BEDU POMPEN

Internal Gear Pumps

R series

made for your process

Operating principle and limits of use

The R internal gear pumps are self-priming positive displacement rotary pumps perfect for viscous liquids (0,5 to over 500.000 mm²/s) of any temperature (-60°C to 350°C), which can be corrosive, abrasive and dangerous for the environment. The pumps are used for transfer, dosing, processing, loading and unloading.

Two gears generate the flow: the rotor 1 and the idler 2. The rotor moves the internal idler. As the gears rotate, the liquid is drawn into the spaces created between the gears and smoothly moved toward the discharge port, where the divider 3, called crescent, closes the free space between the two gears. When the gears mesh, the liquid is slowly forced out of the pump. The result is a constant, smooth flow with no pulsations with a capacity directly proportional to the rotation speed. This will avoid vibrations on fittings, valves or couplings, reducing the foaming or churning of the liquid.

The pump is equipped with one shaft seal or with magnetic coupling only, and has the possibility of a heating jacket around the casing in one cast. The full performance is available in either direction of rotation and the casing can be rotated and delivered with 90° or 180° (in-line) ports. A safety relief valve against over-pressure is incorporated in the pump. This is a heavy duty construction optimized for rare maintenance.

The pumps are available with ATEX certifications to fulfill the EU regulation "Directive 2014/34/EU" that regulates the security of use for equipment in potentially explosive atmospheres. We can supply ATEX certifications for the areas of Group II, categories 2GD (Zone 1) and 3GD (Zone 2) for the temperature classes T1/T2/T3 and T4.
By filling out a simple questionnaire, you can check the availability of the certificate for the specific request.
Further information is available on request.

Bare shaft

R 80 HR1B+Y

Cast iron high temperature pump with DN80 flanged ports and packing shaft seal in bare shaft version. Designed to resist up to 350°C.

Bi-Block

R 35 GL44BBT16

Cast iron pump, with 1 ½" threaded in-line ports (180°) in Bi-Block version directly connected to the motor through a safety coupling, integrated in the pedestal. The pedestal is compatible with standard IEC B5 drives.

Classic

R180 GG30B+Y+2A/245RF129+362De374

Cast iron pump with DN150 ports in classic version. All components (gear box, motor, base plate and coupling guard) are painted separately for long lasting protection.

Pumpable liquids

Amines	Glucose	Plasticizers
Animal fats	Glue	Polymers
Anti- foaming	Glycerine	Polyols
Asphalt	Glycols	Printing inks
Binding agents	Isocyanates	Protein concentrate
Bitumen	Kerosene	Rapeseed oil
Chemical products	Lacquer	Resins
Chocolate	Lubricating oils	Soaps
Colors	Mineral oils	Viscose
Diathermic oils	Molasses	Soluble glass
Emulsions	Naphtha	Starches
Fats	Paints	Wax
Foams	Palm oil	
Frying oils	Paraffins	and many others...
Fuel oils	Petroleum	
Gasoline	Petrol	
Gelatine	Pitch	

R50 with magnetic coupling for isocyanate

The magnetic coupling of this pump allows a perfect seal, preventing dangerous losses of the liquid that is being pumped. The environment remains clean and odorless thus protecting the staff and the environment.

Applications

Adhesives
the possibility to adjust the speed of rotation also allows more viscous liquids to enter between the gears and to be pumped.

Molasses
thanks to their high reliability our pumps are often used for loading and unloading of ships in ports.

Heated oils
the heated casing maintains a constant temperature and viscosity to enable the fluid to remain pumpable.

Diesel and petrol
it is possible to pump low viscosity liquids that could be flammable and in ATEX environments (on request certifications available).

Colors
the use of these pumps in the paint factories is appreciated for the very low maintenance and for its excellent performance.

Resins and polymers
since these pumps are not transmitting vibrations or pulsations to the pipes, they are more and more being installed in industrial plants of various types.

Pump characteristics

DIN or ANSI flanged ports
from DN40 to DN250, with through-holes to facilitate the installation. ¼" threaded holes for vacuum/pressure gauge.

Casing with threaded ports
available for R 35 and R 40 suitable to create more compact installations.

