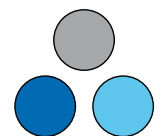


From Foundryman for Foundrymen

KURTZ Solutions For Tilttable Gravity & Gravity Casting



Crown



Housing cover



Mobile hydraulic unit with integrated control unit to operate up to 2 machines



KURTZ Gravity Casting Machines

The Core Pull Makes The Difference

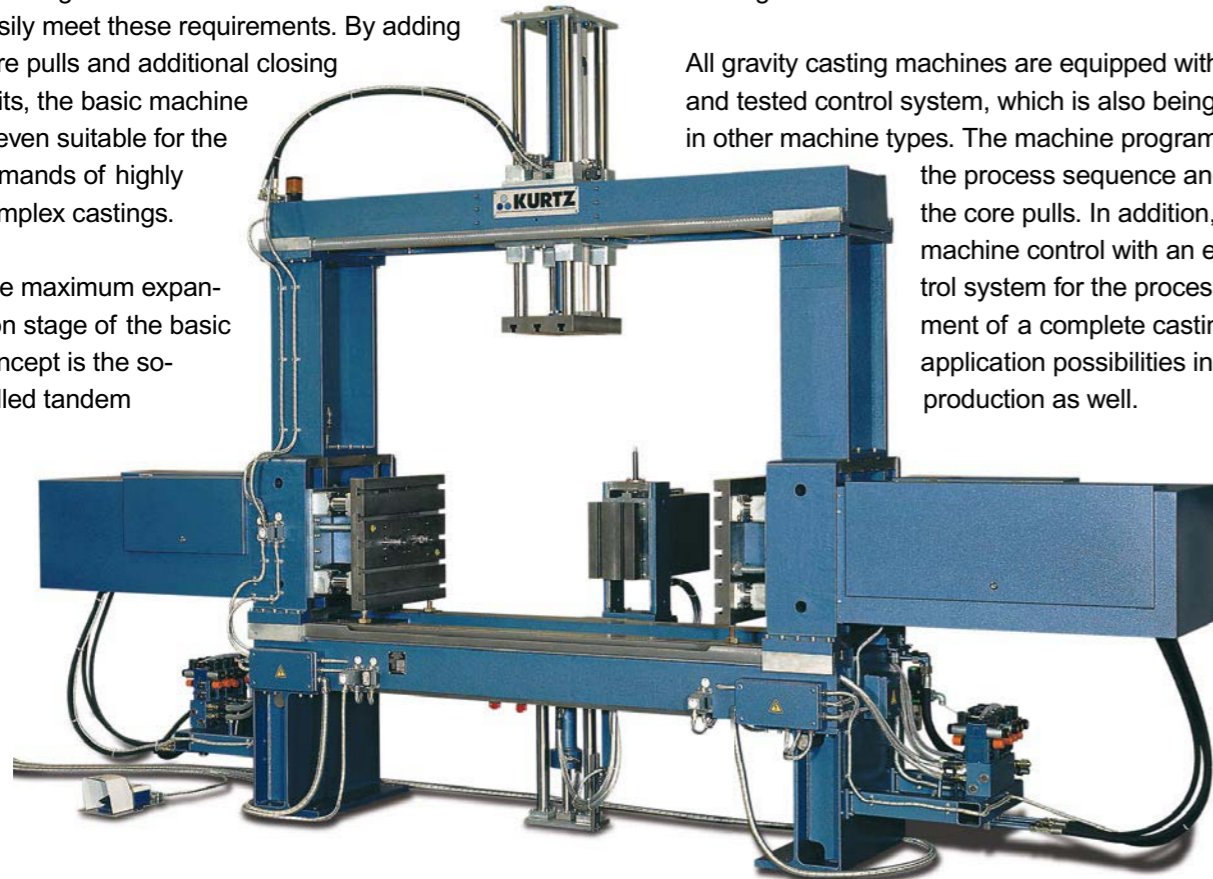
On the whole, gravity casting is the classical casting process. Practiced for hundreds of years, it still offers potential for improvement. KURTZ has developed a machine concept especially for jobbing foundries. Due to the modular machine design this concept can be universally employed. What is needed is flexibility with respect to the most varied castings. A conversion must be possible without great effort. And KURTZ machines easily meet these requirements. By adding core pulls and additional closing units, the basic machine is even suitable for the demands of highly complex castings.

