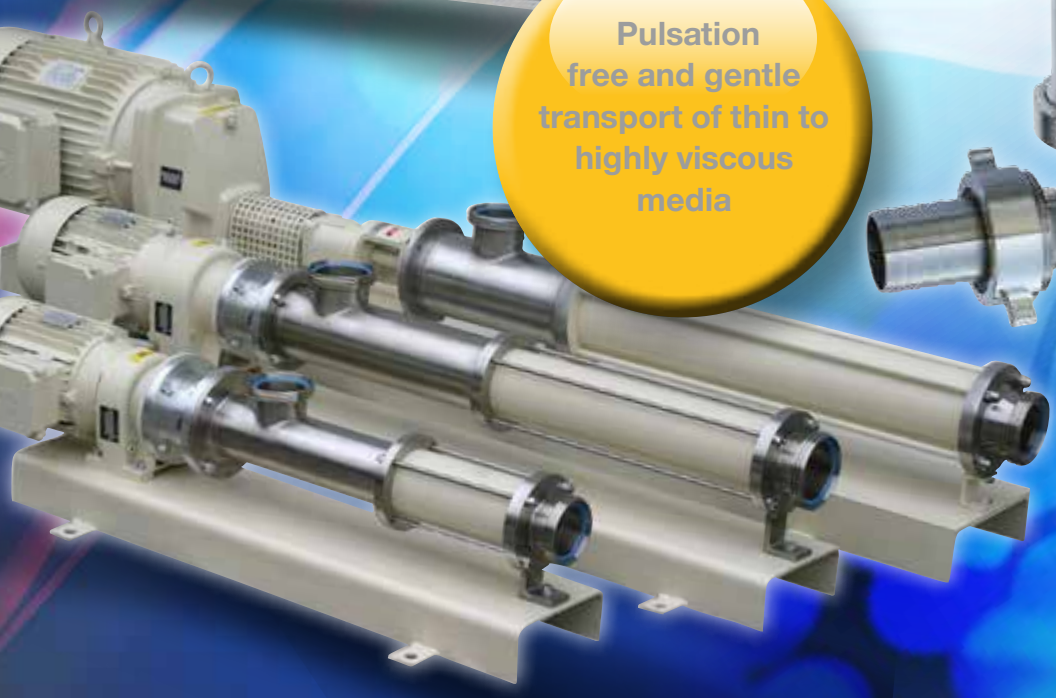
JESSBERGER
pumps and systems

www.jesspumpen.de

Eccentric screw pumps

- Vertical barrel- and container pumps
- Horizontal eccentric screw pumps
- Dosing pumps for high viscous media
- Dosing, filling and emptying systems
- Spare parts

Made in Germany



Pulsation free and gentle transport of thin to highly viscous media

Decades of experience in eccentric screw pump business

Made in Germany

The family-run company JESSBERGER headquartered in Ottobrunn near Munich is manufacturer of electric and pneumatic driven drum and container pumps, vertical and horizontal eccentric screw pumps, dosing pumps for high viscous media, hand operated pumps and a comprehensive range of accessories like flow meters, nozzles, etc.

Air operated diaphragm pumps, horizontal centrifugal pumps (also available as magnetically coupled sealless centrifugal pumps) and vertical centrifugal pumps complete the delivery program beside further industrial pumps.

Due to long time employees and the firm owners the company can look back on a long and substantial experience in pump business. Although the name JESSBERGER exists as a firm name in drum pump business only since beginning 2003 the company has developed within a short time to a real alternative. The intention was to set new standards in price at coexisting highest quality – what was succeeded impressively.

The good reputation of JESSBERGER in drum pump business is a result of a personal, expert advice through our employees, a maximum flexibility in all areas of the company and a direct contact to the customers.

The company owners have set themselves the goal of having a very close and personal contact to their customers – not only by exhibiting on many trade shows each year. Furthermore they want to demonstrate their flexibility that is based on a clear arranged company structure at delivery times and special customers' requests.

Qualified partners in Germany, Europe and all over the world complete this concept and guarantee a nearly optimized customer support.

AtEx100

TÜVRheinland® CERT ISO 9001

Our advantages

- Owner operated family company
- Decades of experience in drum pump business
- Quality made in Germany
- Optimal price / performance ratio
- Personal and expert advice, the best possible customer service
- Maximum flexibility in all company divisions
- Certified acc. to ISO 9001: 2008 and ATEX 94/9/EC

Since March 2008 the pump manufacturer has its new head office in Ottobrunn. More than 500 sqm production/stock and 400 sqm office will ensure a further sustained economic growth and the possibility to fullfill special customers' requests. The construction and production of the eccentric screw pumps occurs at a second facility in Upper Bavaria.

The company leadership and the technical management attach the greatest importance to a strict quality control. The complete production and assembling area is organized in accordance to the quality management system DIN EN ISO 9001:2008 and for the stainless steel pump tubes, the electric ex-motor JP-400, the air driven motors JP-AIR 1, JP-AIR 2 and JP-AIR 3 and some eccentric screw pumps in accordance to ATEX 100 a (explosion prevention and protection).

Annual external and internal inspection audits assure the compliance with these regulations and ensure the high quality standards. This pronounced awareness of quality and the experience for decades in drum pump business guarantee a high quality of the pumps at a very attractive price.

Convince yourself of the advantages of JESSBERGER and the quality made in Germany.

JESSBERGER pumps and systems

Contents

Introduction to the JESSBERGER eccentric screw pumps

Operation of a eccentric screw pump

Horizontal or vertical eccentric screw pumps made by JESSBERGER are especially used for pumping viscous to high viscous, thick, solids containing or fibrous, partly abrasive media. Named after its inventor, Rene Moineau (1887-1948), the pump is also called Moineaupump. The principle of eccentric screw pumps was registered by him for a patent in 1930 and has therefore successfully proven for decades in the pump area and established in many applications.

The eccentric screw pumps belong to the group of rotary positive displacement pumps: In this pump principle, a rotating pump part which is called rotor rotates in a stationary pump part, which is so-called stator and is located in a sleeve made of steel or stainless steel: The rotor looks like a conveyor screw with a large pitch, large flight depth and a small core diameter. It does not form symmetrical axis inside the pump body but rotates as single outer screw “eccentric” in the stator, which is a two-start inner screw having twice the pitch as the rotor.

The due to the materials used mostly elastic, fixed stator basically has a thread more than the rotor and twice the pitch length. Due to the geometry by the eccentric rotation of the rotor and the stator and in addition radially moving rotor cavities are produced for the medium between the stator and the rotating rotor therein. These spaces for the liquid to be pumped are produced in that the movement of the rotor of the second gear of the stator for the pumped liquid is used. The by the eccentric rotation produced cavities move uniformly from the suction side to the discharge side of the stator. Figuratively speaking, the resulting cavities walking with the fluid up or at a horizontal pump in the plane in the direction of the pressure side of the eccentric screw pump.

The rotors of a eccentric screw pump are mostly made of stainless steel material quality 361 Ti or 304 and partially in difficult applications, hard chrome plated (for solids or present abrasiveness) or specially coated. The at the end of the pump shaft attached rotor rotates in the stationary stator in rubber materials, subject-specific also called elastomers such as NBR (Perbunan), BR (Buna CB), NR (natural rubber), EPDM or FKM. We also have a solid stators made of PTFE or partially cast iron available.

