

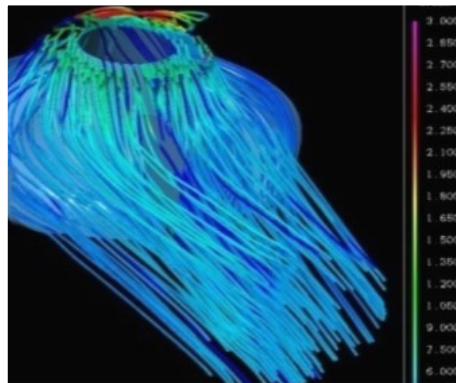
Carl Hamm

Pipes | Pumps | Solutions



MULTISTAGE PUMPS

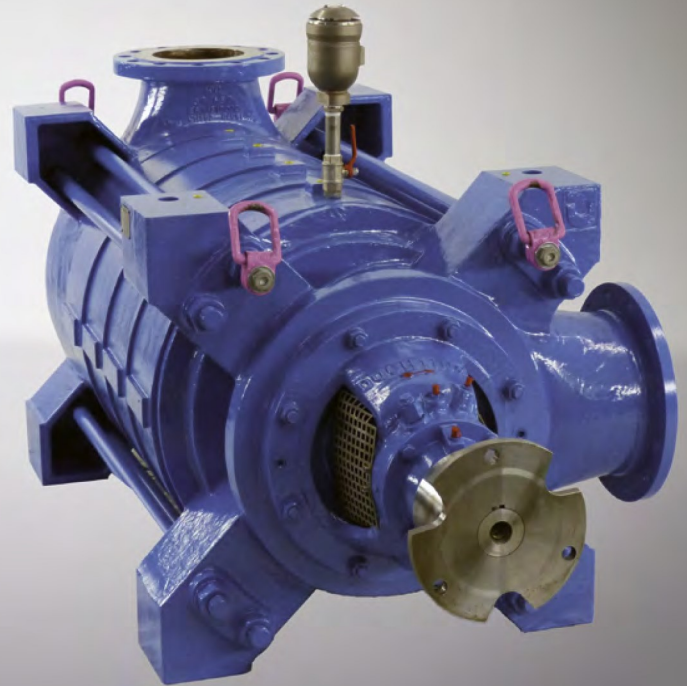
TYPE HPXL
TYPE HPXU
TYPE HPXM



Multistage pump

TYPE HPXL

Handles liquids with up to 10% solids.

