

RōBOT BATH

15200-5 SETA RōBOT BATH

ASTM D2112; D2272; D4742; IP 229

- Ambient to 160°C
- 2 test stations
- Fume extraction
- Gear drive
- Optional automatic pressure monitoring

A floor standing unit used for the evaluation of oxidation stability of new and in-service engine, turbine and insulating oils in the presence of water and a copper catalyst.

Up to two oxidation test vessels (15210-5) are supported at an angle of 30° in an oil bath, and rotated at 100 rev/min by an electric motor and bevel gear drive.

The 72 litre oil bath is digitally temperature controlled. The hinged hood is fitted with a safety interlock that switches off the motor when opened to protect the operator from the rotating test vessels. The bath is equipped with low fluid level and over-temperature protection devices. Extraction fans remove silicone oil vapours and fumes from the bath.

The pressure within a test vessel can be automatically measured and displayed in real time using a Seta AutoRōBOT Pressure Monitoring System (15205-2) or automatically recorded for downloading post-test with a Seta Digi-Corder (15230-2) digital recording manometer.

SUPPLIED WITH: mains leads and instruction manual.



SETAPLUS EXTENDED WARRANTY AVAILABLE

SPECIFICATIONS

Temperature range:	Ambient to 160°C
Temperature stability:	±0.1°C
Bath capacity:	72 litres
Bath fluid:	Silicone Oil
Number of vessels:	2
Rotational speed:	100 rev/min
Voltage:	220/240V, 50Hz 220/240V, 60Hz
Power:	3.2kW
Size (HxWxD):	113 x 78 x 88cm
Weight:	87kg

15210-5 SETA RōBOT OXIDATION VESSEL

ASTM D2112; D2272; D4742; IP 229

- Pressure tested to 5170kPa (750psi)
- Stainless steel construction
- Low rotational vibration

The 15210-5 has been designed to complement the Seta RōBOT Bath. An accurately straight stem and a balance arm opposite the valve ensure smooth rotation when the vessel is installed in a Seta RōBOT Bath.

The oxidation vessel is equipped with a needle valve and a Schrader coupling for charging/discharging, and is threaded to accept various pressure monitoring devices.



CALIBRATION CERTIFICATE (WORKS)

15210-5



15200-5 shown with 15210-5 Oxidation Vessels and 15230-2 Digi-corders installed

ACCESSORIES - RōBOT BATH

REQUIRED - Bath

- 11470-0 SILICONE CARBIDE PAPER, 100 grit (FEPA), 280 x 230mm, pack of 50.
- 15210-5 SETA RōBOT OXIDATION VESSEL, (for details see below).
 PRESSURE CERTIFICATE (UKAS)
- 15460-0 OXYGEN CHARGING AND PURGING KIT, comprises oxygen charging lead and pressure gauge.
- 16930-0 COPPER CATALYST WIRE, 16 SWG (for details see page 73).
OR
- 16931-0 PREFORMED CATALYST COIL, pre-formed 16930-0 (for details see page 73).
OR
- 16932-0 CATALYST "B", (for details see page 73). Note: for ASTM D4742 only.
- 94632-0 SILICONE BATH OIL, 20 litres, for use at temperatures up to 150°C.
Note: 4 required.

REAL TIME DIGITAL PRESSURE MONITORING

- 15205-2 SETA AUTORōBOT PRESSURE MONITORING SYSTEM, (for details see page 65).
OR

DIGITAL PRESSURE MONITORING

- 15230-2 SETA DIGI-CORDER, (for details see page 65). Note: 1 required for each pressure vessel.

THERMOMETERS:

ASTM96C or IP37C

REQUIRED - Oxidation Vessel

- 15211-3 SETA SPANNER AND BENCH PLATE, for oxidation vessel.
- 15220-0 SETA GLASS LINER AND PTFE COVER, borosilicate glass, with stainless steel springs. Note: 1 required for each pressure vessel.

OPTIONAL

- 15215-0 VESSEL STEM GAUGE, to measure run-out on pressure vessel stem.
- 15221-0 ACCESSORY KIT, comprises sample container, aluminium disc and cover, with stainless steel springs. Note: Required for ASTM D2272.
- 15240-0 SETA KEY, for removing heater element from bath.
- 99100-2 ANALYTICAL BALANCE, (for details see page 141). Note: Required for ASTM D2272.

CONSUMABLES - RōBOT BATH

2 Years/2000 Tests - Bath	Qty
15200-308 NYLON BEARING, pack of 2	1
2 Years/2000 Tests - Oxidation Vessel	Qty
15210-401 'O' RING SEAL, pack of 10	1

15205-2 SETA AUTORöBOT PRESSURE MONITORING SYSTEM

ASTM D2112; D2272; D4742; IP 229

- Automatic pressure monitoring
- Real-time graphical display
- Auto end-point detection
- Simultaneous testing on two vessels
- Pressure range 0 to 1380kPa (0 to 200psi)

For use with the Seta RöBOT Bath 15200-5 to provide two independent channels of automated pressure monitoring and end point detection.

