



Putzmeister



Ergonic[®] 2.0 systems

Ergonic® – intelligent functioning

Switching centre for maximum efficiency

If our concrete pumps form the heart of our machines, then Ergonic® is the head. As a switching centre, the microprocessor-supported control systems regulate the functions of concrete pumps, truck mixers and PUMIs®.

Increased efficiency, reduced costs and greater flexibility – these are the results of Putzmeister machines with Ergonic® overcoming the difficulties of day-to-day work on the construction site.



Dedication in every respect

Ergonic® inside means that the machines are quickly ready for use and they work with high power, fuel efficiency and low wear.

In addition, the variety of functions of the Ergonic® Boom Control (EBC) is invaluable for the machine operator. In particular, when working in a narrow space or on a “tricky” job, as is the case with indoor concreting operations or tight formwork. And a PUMI® works more quietly, for example, thanks to the Ergonic® Pump System (EPS) with “silence function”. This, in turn, pleases the local residents.

The most important new functions of Ergonic® 2.0:

- **EPS – Ergonic® Pump System**
Takes control of the concrete pump, ensuring a fully optimised pumping process.
- **EOC – Ergonic® Output Control**
Regulates the optimum engine speed, ensuring that the concrete pump operates smoothly with fuel efficiency and low wear.
- **EMC – Ergonic® Mixer Control***
Operates the mixer drum by radio remote control, including adding water and cleaning.
- **EBC – Ergonic® Boom Control**
Controls and regulates the movement of the concrete placing booms, ensuring an increased placement rate and simple and safe operation.
- **ESC – Ergonic® Setup Control**
The safety system regulates the interaction between the flexible support** and working areas. Provides significantly increased protection for the machine operator and the machine.
- **Ergonic® FFS**
Ergonomic boom control with joystick, ensuring convenient operation and up-to-date feedback as well as system information for the machine.
- **EGD-RC – Ergonic® Graphic Display (Radio) Remote Control**
Transparent overview of the pumps and machine status as well as the pump settings, ensuring convenient operation.

ergonic®
inside

* Pumis and truck mixers
** Availability and functional scope depend on the machine model



Ergonic® and placing boom – working in the comfort zone

Ergonic® Boom Control (EBC)* – smooth, accurate and safe

EBC (optional up to 50 m class, standard from 60 m class) is the evolution of the boom control. In one-handed mode, the boom can be moved comfortably, smoothly and accurately using the joystick.

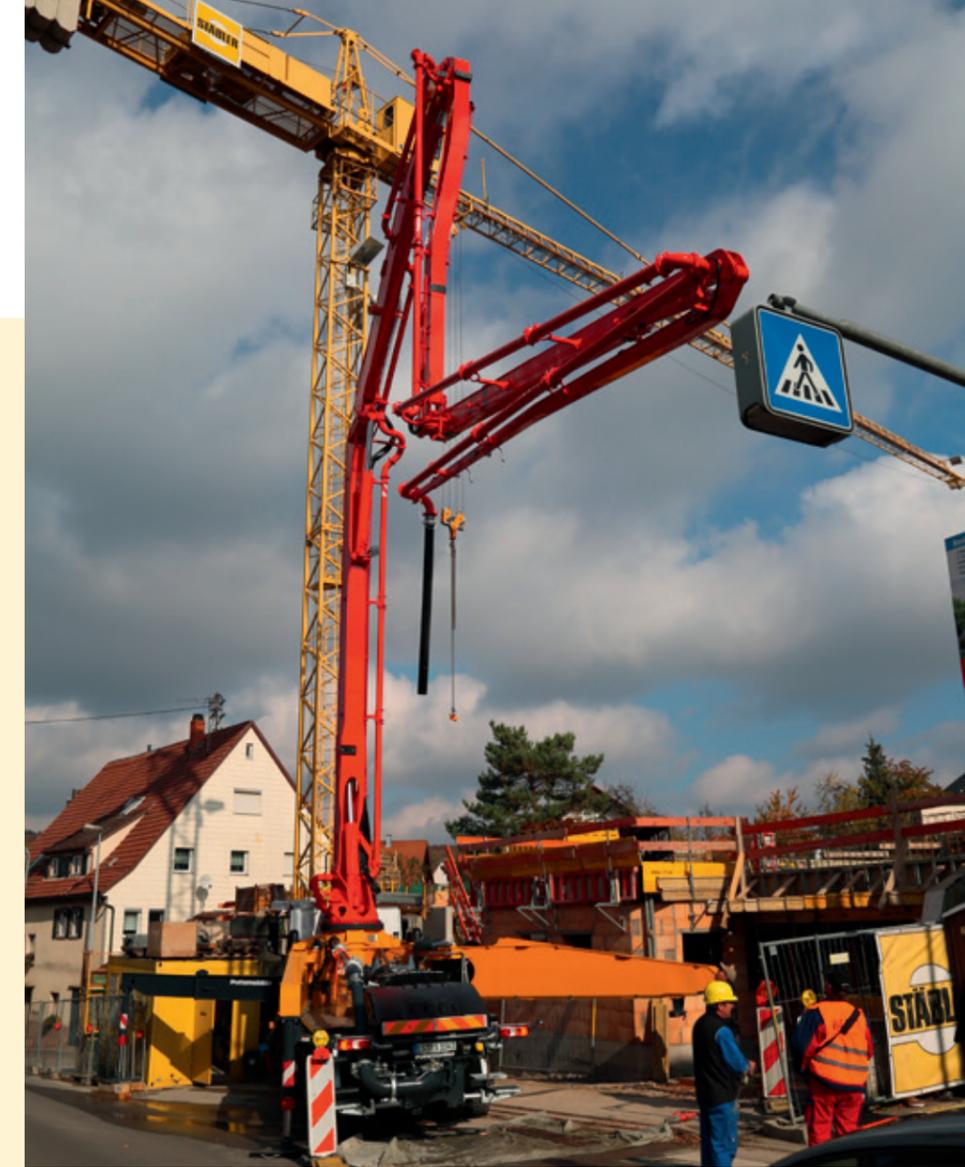
This provides real benefits in terms of operational safety and productivity, especially in narrow spaces. Other advantages include an intelligent working range restriction feature, storing preferred positions and vibration damping, all of which ensure for instance that the end hose remains steady.

