
UPCAST®-SGTube
Wherever. Better.

UPCAST®-SGTube offers a shortcut **in copper tube production**

UPCAST®-SGTube technology bypasses in one big leap many costly steps needed in conventional tube production methods.

UPCAST®-SGTube is the latest trailblazing development in continuous casting from UPCAST OY. It is an innovative extension of our baseline UPCAST® technology used for casting copper rod. UPCAST®-SGTube shares all the inherent benefits of the baseline system but differs in design of the casting machine, coilers and tooling.

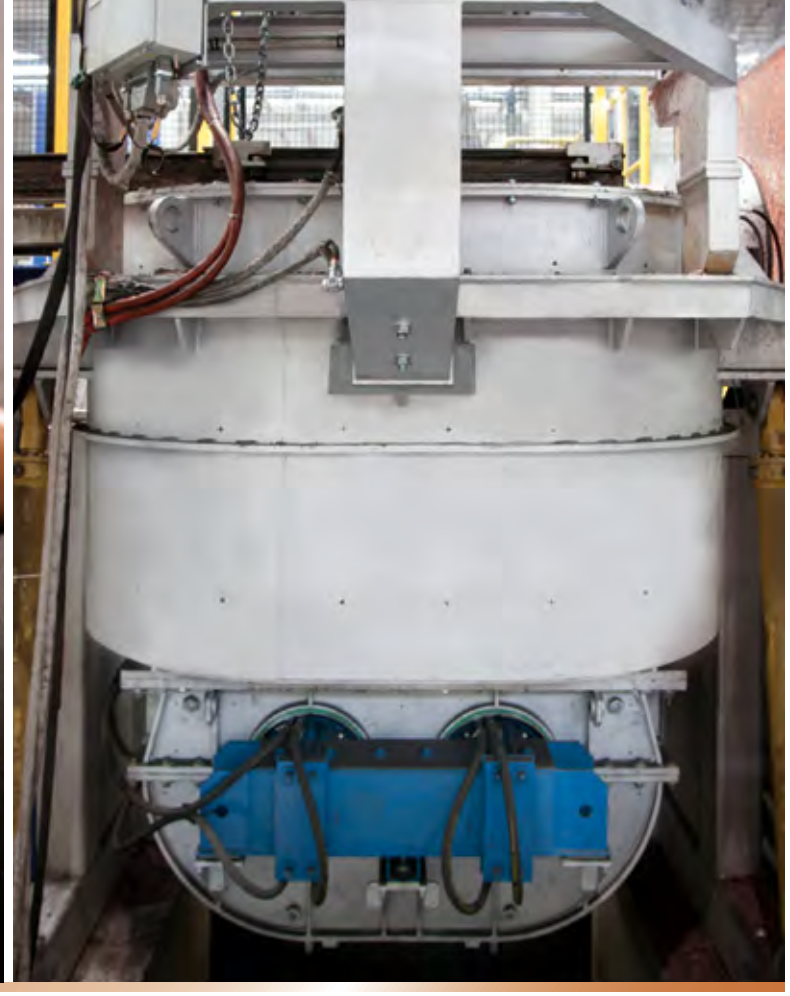
The UPCAST®-SGTube system produces thin-walled copper tube in heavy coils ready for further processing in tube drawing machines. As the tube is in cast condition it is recommended to make the first drawing passes in straight drawing machines followed by inductive in-line annealing. To ensure perfect softening during intermediate annealing the preceding area reduction should be 50% or more.

