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World record: Putzmeister presents the large-boom truck-mounted concrete pump M 70-5

Putzmeister will present the M 70-5 - the largest truck-mounted concrete pump boom in the world - to coincide with the 50th anniversary of the foundation of the company. With a vertical reach of around 70 m and the largest working radius ever achieved, the machine has raised the bar definitively in the concrete construction sector. The first unit is destined for an American PM customer based in California and several other orders have already been placed. The machine is fitted with large-capacity 2-cylinder piston pumps that can attain a maximum output of 200 m³/h.

To comply with the legal regulations in certain US federal states Putzmeister has mounted the large-boom concrete pump M 70-5 on a 10-axle semitrailer - the version planned for European customers and for other countries will be configured differently. The boom, base structure with support and outriggers, pump unit and independent power engine (330 kW Deutz 6-cylinder diesel within international emission standard TIER 3) are located on the semitrailer and of the five axes available, three are steered. The customer has selected a 370 kW Kenworth C500B (10 x 6/4) as a tractor unit. Of five axles on the tractor unit, three are driven fully suspended (cardan) and two of them are hydrostatically driven (for slow speed over rough terrain). Two axes are steered.

This semitrailer solution enabled Putzmeister to develop an extremely mobile large-boom concept with a turning radius of less than 18 m suitable both for use on and off road. Due to this design the world's largest truck-mounted concrete pump is as flexible as much smaller units. However, the 5-arm boom in a roll Z fold configuration has a vertical reach of around 53 m and a horizontal reach of 17 m, far superior to that of other machines. When operated in restricted space, the large boom can unfold fully within the footprint of the machine. During pumping operations, the tractor unit remains rigidly connected to the semitrailer and acts as a counterweight.

To reduce the load moment of the huge placing boom Putzmeister uses special high-strength materials both in the steel frame of the M 70 and for the hydraulic cylinders to achieve weight-optimised construction.

Thanks to the OSS system (One Side Support), this PM large-boom pump can be installed and operated safely on construction sites where space is restricted. During OSS operation, the width of the front and rear support is reduced to only 9.2 m.

Concrete is pumped through low-wearing, twin-wall delivery pipes (ProLine 67 HRC, DN 117) with a life up to 10 times longer than standard pipes (ST 52) according to experience.

The remaining equipment also clearly demonstrates that powerful Putzmeister truck-mounted concrete pumps are not only characterised by their boom length. Needless to say, the M 70-5 is fitted with an EBC (Ergonic Boom Control). The EBC allows the operator to control the boom more easily using a joystick, to reduce vibrations at the vertical end hose and to limit the working area i.e. to avoid dangerous zones.

The machine is fitted with an EOC (Ergonic Output Control) as standard. The EOC module helps the concrete pump save fuel during operation by automatically adjusting the engine to the maximum speed required for the current pumping output. If required, this speed can be increased or decreased at any time via the radio remote control, resulting in a lower fuel consumption, less wear and reduced noise levels during pump operation.

Unlike conventional hydraulic controllers, the EPS (Ergonic Pump System) on the M 70-5 controls the hydraulic drive of the concrete pump fully electronically. The simplified control hydraulics incorporate fewer components, optimise the overall pumping process and increase efficiency. In practice, this ensures a smoother "S" transfer tube changeover, less wear and reduced fuel consumption.

The Ergonic Graphic Display (EGD) on the radio remote control and the control cabinet provide the machine operator (or service engineers, if required) with information on the operating state of the machine at all times. Display parameters include the hydraulic temperature, hydraulic pressure, stroke time, engine speed, delivery pressure/limit, delivery rate/limit and operating hours to name but a few.

Technical boom data M 70-5

Vertical reach:	69.3 m
Horizontal reach:	65.1 m
Depth of reach:	51.4 m
Number of boom arms	5
Slewing circle:	365°
Folding type	Roll Z (RZ)
Delivery line:	ND 117 (2-ply, ProLine 67 HRC)
Support width:	13.4 m (front) 13.8 m (rear)
OSS support:	9.2 m (front) 9.2 m (rear)
Overall length	approx. 21.4 m

Putzmeister recommends using one of the following pump units in combination with the M 70-5 model:

Pump type	16 H	16 H LS	20 H
Output (max.theor., m ³ /h)	160/108*	160	200
Concrete pressure (bar)	85/130*	85	85
Delivery cylinder diameter	230	250	280
Piston stroke (mm)	2100	2100	2100
Strokes/ min. for maximum output	31/21*	26	26
Designation of semitrailer concrete pump **	BSS 70-5.16 H	BSS 70-5-16 H LS	BSS 70-5.20 H

* for piston side operation

** BSS: Semitrailer concrete pump with S transfer tube