

*Dimensional check on 3rd stage shroud block.*



*Root grinding 3rd stage blade.*

## Manufacture of Hot Section Capital Parts for 123 MW, 50 Hz Gas Turbines

**Sulzer Elbar has re-engineered all the parts that form the hot section of the American-designed, 123 MW, 50 Hz gas turbine. Forgings and sheet metal parts have already been supplied to various customers. Now the first cast parts are being machined for delivery in October.**

During the last three years, Sulzer Elbar has expanded their repair activities into the area of field service and new parts manufacturing, to be able to offer a complete service package to their customers. An increasing trend towards sourcing the supply of services and parts from OEM-independent parties was identified.

Driven by customer demand, Sulzer Elbar has re-engineered all the parts that form the hot section of the said gas turbine: the combustion liners, the transition pieces, all blades, all vanes as well as all shroud blocks.

### Shroud blocks

The first hot section components to be delivered were the stage two and three shroud blocks. Since these parts are machined out of relatively straightforward forgings, the development

time, as compared to the cast first stage shroud block, was short.

### Combustion parts

Sulzer Elbar has successfully developed and produced combustion liners and transition pieces for this engine as well as the smaller versions.

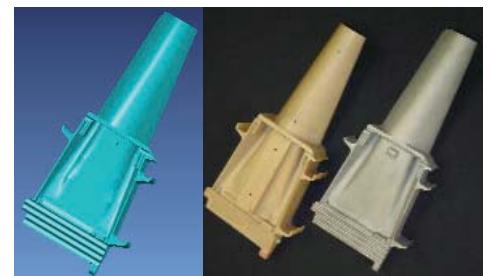
### Cast parts

A tremendous effort is required to develop a casting process up to the point where the produced castings meet Sulzer Elbar's specifications. After the complicated wax injection tooling has been produced, a development process is initiated, where the casting house has to reach the required high quality level necessary for their castings. This process will take several months.

Sulzer Elbar used this time to expand their EDM capacity, as well as to set up the required root grinding and STEM drilling facilities. All set-up, test and qualification operations were successfully performed well before the first production castings were delivered to Sulzer Elbar. This resulted in overall development times being held extremely short, to the benefit of our pilot customers.

### Customer benefits

Sulzer Elbar's vast experience in the repair of these different parts made it possible to realize the thorough development of new and replacement parts in such a short period of time. Apart from the capital parts themselves, Sulzer Elbar is now able to offer all the required installation hardware, the



*1st stage blade, from left to right: 3D model, wax model, cast blade.*

knowledge on how to install the parts, as well as qualified service technicians who can actually take on full responsibility for all the necessary overhaul activities, thereby allowing Sulzer Elbar to provide a complete turn-key service from a highly competent single source.

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