

REID VAPOUR PRESSURE (RVP)

2

22210-3 SETA REID VAPOUR PRESSURE BATH

ASTM D323 Procedures A, C & D; D1267; D4953 Procedure A; IP 69 Procedures A, C & D; IP 402 (obs); IP 410; BS 2000 Parts 69, 402 (obs), 410, ISO 3007; ISO 4256; EN 12 (obs); FTM 791 1201; NF 12 (obs); NF M07-007; NF M41-010 (LPG); JIS K2258

- Accepts up to 6 pressure cylinder assemblies
- Temperature range ambient +5°C to 90°C (194°F)
- Uniformity better than $\pm 0.1^\circ\text{C}$ @ 37.8°C ($\pm 0.2^\circ\text{F}$ @ 100°F)
- Digital temperature control
- Low fluid level and over-temperature protection



22210-3
(Cylinders & gauges supplied separately)

A floor standing water bath specifically designed for the determination of vapour pressure with Seta Reid or Seta Vapour pressure cylinders.

The stainless steel 80 litre water bath has a temperature range of ambient +5°C to 90°C and can achieve a test temperature of 37.8°C (100°F) with a uniformity of $\pm 0.1^\circ\text{C}$ (0.2°F).

A programmable, digitally controlled thermostir unit combines the functions of heater, temperature controller, timer and stirrer. The thermostir unit is equipped with an RS 232 port, a switched output for an external relay, a socket for an external PT100 temperature probe and alarms and cut-outs for low fluid level and over-temperature.

The 22210-3 will accept up to four 22410-0 and up to six 22400-0 Seta Vapour Pressure Cylinder / Ullage Chamber assemblies.

SUPPLIED WITH: 4 pressure cylinder mounting brackets, mains lead and instruction manual.

SPECIFICATIONS

Test Temperature Range:	ambient +5°C to 90°C (9°F below ambient to 194°F)
Temperature Uniformity:	$\pm 0.1^\circ\text{C}$ @ 37.8°C
Bath Volume:	80 litre
Bath Fluid:	Water (De-ionised)
Cylinder Capacity:	Up to 6 cylinder assemblies
Voltage:	220/240V, 50/60Hz
Power:	2.2kW
Size (HxWxD):	77 x 55 x 51cm
Weight:	70kg

ACCESSORIES - RVP Bath

REQUIRED - Gasoline & Volatile Crude Oil

PRESSURE CYLINDER

Select from RVP CYLINDERS below.

THERMOMETERS

ASTM18C/IP23C

REQUIRED - LPG

PRESSURE CYLINDER & ULLAGE CHAMBER

Select from VAPOUR PRESSURE CYLINDERS on page 26.

THERMOMETERS

ASTM65C

OPTIONAL

22210-301 VESSEL SUPPORT BRACKET, for extra cylinders, stainless steel, pack of 2.

RVP CYLINDERS

ASTM D323; D4953 Procedure 'A'; IP 69; IP 402 (obs); BS 2000 Part 69 & 402 (obs); EN 12 (obs); FTM 791 1201; ISO 3007; NF M07-007; JIS K2258

- Reid vapour pressure of non-viscous petroleum products and volatile crude oil
- Accurate chamber volume ratio
- Quick leak-free bayonet connection between chambers
- Chromium-plated brass construction

22400-0 SETA REID PRESSURE CYLINDER ASSEMBLY

- Pressures up to 180kPa (26psi)
- ASTM D323 & IP 69 Procedures A & D
- Hydrostatically pressure tested to 690kPa (100psi)

22410-0 SETA REID PRESSURE CYLINDER ASSEMBLY

- Pressure range 180 to 700kPa (26 to 100psi)
- ASTM D323 & IP 69 Procedure C
- 1/2 inch gate valve between gasoline and air chambers
- 1/2 inch needle valve to gasoline chamber
- Hydrostatically pressure tested to 1380kPa (200psi)



Typical RVP Cylinder Assemblies
(Gauge and Manometer Adaptor supplied separately)

ACCESSORIES - Reid Pressure Cylinder Assembly

REQUIRED

PRESSURE GAUGES

Select from SETA RVP GAUGES on page 25.

OPTIONAL

22460-0 SETA MANOMETER ADAPTOR, adapts customer's manometer to Seta 22400-0 Pressure Cylinder using plastic/rubber tubing, pack of 2.

CHARGING SYSTEMS

Select from TANK SAMPLING EQUIPMENT FOR RVP on page 123.

SETA REID VAPOUR PRESSURE GAUGES



ASTM D323; IP 69; BS 2000 Part 69

- Pressures up to 700kPa (100psi)
- Accuracy $\pm 1\%$ fsd
- 150mm dial
- Mirror scale in kPa and psi
- $\frac{1}{4}$ inch BSP fitting
- Sturdy handle



A range of Bourdon-Tube type pressure gauges with 150mm diameter mirror band dials to eliminate parallax errors while reading. The graduations are marked in kPa and psi (lbf/in²).

