PROMAND
Project Management & Design

DynPro2 by Promand

DESIGNED FOR NEW AND EXISTING TEST CELLS

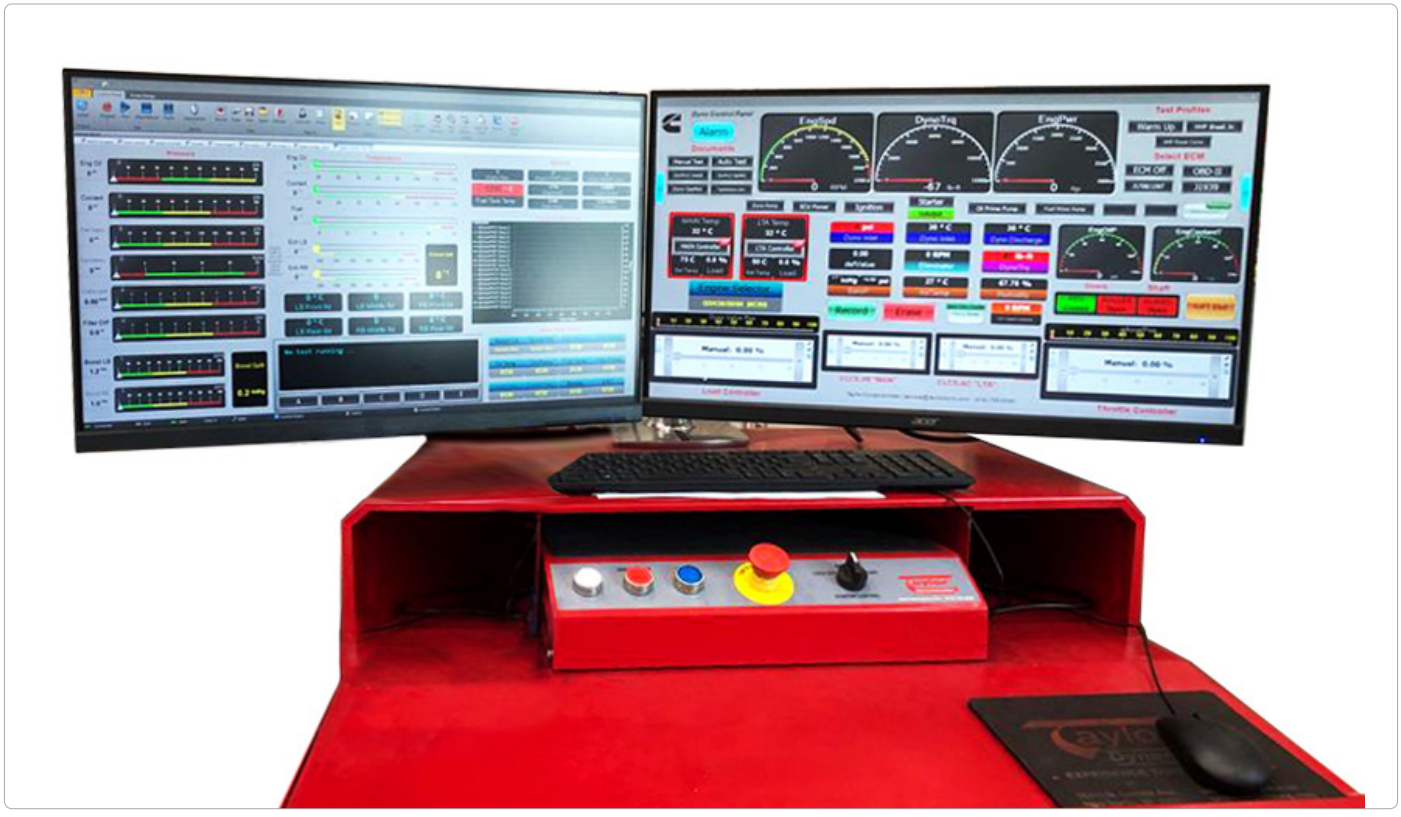
Project Management and Design
promand.com

Site Works DynPro2 Silver/Gold Installation

Revolutionising data acquisition and control for advanced testing

DynPro2 is a powerful Data Acquisition and Control System designed for engine, vehicle, and industrial component testing. It can be programmed to automate dyno and test cell operations such as engine warmup, performance test cycles and cool down profiles.

In addition, Promand can implement programmable controls for seamlessly integrating test cell infrastructure, and multiple safety interlocks. DynPro2 is the user-friendly robust solution for handling demanding dyno testing applications.



