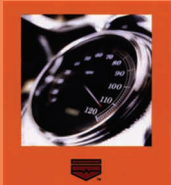


The Westland Corporation

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PROCESSOR

In A Perfect World ...

Dave Larson
President

In a perfect world, there would be justice, serenity and peace. Everyone would have friends, hold a good job, be able to pay their bills and still have enough money to enjoy the good things in life.



Dave Larson

In a perfect plastics processing environment, there would be zero processing issues, employees who enthusiastically show up to work everyday, perfect parts every cycle, stabilized resin prices and components that never wear out.

Obviously I haven't covered everything that would be needed for the world and our businesses to operate in a state of perfection.

In reality, we will never hit perfection, in our personal or working lives. However, as Thomas Watson stated, "it is better to aim at perfection and miss, than to aim at imperfection and hit it".

If we settled for 99% with our cell phone provider, it would equate to 15 minutes with no service everyday. Few of us would accept that.

So why settle for status quo with your current processing versus continually striving for perfection?

It has been said that "the search for perfection begins with detecting imperfection". That is especially true with processing plastic.

Imperfections in your components affect cycle times, part quality and your bottom line.

For example, Westland had one customer who found their total clearance between the screw and barrel more than double the OEM specifications.

Westland was able to rebuild the screw by welding the flights and rechroming. After this repair, the customer was able to reduce RPM, melt temperature and their cycle time. Plus, their scrap rate went from 4% to 1%.

Westland's employees are committed to providing you the tools to help your process as you strive for perfection.

The Search For Perfection Begins With Detecting Imperfection

Are we perfect? No. But I believe that working together, as a team, we can bring perfection closer for both our benefit.

We are more than just a screw and barrel supplier. Westland

has a strong reputation for building relationships with our customers. And in a less than perfect world, it works for us. Why not give it a try?

Put us to work for you today by calling our sales department at 800-247-1144.

CAN YOU NAME ...

Danny Biasone, the late owner of the Syracuse Nationals, invented the shot clock following the 1953-54 NBA season in an effort to try to speed up the game of basketball. The lack of pace in NBA games in the early 1950s was typified by a game between the Fort Wayne Pistons and the Minneapolis Lakers on Nov 22, 1950. The Pistons defeated the Lakers 19 - 18 in the lowest scoring game in NBA history. Each team had only four baskets.

Can you name the highest scoring game in NBA history? (Answer inside)

Taken from the NBA website: www.nba.com/analysis/00422949.html



From L to R: Dan Johnson, Vice President; Tom Howell, 1st Shift Supervisor; Dave Larson, President

TOM HOWELL RECEIVES 20 YEAR AWARD FROM WESTLAND

Tom Howell, shown between Dan Johnson & Dave Larson, has achieved 20 years of excellence at Westland Corporation. Tom supervises our first shift, working to ensure all components meet Westland's high quality standards ... and are completed on time.

Tom's expertise and attention to detail has certainly played a major role in our success these past 20 years. Thanks Tom, for a job well done!



From L to R: Dave Larson, President; Randy Wise, Sales Manager; Dan Johnson, Vice President

RANDY WISE RECOGNIZED FOR 20 YEARS OF SERVICE

Randy Wise recently received a 20 year award from Westland. His service and dedication have truly played a valuable part in Westland's success.

Randy is our Sales Manager. He works extensively with customers and our representative agencies. His commitment to customer satisfaction has strengthened our reputation of excellent service after the sale.

Randy is shown between Dave Larson, President and Dan Johnson, Vice President of Westland.

Answer to Can You Name: The highest scoring game in NBA history was between the Denver Nuggets and the Detroit Pistons on 12/13/1983. The Pistons won the triple over-time game by a score of 186-184.

www.nba.com/history/highest_scoring_game_021107.html

RECOGNIZING WEAR

Common Symptoms and Causes of Component Wear

Any of these symptoms in your processing environment could indicate the presence of wear to a degree that your performance may result in inefficient production, which means loss of profits.

