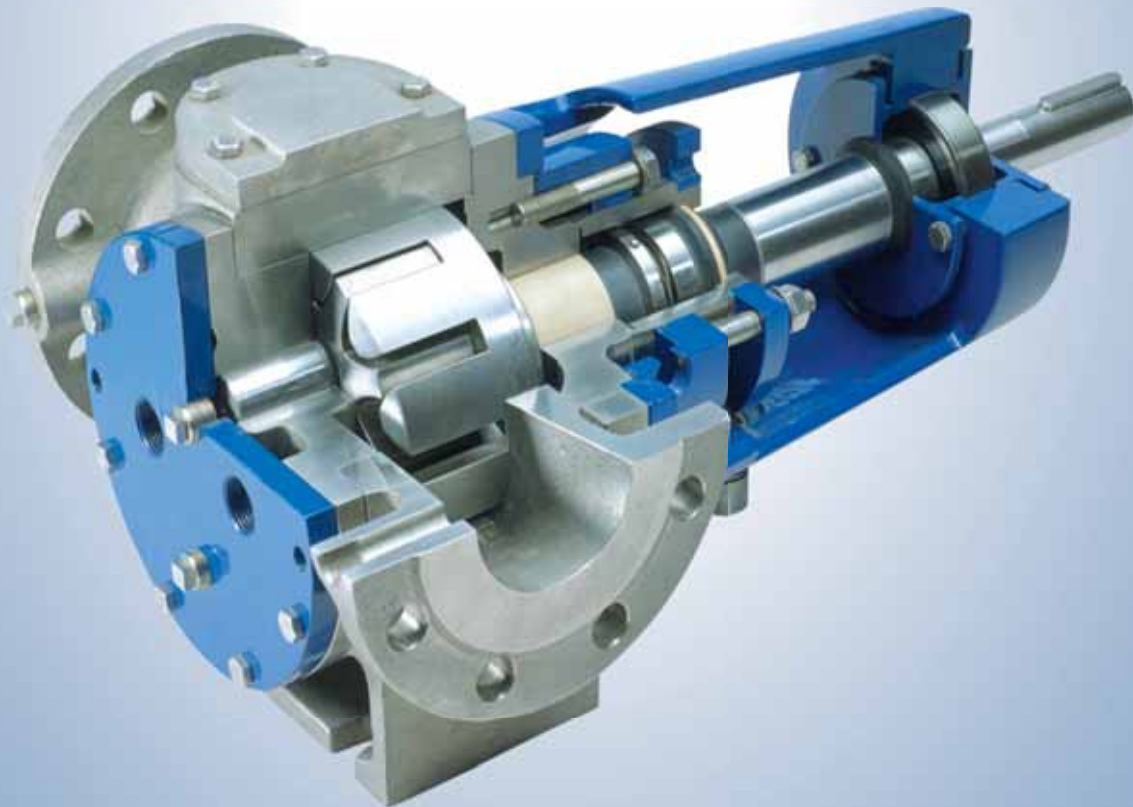




DESMI INC.

ROTAN INTERNAL GEAR PUMPS

Serving industry since 1921
Available in cast iron, carbon steel,
and stainless steel construction





GP/HD/PD/CD/MD SERIES

DESMI ROTAN, one of the world's leading manufacturers of internal gear pumps

DESMI A/S, formerly known as A/S De Smithske, was founded in 1834. Today DESMI A/S develops, manufactures and markets pumps and pumping systems worldwide. The ROTAN pumps are marketed by the DESMI ROTAN division and are distributed by subsidiaries, sales agencies and distributors in more than 40 countries.

The internal gear pump principle was developed in 1915 by a Danish American. In 1921, he licensed a Danish Company to manufacture the pumps, which have been continuously marketed worldwide under the ROTAN name. The unique, modular concept of ROTAN pumps is generally recognized as the most advanced internal gear pump design available today.



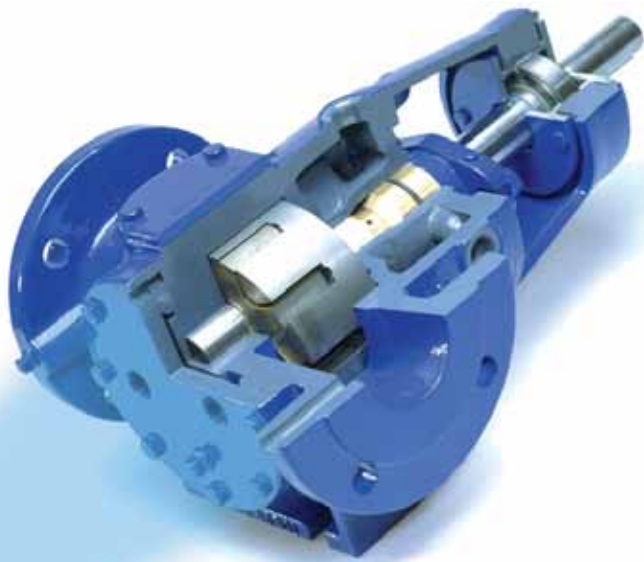
Extensive inventory and assembly capability in North America