The maximum expansion stage of the basic concept is the so-called tandem

machine. Two casting dies are run in phase on one machine. This leads to increased productivity with the added advantage of little space requirement and few personnel.

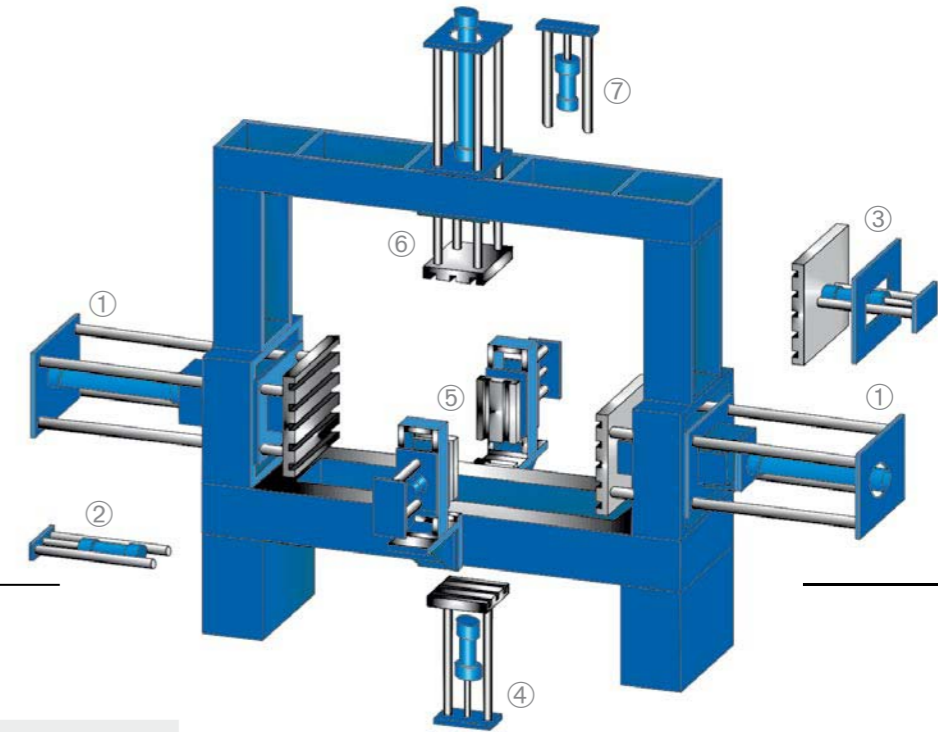
The movable hydraulic unit offers possibilities as a mobile control and hydraulic power unit for controlling the casting die's closing and opening motions for up to two casting machines.

All gravity casting machines are equipped with the tried and tested control system, which is also being employed in other machine types. The machine programme controls the process sequence and motion of the core pulls. In addition, linking the machine control with an external control system for the process management of a complete casting cell offers application possibilities in large-scale production as well.



Layout of a fully equipped gravity casting machine:

- ① Closing unit
- ② Ejector core pull
- ③ Fix clamping plate with ejector core pull
- ④ Bottom-side core pull
- ⑤ Lateral core pulls
- ⑥ Closing unit top
- ⑦ Ejector core pull top



Advantages

- Free programmable control
- Recipe management to store machine and process data
- Solid machine design for harsh foundry conditions
- Modular machine design: closing units, ejectors and core pulls are interchangeable
- Continuous adjustment of all units available as option
- Precise guiding of mould segments & high closing forces
- Hydraulics with pressure & flow rate controlled pumps
- Optimum accessibility
- Hydraulic hand lever control or freely programmable microprocessor control with display and operator guidance

