PUMI® Truck-mixer concrete pumps

The original will always be from Putzmeister
Anyone who knows PUMI®, knows that even small construction sites are important too

Since 1976, increasing numbers of customers have been satisfied with the advantages offered by a PUMI®. Thanks to many years of experience and continuous further development, there is currently a wide range of PUMI®s for every kind of requirement. Tried and tested boom types with high reaches and flexible kinematics together with modern computer-controlled concrete pumps today make operating a PUMI® easier and more economic than ever before.

All components meet Putzmeister’s high quality requirements. It is certified according to DIN has DIN ISO 9001.

The original PUMI® by Putzmeister combines pump, mixer and placing boom in a single machine. It is an addition to the fleet of truck-mixers held by service and customer-oriented suppliers of ready-mixed concrete and significantly extends the range of jobs they can take on: a PUMI® is particularly economic wherever truck-mounted concrete pumps are too expensive or too big and inflexible or wherever truck-mixer conveyor belts are not adequate. In particular, it can be operated cheaply and quickly in small construction sites up to approximately 20 m³. And wherever there is not much space, it comes into its own due to its narrow set-up dimensions. That is, it can be used on cramped construction sites, in cities and in crowded residential areas.

Transporting, pumping, placing — all with one machine and just one machine operator. This saves time and money. For many pumping jobs, one PUMI® is perfectly adequate and can be scheduled for use on its own. For somewhat larger pumping jobs, it can use its own load of concrete to bridge the waiting time between truck-mixer deliveries.
PUMI®s – unbeatable versatility

To work to full capacity, the PUMI® can be used to load truck-mounted concrete pumps, fill crane hoppers or to carry out other jobs as a truck-mixer.

For refurbishment work, a reducer attachment and delivery hoses can simply be connected instead of the end hose in order to add a significant extension to the boom reach. Flexibility inside and out further increases the PUMI®'s range of uses.

From a simple construction site with an obstacle...

... to “slipping” into the building for interior refurbishment ...

... to the concreting of formworks right up to the driver’s cab, all construction sites can be covered by the PUMI®.

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To work to full capacity, the PUMI® can be used to load truck-mounted concrete pumps, fill crane hoppers or to carry out other jobs as a truck-mixer.
The rotor pump – quiet running and almost no concrete residue

- quiet running
- easy and quick cleaning
- virtually continuous delivery
- almost no concrete residue – the load is optimally utilised, no waste disposal required
- delivery rate infinitely variable, forwards and reverse
- delivers even the most difficult materials: steel fibre concrete, broken material, screed, foamed concrete, fluid concrete, lightweight concrete and aggregate size up to 32 mm.
- low wear: the rotor hose is the only wear part.
- gentle pumping, ideal for air pore concrete
- with delivery rates between 30 and 35 m³/h, the rotor has a fuel consumption up to 10 % less than that of a CS piston pump

The piston pump – compact and strong

- high delivery pressure and high delivery rate
- problem-free use of long hose lines, outlet for hose line on pressure connection
- easily accessible for maintenance and service through compact diagonal installation
- quiet pumping and low wear (EPS)
- compact design ideal for use as a mixer: crane hoppers and hoppers can be filled without chute extension
- wide departure angle
- delivery cylinders with 230 mm diameter create good suction and high fill level
- large draining opening on the hopper
- self-adjusting wear ring
- closed hydraulic circuit (FFH)
- maximum ground clearance with shortest possible overhang

Short overhang for difficult terrain and steep gradients.

*on MB Actros 8x4 (competitor’s comparison value in brackets)

The hopper of the CS piston pump is simply folded away. This makes the delivery cylinders easy to access.
PUMI® 21-3 – the best when a good payload is called for

The PUMI® with its 21 m boom and rotor pump not only offers optimum reach for many uses, but has the lowest gross weight thanks to its light boom, with therefore approximately 1 m³ more working load than a comparable PUMI® 24-3. On a 4-axle chassis, the PUMI® 21-3 is equipped with a 7 m³ mixer drum. A 6 m³ mixer drum is an option on a 3-axle chassis. It is very versatile thanks to its compact dimensions. It can quickly be set up on the construction site, with no support needed at the rear, and only a small set-up area required.

