Subject Diagnosis of Windmill Pumping Problems

Symptom	Possible Cause	Recognised by
Pump does not deliver any water	• Broken Pump Rod • Plunger Valve jammed open	• Windmill turns easily without lifting any water • Water at T piece remains full
	• Bottom Valve of Pump is jammed open • Bottom end of Suction Pipe is above the water (inadequate water supply) • Hole in suction pipe above the water level • Suction Pipe is blocked • Pump too far above the water level (max. height should not exceed 5 Mtrs)	• Water rises and falls at the T piece • Air bubbles rising in Column
	• Delivery Pipeline is blocked • Pipeline too long • Pipeline diameter is too small (friction loss	• Windmill pumps water when the delivery pipeline is removed.
Pump delivers a steady but reduced flow	• Worn Pump Cups, or Pump Cylinder	• Water level at T piece will stand when Pump stops
	• Worn Valves or Valve Facings	• Water level at T will drop when pump stops
	• Leak in Rising Column	• Water level drops when pump stops
Pump delivers a full stream when started, but then diminishes or ceases	• Bore or well not making enough water • Suction pipe too long • Suction pipe too small • Suction pipe partly choked • Insufficient waterway in Valves (porting) • Partial vacuum below Plunger	• Excessive knocking in Rising Column • Water splashing at T piece • Air bubbles in Rising Column • Pump Rod appears to be sucked downward on the down stroke • “Hammer” in the pipeline
Windmill requires a strong wind to operate	• Pump size too large • Delivery pipeline diameter too small • Windmill too small • Air Chamber is water logged	• Windmill “rocks” at the bottom of the stroke (tries to turn, then winds back) • Hammer in the delivery pipeline. • Pump does not deliver rated flow
Windmill does not appear to face the wind	• Windmill Gearbox seized on Pivot Tube • Tower not vertical • Trees or buildings in path of the wind • No (or wrong) Oil in Gearbox	• Windmill does not pump a full flow in good winds • Tail of Windmill does not operate in expected direction of the wind
Tail of Windmill waves around erratically	• Turbulence • Windwheel is not 5 Metres above obstructions within 100 Metres	• Wear in the Tail Pin • Erratic operation • Rated flow not being achieved
Damage to Windwheel	• Turbulence (causes Tail to swing into the Wheel) • Broken Hub Shaft (most usually caused by turbulence • Bearing worn • Windmill too lightly loaded • Loose bolts in Windwheel • Windwheel tied to Tower	• Sails broken or missing • Sails hit Tower or Furling Unit

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