Technical Data and Detailed Information

Closing Unit:	
Free area without core pulls:	600 x 500 mm 800 x 600 mm 1,000 x 800 mm further sizes on request
Opening between open clamping plates:	short version: max. 1,060 mm long version: max. 1,660 mm
Opening force at 120 bar:	40 kN**
Closing force at 120 bar:	60 kN** higher forces on request

Recommended Space Requirement:	
Length:	4,000 mm
Width:	2,500 mm
Height:	2,500 mm
Weight:	approx. 2,300 - 6,000 kg

Connection Sizes:	
Die cooling:	air / water R 1/2" each
Hydraulic cooling:	water R 1/2"

Machine Control:	
PLC Siemens S7-300	
Visualization 12" colour monitor with touch screen	

Drive:	
Hydraulic aggregate with pressure and flow rate controlled pump	
Hydraulic fluid:	HFC
Pressure control via proportional valve (continuously adjustable)	
Operating pressure:	20 - 200 bar
Constant pump for filter and cooling circuit	

Electrical Data:	
Machine control:	22 kW
Voltage:	400 V
Frequency:	50 / 60 Hz

*Subject to requirements, further sizes on request

**Pressure freely adjustable between 20 and 200 bar for each movement (display)

KURTZ Tilttable Gravity Casting Machines

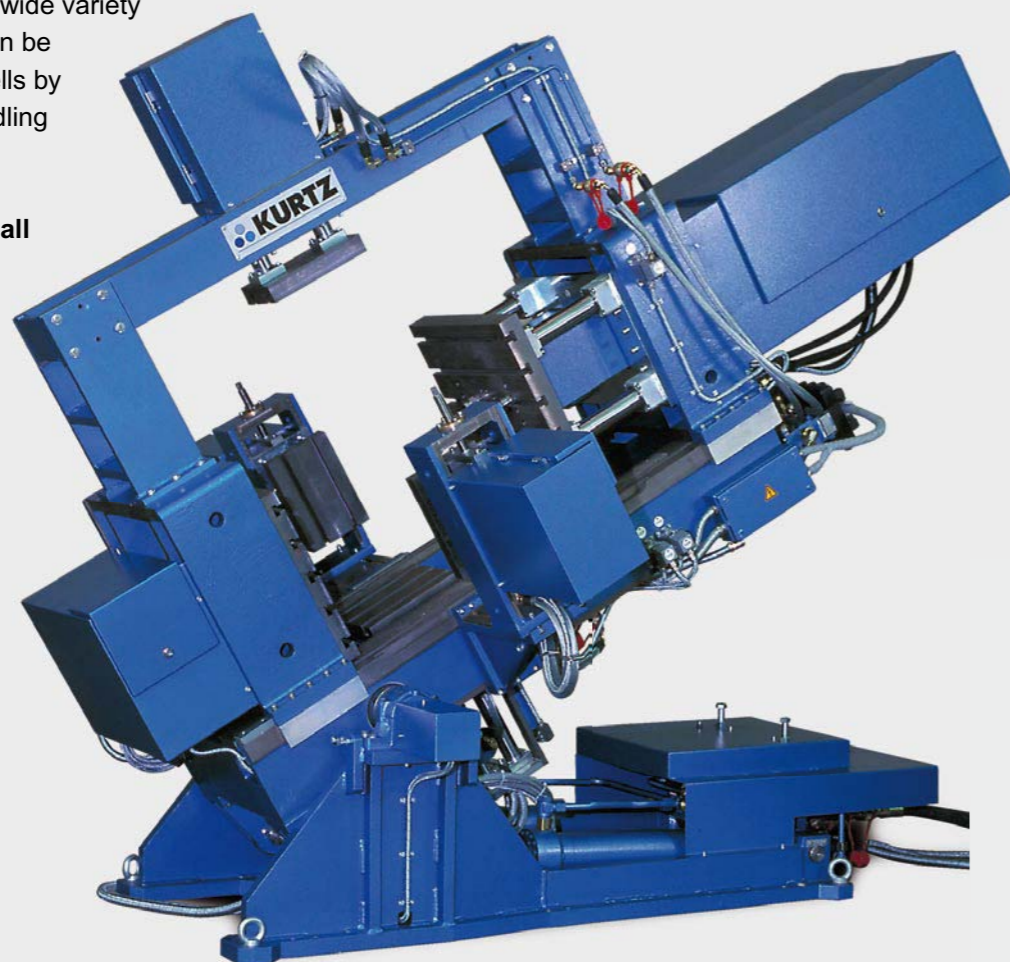
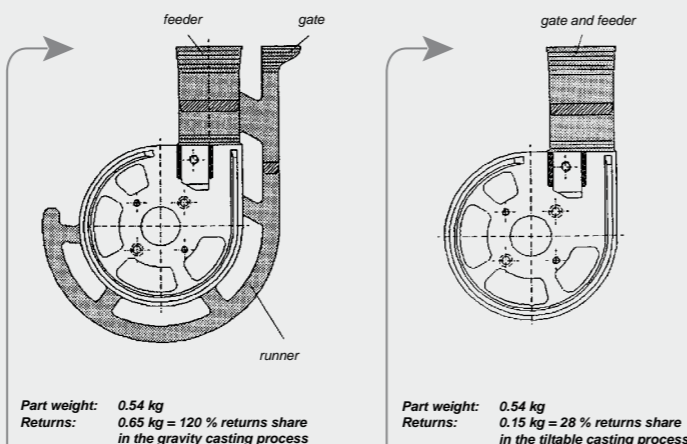
Controlled Filling for Maximum Quality

