

How to use:

1. Find the problem you have in the diagonal columns to the left.
2. Search the rows below for possible troubles you may be facing regarding your problem.
3. Can't find what you are looking for?

Contact Tri-Canada Today

Problem

Pump does not deliver water

Insufficient capacity delivered

Insufficient pressure delivered

Pump loses prime after starting

Pump requires excessive power

Stuffing box leaks excessively

Packing has short life

Pump vibrates or is noisy

Bearings have short life

Pump overheats and seizes

Possible Causes

Suction Troubles									
1	Pump not primed	●							●
2	Pump or suction pipe is not completely filled with liquid	●	●		●			●	
3	Suction pipe lift is too high	●	●		●			●	
4	Insufficient margin between suction and vapor pressure	●	●					●	●
5	Excessive amount of air or gas in liquid		●	●	●				
6	Air pocket in suction line	●	●		●				
7	Air leaks in suction line		●		●				
8	Air leaks into the pump through the stuffing box		●		●				
9	Foot valve is too small or partially clogged		●					●	
10	Inlet of suction pipe insufficiently submerged		●		●			●	
11	Water seal pipe plugged	●			●			●	
12	Seal cage improperly located in stuffing box, preventing sealing fluid entering space to form seal				●		●	●	
System Troubles									
13	Speed too low		●	●					
14	Speed too high	●				●			
15	Wrong direction or rotation			●		●			
16	Total head of system higher than design head of pump	●	●	●		●			
17	Total head of system lower than design head of pump	●				●			
18	Specific gravity of liquid different from design					●			
19	Viscosity of liquid is different from design criteria		●	●		●			
20	Operation at a very low capacity							●	●
21	Parallel operation of pumps unsuitable for such operation		●	●					●
Mechanical Troubles (continued on next page)									
22	Foreign matter in impeller	●	●			●		●	
23	Misalignment	●				●	●	●	●
24	Foundations not rigid							●	
25	Shaft bent					●	●	●	●
26	Rotating part rubbing on stationary part					●		●	●

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Mechanical Troubles (continued)									
27	Bearings worn							●	●
28	Wearing rings worn		●	●		●			
29	Impeller damaged		●	●				●	
30	Casing gasket defective permitting internal leakage		●	●					
31	Shaft or shaft sleeves worn or scored at the packing						●	●	
32	Packing improperly installed					●	●	●	
33	Incorrect type of packing for operating conditions					●	●	●	
34	Shaft running off-center because of worn bearings or misalignment						●	●	●
35	Rotor out of balance resulting in vibration						●	●	●
36	Gland too tight resulting in no flow of liquid to lubricate packing					●		●	
37	Failure to provide cooling liquid to water-cooled stuffing box						●	●	
38	Excessive clearance at the bottom of the stuffing box between the shaft and casing, causing packing to be forced into pump interior						●	●	
39	Dirt or grit in sealing liquid, leading to scoring of shaft or shaft sleeves						●	●	
40	Excessive thrust caused by a mechanical failure inside the pump or by the failure of the hydraulic balancing device, if any							●	●
41	Excessive grease or oil in the bearing housing or lack of cooling, causing excessive bearing temperature							●	●
42	Lack of lubrication							●	●
43	Improper installation of anti-friction bearings (damage during assembly, incorrect assembly of stacked bearings, use of unmatched bearings as a pair, etc.)							●	●
44	Dirt getting into the bearings							●	●
45	Rusting of bearings due to water getting into housing							●	●
46	Excessive cooling of water-cooled bearing resulting in condensation in the bearing housing from moisture in the atmosphere							●	●

PUMP SELECTION SPECIFICATIONS

Company: _____

Name: _____

Phone: _____

New Application? Y / N If no, replacing what model? _____ Why? _____

PLEASE SUPPLY ALL INFORMATION ON THE CURRENT PUMP

Liquids to be pumped: _____ Capacity required (GPM) _____

- Viscosity/Thickness _____ Size/Volume of Solids _____

- Specific Gravity _____ Abrasives _____

- Temperature (F/C) _____ P.H. _____

Sealing Preference _____ Mechanical Seal _____ Packing _____

Discharge Pressure/Head Required _____ Feet of head _____ PSI

Discharge conditions of required unknown:

- Static Discharge Head (Feet) _____

(Distance vertically from pump to discharge pipe) _____

- Total length of piping (Feet) _____ Pipe Size/Diameter (Inches) _____

- Type of Pipe _____

- Elbows, Fittings, or other restrictions to discharge flow, list quantity & type _____

Suction Conditions:

- NPSH Available _____

- Static Suction Lift (Feet) _____

(Distance vertically from pump down to liquid surface) If applicable

- Static Suction Head _____

(Distance vertically from pump down to liquid surface) If applicable

- Pipe Size _____ Pipe Length _____

- Type of Pipe _____

- Elbows, Fittings, or other restrictions to discharge flow, list quantity & type _____

Drive Information:

Specify if other than electric motor

- Enclosure _____ Cycles _____

- Coupling Preference _____

- Voltage _____ Phase _____

Manufacturer	Pump Type															
	CENTRIFUGAL ANSI	DIAPHRAGM	DOSING	DRUM PUMPS	FILTRATION	GEAR LINESHAFT TURBINE	MULTISTAGE	PERISTALTIC	POSITIVE DISPLACEMENT PISTON	PROGRESSIVE CAVITY	REGENERATIVE TURBINE	SANITARY	SOLIDS HANDLING	SUBMERSIBLE	SUMP SEWAGE EFFLUENT VANE	
All-Flo			•													
American Marsh	•	•					•	•					•		•	
Ampco Pumps		•								•		•			•	
AMT		•						•					•	•	•	
ARO/Ingersoll Rand			•						•							
Barnes		•											•	•	•	
Berkeley		•						•					•		•	
Burks		•											•			
Cat Pumps		•							•					•		
Continental										•	•					
Deming	•	•					•	•							•	
Fill-Rite									•	•					•	
Finish Thompson		•							•						•	
Fluid-o-Tech			•			•			•	•				•		
Flux		•	•		•				•			•				
Global Filter						•										
Graco			•		•				•	•	•		•			
Gusher	•	•						•						•		
Hydro Systems				•		•										
Little Giant		•						•						•	•	
MP Pumps		•											•		•	
MTH Pumps		•									•				•	
Myers		•						•					•	•	•	
Oberdorfer		•				•				•						
Pump Components	•	•											•		•	
Pumper Parts																
Roper						•				•	•					
Sethco		•			•											
Sotera			•							•						
Standard Pump			•		•					•			•			
Sta-Rite		•											•	•	•	
Tricom	•	•											•		•	
Tuthill						•				•						
Versa-Matic			•		•							•				
Weinman		•						•							•	
Wright Flow										•			•			
Xylem/Goulds		•						•					•	•		