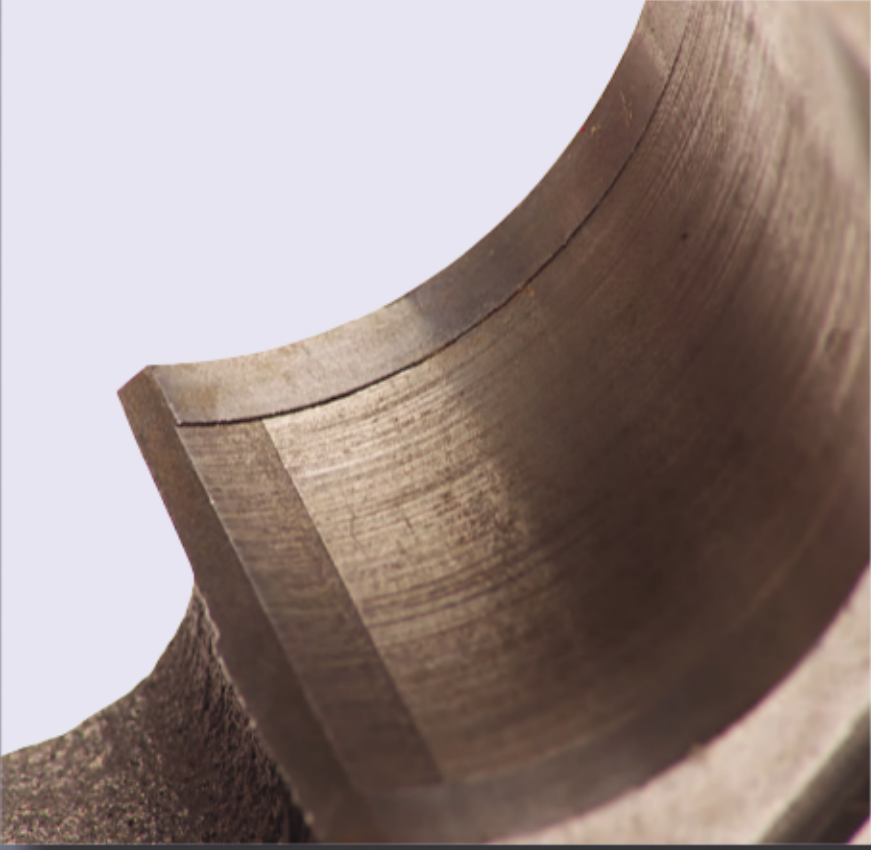


HYDRAULIC PUMP DAMAGE

HOUSING CUT OUT

Pump housing cut-out in excess of .005" due to over pressurization.



CAUSES OF DAMAGE

Pump over pressurization. The pump is being operated beyond its pressure rating or subjected to sudden pressure spikes.

SOLUTION

Review application and check against the pump specifications. Check relief valve setting and function. Replace pump or body section.

CRACKED HOUSING

Pump body cracked at pressure port due to over pressurization.



CAUSES OF DAMAGE

Over pressurization. The pump is being operated beyond its pressure rating or subjected to sudden pressure spikes. Can also be caused by overtightening of NPT fittings.

SOLUTION

Review application and check against the pump specifications. Check relief valve setting and function. Replace pump or body section. Check torque specification of fittings.

BURNT PUMP BODY

Discoloration of pump body in the gear housing or relief valve area due to excessive heat.



CAUSES OF DAMAGE

PTO left engaged while truck driven. Two-line dump pump used in continuous duty application. Relief valve set too low or stuck open.

SOLUTION

Review application and replace pump. Use automatic PTO kick-out valve. Check relief valve setting and function.

THRUST PLATE PHONOGRAPHING

Circular scoring on thrust plate face resembles the grooves on a record.



