MACHINERY MANUFACTURING (USA)

AGRICULTURAL & CONSTRUCTION - COMPONENTS

Castrol Syntilo® 2109

ANNUAL SAVINGS: $175,200*

THE SITUATION

A major construction equipment manufacturer was experiencing high maintenance costs for 36 Mazak machine tools. The incumbent product was contributing to sticky residues and corrosion causing pre-mature failure of way covers, gear boxes, door bearings and other machine components. Castrol was asked to identify alternative product technology to improve maintenance costs and downtime.

BEFORE

- High machine repair costs
- High labor costs
- Biological contamination
- Corrosion of machine tool
- Machine cleanliness issues

AFTER

- Reduced machine part failures: $158,200 annually
  - X-axis way covers
  - 36 sets of door bearings
  - 5 ATC gear boxes
  - Miscellaneous parts
- Reduced PM labor costs: $17,000 annually
- Unit price reduction for product: $0.83/ gal

THE SOLUTION

- Root Cause Analysis indicated several contributing factors:
  - Heavy tramp oil contamination
  - Insufficient filtering of the fluid
  - Reduced rust protection
- Recommendation was to convert the systems from an oil-rejecting synthetic to an oil-accepting synthetic fluid.
- Oil-accepting technology absorbs up to 3% tramp oil, which removed the food source for bacteria, improved carryout and removal of metal fines, and created softer residues.
- These benefits led to reduced part failure without sacrificing machining performance.
- Castrol utilized ‘Best Practice Transfer’ from other customers with similar applications.

- Castrol utilizes ‘Knowledge Transfer’
- Improved metalworking technology allows for significant maintenance savings.

**Machine maintenance and labor savings only*

RECOMMENDATIONS

Using past experience and extensive coolant and application knowledge, Castrol recommended a conversion to an oil-accepting synthetic metalworking fluid that addressed concerns with biological contamination, corrosion, and machine cleanliness.

CONCLUSION

The coolant conversion resulted in considerably decreased biological activity, improved machine cleanliness, and superior rust protection. These improvements led to a dramatic reduction in maintenance costs on 36 Mazak machine tools. All of these benefits were achieved with a fluid that is considerably lower in price than the incumbent.

OTHER POTENTIAL APPLICATIONS

This improvement could be implemented in any machining application where oil-rejecting synthetic fluids are causing concerns with sticky residues and corrosion protection. Proper investigation and root cause analysis allows for proper fluid selection for machining applications.