The theoretical flow rate of a eccentric screw pump depends primarily from the predetermined geometry of the rotor and stator and the cavities resulting from. In practice, the actual volumetric flow rate per revolution is determined at 360 °C rotation of the rotor and free pump outlet. The shape of the cavities resulting during the rotation of the rotor is constant, so that the medium to be conveyed is compressed at no time during the pumping process. With an appropriate geometry of the rotor and stator not only liquids but also media containing solids or fibers can therefore transferred with eccentric srew pumps. The pumping principle guarantees the user a continuous, very gentle and pulsation free transferring of the medium. In particular, the shear forces which act in a pumping process on the conveying medium are very low.

Due to the rotor/stator geometry, the flow rate of a eccentric screw pump can be changed via the speed of the motor. The delivery rate to be achieved also depends on the present back pressure. Because the seal between the rotor and stator is not static, little media will always flow back from the pressure side to the suction side of the pump. This flow rate losses can be displayed as the difference between the theoretically calculated and the actual flow rate based on a characteristic curve.

Vertical and horizontal eccentric screw pumps are basically to absolute flowability of the pumped medium (about 100,000 mPas) used. Since this type of pump must not run dry (otherwise considerable wear on the stator, and damage to the mechanical seal), it is therefore necessary that the medium flows and above all, can flow independently to the pump. If a conveying medium such as peanut butter or silicone is no longer flowable, you can still use an eccentric screw pump, the medium will, however, supplied by the own weight of a follower plate or initially to be supplied under pressure to the pump, until the pump can suck ultimately the follower plate and therefore the conveying medium.

Due to the extensive sealing of rotor and stator we supply eccentric screw pumps with discharge pressures of 6 bar (single-stage version) or 12 bar (two-stage variant). If one were to define the maximum permissible levels of pressure to 6 bar and in addition use twelve-stage conveyor elements could even be overcome pressures up to 72 bar, which is not required in the field of drum pumps.

Nevertheless, a single-stage or two-stage drum pump or container

Due to the geometry by the eccentric rotation of the rotor and the stator and in addition radially moving rotor cavities are produced for the medium between the stator and the rotating rotor therein.

pump must not encourage against a closed valve, a closed nozzle or an already clogged filter. If such an application necessarily be required, you can either use a bypass with a pressure relief valve that ensures a timely relief in the system, or a pressure switch, which the motor and thus the pump immediately switches off before the pump, other system components, or persons will endangered.

The JESSBERGER eccentric screw pumps program

For more than 10 years our production range of eccentric screw pumps includes in particular the following products and services:

- Drum and container pumps with single phase motor or air operated motor to 20,000 mPas (ATEX certified).
- Drum and container pumps with three-phase motor or gear motor or air operated lamellar motor up to 100,000 mPas (ATEX certified).
- Horizontal industrial pumps and block pumps for pumping highly viscous, abrasive, neutral or aggressive media, with or without solids, with or without fibers.
- Dosing pumps (manually or frequency controlled) and filling plants for dosing of small quantities.
- Barrel emptying stations with follower plate for non-flowable media.
- Spare parts for eccentric screw pumps: stators, rotors, connecting rods, mechanical seals, cuffs, etc.
- Pumps repairs and maintenance are processed in our house quickly and reliably.
- In addition, our engineers offer competent and also free consultation to extend the life of your pumps. In addition to the exact application we also consider the suitability of the selected pump materials.
- If you have regular need for spare parts we also offer a free storage of spare parts ordered from us for eccentric screw pumps.

We will advise you in terms of chemical resistance.

Please contact us.

JP-700 SR Eccentric screw drum and container pumps
(speed reducer)

► Drive with electric or air operated motor and planetary gearbox.

► ATEX 100

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 explosive environments.

II ½ G c IIA T4

Description

- 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.
- Pump tube will be driven by electric universal or air operated motors.
- All pump parts are made of stainless steel 316 Ti.
- The stators are adapted to the medium and available in NBR, NBR light, FKM, EPDM, EPDM light, PTFE.
- Discharge pressure 6 bar at the single-stage and 12 bar with the two-stage pump tubes.
- The maximum viscosity of the medium is 20,000 mPas at the SR version.
- Medium temperature up to 160 °C.
- Special lengths up to 2,000 mm on request.
- Easy disassembling and therefore optimal cleaning. Weight 12 kg.
- Special version for food, cosmetic and pharmaceutical products can be delivered: polished surfaces, either open or encapsulated pin joints, no dead spaces in the pump, easy disassembling and therefore easy cleaning, milk thread connection DN 11851, CIP connections as an option, stator and sealing materials in food grade FDA, also PTFE stators available.

Examples of media

Standard version suitable for:

Chemical products

Paints	Latex
Varnishes	Silicone
Resins	Polymers

Mineral oil products

Oils	Cutting oils
Fats	Refrigerant

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

MOTORS

JP-AIR2	JP-AIR3	JP-280	JP-380
600 W at max. 6 bar operating pressure, ATEX	400 W at max. 6 bar operating pressure, ATEX	825 W Electric motor 230/115 V, 50-60 Hz	825 W Electric motor 230 V, 50 Hz
Air operated motor, with starting button on the handle. The motor starts running and the pump is transferring media when the button is pressed.	Air operated motor, stainless steel housing with plug valve at air intake for compressed air control. This regulates the motor speed and varies the pumping capacity.	Double insulated class II, splash proofing acc. IP 24. On/off switch, over load protection switch	Splash proofing acc. IP 55. Low voltage release and integrated speed control.

JESSBERGER pumps and systems

JP-700 SR Pump tubes for eccentric screw pumps (speed reducer)

Pump tubes JP-700 SR speed reducer

- For direct connection to electric universal motors JP-180, JP-280 respectively JP-360, JP-380 and to air driven motors JP-AIR 1, JP-AIR 2 and JP-AIR 3.
- **Suction tube Ø 54 mm, at discharge male thread connection G 1½".**
- **Optional hose connection 1", 1¼" or 1½".**
- Planetary gear (SR speed reducer) reduces speed from 8.000–12.000 rpm to 550–800 rpm.
- Suitable for 200 liter drum with 2"- bunghole.
- All parts of the pump that will get in contact with pumped medium are made of stainless steel or identical to material of stator. Shaft seal by stuffing box packing or single acting mechanical seal Chrome/Carbon/FKM. At discharge side male thread R 1½" made of stainless steel.

JP-700.12.1 SR

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	700 mm 1000 mm 1200 mm	12 l/min	6 bar
EPDM EPDM light	700 mm 1000 mm 1200 mm	12 l/min	6 bar
FKM	700 mm 1000 mm 1200 mm	12 l/min	6 bar
PTFE	700 mm 1000 mm 1200 mm	12 l/min	2 bar

JP-700.12.2 SR

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	800 mm 1100 mm 1300 mm	12 l/min	12 bar
EPDM EPDM light	800 mm 1100 mm 1300 mm	12 l/min	12 bar
FKM	800 mm 1100 mm 1300 mm	12 l/min	12 bar
PTFE	800 mm 1100 mm 1300 mm	12 l/min	3 bar

JP-700.25.1 SR

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	700 mm 1000 mm 1200 mm	25 l/min	6 bar
EPDM EPDM light	700 mm 1000 mm 1200 mm	25 l/min	6 bar
FKM	700 mm 1000 mm 1200 mm	25 l/min	6 bar
PTFE	700 mm 1000 mm 1200 mm	25 l/min	2 bar

JP-700.25.2 SR

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	800 mm 1100 mm 1300 mm	25 l/min	12 bar
EPDM EPDM light	800 mm 1100 mm 1300 mm	25 l/min	12 bar
FKM	800 mm 1100 mm 1300 mm	25 l/min	12 bar
PTFE	800 mm 1100 mm 1300 mm	25 l/min	3 bar

JP-700.50.1 SR

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	800 mm 1100 mm 1300 mm	50 l/min	6 bar
EPDM EPDM light	800 mm 1100 mm 1300 mm	50 l/min	6 bar
FKM	800 mm 1100 mm 1300 mm	50 l/min	6 bar
PTFE	800 mm 1100 mm 1300 mm	50 l/min	2 bar

JP-700 DR Eccentric screw drum and container pumps

with three-phase-, gear-, single-phase- or air operated motor

► Drive with three-phase or air operated motor directly coupled with extended motor shaft.