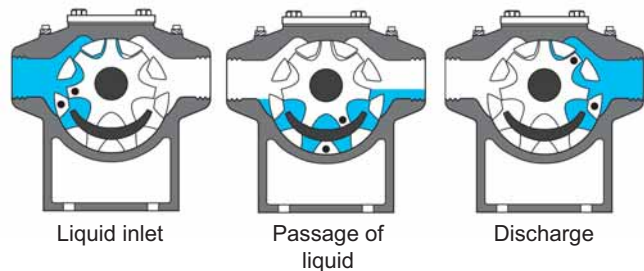
Main office and factory in Aalborg, Denmark



DESMI INC. facility in Norfolk, Virginia



The ROTAN internal gear pump has a standard in-line, opposing connection design. Oversized ports provide **superior self-priming capability** with **gentle liquid handling** as the direction of the liquid flow is changed only slightly. In addition to reduced NPSH requirements, this means high viscosity and shear sensitive materials may be readily pumped. Lubricating and non-lubricating liquids, with appropriate provisions, can be pumped.



Every pump is hydrostatically and performance tested



ISO 9001:2000 certificate

Method of operation

ROTAN pumps offer the following additional advantages and benefits:

- Pumping capability in either direction (all models) allowing installation flexibility
- Modular, back pull-out (except GP) design makes inspection and maintenance easy.
- Construction is simple and rugged with only two rotating parts and a shaft seal, enhancing service life
- External axial adjustment of rotor/shaft for wear and repositioning after maintenance saves time and expense
- Large choice of configurations provide flexibility to handle a wide range of applications
- Substantial inventories are maintained, including stainless steel and mag drive pumps, to meet customer schedules
- Competitively priced, reducing customers' initial and operation costs
- Computerized selection program available for customers needing immediate sizing and related application information
- Standard, integral relief valve mounted on casing saves space and simplifies piping

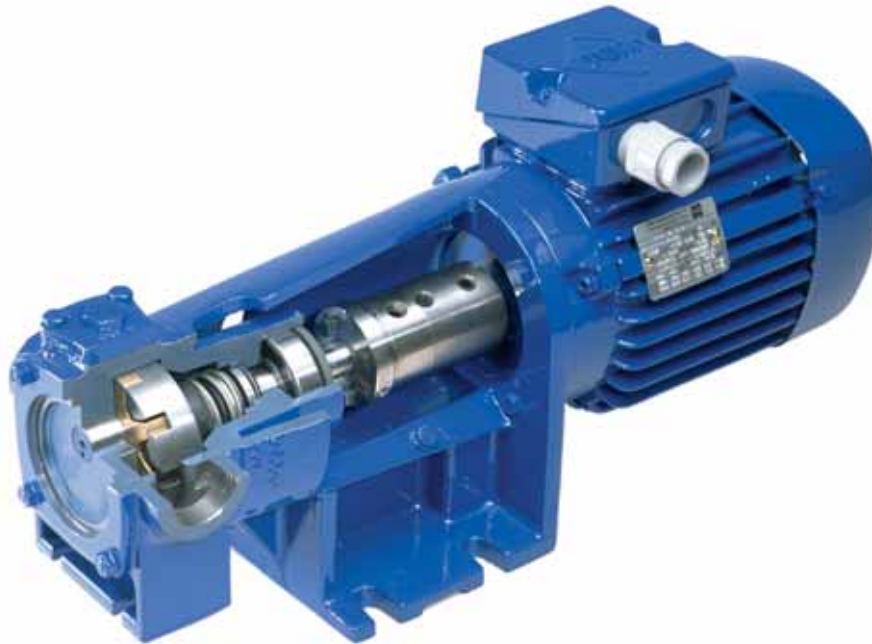


Manufacturing with state-of-the-art CNC equipment



GP/CC SERIES

*Direct coupled pumps in cast iron,
for clean and mildly abrasive liquids*



GP monoblock pumps are typically used for handling various clean and mildly abrasive liquids. The simple and compact construction makes it a low cost pump, often used in modified versions by OEM customers.

CC models (shown below) are close-coupled, providing the ultimate compact construction. GP/CC pumps are designed for use with NEMA or IEC-flanged motors.



