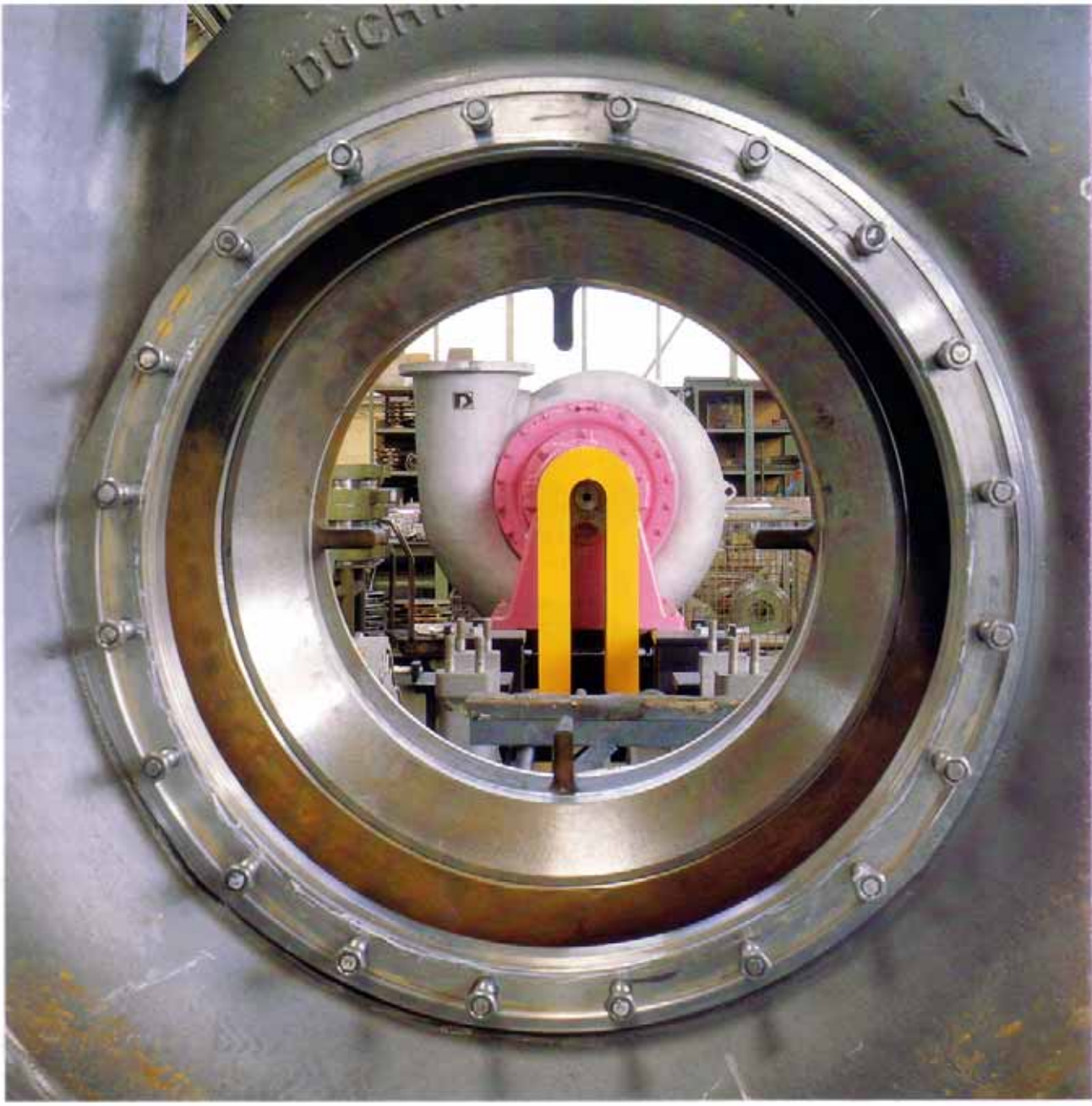
DÜCHTING PUMPEN

Non-clogging Pumps

ROWA Series



Application
in a Flue Gas Desulfurizing Plant

DÜCHTING Non-Clogging Pumps of the ROWA series are especially suitable for feeding suspensions of medium to high concentration. They can be used wherever intensive abrasive or abrasive-corrosive conditions exist, such as, for example:

