

## Brake Development Laboratory

- The Brake Development lab was added to the ARDC in 2016. It consists of three main test areas in a 930 sq metre footprint
- It is one of three of its kind in the world
- Two brake end style dynamometers – high speed (Viper cell) and heavy duty (Ram cell) have the ability to reproduce a wide range of brake noise
- The full size chassis dynamometer, Hell Cat Dyno, can accommodate vehicles ranging from a Fiat 500 to a Ram 5500 to test vehicle level brake systems
- The brake labs perform an average of 800,000 brake stops per year
- The instrumentation and Data Acquisition segment of the lab identifies sources of noise and vibration in brake systems. A number of different instruments are used to perform various tasks:
  - 3D deflection scans during noise event
  - Natural frequencies of individual brake components
  - 3D pressure distribution maps
  - Measure geometric properties and wear of brake rotors and brake pads
  - Caliper performance in various environments
  - Compressibility of friction material
  - Characterizes material properties of friction material

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