A self powered module and pressure transducer is mounted on each test vessel. Data is transferred between the rotating and static elements by an internal infra red link. Signals from each module are fed into the dual channel pressure monitoring module mounted in the bath cabinet.

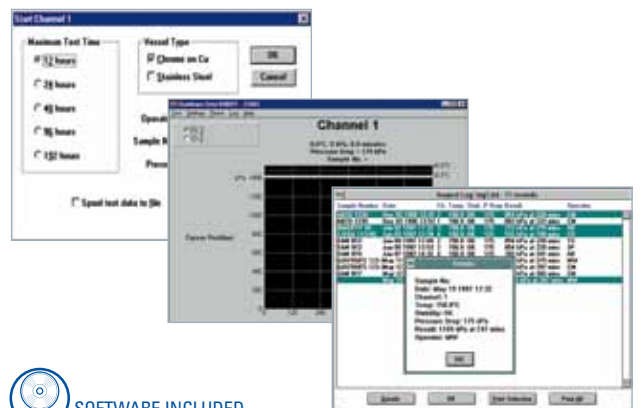
The output can be downloaded to an IBM compatible personal computer via the RS232 port, for data logging and to give real time graphical data output. The specially developed Seta RöBOT Software allows a choice of five maximum test durations - 12, 24, 48, 96 and 192 hours.

SUPPLIED WITH: two pressure transducers, connection cable for a pc, adaptor and software.

Note: An IBM compatible personal computer (not supplied) is required.



15205-2 in-situ



SPECIFICATIONS	
Measurement range:	0 to 1380kPa (0 to 200psi)
Accuracy:	±1% of full scale

CONSUMABLES - AutoRöBOT Pressure Monitor	
2 Years/2000 Tests	Qty
15205-201 LINK LEAD ASSEMBLY	1

15230-2 SETA DIGI-CORDER

ASTM D2112; D2272; D4742; IP 229

- Pressure range 0 to 1380kPa (200psi)
- Selectable recording interval
- Switchable units - kPa, psi, bar
- Memory
- Digital display
- RS232 port



15230-2

The Digi-Corder is a digital recording manometer that can be screwed directly into the top of a 15210-5 Röbot Oxidation Pressure Vessel.

The manometer can be programmed with the required pressure drop limit as specified in the method of test, and the time interval between measurements. 10 minutes after the pressure drop has been reached (ie, end of test), the manometer will switch off automatically. When turned on again, the manometer will display the results of the last test.

The display shows the current pressure, pressure drop, units of pressure measurement, and elapsed time. The pressure readings at each time interval are automatically stored to the internal memory.

The data and resultant pressure/time diagram can be downloaded via the RS232 port to a personal computer using the supplied software.

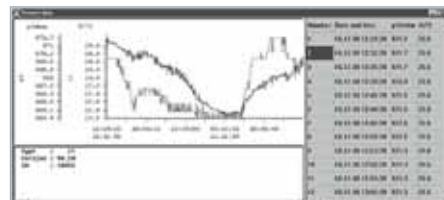
The instrument is housed in a moisture proof case and is powered by a lithium battery, giving approximately 200 days continuous use.

SUPPLIED WITH: RS232 cable, instruction manual and software.

Note: An IBM compatible personal computer (not supplied) is required



Pair of 15230-2 in-situ



SPECIFICATIONS	
Pressure range:	0 to 1380kPa (0 to 200psi)
Units of measurement:	kPa, psi, bar
Time interval:	00:01 to 59:59 min:sec
Power:	3.6V AA size lithium cell (approx 200 days continuous use)
Size (HxDia):	2.5 x 9cm
Weight:	0.7kg

OXIDATION STABILITY CONSOLE BATH

15400-4 SETA OXIDATION STABILITY CONSOLE BATH

ASTM D525; D873; IP 40; IP 138; BS 2000 Parts 40 and 138; EN 7536; ISO 7536; NF M07-012; NF M07-013; FTM 791 3352; FTM 791 3354; JIS K2287

- Operating temperature 100°C
- 4 test stations
- Cold-Plunge bath
- Optional automatic pressure monitoring
- Integral vessel oxygen charge system
- Constant water level device

Measures the induction period for oxygen in gasoline, and allows the weight of gum and residue in aviation fuel to be determined by direct weighing.

The Seta Oxidation Stability Console Bath comprises a heated water bath with reflux condenser, a cold water plunge tank for cooling test vessels after each test, and an integral system (including oxygen charging lead) for charging the oxidation vessels prior to test. The bath can accommodate up to four Oxidation Vessels.

Three methods of pressure measurement are available as accessories ranging from a fully automatic pressure monitoring system to oxygen safe pressure gauges.

SUPPLIED WITH: oxygen charging system, mains leads and instruction manual.



SETAPLUS EXTENDED WARRANTY AVAILABLE



15400-4 with a 15450-3 Control Unit and two 15802-0 Oxidation Vessels installed

SPECIFICATIONS

Bath capacity:	60 litres
Fluid type:	Water
Temperature:	100°C
Max no of Test vessels:	4
Vessel charging:	1380kPa (200psi) maximum
Vessel cooling:	Cold water plunge tank
Voltage:	110/120V, 50/60Hz 220/240V, 50/60Hz
Power:	3kW
Size (HxWxD):	135 x 83 x 77cm
Weight:	87kg

15802-0 SETA OXIDATION VESSEL

ASTM D525; D873; IP 40; IP 138; BS 2000 Parts 40 and 138

- Fitted with burst disc assembly
- Pressure tested to 2480kPa (360 psi)

An oxidation pressure vessel with a safety burst disc assembly and discharge tube in accordance with ASTM D525, D873, IP 40 and IP 138.

