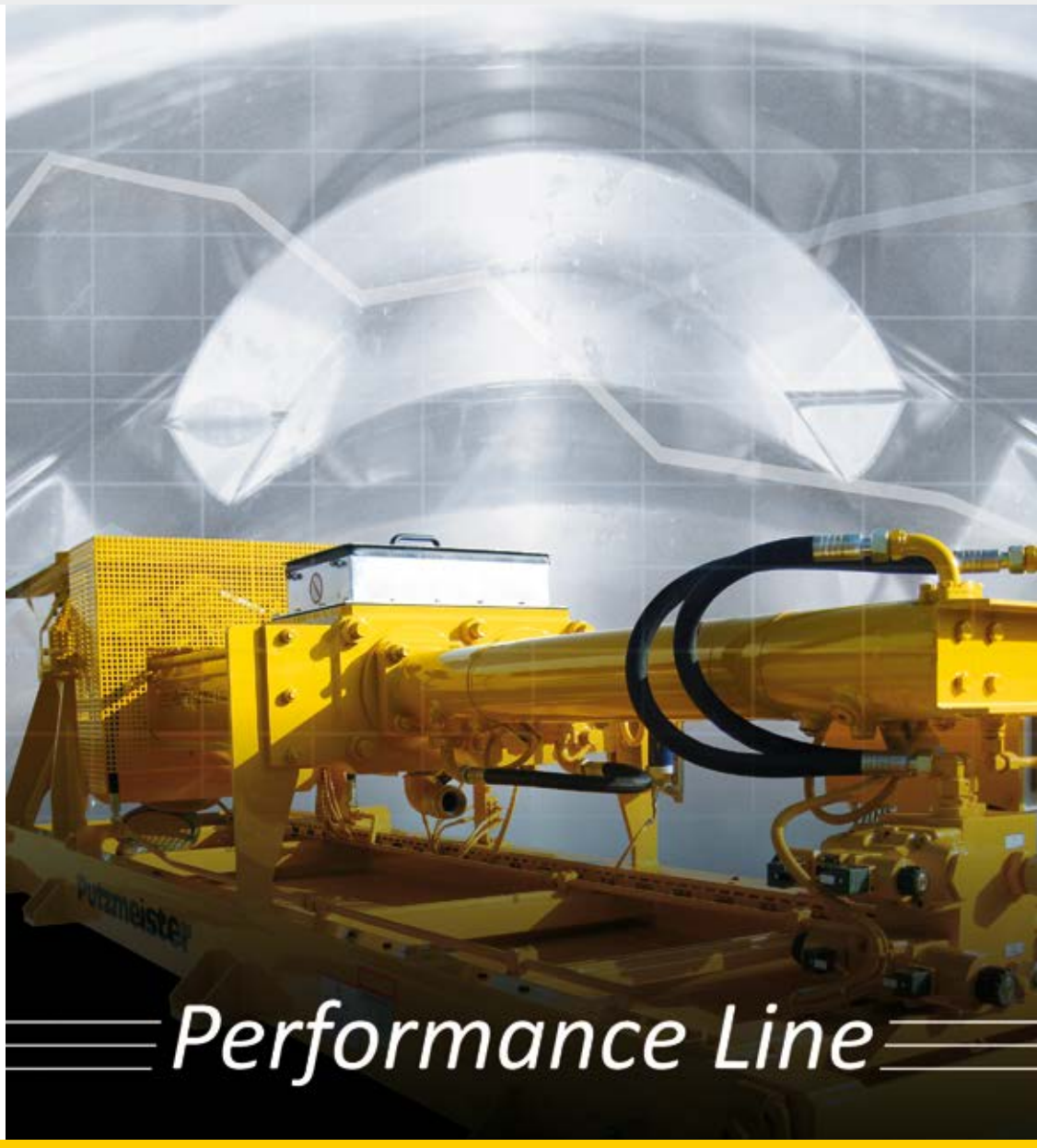
Putzmeister



Putzmeister Performance Line

The optimal pump system with the best price-performance ratio

Core features

The optimal price-performance ratio

The Putzmeister Performance Line offers all the advantages of efficient series production.
The well proven technology with all its components offers a reliable high-performance solution.