Description

- The pumps of the series JP-700 DR are versatile, robust and powerful pumps. They are used for pumping thin fluid to highly viscous substances up to 100,000 mPas**, preferably used stationary and in continuous operation.**
- **JP-700 DR-Version** drive through three-phase-, gear-, single-phase- or air operated motors.
- Wide range of accessories such as pump mounting bracket, double-sided handle, bypass or dry running protection available as an option.
- The weight of the pump depends on suction tube length and the drive 25-35 kg.
- The pump is also available as a food version (see JP-700 SR version) or as a dosing pump (lower flow rate, smaller suction tube diameter).

► **Drive with three-phase or air operated motor is directly coupled with flexible coupling, beared shaft ball.**

► **ATEX 100**

The JP-700 DR with PTFE stator and a special ATEX mechanical seal has a type-examination certificate and can be used for flammable liquids and in explosive environments.

II ½ G c IIA T4

Examples of media

Standard version suitable for:

Sludges	Honey
Pastes	Syrup
Soap	Jams
Shampoos	Ketchup, etc.

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

MOTORS

Three-phase motor	Three-phase gear motor	Air operated lamellar motor
230/400 V, 50 Hz 0,37–2,2 kW	230/400 V, 50 Hz 0,37–2,2 kW	0,5–1,5 kW, 900 rpm at 6 bar
Other flow rates and voltages on request. Single-phase motor 230 V optional.	Reduced speed at high viscosities or for abrasive media, optimal speed for requested flow rate.	JP-AIR 4 (0,5 KW) JP-AIR 6 (1,0 kW) JP-AIR 8 (1,5 KW)

JESSBERGER pumps and systems

JP-700 DR Pump tubes for eccentric screw pumps

Pump tubes JP-700 DR with rigid and flexible coupling

- All parts of the pump that will get in contact with pumped medium are made of stainless steel or identical to material of stator.
- Shaft seal by stuffing box packing or single acting mechanical seal stainless steel/carbon/FKM. At discharge side male thread R 1½" made of stainless steel.
- **Suction tube Ø 54 mm, at discharge male thread connection G 1½".**
- **Optional hose connection 1", 1¼" or 1½".**
- The stators are adapted to the medium and available in NBR, NBR light, FKM, EPDM, EPDM light, PTFE.

JP-700.12.1 DR

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	700 mm 1000 mm 1200 mm	12 l/min	6 bar
EPDM EPDM light	700 mm 1000 mm 1200 mm	12 l/min	6 bar
FKM	700 mm 1000 mm 1200 mm	12 l/min	6 bar
PTFE	700 mm 1000 mm 1200 mm	12 l/min	2 bar

JP-700.12.2 DR

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	800 mm 1100 mm 1300 mm	12 l/min	12 bar
EPDM EPDM light	800 mm 1100 mm 1300 mm	12 l/min	12 bar
FKM	800 mm 1100 mm 1300 mm	12 l/min	12 bar
PTFE	800 mm 1100 mm 1300 mm	12 l/min	3 bar

JP-700.25.1 DR

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	700 mm 1000 mm 1200 mm	25 l/min	6 bar
EPDM EPDM light	700 mm 1000 mm 1200 mm	25 l/min	6 bar
FKM	700 mm 1000 mm 1200 mm	25 l/min	6 bar
PTFE	700 mm 1000 mm 1200 mm	25 l/min	2 bar

JP-700.25.2 DR

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	800 mm 1100 mm 1300 mm	25 l/min	12 bar
EPDM EPDM light	800 mm 1100 mm 1300 mm	25 l/min	12 bar
FKM	800 mm 1100 mm 1300 mm	25 l/min	12 bar
PTFE	800 mm 1100 mm 1300 mm	25 l/min	3 bar

JP-700.50.1 DR

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	800 mm 1100 mm 1300 mm	50 l/min	6 bar
EPDM EPDM light	800 mm 1100 mm 1300 mm	50 l/min	6 bar
FKM	800 mm 1100 mm 1300 mm	50 l/min	6 bar
PTFE	800 mm 1100 mm 1300 mm	50 l/min	2 bar

JP-700.50.2 DR

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	900 mm 1200 mm 1400 mm	50 l/min	12 bar
EPDM EPDM light	900 mm 1200 mm 1400 mm	50 l/min	12 bar
FKM	900 mm 1200 mm 1400 mm	50 l/min	12 bar
PTFE	900 mm 1200 mm 1400 mm	50 l/min	3 bar

- **Shaft seal by single acting mechanical seal stainless steel/ carbon/FKM.**

JP-700 Eccentric screw container pumps

JP-700.80.1, 80.2, 200.1, 200.2, 300.1 and 300.2

► Drive with three-phase or air operated motor directly coupled with extended motor shaft.

► Stator

Description

- 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 joint-free.
- Easy disassembly.
- Various discharge connections.
- Materials of the shaft seal: mechanical seal SS / Carbon / FKM or SiC / SiC / FKM. O-rings made of FKM or FEP. Alternatively stuffing box made of PTFE.
- Driven by three-phase, gear- or air operated motors.
- Wide range of accessories such as pump mounting bracket, 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.

Examples of media

Standard version suitable for:

Chemical products:

Paints	Latex
Varnishes	Silicone
Resins	Polymers

Mineral oil products:

Oils	Cutting oils
Fats	Refrigerants

Food:

Fruit juices	Tomato paste
Concentrates	Syrup / Honey

Information needed to select the right eccentric screw pump

Based on your specific applications we need:

- Specification of the liquid.
- Viscosity and medium temperature.
- 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.

Selection of stators (valid for all pumps)