* **Important note:**
Although Ergonic® Boom Control makes work easier and optimises processes, it is not a safety function. The machine operator remains responsible for their work.



EBC at a glance

- **Precise concrete placement** even at a high output
- **Defining critical working areas** reduces risks
- **The convenient, ergonomic one-handed control** makes the work of the driver easier and ensures that the height remains constant during horizontal movement of the end hose
- Optimised, semi-automatic folding and unfolding process for **quicker machine readiness and greater user-friendliness**
- **Steadier end hose** thanks to vibration damping



ergonic[®]
inside

One-handed control for easier operation

When EBC mode is activated, it is possible to control the boom horizontally and vertically using the ergonomic one-handed control. As a result, the machine operator does not need to change hand position or carry out additional switchovers to individual arms.



Ergonic[®] and placing boom – movement under control

Working range restriction for increased operational safety

You can use this function to easily and reliably define limits for the working and movement range of the boom and the axes. These limits will not be exceeded during concreting, making the work of the machine operator much easier, especially during indoor concreting operations.

The EGD-RC display shows the working areas, in particular during the support operation.

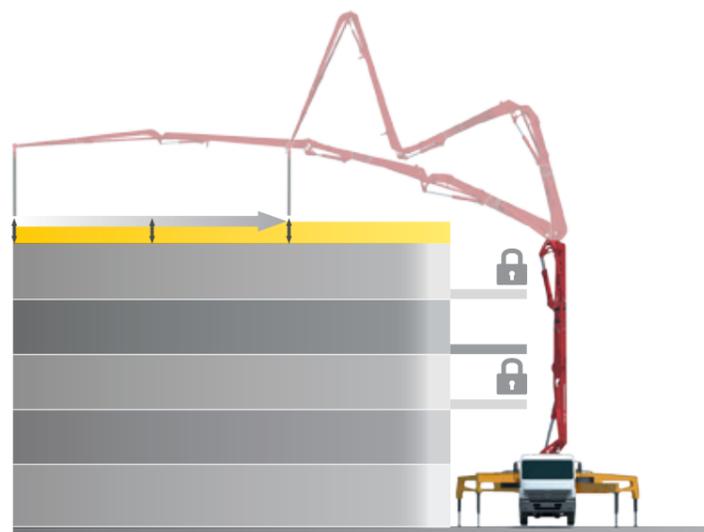
The speed of the boom movement can be continuously adjusted. Even when the boom is moving, the operator can choose between the elbow and the Z fold system.

After placing the concrete, the automatic folding with mounting assist ensures that the boom is gently placed onto the boom cradle.



Locked arm positions for greater user-friendliness

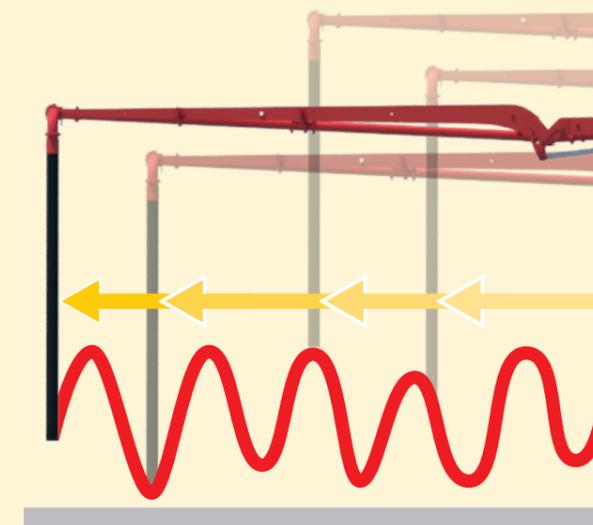
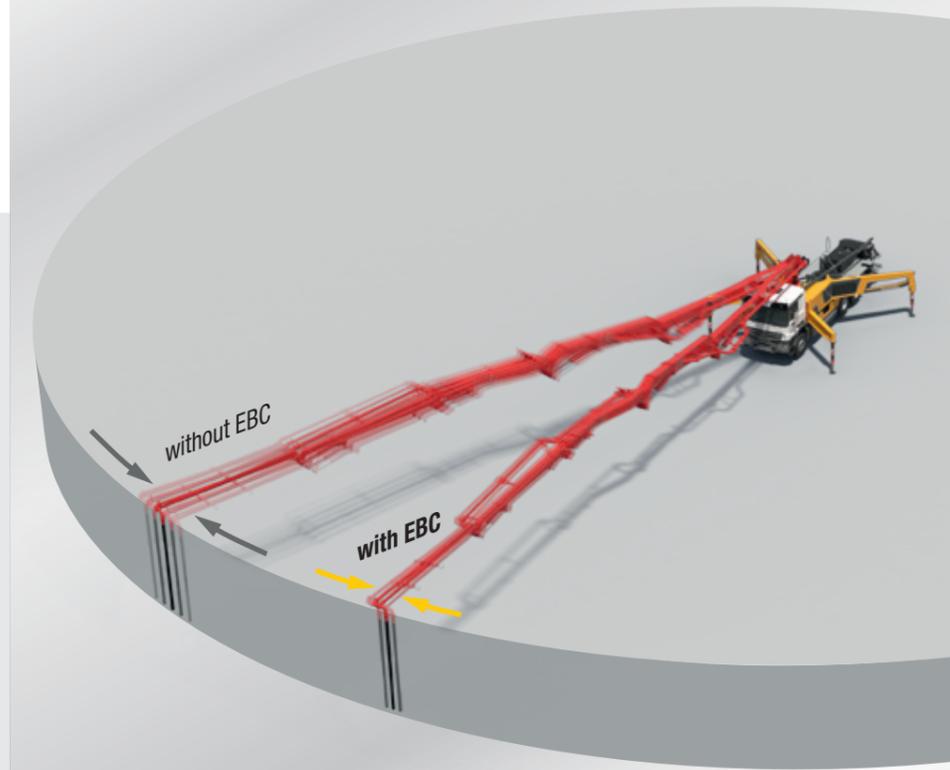
If required, the first two arms can be locked in position and will remain there, regardless of how the remaining arms are moved. A preferred position can be set for the last arm. This position is maintained during concreting.