Comprises a stainless steel vessel with a screw top closure and 'O' ring seal, stem, needle valve, quick connection Schrader male coupling for oxygen charging, and a fitting for pressure monitoring devices.

The stainless steel burst disc will rupture within 10ms at 1530kPa (222psi) ±10% and has a fatigue life of 100,000 cycles to 90% maximum pressure.



15802-0



PRESSURE CERTIFICATE (WORKS)

ACCESSORIES - Oxidation Stability Console Bath

REQUIRED

- 15802-0** SETA OXIDATION VESSEL, with mandatory burst disc as required by ASTM D525, D873, IP 40 & IP 138, (for details see below left).
PRESSURE CERTIFICATE (UKAS)
- 15803-0** SETA VESSEL CLAMP, to hold vessels during opening and closing, can be bench mounted.
- 15805-0** SPANNER, for oxidation vessel.
- 15810-0** SETA LINER, borosilicate glass with cover, pack of 3.
- AUTOMATIC PRESSURE MONITORING**
- 15450-3** SETA AUTO OXIDATION CONTROL UNIT, (for details see page 67).
OR
- ENHANCED ANALOGUE PRESSURE MONITORING**
- 15611-2** PORTABLE CAMBRIDGE PRESSURE RECORDER, (for details see page 67).
OR
- ANALOGUE PRESSURE MONITORING**
- 15600-0** SETA PRESSURE GAUGE, (for details see page 67).

THERMOMETERS:

ASTM22C/IP24C or ASTM22F/IP24F

Note: Other items which may be required include: Solvents, Filtering crucible, Oxygen.

OPTIONAL

- 15650-0** WATER PURIFIER, to minimise scale production. Suitable for domestic water supply, 60l/hr max. flow. Comprises disposable cartridge with capacity for 960 litre soft water or 180 litre hard water.
- 15800-4** SETA OXI-FEED PRESSURE VESSEL, a 15802-0 pressure vessel without a burst disc or discharge tube.
PRESSURE CERTIFICATE (UKAS)
- 99100-2** ANALYTICAL BALANCE, (for details see page 141). Note: required for tests to D873.
- 99200-2** LABORATORY OVEN, (for details see page 137).

PRESSURE MONITORING OPTIONS (ITEMS REQUIRED)

Seta Part No.	1 Vessel	2 Vessels	3 Vessels	4 Vessels
AUTOMATIC PRESSURE MONITORING				
15450-3 Seta Auto Oxidation Control Unit	1	1	1	1
ENHANCED ANALOGUE PRESSURE MONITORING				
15611-2 Portable Cambridge Pressure Recorder	1	1	2	2
ANALOGUE PRESSURE MONITORING				
15600-0 Seta Pressure Gauge	1	2	3	4

OXIDATION STABILITY CONSOLE BATH

15450-3 SETA AUTO OXIDATION CONTROL UNIT

- Simultaneous measurement of 4 test vessels
- Automatic end-point detection
- Simple two point calibration facility

An automatic pressure monitoring system designed to be used with 15802-0 oxidation vessels and to match the 15400-5 bath, but can be used with other suitable baths.

Comprises two digital pressure monitors (each capable of monitoring two vessels) with a membrane switch control panel. The unit can also be used to display oxygen pressure whilst charging vessels.

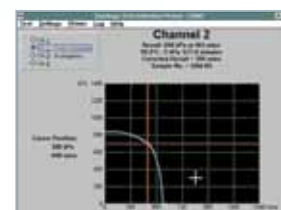
The control unit, when connected to a computer via the DB25 port and using the Seta OXS Software (supplied), allows automatic end point detection, induction period determination, data logging, and graphical/printed output functions. The maximum run time may be selected as either 24 or 96 hours.

SUPPLIED WITH: DB25 cable, OXS software, mains lead and instruction manual.

Note: An IBM compatible personal computer (not supplied) is required.



15450-3



ACCESSORIES - Auto Oxidation Control Unit	
REQUIRED	
15455-0	TRANSDUCER, complete with lead. <i>Note: 1 required for each oxidation vessel.</i>
	CALIBRATION CERTIFICATE (WORKS)
15456-0	CALIBRATION PLUG, plugs into transducer input to indicate calibration accuracy of 15450-3.
OPTIONAL	
15620-2	SETA OXYGEN CHARGING LEAD, for connecting oxygen supply to oxidation vessel when not using 15400-4 bath.
CALIBRATION, VERIFICATION & TRAINING	
80005-2	PRESSURE CALIBRATOR, used to recalibrate pressure monitors, (for details see page 146).



