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.

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

The well proven technology with all its components offers a reliable high-performance solution.

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 2 17/50” (60 mm) for KOS 740 up to 4 11/16” (120 mm) for KOS 1070 are pumpable**
- **Designed for use 24/7**
- **High pump capacity up to 260 gpm (60 m³/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**

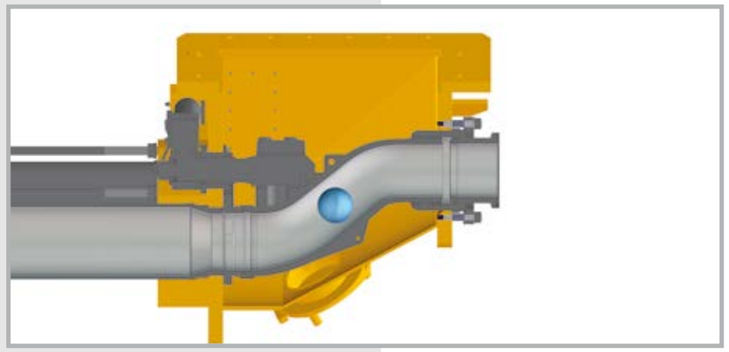
KOS 740, 1040, 1060 and 1070 Performance Line

The oil hydraulic double piston pump with S-transfer tube operates with delivery volumes up to 260 gpm (60 m³/h)and at a delivery pressure up to 1450 psi (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 2 17/50” (60 mm) at KOS 740 and up to 4 11/16” (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:
4 11/16” 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 2 17/50” (60 mm) at KOS 740 and 4 11/16” (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

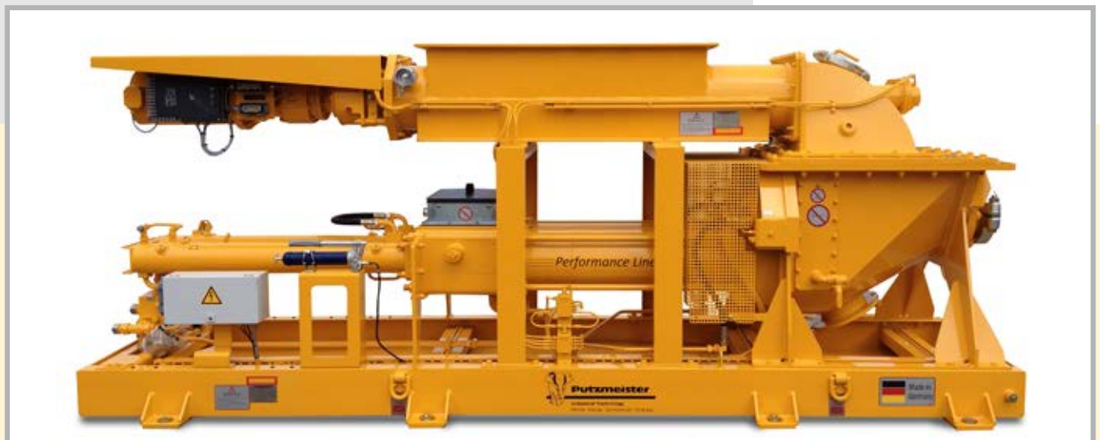
Type	Delivery rate[1] gpm	Delivery pressure[2] psi	Stroke in	Delivery cylinder Ø in	Inlet flange in	Pressure connection mm	Weight pounds	Length (L) in	Width (W) in	Height (H) in
KOS 740 P	44	920 [3]	27 52/93	5 48/53	23 28/45 x 16 53/99	SK 100	2205	8 19/94	3 1/54	2 8/27
KOS 1040 P	74	1450	39 10/27	5 48/53	2’ 4 11/32” x 2’ 4 11/32”	ZX 125	6175	13 4/9	4	3 3/5
KOS 1060 P	110	1450	39 10/27	7 7/8		ZX 200	6175	13 4/9	4	3 3/5
KOS 1070 P	260	920	39 10/27	9 1/18		ZX 200	6175	13 4/9	4	3 3/5

