

**Castings quality
improvement and rework
reduction by 30%**



SUSTAINABILITY

THE CHALLENGE

This mining truck spindle casting must meet strict X-ray, magnetic, and ultrasonic inspection requirements, which are crucial to ensure the casting's quality and reliability for heavy-duty mining operations. To cast such a heavy part achieving all these quality requirements with minimal rework requires the implementation of innovative technologies to ensure highest metal cleanliness at the pouring ladle and no molten metal re-oxidation during the pouring process.

FOUNDRY:  **UNEX**[®]

UNEX foundry is located in the Czech Republic, specialising in the production of high-quality castings for various industries, including mining, heavy construction and transportation. With a focus on innovation and customer satisfaction, UNEX is leading supplier of highquality castings in Europe and globally.

unex.cz/en

VESUVIUS

PARAMETER

Alloy:	GS24Mn6
Casting weight:	6.400 kg
Pouring temp.:	1530°C
Poured weight:	9.800 kg
Yield:	70.1%
Pour time:	68 s
Moulding Process:	Furan mold

FOSECO PRODUCTS

VISO Rotor

VISO Stopper

VAPEX Nozzle

SULFAMIN 70

HOLLOTEX Shroud & Diverter

KALMINEX sleeves

ROTOCAL Solid Calcium wire



OUR SOLUTION

Molten metal treatment by the ROTOCLENE process in the pouring ladle and casting through the HOLLLOTEX Shroud helps to ensure that the metal remains free of impurities and is of high quality, resulting in superior castings.

THE OUTCOME

The use of ROTOCLENE and HOLLLOTEX Shroud has resulted in reduction of rework by 30% compared to the previously used process. The production process has also been stabilized, and pouring temperature reduced by 30°C, which has helped to significantly improve overall casting quality.

Casting inspection: X-ray by ASTM E94 level 2 at critical zones and level 3 the rest of the casting. MPI by ASTM 709 level 1 at critical zones and level 2 at the rest of the casting. Ultrasonic by ASTM E 609 critical zones level 2 and level 3 the rest of the casting.

Final results demonstrate high quality and reliability of the casting, ensuring that it is fit for purpose and meets all the required standards.

> LET'S LEARN MORE



THINK BEYOND. SHAPE THE FUTURE.



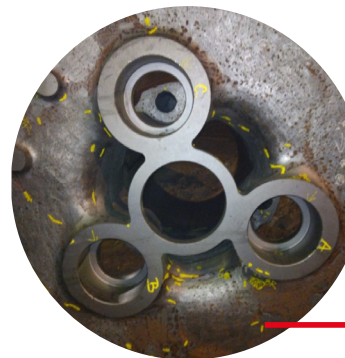
VESUVIUS
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Casting surface
with gas porosity
and cold shuts
HOLLLOTEX CFU.
Pouring temperature
1560°C



Casting surface
without gas
porosity and
cold shuts with
ROTOCLENE treatment
and HOLLLOTEX
Shroud. Pouring
temperature 1530°C

Casting after
Magnetic and
Ultrasonic inspection.
HOLLLOTEX Shroud



Casting after
Magnetic and
Ultrasonic inspection.
HOLLLOTEX CFU

KEY BENEFITS

- Significant rework reduction
- Manufacturing process stabilization
- Faster delivery to final customer
- Increased Impact value under low temperature

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