World Class
Cleaning Solutions

Case Study
Automotive Engine Overhaul

Who: Machining/engine rebuilding shop in Europe
Lead Origin: Referred to Brulin by an equipment dealer
Parts Cleaned: Engines including very old, vintage and pre-war engine parts.
Removing What: Heavy carbonized soils, oils, grease, ambient.
Why: Preparation for Overhaul
Equipment Used: KKS Ultraschall Ultrasonic System 150L

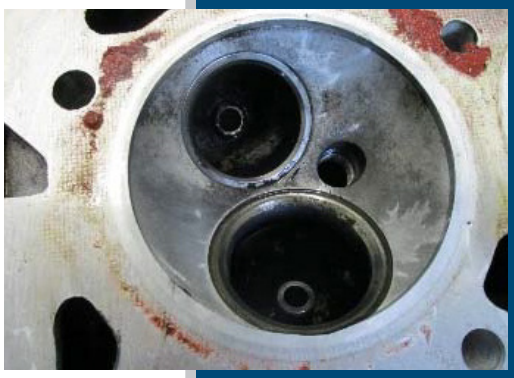
CUSTOMER'S PREVIOUS PROCESS
Current Chemistry: High alkaline/caustic Powder
Washer type: 150L KKS Ultrasonics
Specific Metals: Ferrous metals, Aluminum
Temperature: 140F/ 60C
Customer Improvement requested: Current cleaner is too alkaline to clean aluminum parts (causes corrosion); wants a single cleaner effective on both ferrous and aluminum
Other: City water causing water spots

BRULIN RECOMMENDED PROCESS
Chemistry: AquaVantage 815 QR-NF
Concentration: 10-15%
Temperature: 74C (165F)
Time: 15 minute

CUSTOMER TEST
Chemistry: AquaVantage 815 QR-NF
Concentration: 10% (low end of range)
Temperature: 140F / 60C (lower than recommended temperature)
Time: 30+ minutes wash
Results: Still not clean: *"I thought it would be a bit better"*

CUSTOMER CORRECTED TEST
Chemistry: AquaVantage 815 QR-NF
Concentration: Corrected to 12.7%
Temperature: Corrected to 70C / 158F
Time: 20 minutes wash
Results: Aluminum safely cleaned: *"That is how I like it!"*
No spotting on parts.

COMMENTS
- Encourage customer to monitor/maintain the bath
- Operating parameters are important. Appropriate temperature is very important in removing on overhaul type soils.



Before Correct Wash

Correct Wash in 815 QR-NF

Correct Wash in 815 QR-NF

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