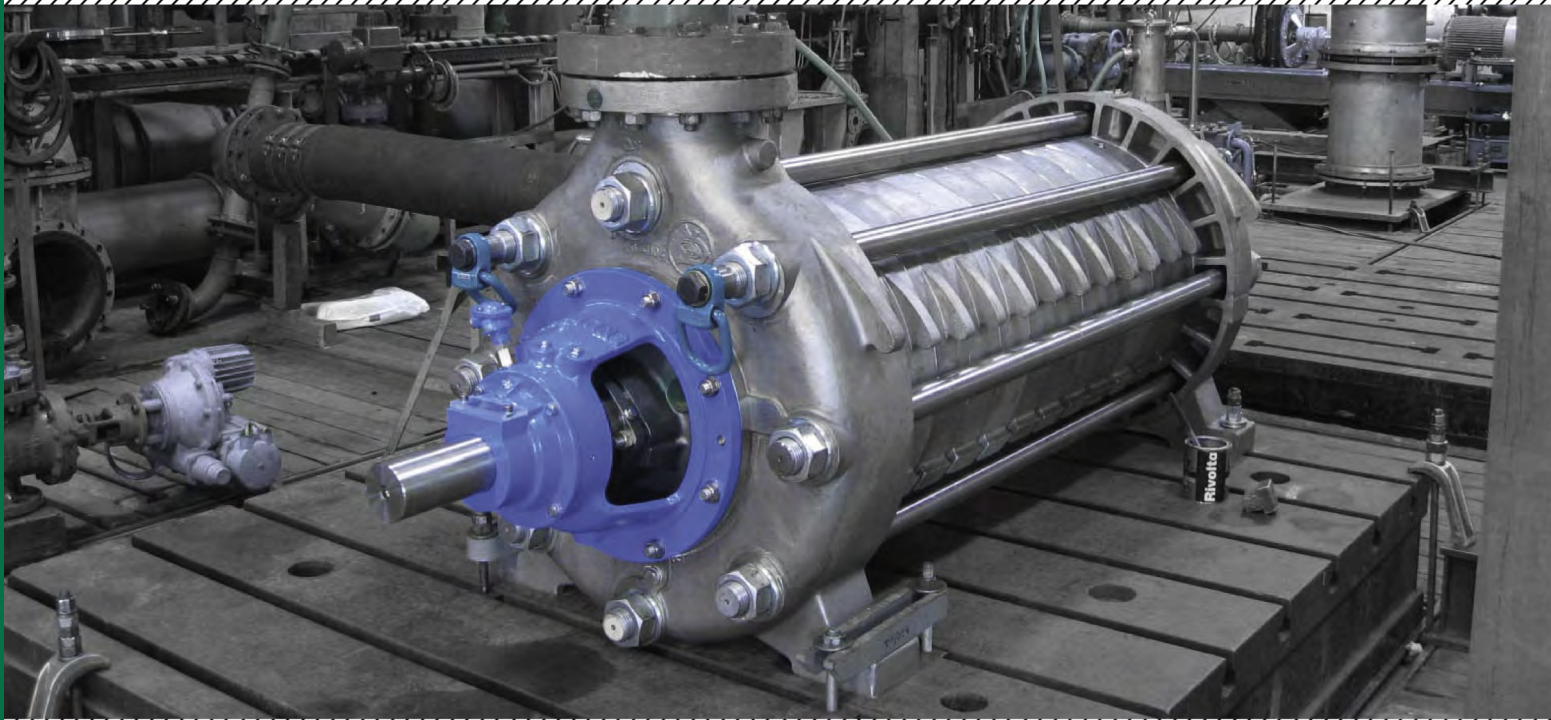


HPXL Design

Multistage centrifugal pump in ring-section design.

- Flanges positioned at 90 ° increments
- Shaft sealing by stuffing box or mechanical seal
- Axial thrust compensation by individually balanced impellers
- Designed for 4-pole speed
- Reduced life-cycle costs
- Grease or oil-lubrication anti-friction bearings available
- Tailormade solutions available:
 - Pump dimensions can be adapted to customer requirements
 - Single or double inlet suction casing available
 - Discharge flanges available on intermediate stage casings
 - Drive from one or both shaft ends possible
- Closed impeller with three-dimensionally curved blades
- Impeller fixed with fitting key





Fields of Application

Handling of contaminated, chemically neutral or aggressive liquids with up to 10% solids.

- Main water drainage in mining
- In addition to drainage and mine weather cooling in mining
- Pressure boosting systems in industrial processes
- Water supply and water treatment plants
- Condensate production
- Mineral industry
- Oil & Gas Applications

Materials

Available in almost any metal from cast iron to SUPER DUPLEX stainless steel.

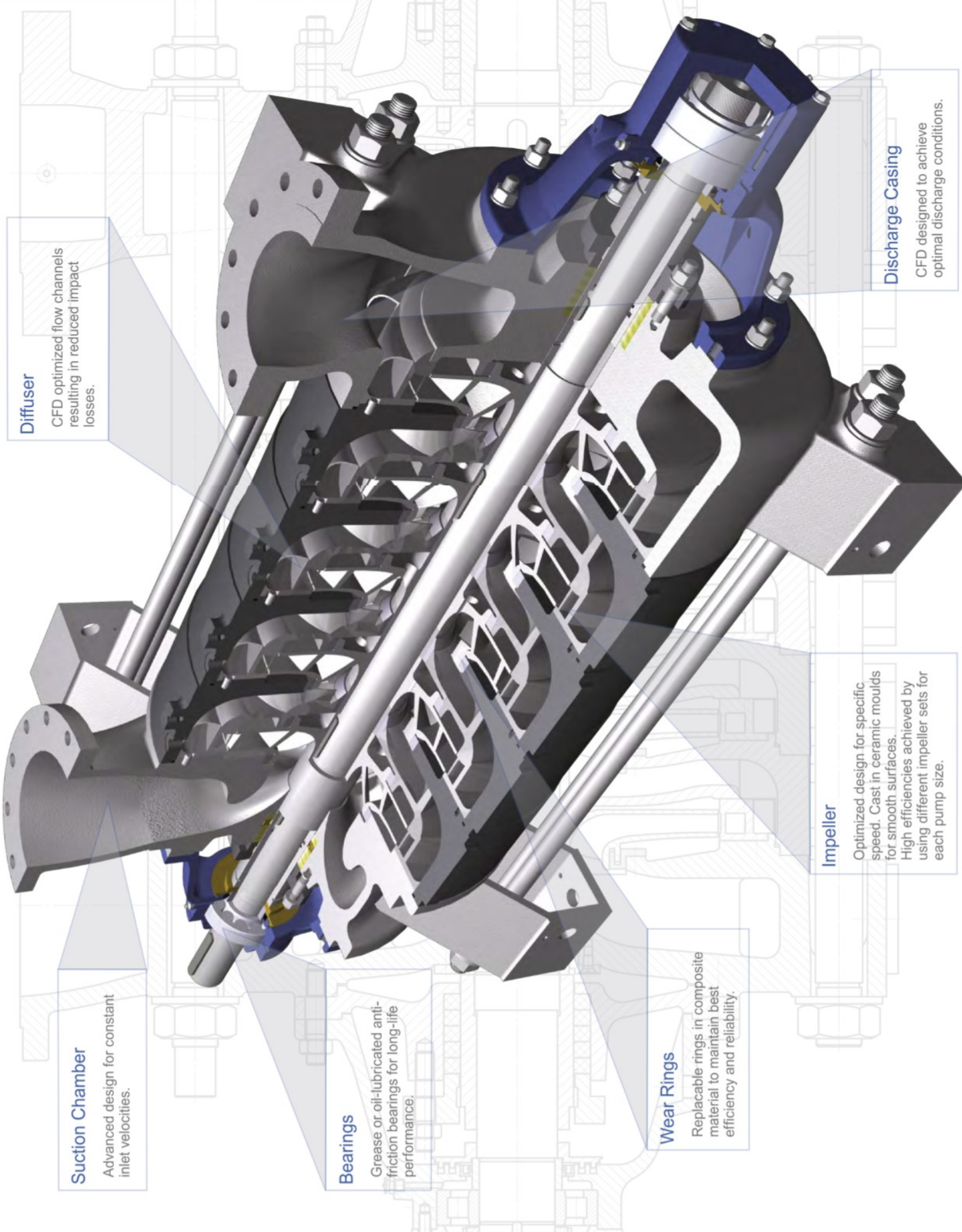
The materials are carefully selected depending on the application, the pumped medium and the combinations of materials adapted to the respective conditions of use.