System Display

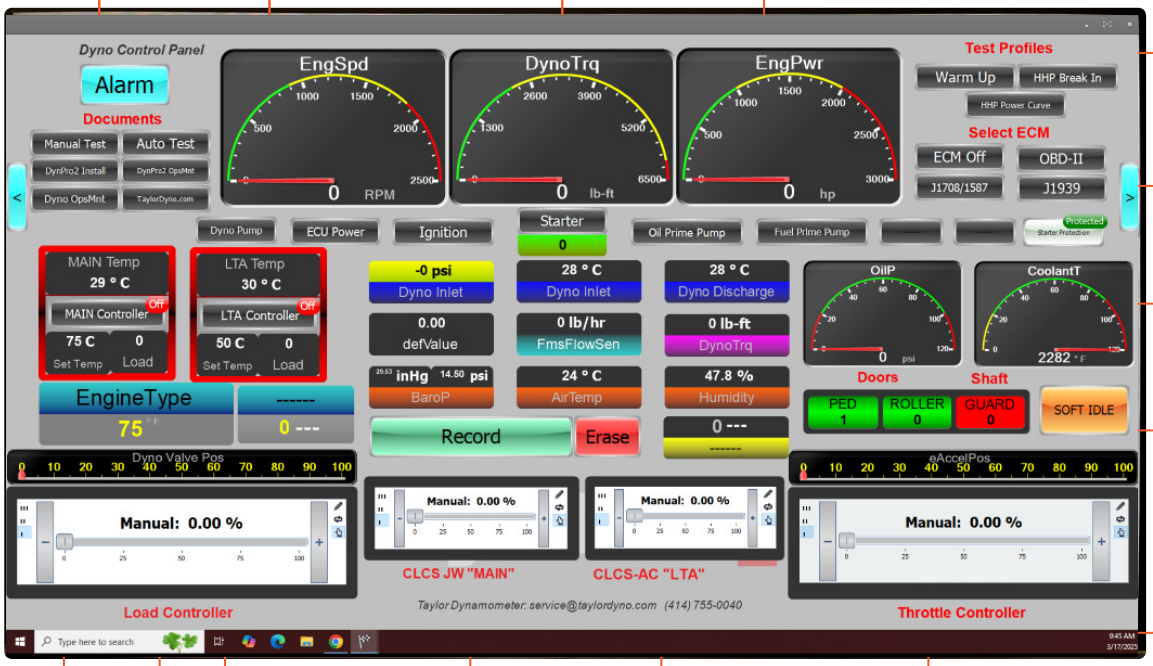
Promand's custom programmed control system display for DynPro2

Bespoke On/Off Buttons

Closed Loop Cooling – AC load/set temp/ current temp

Bespoke Main Gauges visual / hard / soft alarms

Critical Data real time / customisable



Bespoke Auto Cycles warm up/break in/ power curve

Bespoke ECM Interface protocol selection buttons

Bespoke Gauges visual / hard/ soft alarms

Automatic Return to Idle controlled load/throttle

Throttle Controller position/auto/ manual/setpoint

Closed Loop Cooling – JW load/set temp/current temp

Engine Model Drop-Down presets alarms/ gauges/cycle

Load Controller valve position/ auto/manual/ setpoint

Closed Loop VSD Controller VSD speed/auto/ manual/setpoint

Door/Guard/Interlocks locks out engine start

Configuration Options

Promand offers DynPro2 installation and configuration options to balance your budget and operational requirements

PART A - DynPro2 installation, commissioning and training

Overview: DynPro2 installation, commissioning & training

Each DynPro2 upgrade is unique to every test cell, as every test cell is different.

The following is a guide to the scope of works required when upgrading to DynPro2. Variations and customisation will be necessary to suit the actual facility and preferences.

Typically, installation and training is completed within two (2) weeks to 3 weeks with three (3) Promand technicians on site. Duration can vary based on site specific constraints and/or delays.

PART B - Emergency stops, drive shaft guard & door interlocks

Overview: Installation and programming of optional safety features and devices.

Typically completed within one (1) week with two (2) Promand technicians on site. Duration can vary based on site specific constraints and/or delays.

Note: To reduce time and cost we recommend installation and cabling of e-stops and door interlocks be supported by customer electrician under Promand guidance.

PART C - Bespoke programming & automation

Overview: Powerful automation with advanced programming, tailored to customer preferences and operational requirements.