Just as the Bavarian expertly pours his Weissbier in the glass, KURTZ casting machines fill the molten metal into the mould with low turbulence. The freely programmable tilting rate allows an optimum filling rate. This guarantees high quality and takes irregularities out of the process.

In contrast to gravity casting, tilttable casting offers the advantage of a clear reduction in returns. This is achieved with the utilization of the casting contour as a cast-in system and a reduced gating area. At the end of the filling process the last of the poured metal collects in the gating area which now serves as a feeder.

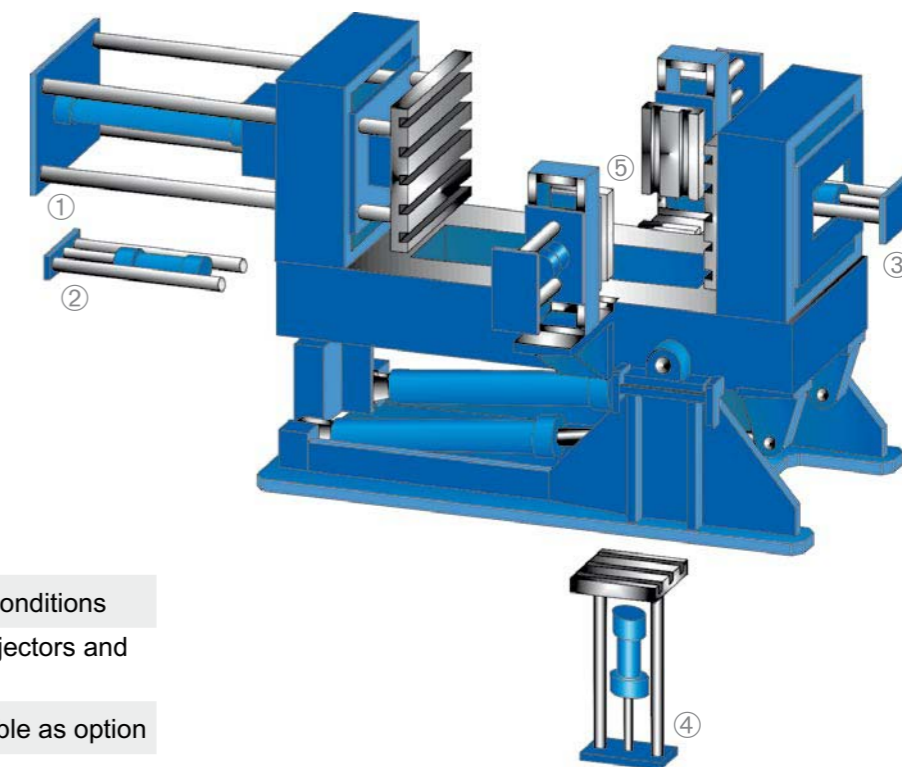
The advantage of the modular construction is also the flexible addition of core pulls with programmable speeds to adapt the machine to a wide variety of demands. KURTZ machines can be completed to automatic casting cells by adding external units for melt handling and parts removal.

