# How to Extend the Life of Components Used in Vibratory Equipment

Vibratory equipment works under constant motion, load, and abrasion, so small ignored maintenance issues can quickly turn into premature component failure. Monitoring stroke and shaft RPM to stay within design parameters, in conjunction with regular inspections and cleaning, helps extend the life of springs, bearings, motors, screen media, liners, fasteners, and structural parts while reducing unplanned downtime.

## Key Practices for Longer Component Life

- **Inspect equipment routinely.** Check screen decks, side plates, cross members, springs, drive components, fasteners, and guards for wear, cracks, corrosion, looseness, or abnormal movement. Inspection should include taking stroke readings to determine your cleaning schedule. View the ACTION maintenance checklist.
- **Lubricate bearings properly.** Follow the manufacturer's recommended lubricant, quantity, and interval. Under-lubrication increases friction, while over-lubrication can cause overheating or seal damage. View the bearing maintenance procedure. Click here for a video on how to relubricate Rexnord PT select bearings
- **Clean material buildup.** Remove dust, fines, packed material, and debris from decks, chutes, motor housings, in/around moving parts and support areas to prevent blinding, imbalance, and excess strain.
- **Maintain correct drive alignment.** Check belts, pulleys, motor mounts, shafts, and drive assemblies for wear or misalignment to prevent excess wear on drive components.
- **Tighten fasteners on schedule.** High-frequency vibration can loosen fasteners. Use proper OEM hardware, torque values, and replace damaged hardware before it affects the frame or component. View the recommended hardware torque table.
- **Monitor vibration, noise, and temperature.** Changes in amplitude, sound, bearing temperature, or motor load are early warning signs that a component may be wearing or failing.
- **Use ACTION parts and consult ACTION before modifications.** Select ACTION components that match the equipment design, operating load, material type, and duty cycle. If considering equipment modifications, consult with ACTION first to confirm the change will not affect safety, performance, balance, or structural integrity.

## Component-Specific Tips

| Component | How to Extend Service Life |
|---|---|
| **Bearings** | Use the correct grease, keep contaminants out, monitor temperature, and listen for grinding or squealing noises. |
| **Springs and mounts** | Inspect for cracking, sagging, uneven height, corrosion, and loss of isolation. Replace matched sets when required. |
| **Screen media** | Maintain proper tension, clean plugged openings, and replace torn or worn panels before they damage the deck or reduce product quality. |
| **Motors and drives** | Keep housings clean, verify belt alignment and tension, check mounts, and investigate overheating or changing motor load. |
| **Fasteners and clamps** | Follow torque specifications, inspect after start-up and scheduled shutdowns, and replace stretched, cracked, or corroded hardware. |
| **Liners and wear surfaces** | Inspect thickness, gouges, cuts, and exposed metal. Repair minor damage when appropriate and schedule replacement before structural wear begins. |
| **Frame and structural members** | Look for cracks, fatigue, weld damage, and movement around cross members, side plates, and support points. |
| **Rocker Arm Bushings and Clips** | Clean around clips to prevent excess friction on the rubber bushing. Inspect clips for wear during each bushing replacement, and ensure the hardware is torqued per specifications for proper bushing function. |

## Warning Signs That Need Immediate Attention

- Unusual grinding, rattling, squealing, banging, or knocking sounds
- Sudden change in vibration pattern, stroke, or amplitude
- Loose bolts, cracked welds, or visible frame movement
- Hot bearings, overheating motors, or burning smell
- Uneven material flow, screen blinding, or reduced throughput
- Broken springs, sagging mounts, or excessive movement at support points
- Torn screen media, damaged liners, or exposed base metal

