

ANALYZE: HOT TUB ROUTERING PROCESS

CLIENT CHALLENGE

The client's process required 120 holes and 32 ft. of fibreglass flashing to be manually drilled into and trimmed from the hot tub. This was a tremendously time consuming and labour intensive process marked by a number of challenges:

- **Employee health and safety** – The nature of fibreglass requires all employees to be completely covered, including full-body suits, breathing masks and eye protection. This results in a hot, dusty and generally unpleasant working environment that is unappealing to new staff.
- **Quality control** – The inefficiencies of drilling all holes manually results in significant repair and rework requirements.
- **Production delays** – Fibreglass is difficult to drill by hand and 9 people are needed to maintain production levels. The impact of staff absenteeism and turnover is thus magnified and slows down the overall process.

THE BP AUTOMATION SOLUTION

BP Automation conducted a **comprehensive engineering scope analysis** to better understand the problem. This analysis revealed two critical requirements:

- To significantly reduce cycle time, the **robot fixturing** was designed to facilitate all cutting and trimming requirements in one pass around the hot tub.
- An **automated material handling system** was needed to load and unload the hot tubs. Due to the cycle time reduction attained by altering the robot fixturing, manual loading of the tubs became a bottleneck that slowed the process down.

RESULTS

1. Reduction in scrap tubs by \$25,000.00/month
2. Reduction in staff from nine to one frees up resources for use in other strategic areas
3. Increase in product quality
4. Increase in overall quality of work environment



Cutting-Edge Robotic Router