



**PUMP  
PAZH**

PUMP SYSTEM MANUFACTURING

# PROGRESSIVE TECHNOLOGIES

PROGRESSING CAVITY SCREW PUMPS



Design, Development  
Manufacturing  
Technical Consultant

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**Water purification and water supply**

- wastewater and slime water
- groundwater with inclusions
- fecal fluid
- bog muck
- chemical and reagents
- flocculants



**Food industry**

- milk and milk derivatives
- vegetable oil
- minced meat
- fruit purees
- tomato paste and sauce
- fillings with various inclusions
- syrup, sugar pulp
- squash, mash, press cake



**Pulp and paper industry**

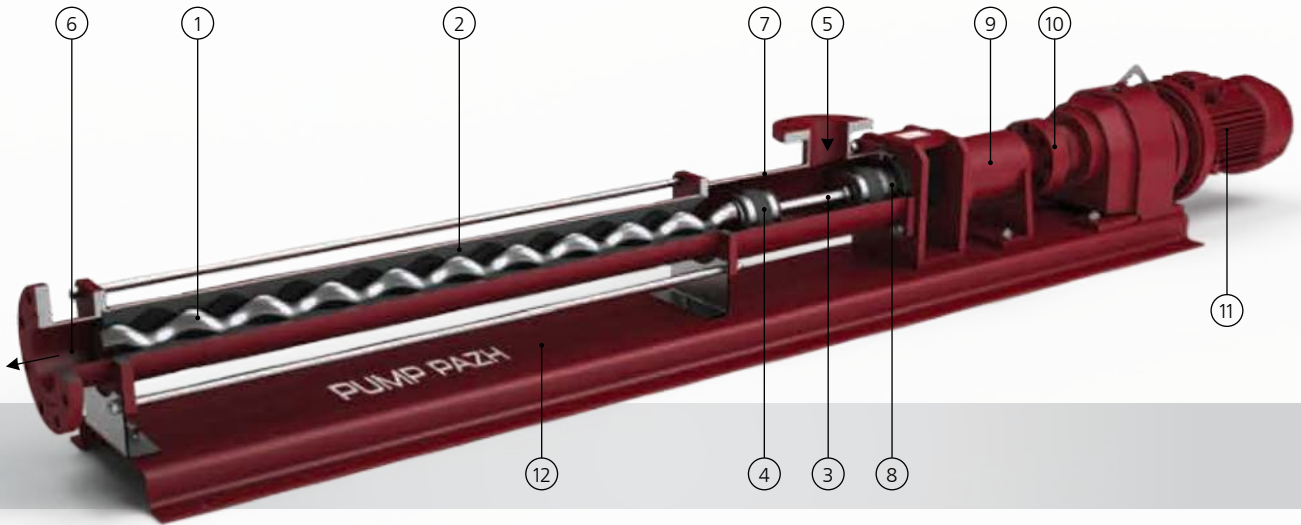
- cellulose
- filling agents
- pigments
- bonding materials
- adhesives
- chemical and reagents



**Pharmaceutical and Cosmetic industry**

- surfactant liquids
- pastes and ointments
- plasticizers
- creams
- vegetable and animal fats
- chemicals and reagents
- precise dosage





## 01 The Rotor

The external single-start helical line with cross-section the center of which is shifted on the size of eccentricity from the rotative axis. The rotor is made of metallic alloys, coated or uncoated.

## 02 The Stator

Inner double threaded helical line made of elastomer and fixed inside of the metal sleeve.

## 03 Transmission rod

It transmits torque from the drive shaft to the rotor, has a high resistance to wear. The usage of transmission rod with a screw feeder is also possible.

## 04 The Flexible joint

It compensates eccentricity of the rotor, filled with grease and has a sealed structure.

## 05 Inlet

Depends on the desires of the customer and the model of the pump, the unit can be made in the form of the pipe with the flange sleeve, the quick coupling connection, or in the form of a rectangular charging inlet.