## Simple Maintenance Schedule

- **Daily:** Check that stroke is within design parameters.  Use this information to develop a cleaning schedule.  Clean decks and chutes, check for abnormal noise or vibration, inspect screen media, and confirm material is feeding evenly.  Note, one problem area that is often ignored is material accumulation around rocker arm/bushing brackets.  This can cause accelerated wear of rocker arm bushings, hardware and bushing brackets.
- **Weekly:** Check fasteners, springs, mounts, belts, guards, and lubrication points. Correct looseness or misalignment immediately.
- **Monthly:** Inspect structural components, document wear patterns, check liner thickness, review bearing temperature trends, check shaft RPM and inspect belts and sheaves.
- **Quarterly or during shutdowns:** Perform a deeper inspection of bearings, shafts, motors, frames, and suspension components. Replace worn parts before they fail in service.
- **Annually:** Review maintenance records, vibration data, and component replacement history to identify recurring problems and plan upgrades or preventive replacements.
  View the inspection schedule

## Operating Habits That Help

Even the best maintenance program can be undermined by poor operating conditions. Avoid overloading the machine, keep feed distribution even, correct material buildup quickly, and train operators to report changes in sound, motion, or performance. Consistent documentation is also important: maintenance records make it easier to spot repeat failures, plan replacement parts, and reduce downtime.

# Resources Referenced

Maintenance Checklist

Conveyor No._____ Inspector _____ Date_____

| YES | NO | MAINTENANCE CHECKLIST ITEM |
|---|---|---|
| | | Has the conveyor been modified or have any repairs been performed? |
| | | Does the foundation or support steel exhibit any signs of cracking, fatigue, or movement? |
| | | Is there excessive dirt or debris around components? Is clean-up required? |
| | | Is equipment located where normal noise levels will be within OSHA standards? |
| | | Has the wiring been modified? |
| | | Loss of pan integrity as evidenced by cracking, holes, or broken welds. |
| | | Are safety devices installed to protect systems, components, and personnel from unsafe conditions? |
| | | Are the stroke plates in place on the pan and balancer? |
| | | Are there any unusual noises? |
| | | Are there any pan or balancer interferences? |
| | | Are the guards in place? |
| | | Is there material build-up on the pan or sub-pan? |
| | | Are there any loose bolts? |
| | | Have the bearings been lubricated consistently? |
| | | Is the equipment safe to use? |
| | | Has the drive been reset at any time? |
| | | Have the drive belts or sheaves been replaced? |
| | | Have the drive bearings been replaced? |
| | | Has the application changed since the original installation? |
| | | Is vibration consistent and at design stroke? |
| | | Is the material travel speed satisfactory? |
| | | Is the pan size sufficient? |
| | | Does the material track straight down the pan without substantial weaving? |
| | | Is the Stroke Plate being read correctly? |

Diligent use of the Maintenance Checklist is required to monitor conveyor performance. Should a problem occur thereafter, you will be asked to forward copies of the Maintenance Checklist. To meet minimum safety requirements, information should be kept available for 2 years. ACTION suggests that the information be retained indefinitely.

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# Bearing Maintenance Procedure

ACTION VIBRATORY EQUIPMENT

At Action Vibratory Equipment, we are committed to providing you with the most current technical information for your machinery. Following these specific steps created by Rexnord can help prevent premature wear and minimize unexpected downtime.

| Step | Action | Description |
|---|---|---|
| C | **CLEAN** the area around the seal prior to lubrication | Remove all the dirty grease from around the seal and make sure the area around your workspace is clean. This way you can be positive that the grease coming out isn't being contaminated by outside sources. |
| L | **LUBRICATE** the bearing until the lubricant purges from the seal | All bearing seals are meant to purge. You want to see the lubrication that is being purged so you can determine whether or not your grease is contaminated. |
| E | **EXAMINE** and evaluate the condition of the purged grease | Does it feel smooth? Is it the right color? If you put it between your fingers and pull them apart, does it string or stretch? If not, it is contaminated and has little lubricating potential. |
| A | **ADJUST** the frequency of lubrication based on the grease's condition | If your grease is contaminated, lubricate twice as often. If you grease at four weeks, adjust it to two weeks, and so on. |
| R | **REPEAT** the process until the purged lubricant has little or no contamination | Repeat the process until you find the optimum frequency and amount. |