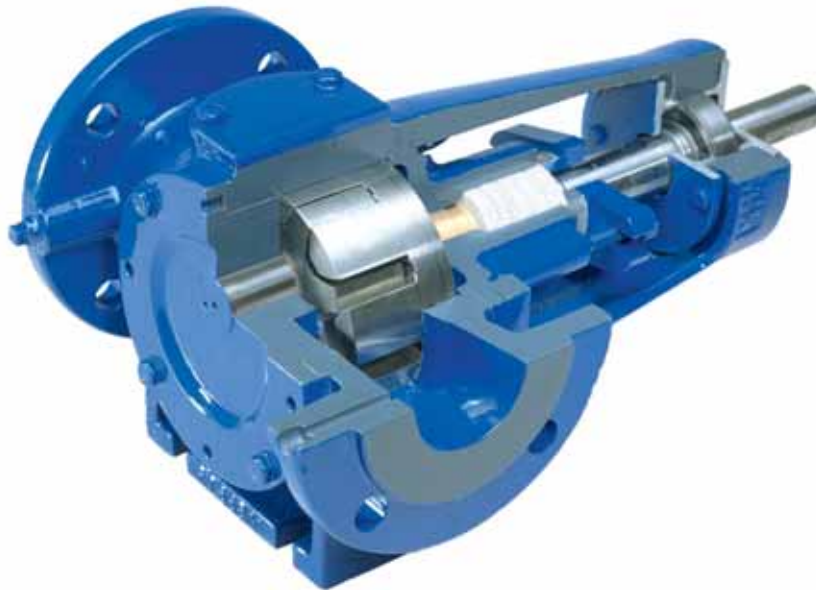
Capacity range:	Up to 225 gpm
Speed:	Up to 1750 rpm
Differential pressure:	Up to 250 psi
Suction lift:	Up to 15" Hg vacuum while priming Up to 24" Hg vacuum while pumping
Viscosity range:	Up to 7,500 cST
Temperature:	Up to 300° F



HD

SERIES

Heavy Duty pumps in cast iron, for a wide range of viscous, non-corrosive liquids



HD pumps are specifically designed for difficult applications and those involving high viscosity liquids.

Typical applications include pumping oils, asphalts, chocolates, paints, lacquers, molasses, soaps, and other industrial viscous process fluids.

HD pumps are known for their rugged and simple construction.



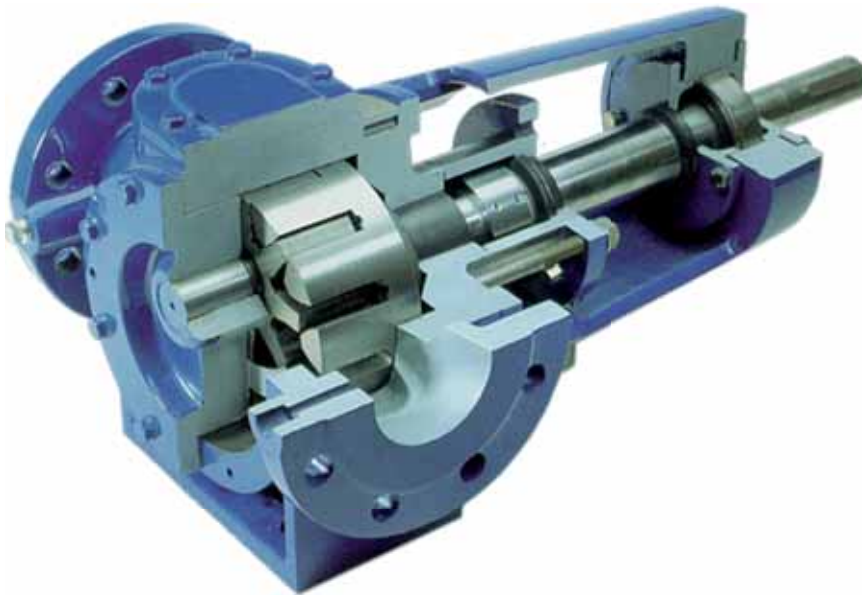
Capacity range:	Up to 750 gpm
Speed:	Up to 1750 rpm
Differential pressure:	Up to 250 psi
Suction lift:	Up to 15" Hg vacuum while priming Up to 24" Hg vacuum while pumping
Viscosity range:	Up to 250,000 cST
Temperature:	Up to 500° F



PD

SERIES

Petrochemical Duty Pumps in carbon steel, designed for Refinery and Petrochemical applications



PD pumps are designed for refinery and petrochemical applications, and are of steel external construction.

Typical applications include pumping fuel oils, gasoline, lube oils, greases, and other hydrocarbon-based fluids. PD pumps are available to meet most API 676 standards.