CAUSES OF DAMAGE

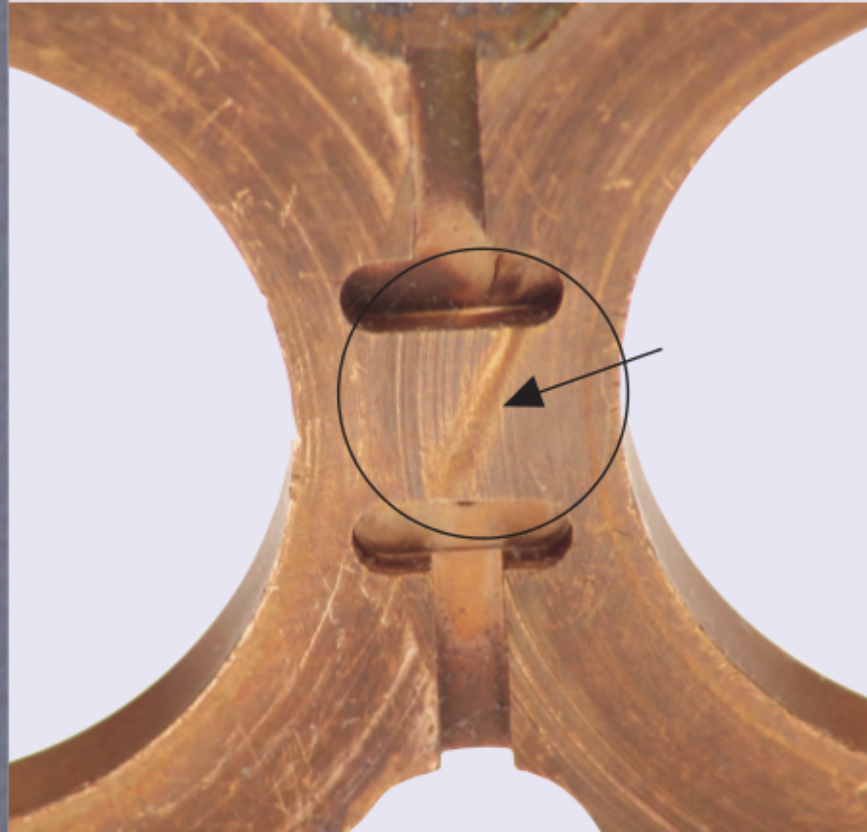
Large particle (sand, metal shavings, etc.) contamination.

SOLUTION

Replace thrust plates and seals. Flush entire system and replace oil and filters.

THRUST PLATE JETTING

Diagonal "erosion" on face of thrust plate.



CAUSES OF DAMAGE

Fine particle contaminates in high concentration.

SOLUTION

Replace thrust plates and seals. Flush entire system and replace oil and filters.

THRUST PLATE PITTING

Pitting of thrust plate surface, often in a "U" shaped pattern. May also occur on the pump body walls.



CAUSES OF DAMAGE

Excessive vacuum at the pump inlet creates cavitation bubbles which implode on the outlet side of the pump.

SOLUTION

Check vacuum at pump inlet. It should not exceed 5 in.Hg. Increase diameter of inlet hose. Clean suction strainer and reservoir breather. Remove suction line filter.

THRUST PLATE CRACKING

Cracks or complete fractures of the thrust plate.



CAUSES OF DAMAGE

Pump operated beyond its pressure rating or subjected to pressure spikes.

SOLUTION

Review application and check against the pump specifications. Check relief valve setting and function.

BURNT THRUST PLATE

Thrust plate face is blackened.



CAUSES OF DAMAGE

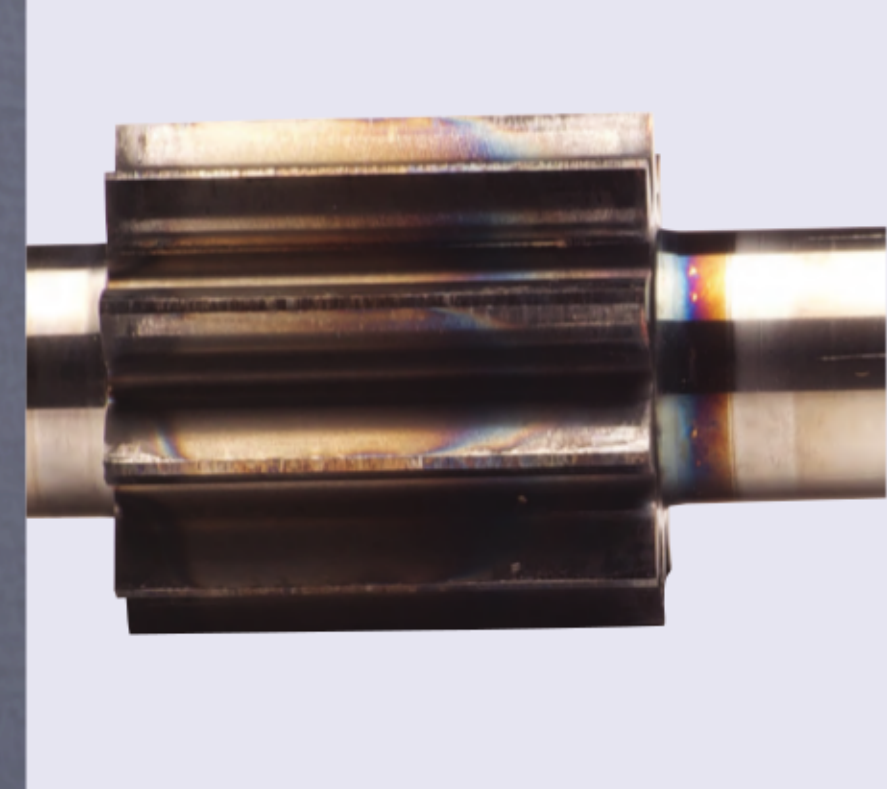
Overheating of pump.

