

# Frames

# NETCore®

Eisenwerke Elterlein manufactures gray and nodular iron castings. The foundry customer specializes in hand molding. The company focuses on the production of components for general mechanical engineering, special machine tool construction, gear manufacturing, printing, and agricultural machinery. The NETCore® technology was introduced in 2017 and is used in particular for difficult contours, where the use of conventional feeder techniques does not allow for efficient and reliable riser removal.



## NET-Technology®?

**The larger the feeder neck diameter, the more reliable the feeding of the casting. However, when the riser contact exceeds a certain size, the effort required to remove the remaining riser rest is significantly greater. With increasingly complex casting shapes and the requirement for feeding in harder-to-reach areas, removing the risers becomes even more time-consuming.**

A significant proportion of the cost incurred during the production of castings occurs in the cleaning department. This is due to the excessive cutting and grinding required to remove the risers sand gating systems. The NET-Technology® range of solutions, developed by GTP Schäfer, were specifically designed to optimize riser removal and reduce costs.

The standard NET-Technology® product range from GTP Schäfer makes it easy to remove risers with contact size up to 150 mm using regular tools within the normal process flow. This eliminates costly and time-consuming post-casting processing.

Within the NET-Technology® product range, NETCore® technology addresses the issues associated with the use of large risers and traditional breaker cores. With these applications, there is a high risk of the breaker core sintering to the casting and increased effort required to remove the riser.

With the NET-Technology® product range from GTP Schäfer, all risers and associated contacts can be removed easily to reduce costs and increase casting quality.



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## Product range

### NETCore®



Breaker core technology that can be applied with highly exothermic THERMO-Riser®, cylindrical or cylindrical reduced EXO-ISO fiber sleeves, consisting of a highly temperature-resistant ceramic medium to prevent sintering combined with a refractory mesh placed directly at the casting surface. This creates the formation of a clean predetermined breaking point along the entire riser neck cross-section.

### NETFrame®



The NETFrame® has been specially designed for the removal of large side risers. It is positioned in the riser neck adjacent to the casting surface. The refractory mesh creates a defined and predetermined fracture point making the riser easy to remove.

### NETSleeve®



Specifically designed for use in hand molding. The elimination of the traditional breaker enables optimized and reliable feeding of the casting due to the increased contact of the riser. With the addition of the refractory mesh, easy riser removal is established with a predetermined fracture point within the riser neck.

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# NETCore®

For feeder neck diameters > 80 mm, riser knock-off becomes increasingly more difficult. In addition, there is a greater risk of contact break-in to the casting while attempting riser knock-off. Contact diameters > 150mm push the limits of most means to knock-off risers. For these applications, NETCore® breaker core technology can be implemented. The NETCore® breaker core is equipped with a highly temperature-resistant fabric directly at the level of the casting contact. This material modifies the metal contact at the target break point to significantly reduce the degree of force required to knock-off the riser.



Reduced  
cleaning costs



Less scrap



Knock off  
up to 450 mm



Significant  
time savings



Reduced  
risk of injury

**Sinter-free breaker core**

**Refractory fabric**



## Customer opinion

**Problem:** The knocking-off or separation of the riser residue on the component is not possible, because the size of the feeder neck (80 mm) presents difficulties. Furthermore, there is the risk of breaking into the casting when knocking off. The foundry must remove the remaining riser outside of the regular process in an additional step.

**Challenge:** To remove the riser residue in the regular process without transferring the part to an additional workstation.

<b>Customer</b>	Eisenwerk GmbH Elterlein
<b>Casting</b>	frame
<b>Material</b>	EN-GJS-500-7
<b>Weight</b>	1.177 kg
<b>Moulding method</b>	hand moulded
<b>Power supply technology</b>	Head feeder
<b>Solution</b>	Integration of NETCore® technology on a TG 24000 thermal feeder by a breaker core with NETCore® B 160 - 80 / 20 NR25. TG 24000 B80 NR25.



### Advantages with NETCore®

*“The use of NETCore® technology enables us to produce sophisticated components within the regular lead time and without having to deviate from the regular production process. Furthermore, the reject rate is clearly reduced.”*

**Thomas Windisch**  
Managing Director

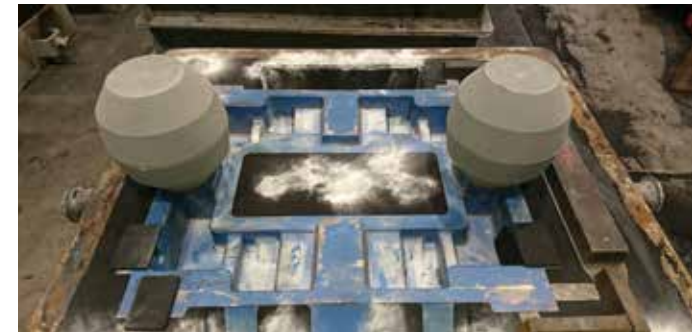
## Cleaning costs in comparison

The following case study describes the time saved in producing the castings and removing the riser by the cleaning department with and without NETCore® technology.

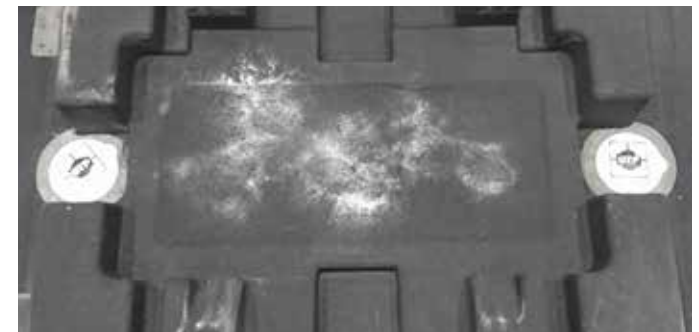
Work steps	Without NETCore®	With NETCore®
Knocking off the remaining feeder	not possible	2 min (3–5 hammer blows)
Deviating from process chain	7 min	not applicable
Transport to the sawing station	8 min	not applicable
Clamping saw	6 min	not applicable
Sawing	9 min	not applicable
Return to process	5 min	not applicable
Total time	35 min	2 min

## Result

By using NETCore® technology, the casting can be produced in the regular process and enables the foundry to reduce the machining time by 35 minutes per casting. Removal of the riser residue is possible by mechanical means. In addition, the risk of rejects from break-in is eliminated.



*THERMO feeder® with NETCore® breaker core before molding*



*NETCore® breaker core after molding*



*Riser contact*



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