

Aerospace QH FLUID INTELLIGENCE™ : QH FLUIDCONTROL™ 100 Make-up, Deliver, Monitor and Control System

HOCUT® 795 B

The Challenge

A global OEM manufacturing aerospace wing ribs in North America was installing 6 new CNC machines in their facility. To support this expansion, they needed an automated fluid monitoring and control system. Without an automated system, the CNCs require manual filling with make-up water and concentrate. The 6 CNC machines consume a large volume of fluid that requires fluid additions at least once per shift. This task takes the plant oiler approximately three hours to fill all 6 CNC machines. This existing manual filling process is highly labor-intensive, so the customer turned to Quaker Houghton for the following:

- Completely automated fluid monitoring and control system
- Eliminate the need for manual filling
- Automatically maintain fluid level
- Real time fluid monitoring and control

The Solution

Our QH FLUID INTELLIGENCE™ team assessed the needs of the customer, and designed an automated coolant pre-mixed delivery system along with installing six QH FLUIDCONTROL™ 100s for monitoring and control of the CNC coolant systems using HOCUT® 795 B. This new automated solution maintains the fluid level in the 6 individual CNCs. QH FLUIDCONTROL™ 100 then monitors the fluid concentration, conductivity, pH, temperature, and fluid level in each CNC independently. This information is communicated back to a Main Control Panel where it automatically adds a high coolant mixture or low mixture when the liquid level in the machine system needs to be replenished.

The customer is pleased with this system which eliminates the additional labor cost for maintaining the machine's fluid level. In addition, the system has been able to stay within the set coolant concentration specification ranges (9.0% +/- 1.0%). This control system eliminates the up and down variations that occur with inconsistent water / concentrate additions.

The Benefits

The customer was able to benefit from the following:

- Eliminated the need for manual filling and additional labor cost for maintaining the machine's fluid level
- Consistent maintenance of coolant concentration
- Reduce operator exposure to metalworking fluids
- Improved tool life and part quality
- Extended useful product life
- Reduction in waste
- Improved safety controls
- Reduced operation downtime
- Optimal biostability of the product due to the continuous monitoring and control of the concentration, improving operator acceptance

QH FLUID INTELLIGENCE™ - Measure, Control, Optimize

QH FLUID INTELLIGENCE™ is the ultimate value-based engineered solution allowing customers to operate more efficiently, safely, sustainably and at the lowest total cost of ownership. Our industry specific application expertise in fluids, combined with the use of QH EQUIPMENT and advanced hardware and software technology, means we are leading our customers to digital transformation and smart manufacturing.

Our QH FLUID INTELLIGENCE™ experts critically review our customers processes and challenges to see where fluid optimization could provide solutions and cost savings. This case exemplifies the benefits and value of this solution, by supporting our fluids and our customers' processes we are able to offer a differentiated approach for automated fluid monitoring, increasing productivity, and improving processes.



QH FLUIDCONTROL™ 100 is completely self-contained monitoring system that represents a new standard in metalworking fluid property measurement and control. This Quaker Houghton engineered system:

- Measures fluid pH, conductivity, concentration, temperature and other sensors depending on customer's needs
- QH FLUIDTREND™ IOT- Industry 4.0, real-time notifications, data retention, and remote access
- Provides automatic control capability

Process & Equipment

Part	Wing Ribs
Material	6000 & 7000 series Aluminum
Product	HOCUT® 795 B
Concentration	9%
Operation	CNC Machining
QH EQUIPMENT	QH FLUIDCONTROL™ 100