Field of application:

Flue gas desulphurization plants	(lime/plaster suspensions etc.)
Coal and ore mining	(wash water/pulps)
Iron and steel works,	(descaling water, waste water from
Rolling mills	dedusting plants)
Foundries	(waste water, slurry)
Aluminium industry	(aluminate lyes)
Cleaning plants for	
heat exchangers	(water with rubber sponge balls)
Building industry	(cement-water mix)
Potassium industry	(potassium lyes/salt grained sludge)
Refuse incineration plants	
Sewage installations	(industrial salt pulp mixtures, storm water)

Construction:

The pump of the ROWA series is a horizontal, radial split centrifugal pump, single-stage, single-stream, with a closed, multiple-vane non-clogging impeller. The suction branch is arranged axially, the pressure branch vertically upwards (up to DN 250) or tangentially upwards (above DN 300).

- Process construction, i.e. rotor can be pulled to the driving end, while the volute casing remains connected to the piping.
- no additional alignment required.

Wearplate in front of and behind the impeller. To protect the casing, the wearplate on the inlet has been extensively drawn forward. 'Inclined gap' resulting in less abrasion, and longer service life.

Adjustable wearplate on the inlet side (up to model 250) mainly for suspensions charged with solid matter or, depending on the respective application, wearplate on the inlet side without adjustment facility with radial gap. Adjustment facility of the complete rotor (above model 300).

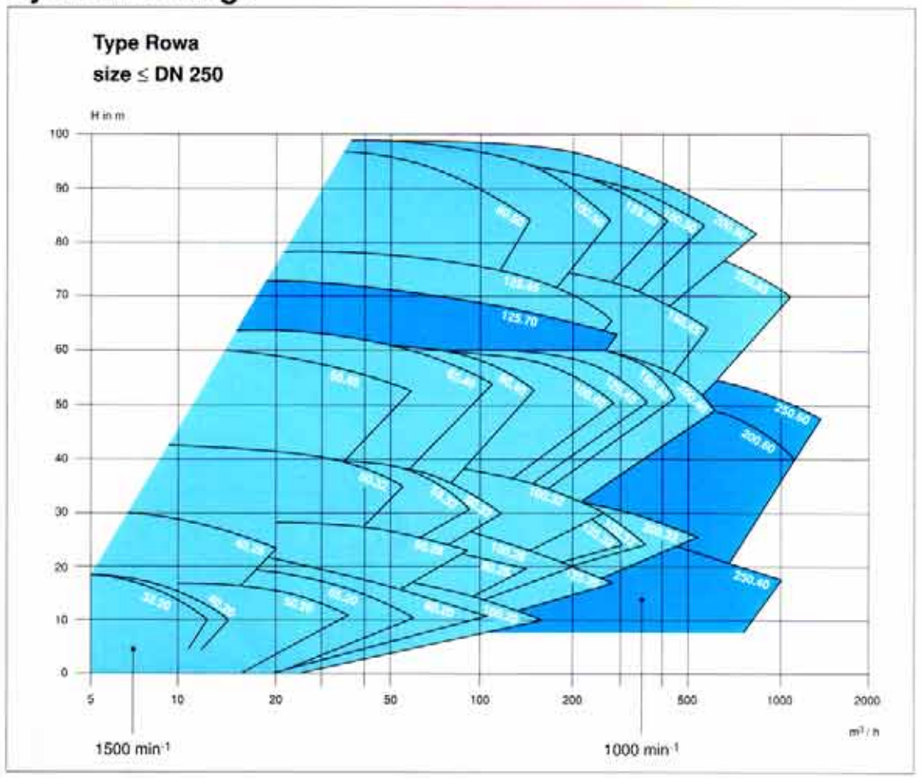
Arrangement of bearings in generously dimensioned antifriction bearings (up to model 250) in one bearing housing or heavy bearing pedestal with bearing drum (above model 300). Assembly slide blocks to facilitate moving the bearing pedestal in and out are available.