Technical data

Placing boom TMM 21-3

<table>
<thead>
<tr>
<th>Boom type</th>
<th>3 arm Z fold system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical reach</td>
<td>20.6 m</td>
</tr>
<tr>
<td>Horizontal reach</td>
<td>16.9 m</td>
</tr>
<tr>
<td>Reach depth</td>
<td>9.9 m</td>
</tr>
<tr>
<td>Unfolding height</td>
<td>5.6 m</td>
</tr>
<tr>
<td>Support width front/rear</td>
<td>4.0 m²/– m</td>
</tr>
<tr>
<td>Delivery line DN</td>
<td>100 / 4.5</td>
</tr>
</tbody>
</table>

PUMI® 24-3 / PUMI® 26-3 – high payload, wide reach

The PUMI® 24-3 and 26-3 models can be used anywhere thanks to their wide boom reach and high concrete payload, ideally in combination with the powerful CS piston pump for rough concrete mixes up to 0/32. The delivery line has delivery line bends with a wide radius (235 mm), which reduces wear and increases the machine’s availability.

The transversally installed pump means the PUMI® has a short overhang and maximum ground clearance. It playfully overcomes difficult terrain or sloping entrances such as construction site pits.

Technical data

Placing boom TMM 24-3

<table>
<thead>
<tr>
<th>Boom type</th>
<th>3 arm Z fold system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical reach</td>
<td>23.8 m</td>
</tr>
<tr>
<td>Horizontal reach</td>
<td>20.0 m</td>
</tr>
<tr>
<td>Reach depth</td>
<td>12.4 m</td>
</tr>
<tr>
<td>Unfolding height</td>
<td>6.9 m</td>
</tr>
<tr>
<td>Support width front/rear</td>
<td>4.0 m²/2.5 m</td>
</tr>
<tr>
<td>Delivery line DN</td>
<td>DN 125 / 5.5</td>
</tr>
</tbody>
</table>

Placing boom TMM 26-3

<table>
<thead>
<tr>
<th>Boom type</th>
<th>3 arm Z fold system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical reach</td>
<td>25.6 m</td>
</tr>
<tr>
<td>Horizontal reach</td>
<td>21.8 m</td>
</tr>
<tr>
<td>Reach depth</td>
<td>13.6 m</td>
</tr>
<tr>
<td>Unfolding height</td>
<td>7.6 m</td>
</tr>
<tr>
<td>Support width front/rear</td>
<td>4.0 m²/2.5 m</td>
</tr>
<tr>
<td>Delivery line DN</td>
<td>DN 125 / 5.5</td>
</tr>
</tbody>
</table>
The Ergonic® modules –
the ultimate plus points to your advantage

The computerised Ergonic® control system continuously monitors and regulates the most important components such as the concrete pump, mixer drum as well as engine data from the truck. As a result, the PUMI® can be operated with the maximum level of productivity and performance, yet with minimum intervention by the driver. All PUMI®s are fitted with FFH and the Ergonic® modules EPS, EMC and EOC as standard.

The machine operator can view all information for the machine centrally on the EGD (Ergonic® Graphic Display). The machine can also be manually controlled from here.

The free-flow hydraulics (FFH) are the most crucial plus point for pumping. The closed fluid circuit in the FFH transmits more power with less energy loss. It consumes less fuel and is therefore more economic.

In contrast to a conventional system with a buffer fluid tank where valves inhibit fluid flow, with the FFH an intelligent control system guides the fluid into the drive cylinders with little loss. Expensive control blocks which lead to unnecessary heating of the fluid are not required and that also makes the hydraulics more service-friendly.

The EPS (Ergonic® Pump System) has significant advantages compared with the conventional hydraulic control systems. It fully regulates the concrete pump electronically and ensures that the pumping process runs at an optimal level. In doing so, it actively and optimally coordinates pumping data, such as the swing angle of the CS pipe, the delivery rate of the hydraulic pump, the hydraulic pressure along many other signals. This is not possible to such an extent with hydraulic control systems.

The silence function integrated in EPS minimises pressure peaks and reduces switchover impacts. The PUMI® is therefore ideal for construction sites in city areas where noise represents an increasingly significant problem. In addition, the “softer” pumping process reduces the vibrations of the machine and of the boom. Not only that, but the gentler run up of the delivery cylinder increases the fill level of the concrete pump. This leads to fewer piston strokes with the same output, which conserves the concrete pump and makes the pumping process significantly smoother.