Technical Data



Pump Size:	DN 32 to DN 300 (1 1/4" to 12")
max. Pressure:	40 bar (580 PSI)
max. Flow:	2500 m³/h (11000 gpm)
Total head:	up to 400 m (1300 ft)
Rotating Speed:	up to 3600 rpm





Diffuser

CFD optimized flow channels resulting in reduced impact losses.

Suction Chamber

Advanced design for constant inlet velocities.

Bearings

Grease or oil-lubricated anti-friction bearings for long-life performance.

Wear Rings

Replaceable rings in composite material to maintain best efficiency and reliability.

Impeller

Optimized design for specific speed. Cast in ceramic moulds for smooth surfaces. High efficiencies achieved by using different impeller sets for each pump size.

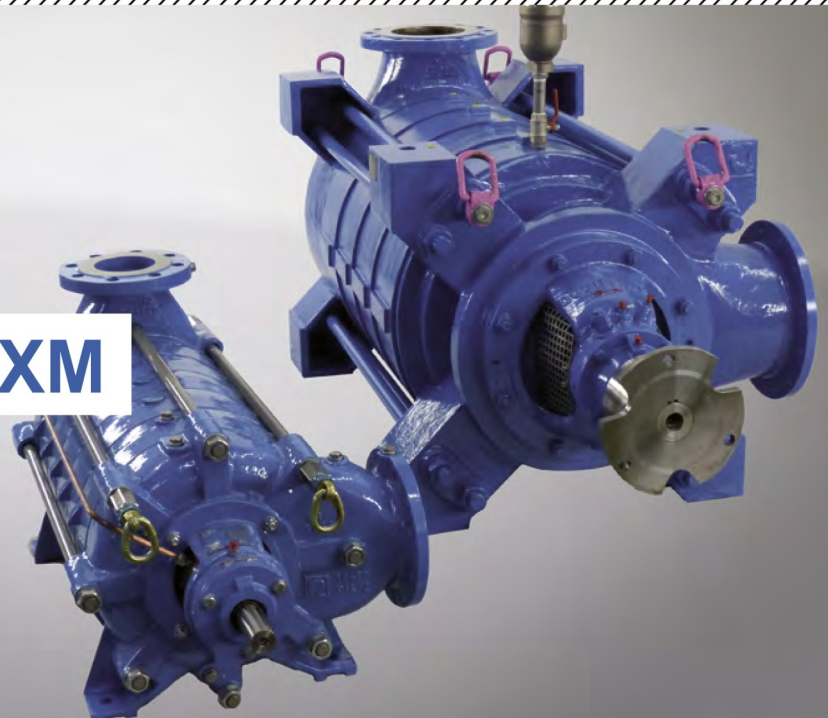
Discharge Casing

CFD designed to achieve optimal discharge conditions.

Multistage pump types

TYPE HPXU & HPXM

Handles liquids with up to 10% solids.



HPXU & HPXM Design

Multistage centrifugal pump in ring-section design.

- Flanges positioned at 90 ° increments
- Shaft sealing by stuffing box or mechanical seal
- Axial thrust compensation by balancing device with optical or digital wear indicator for optimized maintenance control
- Designed for 4-pole speed
- Reduced life-cycle costs
- Grease or oil lubrication anti-friction bearings available
- Tailormade solutions available:
 - Pump dimensions can be adapted to customer requirements
 - Single or double inlet suction casing available
 - Discharge flanges available on intermediate stage casings
 - Drive from one or both shaft ends possible
- Closed impeller with three-dimensionally curved blades
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Fields of Application

Handling of contaminated, chemically neutral or aggressive liquids with up to 10% solids.

- Main water drainage in mining
- Drainage and mine weather cooling in mining
- Pressure boosting systems in industrial processes
- Water supply and water treatment plants
- Condensate production
- Mineral industry
- Oil & Gas - Applications (handling formation water)

