Seta PM-93

ASTM D93 Procedures A, B & C

IP 34 Procedures A, B & C

ISO 2719 Procedures A, B & C

- Easy operation
- Single action raising & lowering of lid
- Superior safety including patented 'SafeFlash' auto fire extinguisher
- Large memory storage combined with unique test profiles

Test Methods

ASTM D93 Procedures A, B & C
IP 34 Procedures A, B & C*
ISO 2719 Procedures A, B & C*

Method A: Distillate fuels (diesel, biodiesel blends, kerosene, heating oil, turbine fuels) new and in use lubricating oils, paints, varnishes and other homogeneous petroleum liquids

Method B: Residual Fuel Oils, cut back bitumen, used lubricating oils, petroleum mixtures with liquids and solids or with film forming properties or highly viscous materials

Method C: Biodiesel (FAME)

*under revision to include method C

> Seta Ignite

Features

- NEW design, latest enhanced operation
- Fully conforms to test methods with 4 heating rates available
- Simple '3-step to test' operation
- Unique patented 'SafeFlash' flame extinguisher system
- Large 8.4" Resistive touch screen menu
- Single action lifting arm operation
- Pre-dip safety mode
- Programmable with 30 test profiles, test methods & sample identities
- Test memory = 2000 results
- Gas or electronic ignition using proven and long lasting Seta 'Ignite' technology
- Compact footprint

The Seta PM-93 is a fully automated Pensky-Martens Closed Cup Flash Point Tester which combines strict method conformance with state of the art control technology and safety systems to provide the next generation of automated precision flash point instruments.

Easy '3-step to test' Operation

Seta PM-93 provides rapid sample testing using integral heating and forced air sample cooling systems to maximise sample throughput.

1. Add sample - place a filled test cup into the air bath

2. Lower pod - all test and detection components are housed in the pod module

3. Enter sample information and press 'start'

> Single action lifting pod

Touch screen operation

An intuitive user menu and 8.4" (215mm) SVGA colour touch screen operation provide unrivalled ease of use with real time display of test progress. Large capacity memory allows storage of test profiles, operator names, test methods and almost unlimited results.

Unique Test Profiles

Unique test profiles enable the test to be set up and repeated quickly without re-entering the same information. For example, if numerous 'diesel' samples with similar expected flash points are being tested then a test profile can be set up called "diesel" which conforms to Procedure A D93 with an expected flash of 75°C. Once the profile is stored to memory the user can select this option without the need to program the test parameters.

Operation is simple, just a single raising or lowering action when loading or removing the test cup. The lid and shutter are integral to a hinged pod and fitted with a fire detection probe, fire extinguishing manifold, ignitor, flash detector and temperature probe. The stirrer drive, shutter actuator and ignitor dipping mechanism are also self contained within the pod module.

A unique alignment design ensures that the lid and cup locate perfectly every time.

> Unique Test Profiles

Service and Calibration

Seta PM-93 has undergone extensive field trials using a wide range of test samples to ensure that the new design provides precision and reliability.
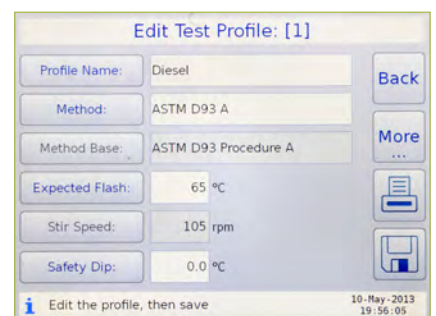
A password protected 'calibration' mode quickly allows verification of instrument performance (a suitable range of traceable verification and calibration materials are available from Seta).

Unique 'Safeflash' safety system (35005-0)

Design of Seta PM-93 takes careful account of the strict safety needs of today's laboratory.

The instrument contains a unique 'SafeFlash' system which automatically and immediately activates an extinguisher in the event of excess flame or fire around the test cup.

If discharged the screen prompts the user to re-activate the extinguisher by simply replacing the integral CO_2 canister. Canisters remain sealed inside the instrument until pierced by the actuator mechanism.

Additional safety features include PRT checks, safety dip before starting, over-temperature cut-out, gas flame relight and gas shut off.