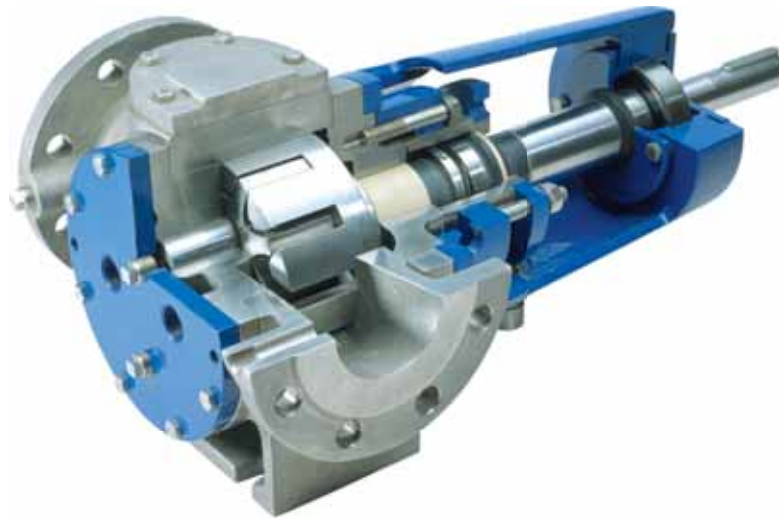
Capacity range:	Up to 750 gpm
Speed:	Up to 1750 rpm
Differential pressure:	Up to 250 psi
Suction lift:	Up to 15" Hg vacuum while priming Up to 24" Hg vacuum while pumping
Viscosity range:	Up to 250,000 cST
Temperature:	Up to 500° F



CD

SERIES

*Chemical Duty pumps in stainless steel,
designed to handle corrosive liquids*



CD pumps are designed for handling corrosive liquids, primarily in the chemical processing, food, and pharmaceutical industries.

Typical applications include pumping organic acids, fatty acids, alkalis, caustic soda, polymer solutions, soap, shampoo, animal fat, vegetable fat, chocolate, and other special fluids.



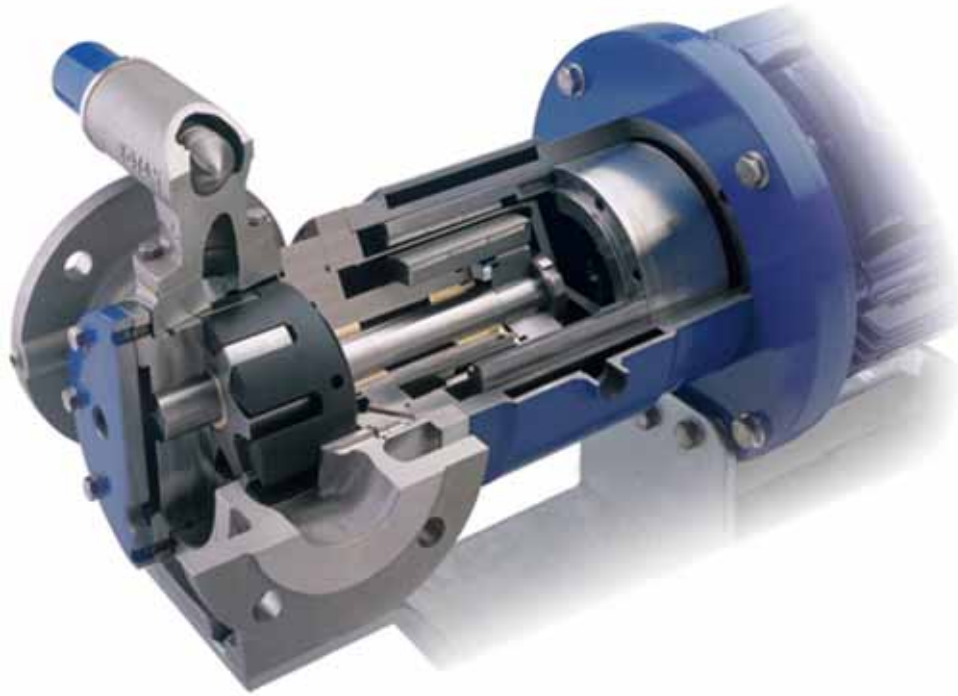
Capacity range:	Up to 750 gpm
Speed:	Up to 1750 rpm
Differential pressure:	Up to 250 psi
Suction lift:	Up to 15" Hg vacuum while priming Up to 24" Hg vacuum while pumping
Viscosity range:	Up to 250,000 cST
Temperature:	Up to 500° F



MD

SERIES

Mag Drive sealless pumps, for ultimate protection against leakage



MD pumps are designed for applications demanding zero emissions. Previously, these applications were typically isocyanate, solvents and other hazardous organic liquids. The use of MD pumps is rapidly expanding to include many non-hazardous liquids.

