

Two Square Timing Chain Test System

Wear and durability of timing chains

This two-specimen coupled chain test system applies rotation under torque, to allow engine-running condition simulation with temperature conditioned ATF fluid.

An energy saving system configuration combined with an integrated servo drive and a spinning hydrostatic rotary actuator simulate high power conditions with low energy.

System rating:

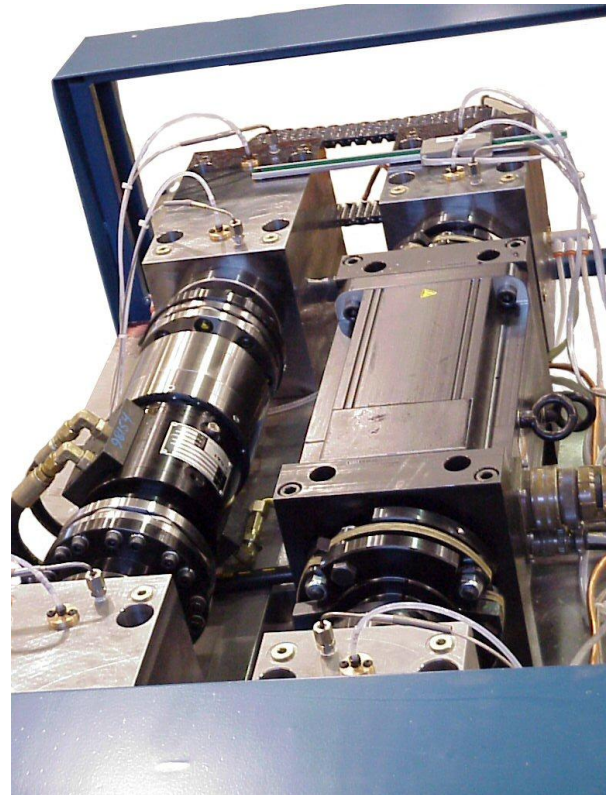
- DC Servo Drive: 5000 RPM, 5 HP
- Hydraulic Torsion: 1,000 Nm - 800 FT LBS
- Hydraulic Power Supply: 8 GPM 16 HP
- Control : PLC - Allen Bradley or Direct Digital Control
 - Speed: 0 to 5000 RPM
 - Torque: Delta P, Reversing Torque
 - Temperature: ATF Fluid
- Bearing Oil Mist Lubrication
- Bearing Temperature Monitoring
- ATF Fluid Flow Monitoring
- Chain Tension Monitoring

Specification:

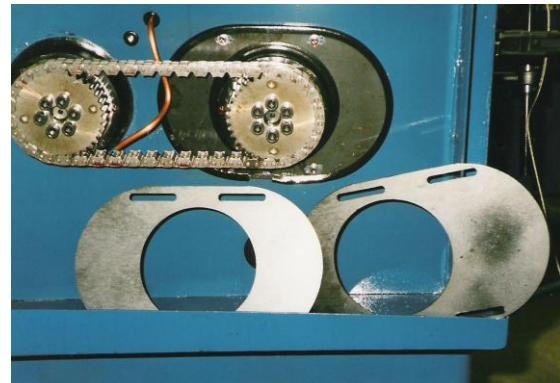
This system tests two chains under torque and speed control with easy access to the chains for inspection and installation. It's made up of a turnkey structure with integrated system control, hydraulic power supply, ATF conditioning, and a bearing lubrication and monitoring system.

The reaction path consists of two permanent and two adjustable high-speed bearing blocks with an oil mist lubrication system, plus temperature monitoring with failsafe function to prevent bearing damage.

Placing the motor drive and torque actuator within the torque loop enables the simultaneous use of two specimens while making access to and replacement



of the specimens quick and simple. To pre-load the specimen, a mechanical device with two digital readouts is used, providing exact positioning of the chains.



An enclosure with an air ventilation system was included to prevent air pollution.

The system is controlled with a custom programmed PLC control using a Panel View 1000 as a HMI.