## 06 Outlet

Depends on the desires of the customer and the model of the pump, the unit can be made in the form of the pipe with the flange sleeve or the quick coupling connection.

## 07 The Pump Chamber

Provides the delivering of pumping substance to the screw pair of pump unit.

## 08 The Shaft Seal

Provides the seal of the shaft. It is possible to use serviced stuffing box, single and double mechanical seal with flushing.

## 09 The Transitional Rack or The Bearing Rack

It is the connecting node between the drive and the pump chamber. The maintenance of seal of the drive shaft happens through the transitional rack.

## 10 The Coupling

Provides transmission torque from the geared motor to the bearing rack.

## 11 The geared motor

Can be made as general industrial, climatic, or explosion-proof construction. It can be equipped with a hydraulic drive.

## 12 The Mounting Plate

Provides coaxial fixing of all nodes of the horizontal pump unit.



PH single screw eccentric progressing cavity pumps are the most universal and any additional options and configurations are available, such as made of stainless steel, explosion-proof, with extra heat flow part, rectangular feeding inlet, screw feeder, the protection system «dry run», special climatic versions, etc.

**Type of design**

horizontal

**Pressure**

from 1 to 24 bar

**Productive capacity**

from 0,1 to 160 cubic meters per hour

**Used screw pairs**

- type S (from 1 to 24 bar)
- type L (from 1 to 6 bar)
- type D (from 1 to 18 bar)
- type P (from 1 to 6 bar)

**Material of flow part**

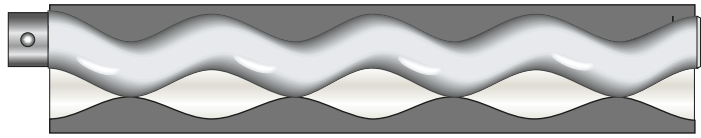
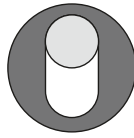
- industrial version HARD STEEL
- hygienic version AISI 314
- chemical version AISI 316

**Sealing of drive shaft**

- mechanical seal
- double mechanical seal with flushing
- serviced stuffing box

**S Geometry**

- Very smooth pumping
- Compact dimensions despite large number of stages
- Large rotor inlet cross-sections
- Low flow velocity/NPSH
- Pumps compacted products
- Pumps large solid particles



- 1/2 lobe
- Double stage
- Flow rate: 100%
- Differential pressure: 12 bar

**L Geometry**

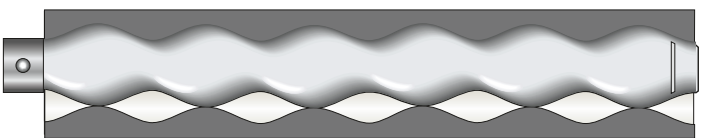
- Good volumetric efficiency/long service life thanks to long seal line between rotor and stator
- Compact dimensions with high flow rates



- 1/2 lobe
- Single stage
- Flow rate: 200%
- Differential pressure: 6 bar

**D Geometry**

- Very compact dimensions despite high pressures and flow rates
- Almost pulsation-free pumping
- High dosing accuracy