There is a special advantage of all KURTZ gravity casting machines: add-on parts can be exchanged between both machine types.



Layout of a fully equipped tilttable casting machine:

- ① Closing unit
- ② Ejector core pull
- ③ Fix clamping plate with ejector core pull
- ④ Bottom-side core pull
- ⑤ Lateral core pull



Advantages

- ▾ Solid machine design for harsh foundry conditions
- ▾ Modular machine design: closing units, ejectors and core pulls are interchangeable
- ▾ Continuous adjustment of all units available as option
- ▾ 20 tilting speed stages, tilting range of 90°
- ▾ Closing unit with 4 guiding tie bars and high closing forces, precise guiding of mould segments
- ▾ Tilting motion via controlled hydraulics to controlled servo hydraulics
- ▾ Hydraulics with pressure and flow rate controlled pumps
- ▾ Freely programmable microprocessor control with display and operator guidance

Technical Data and Detailed Information

Closing Unit:	
Free area without core pulls:	600 x 500 mm 800 x 600 mm 1,000 x 800 mm further sizes on request
Opening between open clamping plates:	short version: max. 960 mm long version: max. 1,560 mm
Opening force at 120 bar:	40 kN**
Closing force at 120 bar:	60 kN** higher forces on request
Recommended Space Requirement:	
Length:	3,900 mm
Width:	3,000 mm
Height:	3,900 mm
Weight:	approx. 4,000 - 6,000 kg

Connection Sizes:	
Die cooling:	air/water R 1/2" each
Hydraulic cooling:	water R 1/2"
Machine Control:	
PLC Siemens S7-300	
Visualization 12" colour monitor with touch screen	
Tilting speed:	1 - 20 speed stages*
Drive:	
Hydraulic aggregate with pressure and flow rate controlled pump	
Hydraulic fluid:	HFC
Pressure control via proportional valve (continuously adjustable)	
Operating pressure:	20 - 200 bar
Constant pump for filter and cooling circuit	
Electrical Data:	
Machine control:	22 kW
Voltage:	400 V
Frequency:	50 / 60 Hz

*Subject to requirements, further sizes on request

**Pressure freely adjustable between 20 and 200 bar for each movement (display)



Gravity Casting Plants, Handling & More

Complete Casting Cells

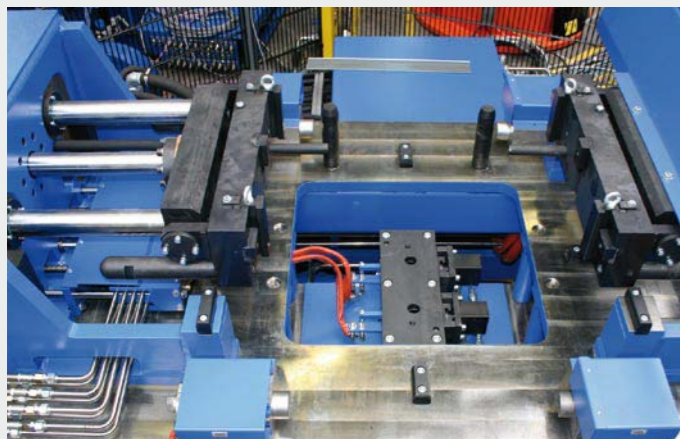
KURTZ provides tiltable gravity and gravity casting machines which are available as single machine or turn-key complete solutions/complete casting cells. The flexible machine concept is easily adaptable to different

customer requirements: low cost or high tech versions, maximum flexibility for frequent product changes or individual customized solutions.

