Highest process reliability

Metal pouring made easy.

POURING MACHINES

www.kuenkel-wagner.com
For foundries of the future

Thinking ahead.

KW is your perfect partner when the situation demands economical, first-rate technology “made in Germany”. Robust, dependable plant and equipment reaffirms our worldwide reputation for over 100 years. We shall continue this journey of shaping the future of this industry since we believe in thinking ahead.

Foundry professionals value the over 100 years of innovation and top-level competence displayed by staff at KÜNKEL WAGNER. Technology, precision, efficiency, functionality and product quality are all reflected in the development and production of turnkey foundry solutions, modular systems and their components. This includes everything from an automatic moulding plant to sand preparation, reclamation, pouring equipment along with enhancing process technology. While the above is true the only standard we apply is the one set by our customers. Our competence spans across various sectors; being the best yardstick to measure success. Make your capability a reality: with KÜNKEL WAGNER. For foundries of the future.
Thinking ahead:
Product technology, development and process knowledge are our USP, which set us apart from our competitors.
Processing and casting of metals must be done using in-depth and extensive know-how to satisfy highest quality standards. Cost-effective, trailblazing ideas are required which go beyond conventional approaches.

More innovation, higher quality, less scrap production.

KW pouring machines are known in the industry for their process-friendly automation available in various system configurations. Metal savings and reduced scrap production are realised by smart solutions, for example KW’s fully automated optical control system providing controlled, uniform and clean pouring. For example: weight-defined cut-off at the end of the pouring cycle and compact-sized pouring cups to reduce generation of recycle material. High reproducibility in series manufacturing. Tundish cover processes. Dosing units for crystallisation of inoculants. And many other.

State-of-the-art pouring.

Substantial cost reductions and process benefits
Attaining perfection in dynamic processes:
KÜNKEL WAGNER MX pouring machines.

expertly engineered features and options in our machines ensuring optimum pouring and long service life in your foundry operations. For highly automated, precisely controlled casting processes providing uniform finished-product properties. For clean melt streams, extremely low-turbulence mould filling and outstanding cast-part quality – with superb cost efficiency.

**Maximum performance. With MAXPOUR. From KW.**

Our pouring machines are ideally suited for use with flaked and flaskless moulding plants of all makes, whether indexed or continuously driven. For pouring of grey and spheroidal iron, steel and aluminium. Understanding your processes and requirements, we respond by developing solutions for a better future: KÜNKEL WAGNER.

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**KW Pouring Machines Benefits**

- Fully automated pouring systems with convincing benefits in price and performance
- Easy to integrate in existing moulding plants for enhanced throughput and technical performance
- Easy to operate, quick change capability for materials and ladles
- Full control flexibility and reproducibility in every pouring cycle
- Compact-sized pouring cup for efficient material usage, reduced melt weight, reduced cleaning costs
- Precision pouring technology for metals of various types with outstanding cost efficiency
- Rugged and highly reliable, compact, space-saving design
- Continuous data logging for quality documentation
Building pouring machines is something many can do, but replicating KÜNCKEL WAGNER’s expert know-how and experience is quite a different story. So it’s no surprise that MX pouring machines have held their leading position in the industry for many years. They provide users convincing advantages: performance and superb engineering down to the smallest detail.

Quite the pair: KW pouring machines MX 20 and MX 30. Both provide the outstanding casting quality you expect. And beyond that: they are available with add-on features and components including various degrees of automation creating ideal conditions for precise, loss-free pouring in your specific process.

Innovative features for the next level in pouring machine technology.

Select the right machine size for the application at hand: either the MX 20, with a ladle capacity of up to 2 tonnes of molten metal, or the MX 30, with a ladle capacity of up to 3 tonnes of molten metal. And select the degree of automation required, whether 1) manual operation, 2) semi-automatic operation with automated pouring or our most popular version, 3) the KW fully automated system which incorporates smart pouring sensors providing weight-defined flow cut-off. An established technology with proven reliability, MAXPOUR systems maximise uptime for highest productivity and profit potential. They radically reduce scrap production, amortising the purchase investment with shortest payback time.

The complete pouring system with systematic dependability:

1. MX 20 or MX 30 pouring machines, available with different degrees of automation.
2. Reliable function, sturdy construction: ladle with tilting device for smooth, uniform pouring.
3. Travelling or stationary changer with revolver-type design for rapid ladle changeover.
4. Optional MX pilot for reliable automated transport of pouring ladles (see page 9).
Custom designed by KW: pouring technology with state-of-the-art MX machines you can depend on fully.

**MX 20 and MX 30 Benefits**

- Precise, reliable pouring system with independent axes and single-side ladle support
- Freely programmable pouring curve, virtual spout swivel axis
- Optical sensor-based, closed-loop control of pouring process
- Long spout for low pouring heights or distant pouring locations
- Modular design provides loss-free ladle changeover in stationary or mobile operation
- Expertly engineered pouring ladles, turbulence-free transfer, substantially reduced temperature drop
- Integrated quality control with automatic process data acquisition from each pouring cycle
- Newest-generation servomotors and CNC technology

Dimensions of MX 20: 4300 x 1700 x 3200 mm (LxWxH), MX 30: 4700 x 2050 x 3700 mm (LxWxH).
Fully automated, expertly engineered, versatile

Exceeding your expectations.

