

## Telescopic Mast



<b>Profile:</b>	<i>octagonal hollow section</i>
<b>Material grade:</b>	<i>D36 &amp; 1.4571</i>
<b>Execution:</b>	<i>laser-hybrid fused</i>
<b>Industry served:</b>	<i>Chemical Tankers &amp; Shipbuilding</i>
<b>Destination:</b>	<i>Germany</i>

For the construction of a large telescopic mast, tailored hollow sections were needed.

The telescopic mast is part of a propulsion system for large ships and vessels, even container vessels, that uses a kite blown by wind.

This technology ensures significant reduction in fuel consumption taking advantage of the wind energy.

The telescopic mast is used as launching and recovery tower of the kite. During these operations the mast is in expanded, otherwise it is retracted.

The challenge is to build a structure that is sufficiently stiff for safe operation but is, at the same time, as light as possible. And while all this extremely tight

tolerances for proper mechanical operation must be granted.

For this purpose a set of octagonal hollow sections was designed. It had to be made in special marine carbon steel D36 from two special precision press brake channels.

The size ranged from the biggest cross section of 800x800mm to the top and smallest one having a outer dimension of 180x180mm.

The junction of the two channels is done by laser hybrid welding with the 3D laser fusion technology, that ensures sound welds and little distortion to the components. Both are important factors for the quality and the final success of the hollow sections.

In addition to the qualified welding procedures, all welds were checked with radiographic and endoscopic testing by a third party institute.

All interior mast sections are equipped on four short sides with a corrosion resistant flat bar in stainless steel welded on it for friction related issues, ensuring proper operation in time.



*a complete set of hollow sections for a telescopic mast*