



## Starburst Graphite Rotor Shaft

### FOUNDRY PROCESS

Degassing

### PREVIOUS SITUATION

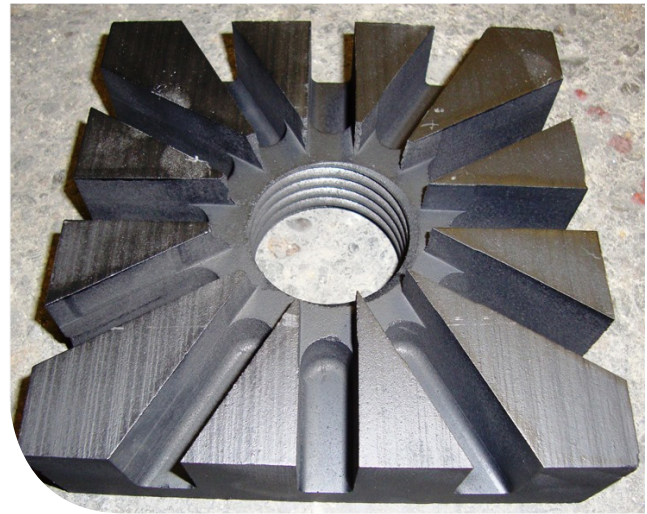
The customer previously utilized a local supplier for their graphite rotor shaft and resisted testing Pyrotek's rotor shaft due to the square design. Locally supplied graphite rotor and shaft:

- Rotor Speed—600/500 rpm
- Density Index—0.5-1.0
- Coupling—Treads

### PYROTEK SOLUTION

After significant effort and explanation of the benefits, the customer agreed to test two sets of Pyrotek's Starburst Graphite Rotor and Shaft.

- Rotor Speed—450/300 rpm
- Density Index—0.3-0.7
- Coupling—Shur-Lok



- thinner than the previous rotor, the customer observed the same performance. Pyrotek supplied the customer with 100-millimeter shaft that further increased the life.
- Simple maintenance allowed for more operators to become qualified to change the shaft, minimizing downtime. The previous rotor could only be changed by one production engineer, which led to delays in the process.
- Drier dross reduced aluminium waste.



### PROCESS IMPROVEMENTS

- Pyrotek's rotor performed six times better than the locally supplied rotor and demonstrated improvement in the following areas:
  - Less electrical consumption
  - Less erosion on rotor and shaft
  - Less vibration on shaft
  - Improved Nitrogen gas dispersion
- Lower density than previous rotor.
- Shur-Lok coupling provided better gas sealing and quicker change-out capability.
- Although the Pyrotek shaft's diameter is 25 millimeters

### ESTIMATED SAVINGS

Unit Costs				
	LOCAL SUPPLIER		PYROTEK	
	Unit Cost (USD)	Number of Cycles	Unit Cost (USD)	Number of Cycles
Rotors	\$35	100	\$115	600
Shafts	\$120	1000	\$235	2000

Pyrotek rotors performed 6 times better than the local supplier's, while Pyrotek shafts performed twice as well.

Annual Cost (USD)	LOCAL SUPPLIER	PYROTEK
Monthly Cost (3600 cycles)	\$1566	\$1260
Annual Cost	\$18,792	\$15,120
<b>Total Savings</b>	<b>\$3700</b>	

