CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	1997
DateRun:	10/01/1997
Experimenters:	Jason Marshall, Prashant Trivedi
ClientType:	Manufacturer of Computer Parts
ProjectNumber:	Project #1
Substrates:	Stainless Steel
PartType:	Part
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil
Cleaning Methods:	Ultrasonics
Analytical Methods:	Visual
Purpose:	Evaluate ultrasonic cleaning
Experimental Procedure:	The purpose of this experiment was to determine if the cleaners could remove all the oil from the parts using the most common energy level of ultrasonic cleaning (40 KHz). All the cleaning parameters from the first trial were duplicated in this trial except for the source of the mechanical energy. A 40 KHz ultrasonic tank was used in place of the stir bar agitation. SUBSTRATE MATERIAL: Stainless steel CONTAMINANTS: Client supplied oil
Results:	The cleaning cycle (2 min. cleaning, 30sec. rinsing and drying) proved that the use of the ultrasonics was more effective than the stir bar agitation in removing the oil. However, all of the oil was not removed. Therefore, the parts were sent through a second and third cleaning cycle. After each cycle, the parts were analyzed visually for cleanliness. Of the two cleaners the Grace product removed more oil than the Fine Organics Corp product. The extended cleaning time did allow for removal of most of the oil.

Summary:

Substrates:	Stainless Steel				
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Fine Organic Corporation	FO 2085 M	5		☑	
Magnaflux	Daraclean 282 GF	5		☑	

Conclusion:

The Grace cleaning product showed very good oil removal after the six minutes of cleaning. Even though all of the oil was not removed from the parts, the length of time can be adjusted further. Also, another way to increase oil removal would be to increase the concentration of the cleaner.

The next step will be to determine better cleaning parameters using the Grace cleaning chemistry and ultrasonic cleaning.