Other maintenance practices to keep in mind:

- New bearings come pre-greased and do not require additional grease at installation.
- When referencing the grease schedule and if using a pump gun, find out how many pumps equate to the required ounces.
- When measuring bearing temperature, measure on the outer black cast bearing housing, not the inner metallic collar. The outer housing should not exceed 160° F, and measure after at least 3 hours of operation after new grease has been added.
- The lubrication frequency should be doubled for every 20° F above 150° F.
- Only use lithium based grease that is class EP2 or equivalent in the bearings.
- Clean the grease gun tip and lube fitting before putting any grease in. Any debris left can get pushed into the bearing when greasing.

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**Recommended Torques (Nut Torque)**

| BOLT DIAMETER | THREADS / INCH | FOOT LBS. (DRY THREADS) SAE GRADE 5 | FOOT LBS. (DRY THREADS) SAE GRADE 8 |
|---|---|---|---|
| 3/8" | 16 | 33 | 47 |
| 1/2" | 13 | 75 | 110 |
| 5/8" | 11 | 150 | 210 |
| 3/4" | 10 | 260 | 380 |
| 7/8" | 9 | 430 | 600 |
| 1" | 8 | 640 | 910 |
| 1-1/4" | 7 | 1120 | 1820 |
| 1-1/2" | 6 | 1950 | 3160 |

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# Inspection Schedule

| Frequency | | Visual Inspection |
|---|---|---|
| Daily | ☐ | The pans and screens are completely clean and clear of debris buildup. |
| Daily | ☐ | All moving parts, springs, and rocker arms are completely clean and clear of debris. |
| Daily | ☐ | The unit is free of any modifications or additional weight. Contact Action about ANY modification. |
| Daily | ☐ | The unit does not make any excessive or unusual noise. |
| Daily | ☐ | The unit does not have any visual lateral (side to side) movement during operation. |
| Daily | ☐ | Inspect the pan, balancer, and base for cracks. |
| Daily | ☐ | Ensure the support structure is stable and not excessively moving. |
| Weekly | ☐ | Ensure that rocker arm bushings are not worn out, arms are straight, and bushing brackets function as designed. |

| | | Part Inspections<br>Ensure that each of the following parts are free from damage and that the hardware is tight |
|---|---|---|
| Daily | ☐ | Reaction springs |
| Daily | ☐ | Drive springs |
| Daily | ☐ | Rocker arms, bushings, and bushing brackets. |
| Daily | ☐ | Isolation springs (if applicable) |
| Daily | ☐ | Bearing rings |

| | | Stroke and RPM Checks |
|---|---|---|
| Daily | ☐ | Check the stroke plates on pan (and balancer if applicable) to measure the stroke. The unit should be ± 2 mm of the design stroke on the stroke plate. Contact Action about any excessive over or under stroke after all other tasks have been checked. |
| Weekly | ☐ | Measure shaft RPM using a strobe light or tachometer. The design RPM is on the stroke plate. If shaft RPM 10 or below design means the unit must replace sheaves, sheave bushings, and belts. Contact ACTION to purchase replacements. |

| | | Drive |
|---|---|---|
| Bi-Weekly | ☐ | Bearings are greased according to the greasing schedule in the ACTION manual. DO NOT OVER GREASE THE BEARINGS. If using a pump gun, calculate how many ounces are in a single pump to find how many pumps are needed. |
| Weekly | ☐ | Bearings do not exceed 160° F after 3 hours of operation. |
| Weekly | ☐ | Check shaft timing (refer to the Action manual and Action YouTube page for more details.) |
| Weekly | ☐ | Ensure that the eccentric shaft and bearings are completely free from damage and at the proper designed elevation and angles. |
| Weekly | ☐ | Ensure that the drive spring connecting bracket is secure and free from damage. |

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