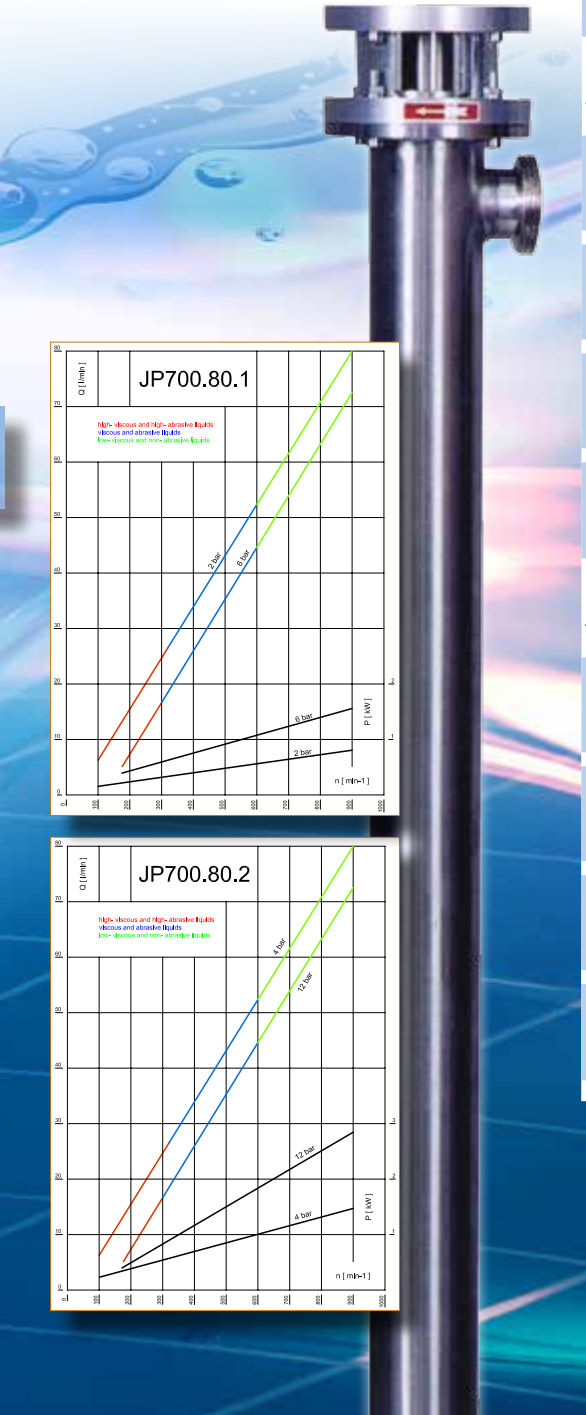
- **NBR black,** max. 90 °C, suitable for oily and greasy media, alcohol and aqueous solutions.
  Not resistant to acids, alkalies and solvents.
- **NBR White** Nitrile, max. 90 °C, suitable for oily and greasy media, alcohol and food.
  Not resistant to acids, alkalies and solvents.
- FKM, max. 160 °C, high chemical resistance.
- **PTFE**, max. 200 °C, high chemical resistance, suitable for food, pharmaceutical and cosmetic products.
- **EPDM** max. 110 °C, good resistance to alkalies (undiluted and diluted), acids (diluted), ketones, alcohols.
  Food-safe (corresponding to BGVV 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.

JESSBERGER pumps and systems

JP-700 Pump tubes for eccentric screw container pumps

Pump tubes JP-700.80-300 with direct coupling

- Flow rates 80, 200 or 300 l/min.
- Discharge pressure 6 and 12 bar.
- Pump tube lengths 1,000, 1,200 and 1,400 mm (special lengths available).
- Suction tube diameter 89 mm (JP-700.80), 105 mm (JP-700.200) and 130 mm (JP-700.300).
- Hose connection DN 40, DN 50–65, DN 65–80.



JP-700.80.1 Ø 89 mm

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	1000 mm 1200 mm 1400 mm	80 l/min	6 bar
EPDM EPDM light	1000 mm 1200 mm 1400 mm	80 l/min	6 bar
FKM	1000 mm 1200 mm 1400 mm	80 l/min	6 bar
PTFE	1000 mm 1200 mm 1400 mm	80 l/min	2 bar

JP-700.80.2 Ø 89 mm

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	1000 mm 1200 mm 1400 mm	80 l/min	12 bar
EPDM EPDM light	1000 mm 1200 mm 1400 mm	80 l/min	12 bar
FKM	1000 mm 1200 mm 1400 mm	80 l/min	12 bar
PTFE	1000 mm 1200 mm 1400 mm	80 l/min	3 bar

JP-700.200.1 Ø 105 mm

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	1000 mm 1200 mm 1400 mm	200 l/min	6 bar
EPDM EPDM light	1000 mm 1200 mm 1400 mm	200 l/min	6 bar
FKM	1000 mm 1200 mm 1400 mm	200 l/min	6 bar
PTFE	1000 mm 1200 mm 1400 mm	200 l/min	2 bar

JP-700.200.2 Ø 105 mm

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	1000 mm 1200 mm 1400 mm	200 l/min	12 bar
EPDM EPDM light	1000 mm 1200 mm 1400 mm	200 l/min	12 bar
FKM	1000 mm 1200 mm 1400 mm	200 l/min	12 bar
PTFE	1000 mm 1200 mm 1400 mm	200 l/min	3 bar

JP-700.300.1 Ø 130 mm

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	1000 mm 1200 mm 1400 mm	300 l/min	6 bar
EPDM EPDM light	1000 mm 1200 mm 1400 mm	300 l/min	6 bar
FKM	1000 mm 1200 mm 1400 mm	300 l/min	6 bar
PTFE	1000 mm 1200 mm 1400 mm	300 l/min	2 bar

JP-700.300.2 Ø 130 mm

Stator material	Pump tube length	Flow rate	Pressure
NBR NBR light	1000 mm 1200 mm 1400 mm	300 l/min	12 bar
EPDM EPDM light	1000 mm 1200 mm 1400 mm	300 l/min	12 bar
FKM	1000 mm 1200 mm 1400 mm	300 l/min	12 bar
PTFE	1000 mm 1200 mm 1400 mm	300 l/min	3 bar

JP-700 H Horizontal eccentric screw pumps

Description

- These eccentric screw pumps enable a gentle, almost pulsation free transport of thin to high viscous, thixotropic, gaseous, solids and fibres containing, aggressive and neutral media.
- Stainless steel execution SS 316 Ti
- Pump and drive directly coupled
- Pressure stages 6 and 12 bar
- Flow rates up to 3.000 l/h
- Connections male thread G 1½" on suction and female thread G 1¼" on discharge side
- Totally enclosed pin joints, Rotor SS 316 Ti
- Stator material adapted to the pumped medium (NBR, NBR food grade, FKM, EPDM, EPDM light and PTFE are available)
- Shaft seal by single-acting mechanical seal or stuffing box
- Base plate as an option (in steel or stainless steel)
- Driven by three-phase motor, gear motor or variable gear motor, IP 55
- Also air motors can be supplied

Examples of media

Standard version suitable for:

Sludges	Honey
Pastes	Syrup
Soap	Jams
Shampoos	Ketchup, etc.

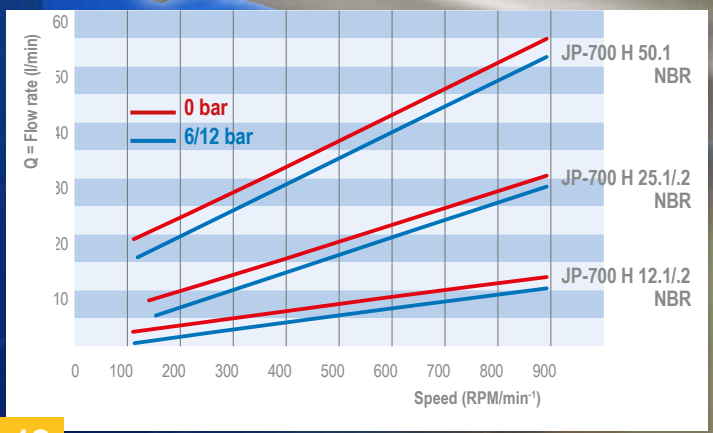
In addition, a special version for use in hazardous areas as well as a version for the food industry is available.