Technical Data

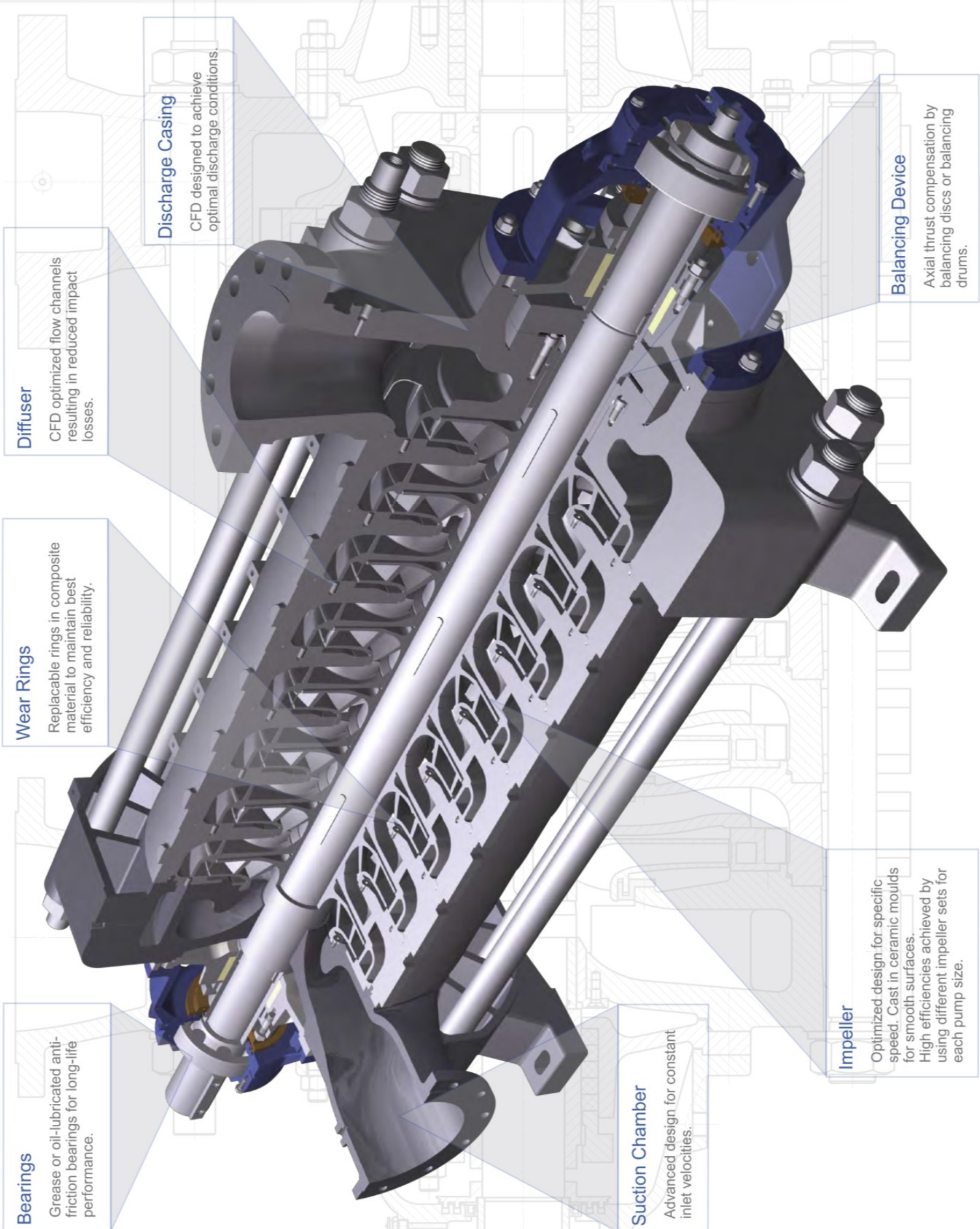
Pump Size:	DN 40 to DN 400 (1 1/2" to 16")
max. Pressure:	160 bar (2300 PSI)
max. Flow:	3250 m³/h (15000 gpm)
Total head:	up to 1200 m (3940 ft)
Rotating Speed:	up to 3600 rpm