Vibration damping for increased productivity

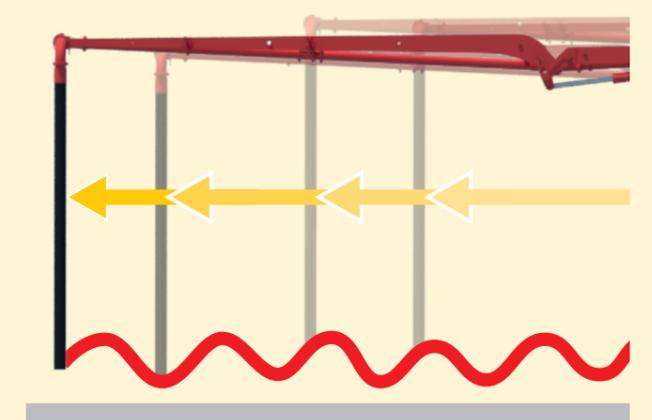
A steady end hose can be moved more easily. As a result, the concrete is placed cleanly, making life much easier for the operator. On large booms of the 40 m class and above, EBC also damps torsional oscillation* (optional).

* Not available for all machine models



Without EBC:

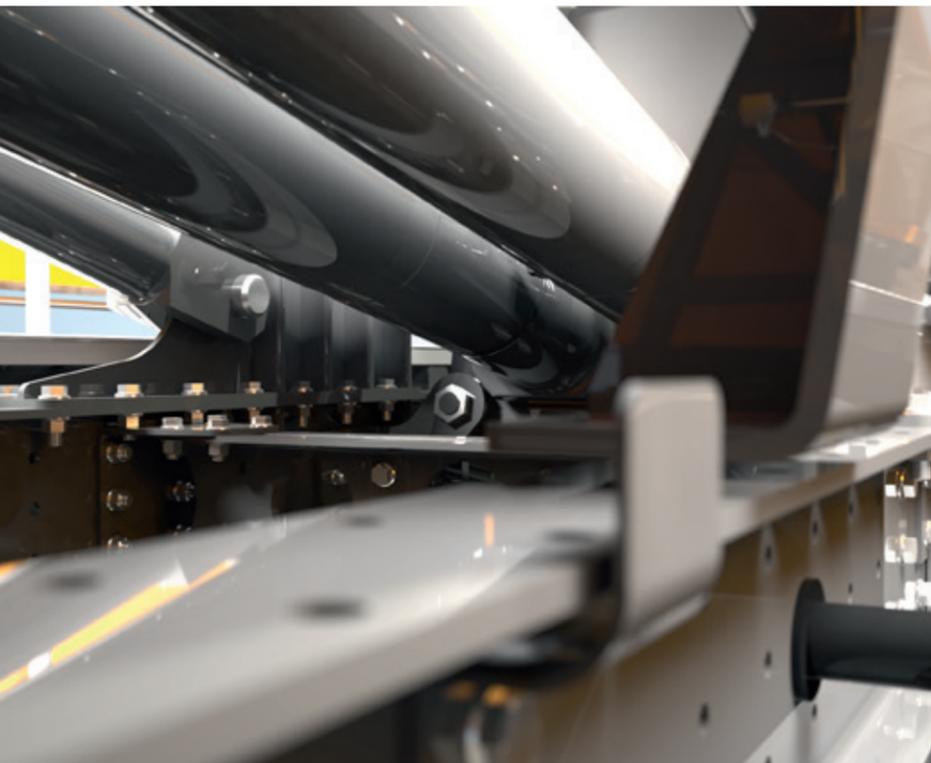
On all placing booms, stop-start movements of the boom and pump pulsations cause various degrees of deflection in the end hose.



With EBC:

EBC reduces vertical movement of the boom by approximately one-third, while simultaneously limiting end hose deflection in all directions.

Ergonic® and concrete pump – maximum performance provided systematically



Ergonic® Pump System (EPS) – getting to the heart of performance

The computer-aided EPS control system regulates the operation of the concrete pump and the truck engine. This results in fewer hydraulic components, which means less wear and reduced energy consumption.

The pumping process is overall more harmonious and smoother, and vibrations in the boom and machine are kept to a minimum. This takes stress off the concrete pump and truck as well as off local residents and construction workers because, thanks to the EPS, the pump is much quieter.

Ergonic® Output Control (EOC) – the optimum speed at all times

EOC means less fuel consumption, wear and noise. The machine operator sets the output using a rotary knob on the radio remote control and EOC controls the optimum speed. It is not possible to set the output to minimum and the engine speed to full throttle at the same time with EOC. If the boom is not moved and the pump is off, the engine will revert to idling speed. This can reduce fuel consumption by up to 10 %.

Increased power with “Speed plus”

In order to accelerate specific processes, such as folding out the boom, the power can be increased at short notice using “Speed plus”. In extreme situations, e.g. if the concrete is particularly heavy, EOC can be switched off.