SYMPTOMS OF WEAR IN EXTRUDER OPERATIONS

The most common and easily recognized symptoms of cylinder and screw wear in extruder operations include:

- Increased screw speed (RPM) to maintain normal output;
- Above normal melt temperatures;
- Reduced product output;
- Poor product appearance (metal particles, streaks or dark specks).

SYMPTOMS OF WEAR IN INJECTION MOLDING OPERATIONS

In an injection molding environment, the conditions which are symptomatic of cylinder, screw and/or valve wear include the following:

- Screw rotating backwards during injection;
- Inconsistent packing of a part resulting in defective production;
- Inability of the screw to hold a cushion;
- Longer than normal recovery time;
- Increase in overall cycle time;

- Streaking or lack of uniform appearance in parts produced;
- Metal particles or dark (appearing burned) specks in parts;
- Difficulty in achieving a color change;
- Heats overriding set points.

If you are experiencing any of these symptoms in your production, check for the potential causes in order to find the proper solution.

The chart on the next page presents a common sense approach to tracking down processing issues that affect your production and profits.

CAUSES OF WEAR IN CYLINDERS, SCREWS AND VALVES

The causes of wear can be many and varied in any given operation. Included in the list are:

- Misaligned machine components indicating a bent screw or cylinder. It might even be a bent screw drive;
- Foreign particles entering melt perhaps due to a lack of magnetic equipment to prevent entry through the hopper. Also poor plating can lead to the dislodgement of plating particles;
- Abrasive fillers and reinforcements used in the continuous processing of plastics, especially when combined with too low of a heat profile, high back pressure and/or a worn valve;
- Processing polymers especially conducive to wear, such as high molecular weight, high density polyethylene;

Continued on Page 4

Send Your Worn Screws and Cylinders to



Westland Corporation

For A No-Cost Evaluation

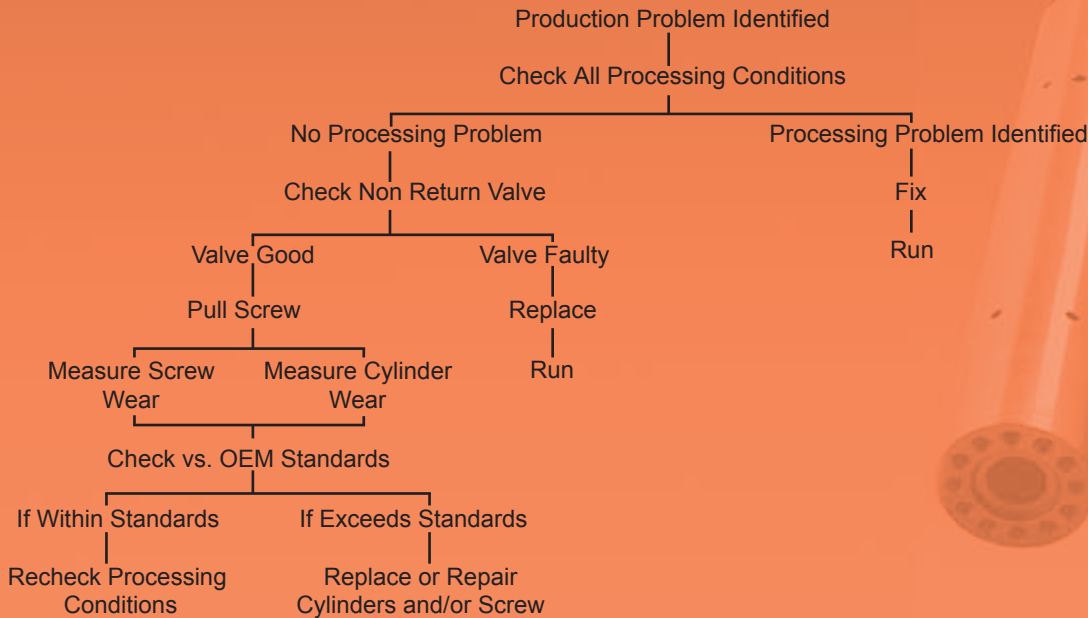
We will quickly quote repair and/or replacement costs

Call Us At 800-247-1144

For Further Details

Common Sense Approach To PROBLEM IDENTIFICATION

Obviously all of the processing conditions should be checked first and eliminated as a cause of the production problem. Only then should one pull the screw and inspect it, along with the valve and the cylinder for excessive wear. The following depicts a common sense approach to problem identification.



