

TG 4900

Automated Metered-Dose Inhaler (MDI) Test System

An automated MDI test system designed to perform:

- Rapid testing of valve actuation
- Valve failure forces of MDI canisters
- Valve backtravel
- A combination of the above tests

This specialised test system is designed to detect the firing load and the valve breakdown load of 'one shot' pressurised MDI canisters using operation and overload sensing systems.

The system comprises an LRXPlus test system, custom designed test jig designed to hold and detect the firing of a MDI canister, detector unit with simple 'start test' button and green and red LED indicators to indicate short duration or continuous canister discharge respectively, a thermistor and optional safety shield. NEXYGEN™MT data analysis software, the Batch Tester software and Ondio™ application builder software are also used with the system (but must be ordered separately)

The MDI canister is inserted nozzle downwards into the custom test jig. The safety shield is then lowered. By pressing a simple 'start test' button on the detector unit, a spherical ended upper probe, which is attached to the moving crosshead, is driven downwards at a high speed until it touches the concave base of the canister. The



SPECIFICATION
CSS-MT-4099-0402
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breakdown test is carried out at a predefined load and tolerance to check that operation is at a consistent pressure to ensure correct dosage.

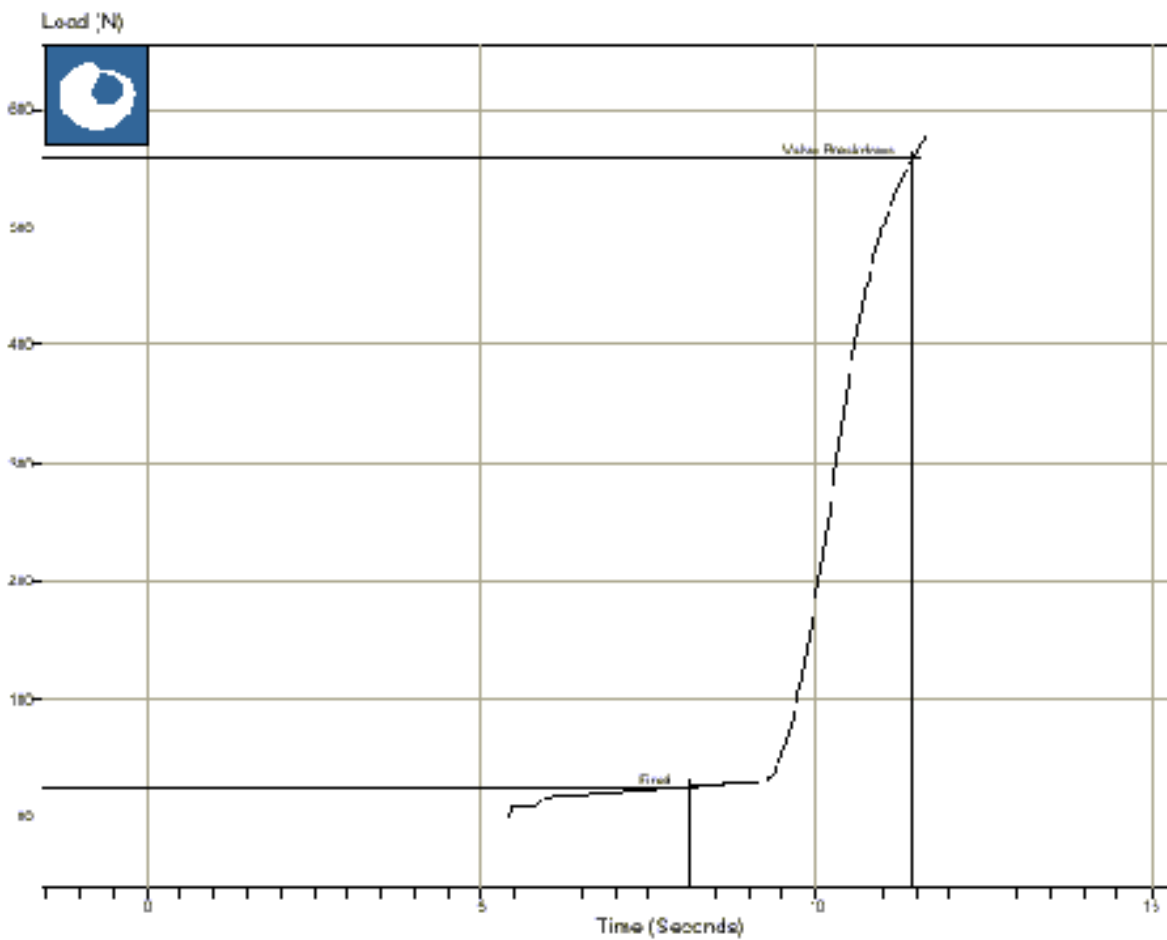
The applied load causes the canister to fire a placebo, which is detected by a thermistor under the discharge nozzle. The thermistor, which incorporates temperature sensing electronics, is cooled by the discharged fluid. The detector circuit will detect a short duration discharge and indicates this by flashing a green LED indicator on the front of the detector unit. The detector will also detect a continuous discharge and indicates this by lighting a red LED on the front of the detector unit.