SPECIFICATIONS	
Measurement range:	0 to 1380kPa (0 to 200psi)
Voltage:	110/120V, 50/60Hz 220/240V, 50/60Hz (switchable)
Size (HxWxD):	45 x 38 x 19cm
Weight:	12.2kg

15611-2 PORTABLE CAMBRIDGE PRESSURE RECORDER

- Range 550 to 1380kPa (80 to 200psi)
- Simultaneous measurement of 2 test vessels
- Twenty-four hour recording time
- Oxygen safety device

An oxygen safe, 24 hour electrically driven chart recorder for monitoring two oxidation vessels within a range of 550 to 1380kPa (80 to 200psi).

SUPPLIED WITH: 5 red pens, 5 green pens, and pack of 100 charts (kPa).

ACCESSORIES - Portable Cambridge Pressure Recorder	
REQUIRED	
15460-0	OXYGEN CHARGING AND PURGING KIT, contains oxygen charging lead and pressure gauge.
15640-0	SETA PRESSURE TRANSMITTING CAPILLARY, for connecting oxidation vessel to 15611-0 Pressure Recorder. <i>Note: 1 required for each vessel.</i>



SPECIFICATIONS	
Pressure range:	550 to 1380kPa (80 to 200psi)
Pen:	Twin pen
Chart drive:	Synchronous electric motor
Voltage:	110/120V, 60Hz 220/240V, 50Hz/60Hz
Size (HxWxD):	66 x 48 x 38cm
Weight:	11kg

15600-0 SETA PRESSURE GAUGE

- 0 to 1380kPa (0 to 200psi)
- Oxygen safe

75mm diameter, oxygen safe pressure gauge with a 0 to 1380kPa (0 to 200psi) range. Suitable for use with Seta 15800-4 and 15802-0 Oxidation Vessels.

Note: 1 required for each pressure vessel.

OXIDATION/CORROSION DUAL PURPOSE BATH

15550-2 SETA OXI-COR BATH

ASTM D525; D873; D5304; IP 40; IP 138; BS 2000 Parts 40 and 138; ISO 2160; FTM 791 3352; FTM 791 3354; NF M07-012; NF M07-013; JIS K2276; Accelerated Shelf Life Test for Dried Pet Food

Also suitable for CORROSION TESTS to: ASTM D130; D4048; D4814 Annex; IP 112; IP 154; IP 227 (obs); IP PM DJ 2005; BS 2000 Parts 112 and 154; DIN 51 811; EN 2160; FTM 791 5325; NF M07-015; JIS K2513

- Ambient to 150°C temperature range
- 3 oxidation test stations
- Oxidation tests including IP 40
- Copper & Silver corrosion tests

A stainless steel water or oil bath with a temperature range of ambient to 150°C, temperature controlled to $\pm 0.1^\circ\text{C}$ by a top mounted thermostir circulator with integral over-temperature and low fluid level protection.

The 15550-2, when used with the relevant accessories, is an economic and versatile bath capable of carrying out oxidation and copper/silver corrosion tests, including IP 40, and ASTM D4814.

The bath can accept up to three oxidation vessels (Seta 15802-0) and accessories are available for three methods of pressure measurement ranging from a fully automatic pressure monitoring system to oxygen safe pressure gauges.

Further details on using the Oxi-Cor as a corrosion bath are shown in the Corrosion & Rust section on page 74.

SUPPLIED WITH: 4 lids, mains lead and instruction manual.



BIO-FUEL TESTING

SPECIFICATIONS

Temperature Range:	Ambient +5 to 150°C
Temperature Stability:	$\pm 0.1^\circ\text{C}$
No of Oxidation Test Stations:	3
Bath Fluid:	Water (to 99°C) or Oil
Bath Capacity:	35 litres
Heater Power:	1500W
Supply Voltage:	110/120V, 50/60Hz 220/240V, 50/60Hz
Size (HxWxD)	41 x 45 x 33cm
Weight:	10kg

ITEMS REQUIRED FOR EACH TEST

Seta Part No.	D525, D873 IP 40, IP 138	D5304
15450-3	▲	
15600-0	▲	▲
15611-2	▲	▲
15802-0	●	
15803-0	●	●
15805-0	●	●
15810-0	●	●
22750-2		
99100-2	●	●
99200-2	●	●
ASTM22C	●	
ASTM61C		●

Items marked ▲ are options for pressure monitoring.

PRESSURE MONITORING OPTIONS (ITEMS REQUIRED)

Seta Part No.	1 Vessel	2 Vessels	3 Vessels
AUTOMATIC PRESSURE MONITORING			
15450-3 Seta Auto Oxidation Control Unit	1	1	1
ENHANCED ANALOGUE PRESSURE MONITORING			
15611-2 Portable Cambridge Pressure Recorder	1	1	2
ANALOGUE PRESSURE MONITORING			
15600-0 Seta Pressure Gauge	1	2	3



15550-2 (Glassware and pressure vessels supplied separately)