EOC at a glance

- **Lower fuel consumption and reduced wear** thanks to optimum engine speed
- Fuel savings of up to **10%**
- **Avoids unfavourable ranges**
- **Automatic idling speed** if there are no boom movements and the pump is off

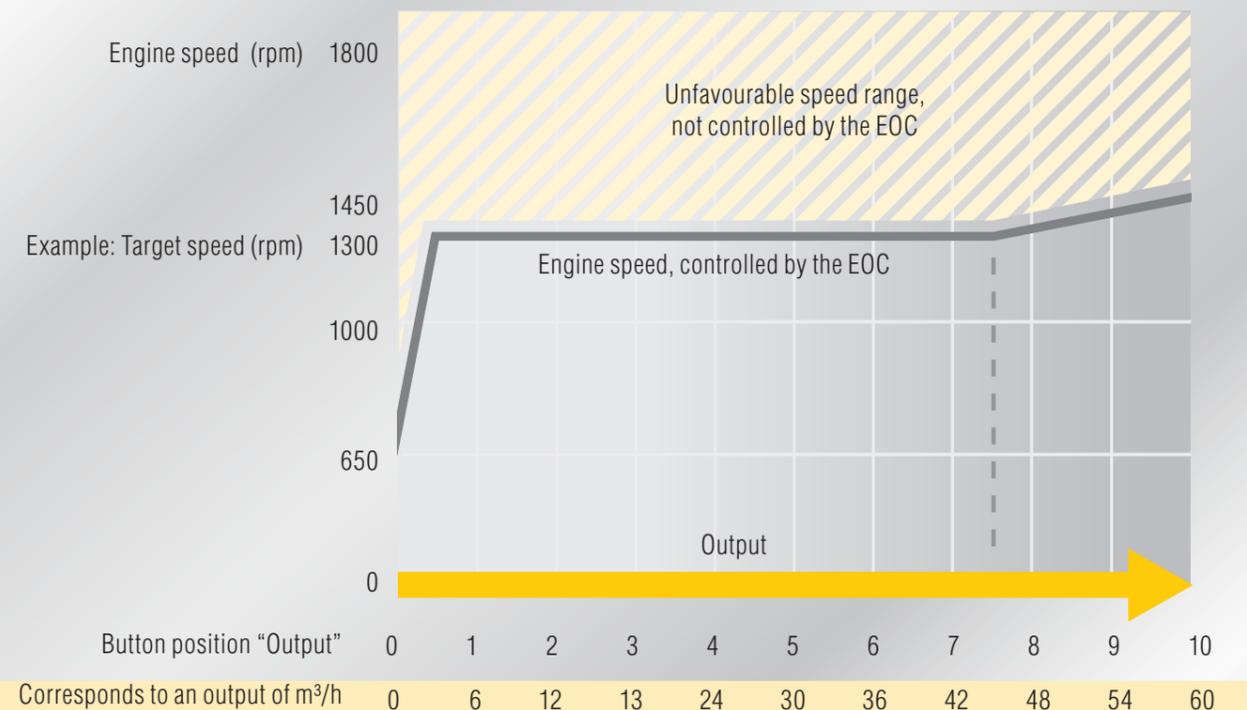
Silence function in the PUMI® – less noise in the construction site environment

Thanks to its integrated “silence function”, EPS reduces pressure peaks and switchover impacts in our PUMI®s. This ensures a softer pumping process, a more gentle start up and fewer strokes with the same output due to a higher fill level.



EPS at a glance

- **Low wear**
- **Reduced vibrations** in the machine and boom
- **Optimised, smooth pumping process**
- **Includes EOC** (Ergonic® Output Control)
- **Fewer components** and therefore lower service costs
- **Practical and reliable fault management**
- **High machine availability** thanks to high-quality components
- **Less noise** thanks to the silence function in the PUMI®



Ergonic® and support – operating range in a protected environment

Ergonic® Setup Control (ESC) – protects people and investment

ESC is the safety system from Putzmeister used for truck-mounted concrete pumps in accordance with the guidelines of the DIN EN 12001:2012* standard. However, ESC provides even more. It helps the operator to safely set up and operate the machine, especially during long, strenuous working days when concentration can start to lapse. Therefore this system serves to both, significantly increase the safety of the persons at the job site and to prevent damage to the investment.

ESC extends the operating range

The working areas given as examples on the following pages show just how much flexibility the ESC safety system allows. Placing arm 1 in a vertical position enables further additional working areas.

* **EN 12001:2012:** This standard specifies automatic checking of the interplay between the support system, boom movements and the pumping function.

ergonic[®]
inside



ESC at a glance

- It works in the most **versatile and easiest way** possible within the framework of the guidelines
- ESC increases **safety on the construction site**: It reduces accidents and liability risks, protects employees and the investment
- Using the one-side support in situations where there is limited set-up space enables work to be carried out with **more flexibility than the full support**
- Clear definition of the permitted arm positions and working areas ensures the **stability of the concrete pump** during ongoing operation
- In **extreme set-up situations**, ESC also provides support in autonomous operation



Ergonic® and support – safe in the knowledge that you have more options

This is how ESC works

- When the boom function is activated, a check is carried out to ensure that the support legs are in the correct horizontal position
- The EGD-RC display shows the working areas during the support operation
- The control system ensures that the arm assembly can only be moved freely in the permitted working area
- The machine set up can also be adjusted when the arm assembly is extended
- An additional working area is released by placing arm 1 in a vertical position
- The arm assembly can be moved upwards to open the hopper so that the concrete pump can be cleaned



Arm 1 horizontal



S support (standard)