A typical test graph (fig 1) is shown over the page:

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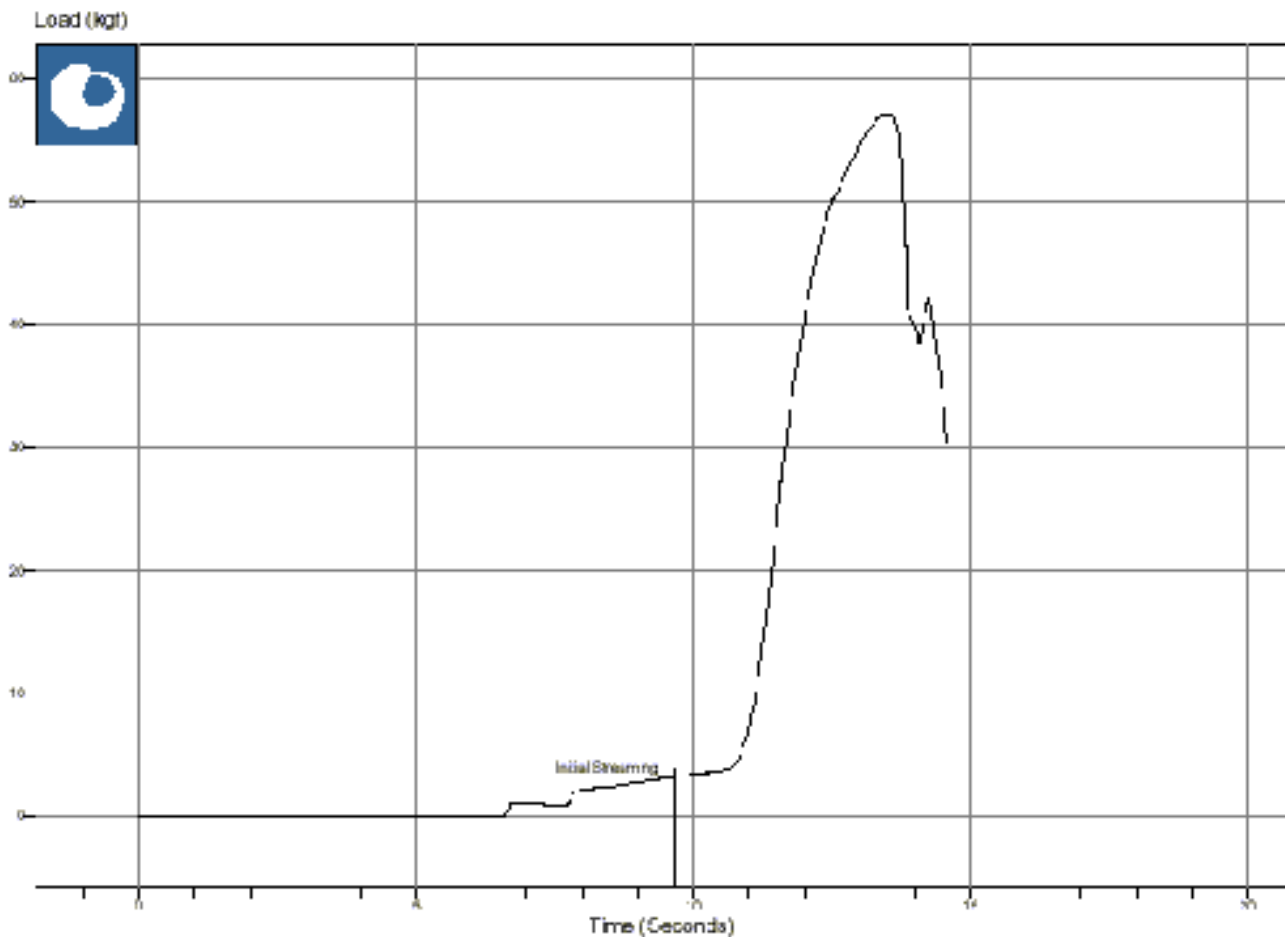
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The first dotted line shows the force where the valve initially 'fired' and the second dotted line shows the load where the valve 'broke' and discharged again. These points coincide with the green indicator flashing on the front of the control unit.