MEASURING COMPONENT WEAR

Repair or Replacement of Worn Components is Essential to Productivity

Measuring Cylinder Wear

Wear on the bore of a cylinder should be measured in the following manner:

- 1) While the cylinder is hot, clean the ID of any adhering plastic using a soft wire brush and allow to cool to room temperature. (A copper or brass gauze can also be used.)
- 2) Set the dial bore gauge to the nominal bore diameter of the cylinder using a micrometer. At 2 to 3 inch intervals, take a gauge reading throughout the length of the cylinder. Record the results on a Barrel Inspection form. *
- 3) Examine the condition of the feed hole area for heavily worn spots. Look for cracks, gouges, faulty end cap or nozzle adaptor or other conditions needing repair and note all this information on the inspection form.

Measuring Screw Wear

Screw wear should be measured in the following manner:

- 1) While the screw is hot, clean it with a soft wire brush and allow to cool to room temperature. (A copper or brass gauze can also be used.)



Demonstrating the use of a flight micrometer for measuring screw wear

If an oven is used to clean the screw, take care to avoid temperatures exceeding 600°F. Higher temperatures, caused by an oven or careless use of an acetylene torch, can cause screw warpage, chrome-plating degradation, and surface blemishes. Remove any burrs observed after cleaning.

- 2) Measure the flight diameter every other flight with a flight micrometer.

Mark the flights and take two measurements at opposite axis at each mark. Record the results on a Screw Inspection form. *

- 3) Measure the diameter of the root between every other flight in the feed and meter sections with a micrometer or caliper and record the measurements.

- 4) Record the condition of the root for undercuts or "washout" conditions. Examine the nose threads and shank for wear. Note any cracks or chipped plating.

- 5) Check the screw for straightness by rolling on a flat table or surface plate.

Maintaining consistent records on your components helps identify wear and the proper time it warrants repair or replacement.

*** For a free copy of a sample Screw and Cylinder inspection report, call us at 800-247-1144 or email your request to: westland@westlandusa.com**

- Corrosive by-products such as acids and oxidizing agents;
- Improper processing methods, including excessive temperatures and improper start up and shut-down procedures;
- Interrelated causes such as a worn cylinder which results in a cracked flow ring;
- Inferior materials and/or workmanship of your cylinder, screw and/or valve.

Maintaining quality components in good operating conditions will help curb wear on your screws and cylinders.

Westland will do a thorough inspection of any screws and/or cylinders you ship to us, after which we will quote repair or replacement costs.

Call our sales engineers today at 800-247-1144 to further discuss our services and repair capabilities.

A STRONG PREVENTIVE MAINTENANCE PROGRAM

The First Line of Defense for Optimum Productivity

In one customer's high speed application, recovery time kept decreasing. In order to maintain the recovery rate, the RPM was raised which resulted in an increasing melt temperature. Raising the RPM to maintain an established recovery rate is typically the first sign of wear.

The increased melt temperature was also a result of the shear produced from the material passing over worn flights. These actions lengthened the cycle time.

As a screw and barrel wears, an inconsistent isothermal melt quality occurs. This creates inconsistent heat developing in concentrated sectors of the screw, taking away a shot-to-shot repeatability, which also contributes to raising the RPM to maintain recovery rate.

Raising the RPM to maintain an established recovery rate is typically the first sign of wear

When this customer's screw was finally pulled and components inspected, they were found to be over double the original clearance.

This processor had sacrificed cycle time due to slow recovery time which meant lost productivity and profits. Savings were being lost because the symptoms and causes of wear were not heeded.

Had a scheduled preventive maintenance program been in place to chart wear patterns on the screw, actions could have been taken sooner to ensure optimum productivity.

After the screw was replaced and the barrel relined, recovery time was reduced by 50% which in turn reduced cycle time by 35%.

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