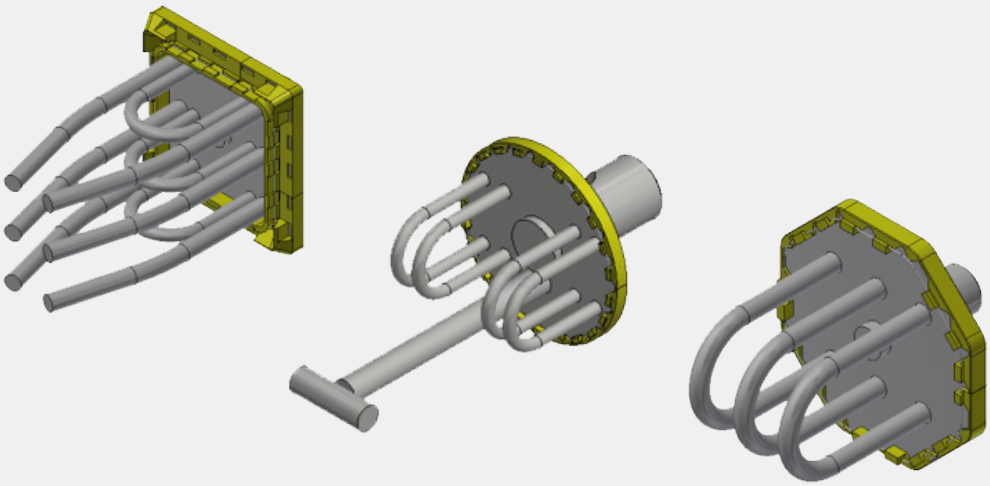
DANIELI SERVICE

QUICK SEALING DEVICE



QSD
>Safe, Quick, Reliable<

Benefits

— Safe and perfect union between cast steel and dummy bar, preventing liquid steel from leaking

— Risk free by avoiding handling operations between tundish and mould

— Quick operation by saving time in strand preparation works

— Significant reduction of the air whistle noise

— Perfect self-positioning

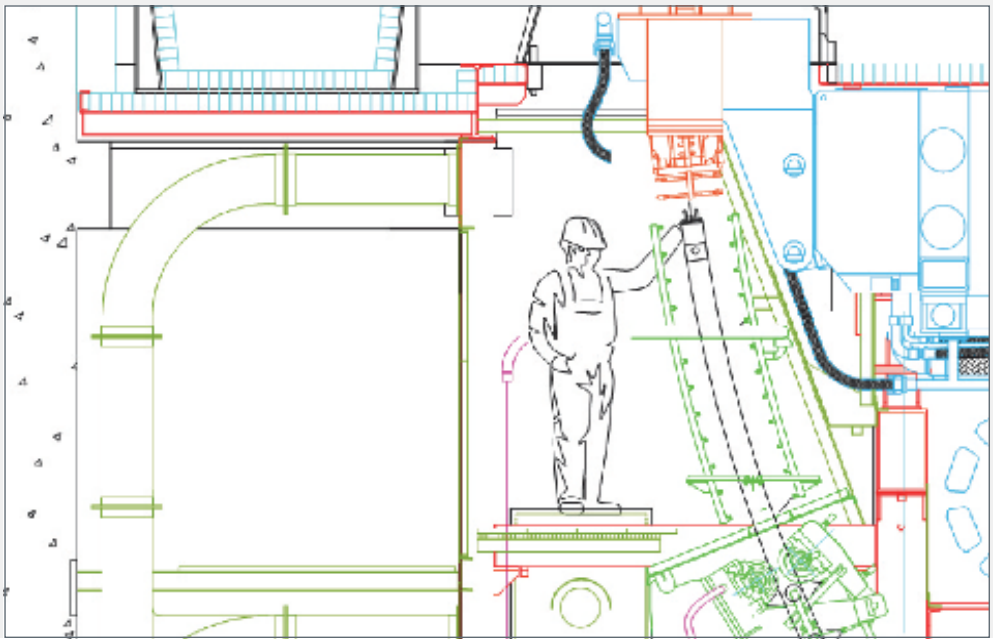
— Applicable to any CCM

Main features

— The Quick Sealing Device protects the dummy bar head from liquid steel
— A customized solution that cools down the steel, makes a firm connection with the solidified steel and is firmly linked to the dummy bar head at the same time
— Properly adjusting and fitting, avoiding damages to the mould
— Easy and fast release
— The Quick Sealing Device standard range is for billet dimensions from 120x120 mm, 4.725" square, to 200x200 mm, 7 7/8". Customized solutions may be also provided case by case
— All the units have been designed to protect the copper mould tube during dummy bar insertion, to provide a perfect seal avoiding any outflow of liquid steel

Connection

— The QSD is ready to be placed inside the cooling chamber (below the mould) immediately after being connected to the dummy bar
— This position provides an easy and controlled insertion into the mould and avoids dangerous manual manipulations
— The limited weight of the QSD complies with standard safety regulation for the manual handling operations



