



Flange **NETCore®**

GSF-Staßfurt is one of the leading foundry companies in the field of mechanical engineering. In 2018, the NETCore® technology was presented and after testing conclusively on special components, we have made it standard in our process.



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.



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.

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: Due to the size of the pendulum, knocking off the risers with a 150-mm feeder neck is hardly possible. In addition, there is the risk of breaking into the casting when knocking off. The foundry must remove the part from the regular process and remove the feeder mechanically in an additional step.

Challenge: Removal from the feeder neck in the regular process without transferring the part to an additional workstation.

| | |
|---------------------------|---|
| Customer | GSF foundry Staßfurt |
| Cast part | Flange |
| Material | EN-GJS 500-7 |
| Weight | 7.900 kg |
| Moulding method | hand moulded |
| Feeding technology | ZXF 15 B250N |
| Solution | Integrate NETCore® technology B 550-250 N80 in the riser neck |



Advantages with NETCore®

“The use of NETCore® technology enables us to handle very high thermally stressed (thick-walled) components made of GJS within the regular throughput time and without removing the castings from the regular production process. Furthermore, the throughput time in the finishing area is minimized due to greatly reduced grinding work at the feeder neck”.

Thomas Zander

Production Manager

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® |
|-------------------------------|------------------|---------------------------|
| Knock off feeder (2 pcs.) | 30 min | 10 min without cutting in |
| Discharge from process chain | 10 min | not applicable |
| Transport to pendulum grinder | 10 min | not applicable |
| Grinding | 280 min | 30 min |
| Return to process | 10 min | not applicable |
| Total time | 340 min | 40 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 300 minutes per casting. The contact residue can be removed by mechanical means (light grinding). In addition, the risk of rejects due to break-in is eliminated.



NETCore® before molding



NETCore® after knocking off



NETCore® riser contact



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