



Kalpak Special Purpose Test Rigs for Quality/ Production Testing

Clutch Plate Torque Test Rig

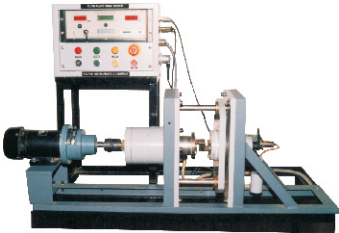


Client: Jaya Hind Industries Ltd, Pune

Test Part: Clutch Plates

Test Capability: The Clutch plate torque test rig is a sophisticated micro-controller based test system with PC connectivity. It offers a very accurate and sensitive method to test the various specimens of clutch plate for torque in Nm in clockwise and counter-clockwise direction. Individual readouts are provided for display of torque and rotation angle as the test proceeds. It also tests the silent play in degrees for the applied torque. The Data can be dumped in PC to generate Customized Test Reports as well as Graphs. Direct hard copy printout option is available through parallel Port on Controller.

Clutch Plate drag Test Rig



Client: Jaya Hind Industries Ltd, Pune

Test Part: Clutch Plates

Test Capability: Kalpak clutch Plate Test rig measures Load and Length at which clutch plate de clamps. The motorized clamping system is used for clamping of clutch plate for drag test and the length and load limits can be set in the Micro Controller based system controller through programming facility provided. The rotary encoder measures the angle of deflection and load cell measures the load in between the movable platen and the screw jack. Proximity sensors are also used for sensing speed change, clamp Limit, de clamp limit and end of the test. The digital readout displays the load and deflection. The data acquired can be dumped in the PC for further evaluation. The hard print facility is available through 25 pin parallel port of the controller.

Piston Valve Clearance Test Rig



Client: Kalyani Brakes Ltd, Chakan, Pune

Test Part: Piston Valves for Brake Drums

Test Capability: Vacuum Leak Test at different Piston Valve positions.

Kalpak Piston valve clearance Test Rig is a vacuum leak Testing System that determines the leakage in Brake Drums at various valve positions and gives appropriate signal depending on the set limits. The system has pneumatic clamping arrangement for the brake drum and stepper motor with position control for stroke adjustment.

ACG/MAGNETO Performance Test Rig



Client: Chheda Electricals & Electronics Pvt. Ltd., Pune

Test Capability: Battery Charging Voltage, Light Coil Voltage, Capacitor Charging Voltage for CDI Unit, Ignition Angle at different speeds

This programmable Test Rig tests the performance of two wheeler vehicle ACG/Magnetos in Manual mode & Auto Mode. The sample is automatically clamped through the electronically controlled pneumatic fixture assembly. The Magneto is rotated at different speeds upto 8000 rpm by variable speed AC drive. The Controller can be programmed for test parameters like speed, test duration & measurement parameter limits. It measures and compares the test results with the pre-programmed limits for various parameter to give concise Go-No Go result. Separate digital readouts are provided for the display of rpm, battery voltage, ignition angle and capacitor voltage. The Data can be dumped in PC through Serial port. Direct printout option is available through parallel Port on Controller.

JASO Test Rig for Command and Control of Vehicles



Client: Tata Ficosa Automotive Systems Ltd, Pune

Test Part: Command and Control Cable

Test Capability: The Kalpak JASO Load/ Extension measurement unit for vehicle command & control cables is used to measure the stroke / load efficiency of the cable.

The unit comprises of cable mounting structure with pneumatic cylinder actuated load exertion unit. Load Cell fitted on the Cylinder side directly measures the effort required to pull the known weight. Length sensors fitted at both the ends measure the inner wire pulled at the dead weight end and the stroke applied at the cylinder side. The difference between the two is used to measure the stroke efficiency. Digital readouts provide the display of load and length value. The unit can be operated in manual/Auto mode.



Bendix Gear Test Rig

Client: JHS Taigene Electrical Co. Pvt. Ltd.

Test Part: Bendix Gear for vehicles

Test Capability: The Bendix gear test rig is a fully automatic micro controller based sophisticated test set up for the performance test of the Bendix gear in standard stimulated engine conditions during start up. The test rig has the programmable timer facility to set the time interval to run machine in starter mode and engine crank mode. The test rig has the display for load current / load voltage, Bendix RPM and engine RPM. All the vehicle engine conditions during start up can be stimulated in the test rig through the front panel key pad provided on the timer. Various safety features are provided on the test rig for operator and machine safety. The machine can be operated in the engine simulation mode.

Clutch Cover Clamp Load/Release Load Test Rig



Client: Jaya Hind Industries Ltd., Pune.

Test part: Clutch Cover Assembly

Test Capability: This Test Rig provides accurate measurement of Clamp/Release load.

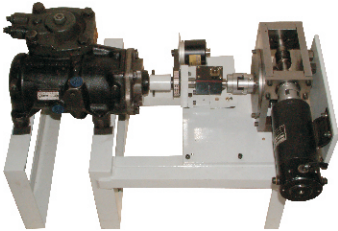
This is a PC based automatic testing equipment which can be operated in auto/manual mode. It consists of two independent test station for clamp load & release. It uses hydro-pneumatic clamping arrangement to hold the clutch cover assembly. Kalpak's customized software enables data acquisition, data analysis & graphical outputs.

Automatic testing and data acquisition system for steering gear

Client: ZF Steering Ltd., Pune

Test Part: Steering Gear

Test Parameters: Kalpak has developed the PC based fully automatic test set up for power steering gears. The system determines various parameters for the steering gear like center and out of center torque, input torque at load condition, valve spool characteristic, maximum angle and limiting angle of the worm rotation. The system is comprised of torque sensor, pressure sensors and angle encoder for measurement of various parameters. Variable speed servo drive is used to run the steering at various speeds. The system tests and logs the result data in the PC with OK/ FAULT indication. Graphical result display of input torque versus angle, valve spool characteristic, input torque versus output torque at no load, input torque versus output torque at load is displayed and stored. Apart from the steering test, this system is also used to feed the serial and batch number for various components used during the assembly of the steering gear.



Automobile Horn Endurance Test Set Up

Client: Kinetic Honda Motor Company Ltd., Pitampur

Test Part: Automobile DC/AC Horns, Speakers, Audio Systems

Test Parameter: Endurance Test

The automobile horn endurance test setup is the microprocessor based programmable instrument used for the endurance testing of automobile horn, speaker, audio systems etc. The system can test four dc horns at a time. AC horn tester can also be provided as per the request of customer. All the parameters such as horn ON / OFF timing are programmable with the keypad on front panel.

Winker Relay Endurance Test Rig

Client: Kinetic Honda Motor Company Ltd. Pitampur

Test Part: Automobile Relays

Test Parameters: Life test

The winker relay endurance test setup is the microprocessor based programmable instrument used for the endurance testing of relays in automobile 2/ 3 wheelers, relay testing etc. The system can test single or multiple relays at a time. All the parameters such as relay ON / OFF timing are programmable with the keypad on front panel.



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