Idler
of robust construction, with thick teeth and wide tolerance for abrasives.

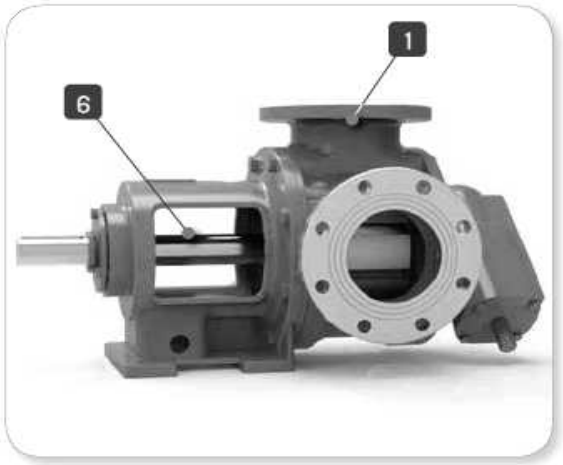
Pump characteristics

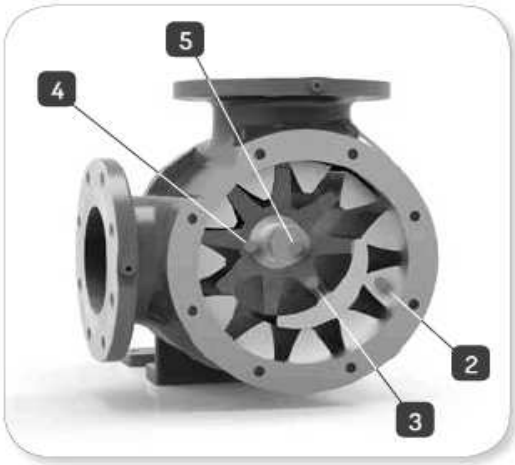
Rotor
with materials designed to prevent accidental breakages caused by unforeseen solids.

Pin
the variety of materials which can be made guarantees its compatibility with different liquids.

Bushings
available in different variants to avoid seizures between the pump parts and to withstand abrasion.

Materials and compnent section





1	CASING	Available in ductile iron and stainless steel.
2	ROTOR	Available in steel, stainless steel and tempered steel.
3	IDLER	Available in cast iron, stainless steel and tempered steel.
4	BUSHINGS	Available in cast iron, sintered iron, graphite, sintered bronze, high temperature bronze, tempered stainless steel and tungsten carbide.
5	PIN	Available in hardened steel, stainless steel, tempered stainless steel, tungsten carbide.
6	SHAFT	Available in tempered steel, stainless steel and coated versions.

Pump heating

Jacket integrated in the casing of the pump in one cast: a very appreciated invention of Vittorio Varisco that combines effectiveness and simplicity of use.

Heating plates on the cover (+R2). An economic alternative for less complex heating systems. With threaded ports.

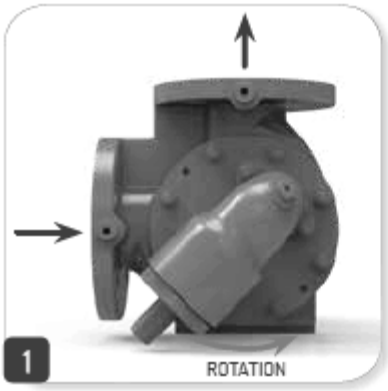
Heating plates on the cover. Available also with flanged connections.

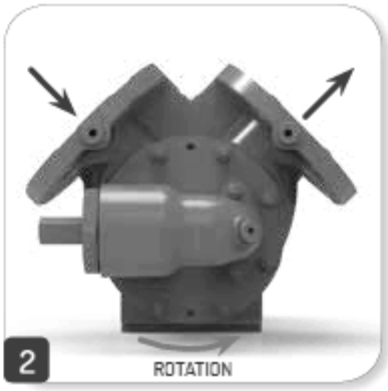
Heating jacket integrated with counter-flanges to weld. Very practical system to be installed in small spaces.