Note: To reduce time and cost we recommend installation and cabling of e-stops and door interlocks be supported by customer electrician under Promand guidance.

PART D - Test cell infrastructure integration

Overview: Optional integration and interlock of test cell infrastructure such as pumps, cell HVAC and cooling tower with DynPro2 system.

Typically completed within one (1) week with one (1) Promand technician on site.

Note: Hardware and facility electrician must be provided by customer for installation of any additional hardware and cabling that may be required.

Deliverables

Comprehensive solution for mechanical and electrical Installation, commissioning and training

	PART A	PART B	PART C	PART D
Mechanical & Electrical:				
Customer to confirm engine temperature and pressure sensor requirements.	✓			
Determine DynPro2 enclosure and boom layout together with users.	✓			
Determine power supply location, instruct customer's electrician.	✓			
Install Power Enclosure on wall.	✓			
Install Connection Enclosure on wall.	✓			
Install Expansion Enclosure on wall (if ordered).	✓			
Install Boom on wall, (or Pedestal on floor).	✓			
Mount Sensor Input Enclosure to boom (or Pedestal).	✓			
Install cables trays between enclosures.	✓			
Install cabling between enclosures & to PC.	✓			
Route cables though Boom.	✓			
Terminate all cables between all enclosures & PC.	✓			
Install Router Power Supply in Sensor Enclosure.	✓			
Install and connect UPS.	✓			
Install and connect Dual Monitors.	✓			
Install and connect FMS to DynPro2.	✓			
Install dyno water inlet pressure sensor (by customer plumber).	✓			
Install dyno water inlet and outlet water temperature sensors (by customer plumber).	✓			
Power up system and troubleshoot/confirm all connections and communications.	✓			
Install calibration arms, hanger and weights. *Note: Unless ordered from Promand, calibration arms, hanger and calibrated weights must be provided by customer.*	✓			
Functional dynamometer control and DAQ system.	✓			
Install & connect required engine sensors (by customer).	✓			
Operator training on installed equipment & features.	✓			
Install & connect required engine sensors (by customer). *Note: Fuel / Oil / Power & operational UUT must be provided by customer for commissioning & training purposes.*	✓			

Deliverables

Tailored installation, configuration, and calibration for optimal performance

	PART A	PART B	PART C	PART D
Software & Programming:				
Install startup DynPro2 MASC.	✓			
Configure and customise MASC to suit local installation and conditions.	✓			
Connect & configure MPID ECM Interface device to DynPro2 and customer supplied harness.	✓			
Connect & configure E-Throttle(s) to DynPro2 and customer supplied harness. *Note: ECM communications for throttle and J1793 requires customer input and knowledge of engine specific requirements.*	✓			
Customise DynPro2 screens and Reports to customer preference.	✓			
Calibrate pressure sensors.	✓			
Calibrate load cell(s) *Note: Unless ordered from Promand, calibration arms, hanger and calibrated weights must be provided by customer.*	✓			
Verify thermocouple function and accuracy.	✓			
Configure PID control loops.	✓			
Configure and calibrate FMS (if ordered).	✓			
Configure two example test cycles and alarm settings.	✓			
Operator training included.	✓			

Deliverables

DynPro2 integration providing advanced control, safety, and automation

	PART A	PART B	PART C	PART D
Deliverables:				
Add safety interlocks installed on driveshaft guard and three (3) test cell doors to DynPro2 system. Interlocks are programmed to prevent engine start. Operator training included. *Note: Customer assistance during installation can shorten the duration of the site works and therefore reduce cost.*		✓		
Automated engine specific configuration including alarms and test cycle parameters. *Note: Customer to work with Promand tech to define requirements.*			✓	
Automated bespoke engine warm up cycle(s).			✓	
Automated bespoke engine cool down cycle after completion of test.			✓	
Automated bespoke power and torque curve test cycles.			✓	
CLCS and CAC temperature set-points on-screen with actual vs set-point graphic.			✓	
Percentage load valve opening displayed in real time.			✓	
Dynamic alarms with high and low warnings, including auto shutdown if critical.			✓	
Promand will configure and populate the required engine database tables for three engine models. Customer staff will be trained on how to complete the data tables for all remaining engines.			✓	
Varies based on existing infrastructure and potential to interface with DynPro2 inputs/outputs. Typically includes control and interlock of, facility water pump(s), test cell HVAC system and ECM power lock out. Discuss the possibilities with our commissioning experts.				✓

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