SOLUTION

Replace thrust plates and all pump seals. Inspect other pump components for damage. Check relief valve setting and function. Heat discoloration is often a secondary symptom of cavitation or contamination damage.

BURNT SHAFT GEAR

Discoloration of gears due to excessive heat.



CAUSES OF DAMAGE

PTO was left engaged while truck driven. Dump pump used in continuous duty application. Relief valve set too low or stuck open.

SOLUTION

Review application and replace pump. Use automatic PTO kick-out valve. Check relief valve setting and function.

SHAFT SPLINE FRETTING

Worn shaft splines with brownish residue. The PTO shaft splines will show similar wear.



CAUSES OF DAMAGE

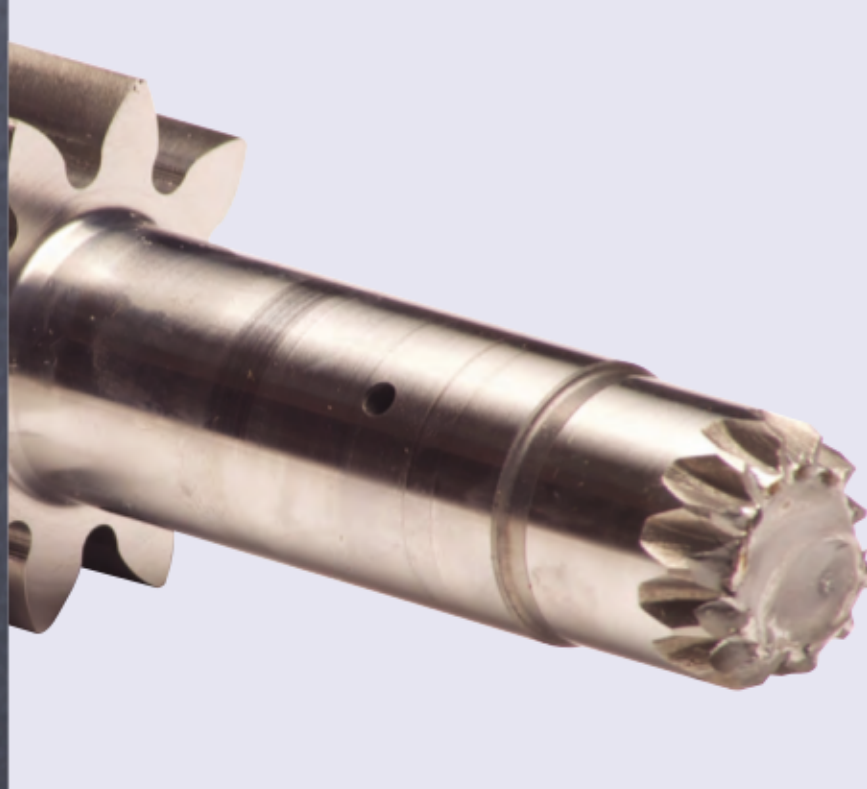
Caused by a combination of a lack of lubrication and harmonic engine vibrations.

SOLUTION

Replace pump shaft. Apply lubricant at regular service intervals. Specify Muncie PTO with greaseable output shaft option.

BROKEN/TWISTED SHAFT

Shaft is broken/twisted off at base of spline area.



CAUSES OF DAMAGE

Excessive operating torque or severe shock load.

SOLUTION

Review application and check against the pump specifications. Replace pump shaft. Check operation and setting of system relief valve.

SHAFT KEYWAY DAMAGE

Edges of keyway damaged. Marks where set screw moved under load.



CAUSES OF DAMAGE

Loose end yoke set screw. Seized slip yoke on driveshaft.

SOLUTION

Replace pump input shaft. Repair or replace driveshaft.