The axial thrust compensation is made partly via impeller back vanes, the remaining thrust absorbtion is made via the bearing arrangement.

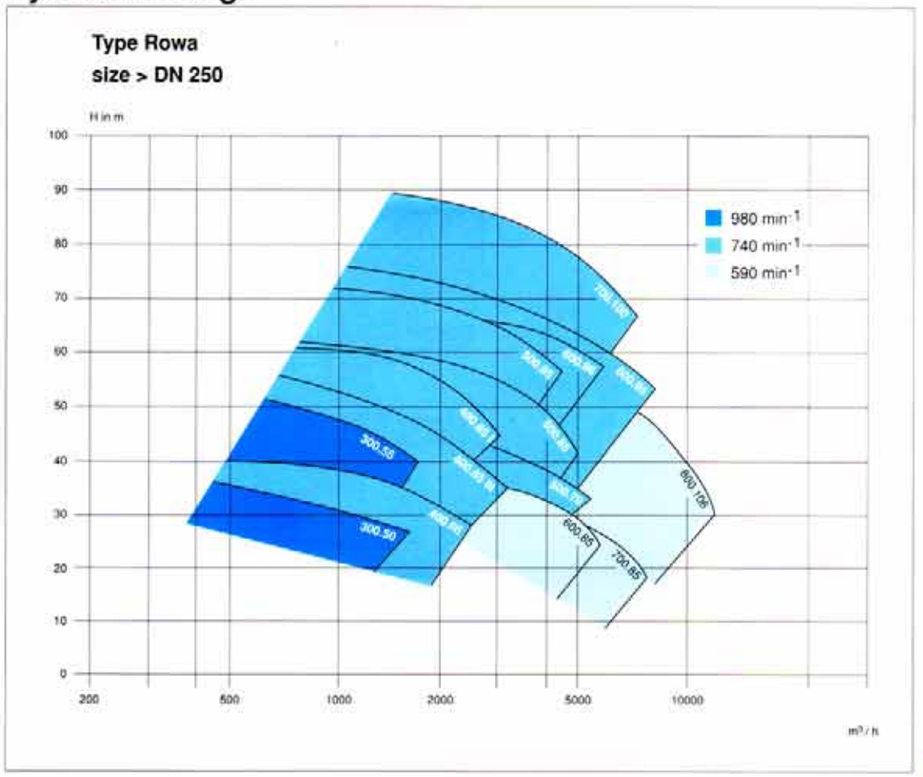
Shaft seals:

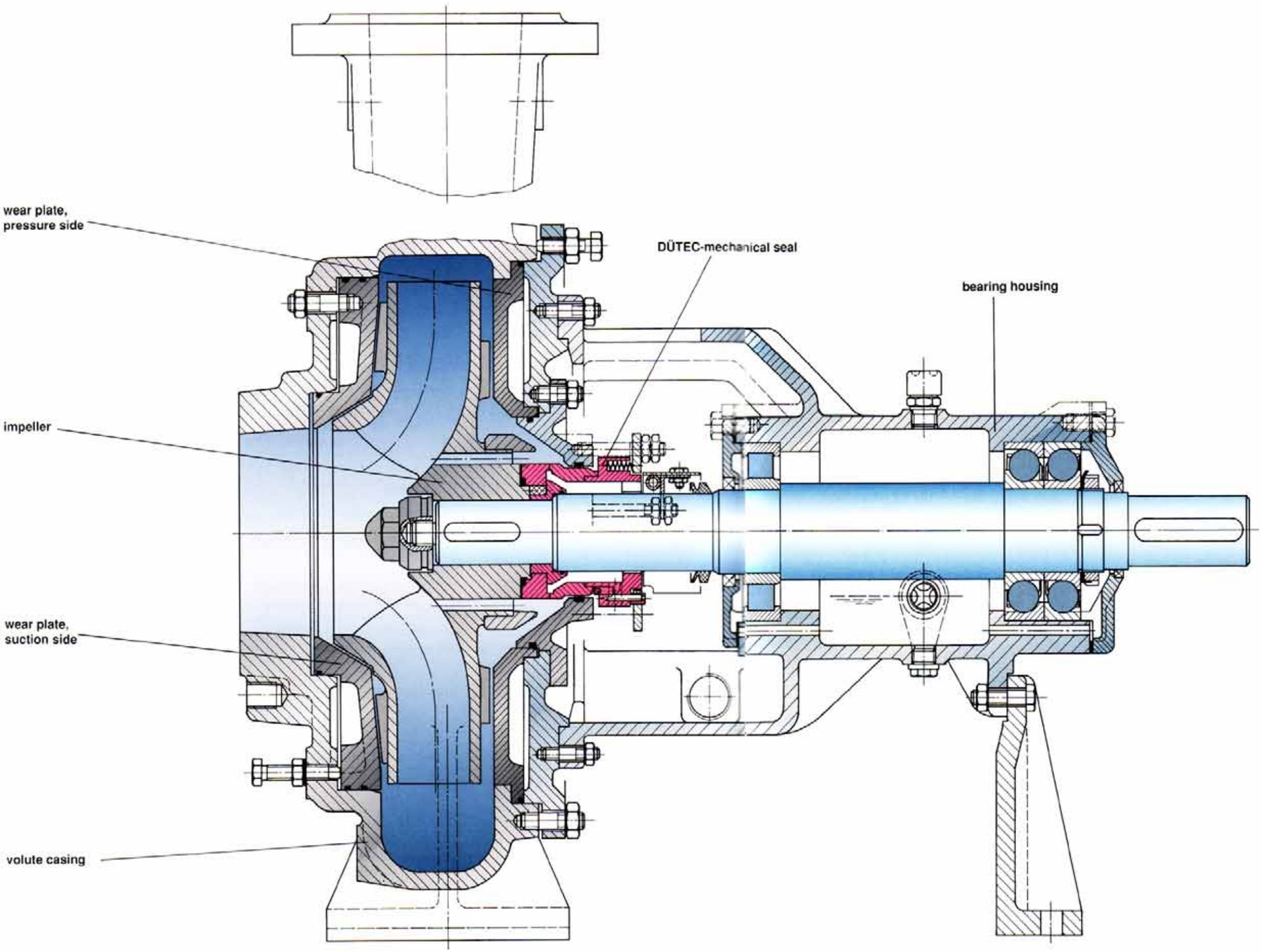
Our ROWA Pumps are epuipped with single-acting, medium-flushed mechanical seals, type DÜTEC as standard. This mechanical seal made by Düchting has been specially designed and optimized for use in ROWA Pumps.
On request, it is of course also possible to install other makes of mechanical seals, single- or double-acting or to achieve sealing by stuffing box packings.

Hydraulic Range



Hydraulic Range





ROWA - Size ≤ DN 250

Materials:

Today more attention is being paid to the materials used in components, e.g. pumps, since it is no longer sufficient to select the material which is merely adequate for the task. To improve the durability of the machines or machine components, materials are also continuously being optimized. The construction and hydrodynamics of our ROWA Non-Clogging Pumps and the use of special materials guarantee a long service life and availabililty to the pump user.

Metallic materials 1.4517 and 1.4464

In more than a decade of experience with ROWA Pumps in flue gas desulphurization plants, ferritic austenitic stainless steels have achieved the best results. where abrasion predominates, ferritic carbide stainless steels are of advantage. The name for these materials is DÜROHARD.