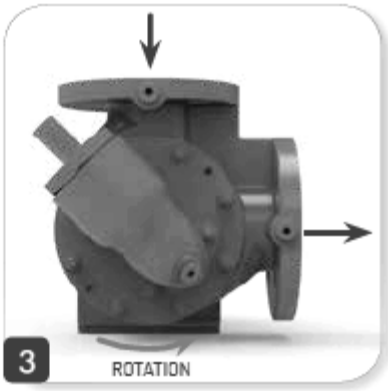
Heating plates on the casing, adaptable to individual requirements, easily removable for a simple maintenance.

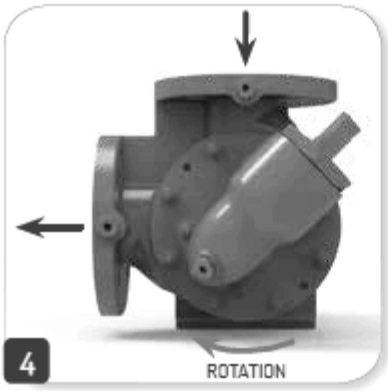
Integral heating, to maintain the temperature constant within the whole pump.
Supplied "taylormade".

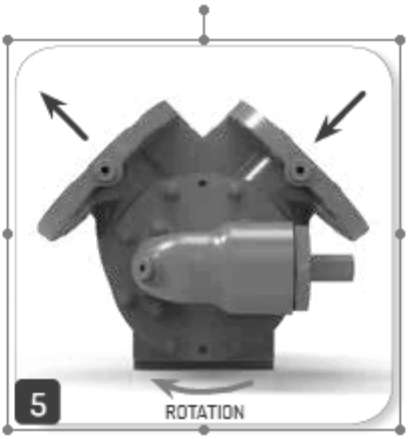
Orientation of suction and discharge flange

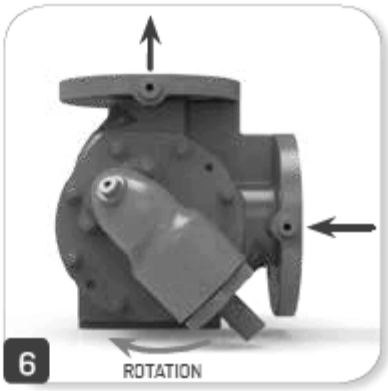












Great versatility:

The flanges of the R pumps can be supplied at 90° or 180° "in line" (.L.). Generally, the pumps are delivered with position #1 (at 90°) or in position #7 (at 180°).

Types of seals and accessories

Packing
simple or lubricated (flushed). It is very robust and economical; recommended for many applications.

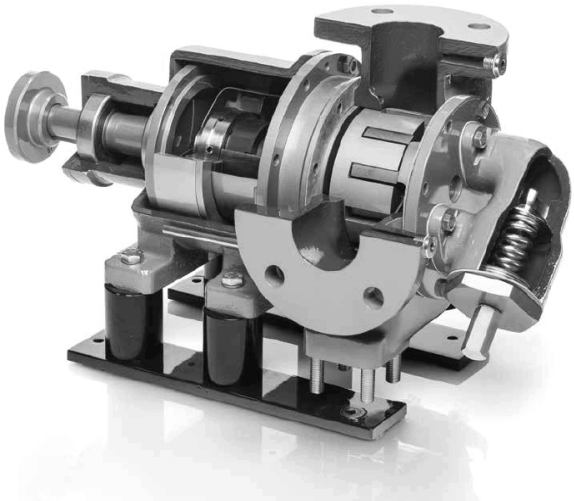
Mechanical seal
single or double (back to back or in tandem). Available in various materials and with O-rings in FKM, PTFE or Kalrez®.

Quench
additional barrier room after the seal, with tank for barrier liquid which is useful to preserve the mechanical seal; for air-sensitive liquids.

Sealing with security packing
in case of accidental breakage of the mechanical seal, the packing ring prevents leakage of the liquid until the next maintenance.

Cartridge seal
for special needs of standardization in installations.

Magnetic coupling
the pump becomes sealless and has only gaskets of a static type, recommended with dangerous liquids to protect the users and the environment.



Accessories

ON REQUEST:
double valve for reversible pump.

