

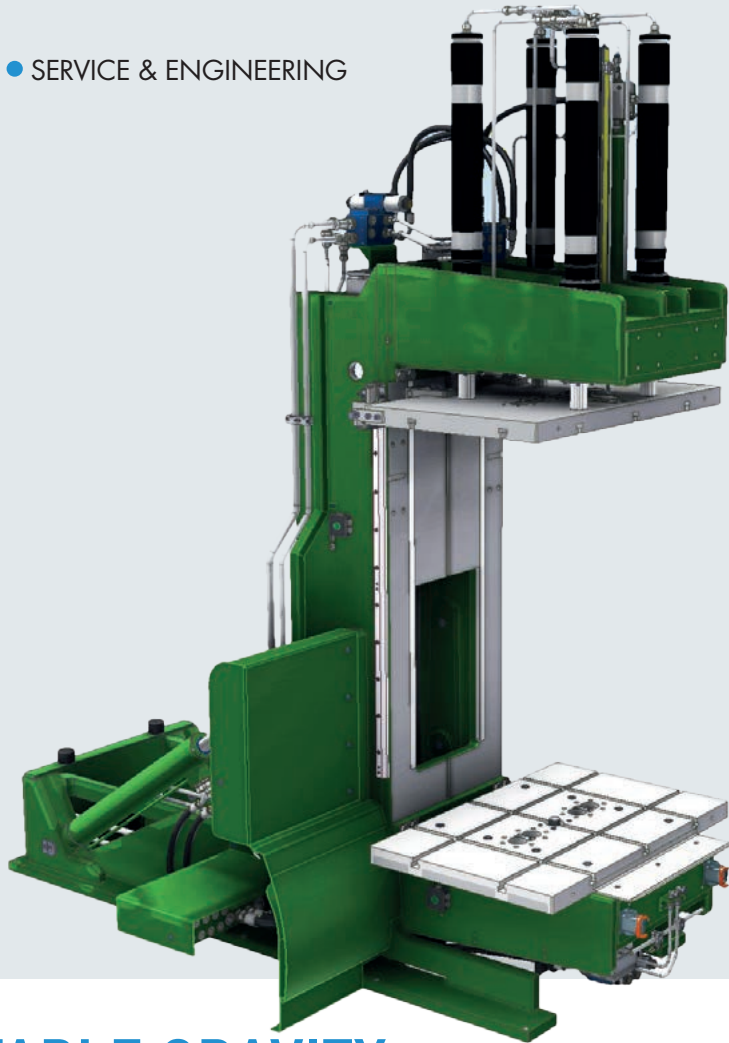
TILTABLE GRAVITY CASTING MACHINE

ROBOTIC
CASTING CELL

AUTOMATION OF
THE TILTABLE GRAVITY AND
GRAVITY CASTING

TALUM • SERVICE & ENGINEERING

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TILTABLE GRAVITY CASTING MACHINE

Controlled machine tilt:

- incline angle -10+90 (100)
- Machine tilting control across the whole path (angle 90° + 10°)
- proportional hydraulic (Rexroth, Parker)

Easy programming:

- fully open cycle programming – the sequence of steps can be determined freely
- unlimited number of programs
- archiving programs
- transfer of programs between machines
- Siemens OP- TP 1200

Rapid changing of moulds:

- monitoring mould position with linear sensor
- quick couplers for air and gas integrated in the machine

Advanced control:

- mould temperature control – gas regulation
- melt temperature control – furnace regulation
- cooling regulation

Energy efficiency

- stand by function – the pump is idle during solidification

ADVANTAGES

Machine tilting control across the whole path (angle 90° + 10°). Speed adjustment for each movement separately.

Casting cycle easy programmable.

Easy mould changing.

Totally integrated automation control including parameters, process visualization and fault detection.



