Ergonic® 1.0 systems
Control system for cost-efficient, convenient operation
Humans control – the machine “thinks” and follows

Ergonic® inside means that the machine not only works with high power, fuel efficiency and low wear, but can also efficiently operate automatically thanks to EPS, for example.

In addition, we have focused on ensuring optimum interaction between the machine operator and the machine.

In this way, even complex tasks can be completed intuitively and therefore easily.

Similarly, the feedback that appears on the clearly organized display of the radio remote control and on the control cabinet provides effective support in daily work.

The most important functions of Ergonic® 1.0

- 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 – Ergonic® Graphic Display
  Transparent overview of the pumps and machine status as well as the pump settings, ensuring convenient operation.

* Pumps 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 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 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

One-handed control for easier operation

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

Working range restriction for increased operational safety

With this function, it is possible to define limits for the working and movement range of the boom. These limits will not be exceeded during concreting, making the work of the machine operator much easier, especially during indoor concreting operations.

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 machine operator. On large booms of the 40 m class and above, EBC also damps torsional oscillation* (optional).

* Not available for all machine models

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.

Without EBC:
Stop-and-go movements when the boom is moved and slewed 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, enabling forwards/reverse pumping with adjustable output. 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 vehicle as well as off local residents and construction workers.

**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. Both the delivery pressure and the output can be limited depending on the application. 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 „Gas +“**

In order to accelerate specific processes such as folding out the boom, the power can be increased at short notice using „Gas +“. In extreme situations, e.g. if the concrete is harsh, EOC can be switched off.

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**EPS at a glance**

- Low wear
- Reduced vibrations in the machine and boom
- Optimised, smooth pumping process
- Possible limiting of the delivery pressure and rate
- Fewer components and therefore lower service costs
- Protection due to pressure limiting
- High machine availability thanks to high-quality components
- Less noise thanks to the „silence function“ in the PUMI®

**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

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**Silence function in the PUMI® – less noise in the job 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.

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**Engine speed, controlled by EOC**

Unfavourable speed range is not controlled by EOC

**Corresponds to output m³/h**

- 0: 0
- 1: 16
- 2: 32
- 3: 48
- 4: 64
- 5: 80
- 6: 96
- 7: 112
- 8: 128
- 9: 144
- 10: 160

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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 machine operator to safely set up and operate the machine, especially during long, strenuous working days when concentration can start to lapse. This system therefore serves to both significantly increase the safety of the persons at the job site and to prevent damage to the investment of the machine operator.

ESC extends the operating range
The working areas given as examples on the following page 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 stipulates the automatic control over the interaction between the support, boom movements and pump function.

ESC at a glance
- This system helps the driver to operate the machine safely in stressful situations
- It works in the most versatile and easiest way possible within the framework of the guidelines
- ESC increases safety on the job site: It reduces accidents and liability risks, protects employees and the investment
- Using the flexible 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
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 control system ensures that the arm assembly can only be moved freely in the permitted working area.
- Placing arm 1 in a vertical position enables an additional working area.
- The machine supports can also be adjusted when the arm assembly is extended.
- The arm assembly can be moved upwards to open the hopper so that the concrete pump can be cleaned.

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

Arm 1 horizontal

- S support (standard)
- LF/RF support (front left/front right)
- Ls/Rs support (narrow left/narrow right)
- F support (frontal)

Arm 1 vertical

- S support (standard)
- LF/RF support (front left/front right)
- Ls/Rs support (narrow left/narrow right)
- F support (frontal)
Ergonic® radio remote control (FFS) – everything at a glance, everything under control

In addition to enabling convenient boom control, the radio remote control allows the machine operator to monitor and set various different parameters. The machine operator has access to live feedback and system information, such as engine speed, fluid temperature, concrete pressure, output, and pressure and volume limits at any time on the display. The strength of the radio signal and charge status of the battery are also indicated via bars.

Working hand in hand with the machine

Operation via rotary and push buttons is extremely clear and simple. EBC parameters such as the upper and lower limits of the working range and the slewing gear limit as well as the vibrator and end hose squeeze valve can be controlled using two joysticks or via one-handed control with just one joystick.

Cable remote control – the reliable replacement

If a situation arises in which the radio remote control cannot be used, the standard cable remote control will serve as a suitable replacement.

Ergonic® FFS at a glance

- Information is made available at the workstation of the machine operator on the radio remote control display
- Ergonomic boom control with two joysticks
- Convenient one-handed control (only with EBC), reducing the effort required by machine operators
- Up-to-date feedback and system information for the machine transmitted onto the easily readable display by an additional signal
- Easy operation of the entire display menu via rotary push button

Ergonic® Mixer Control (EMC) – The EMC (Ergonic® Mixer Control) provides a PUMI® or truck mixer operator with a great deal of convenience when working, as the mixer drum can be operated by radio remote control. The machine operator can therefore conveniently control the „Mix“, „Empty“, „Fast“ and „Slow“ functions from any location on site, and add the water and activate the cleaning function.

Ergonic® and operation – connected by radio
Ergonic® and operation – display for clear viewing

Ergonic® Graphic Display (EGD) – ensuring a transparent overview

On the EGD, the machine operator can view all relevant machine data and adjust individual parameters. Live feedback and system information for the machine appear in real time on the 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 or twist of a button

The display is easy to operate using buttons and a rotary selection knob. These buttons take you from the main menu to the individual sub-menus:

Pump status
- Pumping animation in real time
- Pumping data, e.g. hydraulic pressure, stroke time and engine speed

Machine status
- Sensor* monitoring, e.g. engine speed, transfer tube, magnetic switch, agitator, etc.

Pump settings
- Switching EOC on and off
- Limiting the delivery pressure and rate
- Adjusting the fan and Push Over, etc.

The individual symbols or limit values and maximum values are marked or set in the submenus using the rotary selection knob, and are then confirmed by pressing the rotary selection knob.

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* 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® Graphic Display at a glance

- Complete overview of pumps and machine status as well as pump settings
- Simple control and increased operational safety
- Provides all important information regarding:
  - Hydraulic fluid temperature
  - Operating hours
  - Delivery pressure/delivery pressure limit
  - Delivery rate/delivery rate limit
  - Fault management
  - etc.

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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.

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.

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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.

Induction at handover – everything correct from the outset
So you and your machinist can adapt perfectly to all special features and innovations.

Customer training – benefit from expert knowledge
Practice-based learning offers a host of benefits: Your employees master the machine with all its special features, use the machine to optimum effect, reduce operating costs and avoid operating errors.

Our range of training courses and seminars

For concrete pump machinists
- Training and development seminars
- Concrete pumps

For concrete pump machinists and mechanics
- Training: Handover and induction, on-the-job training
- Training and development seminars
- Concrete pumps

For workshop managers and foremen
- Overview of current developments in Putzmeister concrete pumps

For concrete pumps mechanics
- Training and development seminars
- Concrete pumps

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

Our services for cost-effective activities

The Putzmeister service support points offer you these services – all provided by our experienced service employees:

Mandatory machine inspection – calculable costs instead of incalculable failures
Visual inspection and functional check of components for 100% safety. The hydraulic system with cylinders, electrical system and core pump are also inspected.

100 hours of customer service – avoid potential sources of error
Our customer service team provides you with a status report on your concrete pump as per the Putzmeister service plan.

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Illustrations and descriptions contain options

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