► Food-grade execution

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

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

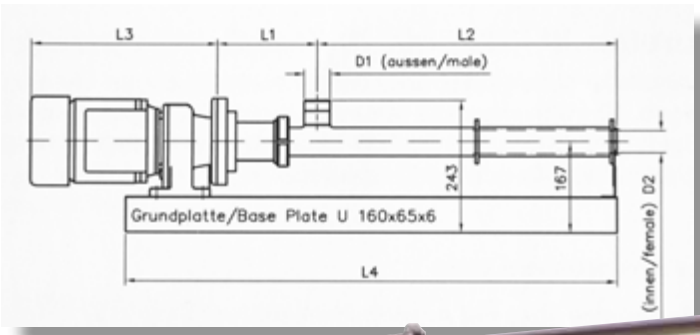
Food-grade execution



► **Drive with three-phase or air operated motor is directly coupled, beared shaft ball.**

JESSBERGER pumps and systems

JP-700 H Horizontal eccentric screw pumps



JP-700 H 12.1			Dimensions					
Stator material	Flow rate	Pressure	L1	L2	L3	L4	D1	D2
NBR, NBR light	12 l/min	6 bar	184 mm	448 mm	343 mm	800 mm	G 1½"	G 1¼"
EPDM, EPDM light	12 l/min	6 bar						
FKM	12 l/min	6 bar						
PTFE	12 l/min	6 bar						
JP-700 H 12.2								
NBR, NBR light	12 l/min	12 bar	184 mm	448 mm	343 mm	800 mm	G 1½"	G 1¼"
EPDM, EPDM light	12 l/min	12 bar						
FKM	12 l/min	12 bar						
PTFE	12 l/min	12 bar						
JP-700 H 25.1								
NBR, NBR light	25 l/min	6 bar	184 mm	548 mm	343 mm	900 mm	G 1½"	G 1¼"
EPDM, EPDM light	25 l/min	6 bar						
FKM	25 l/min	6 bar						
PTFE	25 l/min	6 bar						
JP-700 H 25.2								
NBR, NBR light	25 l/min	12 bar	184 mm	548 mm	343 mm	900 mm	G 1½"	G 1¼"
EPDM, EPDM light	25 l/min	12 bar						
FKM	25 l/min	12 bar						
PTFE	25 l/min	12 bar						
JP-700 H 50.1								
NBR, NBR light	50 l/min	6 bar	184 mm	548 mm	343 mm	900 mm	G 1½"	G 1¼"
EPDM, EPDM light	50 l/min	6 bar						
FKM	50 l/min	6 bar						
PTFE	50 l/min	6 bar						

JP-700 H with direct coupling

- To connect with three phase motors, gear motors or air driven motors.
- Pump tubes in a special food grade version are also available. Please ask us!
- **Pump housing:** Stainless Steel, lantern and motor direct coupled
  Shaft and rotor: Stainless steel
  Stators: see schedule
  Pin-joints/seal: Pins/O-Rings
  Mechanical seal: Chrome/Carbon/FKM
  Base plate: Steel painted

Motors

Three phase motors for horizontal eccentric screw pump tubes JP-700 H

Three phase motors 230/400 V, 50 Hz, 700 or 900 rpm, flange-Ø 160 mm, B3/B5. **See on page 5**

NORD gear motors for horizontal eccentric screw pump tubes JP-700 H

Gear motors 230/400 V, 50 Hz
Foot-/Flange-Execution Ø 160 mm
Thermo sensors are available on request. Please ask us.

1/min	kw
107 - 624	0,37
107 - 624	0,55
107 - 624	0,75
107 - 624	1,10
107 - 624	1,50

Dosing pumps for thin fluid to high viscous media

Description

Type JP-7032 up to JP-7115.4. Almost pulsation free transport and small quantity dosing of thin to high viscous, thixotropic, gaseous, solids and fibres containing, aggressive and neutral media in nearly all industries.

- High dosing precision
- Flow rate adjustable by the speed of the motor
- Stainless steel execution SS 316 Ti
- Pump and motor directly coupled
- Space-saving design
- Flow rates from 0,6 up to 600 l/h
- Pressure stages 6 and 12 bar
- Thread connections on suction side G ¾" and G ½" on discharge side G ¾"
- Totally enclosed pin joints
- Rotor SS 316 Ti
- Stator material adapted to the pumped medium (NBR, NBR light, FKM and EPDM, EPDM light; 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 high viscosity pumps are supplied as standard with either a for operation with frequency inverter drive suitable gear motor or with an adjustable manually control gear motor. The pumps currently do not yet have ATEX approval and should therefore not be used for pumping flammable media.

Media

Chemical products: Colours, resins, coatings, latex, polymers, and silicones

Mineral oil products: Oils, fats, cutting oils, coolant

Cosmetic and pharmaceutical industry: Cleaning agent, liquid soaps, glycerine

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

Motors

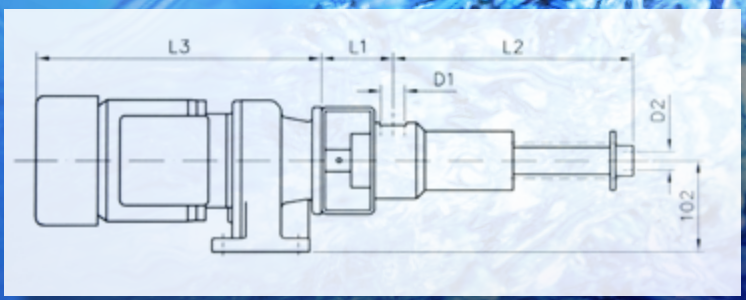
Type series JP-7032 to 7115.4 is supplied with two different drives:

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.
- Fix speed at 50 Hz optionally 107, 120, 134, 150, 165, 181, 197, 214, 233, 251, 392, 426, 462, 498, 538, 578 or 624 rpm, can be operated by frequency inverter.
- Power 0,37 kW and 0,55 kW.
- Frequency inverter for installation in switchboard incl. 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 400 V, 50/60 Hz.

Gear motor, adjustable via hand.

- 0,37 kW and 0,55 kW stepless variable from 0 to 1200 rpm



Types	Delivery rates l/h	Press. bar	Power kW	Speed min -1	Drive	Dimensions in mm				
						L1	L2	L3	D1	D2
JP-7032	0,6 - 3	12	0,37 - 0,75	30 - 1000	SK 01	81	272	343	G ¾"	G ½"
JP-7052	1,2 - 12									
JP-7082	6 - 54									
JP-7112	15 - 150									
JP-7115.1	50 - 600	6					246			G ¾"
JP-7115.2	50 - 600	12					326			
JP-7115.3	50 - 600	18					391			
JP-7115.4	50 - 600	24					484			