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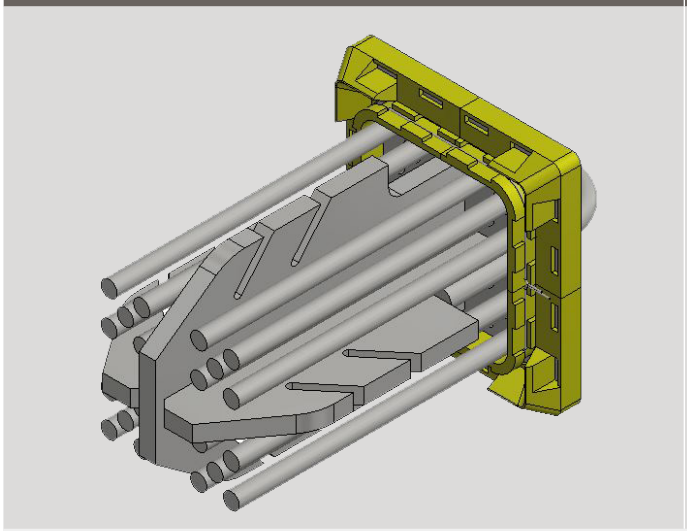
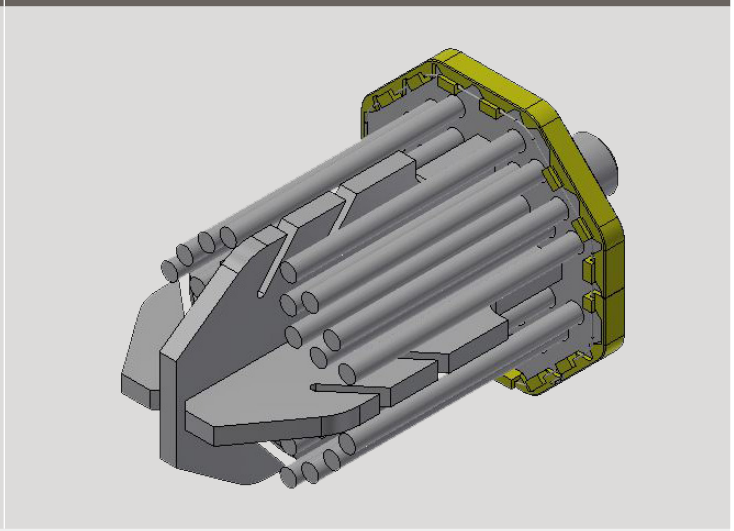
ENHANCED QUICK SEALING DEVICE
Billet caster process and cost optimization

Enhanced QSD section 130x130



Enhanced QSD octagonal section



Benefits

— Reduction of cooling material for casting reding
— All cooling material is provided with the QSD
— Safe and robust connection between cast steel and dummy bar
— Effective and consistent sealing between dummy bar head and copper mould, avoiding human error
— Quick re-stranding operation
— Automatic safe dummy bar disconnection
— Adaptable to all casting sections and shapes, i.e. square, round, octagonal

Danieli Enhanced Quick Sealing Device (E-QSD) has been successfully adopted among our Customers to increase reliability on the starting sequence of continuous casting machines for billets.

In last four years, breakouts during the initial phase of casting sequence have been reduced up to 75%. This outcome has been reached thanks to a strict collaboration between Customers and Danieli Service.

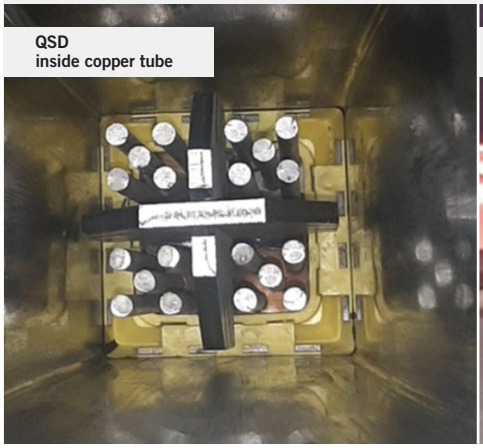
The absence of breakouts is synonym of avoided steel production loss, as well as re-stranding and expensive maintenance repairs in CCM secondary cooling chamber.

These features are maintained during the rest bar life and therefore they have an easy maintenance, and design tolerances can be recovered after usage.

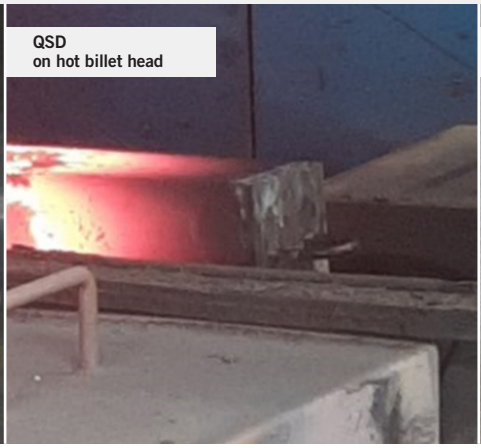
This improvement on process reliability is achieved thanks to the robust welded design of the QSD and its special seal, which protects copper mould tube from costly scratches during entry of the starter bar (“dummy bar”).

Besides process improvements, with the introduction of E- QSD in their plant, Customers benefit also from cost reductions.

QSD inside copper tube



QSD on hot billet head



Detail of the QSD on billet

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