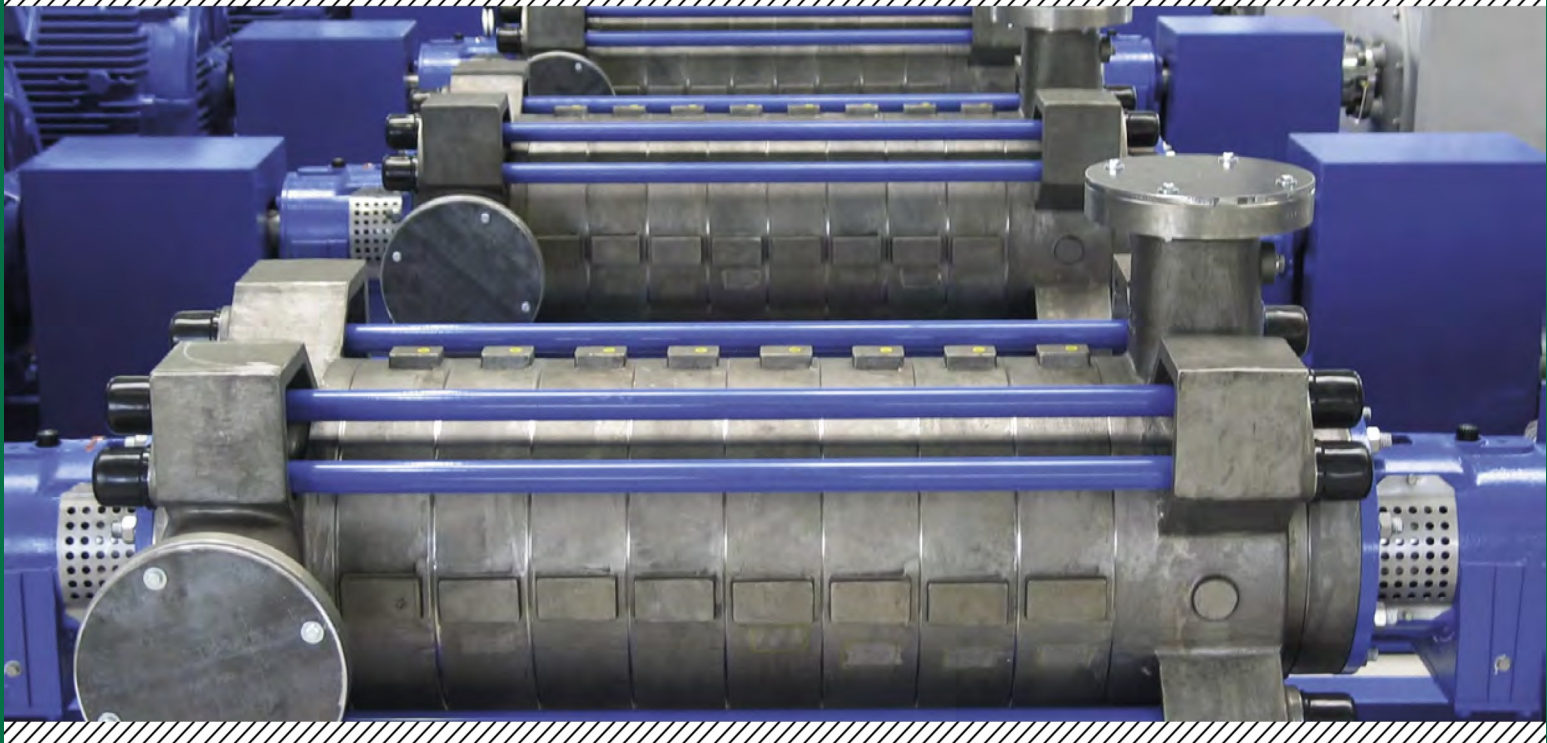
Materials

Available in almost any metal from cast iron to SUPER DUPLEX stainless steel.

The materials are carefully selected depending on the application, the pumped medium and the combinations of materials adapted to the respective conditions of use.







Tailormade Solutions

The pump solutions of DÜCHTING PUMPEN are adapted in their design and construction to meet the demanding needs of the market.

Besides the standard products DÜCHTING PUMPEN can offer a wide variety of different tailormade solutions.



Some examples are shown here, but there are many more possibilities.

Just let us know how we can help you!

