DETROIT PUMP

Symptoms & Causes of Mechanical Pump Failures

	Bearings Run hot and/or fail on regular basis	High rate of mechanical seal failure	Packing has short life	Pump vibrates at higher than normal levels	Pump is drawing too much power	Wear of internal wetted parts is accelerated
Pump not primed or prime lost						
Suction and/or discharge valves closed or clogged				●		
Suction piping incorrect						
Insufficient NPSH available		●		●		●
Excessive air entrapped in liquid						
Speed (rpm) too low						
Incorrect rotation					●	
Broken impeller or bent vanes	●			●		
Incorrect impeller or impeller diameter						
System head too high						
Instruments give erroneous readings						
Air leak in suction						
Excessive shaft misalignment	●	●		●		
Inadequate lubrication	●					
Lubricant contamination	●					
Inadequate lubricant cooling	●					
Axial thrust or radial loads higher than bearing rating	●					
Improper coupling lubrication	●			●		
Suction pressure too high	●	●				
Bearing incorrectly installed	●	●				
Impeller out of balance	●	●				
Overheating of seal faces		●				
Excessive shaft deflection	●	●				
Lack of seal flush at seal faces		●				
Incorrect seal installation		●				
Pumps is run dry		●				
Pump run off design point	●	●	●	●	●	
Shaft/shaft sleeve worn		●	●			
Packing gland not properly adjusted			●			
Packing not properly installed			●			
Impeller clogged				●		
Coupling out of balance	●	●		●		
Baseplate not installed properly	●	●		●		
Pump operating speed too close to system's natural frequency				●		
Bearing failing	●	●		●		
Piping not properly anchored	●	●		●		
Pump and/or driver not secured to baseplate	●	●		●		
Specific gravity higher than specified	●	●			●	
Viscosity higher than specified	●	●			●	
Internal clearances too tight				●	●	
Chemicals in liquid other than specified						●
Pump assembled incorrectly	●	●	●	●		●
Higher solids concentration than specified						●