Pedestal
over-sized bearing, regulation of rotor and drip tray integrated in one cast.

Grounded base
ON REQUEST:
in the ATEX area, it simplifies the work of electrical installation.

SX coupling
elastic coupling to dampen noises caused by the engine and by the irregular flow. The central elastic element breaks in the event of a blockage of the pump, protecting the motor and the gear box.

PX coupling
standard coupling for pumps of large dimensions, guarantees a great elasticity and durability of coupling also with considerable misalignments.

BDS coupling for ATEX pump
excellent flexible coupling for ATEX use, special designed to be maintenance free.

Performance

R 35
(0,04 l/rot.)

DIFFERENTIAL PRESSURE

cSt	rpm	4 bar m³/h	4 bar kW	8 bar m³/h	8 bar kW	16 bar m³/h	16 bar kW
LUBRICATING LIQUIDS							
2	1450	2,9	1,2	2,1	1,6	-	-
20	1450	3,5	1,2	2,9	1,6	-	-
200	1450	3,7	1,4	3,5	1,9	3,3	2,8
2.000	960	2,5	1,3	2,4	1,6	2,3	2,2
8.000	660	1,7	1,2	1,6	1,4	1,6	1,9
20.000	320	0,8	0,5	0,8	0,6	0,7	0,7
200.000	220	0,6	0,4	0,6	0,5	0,6	0,6
NON-LUBRICATING LIQUIDS							
2	960	1,6	0,6	-	-	-	-
20	960	2,2	0,6	-	-	-	-
200	960	2,4	0,7	2,2	1	-	-
2.000	960	2,5	1,3	2,4	1,6	-	-
8.000	660	1,7	1,2	1,6	1,4	-	-
20.000	320	0,8	0,5	0,8	0,6	-	-
200.000	220	0,6	0,4	0,6	0,5	-	-
ABRASIVE LIQUIDS							
2	960	1,6	0,6	-	-	-	-
20	720	1,5	0,4	-	-	-	-
200	720	1,7	0,5	1,5	0,7	-	-
2.000	720	1,8	0,9	1,7	1,1	-	-
8.000	660	1,7	1,2	1,6	1,4	-	-
20.000	320	0,8	0,5	0,8	0,6	-	-
200.000	220	0,6	0,4	0,6	0,5	-	-

R 40
(0,07 l/rot.)

DIFFERENTIAL PRESSURE

cSt	rpm	4 bar m³/h	4 bar kW	8 bar m³/h	8 bar kW	16 bar m³/h	16 bar kW
LUBRICATING LIQUIDS							
2	1450	6,2	1,7	5,4	2,5	-	-
20	1450	6,8	1,7	6,2	2,5	-	-
200	960	4,6	1,1	4,4	1,6	4,2	2,7
2.000	960	4,7	1,6	4,6	2,2	4,4	3,3
8.000	720	3,5	1,8	3,5	2,3	3,4	3,1
20.000	320	1,6	0,7	1,5	0,9	1,4	1,3
200.000	180	0,9	0,4	0,9	0,6	0,9	0,8
NON-LUBRICATING LIQUIDS							
2	960	3,8	0,9	-	-	-	-
20	960	4,4	1	-	-	-	-
200	960	4,6	1,1	4,4	1,6	-	-
2.000	960	4,7	1,6	4,6	2,2	-	-
8.000	720	3,5	1,8	3,5	2,3	-	-
20.000	320	1,6	0,7	1,5	0,9	-	-
200.000	180	0,9	0,4	0,9	0,6	-	-
ABRASIVE LIQUIDS							
2	960	3,8	0,9	-	-	-	-
20	720	3,2	0,6	-	-	-	-
200	720	3,4	0,7	3,2	1,1	-	-
2.000	720	3,5	1,1	3,4	1,7	-	-
8.000	660	3,2	1,5	3,2	1,8	-	-
20.000	320	1,6	0,7	1,5	0,9	-	-
200.000	180	0,9	0,4	0,9	0,6	-	-

cSt: VISCOSITY / **rpm:** MAXIMAL RECOMMENDED REVOLUTIONS PER MINUTE / **m³/h:** FLOW / **kW:** REQUIRED POWER

Performance

R 50
(0,22 l/rot.)

