



## Des-Case<sup>®</sup> Hygroscopic Breathers

*Ring Container Technologies – Belle Fourche, South Dakota*

### *Liberty Blow Molding Machine*

- Significantly reduced particle count and water contamination
- Extended the expected life of hydraulic systems by a factor of five times

#### *Customer Profile*

Ring Container is a U.S.-based company with manufacturing plants in 18 states, plus one in the U.K. and one in Canada. This plant has three production lines and produces poly containers using blow mold machinery. It has been in business and has been an LE customer since 2005.

#### *Application*

Ring Container uses three Liberty RSI 3500 blow molding machines to manufacture 1.5- and 4-gallon poly containers used by adjacent bentonite plants to package granular bentonite marketed as kitty litter.

#### *Challenge*

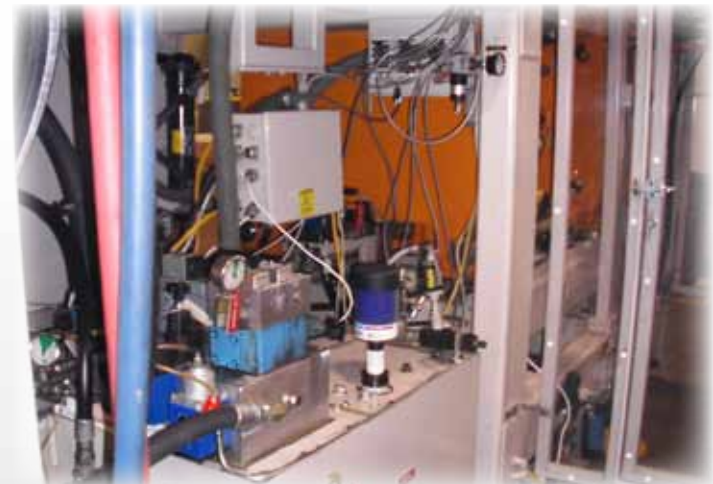
Hydraulic oil reservoirs constantly had contamination issues with high particle counts and water contamination.

#### *Solution*

Mike Carter, LE lubrication consultant, recommended installing Des-Case<sup>®</sup> hygroscopic breathers.

#### *Results*

Ring Container installed the breathers on all six hydraulic reservoirs associated with the Liberty RSI 3500 blow mold machines. Each machine has a hydraulic reservoir of 210 gallons as well as a separate 40-gallon reservoir for the machine programmer. They change the breathers



every three months. Rigid adherence to this maintenance schedule has resulted in significant improvement in both particle count and water contamination in all six reservoirs. (See LEAP report on next page.)



## LEAP Report

Particle count in the worst case, Unit 1H Programmer, was 22/21/17 and has been reduced and held at 15/14/11 or better. Water by Karl Fischer has also been reduced from 680 ppm to 88-194 ppm.

<b>UNIT ID</b> LIBERTY 1 H PROGRAMMER <b>SECOND ID</b>			<b>COMPANY INFORMATION</b> RING CONTAINER TECHNOLOGIES GENE SECREST/MAINT MGR.  BELLE FOURCHE , SD 57717																																																																																																																																																																																																			
<b>UNIT TYPE</b> HYDRAULIC <b>APPLICATION</b> PLASTICS																																																																																																																																																																																																						
<b>ACCOUNT NUMBER</b> 59300005560019 <b>DATE SAMPLED</b> 06/16/09 <b>DATE RECEIVED</b> 06/19/09 <b>DATE COMPLETED</b> 06/22/09		<b>OVERALL SEVERITY OF REPORT</b> based on comments, not individual flags 																																																																																																																																																																																																				
<b>TRACKING #</b> 09058C00031 <b>MANUFACTURER/MODEL</b> LUBE MFR LUBRICATION ENGINEERS <b>LUBE TYPE - GRADE</b> 6120 MONOLEC HYDRAULIC OIL ISO 68 <b>MICRON RATING</b> 10 <b>FILTER TYPE</b> <b>SUMP CAPACITY</b> 0.00 <b>HYD SYSTEM PRESSURE</b> 0 <b>FLUID ADDED</b>		<b>LAB #</b> 391950 <b>LOCATION</b> S <b>ANALYST</b> EAD																																																																																																																																																																																																				
<b>FLUID ANALYSIS REPORT - 800-537-7683</b>																																																																																																																																																																																																						
<b>COMMENTS</b> Data flagged for observation only; Calcium is slightly low for this lubricant; Please provide unit Manufacturer/Model in order to compare data to proper standards for this unit; Sample information has been added or tests have been rerun or additional testing was added and the report has been regenerated;																																																																																																																																																																																																						
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Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

## Life Extension Table

Looking at the life extension table published by Noria, a reduction in particle count from \*/20/17 to \*/14/11 shows that Ring Container can expect a life extension of its hydraulic systems by a factor of five times.

