



Dynamic Testing Report

CTI Seal Style 0618 (3200+ hours)

Test Objective

Central Tire Inflation (CTI) Seals Style 0618 are used in hubs and axles to enable compressed air to be transferred from a fixed air passage into the rotating wheel, for remote tire pressure control. This test replicates the functionality of a CTI Seal Style 0618, which allows for tire inflation and deflation while the vehicle is in motion.

The objective of the test is to determine the reliability of the Style 0618 seal profile over long term use.



Test Conditions

- Tests conducted at positive pressures of 0.7, 2.0, 4.0, 6.0 and 8.0 Bar
- 975mBar vacuum.
- 375rpm, equivalent to 2.06m/s.

Test Procedure

Testing carried out by in-house custom rig as per customer validation parameters.

- Seal samples assembled onto test fixture.
- Speed and pressures regulated by FTL's dynamic test rig.
- Test variables are monitored by integrated instrumentation with continuous logging at 30 seconds interval.
- The leakage rate, temperature, speed and frictional torque is collected and measured.

Test Results

- Completed over 3200 hours of a dynamic test, with a total distance covered of 23,370 km.
- Equivalent vehicle distance of 226,080 km, with FTL test representative of 60% duty cycle.
- There is no evidence of imminent seal failure or significant deviations in leakage after 3200 hours of testing.

Conclusion

After 3200 hours of testing, the CTI Seal Style 0618 demonstrated its reliability for long term service at a 60% duty cycle. For different duty cycles, the FTL test enables us to make predictions for service lifetime.

- ⇒ No deterioration in performance after 3200 hours
- ⇒ 95% Duty Cycle prediction = 142,787 km
- ⇒ 5% Duty Cycle prediction = 2,712,960 km



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