The following list shows a number of possible material combinations:

Designation	Volute casing	Impeller	Wear plate pressure side	Wear plate suction side
VDMA designation	102	230	135.1	135.2
FGD gypsum-slurry	1.4517	1.4464	1.4464	1.4464
Salt water	1.4468	1.4468	1.4468	1.4468
Sand water mix	DÜROHARD 29	DÜROHARD 29S	DÜROHARD 29S	DÜROHARD 29S
Water/sewage	GG 25	GG 25	GG 25	GG 25

Non metallic Materials

Non metallic materials which are resistant to abrasion and corrosion are being used more in the field of conveying fluid/solid matter compounds. The great advantage of these materials is their chemical resistance to almost all media, without reducing their abraison resistance as is the case of high-alloy chrome-nickel steels or nickel-base alloys.

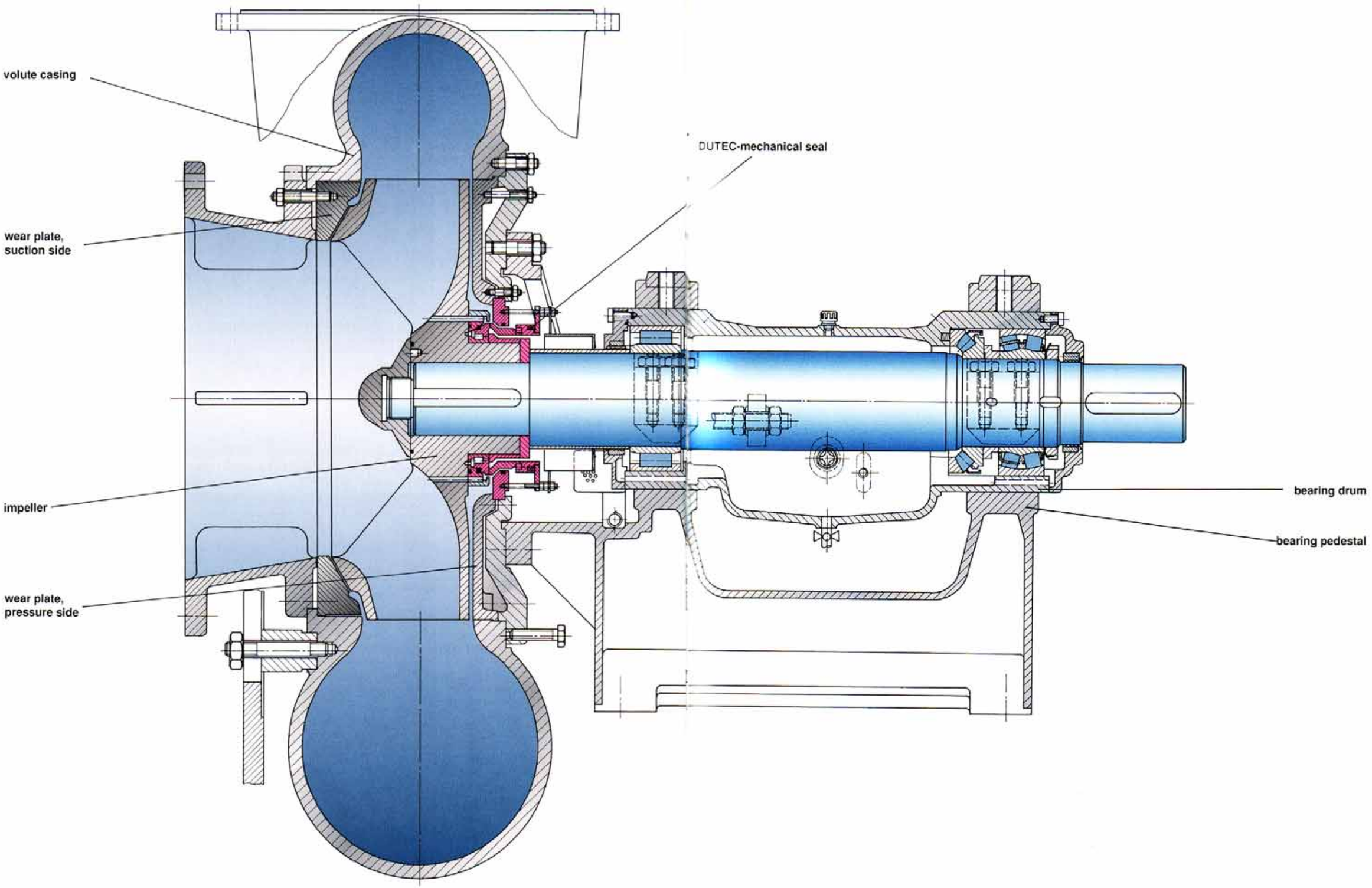
When selecting materials, questions relating to temperature stability, gas permeability, ageing stability and recyling capacity have to be answered. Düchting has found the correct answer to these questions, namely in the Mineral Casting pump, ROWA-MC.
Düchting Centrifugal Pumps of the ROWA-MC series are a further development of the well-proven, metallic series of ROWA. All pump parts which come into contact with the medium to be handled are made of the material, known here as "Mineral Casting'.