**APPLICATIONS AND OPTIONS**

By deciding to purchase a KÜNKEl WAGNER pouring machine, you have taken the first step on a path to state-of-the-art metal processing tailored for your specific needs. A wide range of equipment designs and options – including innovative ancillary and add-on modules as well as multiple-machine combinations – can be used to create the system which best fits your requirements.

Looking to speed up your casting cycle? Utilise the benefits of our rapid, loss-free ladle changeover. Looking for accurate, contact-free measurement of pouring temperature? Our two-colour pyrometer gauge with user-friendly data display will do the job nicely.

**Flexible machinery architecture adaptable to your process needs.**

Retrofitable know-how: tundish treatment in MX pouring ladle.

KÜNKEl WAGNER pouring systems provide flexible options for problem-free processing of even CGI and other process-sensitive metal grades. Whether you need flask tracking and management systems, online data exchange and/or process monitoring and control of parameters such as pouring time, inoculation time, charge I.D., temperature and shot weight, our pouring machines provide the unique combination of technologies to do the job right. Our service-proven designs and the performance spectrum they provide define the state of the art in foundry practice. Whether your application requires one MX 20 or MX 30 or several in combination: we will solve the problem at hand. Supplying just the pouring machine would not be consistent with our holistic systems approach. Let us know your visions and exact requirements; we will propose the best solution for you.
As an established supplier to the industry, we are fully aware of the demands and high safety standards which must be met in metals processing. Offering processes and solutions for maximum operational safety and a hazard-free workplace, we imagine the unimaginable – and then transform it into reality. Innovation at its best. Even forklift trucks for refractory-rated ladle transport cannot eliminate hazards for personnel and machinery when molten metal is transferred from the melting operation to the moulding plant. KW offers the safer solution: the MX pilot. This fully automated ladle transporter with smart design and function travels to its pouring stations in accordance with a programmable schedule. At each stop, it automatically carries out the required tasks, for example lifting the empty ladle, emptying it completely, transporting the ladle to the filling station, refilling it and returning it to the pouring machine in slag-free condition. In short: a safe, on-time connection rivalling those provided by the best railways.
Crystallisation nuclei must be present in the melt stream before and during casting in exact amounts to achieve the desired casting quality. Fully integrated in the process control system, the MX-i inoculant dosing unit performs this crucial task with workhorse dependability.

Not every inoculation is advisable – but this one certainly is, seeing as it controls the morphology attained during solidification of the particular alloy processed. The KÜNKEL WAGNER inoculant dosing unit offers established and time-proven technology for controlled casting morphology.

**Highest precision and reliability.**

The unit provides precise automated dosing and optimum distribution of any desired inoculants directly into the poured melt stream. Direct addition into the molten metal stream provides highly uniform distribution without fading, therefore maximising the inoculation effect. This improves the metallurgic quality of the casting produced – while reducing usage of costly inoculants. An integrated on-line scale monitors the melt stream for closed-loop correction of the dosage rate in accordance with the selected setpoint. Go with KW - for benefits you won’t want to do without.

**MX-i Inoculant Dosing Unit**

- Automatic high-precision inoculant dosing with outstanding process reliability
- No wear & tear, low maintenance, easy to assemble and install
- Suited for various inoculating agents and wide range of targeted grain sizes
- Closed-loop process control via on-line weighing system with continuous data logging
- Specially designed injector nozzles for optimum inoculant flow and distribution
- Continuous monitoring of filling heights, throughputs and blockages, various calibration and test functions
- Optional features including sensor-based melt stream detection, various warning signals and alarms

Controlled crystallisation, highest casting quality

For your alloys.
CONTROL SYSTEMS

The system offers intuitive up-to-the-minute overviews of process times, quality, costs as well as consumption of energy and other resources, providing the basis for informed decision-making.

User-friendly functions for automation levels of all types.

Designed with modular IT architecture, the KÜNKEL WAGNER process control and visualisation system provides highly reliable, user-friendly control for your pouring machines and systems. Advanced data bus and network configurations are used to realise visualisation and control of important processes in real time.

KÜNKEL WAGNER control and visualisation system is complemented by a wide range of optional functional modules incorporating open interfaces with standardised hardware and software. Time proven in industrial use day in and day out, they feature multiple-language capability and provide all required functions for process data displays, documentation, tests, commissioning, service, data archiving as well as maintenance and repair – utilising remote maintenance capability if desired. Whether you need control and data management for a single MX 20 or MX 30 pouring machine with an MX pilot or require a complete plant control system customised to your specifications, we are your one-stop-shop. For state-of-the-art control over all areas of your manufacturing operations – KÜNKEL WAGNER.

For further information, please visit: www.kuenkel-wagner.com
We’re available to you anywhere in the world – with production sites in Germany, India and China. Our highly acknowledged specialists are glad to support you with comprehensive service at all times: You can reach us round the clock, 7 days a week via our Support Hotline.