

# Rotational Seal Test Rig



Spin UK Limited were awarded the contract to engineer a bespoke test rig to enable FTL Technology to perform accurate R&D testing of a range of their seals



The test rig is comprised of four individually controlled test chambers. Each test chamber has its own safety interlocked access with a dedicated test programme that can run

Each test chamber has a dedicated inverter driven drive unit to rotate the shaft to any required RPM up to a maximum of 1500rpm, allowing FTL to replicate their customers' real world applications

Each fixture is monitored for temperature close to the seals and also the fixture housing. The onboard cooling automatically starts should the fixture housing exceed the maximum safe temperature (this is adjustable within our software)

The fixture housing can be pressurised both positively and negatively with the ability to monitor and record leakage rates from the seals

Control for the machine is via a Siemens comfort panel intelligent HMI teamed up with an E200 PLC. Our software engineers designed a bespoke front-end system through TIA portal which allows for automatic or manual control of the test profiles

Example test cycle for the Machine:

1. Test rig runs without air or vacuum
2. Test rig runs with 2 bar air pressure through the seal cavity
3. Test rig runs with 4 bar air pressure through the seal cavity
4. Test rig runs with 6 bar air pressure through the seal cavity
5. Test rig runs with 8 bar air pressure through the seal cavity
6. Test rig runs with 10 bar air pressure through the seal cavity
7. Test rig runs with 12 bar air pressure through the seal cavity
8. 0.95 bar vacuum through the seal cavity
9. Test rig runs allowing the air to vent

Further details of the machine can be found on FTL's website see link below

**FTL Technology company News Update** <https://www.ftl.technology/news/company-news/test-rigs-installed-at-rd-centre-of-excellence>