No major pump failures have occurred since converting to LE Monolec Hydraulic Oil (6120) and maintaining the Des-Case breathers. If there had been any failures, it would have cost \$4,500 for a new hydraulic pump and \$12,500 for a new programmer pump.

### New Cleanliness Level (ISO Code)

		20/17		19/16		18/15		17/14		16/13		15/12		14/11		13/10		12/9		11/8		10/7	
Current Machine Cleanliness (ISO Code)	26/23	5	3	7	3.5	9	4	>10	5	>10	6	>10	7.5	>10	9	>10	>10	>10	>10	>10	>10	>10	>10
		4	2.5	4.5	3	6	3.5	6.5	4	7.5	5	8.5	6.5	10	7	>10	9	>10	10	>10	>10	>10	>10
		4	2.5	5	3	7	3.5	9	4	>10	5	>10	6	>10	7	>10	9	>10	>10	>10	>10	>10	>10
		3	2	3.5	2.5	4.5	3	5	3.5	6.5	4	8	5	9	6	10	7.5	>10	9	>10	>10	>10	>10
		3	2	4	2.5	6	3	7	4	9	5	>10	6	>10	7	>10	8	>10	10	>10	>10	>10	>10
		2.5	1.5	3	2	4	2.5	5	3	6.5	4	7.5	5	8.5	6	9.5	7	>10	8	>10	10	>10	>10
		2	1.5	3	2	4	2.5	5	3	7	3.5	9	4	>10	5	>10	6	>10	8	>10	9	>10	>10
		1.7	1.3	2.3	1.5	3	2	3.7	2.5	5	3	6	3.5	7	4	8	5	10	6.5	>10	8.5	>10	10
		1.6	1.3	2	1.6	3	2	4	2.5	5	3	7	3.5	8	4	>10	5	>10	6	>10	7	>10	>10
		1.4	1.1	1.8	1.3	2.3	1.7	3	2	3.5	2.5	4.5	3	5.5	3.5	7	4	8	5	10	5.5	>10	8.5
		1.3	1.2	1.5	1.5	2	1.7	3	2	4	2.5	5	3	7	3.5	9	4	>10	5	>10	7	>10	10
		1.2	1.1	1.5	1.3	1.8	1.4	2.2	1.6	3	2	3.5	2.5	4.5	3	5	3.5	7	4	9	5.5	10	8
			1.3	1.2	1.6	1.5	2	1.7	3	2	4	2.5	5	3	7	4	9	5	>10	7	>10	9	
			1.2	1.05	1.5	1.3	1.8	1.4	2.3	1.7	3	2	3.5	2.5	5	3	6	4	8	5.5	10	7	
					1.3	1.2	1.6	1.5	2	1.7	3	2	4	2.5	5	3	7	4	9	6	>10	8	
					1.2	1.1	1.5	1.3	1.8	1.5	2.2	1.7	3	2	3.5	2.5	5	3.5	7	4.5	9	6	
							1.3	1.2	1.6	1.5	2	1.7	3	2	4	2.5	5	3	7	4.5	>10	6	
							1.2	1.1	1.5	1.3	1.8	1.5	2.3	1.7	3	2	3.5	2.5	5.5	3.7	8	5	
									1.3	1.2	1.6	1.5	2	1.7	3	2	4	2.5	6	3	8	5	
									1.2	1.1	1.5	1.3	1.8	1.5	2.3	1.7	3	2	4	2.5	6	3.5	
										1.3	1.2	1.6	1.5	2	1.7	3	2	4	3.5	6	4		
										1.2	1.1	1.5	1.3	1.8	1.5	2.3	1.8	3.7	3	4.5	3.5		
												1.3	1.2	1.6	1.5	2	1.7	3	2	4	2.5		
												1.2	1.1	1.5	1.4	1.8	1.5	2.3	1.8	3	2.2		
														1.3	1.3	1.6	1.6	2	1.8	3	2		
														1.3	1.2	1.6	1.4	1.9	1.5	2.3	1.8		
																1.4	1.2	1.8	1.5	2.5	1.8		
																1.2	1.1	1.6	1.3	2	1.6		

Based on ISO 4406:99 - 4 Million range number has been omitted.



### **Other LE Products Used**

- Duolec® Vari-Purpose Gear Lubricant (1605)
- Monolec® Wire Rope Lubricant (2001)
- Monolex® Penetrating Oil & Lubricant (2059)
- Almagard® Vari-Purpose Lubricant (3752)
- Quinplex® Food Machinery Lubricant (4025)
- Monolec® Hydraulic Oil (6120)
- Monolec® Synthetic Industrial Oil (9046)
- Monolec® Synthetic Industrial Lubricant (9220)

*Thank you to Ring Container's Gene Secrest, maintenance manager, and to Mike Carter, LE lubrication consultant (pictured), for providing the information used in this report.*



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