- Well-proven technology
- Components are ideally matched
- Many years of experience in numerous projects and application areas
- Quality - Made in Germany

Take advantage from the synergy effects of performance optimization and series concept design – focused on the essentials.

Many years of experience show the best configuration

The Putzmeister Performance Line includes the engineering and planning work from countless projects – Made in Germany.

Whether it‘s in industry, mining, oil and gas production, power plant technology or dealing with sludge and biomass – Putzmeister always offers the reliable and efficient solution with the lowest lifecycle costs.

The pre-arranged system optimized for all types of solids

The components which leave nothing to be desired

- The pump:
  Oil hydraulic double piston pump with S-transfer tube
- The feeder unit:
  Electric frequency-controlled screw/screw mixer
- The drive:
  Hydraulic power pack, CE, CI and E SP series; 10,000 times proven technology
- The control system:
  Modern automation and visualisation system
- The accessories:
  Technically tested and coordinated accessories at industry standard

Your benefits at a glance:

- **Almost trouble-free, as foreign particles up to 60 mm for KOS 740 up to 120 mm for KOS 1070 are pumpable**
- **Designed for use 24/7**
- **High pump capacity up to 60 m^3/h and low energy consumption**
- **30 years of experience in the delivery of sludge and various other materials which are critical to be pumped**
- **Machine technology whose components are optimally coordinated and which offers maximum functional reliability**
- **Optimized control ensures simple operation and optimal visualisation, as well as simple integration in the superior maintenance control system**
- **High-quality paintwork (Corrosion protection C3)**
- **Short delivery time**
- **Low service costs as a result of long life cycle thanks to robust technology with few moveable parts and components with low maintenance required**
- **Service-friendly as a result of its optimized access and consistent screw concept**
- **Most of the maintenance work can be performed by the operators themselves**

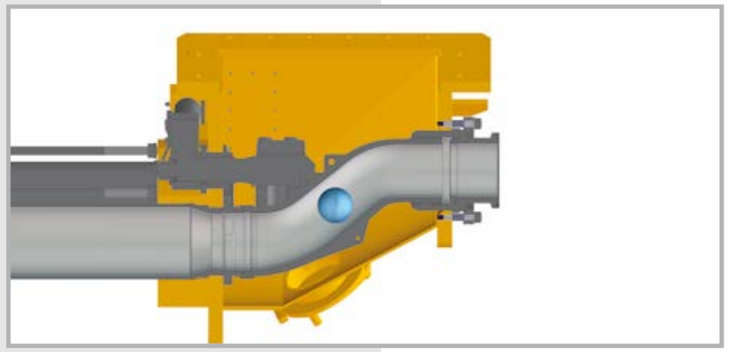
KOS 740, 1040, 1060 and 1070 Performance Line

The oil hydraulic double piston pump with S-transfer tube operates with delivery volumes up to 60 m³/h and at a delivery pressure up to 100 bar. [1]

At the KOS pump the pressure cylinder is connected to the delivery line via an in-take S-transfer tube, while the cylinder works with the entire cross-section of the inlet flange.
This guarantees continuous operation with free passage of the material to be conveyed without any valves. Foreign particles in the material to be conveyed can be easily delivered with a size up to 60 mm at KOS 740 and up to 120 mm at KOS 1070.

The KOS pump is well suited for the delivery of high viscous sludge and material with a high share of coarse grain.
The main area of application of the KOS series is for materials with extreme requirements, such as biological waste from household refuse, recirculates from biogas plants, de-watered sludge cake, oil sludge, drill cuttings, high density solids with high viscosity, etc.

The simple layout of this pump and the low number of wear parts result in an extremely robust, low-maintenance pump which can be operated at minimal operating costs.



