

Four Seasons® provides extensive product coverage using leading-edge manufacturing and technology to produce the highest quality products available in the aftermarket.



FIRST RATE ENGINEERING

Our engineering team, with over 150 years of combined experience, performs extensive research, testing and validation to determine if a particular O.E. unit has an inherent pattern failure or weakness.

- ✓ 3D modeling & design programming to ensure fit, form & function
- ✓ Extensive testing and validation for proven quality
- ✓ On-site prototyping, sampling and tooling capabilities



BEFORE A SINGLE UNIT IS PRODUCED

- ✓ Develop a detailed comparison to O.E. sample as the baseline for fit, form and function
- ✓ Perform field research to develop unique improvements that eliminate known inherent weaknesses
- ✓ Proposed improvements are lab tested to confirm effectiveness



Four Seasons® compressors are performance tested on a calorimeter prior to being released to the production team.



DURABILITY TESTING

Our compressors go through an engineering validation process equivalent to 100,000 miles of real world function.

- ✓ **EVERY** manufacturing lot is subject to random selection for validation testing under these conditions.
- ✓ **EVERY** compressor is tested for leaks and performance.

Did You Know?

- ✓ Continuous dock audits and validation testing are performed
- ✓ Each new compressor comes with all necessary hardware, o-rings and sealing washers



✓ Four Seasons® continues to lead the way in late model coverage
 ✓ 78% of manufactured new compressor units are made in-house

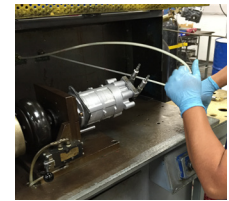
COMPRESSOR TESTING PROCESSES

- ✓ **Function**
- ✓ **Submersion**
- ✓ **Performance**
- ✓ **Vacuum Decay**
- ✓ **Durability**
- ✓ **Helium**
- ✓ **Pressure Decay**

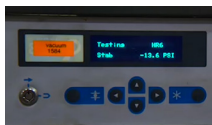
FUNCTION TEST

The function test cycles the compressor to determine pump up time to measure PSI in relation to time through a series of preset times and pressures.

- ✓ Monitors compressor at pre-determined points to qualify internal assembly and operation
- ✓ Production of new and reman compressors is 100% checked
- ✓ Confirms no internal leaks or bleeds are present



VACUUM & PRESSURE DECAY TEST



Vacuum Decay Test

Pulls a vacuum on the unit and ensures no loss of vacuum over a specified test time.



Pressure Decay Test

Pumps pressurizes the unit and ensures no loss of pressure over a specified test time.

SUBMERSION TEST



Variable pressure nitrogen test at 30 and 200psi to ensure no leaks occur at varying pressure conditions.



DURABILITY TEST

The durability test simulates 100,000 miles of real world driving conditions at both high speed and high load low speed to ensure every compressor installed is built to last.

- ✓ Test lasts 10 to 12 days at high speed and 14 to 16 days at high load, low speed
- ✓ High speed tests are focused on internal fatigue failure and clutch durability
- ✓ High load, low speed tests are focused on internal lubrication and wear

PERFORMANCE TEST

A performance test uses a calorimeter to create an environment that allows compressors to be tested to O.E. and Four Seasons specifications.

- ✓ Compressor performance is tested under various conditions including pressures, temperatures, and speeds
- ✓ Tests can be configured to test various compressor designs and displacements and last from 60-90 minutes
- ✓ Data collected from these tests include cooling capacity, efficiency, refrigerant flow rate, compressor RPM, duct temperature and system pressure



HELIUM LEAK TEST

A helium mass spectrometer is used to detect even the smallest leak.

- ✓ 100% inspected at a molecular level to ensure each compressor meets engineering criteria
- ✓ Equipment calibration is performed at the beginning of each shift

