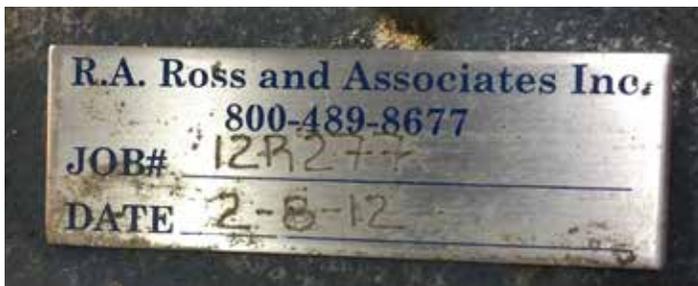


Our repairs last,  
saving you downtime  
and money.



R. A. ROSS & ASSOCIATES, INC.  
2231-A Ampere Drive, Louisville, KY 40299

*Solutions like this are what we  
do every day at R. A. Ross.*



*2012. That's the last time we repaired this pump.*

***"These guys go above and  
beyond!"***

*Gary Morrison  
Maintenance Planner  
Catalyst Division  
Clariant Corporation*

This little tag tells an incredibly  
valuable story.

2012.

That's the last time we repaired this pump.

Our repairs normally last years, even with  
the abuse some of these pumps have to take day  
in and day out. And the 5 year example in this  
case is pretty typical.

#### **Case in point**

In February of 2012, a customer needed their  
Dean ANSI pump repaired. Our repaired pump  
made it 5 years before needing work!

To see what we do differently, see page 2 of this  
story.

## What do we do differently?

Look at the check list (below). Upon receipt, the problem pump is checked and each dimension and value is documented. This gives us a baseline as to the extent of repairs needed. Any component that is not within specification is recommended to be replaced or repaired. Then after authorization to repair, the replaced or repaired components (and finished complete assembly) is rechecked to verify all meet factory recommended specifications.

Not everyone or every repair needs this level of detail, but we can provide it if you desire.

We not only can bring pumps and parts up to OEM specs, we often surpass those specs, including dealing with tolerances within 1/10,000 of an inch.

Pump model	PH2111	SIN 169056	At arrival	After repair	New Style PH2110 Factory spec
<b>Tolerances</b>					
Impeller to backhead measurement			0.1200	0.1000	0.002"
Impeller diameter			0.0000	0.0020	Max 0.006"
Max Shaft Runout			0.0020	0.0060	Max 0.008"
Allowable shaft end play			0.0030		50 ft. lbs
Impeller vane runout			NA	20.0000	20 ft. lbs
Impeller vane runout			NA	40.0000	40 ft. lbs
Impeller vane runout			NA	20.0000	20 ft. lbs
<b>Torque Values</b>					
Casing bolts				1.3782	6207.00
Big end cover				1.3780	1.3789 / 1.3775
Impeller			1.3784	0.0000	1.3780 / 1.0010T
Gland nuts (mechanical seal only)			1.3780	0.0000	0.0117 / 2.8354
<b>Bearings</b>					
Radial Shaft O.D.			2.8348	2.8345	2.8346 / 2.8341
Bearing I.D.			2.8345	0.0000	0.0131 / 0.0041
Fit			0.0000	0.0000	5506ACo
Housing I.D.			1.1816	1.1818	1.1818 / 1.1812
Bearing O.D.			0.0000	1.1809	1.1811 / 1.1807
Fit			1.1816	0.0000	0.0011 / 0.0097
Housing O.D.			1.1808	2.8343	2.8346 / 2.8353
Fit			2.8343	2.8340	2.8346 / 2.8341
<b>Thrust</b>					
Shaft O.D.			2.8342	0.0000	0.0121 / 0.0000
Bearing I.D.			0.0000		
Housing I.D.					
Bearing O.D.					
Fit					

If a customer desires or something non-typical occurs, pictures of the subject part or parts are taken and furnished to the customer.

We've even gone so far as to make duplicates of hard to find parts.

## Attention to detail

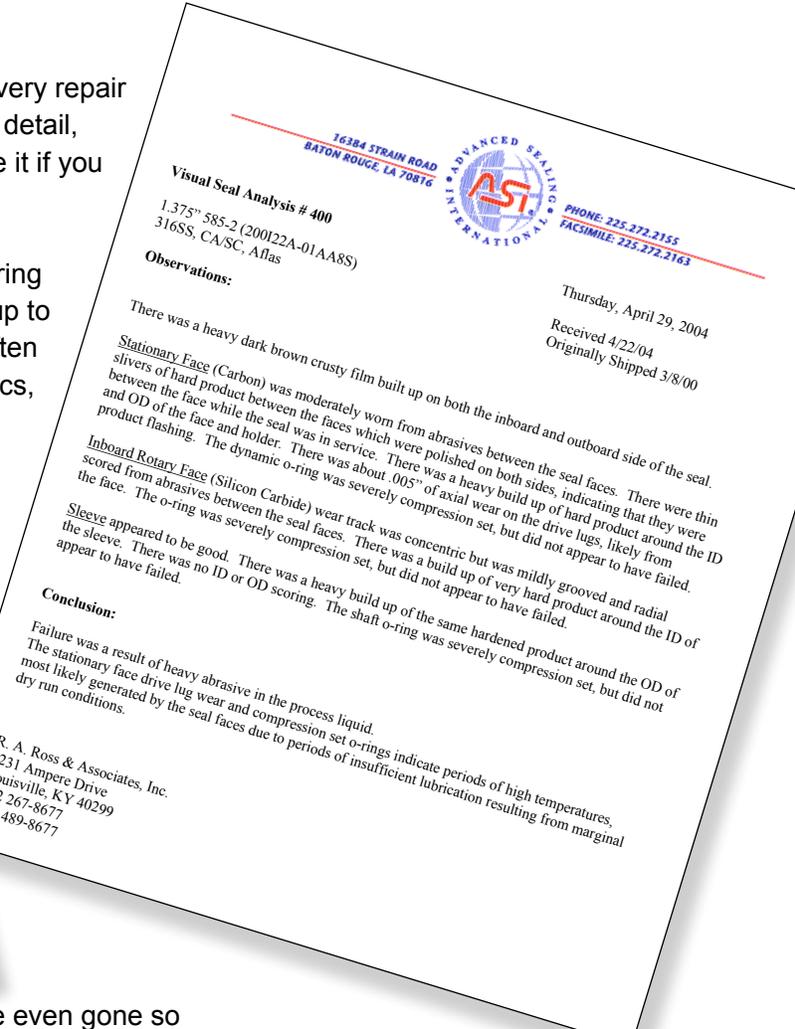
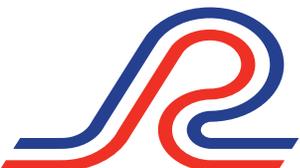
No repair leaves our shop without passing a rigorous checklist. This attention to detail will save you valuable downtime and money.

If you want it repaired right, call us. We'll arrange shipping, work up estimates and turnaround time, and call you with any concerns about future issues or why your pump or pump parts failed (see evaluation at upper right).

## CONTACT US

Call us for information on how we can help solve your problems in any of the following areas:

- ▶ Pumps
- ▶ Blowers
- ▶ Filters
- ▶ Mixers
- ▶ Tanks
- ▶ Vacuum Pumps
- ▶ Mechanical Seals
- ▶ Heat Exchangers
- ▶ Repairs

**R. A. ROSS & ASSOCIATES, INC.**  
*Keeping process flowing since 1985*

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Watch our company story video at RARoss on YouTube!