



# ECCENTRIC SCREW PUMPS

**JESSBERGER**®  
pumps and systems

# JP-700 SR

## SPEED REDUCER



### Drives

Drive with electric or air operated motor and planetary gear.



### ATEX

The JP-700 SR with PTFE stator and a special ATEX mechanical seal has a type examination certificate and can be used for flammable liquids and in potentially explosive environments. II 1/2 G c IIA T4.



### Media

#### Chemical products:

Paints, varnishes, synthetic resins, etc.

#### Mineral oil products:

Oil, fats, etc.



In addition, a special version for the pharma sector and the food sector is available.



### PUMP TUBES

Suction tube Ø 54 mm, discharge connection male thread G 1 1/2". Optional hose connection 1", 1 1/4" or 1 1/2".

SR-Version (with planetary gear = speed reducer, ca. 700 rpm) for short term usage.

Model	Length mm	Flow	Pressure
JP-700.12.1	700/1.000/1.200	12 l/min	6 bar
JP-700.12.2	800/1.100/1.300	12 l/min	12 bar
JP-700.25.1	700/1.000/1.200	25 l/min	6 bar
JP-700.25.2	800/1.100/1.300	25 l/min	12 bar
JP-700.50.1	800/1.100/1.300	50 l/min	6 bar

### Eccentric screw, drum and container pumps

- Particularly for intermittent operation.
- For gentle and almost pulsation free transferring of low viscous to highly viscous, thixotropic, gassy, solids and fibres containing, aggressive and neutral media.
- The stators are adjusted to the medium and are available in **NBR, light NBR, EPDM, light EPDM, FKM and PTFE**.
- Flow rate optionally 12, 25 or 50 l/min (JP-700 DR also as dosing pump available!).
- Discharge pressure **6 bar** at the single-stage and **12 bar** at the two-stage pump tube (PTFE 1-stage max. 2 bar/ 2-stage max. 3 bar).
- The maximum viscosity of the medium is 20.000 mPas at the SR version.
- Medium temperature depending on the stator.
- **Special version for food, cosmetic and pharmaceutical products can be delivered:** Polished surfaces, encapsulated mechanical seal or lip seal, no dead spaces in the pump, easy to disassemble and therefore easy to clean, milk thread connection DN 40 DIN 11851, CIP connections as an option, stator and sealing materials in food grade FDA, also PTFE stators available.



### JP-AIR 2

600 W at max.  
6 bar operating pressure, ATEX

Air operated motor, with starting button and fixing device on the handle. The motor starts running and the pump is transferring media when the button is pressed.

### JP-AIR 3

400 W at max.  
6 bar operating pressure, ATEX

Air operated motor, Stainless steel housing with plug valve at air intake for compressed air control. This regulates the motor speed and varies the flow rate.

### JP-280

825 W Electric motor 230 V, 50/60 Hz

Double insulated class II, splash proofing acc. IP 24. On/off switch, over load protection switch. 5 m cable with plug.

### JP-480

825 W Electric motor ATEX 230 V, 50/60 Hz

Protection class II 2G Ex db IIC T6 Gb, IP 55. On/off switch, over load protection switch. 5 m cable without plug. Ex plug as an option.

# JP-700 DR, -FK

## Eccentric screw drum and container pumps with three-phase-, gear-, single-phase or air operated motor

- The pumps of the series JP-700 DR, FK are robust and powerful. They are used for pumping thin fluid to highly viscous substances (**up to 100.000 mPas**), preferably used stationary or for continuous operation.
- Accessories such as pump hanger, double-sided handle, bypass or dry running protection available as an option.
- The stators are adjusted to the medium and are available in **NBR, light NBR, EPDM, light EPDM, FKM and PTFE**.
- Discharge pressure **6 bar** at the single-stage and **12 bar** at the two-stage pumped tube (PTFE 1-stage max. 2 bar/ 2-stage max. 3 bar).
- **The pump is also available as a food version** (see JP-700 SR) or as a dosing pump (lower flow rate, smaller suction tube diameter).
- Pump tubes with flexible or rigid coupling. Shaft sealing by stuffing box packing or **single acting mechanical seal SiC/carbon/FKM** (O-rings alternatively in FEP). Pump outlet thread R 1½" in Stainless steel SS 316Ti.



MOTORS

**Three-phase motor**  
230/400 V, 50 Hz  
0,55–2,2 kW

**Single-phase motor**  
230 V, 50 Hz  
0,55–1,5 kW

Other drive powers and voltages on request.

**Three-phase gear motor**  
230/400 V, 50 Hz  
0,55–2,2 kW

Reduced speed at high viscosities or for abrasive media, optimal speed for required flow rate.

