

# TECHNICAL BULLETIN

PROGRESSING CAVITY PUMPS | LS-TB-011



**BULLETIN**  
LS-TB-011

**TOPIC**  
PCP DURABILITY TESTING OVERVIEW

**ISSUE DATE**  
FEBRUARY 20, 2020

**ISSUED BY**  
ENGINEERING

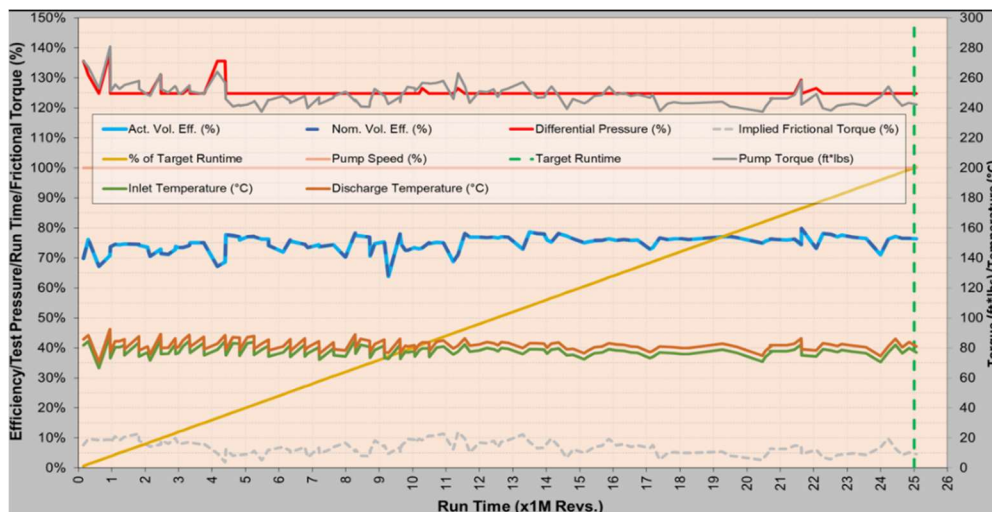
Testing is performed at the prescribed conditions for a given pump model/geometry and elastomer combination.

- 1) Test temperature – maximum rated temperature for the given model and elastomer, primarily driven by elastomer
- 2) Test Speed – maximum rated speed for the given model and elastomer, primarily driven by geometry
- 3) Test Pressure – targeted for 125% of published cavity pressure rating for the model/geometry and elastomer

**Pump Specifications:**

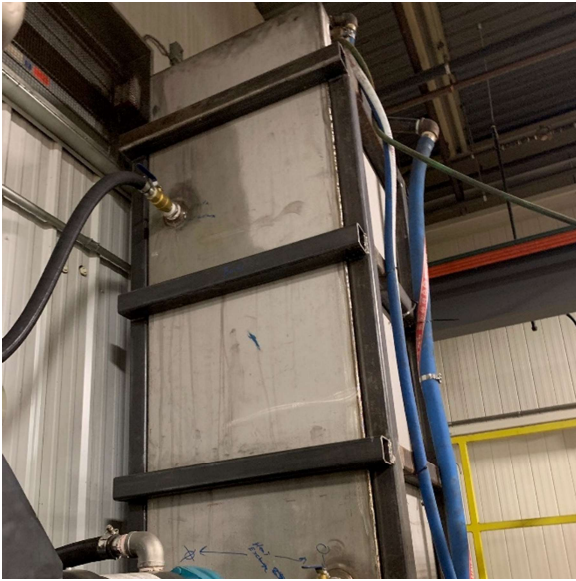
Nominal Capacity (m <sup>3</sup> /D/100rpm):	60	Validated Capacity (m <sup>3</sup> /D/100rpm):	60.0
Nominal Capacity (bbl/d/100rpm):	377	Validated Capacity (bbl/d/100rpm):	377.4
Target Speed (rpm):	475 to 525	Target Temperature (°C):	76 to 84
Nominal Pump Lift/Head:	400 m or 1300 ft	ISO V1 Pressure Requirement:	125% +/- 5%
Pump Pressure Rating:	3792 kPa or 550 psi	Target Test Pressure (psi):	653 to 722
Rated Pressure per Cavity:	593 kPa or 86 psi	Applied Pressure per Cavity (psi):	102 to 113

- 4) Rotor size is selected for target 70-90% volumetric efficiency at the above conditions at startup.
- 5) Results are continuously monitored with data collected several times during the day.
- 6) Automated test controls allow the bench to run continuously with data logging and integrated shut down programs.
- 7) Objective is to achieve at least 25M revolutions of runtime without efficiency dropping below 50%. The test is considered successful if these criteria are met.
- 8) L3 inspection is performed on the pump after the validation testing. Findings from the inspection help make improvements or to adjust ratings as required.



## DURABILITY TEST EQUIPMENT IMAGES

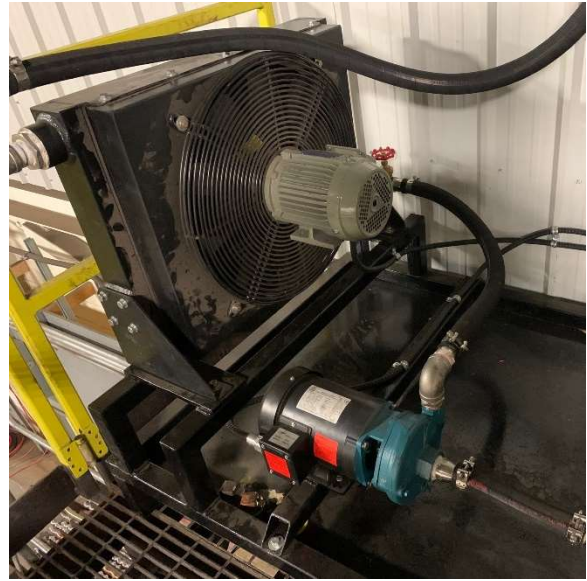
WATER TANK



PUMP 1



HEAT EXCHANGER



PUMP 2