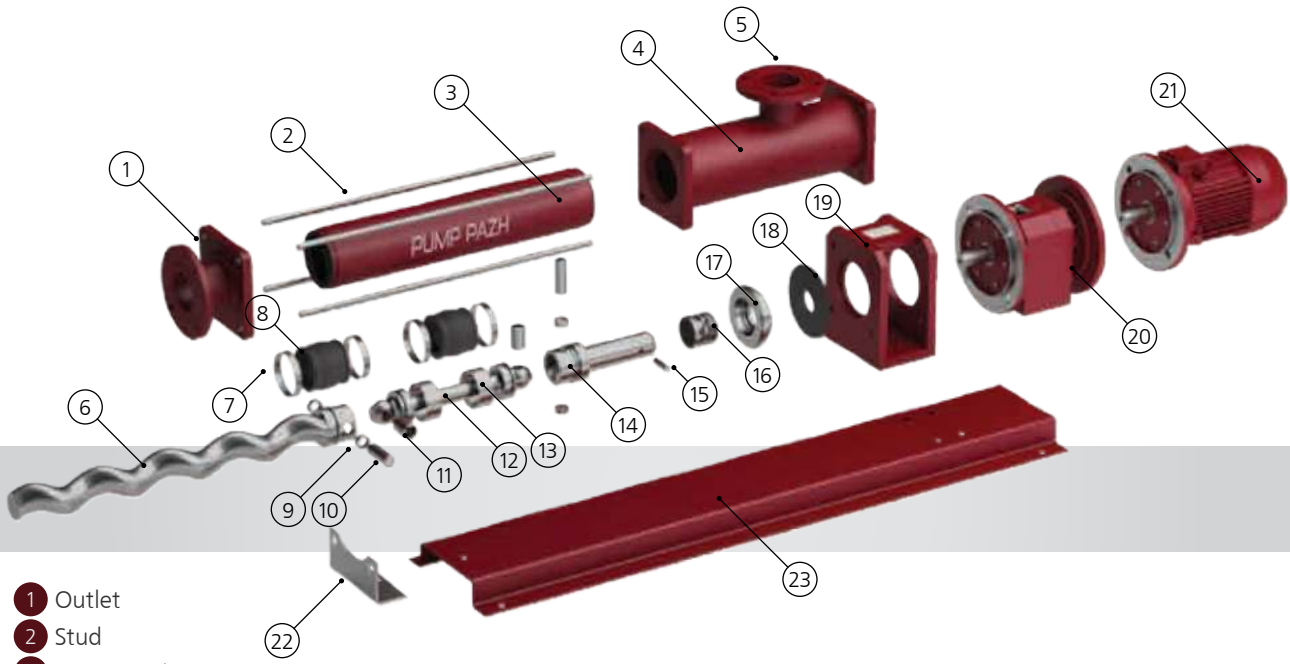
- 2/3 lobe
- Double stage
- Flow rate: 150%
- Differential pressure: 12 bar

**P Geometry**

- Compact dimensions in conjunction with very high flow rates
- Almost pulsation-free pumping
- High dosing accuracy
- Good volumetric efficiency/long service life thanks to long seal line between rotor and stator



- 2/3 lobe
- Single stage
- Flow rate: 300%
- Differential pressure: 6 bar



- 1 Outlet
- 2 Stud
- 3 Stator in sleeve
- 4 Chamber
- 5 Input
- 6 Rotor
- 7 Clamp
- 8 Protecting case
- 9 Bushing
- 10 Pin
- 11 Articulated shaft sleeve
- 12 Articulated shaft
- 13 Locking sleeve
- 14 Transitional shaft
- 15 Transitional shaft pin
- 16 Shaft seal
- 17 Face seal case
- 18 Gasket
- 19 Bearing rack
- 20 Reducer
- 21 Electric motor
- 22 Support leg
- 23 Mounting plate (frame)



Spare parts and repair kit for screw pumps

**Pump unit without bearing stand with directly mounted gearmotor**

Used at pump units with pressure up to 12 bar. Such type of the design has a compact form, more easy to assemble and maintain.

**Pump unit with the bearing stand design**

Used at pump units that can create a pressure more than 12 bar and up to 40 bar inclusive.



**Pump unit made of stainless steel**

It using for pumping of corrosive active and acidic liquids.



**The pump with automation systems**

It can be equipped with any different automation systems that allow more efficiently to control operation of the pump unit.