**Air operated vane motor**  
0,5–1,5 kW,  
900 rpm, 6 bar

JP-AIR 4 (0,5 kW)  
JP-AIR 6 (1,0 kW)  
JP-AIR 8 (1,5 kW)



### Drives

Three-phase or air operated motor, directly coupled with flexible coupling. Pump shaft on ball bearings.

### ATEX

The JP-700 FK in the version with a flexible coupling with PTFE stator and a special ATEX mechanical seal has a type examination certificate and can be used for flammable liquids and in potentially explosive environments.

II ½ G c IIA T4

### Media

Sludges, pastes, soaps, shampoos, honey, syrup, jams, ketchup, etc.

In addition, a special version for use in the food industry and hygienic sector is available.

### PUMP TUBES

Suction tube Ø 54 mm, at discharge connection male thread G 1½".

Optional hose connection 1", 1¼" or 1½".

Model	Length mm	Flow	Pressure
JP-700.12.1 DR	700/1.000/1.200	12 l/min	6 bar
JP-700.12.2 DR	800/1.100/1.300	12 l/min	12 bar
JP-700.25.1 DR	700/1.000/1.200	25 l/min	6 bar
JP-700.25.2 DR	800/1.100/1.300	25 l/min	12 bar
JP-700.50.1 DR	800/1.100/1.300	50 l/min	6 bar
JP-700.50.2 DR	900/1.200/1.400	50 l/min	12 bar
JP-700.50.L DR	900/1.200/1.400	100 l/min	6 bar

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# JP-700.80-.300

## CONTAINER PUMPS



### Eccentric screw container pumps JP-700.80.1, 80.2, 200.1, 200.2, 300.1 and 300.2

- Gentle and nearly pulsation free pumping of low to high viscous, thixotropic, gaseous, solids and fibers containing, aggressive and neutral media.
- **Suction tube, pump parts and rotor made of Stainless steel 316 Ti.**
- Pump and motor directly coupled.
- Encapsulated pin joints or open joints.
- Materials of the shaft seal: **mechanical seal SiC/SiC/FKM or SiC/SiC/FKM encapsulated.** Alternatively stuffing box made of PTFE.
- Discharge pressure **6 bar** at the single-stage and **12 bar** at the two-stage pump tube (PTFE 1-stage max. 2 bar/ 2-stage max. 3 bar).
- Wide range of accessories such as pump hanger, double-sided handle, bypass or dry running protection available as an option.

- **Special features of the food version:** Polished surfaces, easy disassembly and thus easy to clean, at the discharge milk thread DIN 11851, stator and seals in food grade version according to FDA, PTFE stators also available.

#### Drives

Three-phase, gear or air operated motor, directly coupled with extended motor shaft.



#### Media

##### Chemical products:

Paints, varnishes, synthetics resins, latex, silicone compounds, polymers etc.



##### Mineral oil products:

Oils, fats, etc.



##### Food:

Fruit juices, concentrates etc.



#### PUMPS

Suction tube Ø 89, 105, 130 mm, male thread on the discharge port.

Hose connection DN 40, DN 50-65, DN 65-80.

Model	Length mm	Flow	Pressure
JP-700.80.1	1.000/1.200/1.400	80 l/min	6 bar
JP-700.80.2	1.000/1.200/1.400	80 l/min	12 bar
JP-700.200.1	1.000/1.200/1.400	200 l/min	6 bar
JP-700.200.2	1.000/1.200/1.400	200 l/min	12 bar
JP-700.300.1	1.000/1.200/1.400	300 l/min	6 bar
JP-700.300.2	1.000/1.200/1.400	300 l/min	12 bar



### Correct interpretation of your eccentric screw pump.

Based on your specific application we need:

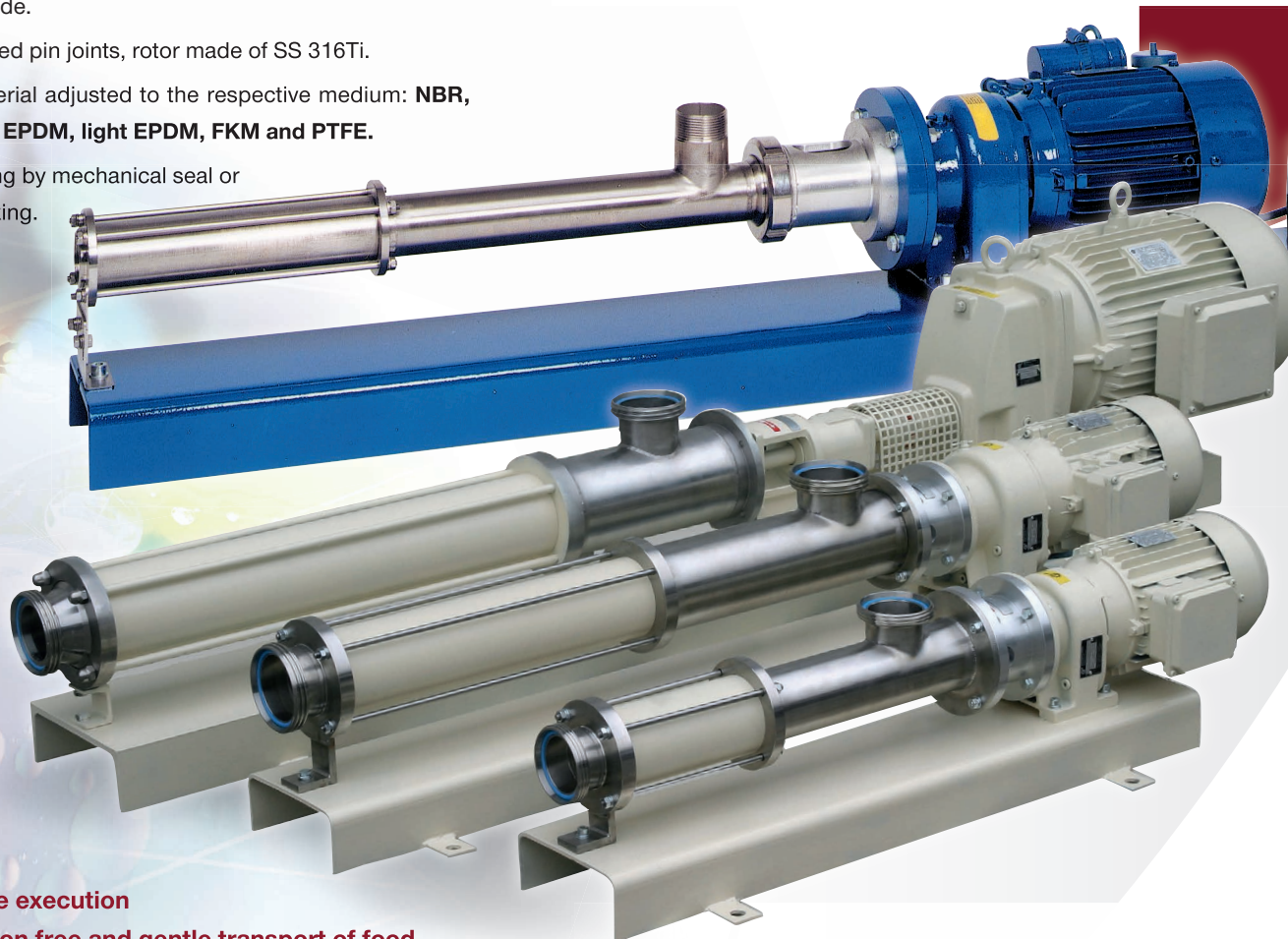
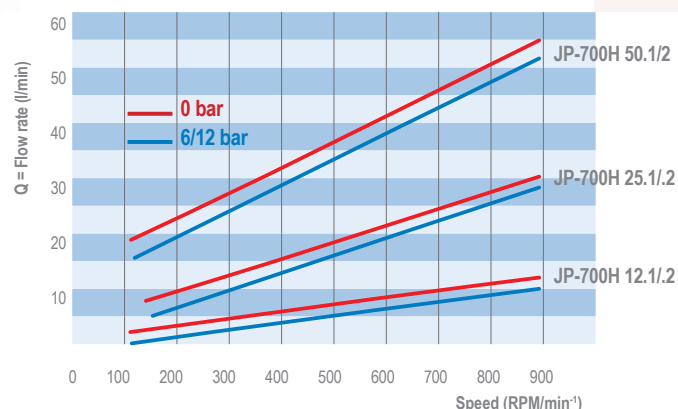
- Specification of the liquid.	✓
- Viscosity, medium temperature and density.	✓
- Required flow rate.	✓
- Head including pipe losses.	✓
- Content as well as type and size of solids.	✓
- Will the pump be used mobile or stationary, vertical or horizontal?	✓
- Operating hours per day.	✓

# JP-700.H

## HORIZONTAL PUMPS

### Horizontal eccentric screw pumps

- These eccentric screw pumps enable a **gentle, almost pulsation free transport** of thin to high viscous, thixotropic, gaseous, solids and fibre containing, aggressive and neutral media.
- Driven by **air operated, three-phase motor, gear motor, variable speed gear motor, IP 55.**
- Pump and drive directly coupled.
- Pressure stages 6 or 12 bar, with PTFE 2-3 bar, **flow rates up to 3.000 l/h.**
- Threaded connections G 1½" on suction and G 1¼" on pressure side.
- Encapsulated pin joints, rotor made of SS 316Ti.
- Stator material adjusted to the respective medium: **NBR, light NBR, EPDM, light EPDM, FKM and PTFE.**
- Shaft sealing by mechanical seal or gland packing.