Undisturbed operation:
120 mm foreign particles in S-tube of KOS 1070 Performance Line

[1] For higher delivery volumes and pressures and customer-specific solutions the customized Putzmeister Full-Engineered pump is the best solution.

Your benefits at a glance:

- **Delivery of coarse-grained solids with high grain content and foreign particles of 120 mm at KOS 1070 are possible without shredder**
- **With the S-transfer tube there are no interference contours in the mass flow**
- **Less maintenance and wear, due to fewer moving parts**
- **Insensitive against short-termed dry running**
- **Less suction resistance due to high-volume and unrestricted infeed of material**
- **Hydraulic circuit will always remain separate from pump material**
- **Twin-circuit hydraulic control for a reliable pump function and longer lifetime of the hydraulic oil.**
- **Designed for use 24/7**

Equipment features Basic version

- Low-wear S-transfer tube
- Feed monitoring of S-transfer tube
- Dual chrome-plated delivery cylinder, 250 µm coating thickness
- Cleaning access in the pump hopper for simple replacement of wear parts (KOS 1040, 1060 and 1070)
- All electric sensors and actuators wired to one terminal box
- Fool-proof electric connection of the machine by Harting quick connection system
- Manual central lubrication system
- ZX pump pressure connections with counterflange seal and coupling
- Electrical delivery rate adjustment
- Robust pump frame

Technical data

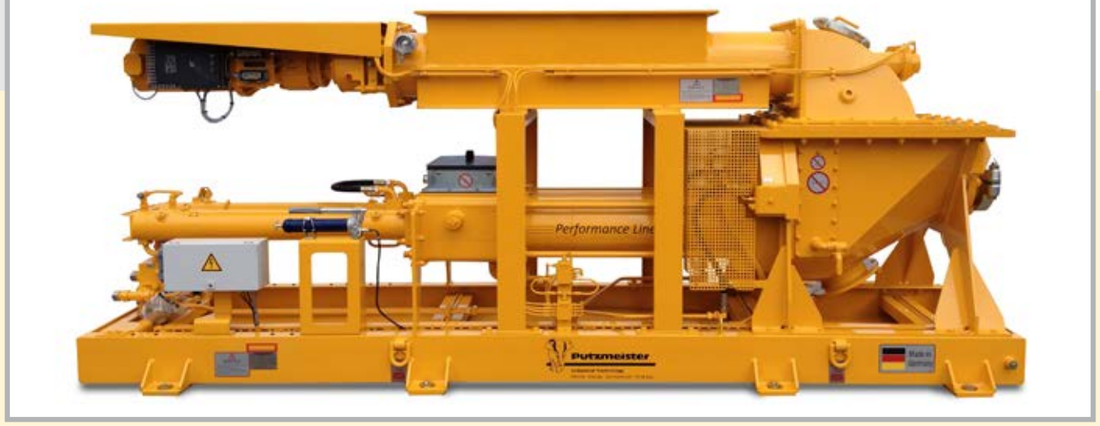
Type	Delivery rate[1] m³/h	Delivery pressure[2] bar	Stroke mm	Delivery cylinder Ø mm	Inlet flange mm	Pressure connection mm	Weight kg	Length (L) mm	Width (W) mm	Height (H) mm
KOS 740 P	10	64 [3]	700	150	600 x 420	SK 100	1000	2500	920	700
KOS 1040 P	17	100	1000	150	720 x 720	ZX 125	2800	4100	1200	1100
KOS 1060 P	26	100	1000	200	720 x 720	ZX 200	2800	4100	1200	1100
KOS 1070 P	60	64	1000	230	720 x 720	ZX 200	2800	4100	1200	1100

[1] Filling level 100 % at maximum stroke frequency
[2] Maximum theoretical delivery pressure, partly at reduced delivery rate
[3] 64 bar only possible for 8 h/day; 24/7 operation only possible at 40 bar