JESSBERGER pumps and systems

More eccentric screw pumps

Industrial pumps in horizontal mounting form

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

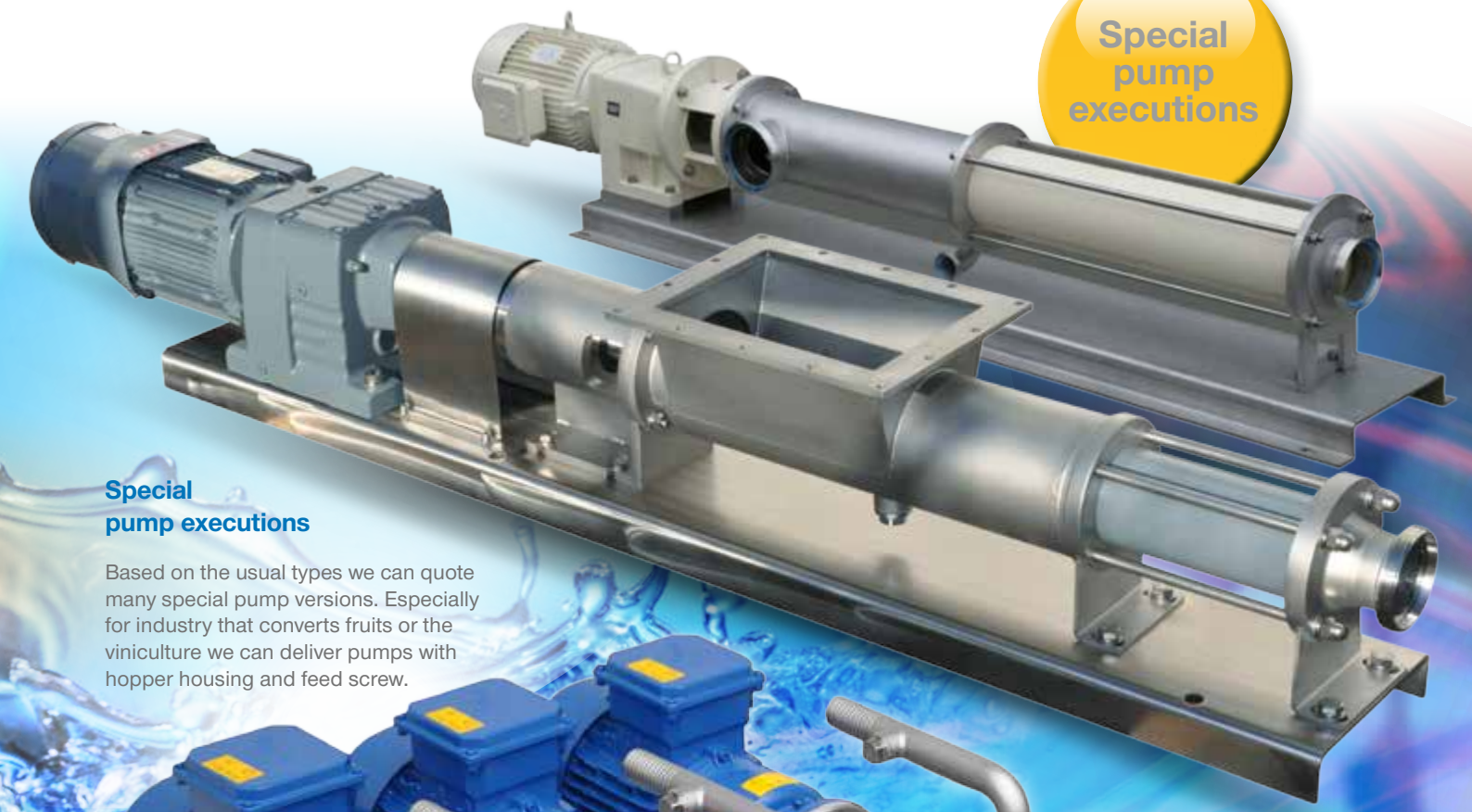
Flow rate: up to 200 m³/h
Pressure stages: 6, 12, 18 and 24 bar

Block pumps in horizontal mounting form

A low priced alternative are pumps in block construction. These pumps are directly flanged to the drive. Due to economisation 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



Special pump executions

Based on the usual types we can quote many special pump versions. Especially for industry that converts fruits or the viniculture we can deliver pumps with hopper housing and feed screw.

Special pump executions

For more industries e.g. the garment industry, corresponding pump adaptations can be produced.

Eccentric srew pumps JP-700 PB / JP-700 PS

Description

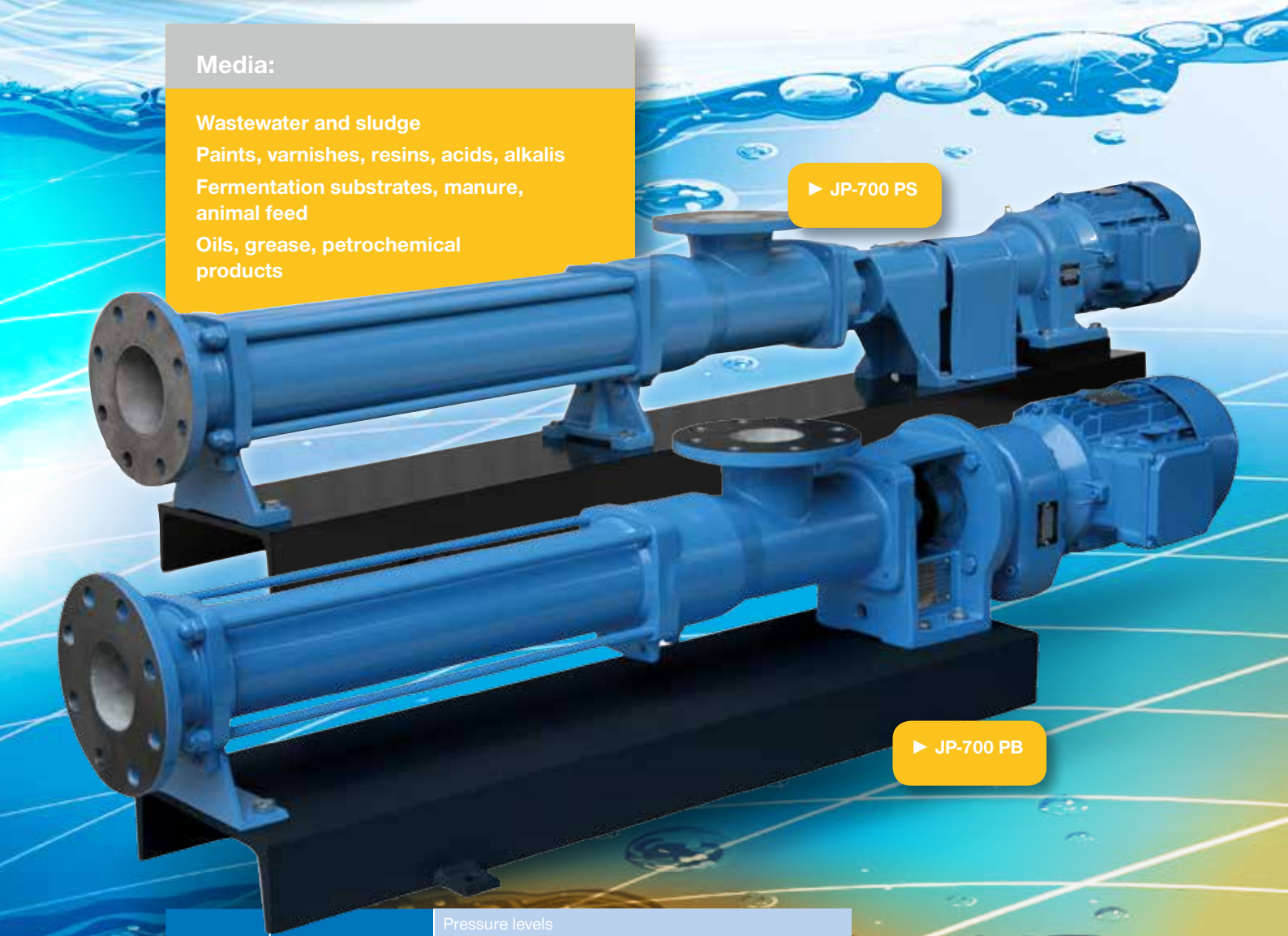
For pumping thin to high viscous, thixotropic, solid and fibrous, aggressive and neutral media in almost all branches of industry, agriculture and biogas industries.

- Pulsation free transport.
- Product gently.
- Drive directly coupled or with bearing housing and flexible coupling.
- Flanges DIN 2501 or ANSI.
- Self-priming.
- Reversible pumping direction.
- Pump housing in cast iron or stainless steel.
- Rotating parts in stainless steel.
- Sealed universal joints.
- Shaft seal stuffing box or mechanical seal.
- Stators in NBR, EPDM, FPM, 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.

► **Drive with three-phase or air operated motor.**

Media:

Wastewater and sludge
Paints, varnishes, resins, acids, alkalis
Fermentation substrates, manure, animal feed
Oils, grease, petrochemical products



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

JESSBERGER pumps and systems

Eccentric srew pumps JP-700 PB / JP-700 PS

Bearing

Bearing

The drive is connected to the pump by an elastic coupling. Forces are borne by the pump bearing.

