RAJAMANE INDUSTRIES PVT.LTD., BANGALORE 560048

RAJAMANE COOLANT PUMPS- TROUBLE SHOOTING

TROUBLE	REASON	REMEDY
1) Low discharge / Low pressure	a)Wrong direction of rotation	Change the direction
	b) High head	Choose next high head pump
	c) Impeller cover fitted wrongly	Check the involute & fit the impeller cover in correct position
	d) Single phasing of supply	Check supply voltage
	e) Outlet clogged	Clean the outlet
	f) Smaller pipe diameter taken for outlet	Use the pipe of pump outlet size
	g) Low liquid level	Add some more liquid to the tank. Please check the maximum liquid level, 20mm below pump flange ,as shown in the catalogue, when m/c. turned off.
	h) Wear out of bush bearing	Replace with new set of bush & sleeve
	i) Use of hydraulic fittings for bends,diversions & splittings	Replace all hydraulic fittings by GI pipe fittings which reduces the head loss.
	j) Suction mesh clogged	Clean the suction mesh. If frequent, check the filtration or chip Conveyor.(aluminum chips are to be Specially filtered)
	k) Suction gap low	Increase suction gap-refer catalog.
	l) High viscous oil	Check oil viscosity- should be less than 15 cst. Consult RIPL.
	m) Impeller vanes worn out -due to rubbing with cover	Replace the impeller & tighten the bolt/ nut properly. Check pump duty cycle- if more than 10 On/off per hour contact RIPL.
	-due to contamination	Replace impeller/s. Check contamination in the tank & consult RIPL.

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2) High current	a) Between phase voltage difference	Correct the between phase voltage in stabilizer or check supply voltage
	b) Single phasing	Check the supply voltage & terminals leads of the pump &supply. Check OLR & contactors.
	c) High viscosity of liquid	Check the liquid viscosity. It should not be more than 20 CST.
	d) Wrong operating point- pump operating at low head/ non-operating range.	Change pump to suitable model-give details on existing flow & pressure/head Fit a gate valve at pump outlet.
	e) Bush/sleeve tight.	Oil the bush /sleeve point, force rotate the shaft for few rounds.
	f) Dry run- without pump portion immersed in liquid.	do as per (e). Check fluid level in the tank.
3) Noise	a) Bearing failure due to entry of coolant into the motor	Replace the bearing & see that the maximum level of liquid is as shown in the catalogue Do not keep the pump upside down while taken out for tank cleaning or general maintenance. Keep a sponge –5-10 mm thick- on fan cover & clean it frequently.
	(bearing failure can happen due to entry of mist through fan cover, through shaft entry point, due to hot liquid)	
	b) Solid particle stuck in the impeller housing	Remove the impeller cover & clean it. Filter the liquid before pumping
	c)Wear out of bush bearing	Replace with new set of bush & sleeve
	d) Pump noise level itself is high.	RR50 series pumps emit more noise Consult RIPL.
	e) Coupling is loose on the shaft	Replace it with new set, bored to the exact O.D of the shaft
	f) Motor loosely fitted on the coupling stem	Tighten the 4 mounting bolts on the flange of the motor

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	g) Coupler spider rubber worn out	Replace the rubber
	h) Impeller rubbing the cover	Tighten the impeller holding nut/ bolt.
	i) Fan & fan cover rubbing	Tinker or replace fan/ fan cover.
	j) Wrong direction of rotation	Check & reverse the direction of rotation.
	k) Liquid level below min. mark	Add liquid.
4) Discharge through the outlet coming after a delay of few seconds	a) Impeller wrongly fitted	Check the impeller key & holding bolts/nuts Tighten properly
	b) Direction of rotation may be wrong	Change the direction by interchanging any two supply leads
	c) Too lengthy pipe line	Fix a non return valve just after the outlet or best at the min. diam. of the pipe line.
	d) Air trapped inside the pipe line	As in (c) or have a separate solenoid valve which can be programmed for few seconds after the pump is turned on to allow the trapped air to escape
	e) Motor problem(low R.P.M,single phase,etc)	Check the motor supply & resistance. If the problem still exists consult RIPL.
	f) Suction pipe leakage	Clean the suction pipe for any leakage holes or cracks & the foot valve ,if fitted
	g) Bush wear out	Change the bush
	h) liquid level	Maintain the liquid level as in the catalogue. If using an extension pipe at the suction end care should be taken to maintain the liquid level as in catalogue,while turning on the pump
2) Coupler heating & Noise (not for rigid, split type couplings)	a) Absence of air gap between two pieces of coupler	Correct the depth of the bore in the coupler Lift the top half of the coupling & tighten the Grub screw.

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	b) Incorrect shaft extension of the motor	Face the motor shaft or change the bore depth in the coupler.
4) Discharge through the outlet coming after a delay of few seconds	a) Impeller wrongly fitted	Check the impeller key , holding bolts & nuts Tighten properly
	b) Direction of rotation may be wrong	Change the direction by interchanging the any two supply leads
	c) Too lengthy pipe line	Fix a non return valve just after the outlet
	d) Air trapped inside the pipeline	As in (c) or have a separate solenoid valve which can be programmed for few seconds after the pump is turned on, to allow the trapped air to escape
	e) Motor problem	Check the motor supply (low resistance R.P.M,single phas etc) If the problem still exists consult the company for details
	f) Suction pipe leakage	Clean the suction pipe for any leakage holes or cracks & the foot valve if fitted
	g) Bush wear out	Change the bush
	h) liquid level	Maintain the liquid level as in the catalogue. If using an extension pipe at the section, care should be taken to maintain the liquid level as in the catalogue , while turning on the pump.
5) Spilling/leakage through shaft entry point/bush	a)Metallic slinger moved up on the shaft.	Lower the metallic slinger & tighten the grub Screw. keep at minimal distance from bush.
	b) bush worn-out.	Replace with new one
6) Pressure drops after few Few seconds of turning On the pump.	a) Liquid level dropping.	Recharge the tank with liquid. Immersion depth of pump to be increased, contact RIPL.
	b) Suction gap is low.	Increase the suction gap by providing a spacer at pump mounting.
7) Early failure of bush	a) Contamination in the	Replace with a pump having no bush

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Bearings / mechanical seal	liquid.- high failure in Case of grinding application	bearings. Replace bush bearing/ mechanical with harder material-consult RIPL.
8) Shaft jam .	a) Bearing jam.	Refer above cases of High Current.
	b) Bush jam- due to dry run.	Refer above case for High current.
	c) Fan / Fan cover jam.	Tinker the fan cover & fit.
	d) Impeller stuck due to solid particle.	Remove cover & clear the waste.
	e) Testing in water- bush will jam while testing, as water is not a lubricant.	Refer above case for High current.
8) Frequent failure of Impellers.	a) Contamination in the liquid.	Refer the recommendation chart For contamination handling capacities Of pumps & adopt suitable filtration.

RIPL- Rajamane Industries Pvt. Ltd.