60 Hz

MATERIAL AND CONSTRUCTION

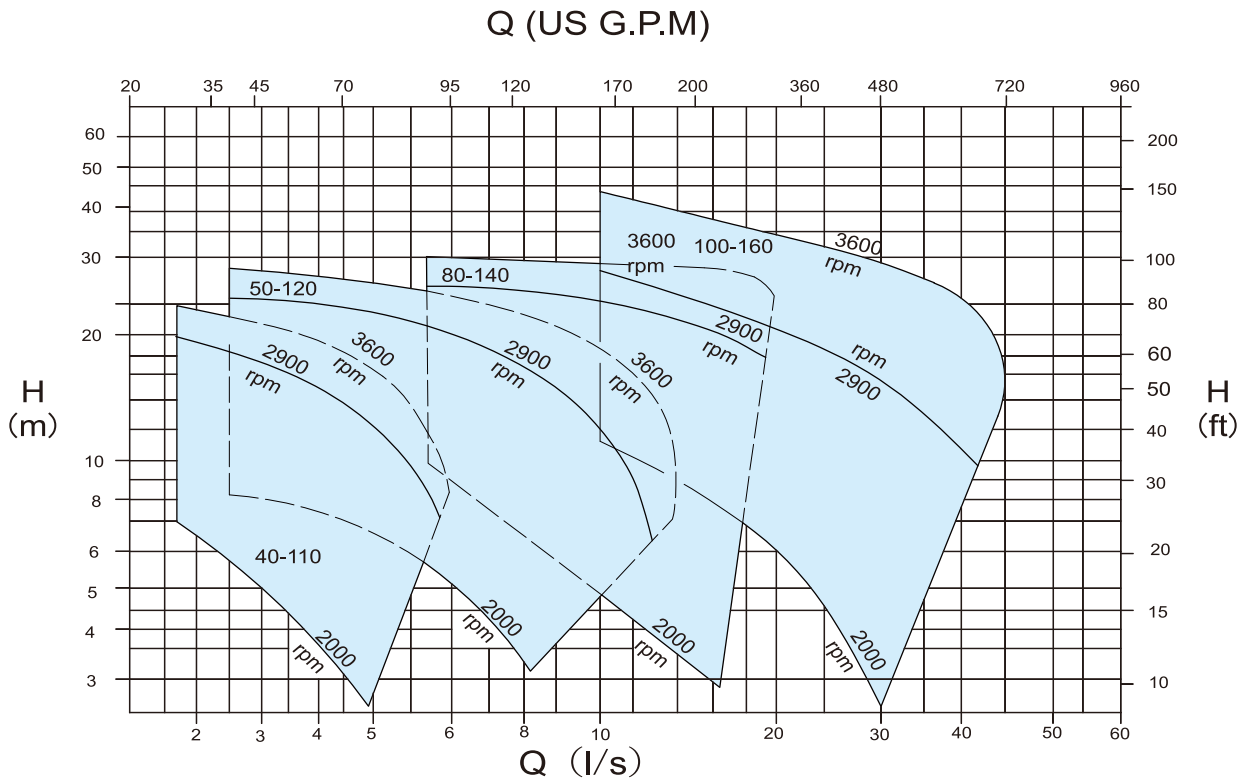
- Pump casing: cast iron, ductile iron
- Impeller and wear plate: ductile iron, bronze, stainless steel 304 or 316
- Shaft: carbon steel ASTM 1045, stainless steel 420, 304 or 316,
- Shaft seal: single mechanical seal
- Lubrication: grease
- Nozzles: RP screw thread for DN40 to DN100, flange for DN150 to 200

