Nidec

Measuring Quality

Application Information

Tire Sealant Removal

A global manufacturer of automotive tires contacted Nidec-Shimpo in search of a solution to help with a new process in their manufacturing.

The engineering team was in need of a simple method to determine the amount of force required by an operator to completely remove the tire's internal sealant after they come off the production line.

In order to simulate the human action of removing the sealant from the tire, it was recommended that they use a force test stand with mounted force gauge. They chose the FGS-220VC motorized test stand along with an FGV-10XY 10 lb (5 kg) capacity data-logging digital force gauge.

The object of the test was to simulate an operator removing the inner sealant by measuring the amount of force necessary to separate and remove the sealant from the inside of the tire. Utilizing the FG-M6TAP30U tape grip connected to the force gauge, the simulation was achieved with a piece of tape affixed on the sealant inside the tire. By determining the point at which the tape/sealant broke away from the tire, enabled them to determine the level of force a worker would have to apply to remove the sealant during the production process.

As a result of the testing, it was determined that approximately 8 pounds of force (3.6 kg) would be required to remove this substance from inside of the tires, well within the acceptable range a normal worker can routinely achieve and not have long term effects.

Equipment Used

- *FGS-220VC – Motorized Test Stand with data output*
- *FGV-10XY – 10 lb (5 kg) Digital Force Gauge*

FGV-XY Digital Force Gauge

Force Test Stand shown with Force Gauge

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