Pump model	P, bar	Q, m <sup>3</sup> /h	N, kW	R, min	OUT, DN in
PCP105	6	0,1	0.75	100	1,1/4"
PCP110	6	0.4	0.75	400	1,1/4"
PCP115	6	0.85	0.75	960	1,1/4"
PCP120	4	0.05	0.75	100	1,1/4"
PCP125	4	0.2	0.75	400	1,1/4"
PCP130	12	0.25	0.75	750	1,1/4"
PCP135	12	0.35	0.75	960	1,1/4"
PCP205	4	0.3	0.75	100	1,1/4"
PCP210	4	0.6	0.75	250	1,1/4"
PCP220	6	1	0.75	400	1,1/4"
PCP225	4	2	0.75	750	1,1/4"
PCP230	6	2.5	0.75	960	1,1/4"
PCP235	8	0.2	0.75	200	1,1/4"
PCP240	12	0.1	0.75	250	1,1/4"
PCP245	12	0.4	0.75	400	1,1/4"
PCP250	8	1	0.75	750	1,1/4"
PCP255	8	1.25	0.75	960	1,1/4"
PCP305	8	1.6	1.5	300	2"
PCP310	2	3	1.5	400	2"
PCP315	6	5	2.2	750	2"
PCP320	8	6.5	3	960	2"
PCP325	12	1	1.5	250	2"
PCP330	12	1.5	1.5	400	2"
PCP335	12	2.75	2.2	750	2"
PCP340	12	3.75	3	960	2"

Pump model	P, bar	Q, m <sup>3</sup> /h	N, kW	R, min	OUT, DN in
PCP350	6	4.5	2.2	250	3"
PCP355	4	6	2.2	315	3"
PCP360	4	8	4	400	3"
PCP370	8	2	2.2	100	3"
PCP375	8	3	2.2	400	3"
PCP380	12	4	4	750	3"
PCP410	6	5	4	160	3"
PCP420	4	10	4	250	3"
PCP430	6	11	5.5	315	3"
PCP425	6	15	5.5	400	3"
PCP445	8	8	4	400	3"
PCP510	12	6	5.5	400	3"
PCP520	8	13	4	250	4"
PCP530	4	20	5.5	315	4"
PCP540	6	25	5.5	400	4"
PCP550	12	8	5.5	315	4"
PCP555	12	10	5.5	400	4"
PCP610	6	30	7.5	315	6"
PCP615	6	50	7.5	400	6"
PCP620	8	12.5	7.5	250	6"
PCP625	12	17.5	7.5	400	6"
PCP760	6	70	11	400	8"
PCP770	12	30	11	400	8"
PCP800	6	200	15	400	8"
PCP880	12	100	15	400	8"

