PUMP TEMPERATURE

NOTE: The phrase “the pump heats” is inappropriate as it is not a unit of measurement.

Pumps reach different operating temperatures depending on their use and local operating conditions; what’s more, different sizes of pump are subjected to different levels of stress even when operating in identical conditions.

A temperature a few degrees higher than normal does not affect correct pump operation.

During the first hours of pump operation, conventional tapered roller bearings normally are subject to relatively high friction torque, but this drops after the running-in period.
During the running-in period, the temperature of the bearings increases rapidly due to the initial friction and then drops to a balanced level after the running in phase is over.
After 40 to 60 minutes, the temperature will gradually drop and settle between 45 and 70°C depending on the pump model.

The oil temperature, measured at the oil dipstick, can reach up to 70°C on some versions but this does not endanger correct pump operation.

Very high friction torque on the bearings may cause the oil temperature to increase by about a few degrees, but this is not dangerous for pump operation.

However, should the customer be concerned it is too high, it can be reduced by adding shims.

The pump may be noisy and the life of the bearing be reduced if the bearing is not sufficiently loaded.

Change the preload as follows:

a) Drain the oil out of the pump's crankcase.
b) Unscrew the screws on the closed bearing housing.
c) Remove the O-ring sealing the flange.
d) Alter the number of shims; add shims to reduce the preload and make the pump smoother or take shims away to increase the pre-load and make the pump "harder". (only add or remove one shim at a time).
e) Replace the O-ring.
f) Replace the flange and tighten the screws with the following torque ratings:
NMT / NPM / NLTI / XLTI / XXT / PXI pumps: 25 Nm
HFR / HHP pumps: 20 Nm.
g) Check the pump shaft turns in the correct direction.
h) Restore the correct oil level with the type of oil indicated on the pump's specifications label, using clean oil if possible