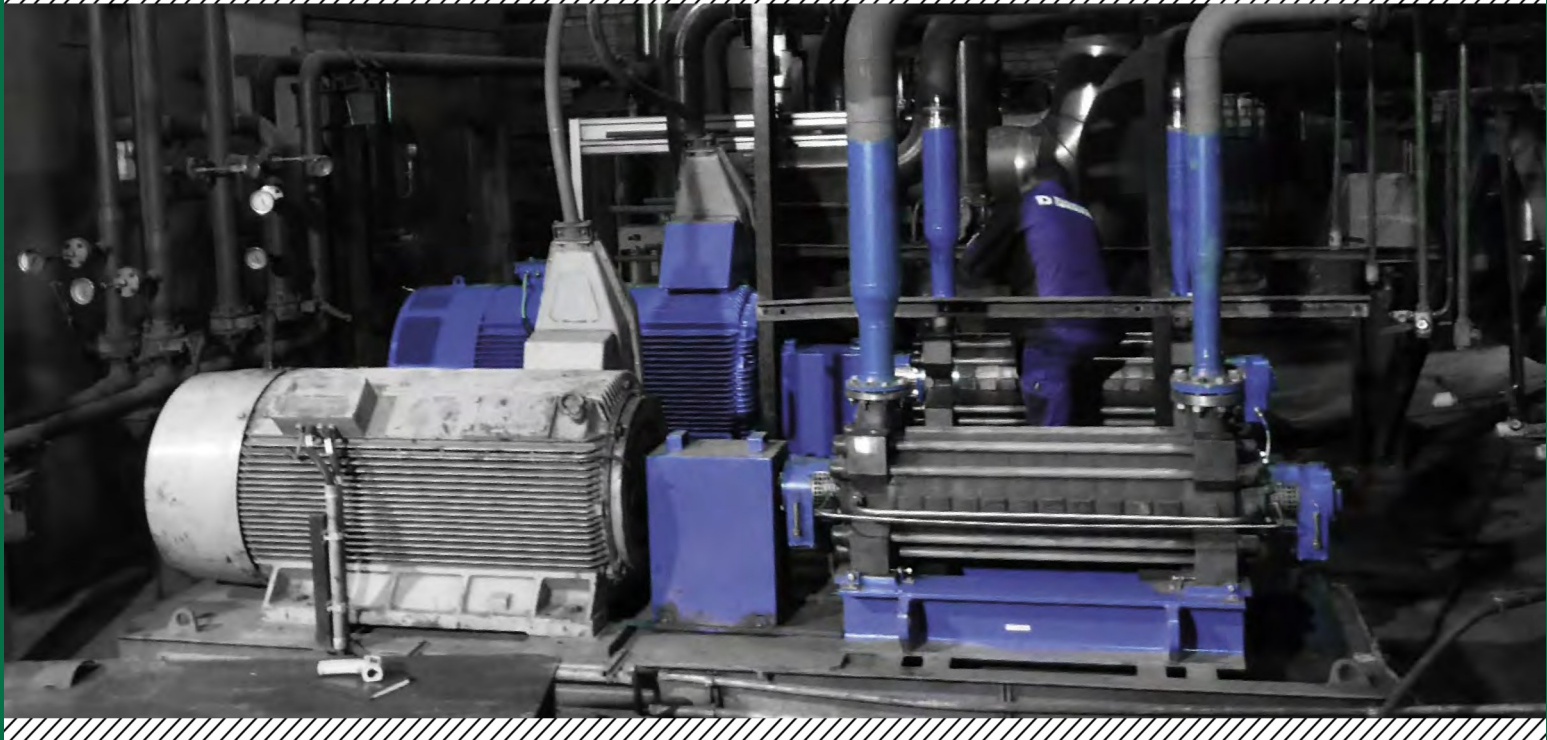


Two flanges in one suction casing

Intermediate flange at stage casing

Together with the pumps DÜCHTING PUMPEN can supply a wide range of accessories – from electrical motors to gear boxes, turbines, frequency converters up to complex instrumentation.

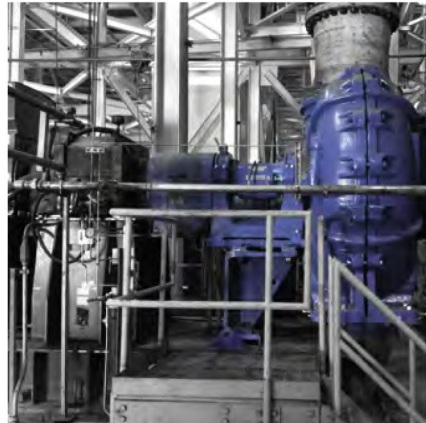




Plug & Play

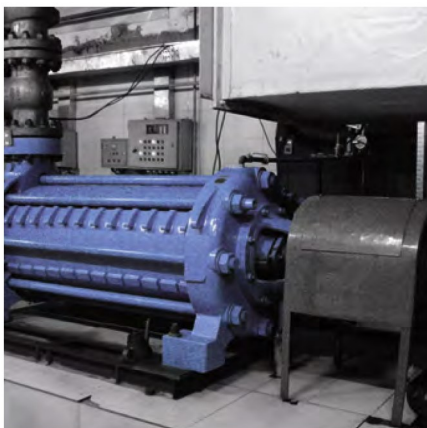
Beside tailormade solutions DÜCHTING PUMPEN offers retrofit designs.

These Plug & Play solutions can help the customers to find a solution for problematic or critical pumps in their plants.



With a retrofit pump DÜCHTING PUMPEN delivers a product which can be installed in the existing footprint and can be put into operation easily.

DÜCHTING PUMPEN has designed a new retrofit pump series (MCCR) especially to replace absorber pumps in the FGD process.

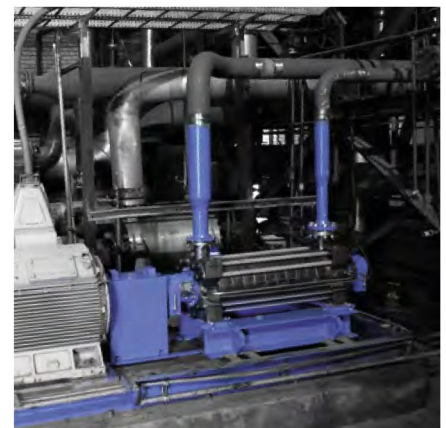


Adjustment feet

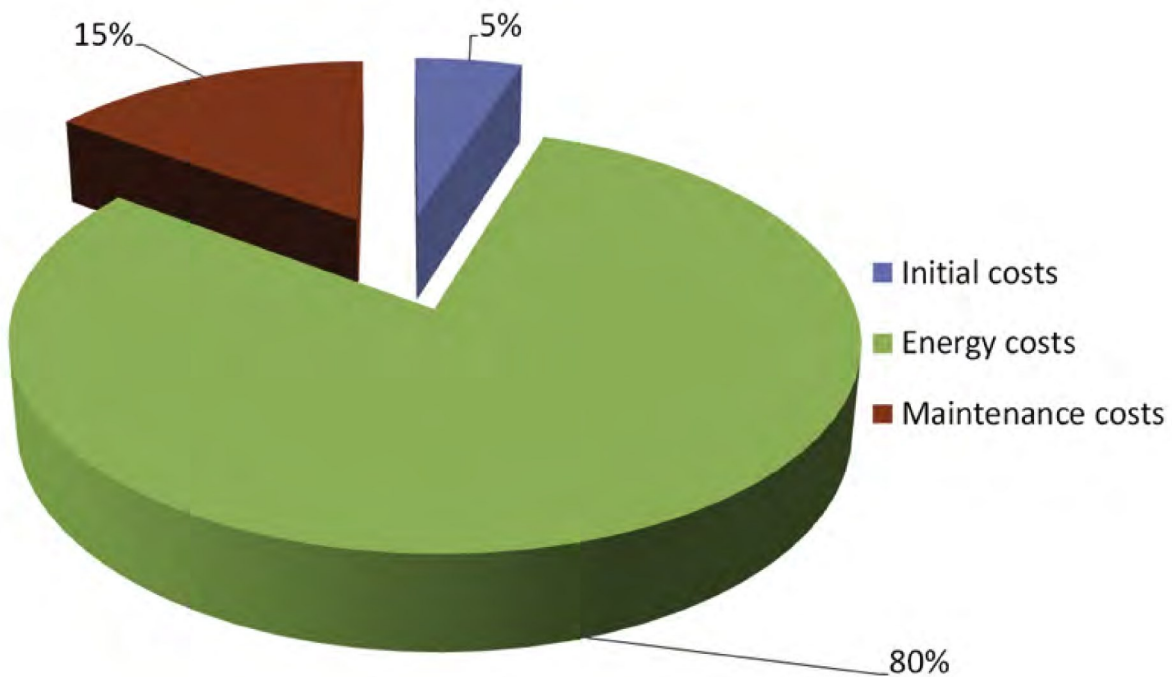
Customer's installation dimensions (MCCR)