ACCESSORIES - Oxi-Cor Bath

REQUIRED

- 15455-0 TRANSDUCER, complete with lead. *Note: 1 required per oxidation vessel.*
 CALIBRATION CERTIFICATE (WORKS)
- 15620-2 SETA OXYGEN CHARGING LEAD, oxygen supply to oxidation vessel. 1m long, Schrader quick connect couplings, one end male, one end female.
- 15802-0 SETA OXIDATION VESSEL, with mandatory burst disc as required by ASTM D525, D873, IP 40 & IP 138, *(for details see page 66)*.
 PRESSURE CERTIFICATE (UKAS)
- 15803-0 SETA VESSEL CLAMP, to hold vessels during opening and closing. Can be fixed to a bench.
- 15805-0 SPANNER, for oxidation vessel.
- 15810-0 SETA LINER, borosilicate glass with cover, pack of 3.
- 22750-2 DIGITAL STOPWATCH, hand-held, 0.1s resolution, *(for details see page 141)*.
- 94633-0 BATH OIL, 20 litres, for filling bath, for temperatures up to 80°C. *Note: 2 required.*
- OR
- 94635-0 BATH OIL, 20 litres, for filling bath, for temperatures between 80 and 120°C. *Note: 2 required.*
- OR
- 94632-0 SILICONE BATH OIL, 20 litres, for filling bath, for temperatures between 100 and 150°C. *Note: 2 required.*
- 99100-2 ANALYTICAL BALANCE, for tests to D873, *(for details see page 141)*.
- 99200-2 LABORATORY OVEN, for tests to D873 and IP 138, *(for details see page 137)*.

AUTOMATIC PRESSURE MONITORING

- 15450-3 SETA AUTO OXIDATION CONTROL UNIT, *(for details see page 67)*.

OR

ENHANCED ANALOGUE PRESSURE MONITORING

- 15611-2 PORTABLE CAMBRIDGE PRESSURE RECORDER, *(for details see page 67)*.

OR

ANALOGUE PRESSURE MONITORING

- 15600-0 SETA PRESSURE GAUGE, *(for details see page 67)*.
 CALIBRATION CERTIFICATE (WORKS)

THERMOMETERS:

ASTM22C/IP24C or ASTM61C/IP63C

OPTIONAL

- 15650-0 WATER PURIFIER, to minimise scale production.
- 15800-4 SETA OXI-FEED PRESSURE VESSEL, a 15802-0 pressure vessel without a burst disc or discharge tube.
 PRESSURE CERTIFICATE (UKAS)

Note: Other items which may be required include: Oxygen, Forced-air drying oven, Filter Funnel, Hotplate.

SOLID BLOCK OXIDATION BATHS

16670-0 SETA OXI SOLID BLOCK BATH - 4 WAY

ASTM D525; D873; D2274; D4310; ASTM D7462 Oxidation Stability of Biodiesel Blends (B100) and Blends of Biodiesel with Middle Distillate Petroleum Fuel (Accelerated Method); IP 40; IP 138; IP 157; IP 388; BS 2000 Parts 40 and 138; EN 7536; ISO 7536

- 4 position
- Dry block
- Over temperature cut out
- Small footprint

The Seta Oxi Solid Block Bath is an aluminium block bath with digital temperature control that has been designed to accept up to four oxidation vessels for carrying out tests equivalent to the IP 40 test method. Seta Oxidation Vessels (15802-0) are recommended for use with the Seta Oxi Block Baths. Automatic pressure monitoring can be carried out using a Seta Auto Oxidation Unit (15450-3 four channel or 15452-0 six channel). Alternatives are the Portable Cambridge Pressure Recorders (15611-2) or Seta Pressure Gauges (15600-0).



SPECIFICATIONS	
Temperature Range:	Ambient +5° to 100°C
Bath Type:	Dry Block
Max No. of Test Vessels:	4
Heat-Up Time to 100°C:	80 mins
Voltage:	220/240V, 50/60Hz
Power Consumption:	3kW max
Size (HxWxD):	30 x 60 x 28cm
Weight:	65kg

PRESSURE MONITORING OPTIONS (ITEMS REQUIRED)				
Seta Part No.	1 Vessel	2 Vessels	3 Vessels	4 Vessels
AUTOMATIC PRESSURE MONITORING				
15450-3 Seta Auto Oxidation Control Unit	1	1	1	1
ENHANCED ANALOGUE PRESSURE MONITORING				
15611-2 Portable Cambridge Pressure Recorder	1	1	2	2
ANALOGUE PRESSURE MONITORING				
15600-0 Seta Pressure Gauge	1	2	3	4

ACCESSORIES - Oxi Solid Block Bath

REQUIRED	
15802-0	SETA OXIDATION VESSEL, with mandatory burst disc as required by ASTM D525, D873, IP 40 & IP 138, (for details see page 66). PRESSURE CERTIFICATE (UKAS)
15803-0	SETA VESSEL CLAMP, to hold vessels during opening and closing, can be bench mounted.
15805-0	SPANNER, for oxidation vessel.
15810-0	SETA LINER, borosilicate glass with cover, pack of 3.
AUTOMATIC PRESSURE MONITORING	
15450-3	SETA AUTO OXIDATION CONTROL UNIT, (for details see page 67).
OR	
ENHANCED ANALOGUE PRESSURE MONITORING	
15611-2	PORTABLE CAMBRIDGE PRESSURE RECORDER, (for details see page 67).
OR	
ANALOGUE PRESSURE MONITORING	
15600-0	SETA PRESSURE GAUGE, (for details see page 67).
THERMOMETERS:	
ASTM22C/IP24C or ASTM22F/IP24F	
Note: Other items which may be required include: Solvents, Filtering crucible, Oxygen.	