Technical data of the machine:

Machine height 3500 mm
Machine length 3850 mm
Machine width 1650 mm

Table size: 1200x800 mm
Opening height: 800 mm
Operation pressure: 140 bar
Electro motor 17-22 KW
Siemens OP- TP 1200
Mould closing force: 300kN



ROBOTIC CASTING CELL

Automation of the tiltable gravity and gravity casting:

- one robot
- two casting machines
- automated melt and castings handling

THE CASTING CELL CONSTRUCTION PROCESS

Design and modelling

- Risk assessment
- 3D production model
- Project documentation
- Technological solutions

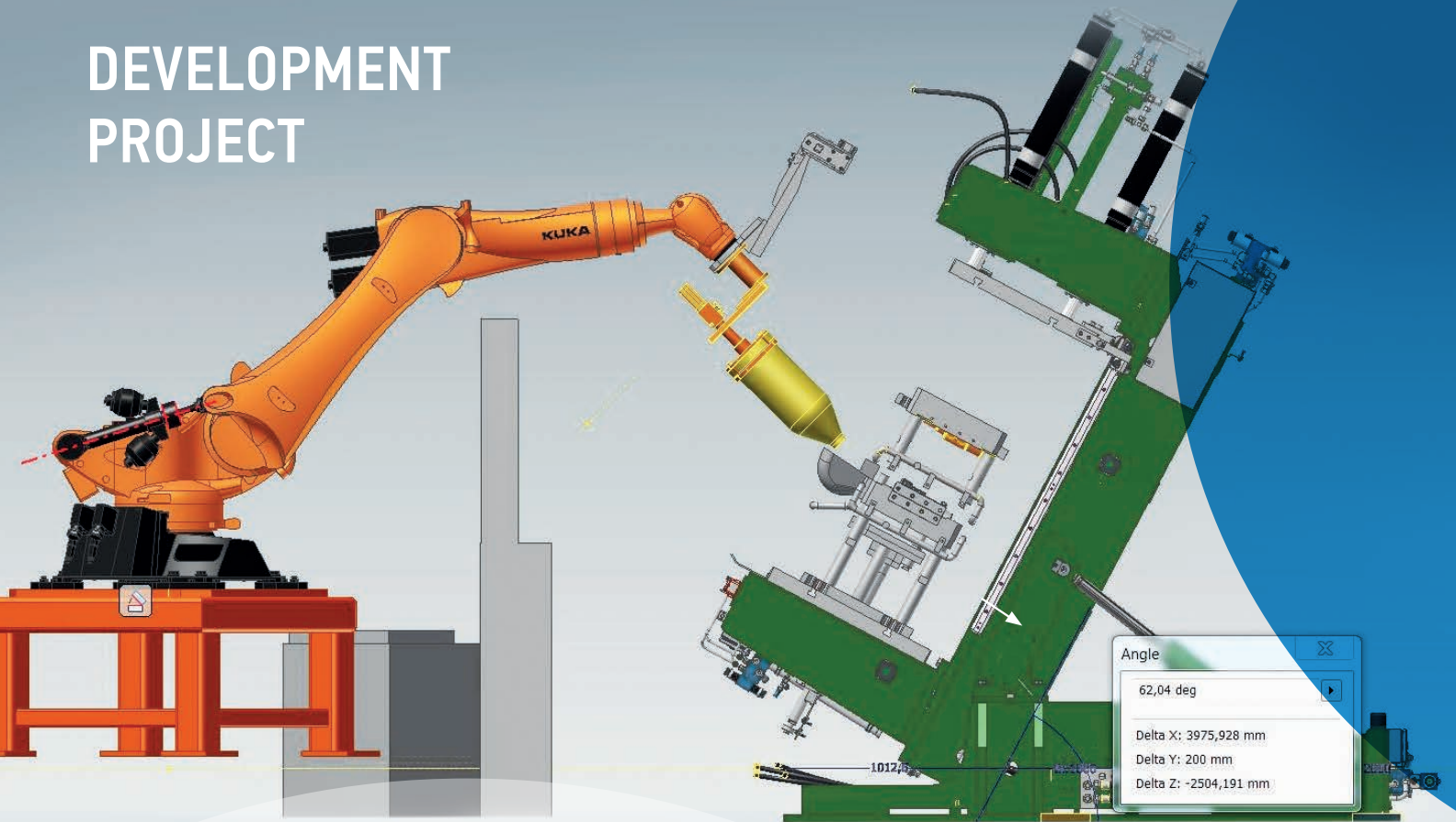
Machine manufacturing

- Manufacturing of mechanical components
- Hydraulics and pneumatics
- Special hold of the robotic arm
- Electrical cabinets
- Automation and robotization

Machine installation and start-up

- Casting machine installation
- Robot installation
- Energy supply connection
- Safety elements
- Commissioning and start-up
- Integration with other production operations

DEVELOPMENT PROJECT



Melt feeding during machine tilting:

- reduction of oxides
- increased safety - increased energy efficiency
- high feeding accuracy

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