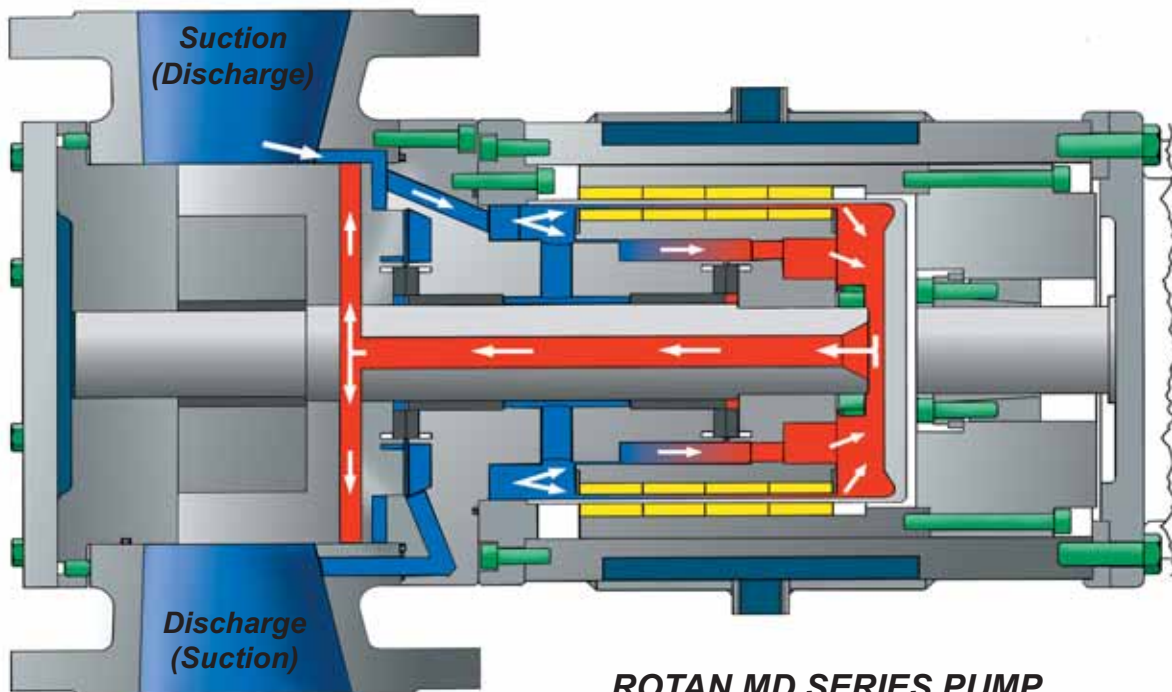
This is due to the increasing need to eliminate leakage and subsequent pollution. Another advantage of installing MD pumps is the extremely low maintenance requirement. They will often provide a cost-effective solution for installations where a conventional pump would need frequent replacement of the shaft seal(s).



Capacity range:	Up to 400 gpm
Speed:	Up to 1750 rpm
Differential pressure:	Up to 250 psi
Suction lift:	Up to 15" Hg vacuum while priming Up to 24" Hg vacuum while pumping
Viscosity range:	Up to 10,000 cST
Temperature:	Up to 500° F

Most important MD model features and benefits:

- Maximum protection against leakage, sealless design provides assurance against environmental contamination
- Advanced, patented cooling system based on an integral pump eliminates the need for external cooling
- Dynamic axial balancing system minimizes axial loads, reduces energy consumption, and increases equipment MTBM
- Inherent secondary containment system, provided by completely enclosed magnetic coupling housing, controls leakage if primary containment fails
- Superior, positive thrust control feature maintains correct running clearances and eliminates failures common to other designs.
- Wide choice of bearing materials available, including cast iron, bronze, carbon and tungsten carbide
- Standard magnet material is neodymium-iron-boron. Optional samarium cobalt permanent magnets allow operating temperatures up to 500°F.
- Reversible pumping capability, available by changing the rotation of the motor, allows installation flexibility
- Optional external heating jackets for both front cover and magnetic coupling housing available when required to assure proper pump operation
- Genuine back-pullout design
- Pump comes standard as close-coupled, optional with bare shaft
- Both internal and external canister protection



ROTAN MD SERIES PUMP

The most advanced, magnetically driven, positive displacement pump available.



**By indicating the options in the order below,
the complete pump can be identified**

1) Pump series

GP	General Purpose, mono block pump in cast iron
CC	General Purpose, close-coupled pump in cast iron
HD	Heavy Duty pump in cast iron
PD	Petrochemical Duty pump in carbon steel
MD	Mag Drive pump, magnetically coupled, in cast iron, carbon steel or stainless steel

2) Pump sizes

26	DN 25-1"
33	DN 32-1¼"
41	DN 40-1½"
51	DN 50-2"
66	DN 65-2½"
81	DN 80-3"
101	DN 100-4"
126	DN 125-5"
151	DN 150-6"
152	DN 150-6"
201	DN 200-8"

Available with flanges* or NPT tapped dependent on the size and material. GP pumps are available through size 101; PD are not available in size 152.

* Flange connections according to:
ANSI B 16.1/B 16.5, ISO 2084, DIN 2501, BS 4504 1969

3) Configurations

E	Suction/discharge connections in-line
B	Suction/discharge connections at 90° angle (optional)

Add: Choice of additional options, see page 12.

- Hyphen

5) Material codes for wetted parts

Code	Type	Casing/Covers	Rotor/Idler	Shaft
1	GP/HD	Cast iron	Cast Iron	Carbon Steel
2	CD	316 SS	329 SS	329 SS
3	PD	Cast steel	Cast iron	Carbon steel

For MD pumps, all material codes may be used.