Draught Screen
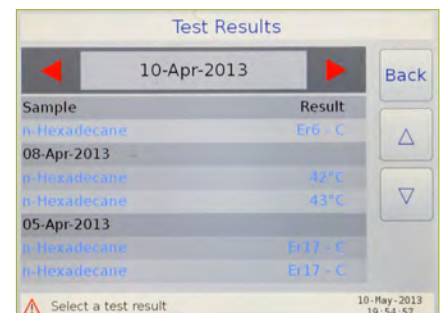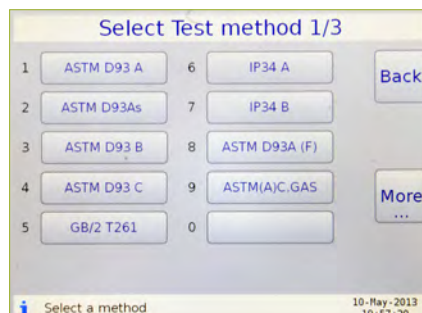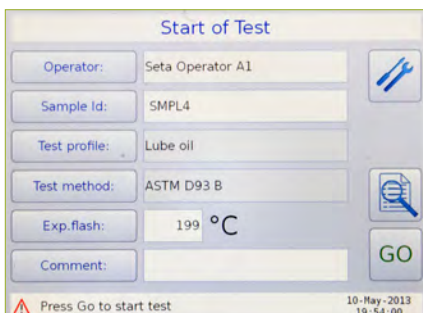
Electric Hot-wire or Gas Ignition

The ignition source is a purpose-designed extended life hot wire, a gas ignition option is also included.

The sample temperature probe is a class A PRT and flash detection is by a thermocouple.

Data management

Test status and results are graphically displayed whilst the internal memory has capacity to store more than 2000 results.

All primary instrument settings and operations are password protected.

Data format is compatible with most PC spreadsheets and a USB port allows results and other stored data to be saved to portable memory devices.

Seta PM-93 can be connected directly to LIMS using a standard Ethernet cable, no special software or other interface items are required.

Quick release lid for easy maintenance

The instrument's lid module can be cleaned in-situ to minimise down time between tests and a quick release mechanism allows easy access to the lid module for maintenance.

Intuitive Menu Driven Operating System

View a demo video at: www.stanhope-seta.co.uk/pm-93-flashpoint.html

Technical Specification

Operation	
Ignition system:	Electric hot-wire or Gas flame
Flash detection:	Thermal
Cooling:	Forced air (integral fan)
Heating Rate:	Fast heating mode (>10°C/min) and standard rate; 5.5°C/min; 3°C/min; 1.3°C/min; 1°C/min
Calibration:	Calibration dates/data stored to memory, easy retrieval and password protected
Application range:	Ambient +5°C to 400°C

Measurement	
Sample temperature measurement:	Pt 100 stainless steel probe
Barometric pressure correction:	Automatic correction with built-in pressure sensor

Data Management	
Information:	Real-time display on screen of test progress and results in °C
Internal Memory - Parameters:	30 programmable test profiles, sample ID's, operator names and test methods
Internal Memory - Results:	In excess of 2000 test results

Safety	
Fire Detection:	Thermal
External Fire Alarm Relay Contact:	240Vac max, 1A max resistive. External warning: 12V dc signal output
Fire Extinguisher (Factory Option):	Integral automatic inert gas
GAS SUPPLY (Optional)	
Gas type:	Butane, propane or natural gas source
Gas Supply:	30mbar (3kPa)

Power Requirements	
Voltage:	230Vac +/-15% or 110Vac +/-15%. Frequency 50/60 Hz. Auto-sensing - no selector switch required
Power:	1.1 kW

Interface Specifications	
Display:	8.4" SVGA Colour touchscreen (resistive - can be used with gloves)
Data Input/Output:	Connection to LIMS via; Ethernet RJ45 USB Type A (x2 front and back), RS232C Test results can be emailed or saved to memory stick
Printer Options:	USB, Ethernet or RS232C

Environmental Conditions	
Operating temperature:	5 to 35°C (50 to 104°F)
Relative Humidity:	Up to 80% at 35°C (not condensing)
Altitude:	2000m maximum

Physical	
Dimensions (H xW x D):	38.5 x 24 x 50cm
Weight:	25 Kg

Order Information	
Seta Auto PMCC	35000-0
Fully Automatic Fire Extinguisher System	35002-0

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