[1] Filling level 100% at maximum stroke frequency
[2] Maximum theoretical delivery pressure, partly at reduced delivery rate
[3] 920 psi only possible for 8 h/day; 24/7 opeartion only possible at 580 psi

The feeding unit – electrically operated screws

Equipment features Basic version

- Housing in structural steel (15/64” / 6 mm), auger blades in structural steel (5/16” / 8 mm) wear plates (13/64” / 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 l ubrication 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:

- 63/64” (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)
		gpm	hp	Nm	in	in	in	pound	ft	ft	ft
Delivery and prepress screws	**THS 222 HCB P**	105	7.4	2 x 1000	4‘ 1/32“ x 1‘ 6 1/2“	9 5/6	9 5/6	1,550	12 1/7	3	1 4/7
	THS 332 HCB P	176	14.7	2 x 2000	3‘ 3 3/8“ x 1‘ 10 53/64“	12 2/5	9 5/6	2,210	15	3	3 3/5
	THS 532 HCB P	176	14.7	2 x 2000	6‘ 6 47/64“ x 1‘ 10 53/64“	12 2/5	9 5/6	2,650	14 3/4	3	3 3/5
	THS 842 HCB P	264	20.1	2 x 3200	6‘ 6 47/64“ x 2‘ 6 45/64“	15 3/4	11 4/5	5,300	17	3	2 1/3
Screw mixers	**THS 222 MX P**	105	7.4	2 x 1000	4‘ 1/32“ x 1‘ 6 1/2“	9 5/6	9 5/6	1,550	10 1/2	3	1 4/7
	THS 332 MX P	176	14.7	2 x 2000	3‘ 3 3/8“ x 1‘ 10 53/64“	12 2/5	9 5/6	2,210	11 4/5	3	1 4/7
	THS 532 MX P	176	14.7	2 x 2000	6‘ 6 47/64“ x 1‘ 10 53/64“	12 2/5	9 5/6	2,650	14 3/4	3	2 2/7
	THS 842 MX P	264	20.1	2 x 3200	6‘ 6 47/64“ x 1‘ 10 53/64“	15 3/4	11 4/5	5,300	17 7/8	4	4 1/4
Shaftless screws	**THS 131 HCB P**	44	7.4	1 x 1700	1‘ 11 5/8“ x 1‘ 1 25/32“	12 1/5	11 4/5	890	7 7/8	1 3/4	1 1/3
	THS 231 HCP P	44	7.4	1 x 1700	4‘ 1/32“ x 1‘ 1 25/32“	12 1/5	11 4/5	1,110	10 1/2	1 3/4	1 2/3

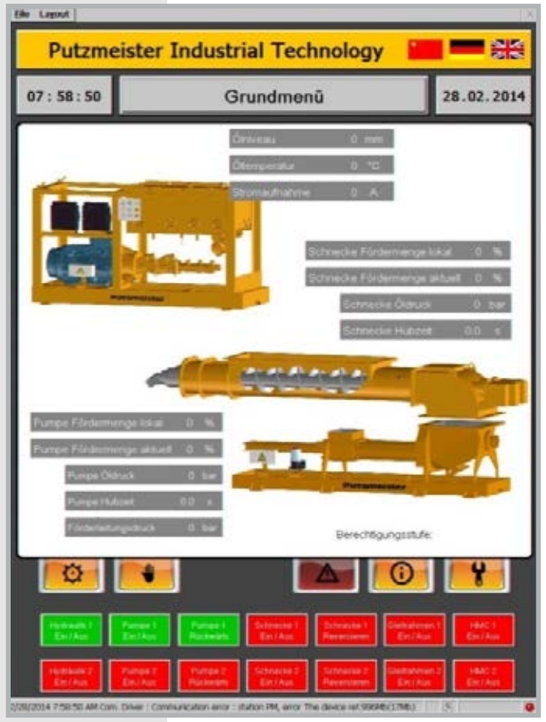
The hydraulic power pack

Select the power

For the drive of the solids handling pumps power rates from 15 hp (11 kW) up to 215 hp (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.