6) Lubrication

U	Idler bearing and main bearing lubricated by pump medium
M	Externally lubricated idler bearing and main bearing

7) Material codes for idler bearing

Code	Idler Bush	Idler pin: GP-HD-PD	Idler pin: CD
1	Cast iron	Hardened steel	329 SS
2	Bronze	Hardened steel	329 SS
3	Carbon	Hardened steel	329 SS
4	Al.oxide	Cr.oxide coated steel	329 SS
5	Carbon	Al.oxide, polished	Al.oxide, polished
8	Tungsten carbide	Tungsten carbide	Tungsten carbide

8) Material codes for main bearing

Code	Bearing bush	Shaft: GP-HD-PD	Shaft: CD
1	Cast iron	Carbon steel	329 SS
2	Bronze	Carbon steel	329 SS
3	Carbon	Carbon steel	329 SS
4	Al.oxide	Cr.oxide coated steel	Cr.oxide coated 329 SS
8	Tungsten carbide	Coated steel	Cr.oxide coated 329 SS
B	Ball bearing	Steel	Not applicable

9) Shaft seals

B	Teflon-impregnated, non-asbestos packing
2	Single mechanical shaft seal
	Bellows or O-ring type
22	Double mechanical seal, O-ring type

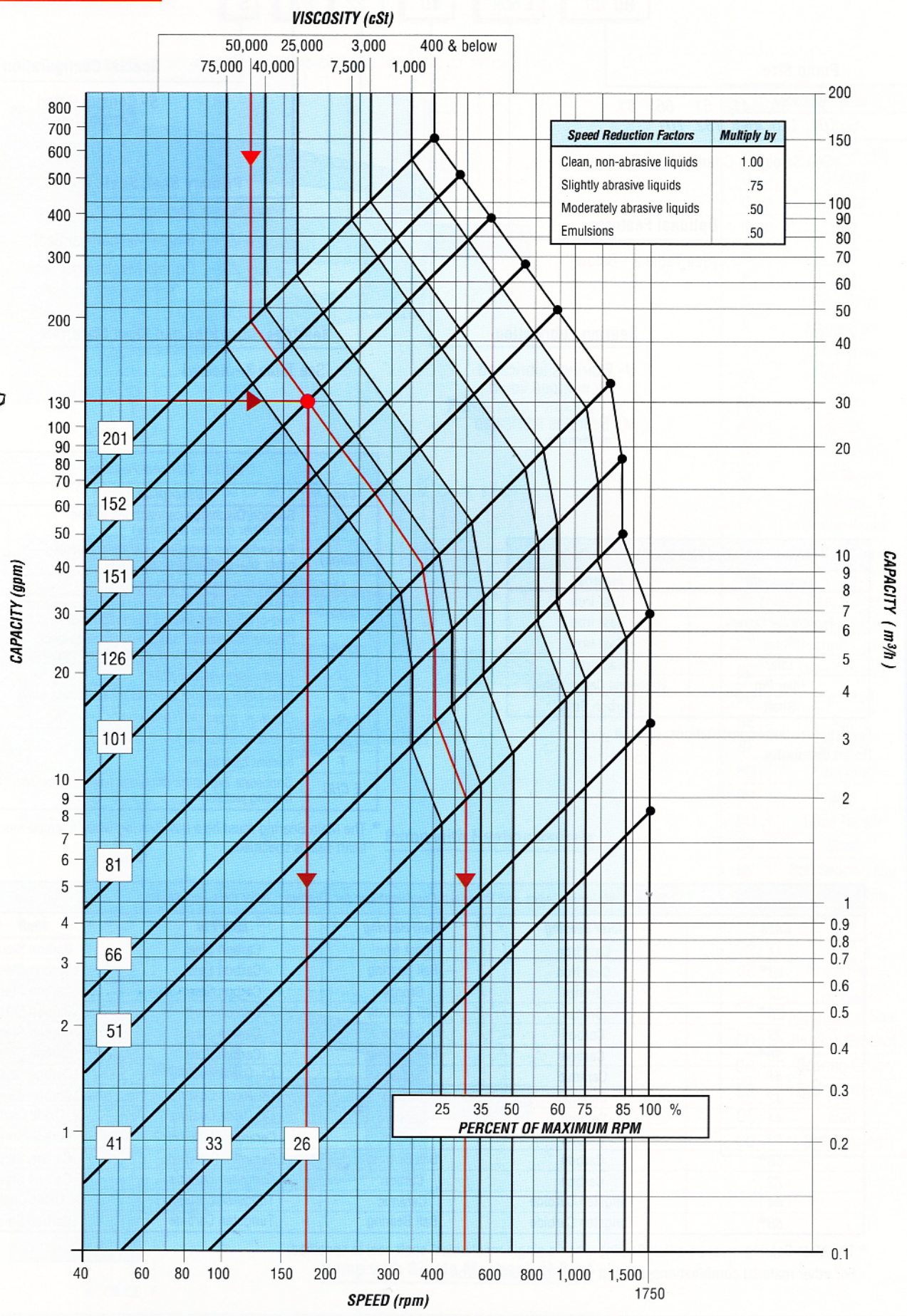
Only for MD pumps

/xx	Magnet length: xx cm
N	Magnet material: Neodymium-iron-boron
C	Magnet material: Samarium Cobalt

