CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1995

DateRun: 03/07/1995

Experimenters: Donald Garlotta

ClientType: Biomedical Device Manufacturer

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Part

Contaminants: Lubricating/Lapping Oils, Fingerprints

Cleaning Methods: Ultrasonics

Analytical Methods: Visual

Purpose: Determine the effectiveness of removing light oils

Experimental Procedure: The parts will be cleaned in a Crest Ultrasonic unit. Part #2 was cleaned for 4 minutes and parts #3 and #4 were cleaned for 10 minutes. The cleaner bath temperature was set at 140 F. Half of the cleaning time was done with the hole side up while the other half was done with the hole side down so that both the interior and the exterior would be subjected to ultrasonic energy. The parts were then washed in a tap water rinse and then a DI water rinse, both for 2 minutes at 140 F. The parts were then dried under an IR lamp for 25 minutes and then in a convection oven for 30 minutes.

Temperature

	time (min)	sample #2	sample #3	sample #4
Ultrasonics	4, 10, 10	144	144	144
#1 RINSE/TAP H_2O	2	138	145	141
#2 RINSE/ DEIONIZED H_2O	2	138	142	138
DRY- IR lamps	30	104	105	104
DRY convection oven	30	135	139	134

Results: Part #2- A lot of oil dragout was noticed in both rinse tanks, so cleaning time was increased to ten minutes. Water was noticed on the part after 30 minutes under the IR lamp. After 30 minutes in the convection oven, there was still some water remaining on the part. Parts #3 and #4- Excellent removal of oil on both the inside and outside of the tubes. No oil dragout was noticed in the rinse tanks suggesting that all oil was removed in the cleaning bath. Once again, drying was incomplete.

Summary:

Substrates:	Stainless Steel				
Contaminants:	Lubricating/Lapping Oils, Fingerprints				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Valtech Corporation	Valtron SP 2275	5	0.00	☑	

Conclusion: A cleaning time of ten minutes seems sufficient to remove all of the oil. Due to the large surface area, the parts take a long time to dry. The shortest drying time would probably be achieved by using a vacuum oven after the hot rinse.