Metalphoto of Cincinnati

Industrial Pump Maintenance Checklist

Pre-Maintenance Safety Procedures

- [ ] **Lockout/Tagout (LOTO) procedures followed**
  - [ ] All power sources shut off (electric, hydraulic, pneumatic)
  - [ ] Each source locked with assigned lock
  - [ ] Tags applied with name, date, reason
  - [ ] Equipment tested for zero energy
  - [ ] Keys retained by authorized personnel
- [ ] **Hazard Assessment completed**
  - [ ] Slippery surfaces cleaned and marked
  - [ ] Chemical exposure identified and PPE selected
  - [ ] Mechanical risks (e.g., exposed belts) guarded
  - [ ] All hazards communicated to the team
- [ ] **Personal Protective Equipment (PPE) in use**
  - [ ] Safety glasses or goggles
  - [ ] Chemical-resistant gloves
  - [ ] Steel-toe boots
  - [ ] Hard hat
  - [ ] Hearing protection
  - [ ] PPE inspected and undamaged

Visual Inspection

External Condition Assessment

- [ ] Casing undamaged (no dents/cracks)
- [ ] Paint/coating intact
- [ ] Labels and warnings readable
- [ ] Surfaces clean (no buildup)

Leak Detection

- [ ] No fluid around or under pump
- [ ] All seals and gaskets dry
- [ ] Connections tight
- [ ] Leaks marked and reported

Mounting and Alignment

- [ ] All bolts secure
- [ ] Base and supports undamaged
- [ ] Coupling aligned (check with straightedge/laser)
- [ ] No movement during operation

Mechanical Component Maintenance

Couplings and Bearings

- [ ] Couplings not cracked or worn
- [ ] Coupling alignment correct
- [ ] Bearings spin smoothly and quietly
- [ ] No overheating in bearings
- [ ] Mounting bolts tight

Seals and Gaskets

- [ ] No drips or moisture at seals
- [ ] No cracks, hardening, or swelling in gaskets
- [ ] Gland packing and mechanical seals checked
- [ ] Correct seal replacements used

Lubrication

- [ ] Correct oil/grease type used
- [ ] Lubrication intervals followed:
  - [ ] Small centrifugal: grease every 3 months
  - [ ] Large industrial: oil monthly
  - [ ] Magnetic drive: slide bearing every 6 months
- [ ] Fittings cleaned before filling
- [ ] Proper amount added
- [ ] Old lubricant removed if needed
- [ ] Lubrication activity logged

Operational Testing Procedures

Startup Test

- [ ] Power supply verified
- [ ] Pump and suction line primed
- [ ] Inlet/outlet valves opened slowly
- [ ] Pressure within safe range
- [ ] Listen/observe for abnormal sounds, movement, leaks

Shutdown Test

- [ ] Cooldown time allowed
- [ ] Power turned off in correct sequence
- [ ] Valves closed per manufacturer

Flow Rate Measurement

- [ ] Flow meter attached
- [ ] Pump run at normal load
- [ ] Flow rate recorded and compared to rated capacity
- [ ] Issues flagged if deviation >10%

Noise & Vibration Analysis

- [ ] No grinding/squealing from bearings
- [ ] No shaking/rattling from housing
- [ ] Piping connections tight
- [ ] No leaks/hissing from seal area
- [ ] Abnormal vibration documented and investigated

Documentation & Recordkeeping

Maintenance Log Updated

- [ ] Pump nameplate info recorded
- [ ] Date of maintenance
- [ ] Task performed
- [ ] Technician name
- [ ] Tools/checklists used

Irregularities Reported

- [ ] Date/time of issue
- [ ] Pump model/serial number
- [ ] Description of problem (noise, leak, vibration)
- [ ] Action taken and by whom
- [ ] Supervisor notified if needed