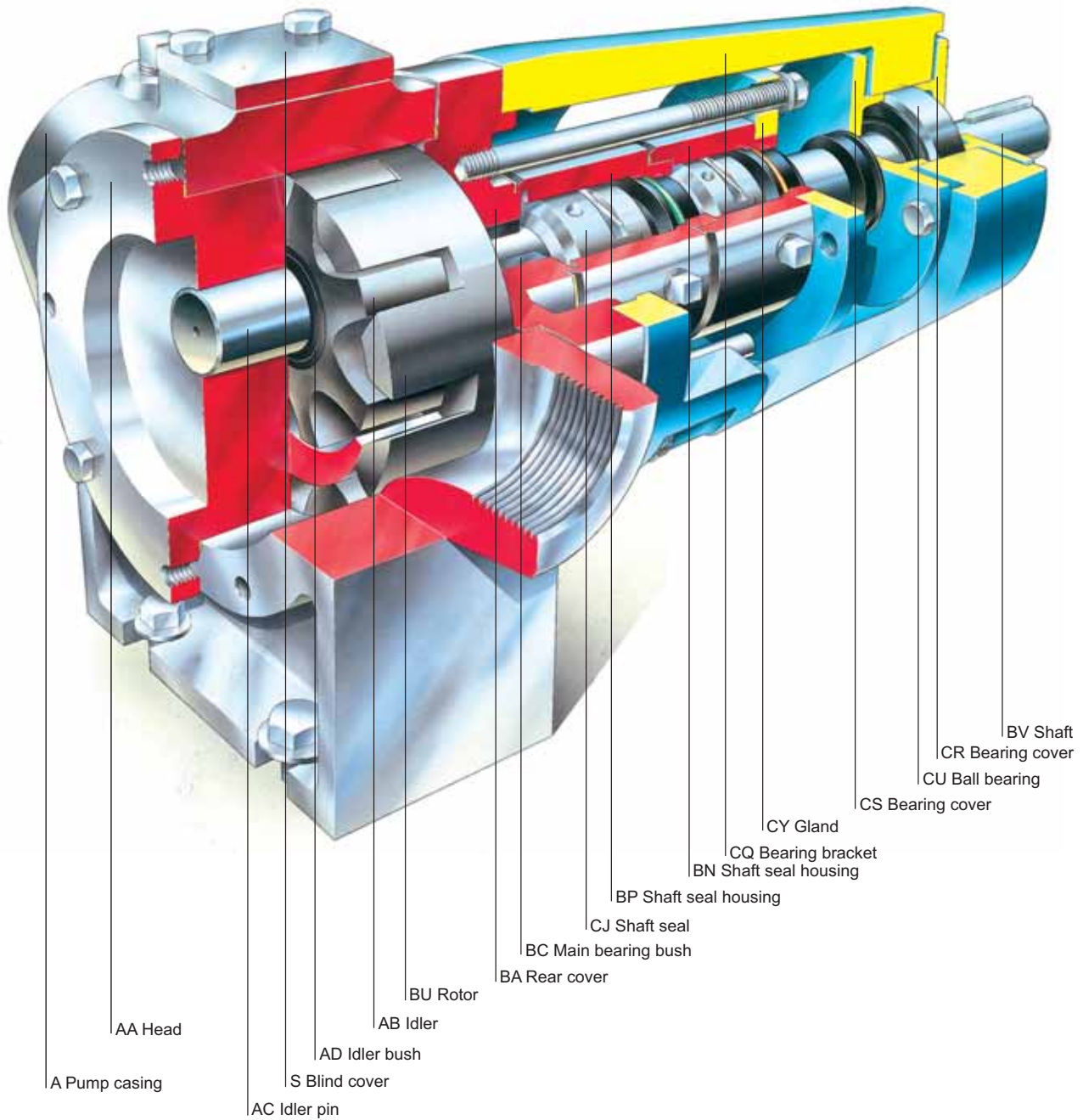
10) Special configurations

S	All special configurations are marked with: S
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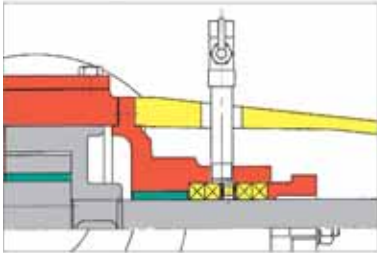
Selection Chart



Item references and descriptions



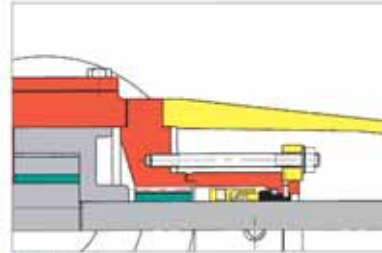
Pump Configuration Options



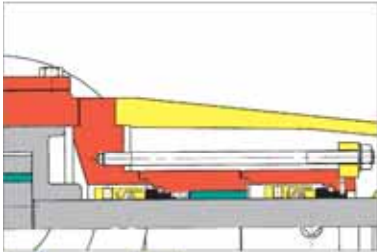
Sealing with stuffing box, with or without lantern ring, for use of external lubrication. Used for high viscosities and where some leakage is allowed.