Media	Dynamic Viscosity mPa (cps)	Temperature, deg, °C	Stator elastomer	Rotor steel
<b>Oil and Chemical Products</b>				
Alkyds Resin	500 - 3000	20	NBR	AISI 321
Latex Emulsions	200	20	NBR	AISI 321
Liquid Soap	58	60	NBR	AISI 321
Liquid Wax	500	90	NBR	AISI 321
Crude Oil 19.4° - 19° API	200 - 400	20	NBR	AISI 420 heat-treated
Crude Oil 32.3° - 28.7° API	42 - 163	20	NBR	AISI 420 heat-treated
Crude Oil 43.6° - 31.9° API	42 - 163	20	NBR	AISI 420 heat-treated
Formation Oils	0.2 - 2000		NBR	AISI 420 heat-treated
Formation Oils of fields in Western Siberia	0.3 - 7.5	50 - 92	NBR	AISI 420 heat-treated
Fuel Oil	2022	25	NBR	AISI 420 heat-treated
Diesel Fuel	8	20	NBR	AISI 321
Gelled Hydrochloric Acid	2305	20	EPDM	AISI 321
Concentrated Hydrochloric Acid	638	20	EPDM	AISI 321
Kerosene-water emulsion (20% water, 80% kerosene)	5000	20	NBR	AISI 321
Kerosene-water emulsion (30% water, 70% kerosene)	84	20	NBR	AISI 321
Emulsion (20% mixture of kerosene gas oil acid, 80% HCl)	4200	30	NBR	AISI 321
Emulsion (40% mixture of kerosene gas oil acid, 60% HCl)	80	30	NBR	AISI 321
Oleic Acid	40	20	NBR	AISI 321
Paraffin Emulsion	3000	20	NBR	AISI 321
Polyester caoutchouc	3000	30	NBR	AISI 321
Polyglycerol caprate	6000 - 7000	15	NBR	AISI 321
Polymeric solution	20000 - 7100	20	NBR	AISI 321
Polyol (A-component)	85000	10	NBR	AISI 321
Polyol unpigmented	500 - 5000	20	NBR	AISI 321
Polyester resin	3000	30	NBR	AISI 321
Potassium hydroxide	67	20	NR	AISI 321
Printing inks	550 - 2200	40	NR	AISI 321
The dough-like substance	100	40		AISI 321
Dissolved rubber	7100	20	NBR	AISI 321
Caustic soda 50%	45	20	NR	AISI 321
Very liquid adhesives and paints	70 - 500	20	NBR	AISI 321
The majority of paints and enamels	500 - 3000	20	NBR	AISI 321
Dense paints	3000	20	NBR	AISI 321
Dense adhesives (for wood flooring or linoleum)	3000 - 50000	20	NBR	AISI 321
Waterborne varnish	900	20	NBR	AISI 321
Varnishes (25% pigment)	3000	20	NBR	AISI 321
Sealing compounds and mastics	10000 - 500000	20	NR	AISI 321
Sealing compounds and mastics	1500	70	NBR	AISI 321
<b>Cosmetic and pharmaceutical products</b>				
Vaseline oil	300	20	NBR	AISI 321
Dental fillings	30000	20	NBR	AISI 321
Shampoo	3000	20	NBR	AISI 321
Toothpaste	70000	40	NBR	AISI 321
Vitamin oil	4500	10	NBR	AISI 321
Whipped products	1500	40		AISI 321
Glycol	20 - 40	20	NBR	AISI 321
Dipropylene glycol	107	20	NBR	AISI 321
Gelafin	1200	45	NBR	AISI 321
Glycerine 100%	4500	10	NBR	AISI 321
Glycerine 100%	650 - 1490	20	NBR	AISI 321
Hand Creme	8000	20	NBR	AISI 321
<b>Vegetable oils / Animal oils</b>				
Peanut Oil	40	40	NBR	AISI 321
Caster Oil	580 - 1500	20	NBR	AISI 321
Caster Oil	2420	10	NBR	AISI 321
Coconat Oil	60 - 80	20	NBR	AISI 321
Cocoa Butter	50	60	NBR	AISI 321
Cod Liver Oil	35	40	NBR	AISI 321
Corn Oil	30	60	NBR	AISI 321
Herrmp seed oil	60	20	NBR	AISI 321
Pig Fat	65	40	NBR	AISI 321
Linseed Oil	55	20	NBR	AISI 321
Linseed Oil	30	40	NBR	AISI 321
Olive Oil	85	20	NBR	AISI 321
Olive Oil	40	40	NBR	AISI 321
Palm Oil	130	20	NBR	AISI 321
Palm Oil	45	40	NBR	AISI 321
Soya Oil	60 - 80	20	NBR	AISI 321
Soybean oil, processed	600 - 800	20	NBR	AISI 321
Rap seed oil	160	20	NBR	AISI 321