DIFFERENTIAL PRESSURE

cSt	rpm	4 bar m³/h	4 bar kW	8 bar m³/h	8 bar kW	16 bar m³/h	16 bar kW
LUBRICATING LIQUIDS							
2	720	8,2	1,6	6,4	2,7	-	-
20	720	8,6	1,7	7,4	2,8	-	-
200	640	7,9	1,8	7,2	2,8	6,3	4,8
2.000	520	6,7	1,9	6,3	2,8	5,8	4,6
8.000	380	4,9	1,9	4,6	2,6	4,3	3,7
20.000	200	2,6	0,9	2,4	1,2	2,1	1,7
200.000	120	1,6	0,6	1,6	0,8	1,6	1,3
NON-LUBRICATING LIQUIDS							
2	720	8,2	1,6	-	-	-	-
20	720	8,6	1,7	-	-	-	-
200	640	7,9	1,8	7,2	2,8	-	-
2.000	520	6,7	1,9	6,3	2,8	-	-
8.000	380	4,9	1,9	4,6	2,6	-	-
20.000	200	2,6	0,9	2,4	1,2	-	-
200.000	120	1,6	0,6	1,6	0,8	-	-
ABRASIVE LIQUIDS							
2	600	6,6	1,3	-	-	-	-
20	600	7,0	1,3	-	-	-	-
200	600	7,4	1,5	6,7	2,4	-	-
2.000	460	5,8	1,5	5,4	2,1	-	-
8.000	380	4,9	1,9	4,6	2,6	-	-
20.000	200	2,6	0,9	2,4	1,2	-	-
200.000	120	1,6	0,6	1,6	0,8	-	-

R 65
(0,48 l/rot.)

DIFFERENTIAL PRESSURE

cSt	rpm	4 bar m³/h	4 bar kW	8 bar m³/h	8 bar kW	16 bar m³/h	16 bar kW
LUBRICATING LIQUIDS							
2	620	17	3,2	15	5,2	-	-
20	620	18	3,3	17	5,3	-	-
200	480	14	2,4	13	4,2	12	5,5
2.000	380	11	2,8	11	4,1	10	6,5
8.000	300	9	3	8,7	4	8,4	5,9
20.000	140	4,1	1,1	3,9	1,6	3,7	2,5
200.000	100	2,9	0,7	2,9	1,2	2,9	1,6
NON-LUBRICATING LIQUIDS							
2	600	16	3,1	-	-	-	-
20	600	17	3,2	-	-	-	-
200	480	14	2,4	13	4,2	-	-
2.000	380	11	2,8	11	4,1	-	-
8.000	300	9	3	8,7	4	-	-
20.000	140	4,1	1,1	3,9	1,6	-	-
200.000	100	2,9	0,7	2,9	1,2	-	-
ABRASIVE LIQUIDS							
2	500	13	2,4	-	-	-	-
20	360	9,7	1,7	-	-	-	-
200	360	10	2,1	9,4	3,3	-	-
2.000	360	11	2,8	10	4	-	-
8.000	300	9	3	8,7	4	-	-
20.000	140	4,1	1,1	3,9	1,6	-	-
200.000	100	2,9	0,7	2,9	1,2	-	-

cSt: VISCOSITY / **rpm:** MAXIMAL RECOMMENDED REVOLUTIONS PER MINUTE / **m³/h:** FLOW / **kW:** REQUIRED POWER

Performance

R 80 (1,2 l/rot.)

