

SIGMA 50 & 60 Dynamometers

Technical Data

Froment Sigma Dynamometers test tractors, combines and foragers ensuring efficiency and peak performance are maintained at all times.

Construction

The frame of the dynamometer is constructed from 2mm 'Zintec' steel, folded and welded to form a monocoque construction.

Recessed doors allow easy access to the separate enclosures for control, power connections and maintenance.

A 4 pole 2-bearing brushless alternator complete with fan assisted forced air cooling enables high-torque operation over a wide speed range.

The gearbox is custom made to Froment specification from aluminium and has hardened steel helical gears. The gearbox is easily removed with the optional removal tool to enable engine speed testing.

The discharge duct contains stainless steel strip resistive load elements and the cooling fan. The hot air outlet door has an interlocking feature inhibiting load application and warns the operator if the door is not opened.

A stainless steel mesh screen on the outlet provides protection against access to hazardous parts to IP1X.

All electrical enclosures are to IP54.

Mobile versions are supplied with a twin axle braked four wheel trailer with 4 stud 4.5J x 13 pressed wheels and tubeless 165R13C radial ply tyres with rubber trailing link with rubber trailing link independent suspension that can be towed behind a car or commercial vehicle.

The main chassis is constructed from formed 3mm and 5mm steel and the floor from 1.6mm steel. The whole chassis is hot dipped galvanised after fabrication.

Two prop stand jacks are provided at the rear of the trailer and a jockey wheel on the a-frame where an ISO 50mm ball coupling with hydraulic dampened overrun brake actuator is located and a manual hand brake which has an energy store to operate the auto reversing brakes.

Trailer lighting includes brake, tail, side marker, direction flashing, reversing and fog lights. Reflective triangles incorporated in the rear light combination units.

Static models are fitted to a heavy duty fork pocket fork pocket constructed hot hot dipped galvanised base made from formed 3mm and 5mm steel.

Finish

High quality two-pack industrial acrylic paint system applied to an electro-plated zinc base and low-bake finish.

Standard colour is Aluminium Silver (RAL9006). Other colours are available on request.

Auxiliary Supply

The fans and control circuit are powered from an external 13 or 16 amp single phase 220-240 Volt 50Hz supply.

An IEC 60309-2 plug is mounted in the control enclosure with a 10m power cable and UK or Euro plug.



Protection

An emergency stop/disconnect switch gives full isolation of the fan and control supply.

A 220 Volt AC control circuit transformer provides isolation and operator safety.

Stop/start buttons ensure the dynamometer will not automatically restart.

The fan motors are fully protected with fuses and overloads. Thermal detectors are fitted to the alternator and load bank to protect against over heating.

On initial start-up the dynamometer performs a self-test to check all systems and calibration. If a fault is found this is displayed on the Intelligent Hand-held Terminal.

Optional Accessories

DynaTest PC software • Direct drive coupling

Load Control

Load control is provided by robust IP65 Hand-held. The 10m lead allows tests to be carried out in the tractor cab if required and the display provides constant live data readout of power, torque and speed.

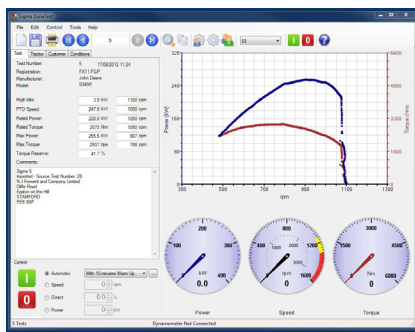
Five test modes are available, constant speed, constant power, direct load, memory and AutoTest which provides reliable and repeatable testing.

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Addition of DynaTest PC software adds an engine warm up facility and two cyclic testing modes of power and engine speed. PTO and or Engine power can be displayed. Test results can also be saved to build a comprehensive test library which includes test criteria, tractor models and customer details. Test results can be compared and contrasted from previous tests in graphical and tabular format. These results can then be printed or exported for further analysis.



Optional PTO Shafts

- 1 x 3/8" 6 spline.
- 1 x 3/8" 21 spline.
- 1 x 3/4" 20 spline.
- 2 x 1/4" 22 spline (Sigma 60 only)
- 1 x 3/4" 6 spline

Speed Range and Capacities

Sigma 50 will test up to 515PS (380kW) and fully torque test a typical modern tractor up to 350PS (260kW). Sigma 60 will test up to 680PS (500kW) and fully torque test a typical modern tractor up to 500PS (370kW).

Mode	Maximum Power (sigma 50)	Maximum Power (sigma 60)	Torque (sigma 50)	Torque (sigma 60)
PTO(270-1250rpm)	515PS(380kW) at 1000rpm	680PS(500kW) at 1000rpm	3170Nm at 800rpm	4150Nm at 800rpm
Direct (480-2200rpm)	515PS(380kW) at 1800rpm	680PS(500kW) at 1800rpm	1790Nm at 1400 rpm	2340Nm at 1400 rpm

Testing, Standards and Warranty

Functional operation and load tests are completed on all Sigma Dynamometers, before despatch, in line with our ISO 9001:2008 procedures.

Froment Sigma Dynamometers comply with international standards and are CE marked to confirm compliance with both the EMC and Low Voltage Directives.

The equipment is covered by a 12-month warranty as detailed in our Conditions of Trade.

Documentation - Operator Handbook

A comprehensive illustrated operator's manual is supplied. Sections cover safety, installation, commissioning, operation, calibration, maintenance and fault finding.

Dimensions and Weights

	Mobile 50	Mobile 60	Static 50	Static 60
Weight	1780kg	1980kg	1460kg	1660kg
Height 50 & 60	1729mm	1729mm	1791mm	1791mm
Width 50 & 60	1850mm	1850mm	1350mm	1350mm
Length 50 & 60	3700mm	3700mm	2456mm	2456mm