8

A 6 POSITION BATH ALSO AVAILABLE (16675-0) - PLEASE CONTACT STANHOPE-SETA FOR DETAILS

NORMA HOFFMAN OXIDATION PRESSURE CYLINDER

16400-3 SETA OXIDATION PRESSURE CYLINDER (NORMA HOFFMAN)

ASTM D942; D1402 (obs); IP 142; BS 2000 Part 142

- Pressure tested to 1860kPa (270psi)

Used to determine the resistance to oxidation of lubricating oil when stored statically in a sealed system with an oxygen atmosphere.

Comprises polished stainless steel cylinder with top closure and lead seal, stem, needle valve and quick connection coupling.



ACCESSORIES - Oxidation Pressure Cylinder

REQUIRED	
16410-0	SETA DISH-HOLDER, stainless steel, supports five glass dishes.
16420-0	SETA GLASS DISH, borosilicate, pack of 10.

CONSUMABLES - Oxidation Pressure Cylinder

2 Years/2000 Tests - Bath	Qty
15640-001 NEOPRENE WASHER, pack of 50	1
16400-001 LEAD GASKET, pack of 20	1

16450-0 OXYGEN PRESSURE GAUGE NH

- 0 to 1380kPa (0 to 200psi)
- Oxygen safe



An oxygen safe pressure gauge with a range of 0 to 1380kPa (0 to 200psi), 150mm diameter, suitable for use with 16400-3 Norma Hoffman oxidation cylinders.

SOLID BLOCK OXIDATION BATHS

ASTM D2440; D4636; D4871; D5763; D5846; D6514; IP 48; IP 154; IP 280; IP 306; IP 307; IP 331 (obs); IP 335; EN 61125A, B and C; IEC 61125 Methods A, B and C; BS 2000 Parts 48, 280 and 306; ISO 2160; ISO 7624; DIN 51 811; NF T60-150; JIS K2513

Suitable for heating samples for Copper Strip Tests to ASTM D4048; IP 112; BS 2000 Part 112

A Solid Block Bath alternative to ASTM D130 and IP 154



16600-2 (Glassware & Flowmeters supplied separately)

16600-2 SETA HIGHTEMP BATH - UNIVERSAL OXIDATION

- Solid block bath
- 50 to 375°C temperature range
- 15 test wells in three sizes
- Up to 6 simultaneous tests

A solid block bath for oxidation and thermal stability tests that allows up to six tests to be carried out simultaneously.

Comprises a solid block bath, flow control unit (flowmeters supplied separately) and a digital temperature controller. The aluminium solid block bath maintains a set temperature to within $\pm 0.5^\circ\text{C}$ across a range of 50° to 375°C . The top of the bath is insulated by a ceramic pad, and the vacant test wells have removable ceramic covers. The bath can accept six 27mm oxidation cells, or six 39mm oxidation cells, or three 51mm oxidation cells.

The flow control unit comprises a gas inlet pressure regulator, pressure gauge and mounts for six flowmeters. The digital temperature controller is simple to operate and features an easy-to-read high visibility blue display.

SUPPLIED WITH: flow control unit, digital temperature controller, mains leads and instruction manual.

Note: Flowmeters, glassware and catalysts must be ordered separately.



BIO-FUEL TESTING



SETAPLUS EXTENDED WARRANTY AVAILABLE

SPECIFICATIONS

Seta Part No:	16600-2	16620-2
Temperature Range:	50° to 375°C	50° to 375°C
Temperature Stability:	$\pm 0.5^\circ\text{C}$	$\pm 0.5^\circ\text{C}$
Test Wells:	6 x 27mm 6 x 39mm 3 x 51mm	12 x 27mm
Voltage:	220/240V, 50/60Hz	220/240V, 50/60Hz
Power:	1.2kW	1.2kW
Size (HxWxD)		
Bath:	48 x 45 x 49cm	48 x 45 x 49cm
Flow Control Unit:	44 x 35 x 26cm	44 x 35 x 26cm (each)
Temperature Controller:	26 x 12 x 6cm	26 x 12 x 6cm
Weight		
Bath:	90kg	90kg
Flow Control Unit:	11kg	11kg (each)
Temperature Controller:	2kg	2kg

FLOWMETER SPECIFICATIONS

Seta Part No.	Flow Rate l/hr	Conditions	Accuracy
16601-2	0.15 to 2.05	Oxygen @ 0.4 bar (g) and 21°C	$\pm 2\%$ full scale
16602-2	0.3 to 3.9	Air @ 0.4 bar (g) and 21°C	$\pm 2\%$ full scale
16603-2	0.8 to 10.8	Air @ 0.4 bar (g) and 21°C	$\pm 2\%$ full scale
16608-0	1.0 to 17	Air @ 0.4 bar (g) and 21°C	$\pm 1\%$ full scale

SOLID BLOCK OXIDATION BATHS

16620-2 SETA HIGHTEMP BATH - 12 WAY

- 12 test wells for 27mm glassware
- Up to 12 simultaneous tests

Similar to the 16600-2 Seta Hightemp bath, the 16620-2 can accept up to twelve 27mm oxidation cells.

