

# SuperQuench.

Greater performance, more flexibility.



## The lower the alloy-content of steel, the greater the importance of correct quenching.

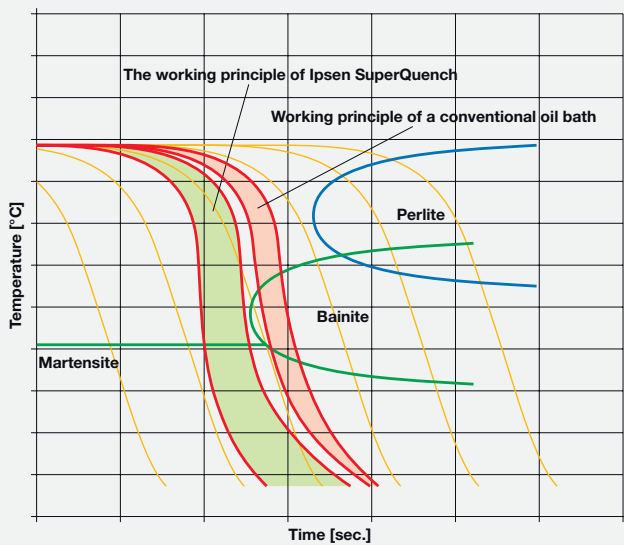
Low-quality steels pose big challenges when it comes to heat treatment.

Challenges that you can now confidently take on – with the SuperQuench oil bath from Ipsen.

Less demands more: Given the fact that steels of this type are, on grounds of cost, increasingly being specified and offered for sale, Ipsen has been busy dealing with the issue of how to optimise the quenching process. The solution is now available: SuperQuench.

One decisive factor when it comes to quenching performance is the flow rate at which the

oil is fed into each batch, particularly when the workpiece is plunged into the oil at the initial phase of the cooling process, causing a film of steam to form on its surface. This layer conducts little heat, so the rate of cooling is normally very low at the start of the quenching process.



SuperQuench offers optimum quenching performance for low-alloy steels in particular.

process, allowing multiple tasks to be handled smoothly with a single oil bath.

However, it is precisely these steels with reduced hardenability (i.e. low-alloy or non-alloy steels) that require a short steam-layer phase if optimum hardness is to be achieved. It is therefore important to use a high-speed flow of oil to disintegrate the insulating film of steam as quickly as possible. Flow rate also has a decisive influence on correct hardness during the subsequent boiling phase, when the oil begins to bubble up.

Ipsen thus provides a universal solution that is suitable both for low-alloy, low-quality steel and its high-alloy, high-quality equivalent – an achievement unmatched anywhere else in the sector. Results of trials carried out by our R&D staff demonstrate this convincingly – and we will be more than pleased to show you the evidence.

These are the three key factors that allow SuperQuench to optimise the hardening process:

1. Powerful drive motors and circulating pumps,
  2. Specially-designed conducting channels, and
  3. Carb-o-Prof<sup>®</sup> software designed to optimise the quenching process for each grade of steel.
- The array of up to six motors is infinitely adjustable by means of frequency converter. This allows the oil to flow into the workpiece batch at up to four times normal speed, thus ensuring optimum heat dispersal. Each individual circulation pump is also assigned its own separate flow-control system to ensure the reliable, consistent and fast cooling of each batch.

SuperQuench is also compatible with all Ipsen atmosphere furnaces.

Non-stepped flow control is of particular benefit to the user, as is the thoroughly tried-and-tested Carb-o-Prof<sup>®</sup> software, which provides maximum flexibility for the configuration of the heat-treatment