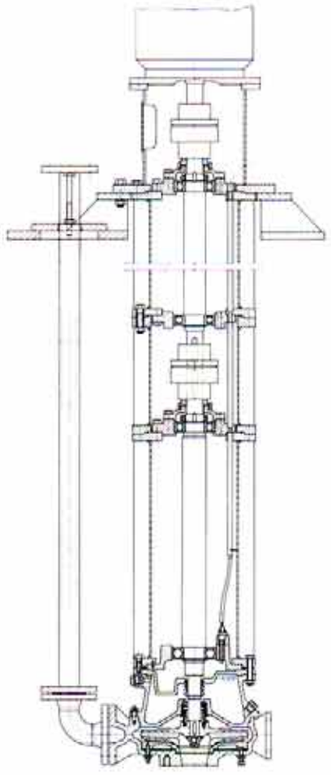
The term 'Mineral Casting' describes a high-quality material which, depending on the respective requirements, is made up of a compound of chemical resistant and temperature. Stable reaction resin with minerals like silicon corbide, silica sand or ceramics, mixed under vacuum. By adjusting appropriate formulations practically any mixed chemical resistance can be achieved combined with high abrasion resistance.

Further information is available in our brochure: Mineral Casting Pump ROWA-MC Series.

ROWA-E 80.40
Handling gypsum-slurry in a flue gas desulfurization plant

ROWA 800.106
An absorber-recirculating pump installed in a flue gas desulfurization plant


volute casing
wear plate, suction side
impeller
wear plate, pressure side
DUTEC-mechanical seal
bearing drum
bearing pedestal

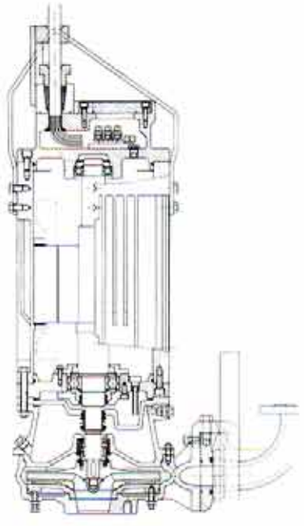


Important supplements to our horizontal non-clogging pumps:

Vertical submersible pump, ROWA-UVL Series

Submersible motor-driven pump, ROWA-UV Series

Common constructional design: Non-clogging pump from the well-proven ROWA Range,
i.e. closed impeller, balancing blades on both sides, exchangeable, adjustable wear plate with slanted opening on the inlet side.
Well-proven mechanical seal system: e.g. for the product, carbon silicide for the motor cast chromium/carbon.
Amply dimensioned oil filling between the mechanical seals. Maintenance-free antifriction bearings with continuous lubrication.
Accessories: On request the entire pump control assembly, i. e. float type switch and switch cabinet can be supplied.
Materials: All materials listed on p. 6 may be used for the pumps.