Media	Dynamic Viscosity mPa (cps)	Temperature, deg, °C	Stator elastomer	Rotor steel
Cotton seed oil	60	20	NBR	AISI 321
Salad - oil	65	20	NBR	AISI 321
Whale oil	100	20	NBR	AISI 321
<b>Mineral oil products</b>				
Motor oil SAE 5	30	20	NBR	AISI 420 heat-treated
Motor oil SAE 10	50	20	NBR	AISI 420 heat-treated
Motor oil SAE 15	130	20	NBR	AISI 420 heat-treated
Motor oil SAE 15W40	390	20	NBR	AISI 420 heat-treated
Motor oil SAE 15W40	3000	-15	NBR	AISI 420 heat-treated
Motor oil SAE 30	380	20	NBR	AISI 420 heat-treated
Motor oil SAE 40	600	20	NBR	AISI 420 heat-treated
Motor oil SAE 50	750 - 900	20	NBR	AISI 420 heat-treated
Motor oil SAE 5W	50	20	NBR	AISI 420 heat-treated
Motor oil SAE 10W	160	20	NBR	AISI 420 heat-treated
Motor oil SAE 20W	160	20	NBR	AISI 420 heat-treated
Gear oil SAE 90	700	20	NBR	AISI 420 heat-treated
Gear oil SAE 140	2300 - 2700	20	NBR	AISI 420 heat-treated
Hydraulic oil HLP 46	120	20	NBR	AISI 420 heat-treated
Hydraulic oil HLP 68	195	20	NBR	AISI 420 heat-treated
Hydraulic oil HLP 100	300	20	NBR	AISI 420 heat-treated
Engine oil, thick	600	20	NBR	AISI 420 heat-treated
Engine oil, Liquid	150	20	NBR	AISI 420 heat-treated
Electric insulating oil	30	30	NBR	AISI 420 heat-treated
Electric insulating oil	75	10	NBR	AISI 420 heat-treated
Lubricating oil	60 - 200	20	NBR	AISI 420 heat-treated
Oil for steam turbines	30 - 1100	20	NBR	AISI 420 heat-treated
<b>Dairy products</b>				
Butter Fat	45	40	NBR	AISI 321
Cheese Spread	30000	60	NBR	AISI 321
Soft Cheese	30000	60	NBR	AISI 321
Cocoa butter	50	60	NBR	AISI 321
Condensed Milk	80	40	NBR	AISI 321
Sweetened condensed milk	6100	20	NBR	AISI 321
Cream (30-50 % fat content)	15 - 115	20	NBR	AISI 321
Cream	500	20	NBR	AISI 321
Milk	2	20	NBR	AISI 321
Whey	800 - 1500	40	NBR	AISI 321
Sour cream (30-50%)	11 - 115	20	NBR	AISI 321
Yoghurt	150	40	NBR	AISI 321
Liquid egg	150	45	NBR	AISI 321
<b>Foodstuffs</b>				
Cocoa - pasta	4000	20	NBR	AISI 321
Water	894	20	NBR	AISI 321
Baby Food	1400	40	NBR	AISI 321
Brewer's Yeast	370	20	NBR	AISI 321
Vegetable Soup	430	20	NBR	AISI 321
Chocolate products	2600	40	NBR	AISI 321
Chocolate Sauce	280	50	NBR	AISI 321
Fruit Pulp	600	20	NBR	AISI 321
Whipped Desserts	1500	40	NBR	AISI 321
Gelatine	1200	45	NBR	AISI 321
Glucose	4300 - 6800	25 - 30	NBR	AISI 321
Gravy	110	80	NBR	AISI 321
Salat dressing	1300 - 2600	20	NBR	AISI 321
jam	8500	20	NBR	AISI 321
Malt Extract	9500	20	NBR	AISI 321
Mayonnaise	2000	20	NBR	AISI 321
Pectin	300	40	NBR	AISI 321
Fruit juice	50	20	NBR	AISI 321
Fruit Juice Concentrate	1500 - 2500	20	NBR	AISI 321
Fruite Pure	600	20	NBR	AISI 321
Apple Pure	1500	20	NBR	AISI 321
Thick sweet porridge	1000	40	NBR	AISI 321
Strach solution, 25° Baurne	300	20	NBR	AISI 321
Sugar syrup 650 Bx	120	20	NBR	AISI 321
Sugar syrup 750 Bx	400	20	NBR	AISI 321
Tomato Ketchup	1000	30	NBR	AISI 321
Tomato Pure	195	20	NBR	AISI 321
Honey	2000	40	NBR	AISI 321
Alcoholic Beverages	10 - 100	20	NBR	AISI 321
Liquid Eggs	150	45	NBR	AISI 321



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