The feeding unit – electrically operated screws

Equipment features Basic version

- Housing in structural steel (6 mm), auger blades in structural steel (8 mm), wear plates (5 mm)
- Screws with wear sleeve
- Drive with IE-3 electric motor
- Electric delivery rate adjustment by frequency converter (mounted directly on motor)
- Variable direction of rotation
- Synchronization of shafts by spur gear box or FU control
- Substructure in structural steel, assembled on pump or separately
- Shaft sealing with grooved ring
- Torque limit by means of FU as overload protection
- Outboard bearings for reliability and longer life cycle
- Pressure sensor in transition piece for optimum pre-pressure of the KOS



Your benefits at a glance:

- **Robust design**
- **Outboard bearings for longer life cycle**
- **Frequency-controlled IE-3 electric motors**
- **Standard rotation monitoring**
- **Connection to the manual central lubrication system, standard (mounted on KOS pump)**
- **Can be combined with every KOS pump in the Performance Line series**
- **Automatic pressure regulation for maximum power efficiency and minimum wear as a standard**

Conducted filling concept for optimal material flow

Pre-compression screws

To convey high viscous, i.e. non-flowing solids, the material must be fed to the Putzmeister pump.
This is best done by using double-shafted screws.

The double screws generate pre-pressure that feeds the piston pumps more effectively. As a secondary effect of the double screw, the auger spirals are self-cleaning as they are arranged like a screen.

Special feature:

- Screening, self-cleaning screw arrangement
- Prepress effect in transfer housing
- Speed and energy requirement are infinitely variable by using a frequency converter

Screw mixers

The Putzmeister screw mixers are the efficient and reliable solution for continuous mixing processes of two or several components.

Over 25 years they have proven their efficiency in industrial biological fermentation and for applications with mineral materials.

Special feature:

- Optimal mixing result due to high rotation and well thought-out design
- Robust design of mixing tools
- Mixing paddels in inlet area
- Speed and energy requirement are infinitely variable by using a frequency converter

Shaftless screws

For simple, non-flowing media the reasonably priced shaftless screws are the right solution.

The shaftless screw delivers even those media which tends to wrap around the screw (clogging).

Special feature:

- 25 mm spiral thickness
- Speed and energy requirement are infinitely variable by using a frequency converter

Technical data

	Type	Delivery rate theor.	Drive	Torque	Infeed opening	Screw Ø	Pitch	Weight approx.	Length (L)	Width (W)	Height (H)
		m^3/h	kW	Nm	mm	mm	mm	kg	mm	mm	mm
Delivery and prepress screws	**THS 222 HCB P**	24	5.5	2 x 1000	1220 x 470	250	250	700	3700	930	480
	THS 332 HCB P	40	11	2 x 2000	1000 x 580	315	250	1000	3750	930	1100
	THS 532 HCB P	40	11	2 x 2000	2000 x 580	315	250	1200	4500	930	1100
	THS 842 HCB P	60	15	2 x 3200	2000 x 780	400	300	2400	5200	930	720
Screw mixers	**THS 222 MX P**	24	5.5	2 x 1000	1220 x 470	250	250	700	3200	930	480
	THS 332 MX P	40	11	2 x 2000	1000 x 580	315	250	1000	3600	930	480
	THS 532 MX P	40	11	2 x 2000	2000 x 580	315	250	1200	4500	930	700
	THS 842 MX P	60	15	2 x 3200	2000 x 780	400	300	2400	5450	1200	1300
Shaftless screws	**THS 131 HCB P**	10	5.5	1 x 1700	600 x 350	310	300	400	2400	530	400
	THS 231 HCP P	10	5.5	1 x 1700	1220 x 350	310	300	500	3200	530	500