Side opening bracket

The drive is directly connected to the pump. This reduces the length of the unit. Forces are borne by the bearing of the drive.

Joints

Cardan joint

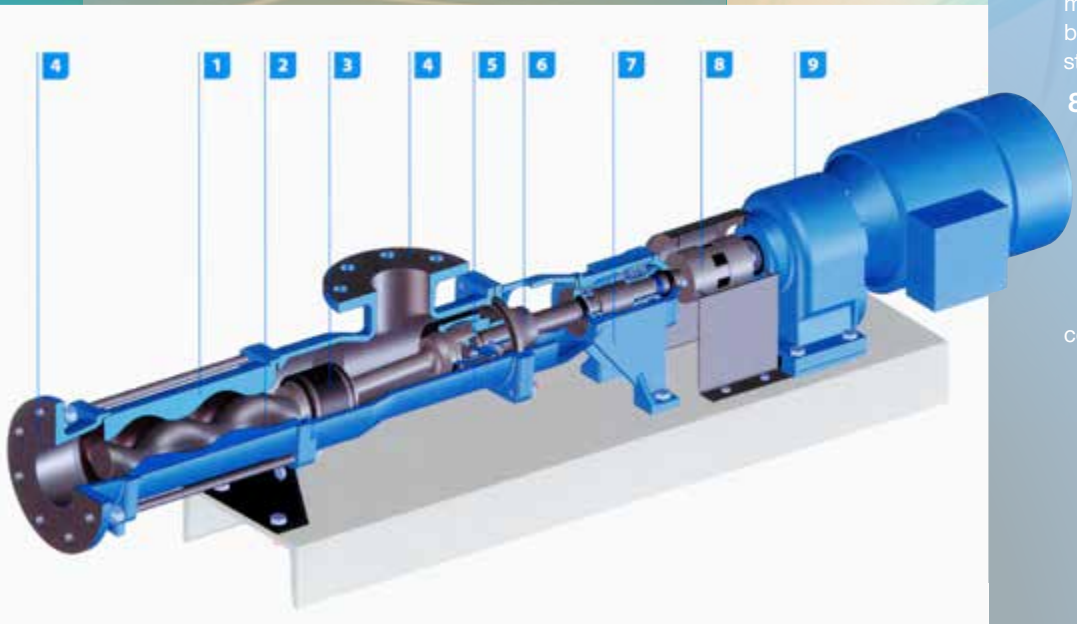
Heavy duty, wear-resistant basic joint. The design of this joint guarantees extremely long lifetimes. is encapsulated and filled with lubricant.

Bolt joint (open)

Especially for applications with hygiene requirements. A low quantity of joint parts and the reduction of clearance volume make it possible to clean the pump inside without residue.

Bolt joint (sealed)

For use in special series. It is sealed with an O-ring; a lubrication filling increases the lifetime.



Design

1 Stator
wide range of elastomer types, vulcanised in steel pipes, also as PTFE.

2 Rotor
different geometries and materials.

3 Joints
open and encapsulated, cardan joints and bolt joints.

4 Connections
to all standards, as well as customized solutions.

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 box drive, adjustment mechanism, hydraulic drive, compressed air drive, electric motor, combustion engine.

Precision in dosing

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 p**recisely in small containers**

This follows not only from the facts, but also the EU-condition with regard to the filling of packaging in order to avoid penalizing consumers. In the final packaging directive is normalized, the extent to which the

multi Component Filling and Dosing System

Structure of multi-component filling and dosing system

The metering system includes:

- Horizontal eccentric dosing screw pumps 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.

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

mass or volume of the contents of a box may differ from the print on the package. The standardized requirements were met there are implemented by our designers with the following filling plants.

► Prevention of delayed dripping of medium.

JESSBERGER
pumps and systems

The input of the recipes and dosing batch is done via an elegant display with a keyboard.

In order to ensure process safety, the changing of parameters and recipes are protected by a password.

Multi-component filling and dosing system

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

Task and starting point

According to the customer‘s application, three different components should be dosed according to pre-selected recipes from storage containers in manually supplied container. Starting point in developing a solution proposal were initially the own eccentric screw pumps. They have a rotating screw conveyor made of stainless steel SS 316 Ti (rotor) and a counter-rotating, stationary elastomeric stator of the available materials NBR, NBR light, FKM, EPDM or EPDM light. Due to the different slope and transfer coefficient of the two conveying elements create cavities that mutually open and close due to the rotation of the rotor and whose volume is always the same. The gentle and pulsation-free delivery with extremely low shear eccentric screw pumps are therefore ideally suited for dosing.

drawal value. By reversing the direction of rotation in the filling nozzle is at the end of dosing a minimal amount of product in the dispensing nozzle sucked back, therefore a filling valve will not be needed. The input of the recipes with the dosing of the individual components is done via an input display, which is housed in a central control cabinet. The central control cabinet, is due to the customer‘s specifications, in a separate room. In order to ensure process safety, the changing of parameters and recipes is only possible by password and therefore protected from changes.

Another control cabinet, made of stainless steel, with digital display of the currently selected recipe is located at the bottling plant. To start the filling process is first necessary to calibrate sample expenditure for each of the components. This is done by entering the nominal quantities and the calculated actual quantities of the sample output.

The shown Multi-Component Filling and Dosing System was designed very user-friendly due to the easy disassembly and cleaning. In addition to a precise dosage it ensures low pulsation, gentle product handling without dripping. Beyond a large flow rates and application area, also a password-protected prescription and conveying volume prefix was implemented. Due to its modular design it can be used for many other applications in the field of dosing technology.

Operating principle

The dosage by means of the Multi-Component Filling and Dosing System is based on the illustrated volumetric principle by means of horizontal, infinitely variable controlled eccentric screw pumps. With each revolution of the rotor a by the customer desired and therefore predefined volume is delivered, the filling quantity is determined by the number of revolutions. The dripping of medium is prevented by entering a with-

The metering system is integrated in a frame of stainless steel SS 316 Ti:

Lift me up, lift me up higher and higher

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 months, numerous special designs have been supplied to renowned German companies. An example of a semi-automated barrel emptying highly viscous media is the mobile single-column barrel emptying plant.

Construction and operating methodes

In the mobile single-column barrel emptying plant a vertical eccentric screw pump is mounted in food execution to a mobile truck with a movable boom. By means of a double-acting pneumatic cylinder it is moved together with this swing arm in the lower or upper end position.

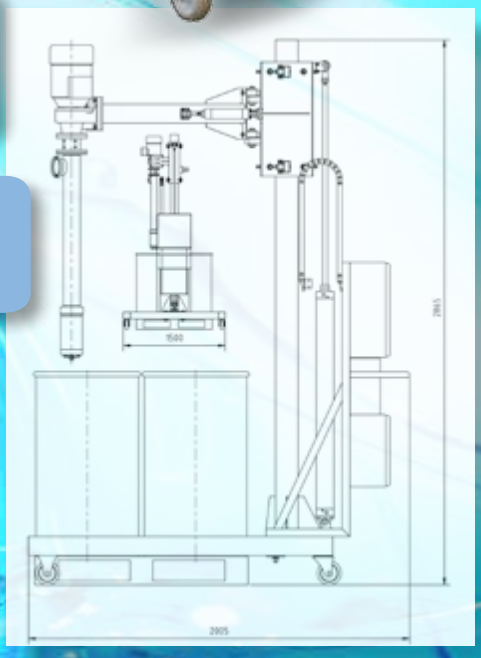
In this position, the truck is locked by another pneumatic cylinder, for reasons of safety at work. The swing arm is then moved through a third pneumatic cylinder in either the left or right working position.