### Food grade execution

**For pulsation free and gentle transport of food, cosmetic and pharmaceutical products.**

- Polished surfaces, easy to dismantle.
- No dead spaces inside the pump, therefore easy to clean.
- Milk thread connections DIN 11851.
- CIP-connections (as an option).
- Open pin joints.
- **Stator and material of seals in food grade quality FDA, also PTFE stators are available.**

### Drives

Three phase or air operated motor directly coupled, pump shaft on ball bearings.



### Media

Sludges, pastes, soaps, shampoos, honey, syrup, jams, ketchup, etc.



In addition, a special version for use in hazardous areas as well as a version for the food industry is available.





# DOSING PUMPS

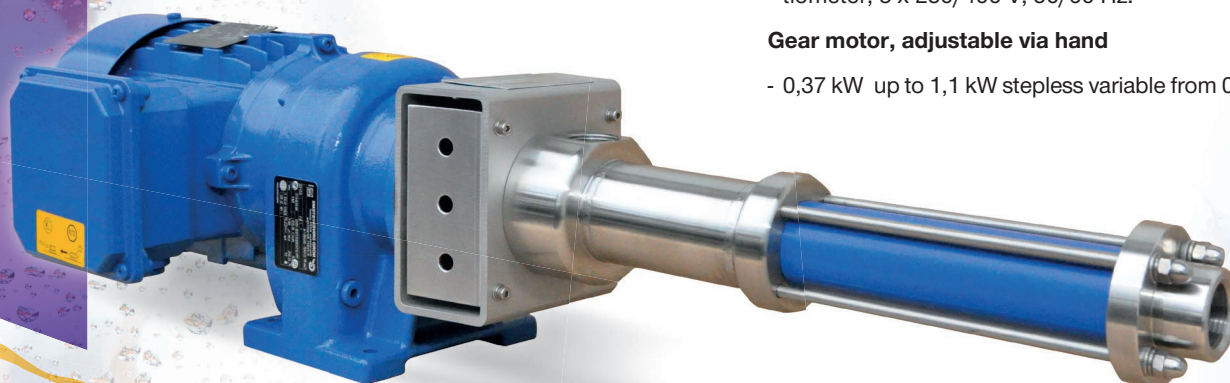
Type series JP-7032 to 7120.2 is supplied with two different drives:

## Gear motor, suitable for use with frequency inverter

- Between 12 and 100 Hz, 230/400 V, 50 Hz, IP 55, B3/B5, flange 120 mm, Iso class F, thermo sensors 3 x 155 °C.
- Frequency inverter for installation in switchboard, including line filter and operating terminal, single phase AC connection 1 x 230 V, 50/60 Hz.
- Frequency inverter on gear motor, speed control by potentiometer, 3 x 230/400 V, 50/60 Hz.

## Gear motor, adjustable via hand

- 0,37 kW up to 1,1 kW stepless variable from 0 to 1.200 rpm.



Series	Flow l/h	Pressure bar	Power kW	Speed min -1	Drive
JP-7032	0,6 - 3	12	0,37 - 0,75	0 - 700	SK 01
JP-7052	1,2 - 12				
JP-7082	6 - 54				
JP-7112	15 - 150				
JP-7115.1	50 - 600	6	0,55 - 1,1		
JP-7115.2	50 - 600	12			
JP-7115.3	50 - 600	18			
JP-7115.4	50 - 600	24			
JP-7120.1	50 - 1.200	6			
JP-7120.2	50 - 1.200	12			

Dosing pumps for thin fluid to high viscous media of series JP-7032 up to JP-7120.2 are suitable for an almost pulsation free transferring and small quantity dosing of thin to high viscous, thixotropic, gaseous, solids and fibre containing, aggressive and neutral media in nearly all industries.

- Flow rate adjustable by the speed of the motor.
- Stainless steel execution SS 316 Ti. Rotor SS 316 Ti.
- Pump and motor directly coupled, space-saving design.
- Flow rates from 0,6 up to 1.200 l/h.
- Pressure stages 6, 12, 18 and 24 bar.
- Threaded connections on suction side G 1" and G ½", on discharge side G 1".
- Totally enclosed and open pin joints.
- Stator material adapted to the pumped medium (**NBR, light NBR, EPDM, light EPDM, FKM; PTFE** is only available at types JP-7115.1 and JP-7115.2).
- Shaft seal by single-acting mechanical seal or stuffing box.
- The JESSBERGER eccentric screw dosing pumps will be supplied in the standard version with a gear motor that is suitable for use with a frequency inverter or a gear motor that is adjustable via hand. The pumps currently do not yet have an ATEX approval and are therefore not allowed to be used for pumping flammable media.