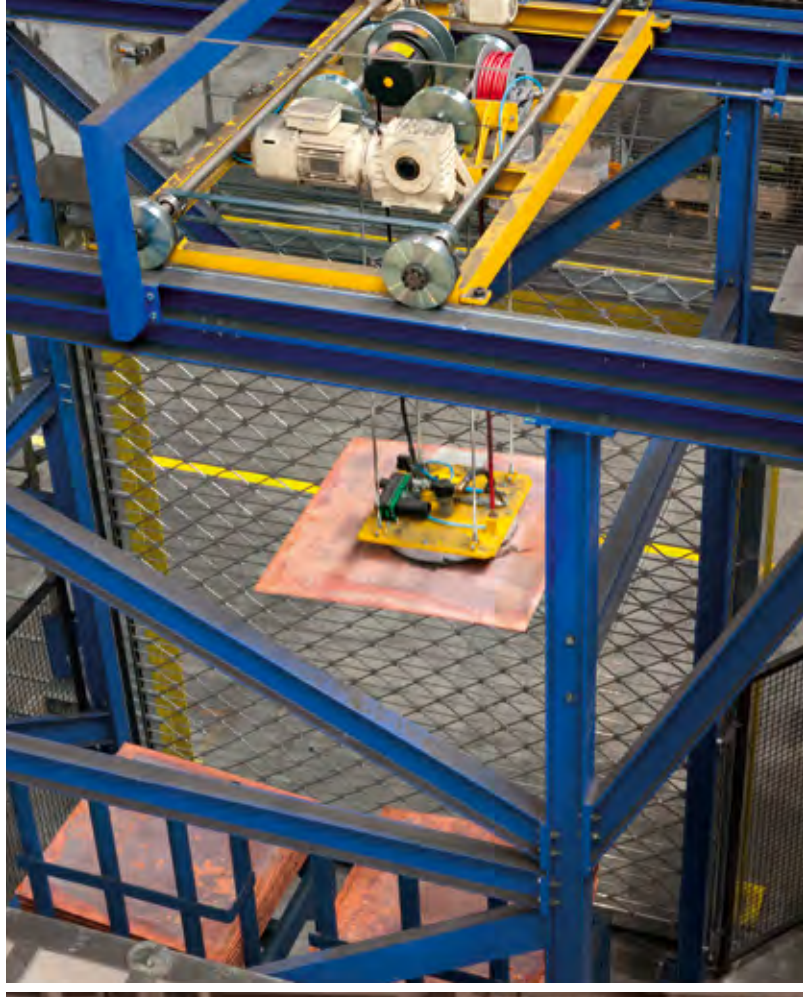
Flexible customized solutions

Similar to the construction of baseline UPCAST® systems also UPCAST®-SGTube lines are of modular design allowing customized solutions. It is possible to choose between single- and double-furnace configurations. The double-furnace configuration – with separate melting and casting furnaces – can reach an annual output of 12,000 tons while the single-furnace configuration – built around a combined melting/casting furnace – has a maximum capacity of 9,000 tons per year. If scrap – clean and dry – will form a significant part of the input material then a double-furnace configuration is the preferred choice.

UPCAST®-SGTube is flexible as to the size of the cast tube. A common range for the outer diameter extends from 38mm

Small grains, **Big gains**





to 52mm while wall-thickness varies typically between 2mm and 3mm. Different tube sizes can be cast simultaneously when the servo-driven casting machine is equipped with two independent withdrawal systems. The optimum dimensions for the cast tube depend on the size of the finished tube. UPCAST®-SGTube can produce very high coil weights limited not by the ultimate capacity of the cast tube coiler but rather by the intake capabilities of downstream drawing equipment.

The main application for UPCAST®-SGTube is the casting of phosphor deoxidized copper (Cu-DHP) tube. The process is however not limited to Cu-DHP but is suitable also for other copper grades such as oxygen free copper (Cu-OF) and cupronickel (CuNi10).

In production - further improved

As testimony of the technology's maturity UPCAST®-SGTube has been in production use since 2010. This however does not imply to an end in efforts to exploit the full potential of this groundbreaking technology. On the contrary UPCAST OY is investing heavily to further improve both the overall performance of the system and ductility of the cast tube. All this is being done in close collaboration with our customers.

One big leap

Having the UPCAST®-SGTube process as the first step in your tube production line will translate into clear savings in overall costs. As the cast tube is already rather close to the finished tube sizes, UPCAST®-SGTube bypasses in one big leap many costly steps needed in conventional tube production methods. Further savings can be attained through the small footprint of UPCAST®-SGTube lines - being only a fraction of the floor area taken by conventional equipment.

UPCAST® -Hybrid

natural offspring of UPCAST®-SGTube

After the advent of UPCAST®-SGTube it was only a question of time before a hybrid UPCAST® system capable of casting both rod and tube would emerge. UPCAST®-Hybrid technology is based on the idea of using the same equipment for casting both products. This has been achieved by modifying product specific parts in the UPCAST®-SGTube casting machine and coilers to facilitate easy changeover. The flexibility of the product mix makes the hybrid system a truly cost-effective solution for companies with a diverse product portfolio.

As rod and tube are typically produced from different copper grades - e.g. Cu-OF for rod and Cu-DHP for tube - a hybrid configuration may include two furnaces from which casting takes place. Such an arrangement facilitates quick change from one product to the other as melt for both product types is readily available at all times. Normally rod and tube are cast separately but they can also be cast simultaneously when both are made from the same copper grade. For such a case the casting machine would be equipped with two independent withdrawal systems.

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