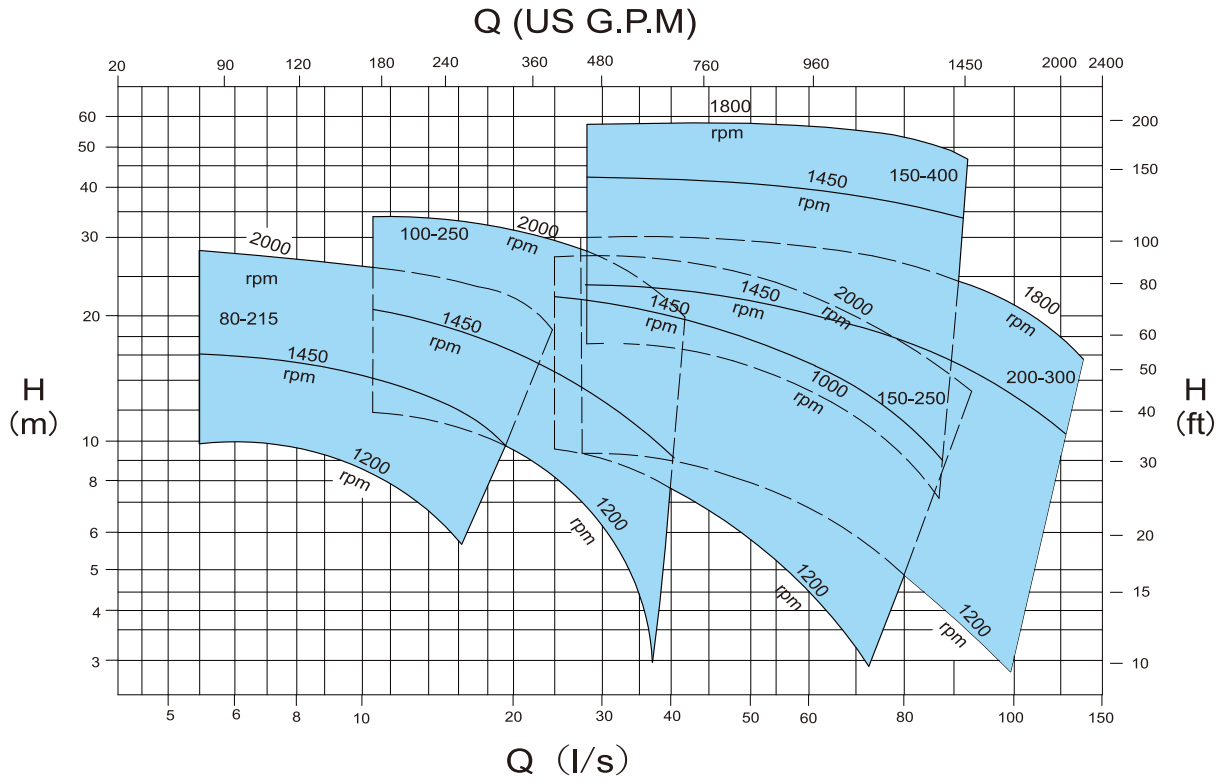
The pump is driven by a standard IEC foot mount motor or diesel engine. The power is transmitted through a standard or spacer coupling and close coupled configuration for RPEC.

The baseplate is fabricated from steel, drill and tap bases, secure pump and motor to base, made more rigid and pre-alignment before delivery.