cSt	rpm	DIFFERENTIAL PRESSURE 4 bar m³/h	4 bar kW	8 bar m³/h	8 bar kW	16 bar m³/h	16 bar kW
LUBRICATING LIQUIDS							
2	400	25	4,2	22	7,5	-	-
20	400	27	4,5	26	7,7	-	-
200	300	21	3,3	20	5,5	18	10
2.000	240	17	4	16	5,8	15	9,5
8.000	180	13	3,8	12	5,4	12	8,3
20.000	90	6,3	1,7	6	2,4	5,6	3,9
200.000	60	4,2	1,4	4,2	2	4,1	3
NON-LUBRICATING LIQUIDS							
2	400	25	4,2	-	-	-	-
20	400	27	4,5	-	-	-	-
200	300	21	3,3	20	5,5	18	10
2.000	240	17	4	16	5,8	15	9,5
8.000	180	13	3,8	12	5,4	12	8,3
20.000	90	6,3	1,7	6	2,4	5,6	3,9
200.000	60	4,2	1,4	4,2	2	4,1	3
ABRASIVE LIQUIDS							
2	380	24	3,8	-	-	-	-
20	300	20	3,2	18,6	5,4	-	-
200	300	21	3,3	20	5,5	18	10
2.000	240	17	4	16	5,8	15	9,5
8.000	180	13	3,8	12	5,4	12	8,3
20.000	90	6,3	1,7	6	2,4	5,6	3,9
200.000	60	4,2	1,4	4,2	2	4,1	3

R105 (2,3 l/rot.)

cSt	rpm	DIFFERENTIAL PRESSURE 4 bar m³/h	4 bar kW	8 bar m³/h	8 bar kW	16 bar m³/h	16 bar kW
LUBRICATING LIQUIDS							
2	350	42	7,2	37	13	-	-
20	350	46	7,3	43	13	-	-
200	270	36	6,3	35	11	34	19
2.000	220	30	7,5	29	11	29	18
8.000	160	22	7,5	21	11	21	18
20.000	80	11	3,8	11	5,3	10	8
200.000	60	8,2	3,4	8,2	4,6	8,1	6,9
NON-LUBRICATING LIQUIDS							
2	350	42	7,2	-	-	-	-
20	350	46	7,3	-	-	-	-
200	270	36	6,3	35	11	34	19
2.000	220	30	7,5	29	11	29	18
8.000	160	22	7,5	21	11	21	18
20.000	80	11	3,8	11	5,3	10	8
200.000	60	8,2	3,4	8,2	4,6	8,1	6,9
ABRASIVE LIQUIDS							
2	320	38	6,8	-	-	-	-
20	230	29	4,4	27	8	-	-
200	230	31	5	29	8,6	28	16
2.000	220	30	7,5	29	11	29	18
8.000	160	22	7,5	21	11	21	18
20.000	80	11	3,8	11	5,3	10	8
200.000	60	8,2	3,4	8,2	4,6	8,1	6,9

cSt: VISCOSITY / **rpm:** MAXIMAL RECOMMENDED REVOLUTIONS PER MINUTE / **m³/h:** FLOW / **kW:** REQUIRED POWER

Performance

R151 (3,9 l/rot.)

DIFFERENTIAL PRESSURE

cSt	rpm	4 bar m³/h	4 bar kW	8 bar m³/h	8 bar kW	16 bar m³/h	16 bar kW
LUBRICATING LIQUIDS							
2	420	90	14	84	24	-	-
20	400	90	14	87	24	-	-
200	340	78	13	76	22	74	49
2.000	260	60	14	59	21	58	34
8.000	200	46	14	46	19	45	30
20.000	100	23	6	23	8	22	15
200.000	70	16	6	16	8	16	12
NON-LUBRICATING LIQUIDS							
2	340	72	12	-	-	-	-
20	340	76	13	-	-	-	-
200	340	78	13	76	22	74	49
2.000	260	60	14	59	21	58	34
8.000	200	46	14	46	19	45	30
20.000	100	23	6	23	8	22	15
200.000	70	16	6	16	8	16	12
ABRASIVE LIQUIDS							
2	260	53	8	-	-	-	-
20	200	43	6	40	12	-	-
200	200	45	7	43	12	41	22
2.000	200	46	10	45	14	44	25
8.000	200	46	14	46	19	45	30
20.000	100	23	6	23	8	22	15
200.000	70	16	6	16	8	16	12

R180 (7 l/rot.)