The PUMI® control system, which is doubly protected by electronic and hydraulic systems, means that in most cases when faults occur on the machine, you can still continue your construction work in emergency operation. The condition of all sensors is displayed via the EGD. Defective sensors can be immediately detected and deselected. The specific sensors in question can be located later when the machine is in the workshop and replaced with a new one.

EMC – Ergonic® Mixer Control
With EMC the mixer drum can be operated by radio remote control as standard. The ‘Mix’ and ‘Empty’ functions, as well as ‘Fast’ and ‘Slow’ can be comfortably controlled by the machine operator from his location on site.

The integrated mixer memory function stores a default mixer drum speed.

EOC – Ergonic® Output System
The delivery rate of the pump is set directly with just one knob on the radio remote control. The electronics of the EOC then regulate the optimal engine speed for the lowest level of fuel consumption, wear and noise.

Unfavourable conditions, such as full throttle engine speed with a minimal delivery rate can be avoided with EOC. If the boom is not moved and the pump is off, the speed drops to idling after 10 seconds.

With EOC you can achieve an approximate fuel saving of up to 10 % when pumping and without any noteworthy cutbacks in performance.

The diagram is vehicle-dependent: example shown is for MB Actros.

The entry menu on the EGD.
Key pumping data can be recorded at a glance.
Variable pressure and power adjustment via the EGD e.g. for the use of hose lines.
The operating unit on the rear right for on-site operation of the machine and to display the pumping data.
Top form as standard – standard accessories for every occasion

The mixer operating box beneath the ladder contains the key functions for controlling the mixer drum.

The high-pressure water pump for thorough cleaning of the machine after the work is done.

The large 650 litre water tank, supplied with compressed air, ensures there is always sufficient water.

Several movements can be executed at the same time using the fully proportional radio remote control with actual two-handed operation without having to change your grip.

An extension chute is supplied as standard, and a second can be purchased as an option.

As an option:
Radio remote control with Ergonic® Graphic Display offers a great many of mixer assist functions:

- **Automatic emptying function:** Adjusts the mixer drum speed to the pump delivery rate
- **Mixer cleaning function:** Reduces the amount of concrete left stuck to the mixer blades
- **Adding of water to the mixer drum via radio**
- **and many other functions**

Radio remote control with Ergonic® Graphic Display displaying current machine data with feedback, and providing radio control for a variety of functions:

- **Automatic emptying function:** Adjusts the mixer drum speed to the pump delivery rate
- **Mixer cleaning function:** Reduces the amount of concrete left stuck to the mixer blades
- **Adding of water to the mixer drum via radio**
- **and many other functions**

Thanks to an additional signal transmission system, the machine operator receives current feedback information and system displays from the machine directly onto the easily readable display:

- The strength of the radio signal and the state of charge of the battery are displayed via bar indicators.
- Relevant machine data, such as speed of rotation, fluid temperature, concrete pressure, delivery rate, and pressure and volume limit can be quickly accessed.
- Vibrator and end hose squeeze valves can be switched on and off.
- Slewing gear and boom arms can be locked or enabled, and the boom speed can be adjusted.

Mixer drum remaining fill volume (is calculated from the input value minus pumped quantity)

Mixer drum fill volume from the concrete plant (input value)

Mixer drum speed

Mixer pressure (sensor must be present)

Feedback from active functions

Automatic emptying

Water pump

CSD (Constant Speed Drive)

Automatic cleaning

Adding of water to mixer drum
The decisive factor for maintenance and servicing is who finishes first!

In the competition for concreting jobs the machine with the best possible availability has the best chance. Therefore, we have improved the accessibility of the maintenance points for the PUMI® and simplified the service. We also have the distinctive Putzmeister service network, which quickly offers help throughout the world. All this ensures a maximum usage duration and enables optimum utilisation of your machine.

Think ahead is the motto

Most of all we want you to be successful with your PUMI®. That’s why our service is not only available if the worst comes to the worst. You can rely on a fast emergency service and prompt parts delivery, for throughout the world Putzmeister and its partners are in an area near you. In addition, the Putzmeister Academy offers competent training and seminars for many aspects of your daily work.

But that’s not all. Solid design and manufacture also make their contribution to the development of every new PUMI®. Designed to have a long life, they also retain their high reliability in use even after many years service.