## Media

### Chemical products:

Colours, synthetic resins, coatings, latex, polymers and silicones compounds, etc.



### Mineral oil products:

Oils, fats, cutting oils, coolants, etc.



### Cosmetic and pharmaceutical industry:

Cleaning agent, liquid soaps, glycerine, etc.



### Food:

Tomato puree, ketchup, jam, honey, fruit juices and concentrates, wine grapes, mashes, fruit pulps, milk products, chocolate mass, dough, pectin, etc.



# FURTHER INDUSTRIAL PUMPS

<b>Selection of stators for your eccentric screw pumps</b>	✓
<b>NBR black</b> max. 90 °C, suitable for oily and greasy media, alcohol and aqueous solutions. Not resistant to acids, alkalies and solvents.	✓
<b>NBR White Nitrile</b> max. 90 °C, suitable for oily and greasy media, alcohol and food. Not resistant to acids, alkalies and solvents.	✓
<b>FKM</b> max. 160 °C, high chemical resistance.	✓
<b>PTFE</b> max. 200 °C, high chemical resistance, suitable for food, pharmaceutical and cosmetic products.	✓
<b>EPDM</b> max. 110 °C, good resistance to alkalies (undiluted and diluted), acids (diluted), ketones, alcohols. Food compatible (corresponding to BGWV recommendations and in the composition of the positive list of FDA). Not resistant to oils and fats, when transferring milk (3.5% fat) a sufficient resistance is given.	✓

## Industrial pumps horizontally mounted

- In addition to the shown standard pumps we can quote further sizes:

**Flow rate:** up to 200 m³/h

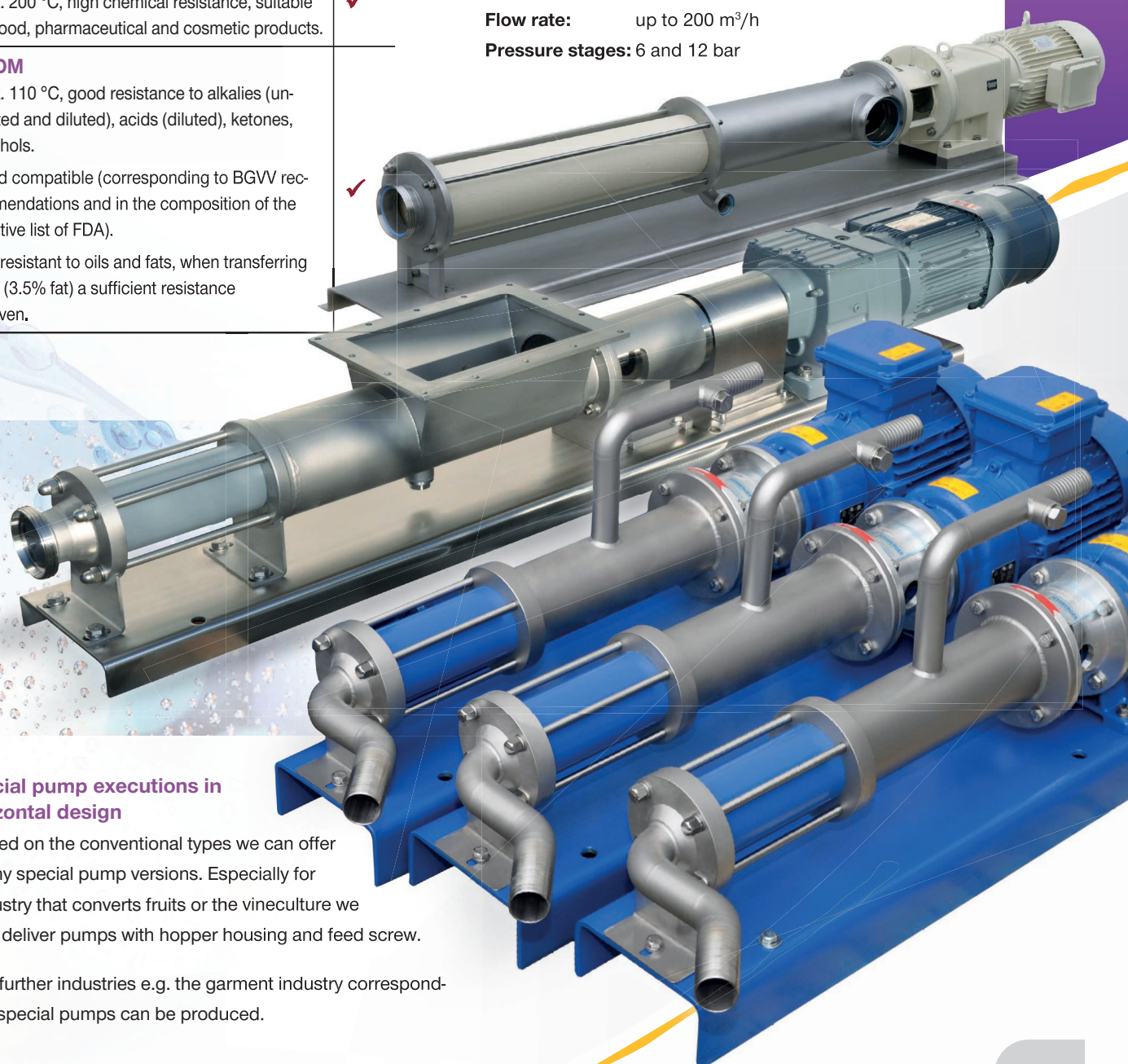
**Pressure stages:** 6, 12, 18 und 24 bar