DIFFERENTIAL PRESSURE

cSt	rpm	4 bar m³/h	4 bar kW	8 bar m³/h	8 bar kW	16 bar m³/h	16 bar kW
LUBRICATING LIQUIDS							
2	250	98	14	87	26	-	-
20	250	105	15	101	27	-	-
200	200	86	12	83	22	-	-
2.000	160	70	14	68	21	-	-
8.000	120	53	12	52	19	-	-
20.000	60	26	8	26	11	-	-
200.000	40	18	5	18	7	-	-
NON-LUBRICATING LIQUIDS							
2	250	98	14	-	-	-	-
20	250	105	15	101	27	-	-
200	200	86	12	83	22	-	-
2.000	160	70	14	68	21	-	-
8.000	120	53	12	52	19	-	-
20.000	60	26	8	26	11	-	-
200.000	40	18	5	18	7	-	-
ABRASIVE LIQUIDS							
2	220	85	12	74	22	-	-
20	160	65	9	61	19	-	-
200	160	68	12	66	20	-	-
2.000	160	70	14	68	21	-	-
8.000	120	53	12	52	19	-	-
20.000	60	26	8	26	11	-	-
200.000	40	18	5	18	7	-	-

cSt: VISCOSITY / **rpm:** MAXIMAL RECOMMENDED REVOLUTIONS PER MINUTE / **m³/h:** FLOW / **kW:** REQUIRED POWER

Performance

R200 (14 l/rot.)

DIFFERENTIAL PRESSURE

cSt	rpm	4 bar m³/h	4 bar kW	8 bar m³/h	8 bar kW	16 bar m³/h	16 bar kW
LUBRICATING LIQUIDS							
2	210	182	25	170	40	-	-
20	210	188	26	184	45	-	-
200	160	145	22	143	37	-	-
2.000	130	119	19	118	32	-	-
8.000	100	92	20	92	29	-	-
20.000	50	46	9	46	13	-	-
200.000	30	28	8	28	12	-	-
NON-LUBRICATING LIQUIDS							
2	210	182	25	-	-	-	-
20	210	188	26	184	45	-	-
200	160	145	22	143	37	-	-
2.000	130	119	19	118	32	-	-
8.000	100	92	20	92	29	-	-
20.000	50	46	9	46	13	-	-
200.000	30	28	8	28	12	-	-
ABRASIVE LIQUIDS							
2	170	145	19	133	32	-	-
20	130	114	15	110	27	-	-
200	130	117	16	115	28	-	-
2.000	100	91	15	90	24	-	-
8.000	100	92	20	92	29	-	-
20.000	50	46	9	46	13	-	-
200.000	30	28	8	28	12	-	-

R250 (21 l/rot.)

DIFFERENTIAL PRESSURE

cSt	rpm	4 bar m³/h	4 bar kW	8 bar m³/h	8 bar kW	16 bar m³/h	16 bar kW
LUBRICATING LIQUIDS							
2	240	288	44	276	75	-	-
20	240	294	47	290	79	-	-
200	180	223	37	221	64	-	-
2.000	150	187	42	186	68	-	-
8.000	110	138	38	137	55	-	-
20.000	55	69	20	68	32	-	-
200.000	35	44	17	44	25	-	-
NON-LUBRICATING LIQUIDS							
2	190	225	34	-	-	-	-
20	190	231	35	227	60	-	-
200	180	223	37	221	64	-	-
2.000	150	187	42	186	68	-	-
8.000	110	138	38	137	55	-	-
20.000	55	69	20	68	32	-	-
200.000	35	44	17	44	25	-	-
ABRASIVE LIQUIDS							
2	150	175	27	163	43	-	-
20	110	131	28	126	44	-	-
200	110	134	30	132	45	-	-
2.000	110	137	34	135	49	-	-
8.000	110	138	38	137	55	-	-
20.000	55	69	20	68	32	-	-
200.000	35	44	17	44	25	-	-

cSt: VISCOSITY / **rpm:** MAXIMAL RECOMMENDED REVOLUTIONS PER MINUTE / **m³/h:** FLOW / **kW:** REQUIRED POWER

BEDU
POMPEN

made for your process

- Deskundig advies
- Een klantgerichte organisatie die zich aanpast aan de eisen en wensen van uw organisatie
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- Technische dienst met uitgebreide testfaciliteiten, werkend vanuit onze eigen werkplaats of bij u op locatie
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