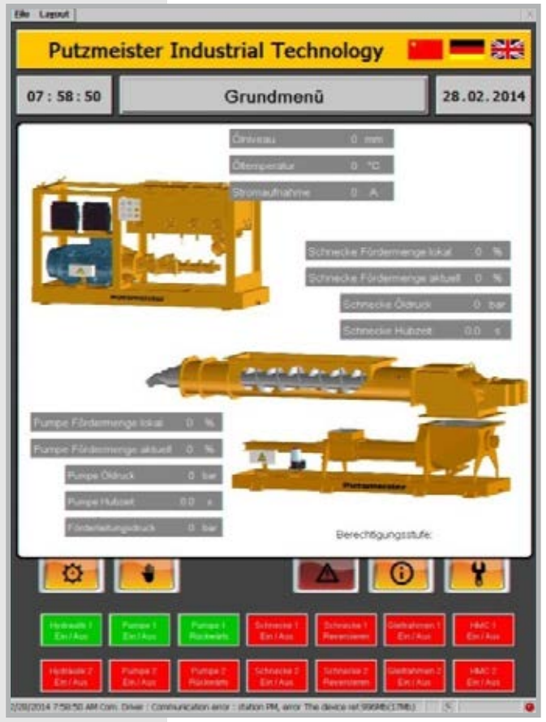
The hydraulic power pack

Select the power

For the drive of the solids handling pumps power rates from 11 kW up to 160 kW are available.

The oil supply to the hydraulic pumps is effected freely in order to avoid damage by cavitation.

This 10,000 times proven technology helps the solids handling pumps to bring their power into the material conveyed.



Intuitive and clear control

Long life cycle and high availability

All components are designed to reach high performance and to save costs caused by service and maintenance. This is achieved by

- **Service-friendly control system and the associated constantly high quality of oil**
- **Low-maintenance components typical of Putzmeister and good access**
- **No special tools required due to standard components**

The heart of the system

Equipment features Basic version

- Frame, oil tank, filter and cooling unit
- Main oil pump with IE-3 motor
- Protection and control devices
- Oil/Air cooler as front end cooler (HA CE) incl. partial flow filter 10 µm
- Oil/Air cooler with electric drive (HA CI and E-SP) incl. partial flow filter 10 µm
- Oil tank with filler necks, ventilation filter and control glass, drain cock and opening for inspection and maintenance
- Pressure relief valve for the oil circuit means no motor overload even at maximum operating load
- All electric sensors and actuators wired to one terminal box
- Fool-proof electric connection of the machine by Harting quick connection system

Technical data

Typ	Power kW	Oil tank volume l	Weight kg	Length (L) mm	Width (W) mm	Height (H) mm
HA 11 CE	11	200	600	1550	860	1200
HA 15 CE	15	200	650	1550	860	1200
HA 22 CE	22	200	700	1550	860	1200
HA 30 CE	30	200	1000	2000	860	1200
HA 45 CE	45	200	1100	2000	860	1200
HA 55 CI	55	600	2000	2550	1360	1700
HA 75 CI	75	600	2200	2550	1360	1700
HA 90 CI	90	600	2500	2550	1360	1700
HA 110 E SP	110	600	2800	2800	1360	2000
HA 132 E SP	132	600	3000	2800	1360	2000
HA 160 E SP	160	900	3300	2800	1360	2000

The solid basic equipment

The Putzmeister control cabinets include the power and control part for the hydraulic systems.
It meets ISO, DIN, VDE and UVV standards. They are products from leading manufacturers with components which are partly optimized (pump-specific) according to PSP standards.

The control cabinet (steel sheet enclosure) is mounted free-standing and has one or two doors.

