

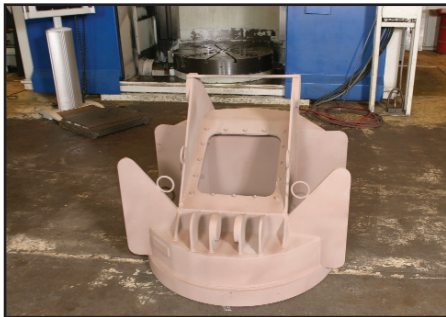
## Oilfield Equipment

## Lift Boats and Cranes

## VTC 1600 Vertical Turning Center

### The Challenge

Elevating Boat (EB), located in Braithwait, Louisiana, produces lift boats, pedestal cranes and related equipment for offshore drilling. In order to reduce costs, EB machined in batches. While this reduced setup costs, it meant longer lead times. Delivery is critical when construction or repair of offshore structures is on the line. Elevating Boat went in search of a vertical lathe that would help them reduce manufacturing costs and improve their lead times.



### Part Specifications

Elevating Boat produces large parts on the VTC 1600 such as the 40 x 38 inch plate made of 588 steel. This part must be faced, drilled and bored.

Other parts, which are even more difficult to machine, include rings forged from 4130 steel with a 340 Brunell hardness rating. These have a series of 64 holes.

**MAG**  
142 Doty Street  
Fond du Lac, WI 54935  
Tel: 920 921 9400, Fax: 920 906 2522  
www.mag-ias.com

### The Solution

The bottom line was that the MAG vertical turning center could produce Elevating Boat's parts faster and more economically. The machine rigidity, the added column height for tall parts, the tool magazine capacity, the versatility of the live spindle and the time saving capabilities of the tool and part probes are just a few of the factors that led to that determination.

*"We can machine our parts with minimal setup time. We no longer have to batch process the parts. The VTC allows us to get cranes to our customers faster."*

Ronald Ricouard  
Machine Shop Manager



### VTC 1600 Specifications

- 1500 mm (60 in) table
- Extended column height of 2440 mm (96 in)
- Large 250 mm (9.8 in) ram
- 40 hp live spindle
- Standard linear scales
- 20-position tool disk
- Tool and part probes

### The Results

- Cycle times were reduced by up to 57 percent.
- Where two setups and machines were required previously, the VTC's live spindle allows complete machining in one setup.
- The Z-axis ram extension makes it possible to machine deep inside the part.
- With the reduced setup times, EB has abandoned batch processing in favor of just-in-time or production of kits.
- Reinforcement of the VTC structure in critical areas increases casting rigidity without increased resonance. The sturdy casting prevents deflection under heavy cutting forces, producing better surface finishes and part quality.



- The VTC's open design allows easy crane or forklift loading.
- The 60 inch 3-jaw hydraulic chuck was modified for Elevating Boat to accept 4 jaws. Four-jaw chucks are often better suited for rectangular or square parts.
- The tool probe reduces setup time and the opportunity for errors.
- The part probe can be used for on-machine inspection. EB uses it to ensure accurate hole positioning. One part has 64 holes which are drilled halfway through the part, the part is then flipped and the probe finds the hole position completing the bolt hole. Standard through-the-ram coolant helps with chip evacuation.
- The full X-axis travel right and left of center allows probing of part diameters rather than radii, which improves accuracy.