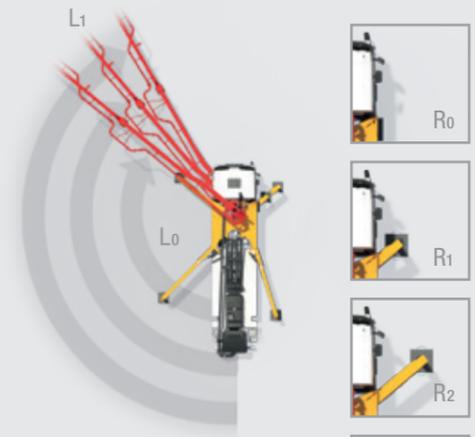
LF/RF support (left frontal / right frontal)



Ls/Rs support (left narrow / right narrow)



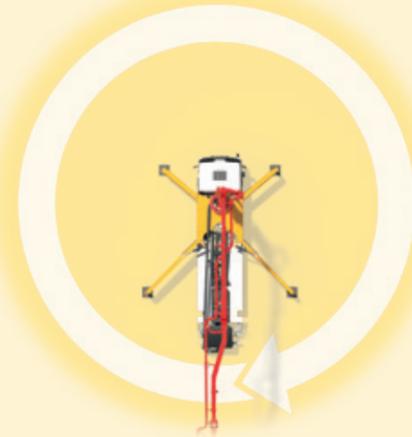
F support



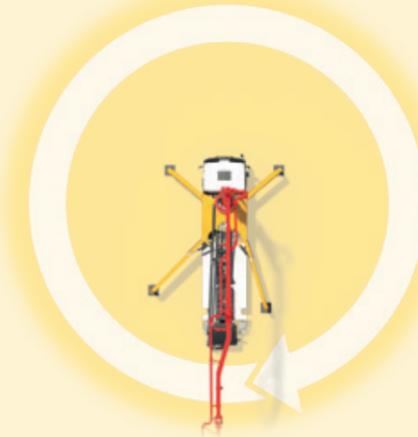
L/R support L0*, L1*, L2*/R0*, R1*, R2* (frontal)

* These positions are only possible for machine models that are equipped with the new Putzmeister Ergonic® 2.0 control system

Arm 1 vertical



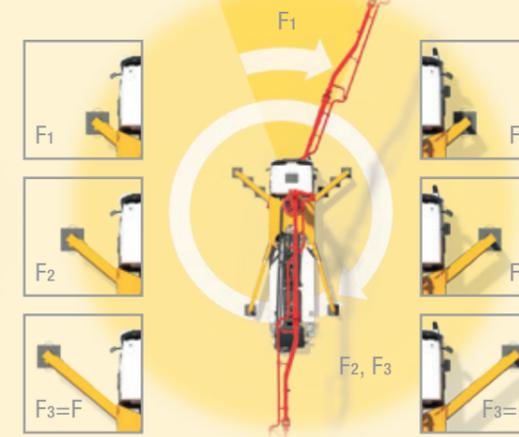
S support (standard)



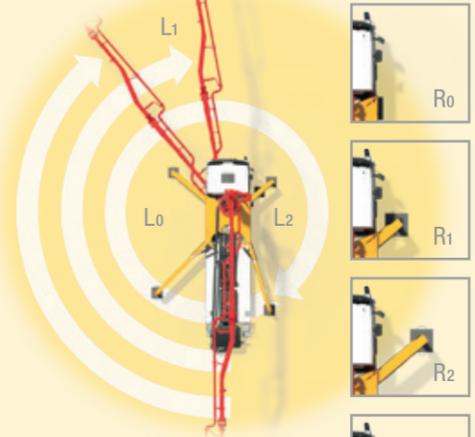
LF/RF support (left frontal / right frontal)



Ls/Rs support (left narrow / right narrow)



F support F1*, F2*, F3*



L/R support L0*, L1*, L2*/R0*, R1*, R2* (frontal)

The more constricted the job site, the more tangible the advantages

The PUMI® NEW Generation offers three different support expansion stages to suit different requirements.

The frontal and standard support is standard equipment. These stages are suitable for applications where setup space is adequate.

The Ls/Rs support is used on smaller job sites where setup conditions are usually constricted.

The highest expansion stage is the innovative Variable Support System. This offers maximum flexibility in the smallest space.

All four stages feature the Putzmeister ESC safety system. The working range created by the support is visualised to the operator on the remote control display.

Putzmeister safety system without variable support



Frontal support

Setup is simply via the four support cylinders at the front and rear, without extending support legs. This creates a minimum support spanning 2.6 m of vehicle width.



Standard support

The machine is fully supported. A working range of 360° is fully available. The working range at the front is 4.3 m.