## Mono pumps horizontally mounted

- A low priced alternative are pumps in block construction. These pumps are directly flanged to the drive. Due to saving of bearing pedestal, elastic coupling and if necessary also base plate briefer mounting forms and cheaper versions can be realised.

**Flow rate:** up to 200 m³/h

**Pressure stages:** 6 and 12 bar



## Special pump executions in horizontal design

- Based on the conventional types we can offer many special pump versions. Especially for industry that converts fruits or the vineculture we can deliver pumps with hopper housing and feed screw.
- For further industries e.g. the garment industry corresponding special pumps can be produced.



# FOR AGRICULTURE AND BIOGAS PLANTS

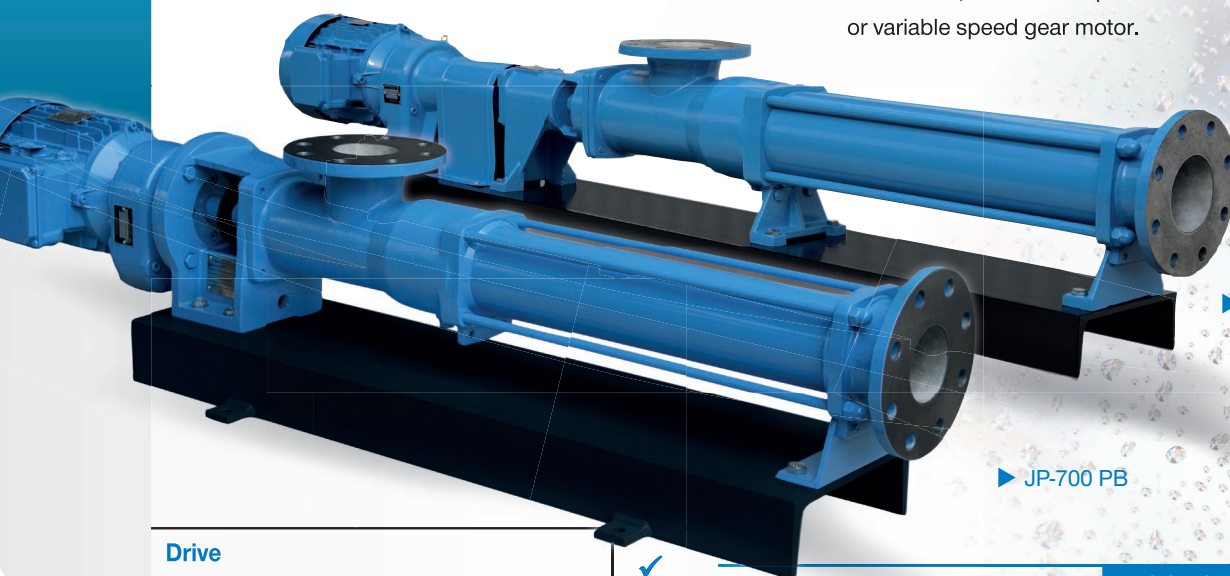
**Eccentric screw pumps JP-700 PB / JP-700 PS for pumping thin to high viscous, thixotropic, solid and fibrous, aggressive and neutral media are used especially in the agriculture and biogas industries.**

- **Pulsation-free transport**, gentle pumping.
- Self-priming, reversible Pumping direction.
- Pump housing in gray cast iron or Stainless steel.
- **Rotating parts in Stainless steel**, encapsulated cardan joints.
- Shaft seal, stuffing box or mechanical seal.
- Stators in **NBR, EPDM, FKM, PTFE**.
- Base plate in Steel or Stainless steel. Horizontal or vertical mounting.
- Gear motor, suitable for operation with frequency converter or variable speed gear motor.