Monitoring and parameterisation of status data through the Ergonic® Tele Service (ETS)

All Putzmeister PUMI®s are fitted with the Liebherr truck-mixer superstructure, which has proved itself time and time again. They are distinguished by the use of components which are particularly maintenance-friendly and wear-free. The mixer drums are manufactured from high-strength special steel 27MnB5 and provided with end-to-end welded-on wear protection on the mixer coils. The drum geometry allows quick loading and unloading with optimal mixer efficiency and maximum loading capacity.

Of course Liebherr, like Putzmeister, also has DIN EN ISO 9001 certification.

Technical data

<table>
<thead>
<tr>
<th>Liebherr truck-mixer drum model</th>
<th>HTM 604 N (with PUMI® 21 on 6x4 truck)</th>
<th>HTM 704 P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal fill level</td>
<td>6 m</td>
<td>7 m</td>
</tr>
<tr>
<td>Drum speed</td>
<td>max. 1 – 14 rpm</td>
<td>max. 1 – 14 rpm</td>
</tr>
<tr>
<td>Material</td>
<td>high-strength special steel 27MnB5; wall thickness wear-dependent; mixer coils with end to end welded-on wear protection</td>
<td>high-strength special steel 27MnB5; wall thickness wear-dependent; mixer coils with end to end welded-on wear protection</td>
</tr>
</tbody>
</table>
## Technical Data of the PUMI® fleet

### Placing booms

<table>
<thead>
<tr>
<th>Type</th>
<th>TMM 21-3</th>
<th>TMM 24-3</th>
<th>TMM 26-3</th>
<th>TMM 28-4</th>
<th>TMM 31-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery line (mm / inch)</td>
<td>100 / 4.5</td>
<td>125 / 5.5</td>
<td>100 / 4.5</td>
<td>125 / 5.5</td>
<td>100 / 4.5</td>
</tr>
<tr>
<td>Pedestal / arm fold</td>
<td>TR / 3-Z</td>
<td>TR / 3-Z</td>
<td>TR / 3-Z</td>
<td>DT / 4-Z</td>
<td>DT / 4-Z</td>
</tr>
<tr>
<td>Vertical reach (m)</td>
<td>20.6</td>
<td>23.8</td>
<td>25.6</td>
<td>27.8</td>
<td>30.6</td>
</tr>
<tr>
<td>Horizontal reach (m)</td>
<td>16.9</td>
<td>20.0</td>
<td>21.8</td>
<td>24.0</td>
<td>26.7</td>
</tr>
<tr>
<td>Reach depth (m)</td>
<td>9.9</td>
<td>12.4</td>
<td>13.6</td>
<td>16.9</td>
<td>18.9</td>
</tr>
<tr>
<td>Unfolding height (m)</td>
<td>5.6</td>
<td>6.9</td>
<td>7.6</td>
<td>6.5</td>
<td>7.4</td>
</tr>
<tr>
<td>Support width front / rear (m)</td>
<td>4.0 / –</td>
<td>4.0 / 2.3</td>
<td>4.8 / 2.3</td>
<td>5.4 / 2.5</td>
<td>5.4 / 2.5</td>
</tr>
</tbody>
</table>

### Pump systems

<table>
<thead>
<tr>
<th>Type</th>
<th>Rotor pump Q</th>
<th>Piston pump CS-tube</th>
<th>Piston pump S-tube</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output* (m³/h)</td>
<td>58</td>
<td>56</td>
<td>67</td>
</tr>
<tr>
<td>Delivery pressure* (bar)</td>
<td>25</td>
<td>57</td>
<td>75</td>
</tr>
<tr>
<td>Delivery hose Ø (mm)</td>
<td>125</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Delivery cylinder Ø (mm)</td>
<td>–</td>
<td>230</td>
<td>230</td>
</tr>
<tr>
<td>Stroke (mm)</td>
<td>–</td>
<td>700</td>
<td>1000</td>
</tr>
<tr>
<td>Revolutions (min⁻¹)</td>
<td>35</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Strokes (min⁻¹)</td>
<td>–</td>
<td>32</td>
<td>27</td>
</tr>
</tbody>
</table>

*All data max. theor.*

Max. delivery rates and max. concrete pressures cannot be operated at the same time.