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3/20/09

Ransohoff Test Report # XXXX-09



Undisclosed Customer

Attn: Engineering Manager

Ransohoff Equipment: Lean-Jet™ RB-1

Parts Being Tested: ABS Components

We trust this test report meets with your requirements, however,
if you require any additional information, please call.
Matthew Baumet, Technical Center Process Engineer, (513) 870-1762



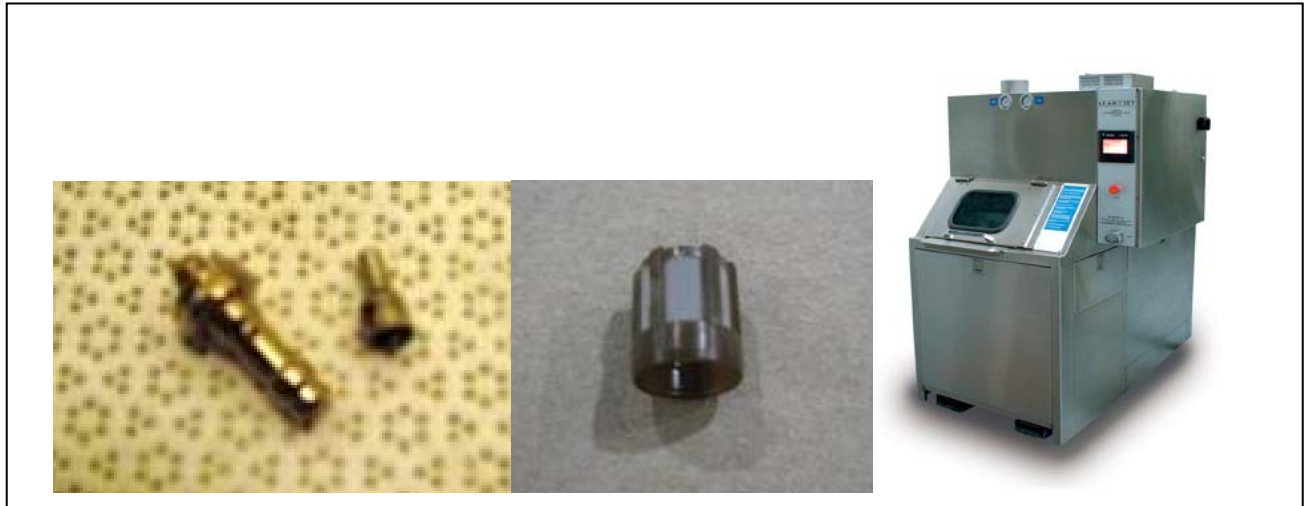
A NM Group Global, LLC Company

Purpose:

- Determine if the subject ABS components can be cleaned to a 100 micron maximum particle size specification using the LeanJet RB-1.

Parts and Equipment:

- ABS components processed by Ransohoff for Company ABC in our Lean-Jet™ RB-1 cleaning equipment.



Parts Tested

Lean-Jet™ RB-1

Machine Specifications	
Machine Type	Lean-Jet™ Rotary Basket Washer
Machine Serial Number	4420
Wash and Rinse Nozzles	(5) Bex #F5030
Nozzle Flow Rate	15 gpm
Wash and Rinse Spray Pressure	40 psi
Eductors	(2) Bex #TOMP – 3/8
Line Rinse Nozzles	(5) Bex #F80
Line Rinse Flow Rate	4 gpm
Eductor Flow Rate (Turbulation)	150 gpm
Blower Rating (Regenerative)	275 CFM @ 40" Static Pressure
Ultrasonic Specification	1500 watts @ 40 kHz
Wash and Rinse Filters	3 micron cartridge filters

Process Parameters:

	Seats And Sleeves	Regulator Filters
Wash Chemistry	5% Chem A	DI Water
Rinse Chemistry	3% Chem B RP	DI Water
Wash Temperature	140°F	Ambient
Rinse Temperature	140°F	Ambient
Blow-Off Temperature	220°F	140°F
Turbulated Wash	540 s	60 s
Ultrasonic Wash	360 s	180 s
Open Air Wash	180 s	240 s
DI Line Rinse	60 s	0 s
Turbulated Rinse	180 s	60 s
Ultrasonic Rinse	300 s	120 s
Open Air Rinse	180 s	300 s
Blow -Off	530 s	180 s

- The parts were placed in a stainless steel mesh basket with a compression lid as shown below:



Results:

- After the cleaning processes, the parts cleanliness tested per Gravimetric / Millipore Cleanliness Procedure (WI-03-006). The solvent used was mineral spirits and the Millipore pad size was 5 microns. Ten (10) parts were Millipored on each filter pad. See below for the results.

Process	0-10 µm	10- 20 µm	20- 30 µm	30- 40 µm	40- 50 µm	50- 60 µm	60- 70 µm	70- 80 µm	80- 90 µm	90- 100 µm	>100 µm	Max Particle Size (µm)
Blank Pad	6	7	5	2	0	1	0	1	0	0	0	70.5
Regulator Filter (Small)	3	3	2	1	0	2	0	1	0	0	0	75.5
Regulator Filter (Small)	1	11	6	7	5	5	0	1	0	0	0	76.5
Regulator Filter (Small)	6	11	9	7	6	0	0	1	0	0	0	74.7
Regulator Filter (Large)	8	9	3	0	0	2	2	1	0	0	0	78.3
Regulator Filter (Large)	0	6	3	2	1	0	1	1	1	0	0	89.6
Regulator Filter (Large)	11	19	13	9	5	3	1	1	0	0	0	75.5
Sleeves	11	15	8	7	1	0	0	0	0	0	0	45.4
Sleeves	11	10	6	2	2	0	0	0	0	0	0	46.9
Sleeves	6	8	3	7	1	2	1	0	0	0	0	67.1
Seats	9	6	11	4	2	1	0	0	0	0	0	52.6
Seats	5	6	4	5	3	1	1	0	1	0	0	88.7
Seats	1	3	5	2	0	0	1	0	0	1	1	111

Conclusions:

- Based upon the above results, it appears that the above processes did meet the 100 micron maximum particle size specification.

Please feel free to contact us with any further questions or concerns.

Sincerely,



Matthew Baumet
 Technical Center Process Engineer
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