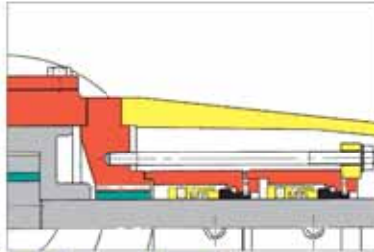
M -GP/HD
Sealing with mechanical shaft seal, DIN 24960 - KU, combined with a ball bearing as main bearing. Used where only minor leakage is allowed.



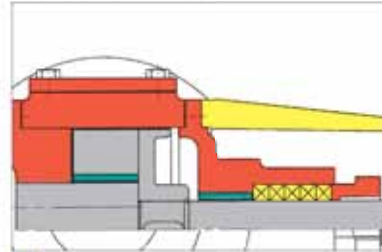
M -PD/CD
Sealing with mechanical shaft seal, DIN 24960 - KU, combined with a slide bearing as main bearing. Used where only minor leakage is allowed.



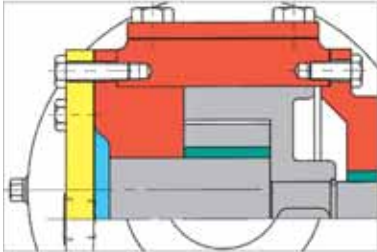
MM (tandem) - MMP (back-to-back)
Double mechanical shaft seals, DIN 24960 - KU, in tandem or back-to-back, with main bearing in the barrier fluid. Used where no leakages are allowed. Up to 90 PSI differential pressure allowed.



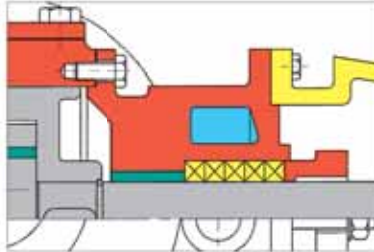
MMW (tandem) - MMPW (back-to-back)
Double mechanical shaft seals, DIN 24960 - KU, in tandem or back-to-back, with main bearing in the liquid. Used where no leakages are allowed. Up to 250 PSI differential pressure allowed.



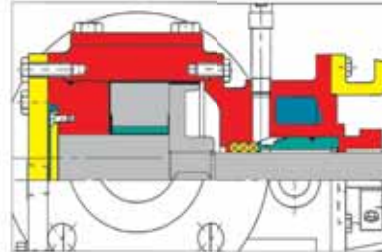
T
Special clearances increase of tolerances used for liquids with a viscosity above 7,500 cSt. or a temperature above 300°F.



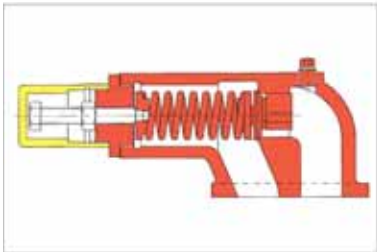
D
Heating jacket on the front cover, often required prior to start-up when pumping high viscosity liquids and liquids which tend to solidify.



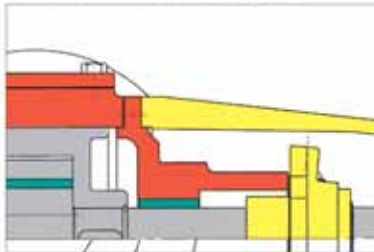
K
Heating jacket on the rear cover, often required prior to start-up when pumping high viscosity liquids and liquids which tend to solidify. This jacket is also used as a seal cooling jacket.



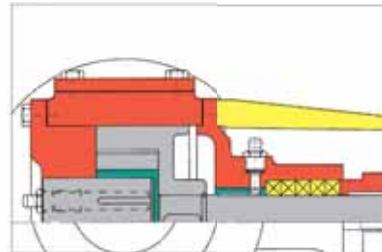
CHD
Combination of special clearances and heating jackets together with external lubrication of the main bearing, used in the chocolate industry.



R
Safety valve, (single acting lone direction), used to protect the pump and the complete installation against excessive pressures.



Special configurations
Example: Mounting of a cartridge seal, single or double, is semi standard.



Lubrication
Idler bearing and main bearing externally lubricated. Used when pumping non-lubricating or high viscosity fluids.



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