



Mayura Automation & Robotic Systems

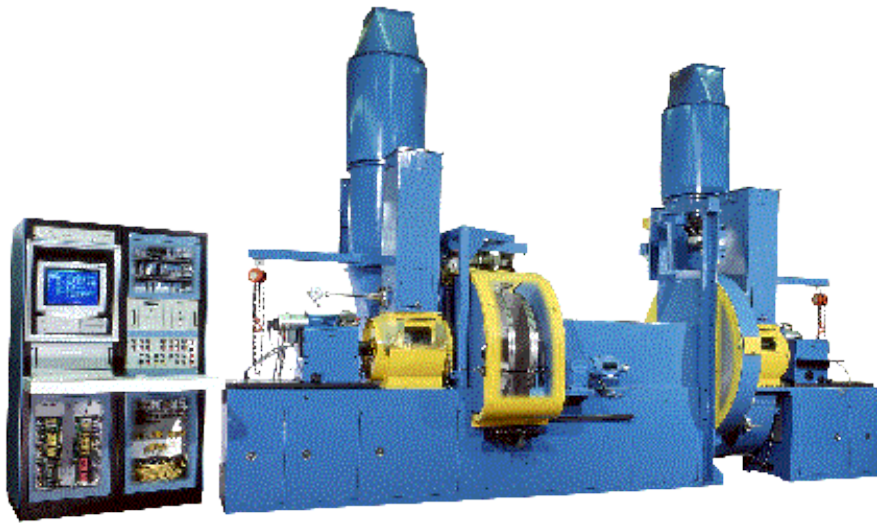
25, Crescent road, West Shenoy nagar, Chennai – 600 030

Ph.: + 91- 9789049050

DYNAMOMETER TESTING

Test Rig Automation

LAB VIEW BASED SOLUTION



PROJECT DESCRIPTION:

The brake dynamometer is used for testing the brake performance that is used in automobiles. The dynamometers will actually simulate the Vehicle Braking condition by having sufficient mass in the test setup by means of Inertia wheels and controlling braking patterns. Brake test dynamometers are required to represent all aspects of the operation of the vehicle braking process. They typically use inertia disks to simulate vehicle inertia. Inertia must be varied to represent different vehicles and different vehicle ballast conditions.

INDUSTRY:

Serves a variety of industry segments: Passenger Cars, Multi Utility, Vehicles, Light Commercial Vehicles, Medium & Heavy Commercial Vehicles, Farm Tractors, Three-wheelers, Two-wheelers and Stationary Engines. Supplier of composite brake blocks to Indian Railways.

PRODUCTS USED:

NI-LabVIEW

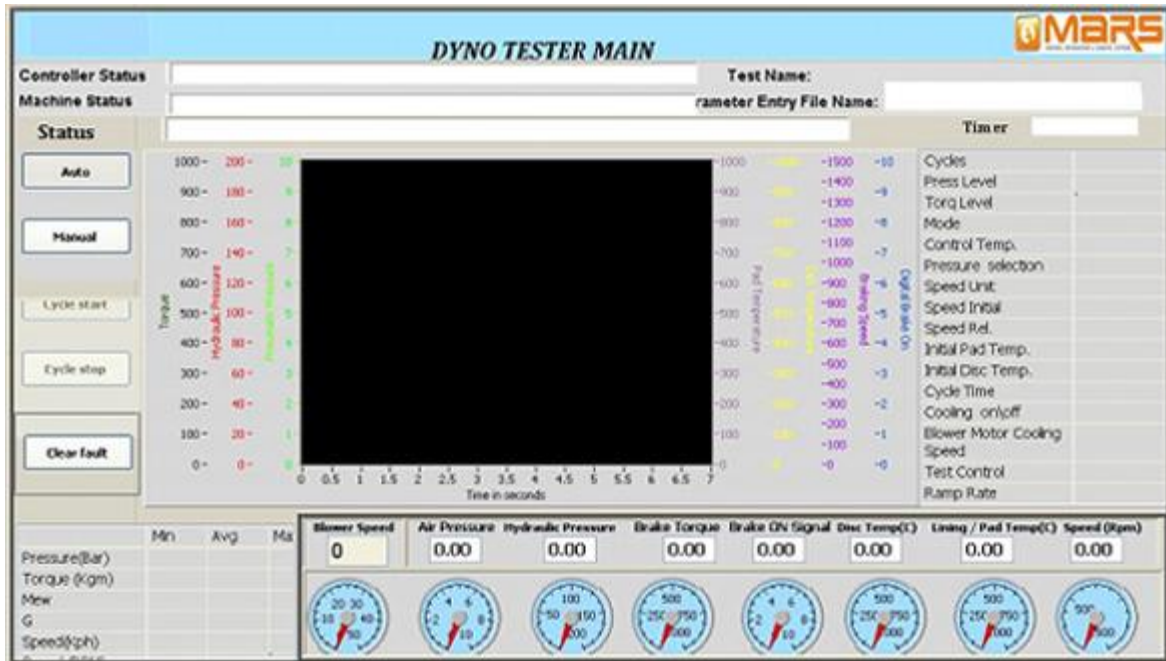
NI – PXIRT

THE CHALLENGE:

To build a Data Acquisition and Control System for the Dynamometer test system and display the acquired data graphically. The Torque produced was controlled by applying a suitable pressure.

THE SOLUTION:

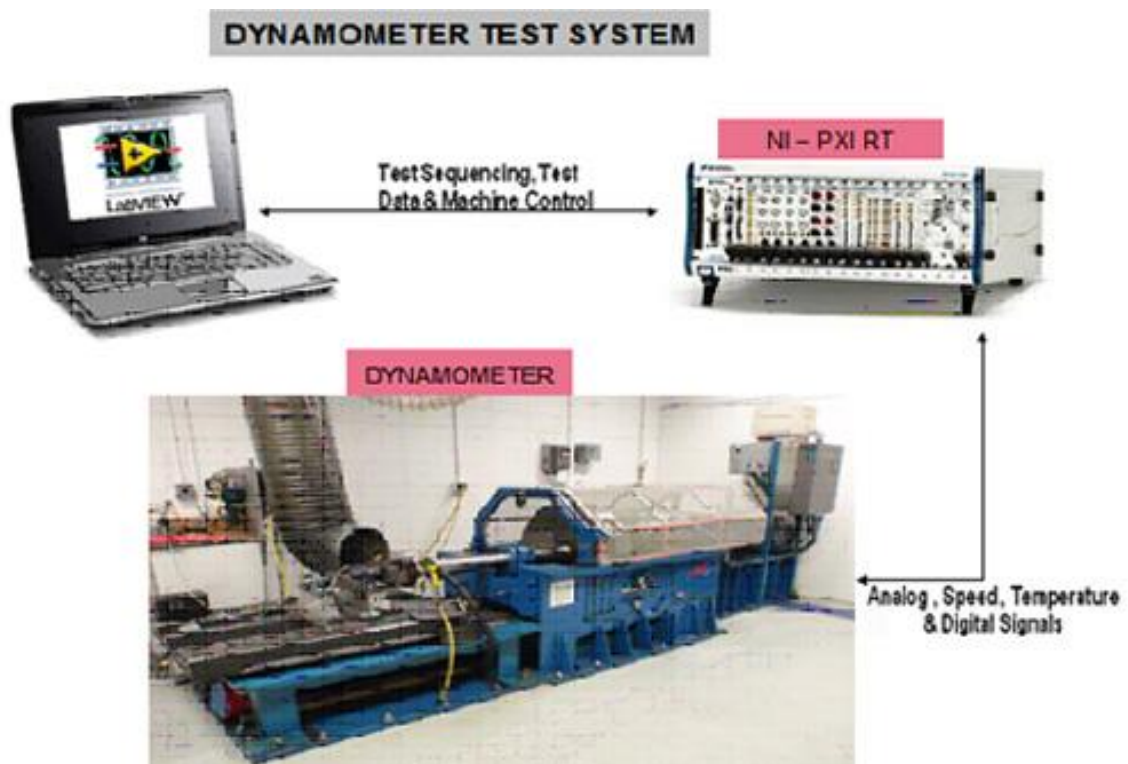
National Instruments LabVIEW and NI – PXIRT were used to develop a highly reliable and flexible Data Acquisition and Control System resulting in a controlled constant Torque.



Tests Performed:

1. Temperature Control Mode (Torque & Pressure)
2. Time Interval Mode (Torque & Pressure).
3. Cycle Time(Torque & Pressure).
4. Drag Time (Torque & Pressure).

Schematic Block Diagram



Conclusion

The Data Acquisition and Control System for Dynamometer Test was successfully developed in the quickest possible time with all hardware integrated effortlessly. Using LabVIEW, proved to be the best platform for measurement and testing in this project. The NI - PXIRT based system helped in building a robust unit thus delighting the customer immensely.