Pressure stages in bar

Version	Flow rate	1-stage	2-stage	3-stage	4-stage
JP-700 PB	0,2 m³/h - 150 m³/h	max. 6	max. 12	max. 18	max. 24
JP-700 PS					

- Drive coupled directly or with bearing bracket and flexible coupling. Flanges DIN 2501 or ANSI.



► JP-700 PB

## Drive

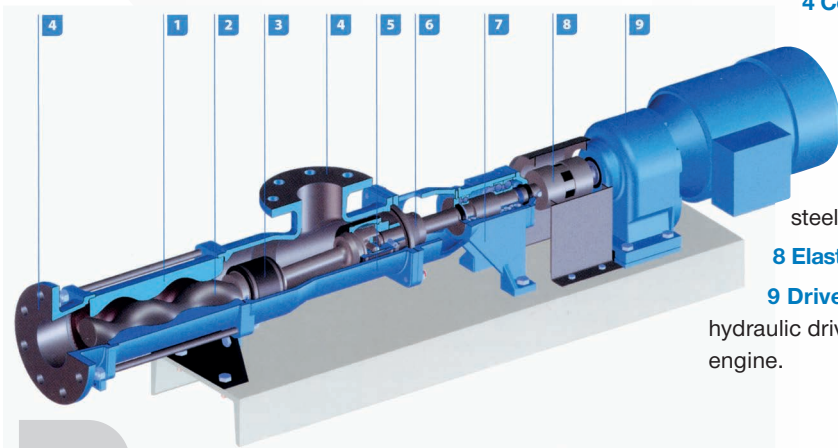
Three-phase or air operated motor.

## Media

Wastewater and sludges, paints, varnishes, resins, acids, alkalies, fermentation substrates, fertilizer, animal feed, oils, grease, petrochemical products, etc.

## CONSTRUCTION

- 1 Stator** - wide range of elastomer types, vulcanised in Steel pipes, also as solid stators.
- 2 Rotor** - different geometries and materials.
- 3 Joinst** - open and encapsulated, cardan joints and bolt joints.
- 4 Connections** - according to all standards, special versions.
- 5 Casing** - different materials and variants available.
- 6 Shaft seals** - many seals, mechanical seal as standard.
- 7 Bearing bracket** - maintenance-free ball bearings, robust bearing bracket, drive shaft made of Stainless steel.
- 8 Elastic coupling** - connection between drive and pump shaft.
- 9 Drive** - selectable: gear motor, variable geared motor, hydraulic drive, air operated drive, electric motor, combustion engine.





# DOSING SYSTEMS

## MULTI-COMPONENTS

Numerous customers from the food sector, as well as the packaging and chemical industries want to decant liquids not only from barrels or containers, but to fill these precisely in small containers.

In the case that thin to viscous media should be volumetrically filled into small containers, in addition to a **gentle and low-pulsation transferring** an accurate dosing is needed.

This not only results from the nature of things, but is also an EU requirement with regard to the filling of packaging in order not to disadvantage consumers.

In the pre-packaging directive is normalized to what extent the mass or the volume of the contents of a pack as printed on the pack may deviate.

### Multi-component filling and dosing system.

For dispensing of low-viscous to medium viscous media according to **specified recipes a Multi-Component Filling and Dosing System** was supplied that is based on the principle of our own eccentric screw pumps and the different media can reliably and accurately be filled and dispensed.

► Prevents dripping of the medium.

► The recipes and dosing quantities are entered via a display with a control keyboard.

► Eccentric screw dosing pumps for precise filling of thin to viscous media.

### Structure of multi-component filling and dosing system

Horizontal <b>eccentric dosing screw pumps</b> with gear motor.	✓
Storage tank made of Stainless steel, with sight glass, optionally with heating jacket available for warm water heating.	✓
Frequency inverter (in central control cabinet).	✓
Level indicator.	✓
Control cabinet with digital display.	✓
Central, password-protected control cabinet in a separate room.	✓
Foot switch for starting the dosing.	✓

► The metering system is integrated in a frame of Stainless steel SS 316 Ti.



# DRUM EMPTYING UNIT

## MOBILE



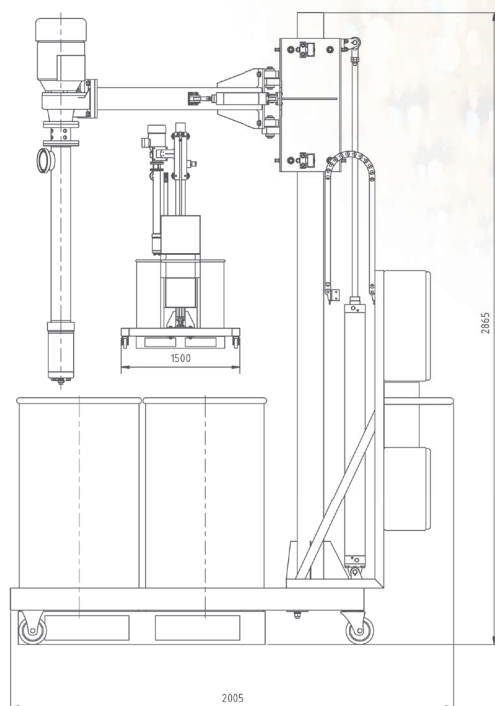
► Single-column drum emptying station with container pump.