Putzmeister safety system with variable support



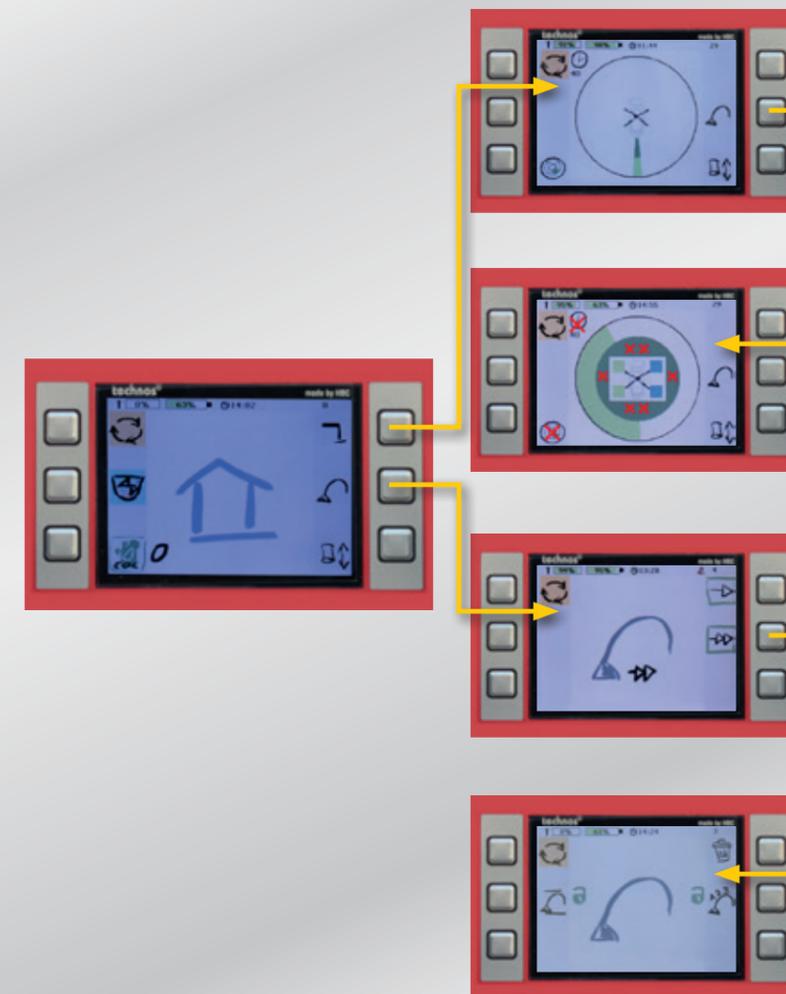
Ls/Rs support

In addition to the front and standard support, this optional software configuration also permits narrow support on one side of the machine. This reduces the working range at the front to 3.4 m.



Variable support

The front stabiliser is supported steplessly. This permits all support variants in the 2.6 m to 4.3 m range with this optional software configuration.



Ergonic® Graphic Display (Radio) Remote Control (EGD-RC) – ensuring a transparent overview

On the EGD, the machine operator can view all relevant machine data and adjust individual parameters. Up-to-date feedback and system information for the machine appear in real time in the remote control display.

Thanks to a reliable fault management system with a double protection for the control system (electronic and hydraulic), the machine is fully operational in the event of a fault, even in emergency operation. If components, such as sensors, that are not relevant for safety fail, they can be switched off, enabling work to continue without interruption.

Quick results at the touch of a button

The display is easy to operate using buttons. These buttons take you from the main menu to the individual sub-menus.

You can use the buttons to select or set the individual symbols or limit values and maximum values, etc. in the sub-menus, and you can then confirm these by pressing the buttons.

For example, support:

The machine is parked at the site of use and, depending on the conditions on the construction site, it is provided with support.

The display shows permissible ESC-secured working areas and the boom can be moved into these areas by making an entry. Furthermore, the working areas can be limited (as described on page 6).

* Sensors that are not relevant for safety can be deselected for the time being, and the machine will continue to work in emergency operation.

Ergonic® and operation – connected by radio

Ergonic® radio remote control 2.0 (FFS) – simple and 100% practical

The remote control on the latest generation Ergonic® 2.0 is extremely lightweight and easy to handle. In contrast to generation 1.0, it is a whole 30 per cent lighter on the scales.

This comfort and well thought-out menu guidance with lots of clearly structured functional contents for controlling the boom and pump makes this system extremely popular among machine operators. Above all, there is the large, high-resolution colour display, which offers a complete overview, including extremely clear readability.

Robust and reliable – a real help

We have encapsulated the remote control's electronics, meaning that they are completely leak-tight and robust enough to withstand any environmental and weather conditions (protection class IP 65 dust-resistant and watertight). A battery with a runtime of up to 17 hours reliably supplies power here. Alternatively, if radio operation is not possible, it can be connected via a CAN cable.

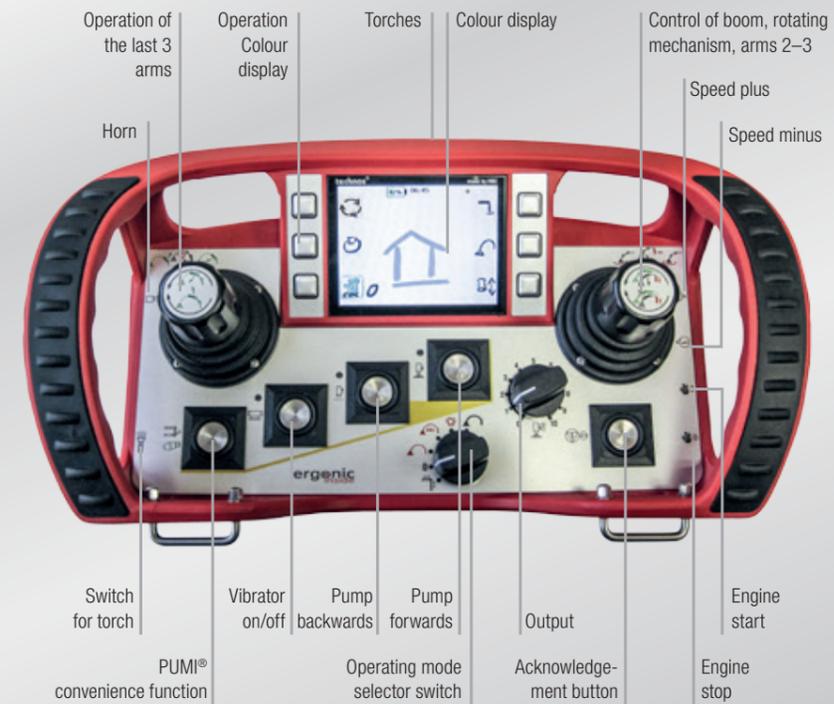
On dark days, a lamp with torch function lights up the machine operator's location – for increased visibility on the construction site.

Multiple truck-mounted concrete pumps – one remote control

By exchanging the integrated chip card, the radio remote control can be used for all concrete pumps, regardless of the number of arm segments.