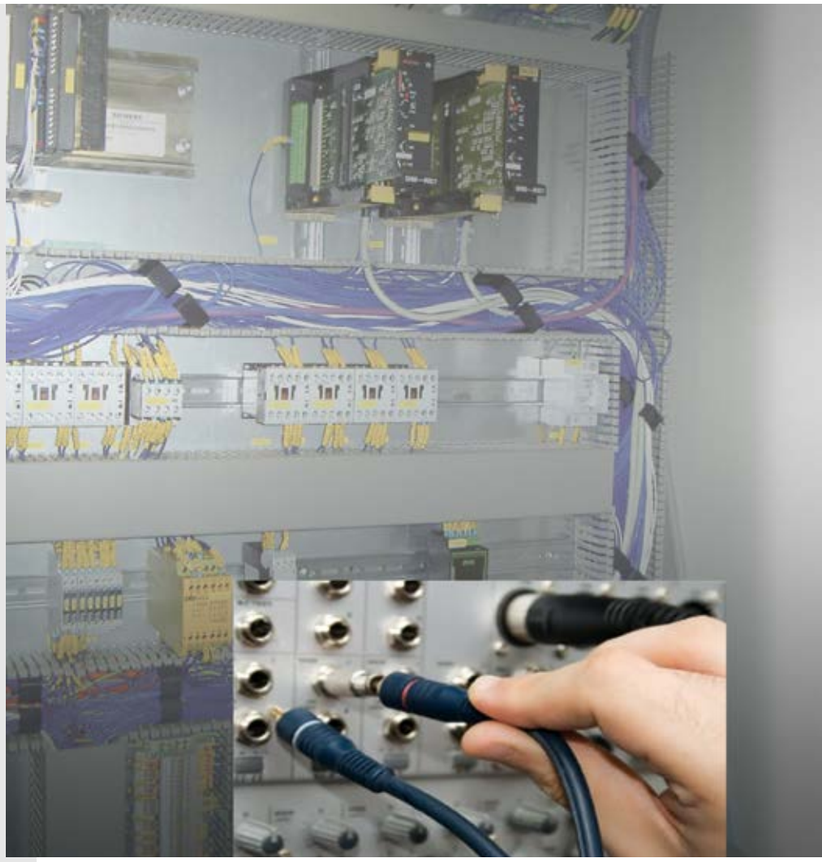
The connection to the local terminal boxes of the machines is effected via a Harting connector.

The control system is designed as a standard PLC, with operating panel (OP) and options to exchange signals via data bus (Profibus, Ethernet, modem …).

The electric delivery rate adjustment of the solids pump is included in the basic equipment.

Equipment features
Basic version

- Supply with main switch
- Motor protection switch
- Power contactors (for star delta start-up)
- Circuit breakers
- Signal exchange by means of potential-free contacts
- Programmable logic control (Siemens S7-300)
- 15“ operating panel (Putzmeister OP 151)
- Amplifier cards for activating the proportional valves
- Fault light (red)
- Key switch (site-0-control room)
- No connection of signal cable required – simple Harting connection system
- Delivery rate measurement, volumetric or by means of density input with automatic mass balance
- Automatic pressure regulation for THS



Features and benefits
of the Putzmeister control system:

- **Use of Siemens S7-300 SPS**
- **Large 15“ operating panel Putzmeister OP 151 for simple operation and maintenance of the system**
- **Signal exchange with potential-free contacts as standard**
- **Key switch for pre-selecting the desired operating mode**
- **Electric main switch**
- **Star delta start-up for electric motors**
- **Monitoring of motor temperature**
- **Monitoring of all installed sensors and actuators**
- **Power of 11 – 160 kW, 400 V, 50 Hz**
- **System service via mobile device (Tablet computer with PSP Application)**

Putzmeister Performance Line – modest appearance, great job

Excellent and efficient service is an important factor in Putzmeister services

In addition to a telephone hotline, Putzmeister also offers a short-term parts supply, as well as repairs of systems, within maintenance contracts.

- Competent service – direct from the manufacturer and trained sales partners
- Assembly and commissioning
- Briefing the users – service training sessions for operational and maintenance personnel on-site or at the manufacturer
- Process optimization for material changes
- Competent spare part advice
- Individually tailored maintenance contract
- Flexible retrofitting – modernisation, adaptation to modified operating conditions
- Valuable time savings with remote diagnosis
- Spare parts of Performance Line available ex warehouse

Jobsite training in the Bulyanhulu gold mine, Tanzania

New installation in the sewage treatment plant, Neu-Ulm, Germany

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