**Electric or pneumatic powered lifting devices are used in many industries for lifting and positioning heavy supplies. In connection with an eccentric screw pump, also barrels with highly viscous media can be emptied quickly, safely and semi-automated.**

Numerous customers from the bottling, manufacturing or packaging industry need to empty highly viscous liquids from a variety of **200 liter barrels quick, clean and as simple as possible**. In many of these applications, it is no longer enough for a pump manufacturer to offer only a single pump.

The barrel pump manufacturer JESSBERGER has, therefore, developed in the field of **eccentric screw pumps**, as the company logo and the text **“pumps and systems”** shows, from a pure pump manufacturer to a system supplier who can offer complete solutions in the field of automation, dosing and control technology in addition to pumps. In recent years, numerous special designs have been supplied to renowned German companies. An example of a semi-automated barrel emptying of highly viscous media is the mobile single-column barrel emptying system.

► Constructive representation of a single-column drum emptying station with pump.



### Construction of JESSBERGER single-column drum emptying system

The **barrel emptying system** is almost completely made of Stainless steel and consists of the following components:

Vertical eccentric screw pump in food design.	✓
Wheeled truck with a swivelling arm.	✓
Electrical control in a shapely Steel control cabinet.	✓
Pneumatic control in a separate switch-box.	✓



# DRUM EMPTYING PLANT STATIONARD

**Starting point for the stationary single-column barrel emptying system with follower plate has been again our own eccentric screw pumps.**

This additional special construction by JESSBERGER was delivered to a customer, who wanted to fill a high-viscosity preservative agent from 200 liter barrels by means of a type grease gun with follower plate and a scale in small containers.

The solution proposed by our screw pump designers was a stationary single-column barrel emptying system with follower plate. The system was designed for an almost **complete emptying of middle to high viscous media** from cylindrical smooth wall or corrugated barrels with 200 liter capacity.

- Weighing unit for the exact determination of the pumped media.
- Follower plate made of Stainless steel 1.4301 with silicone rubber sealing lip.
- The pump with the follower plate is lifted into the upper end position by means of a lifting cylinder.



## Pump parts

Drive shafts, coupling rods and other turned parts.

## Seals

Mechanical seals, glands or O-rings.

## Stators

in all popular elastomers.

## Rotors

of Stainless steel.  
Hard chrome plated  
or coated as an option.



# SPARE PARTS

## Spare parts for eccentric screw pumps.

Due to our good contacts in pump business we can deliver original spare parts from a lot of reputable manufacturers.

If you prefer we can deliver also alternatives that are nearly equivalent in quality – but they are explicitly not original parts.

# BOTTLLING PLANT WITH HOPPER



► The bottling system was completely made of Stainless steel SS 316 Ti and is thus suitable for many industries and applications.

## Dosing control

The dosing control Jessfill-01 consists essentially of a **memory programmable controller (PLC)**, an LCD display for parameter input and the power unit for driving the pump. The dosing control can be used for the control of different pump sizes, whereby a further portion of the filling quantity is also possible.

To start the filling process initially a trial issue is to calibrate. This is done by entering the **nominal capacity** and the determined **actual amount** of the sample output. Then the continuous filling can begin. Occasional checks to deviations of capacity from the nominal value are required. Any discrepancies can be corrected manually at the control box.

Another system with a funnel-shaped storage container for filling in bottles, cups or cans is also based on the principle of eccentric screw pumps.

At the customer's application **thin to viscous media should be bottled by pressing a button** and on a gram exactly in manually supplied containers, so that in view of the EU pre-packaging directive a repeatable dosing had to be absolutely guaranteed.

In addition to chemical resistance with respect to the conveying medium, care was taken in the design of the system with regards to the compatibility with respect to any cleaning agents as well as the expected temperatures in the cleaning process.

The bottling system can be used both in **stand-alone mode** as well as connected to a master control unit and allows in this particular case of the customer a valveless, subsequent drip free filling of different media in bottles, cups or cans.

Besides the user-friendly design (easy disassembly, fast product change) particular attention was paid to a **high dosing accuracy**, a gentle product handling and a pulsation free bottling. In addition to a FDA compliant version, CIP cleaning can be offered as an option.

## ► DOSING CONTROL



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