Ergonic® FFS 2.0 at a glance

- **Ergonomic boom control** with two joysticks
- **Convenient one-handed control** (only with EBC) reduces the effort required by machine operators
- **EBC functions operated** directly using the radio remote control
- **Can also be used as a cable remote control** (e.g. where radio communication is prohibited)
- **Easy replacement** of the radio remote control thanks to radiomatic® iLOG technology
- **Lithium ion battery for a working time of up to 17 hours**
- **Optimum clarity** thanks to modern menu guidance and 3.5" colour display
- **Leak-tight and robust** thanks to encapsulated electronics
- **Improved safety on the construction site** thanks to a lamp with pocket torch function
- **Includes functional contents for EMC** on the PUMI®



Left side



Chip for machine
Connection cable for cable remote control

Right side



Emergency stop

Ergonic® Mixer Control (EMC) – The EMC makes the PUMI operator's job very easy; he can operate the mixer drum simply via the radio remote control. He conveniently controls the "mixing" and "emptying" functions, as well as "fast" and "slow" speeds and water addition and cleaning from his location.

All functions and information to hand

The rotary and push buttons are remarkably easy to operate. Two joysticks or one-handed control with just one joystick for EBC operation can be used to control EBC parameters, such as upper and lower limit of the operating range and rotating mechanism limit, as well as the compactor and end hose squeeze valve (optional).

Cable remote control – the reliable substitute

If use of a radio remote control is not permitted, it can be connected to the control cabinet and hence to the cable remote control via the cable supplied.



Build on Putzmeister – in service, parts, training

Everything that sets service apart

Swift assistance, meaningful advice and a reliable supply of genuine Putzmeister accessories and parts – in over 120 countries worldwide. This is what we at Putzmeister understand as first-class service.

Ideally placed to support you

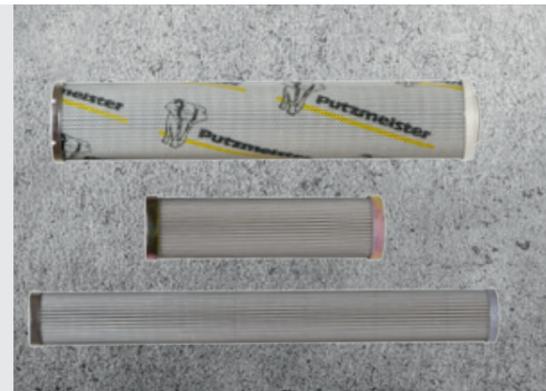
We provide continuous training for our service technicians, provide a close-knit information network and the latest equipment and consistently strive to meet our customers' needs.

Thanks to state-of-the-art technology, our employees have all the relevant technical information about your machine at their fingertips, should the need arise. Allowing us to provide you with the best possible support for emergencies, repairs or preventive maintenance.