To reach the interchangeability DÜCHTING PUMPEN

- designs special/new hydraulics to reach the original duty point conditions
- adjusts the pumps to existing dimensions



Adjustment reducers & retrofit base frame



Life-Cycle-Costs

Average life cycle costs for industrial pumps.

Evaluating the Life-Cycle-Costs will identify the most financially attractive alternative.

The initial purchase price is a very small part of the life cycle cost for high usage pumps.

Minimizing energy consumption and plant downtime have a big influence on the total Life-Cycle-Costs.

Energy costs

DÜCHTING PUMPEN offers a wide range of impeller sets for high efficiencies.

- ▶ **high efficiency leads to low energy costs**



Maintenance costs

Robust design leads to long lifetime of the pump parts.

- ▶ **low wear leads to low maintenance work and costs**

Easy accessible and changeable wear parts lead to short downtime for overhauls.

- ▶ **short downtime leads to low maintenance costs**



Quality Assurance

To ensure highest quality, every pump is tested and certified on our test bed according to international standards.

DÜCHTING PUMPEN is able to provide extensive testing beside the standard performance tests. This includes tests like sound pressure, hydrostatic and vibration tests as well as string test of complete pump units.



In-house Test Bed

Continuously high quality of each single pump due to performance tests according to

- ISO 9906 standard
- Modern computer-aided test bed
- Capacity: up to 25,000 m³/h [110,000 gpm]
- Delivery Head: up to 2,200 m [7,200 ft]
- Electrical Power: up to 5,000 kW [6,700 hp]
- Witnessed inspection tests
- ISO 9001 certified since 1994

Try & Buy

To ensure that the pumps will work properly under the given conditions in the plant and to convince the customer, „Try & Buy pumps“ can be supplied.

Discuss with us if you are interested.



CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

DÜCHTING PUMPEN Maschinenfabrik GmbH & Co KG
Wilhelm-Düchting-Str. 22, 58453 Witten
Germany

has been approved by Lloyd's Register Quality Assurance to the following Quality Management System Standards:

DIN EN ISO 9001:2008

The Quality Management System is applicable to:

Design and manufacture of single- and multistage centrifugal pumps of metallic and non-metallic materials.

Approval Certificate No. LR 025957

Original Approval: 03 February 1999

Current Certificate: 01 February 2016

Certificate Expiry: 14 September 2018

Anna Beckmann

Issued by Lloyd's Register Quality Assurance GmbH
For and on behalf of: Lloyd's Register Quality Assurance Limited



ISO 9001



Service & Spare Parts

With its service and spare parts department DÜCHTING PUMPEN offers the full range of after-sales-service.

With its own service technicians and several service partners worldwide DÜCHTING Service is everywhere and always available.

Inhouse - Service

- Maintenance
- rebuild & repair
- damage analysis
- performance tests with vibration analysis
- site staff training
- and much more



Site - Service

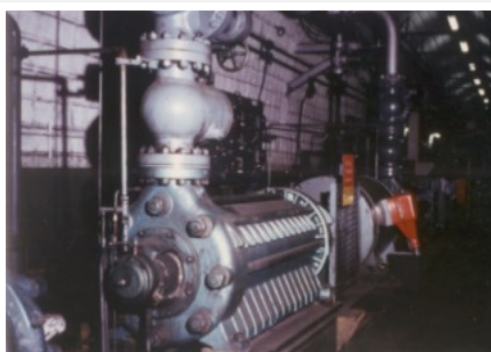
- start-ups
- commissioning assistance
- Revisions
- Repairs
- Troubleshooting
- laser alignment
- vibration & condition analysis
- flow rate measuring
- whole pump rebuild and repair
- mechanical seal exchange
- training at site
- and much more

GERMANY, IBBENBÜREN, COAL MINE



- 1st pump ever manufactured by Düchting.
- High pressure pump type **HPXM 50x3**.
- 720 m³/h @ 30 bar (3,170 gpm @ 435 PSI).
- First supply was in 1939.
- Last time supplied in 1988.
- Some of the pumps are still in operation and spare parts are still available.