Self-explaining HMI

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-proved electric connection of the machine by Harting quick connection system

Technical data

Typ	Power hp	Oil tank volume gal	Weight lbm	Length (L) ft	Width (W) ft	Height (H) ft
HA 11 CE	15	50	1330	5	2 5/6	4
HA 15 CE	21	50	1440	5	2 5/6	4
HA 22 CE	30	50	1550	5	2 5/6	4
HA 30 CE	41	50	2210	6 5/9	2 5/6	4
HA 45 CE	61	50	2430	6 5/9	2 5/6	4
HA 55 CI	74	150	4410	8 3/8	4 1/2	5 4/7
HA 75 CI	101	150	4860	8 3/8	4 1/2	5 4/7
HA 90 CI	121	150	5520	8 3/8	4 1/2	5 4/7
HA 110 E SP	148	150	6180	9 1/5	4 1/2	6 5/9
HA 132 E SP	178	150	6620	9 1/5	4 1/2	6 5/9
HA 160 E SP	215	230	7280	9 1/5	4 1/2	6 5/9

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.

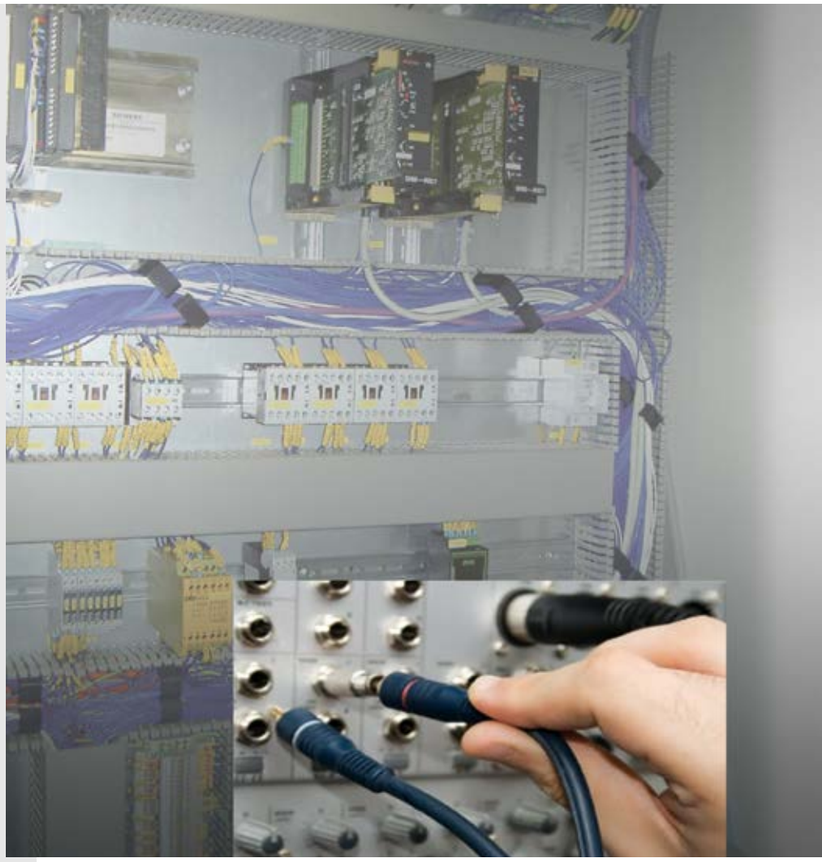
The connection to the local terminal boxes of the machines is effected via a Harting connector.

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 / AB Compact Logix)
- 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 or optionally Allen Bradley Compact Logix PLC**
- **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 15 hp up to 215 hp (11 – 160 kW), 460 V, 60 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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