Genuine parts for maximum availability

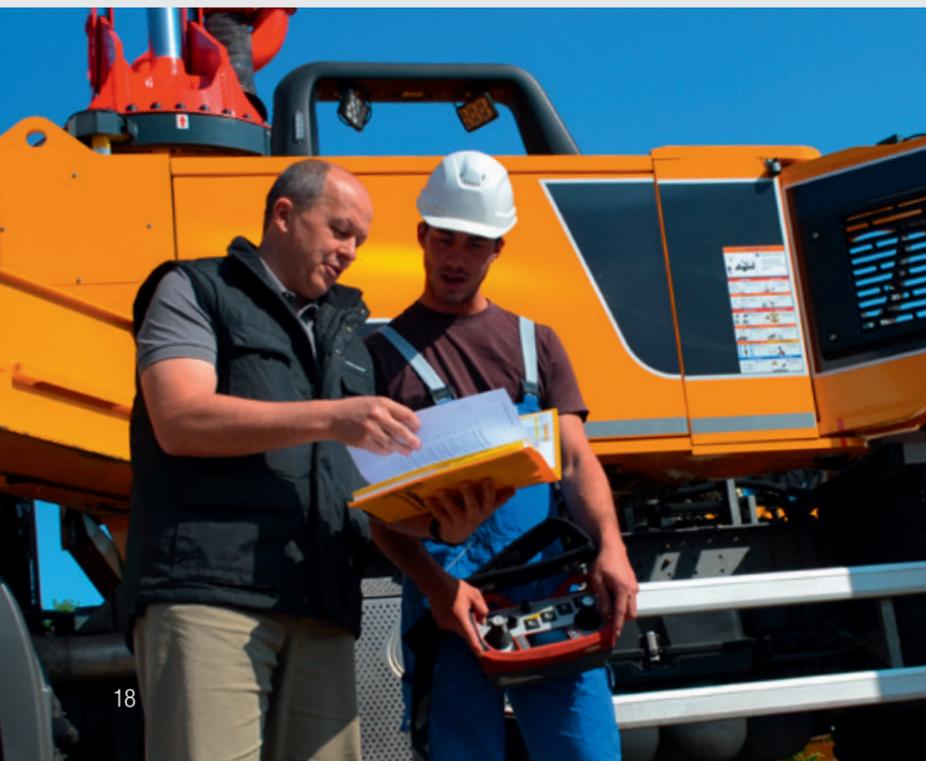
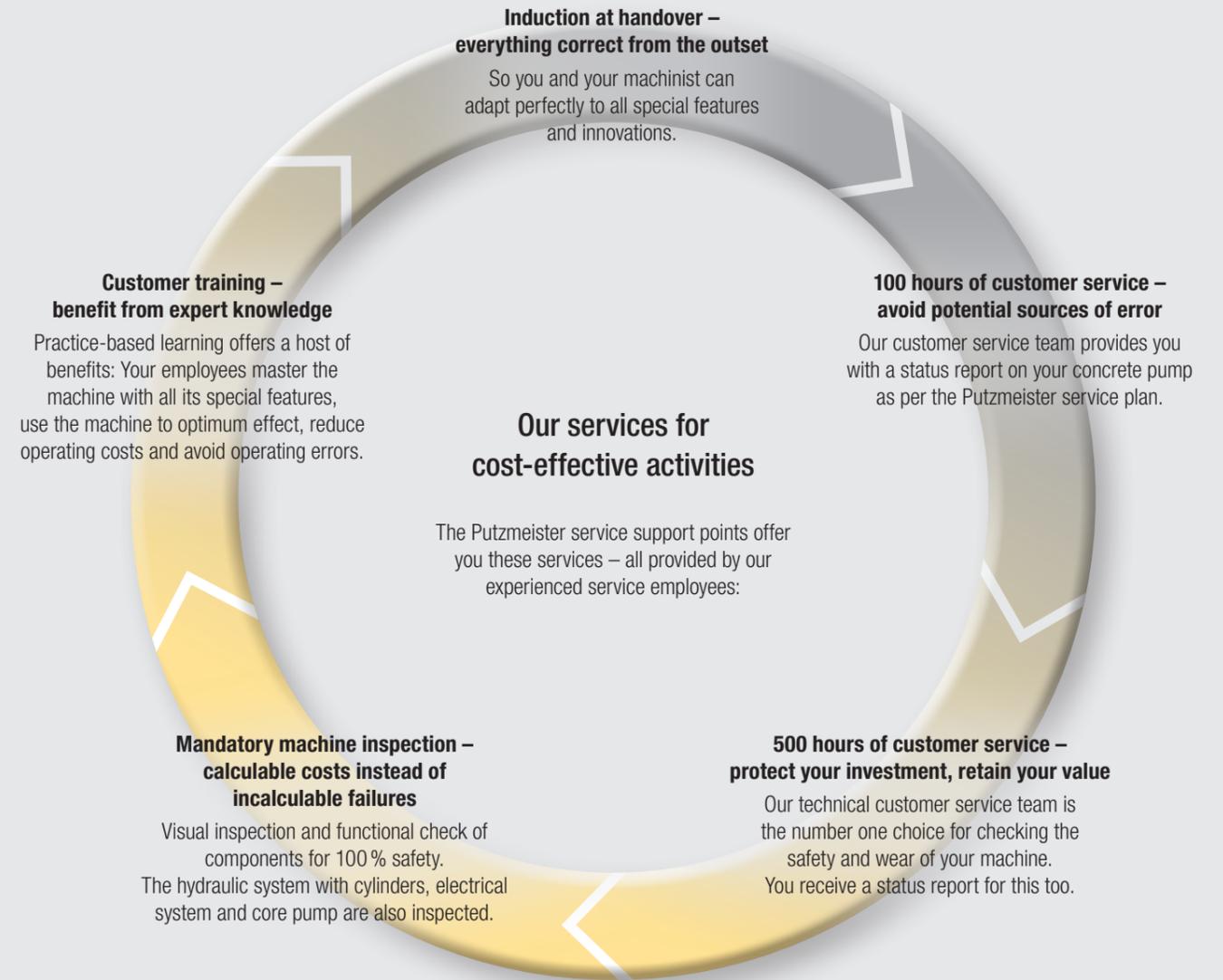
It goes without saying that we use only genuine Putzmeister parts in our workshops. This is the only way to guarantee consistent quality, checked for interoperability. And you can be absolutely sure that your machine meets the tough requirements with maximum performance and availability.



Excellent in quality customer proximity

In case of need, you have two options: Either the service team visits you or you take your machine to one of our service workshops. The latest tools, software analysis solutions and genuine parts ensure that your machine is operable again immediately.

All Putzmeister workshops and the workshops of our international Putzmeister partners meet our high quality standard. Especially when it comes to manufacturer's inspections and acceptance procedures in accordance with specifications.



Our range of training courses and seminars

For concrete pump machinists

- Training and development seminars Concrete pumps
- Training and development seminars PUMI with piston and rotor pumps
- Regional / company seminars (in your region or on your premises)

For concrete pumps mechanics

- Training and development seminars Concrete pumps

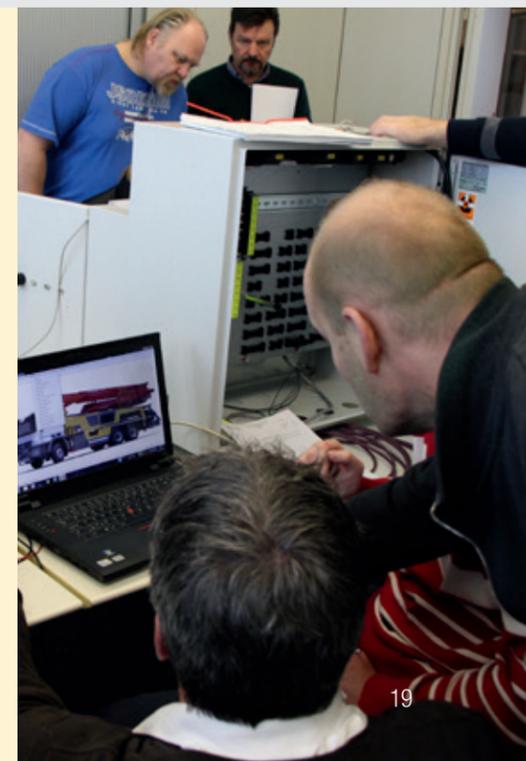
For concrete pump machinists and mechanics

- Practical days in Aichtal
- Training: Handover and induction, on-the-job training

For workshop managers and foremen

- Overview of current developments in Putzmeister concrete pumps
- Qualification at the customer workshops for requisite maintenance work

Further information can be found at: www.pm-akademie.de



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* Pumis and truck mixers

** Availability and functional scope depend on the machine model

Illustrations and descriptions contain options



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