The flow control unit is supplemented by a second unit that provides places for a further six flowmeters (supplied separately), thus allowing 12 simultaneous tests.

SUPPLIED WITH: two flow control units, digital temperature controller, mains leads and instruction manual.

Note: Flowmeters, glassware and catalysts must be ordered separately.



BIO-FUEL TESTING



SETAPLUS EXTENDED WARRANTY AVAILABLE

16630-0 SETA HIGHTEMP BATH - 61125 METHOD C

- Supplied with flowmeters

Similar to 16600-2, but supplied with flowmeters for tests to IEC 61125C.

16635-0 SETA HIGHTEMP BATH - 12 WAY - 61125 METHOD C

- Supplied with flowmeters

Similar to 16620-2, but supplied with flowmeters for tests to IEC 61125C.

ACCESSORIES - Hightemp Baths

REQUIRED

Select from the table "ITEMS REQUIRED FOR EACH TEST":

- 16720-0 GLASSWARE, 27 x 210mm test cell assembly, pack of 6.
Note: 2 sets of glassware are required for 12 test configuration.
 - 16771-0 GLASSWARE, 39 x 210mm test cell assembly, pack of 6.
Note: 16600-0 only.
 - 16840-0 GLASSWARE, 27 x 300mm test cell assembly, pack of 6.
Note: 2 sets of glassware are required for 12 test configuration.
 - 16850-0 GLASSWARE, 39 x 300mm test cell assembly, pack of 6.
Note: 16600-0 only.
 - 16860-0 GLASSWARE, 51mm Allihn condensor assembly, pack of 6.
Note: 16600-0 only.
 - 16601-2 FLOWMETER, 1.0 l/hr, oxygen, ±2% fs, set of 6.
CALIBRATION CERTIFICATE (WORKS)
 - 16602-2 FLOWMETER, 3.0 l/hr, air, ±2% fs, set of 6.
CALIBRATION CERTIFICATE (WORKS)
 - 16603-2 FLOWMETER, 5.0 l/hr, air, ±2% fs, set of 6.
CALIBRATION CERTIFICATE (WORKS)
 - 16608-0 FLOWMETER, 15 l/hr, air, ±1% fs, set of 6.
CALIBRATION CERTIFICATE (WORKS)
 - 16610-0 DIGITAL THERMOMETER, with 30 and 100cm thermocouples.
 - 16780-0 IRON CATALYST WIRE, 15m, (for details see page 73).
 - 16790-0 COPPER CATALYST WIRE, 15m, (for details see page 73).
 - 16919-0 PREFORMED COPPER/STEEL CATALYST COIL, pack of 6, (for details see page 73).
 - 16920-0 STEEL CATALYST WIRE, 3m, pack of 6, (for details see page 73).
 - 16930-0 COPPER CATALYST WIRE, 3m, pack of 6, (for details see page 73).
 - 16791-0 PREFORMED COPPER CATALYST COIL, pack of 6, (for details see page 73).
 - 16890-0 5 METAL SPECIMEN SET
 - 16660-0 BUBBLE FLOWMETER
 - 16730-0 BUBBLE FLOWMETER
 - 22750-2 DIGITAL STOPWATCH, hand-held, 0.1s resolution, (for details see page 141)
- THERMOMETERS:**
ASTM9C/IP15C; ASTM40C/IP80C; ASTM41C/IP81C; IP22C

ITEMS REQUIRED FOR EACH TEST

Seta Part No.	IP 48	IP 280 ISO-DIS 7624	IP 306	IP 307 EN 61125A	IP 331	IP 335 EN 61125B	D2440	D4636	D5763	D5846	D6514	EN 61125C
22750-0	●	●	●	●	●	●	●	●	●	●	●	●
GLASSWARE												
16720-0	●	●	●	●		●	●					●
16771-0					●							
16840-0												
16850-0									●	●	●	
16860-0								●				
FLOWMETERS												
16601-2		●	●	●	●	●	●					
16602-2									●	●	●	
16603-2								●				
16608-0	●											
16660-0	●							●				
16730-0		●	●	●	●	●	●		●	●	●	
THERMOMETERS												
16610-0							●	●	●	●	●	
IP22C	●											
ASTM9C/ IP15C		●		●		●						●
ASTM40C/ IP80C				●								●
ASTM41C/ IP81C		●	●		●	●	●		●			●
ASTM41C/ IP81C												
CATALYSTS												
16780-0					●							
16790-0	●		●	●	●	●						●
16791-0							●					
16919-0										●	●	
16920-0										●	●	
16930-0										●	●	
16890-0								●				

SOLID BLOCK OXIDATION BATHS

16640-0 SETA TOST BATH - 12 WAY

ASTM D943; ASTM D7472 Oxidation Stability of Biodiesel Blends (B100) and Blends of Biodiesel with Middle Distillate Petroleum Fuel (Accelerated Method); IP 157; ISO 4263; DIN 51 587; NF T60-150 (TOST Test)

* Alternative to ASTM D2274-IP 388 and ISO 12205

- 12 positions
- Dry block bath
- Ambient to 100°C temperature range
- Integral Setatemp controller
- Seta Oxflo Controller and flowmeters included

A compact solid block bath which can accept up to 12 sets of oxidation glassware and is suitable for TOST tests and as an alternative to liquid filled baths.