GERMANY, FRANZ HANIEL, COAL MINE



- High pressure pump type **HPXU 200x13**.
- 420 m³/h @ 103 bar (1,850 gpm @ 1495 PSI).
- First 3 pumps supplied in 1980.
- Two additional pumps supplied in 1989.
- One pump supplied in 2003, 2005, 2008, 2011, 2013 and 2016.

POLAND, OGDANKA, COAL MINE



- High pressure pump type **HPXU 200x13**.
- 500 m³/h @ 100 bar (2,200 gpm @ 1450 PSI).
- First pump supplied in 2001.
- One pump supplied in 2006 and 2013.
- Two drive shaft ends supplied..

CHINA, XINWEN, COAL MINE



- High pressure pump type **HPXU 200x13**.
- 500 m³/h @ 93 bar (2,200 gpm @ 1350 PSI).
- Four pumps supplied in 2009.
- Pump dimensions adapted to suit clients requirements.

POLAND, LUBIN, COPPER MINE



- High pressure pump type **HPXM 250x6**.
- 540 m³/h @ 67 bar (2,380 gpm @ 971 PSI).
- First pump supplied in 2005.
- Three additional pumps supplied in 2006 and 2008.
- One pump supplied in 2010, 2012 and 2014.

GERMANY, ESCO



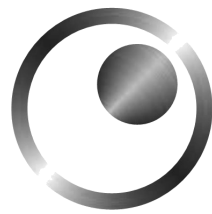
- High pressure pump type **HPXM 250x4**.
- 330 m³/h @ 24 bar (1,453 gpm @ 348 PSI).
- Pumps used in the production salt (NaCl) brines and slurries
- 10 pumps installed (HPXL, HPXM, WR and MC).
- Supplied from 1993-2014.

“DÜCHTING”

LET US DISCUSS YOUR APPLICATION



FROM

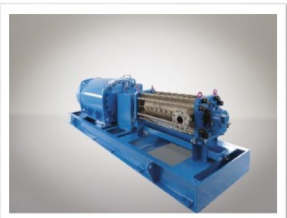
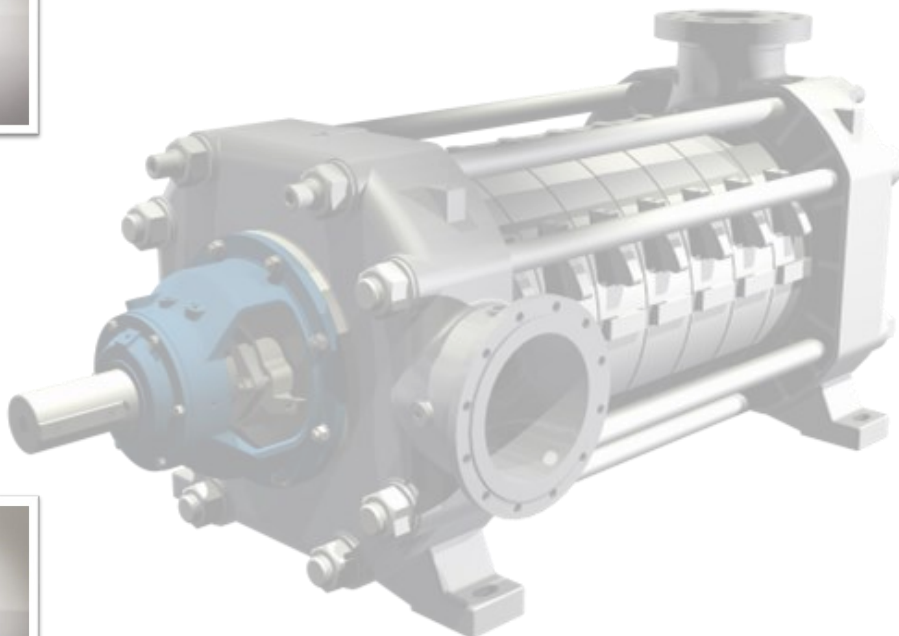


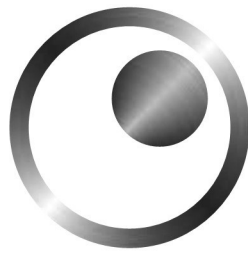
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Pipes | Pumps | Solutions

4-Pole pump for liquids with abrasive content

- *Maximum density up to 1,400g/l (e.g. brine).*
- *Typical mining application up to 5% by weight (approx. 50.000ppm).*
- *Low speed = low wear.*





Carl Hamm

Pipes | Pumps | Solutions

Competence, experience, innovative thinking, modern manufacturing plants and motivated employees form the basis of our services.

With the flexibility of a modern, medium-sized company and the experience of our over 90-year history, we are well equipped to meet the requirements of the future.

The numerous certifications and technical approvals of course ensure that we serve our customers with the highest quality standards through the complete project phases.

Our product range focuses on water, waste water and power industries, tunnel construction and well sinking as well as open-pit and underground mining.

We as a competent partner ensure an added value for the specific customer needs: from the conceptual planning to professional production and punctual delivery.



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