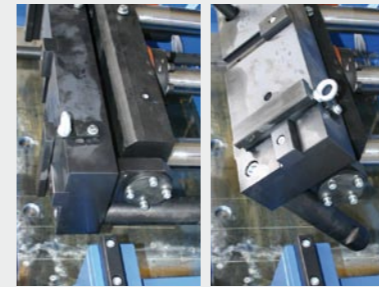
Apart from automated casting processes the focus is on core and part handling. Additional features and peripherals are realized subject to requirement. Servo-hydraulic, i. e. controlled, casting machines are used for tiltable gravity casting with robot. The free programming of both robot and casting machine is absolutely quick and easy; robot and casting machine must run synchronously to obtain high-quality castings.

The KURTZ casting machine division acts as one-stop supplier: The customer can expect complete solutions from one source - from casting and process development through the steps mould making, installation of the machine on site, mould start-up and training. In short: KURTZ takes responsibility as a general contractor.

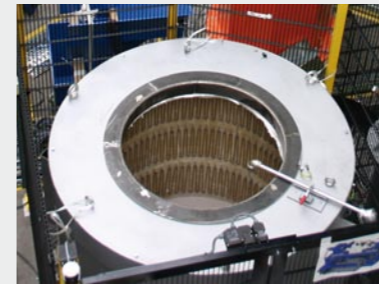
Ejectors with hydraulic coupling



Casting robot



Side shifter straight / tilted



Holding furnace



Cooling systems: water-, air- or mixed cooling



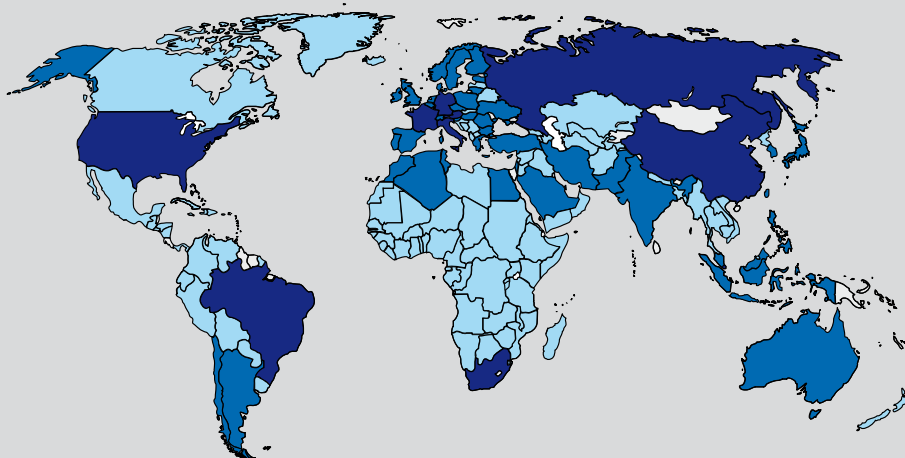
Coupling of the die cooling



Tiltable gravity casting machine, tilted by 90°, servo-hydraulic tilting motion, tilting angle of up to 110° possible

Supply Scope

- ▼ Casting machines
- ▼ Robot for dosing and pouring melt into the machine
- ▼ Peripherals for robot
- ▼ Freely programmable casting cell control
- ▼ Cooling technology
- ▼ Holding furnaces
- ▼ Handling system/-manipulators for castings and sand cores
- ▼ Core grabber/grabber system
- ▼ Casting spoon
- ▼ Conveyor systems for castings
- ▼ Heating technology for casting spoon and die



The World is Kurtz –
Present in 135 countries

- Production plants/subsidiaries
- Local agents
- Other presence

Kurtz. METALS

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KURTZ Foundry Products

Aluminium Foundry, Wiebelbach
Aluminium castings of up to 100 kg
Aluminium sand castings of up to 1 t

Iron Foundry, Hasloch
Grey/nodular cast-iron parts of up to 5 t

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