The gauges have a bottom entry $\frac{1}{4}$ inch BSP fitting and a heavy duty stainless steel case with a large carrying handle suitable for lifting a complete pressure vessel assembly from a bath.

The gauges conform to EN 837 S2, Accuracy Class 1 $\pm 1\%$ fsd.

Seta Part	Scale Range		Division		Sub-Division	
	kPa	psi	kPa	psi	kPa	psi
22500-0	0 to 35	0 to 5	5	1	0.5	0.1
22510-0	0 to 100	0 to 15	10	3	0.5	0.1
22520-0	0 to 200	0 to 30	25	5	1	0.2
22530-0	0 to 300	0 to 45	25	5	1	0.2
22540-0	0 to 400	0 to 60	50	10	1.5	0.25
22550-0	0 to 700	0 to 100	50	10	2	0.5

22430-3 SETA PRE-PRESSURISED MANOMETER

- Verification of pressure gauge up to 135kPa (19.5psi)
- 0.2kPa graduations

Mercury type, unbreakable plastic construction, wall mounting.

SUPPLIED WITH: needle valve, isolation valve, quick release coupling, neoprene tube and instruction manual.

Note: Supplied without mercury.



22470-3 SETA MANOMETER

- Verification of pressure gauge up to 135kPa (19.5psi)
- 0.5kPa graduations

Mercury type, unbreakable plastic construction, wall mounting.

Note: Supplied without mercury.



80005-2 SETA PRESSURE CALIBRATOR

- For verification above 180kPa (26psi)
- Accuracy $\pm 0.015\%$ indicated pressure

A deadweight tester with integral handpump and pressure gauge.

SUPPLIED WITH: set of calibrated weights.

Note: Refer to Section 22, CALIBRATION, for more details.



RVP VERIFICATION INSTRUMENTS



22430-3

VAPOUR PRESSURE CYLINDERS

2

ASTM D1267; IP 161 (obs); IP 410; BS 2000 Part 410; EN ISO 4256; NF M41-010

- Pressure Tested & UKAS Certified to 6900kPa (1000psi)
- Stainless steel construction

22300-2 SETA MAIN CHAMBER

- Ullage to cylinder ball valve
- Fine control bleeder valve

22310-2 SETA 20% ULLAGE CHAMBER

- Fine control ullage inlet valve

22320-2 SETA 33¹/₃% ULLAGE CHAMBER

- Fine control ullage inlet valve



Used to determine the vapour pressure of LPG to avoid exceeding pressure safety limits during storage, handling and use.



ACCESSORIES - Vapour Pressure Cylinders

REQUIRED FOR 22300-2

- 22490-0** SETA GAUGE ADAPTOR, 1/2 inch BSP male to 1/4 inch BSP female. For fitting gauge to 22300-2 Main Chamber, pack of 2.
- 22330-0** SETA CORROSION RESISTANT SAMPLING CONNECTOR, 3ft long, one end suits ullage chamber inlet valve, connects apparatus to sample.

PRESSURE GAUGES

Select from SETA VAPOUR PRESSURE GAUGES below.

OPTIONAL

- 22090-0** SETA COOLING UNIT, for LPG, with inlet and outlet valves, requires solid CO₂ (for details see page 118).

Typical Cylinder Assembly
(Gauge and Ullage Chamber supplied separately)

VAPOUR PRESSURE GAUGES

SETA VAPOUR PRESSURE GAUGES



ASTM D1267; IP 410; BS 2000 Part 410

- Pressures up to 3500kPa (500psi)
- Accuracy $\pm 1\%$ fsd
- 150mm dial
- Mirror scale in kPa and psi
- 1/4 inch BSP fitting
- Sturdy handle



A range of Bourdon-Tube type pressure gauges with 150mm diameter mirror band dials to eliminate parallax errors while reading. The graduations are marked in kPa and psi (lbf/in²).

The gauges have a bottom entry 1/4 inch BSP fitting and a heavy duty stainless steel case with a large carrying handle suitable for lifting a complete pressure vessel assembly from a bath.

The gauges conform to EN 837 S2 (up to 2,500kPa) or S3 (2,500kPa and above), Accuracy Class 1 $\pm 1\%$ fsd.

SETA VAPOUR PRESSURE GAUGES

Seta Part	Scale Range		Division		Sub-Division		Method
	kPa	psi	kPa	psi	kPa	psi	
22550-0	0 to 700	0 to 100	50	10	2	0.5	D1267
22560-0	0 to 1750	0 to 250	100	25	2.5	0.2	D1267
22561-0	0 to 3500	0 to 500	250	50	25	2	D1267
22570-2	0 to 700	n/a	50	n/a	2	n/a	IP 410
22580-2	0 to 2000	n/a	100	n/a	5	n/a	IP 410
22590-2	0 to 3500	n/a	250	n/a	25	n/a	IP 410