The layout of the heating elements give an even temperature distribution and the integral Setatemp 50K Temperature Controller ensures stability over extended test times. Safety features include an over-temperature cut-out.

The Seta Oxflo Controller (supplied) comprises an inlet pressure regulator, pressure gauge and six precision flowmeters with tubes and floats calibrated for oxygen at 3 litres/hour, 21°C and 0.4bar pressure.

SUPPLIED WITH: 6 place Seta Oxflo Controller with gas inlet pressure regulation, pressure gauge and six precision flowmeters calibrated at 3 litres/hr.

Note: For 12 way operation an additional SetaOxflo Controller (16905-2) is required.



16640-0 (Glassware supplied separately)



BIO-FUEL TESTING



CALIBRATION CERTIFICATE (WORKS)



SETA PLUS EXTENDED WARRANTY AVAILABLE

16645-0 SETA TOST BATH - 6 WAY ALSO AVAILABLE, PLEASE CONTACT STANHOPE-SETA FOR DETAILS

ACCESSORIES - TOST & Oxidation Baths

REQUIRED

Select from the table "ITEMS REQUIRED FOR EACH TEST":

- 11470-0 SILICONE CARBIDE PAPER, 100 grit (FEPA), 28 x 23cm, pack of 50.
- 16905-2 SETA OXFLO CONTROLLER, 6 way (FOR 16640-0 ONLY) *Note: required for 12 way operation only.*
- 16910-0 SET OF GLASSWARE, comprises six each condensers, test tubes, delivery tubes and interconnecting tubing.
- 16914-0 SAMPLE FILTERING KIT, for ASTM D2274 only, comprises filters, filter holder, vacuum flask, and vacuum pump.
- 16915-0 FILTRATION & ACCESSORY KIT, for ASTM D4310 only, comprises filters, filter holder, weighing bottle, separating funnel, sampling tube, syringe, dessicator, vacuum filtering flask, forceps, and vacuum pump.
- 16916-0 FILTRATION KIT, for ASTM Draft Method for BioDiesel and BioDiesel Blends, comprises filters, filter holder, vacuum filtering flask, and vacuum pump.
- 16920-0 STEEL CATALYST WIRE, cut in 3 metre lengths, pack of 6, (for details see page 73).
- AND
- 16930-0 COPPER CATALYST WIRE, cut in 3 metre lengths, pack of 6, (for details see page 73).
- OR
- 16921-0 PREFORMED COPPER/STEEL CATALYST COIL, pack of 6, (for details see page 73). *Note: alternative to 16920-0, 16930-0 and 16940-2.*
- 16950-0 ACCESSORY PACK, for ASTM D943, comprises thermometer bracket, two support rings and six each sampling tube holders, sampling tube spacers, stainless steel sampling tubes with Luer connector, stoppers, oil level indicator strips and 10ml syringes. Excluding thermometer, 16980-0.
- 16980-0 THERMOMETER (SPECIAL) for ASTM D943, 80°C to 100°C graduated in 0.1°C. Immersion depth 76mm.
- 25000-3 SETA-HOT, 1000w electric heater with variable heat control, (for details see page 137).
- 94635-0 BATH OIL, 20 litres, for filling bath, for temperatures between 80 and 120C (FOR 16900-5 and 16960-0 ONLY).
- 99100-2 ANALYTICAL BALANCE, (for details see page 141).
- 99200-2 LABORATORY OVEN, (for details see page 137).

THERMOMETER:

ASTM40C/IP80C

Note: Other items which may be required include: Silicone grease, Solvents and acids.

SPECIFICATIONS

Temperature Range:	Ambient to 100°C
Temperature Control at 95°C:	Uniformity: ±0.1°C Stability: ±0.03°C
Bath Type:	Solid Block
Power:	2kW
Voltage:	220/240V, 50/60Hz
Size (HxWxD)	
Bath:	50 x 25 x 64cm
Oxflo Control Unit:	44 x 35 x 26cm
Weight	
Bath:	110kg
Oxflo Control Unit:	11kg

ITEMS REQUIRED FOR EACH TEST

Seta Part No.	Fuels		Oils		
	*ASTM D2274	ASTM Draft Biodiesel	ASTM D943	ASTM D4310	DIN 51 587
11470-0			●	●	●
16910-0	●	●			●
16914-0	●				
16915-0				●	
16916-0		●			
16920-0			●	●	●
16921-0			●	●	●
16930-0			●	●	●
16950-0			●		
16980-0			●	●	
25000-3	●	●			●
99100-2	●	●		●	●
99200-2	●	●		●	●
ASTM40C/IP80C	●	●	●	●	●

*Note: *ASTM D2274 specifies the use of a liquid bath.*