Selection Charts

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

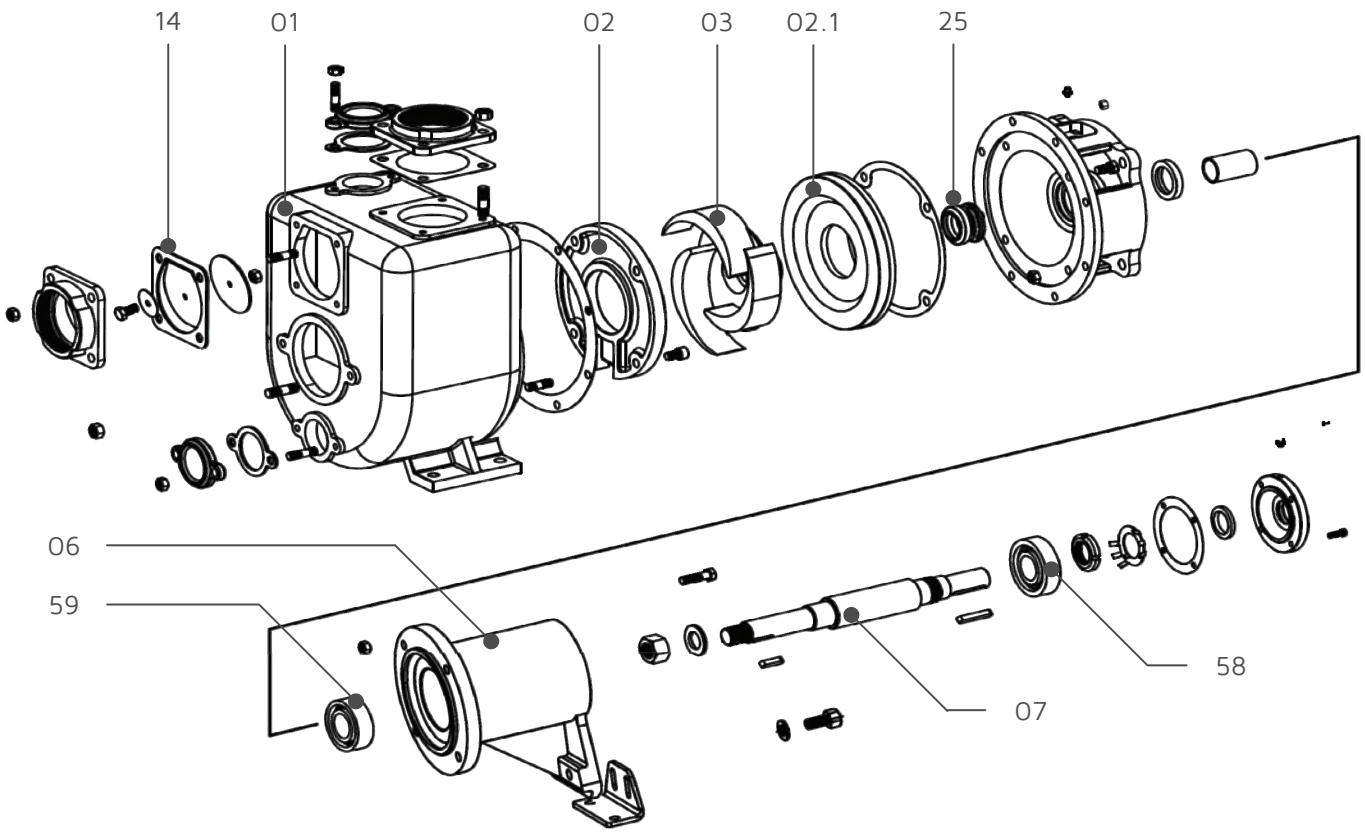




ROTAMAC

PUMP SECTIONAL DRAWING AND PARTS LIST : RPE LONG COUPLED

Pump construction is a little different depending on size



Available in a close coupled configuration - RPEC
for pump size up to 4"

Item no.	Part name	Materials / Construction
01	Casing	Cast iron, Ductile iron
02	Front Wear Plate	Ductile iron, Bronze, Stainless steel 304 or 316
02.1	Back Wear Plate	Ductile iron, Bronze, Stainless steel 304 or 316
03	Impeller	Ductile iron, Bronze, Stainless steel 304 or 316
06	Bearing Frame	Cast iron
07	Shaft	Carbon steel ASTM 1045, Stainless steel 420, 304 or 316
14	Check Valve Set	Natural rubber with metal plates
25	Mechanical Seal	Single mechanical seal
58, 59	Pump Bearing	Single row ball bearing

RPE / RPEC Series, Self-Priming Pumps

Economical Operation
Reliable, Simple and Easy To Maintain

CLOSE COUPLED SELF-PRIMING PUMPS

RPEC Series close coupled self-priming centrifugal pumps are designed solely for applications in medium duty service, in wastewater treatment, water circulating, clean or dirty liquid contain air.

Enables an easy and quick dismantling, assembly and installation. Saves space, requires less maintenance and needs no alignment.

- Capacities to 145 m3/hr
- Heads to 40 m
- Small flange IEC motors up to 7.5 KW
- 7 sizes (all ROTAMAC RPE Series DN40 to DN100
- Available for mounting on stainless steel baseplates
- Lightweight/space efficient design

PORTABLE ENGINE DRIVEN PUMPS

Whether bypassing a pump station during repair, keeping critical services operational at a plant, or helping a construction crew finish on time,

ROTAMAC RPE Series portable engine-driven pumps keep the liquid flowing. They are designed to reprime automatically in a completely open system - without a need for suction check valves. Additionally, there is no need for add-on vacuum pumps or compressors, which add to owner maintenance and increase the potential for costly repairs.

SOLIDS-HANDLING IMPELLER AND REMOVABLE WEARPLATE

Semi-open and open impeller allowing the passage of wide solid bodies and easy inspection. Ductile iron, bronze or 304/316 stainless steel impeller handling large diameter spherical solids. The wear plate is easily replaceable and resistance to abrasive liquids.

The parts subject to wear can be easily replaced, restoring the original performance of the pump.

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

436 Soi On-Nuch 39, Sukhumvit Rd.,
Suanluang, Bangkok 10250 - Thailand

T : +66 2721 3860
F : +66 2721 3869
E : sales@energytechnology.co.th
www.energytechnology.co.th

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

Installation

Commissioning

Laser alignment

Inspection

Overhaul

Testing

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

Product information is subject to change; consult factory for details.