If the valve continuously discharges after the initial 'firing', the red indicator on the detector unit will light and this will stop the test. The graph (fig 2) will only show one dotted line and this will be marked with the label 'continuous streaming'



The detector unit is connected to a PC. The data from multiple tests are stored within the Batch Tester and analysed by NEXYGEN MT data analysis software and Ondio applications builder software. Customised reports can be produced.

Machine Capacity

5kN

Applications

The system is designed to assess the operating or 'firing' force of MDI valves and valve breakdown.

Each actuation of the valve should ensure that the patient receives a correctly measured dose.

Specifications

Maximum Capacity:	5 kN (test fixture)
Minimum Loadcell:	100N for firing and backtravel tests or 1 kN for firing and breakdown tests
Typical Dimensions of MDI:	Crimped cap diameter: 20.9mm
	Ferrule diameter: 10.6mm
	Pin diameter: 2.8mm
	Canister diameter: 22.2mm
Eye End Diameter:	5/8 in
Temperature Limits:	Ambient

Safety shield and software must be ordered separately.

The Automated Metered-Dose Inhaler Test System requires NEXYGEN MT data analysis software V4.1 or later and Ondio software V4.1 or later which must be purchased separately and installed on a PC. The system also requires Batch Tester V4.0 Issue 3 or later and NEXYGEN Port Control V2 or later, which are supplied on the NEXYGEN CD.

Ordering Information

- TG4900 Automated Metered-Dose Inhaler (MDI) Test System, including
 - LRXPlus materials testing system
 - Detector unit
 - Thermistor
 - MDI Test Fixture(Please contact AMETEK to discuss exact requirements prior to order)

- 100N loadcell - 01/2480
- 1 kN loadcell - 01/2419
- Lower sliding splinter shield with electrical interlock - 01/3046

(An optional 'automatic shield lock' to prevent the lid from being lifted during a test can also be ordered. Optional lid to fully enclose the splinter shield is also available. Please contact AMETEK to discuss exact requirements prior to order)

- NEXYGEN™ MT data analysis software - 40/0658
- NEXYGEN Batch Tester - 40/0749
- NEXYGEN Port Control - 40/0750
- Ondio™ application builder software - 40/0683
- Test Support CD (includes firing, backtravel & breakdown setups) - 40/0743



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Manufacturer