Construction of JESSBERGER single-column barrel emptying plant

The barrel emptying plant is almost completely made of stainless steel and consists of the following components:

- Vertical eccentric screw pump in food design.
- Wheeled truck with a movable boom.
- Electrical control in a shapely steel control cabinet.
- Pneumatic control in a separate switchbox.

Single-column barrel emptying plant with pump



► Constructive representation of single-column barrel emptying plant with pump.

JESSBERGER pumps and systems

Stationary single-column barrel emptying plant

Starting point for the stationary single-column barrel emptying plant with follower plate were again the 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 designers in the field of eccentric screw pumps presented is a stationary single-column barrel emptying plant with follower plate. This plant was designed for the almost complete emptying of medium to high viscosity and viscous media of cylindrical smooth wall or corrugated barrels with 200 liter capacity.

Mechanical construction

- Vertical eccentric screw pump JP-700.25.2 with gear motor.
- Follower plate made of stainless steel 1.4301 with sealing lip made of silicone rubber.
- Clamping ring with stator cladding tube to coupling of the pump.
- Hand-operated vent valve.
- Pneumatically actuated vent valve.
- Base plate with lifting column made of stainless steel 1.4301.
- Truck with pump carrying arm from stainless steel 1.4301
- Double acting pneumatic cylinder
- Pneumatic control
- Cabinet with electrical control.

Operating principle

A eccentric screw pump with follower plate and elastic sealing lip is mounted vertically with a boom to a lifting device.

By means of a double-acting pneumatic cylinder the pump is lifted into the upper end position. The barrel to be emptied, is pushed to the bottom plate and centered under the pump and locked.

The pump is then lowered so with the help of the pneumatic cylinder into the barrel until the follower plate touches the surface of the medium.

The air between the barrel edge and medium escapes through a hand-operated vent valve in the follower plate. Once a small amount of medium escaping through the vent valve, the vent valve is closed, the pneumatic cylinder is depressurized and the pump switched on.

The eccentric screw pump with follower plate, submerge by the low pressure produced by the pump, slowly into the barrel. Before reaching the bottom of the barrel the pump is turned off by a magnetic limit switch on the pneumatic cylinder. Thus, a prolonged dry running of the pump is prevented. The remaining residue in the barrel amount is about 1% of the barrel volume.

The pneumatically operated vent valve (pinch), mounted on the follower plate, will supply compressed air from about 0.5 bar between barrel base and follower plate. The resulting lifting force transports the eccentric screw pump as far out from the barrel until the follower plate has reached the barrel edge. Then the vent valve is shut off.

By means of lift cylinder the pump with follower plate is lifted into the upper end position.

Bottling plant with hopper

with manual feed of the bottles, cups or cans

Another plant with a funnel-shaped storage container for filling in bottles, cups or cans also bases upon the principle of eccentric screw pumps.

Definition of task

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

Operation principle and construction

The heart of the system is a vertical eccentric with a funnel-shaped storage container. With each revolution of the rotor, a defined volume is delivered so that the filling quantity is determined by the number of revolutions.

Dosing control

The dosing control Jessfüll-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.

The bottling plant was completely made of stainless steel SS 316 Ti and is thus suitable for many industries and applications. In addition to chemical resistance with respect to the conveying medium, care was taken in the design of the plant with regards to the compatibility with respect to any cleaning agents as well as the expected temperatures in the cleaning process.

The bottling plant can be used both in stand-alone mode as well as be involved operated in a master control unit and allows in this particular case of the customer a valveless, subsequent dripping free filling of different media in bottles, cups or cans. In addition to 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 an FDA compliant version, also CIP cleaning can be offered as an option.

Due to the requirements set out in the EU pre-packaging directive aspects can be considered from a legal perspective, that the bottle plant based on the principle of eccentric screw pumps by JESSBERGER with probability bordering on certainty takes these requirements into account and the filled volumes consequently always be within the permissible tolerance range.

JESSBERGER pumps and systems

Spare parts

We are pleased to support you by your purchase of spare and wear parts for eccentric screw pumps. At this procurement transaction a short delivery time is important as well as quality and price.

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 no original parts.

Rotors

Stainless steel rotors, e.g. SS 316 Ti, SS 304, eventually with hard chrome plating or ductile coating if necessary. Also hardened tool steel or lower alloy steels.

Stators

in all popular elastomers, e.g. NBR (Nitrile), BR (Buna CB), NR (Natural Rubber), CSM, EPDM, FKM. Also solid stators are available, e.g. PTFE and cast iron.

Seals

like mechanical seals, glands or O-rings.

Pump parts

Drive shafts (with or without hard chrome plating) and coupling rods, as well as other turning work pieces for pumps in various materials.

Electric and pneumatic driven drum and container pumps

JESSBERGER pump technology with internal and external cooled electric motors or pneumatic motors (also ex-protected) in different engine-power classes. Sealless pump tubes in Polypropylene, PVDF, ALU and Stainless Steel SS 316. Pump tube lengths 700, 1,000, 1,200, 1,500 and 1,800 mm. Special lengths up to 3,000 mm on request.

Manual hand operated drum pumps

are lightweight, handy devices for almost any fluid liquids.

JP-02 Telescopic suction tube made of PP, **340–900 mm** for **acids, alkaline solutions and chemicals** (on water basis because shaft is made of Stainless Steel SS 316).

JP-03 Telescopic suction tube made of PP, **340–900 mm** for **oils, diesel, alcohol (max. 50%), anti freeze liquid, soap solutions, shampoo, water, etc.**

JP-04 Telescopic suction tube made of PP, **480–950 mm,** for thin fluid liquids. Particularly suitable for **acids and lyes.**

JP-05 Pump tube made of Stainless Steel SS 316 with seals made of PTFE, pump tube lengths **700 or 1.000 mm**. Especially suitable for **flammable media like solvent.**

Air-operated diaphragm pumps JP-800

JESSBERGER diaphragm pumps are suitable for nearly all areas of use. They are capable of pumping aggressive and flammable substances, high viscous liquids also with solids or fibre particles and media containing gas of 5 l/min to 900 l/min.

Sealless magnetic driven pumps

Available in various sizes, state-of-the-art construction, sealless and environmentally friendly, suitable for a variety of uses. Low noise level, long life, easy to maintain.

Electronic flowmeter

Housing made of PP. Volume preset, signal-check for further data processing as an option. Other materials: PVDF and SS

Vertical centrifugal pumps serie JP-820

Executions in Polypropylene and PVDF.

Horizontal centrifugal pumps serie JP-840

Executions in Polypropylene and PVDF.

Mixers for drums and containers

JESSBERGER offers solutions for almost every mixing application for drums and containers.

Dosing pumps

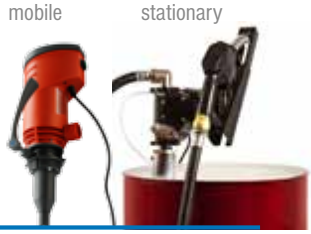
Diaphragm or plunger metering pump.

Electric diesel and heating oil pumps

for refueling the motors of vehicles that are driven with diesel or heating oil of hazard class A III like tractors, agricultural machines and machines for construction work, trucks and motor boats.

protank 25 mobile

protank 50 stationary



Hoses

Universal- and special hoses for chemical substances, PVC-hoses, PTFE-hoses, hoses for mineral oil and solvents, tissue-reinforced or conductive, hoses for food.

Please ask for details.

Please require detailed information about the individual product groups of the JESSBERGER delivery program.

Please make a cross next to the requested products and fax or e-mail this page to us with your address.

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