ROWA-UVL

Technical data

Pressure branch:		DN 32 - DN 250
capacity:	up to	800 m³/h
Head:	up to	90 m
Medium temperature:	up to	70 °C
Installation depths:	single-section shaft	from 600 to 2000 mm
	multi-section shaft	from 2000 to 8000 mm.

Intermediate bearing: **continuous lubrication and maintenance-free** drive via standard motor, direct coupling.

ROWA-UV

Technical data

Pressure branch:		DN 32 - DN 80
Capacity:	up to	110 m³/h
Head:	up to	30 m
Medium temperature:	up to	50 °C

- Drive by a medium-cooled squirrel-cage motor, insulation class F, explosion resistance possible.
- Protection of the motor by means of series connected leakage monitor system.
- Thermal engine protection plate.
- Cable entry completely tight, secured at several positions.
- Pump can be supplied in portable or stationary form with (flanged) elbow pipe with foot, traction cable and guide rails.

Mechanical Seal - DÜTEC

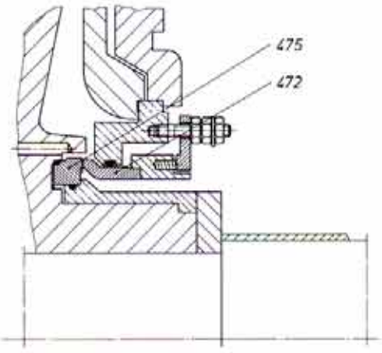
Description

This single-acting, product-lubricated mechanical seal developed by **DÜCHTING PUMPEN** has been specially designed for use in Düchting Pumps of the Rowa series.

DÜTEC Mechanical Seals achieve long running periods under severe operating conditions.

An essential feature of our DÜTEC Mechanical Seal are the pressure springs located outside of the medium-contact space. This avoids blocked pressure springs caused by sediment in the spring area, and which in the past has sometimes caused breakdowns (leakages) of mechanical seals.

Operation
The sliding ring (472) and the backing ring (475) are pressed together in a standstill condition by means of the spring resistance, and during operation additionally by means of hydraulic pressure. The sliding ring is positioned stationary in the housing lid. The backing ring, located in the impeller, rotates with the shaft. Vents have been provided in the impeller near to the mechanical seal, in order to ensure the exchange of liquid during operation.



Service

The quality of a product is the sum of all performances, and for us at DUCHTING PUMPEN this also includes. extensive and reliable after-sales service.
Our service team staff are highly qualified and can complete tasks swiftly and competently. They are in continuous contact with the service manager and pass on all findings and customer requests directly. In this way, the analysis of the problem on location together with the customer can provide important pointers to future improvements. Continuos technical training of our service staff ensures their ability to tackle any future problems which may arise.

To ensure that our centrifugal pumps meet quality assurance standards, it is necessary to subject the machines to a test run before they leave the factory. In most cases this involves documents confirming performance and an acceptance test (according to national and international standards) performed in the presence of the customer.
For this purpose and with this objective, work was carried out over many years on a concept based on the latest findings.
Following our experiance and assessment of standards and future proposals our test facility was completeley upgraded in 1990
The pipeline system of the test facility is designed for a maximum flow rate of 10000 m^3/h and a delivery pressure of 160 bar.
A variety of calibrated three phase motors up to 2000 kW output with different speeds of between 600 - 3000 rpm are available to drive the centrifugal pumps.
A wide range of turbo-machines can be tested for all acceptance and test series parameters.

The recording, evaluation, documentation and archiving of all measured values takes place centrally via a computer at the measuring station.

The test facility can also be made available to other companies for the above-mentioned possibilities.

DÜCHTING PUMPEN

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