RELIANCE LABORATORY EQUIPMENT (GAUTENG) PTY LTD.
Reg no. 2004/024304/07

95 ROBYN STREET
KLERKSOORD
AKASIA
PRETORIA
SOUTH AFRICA

TEL: +27 0 12 5498910/1/2
FAX: +27 0 86 5030909
Email: info@reliancelab.co.za
Website: www.reliancelab.co.za

PENETROMETER BITUMEN

CONTENTS

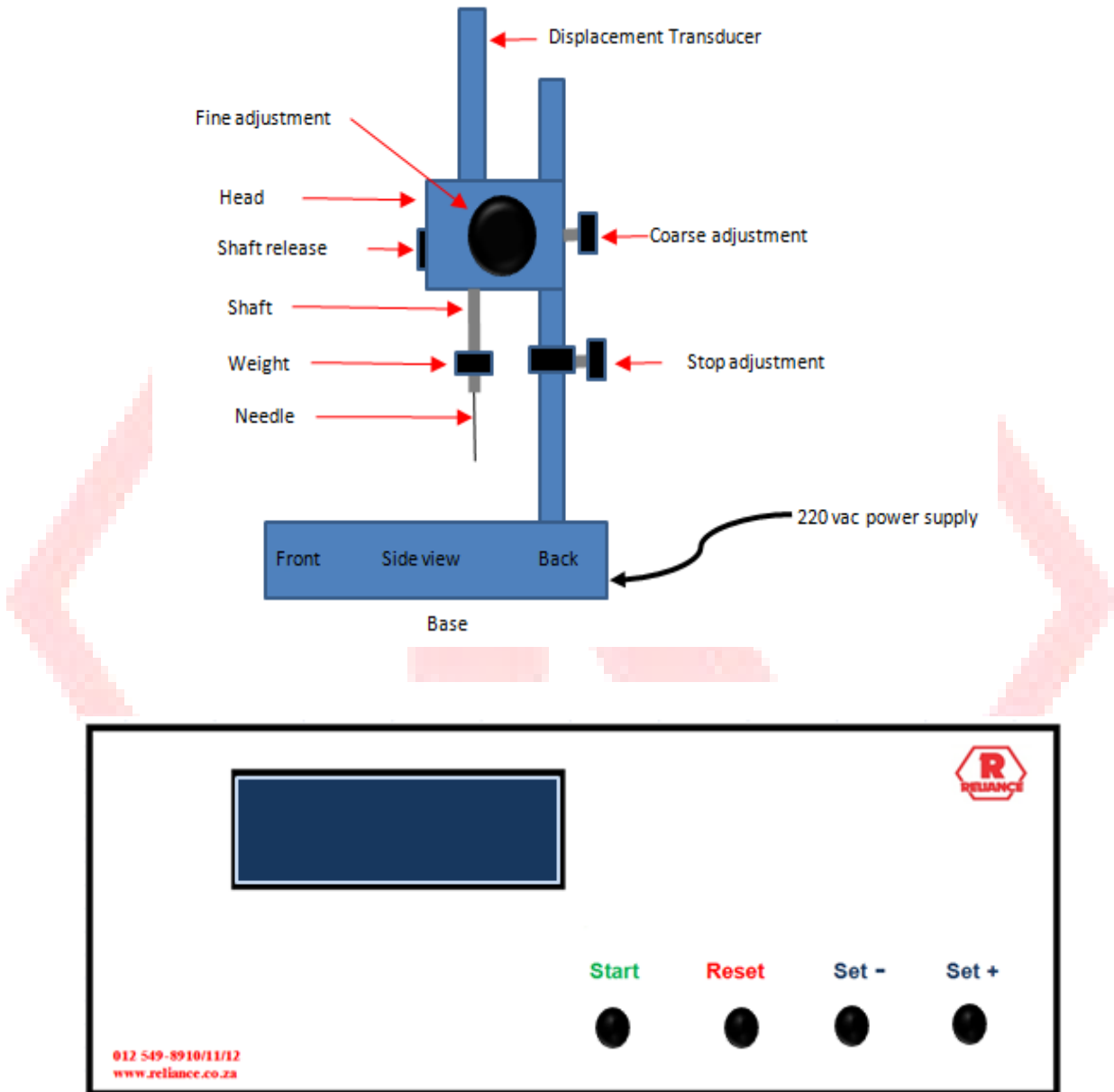# CHAPTER 1

1.1 SETTING UP

With the unit fully assembled and plugged into a 220 vac outlet. Switch the device On. (On switch back panel).Wait 5 to 10 minutes for the electronics to warm up an stabilized.

Press and hold the "Shaft release".

While holding the shaft release in, genly move the "Shaft" up or down until the display shows "Ready==========".

Use the "Coarse adjustment to adjust clearance between the needle an base so that a test sample can easily be inserted between the needle and the base.

Move the lock adjustment up so that it touches the bottom of the "Head" and lock into place.

1.2 TESTING

1. Prepare a sample as per specification.
2. Press and hold the "Shaft release."
3. While holding the Shaft release in. Gently move the "Shaft" up or down until the display shows "Ready========"
4. Place the sample between base and the needle.
5. Use the "Fine adjustment" to lower the needle till it touches the sample.
6. Press the test button.
7. Wait for the result. Record the result.
8. Press the "Reset button".
9. Repeat as required.

Ready for testing   Test in progress   End of test

| 1.2mm   5.0sec | | 1.2mm   4.6.sec | | 6.8mm   4.6.sec |
| Ready============== | | Testing============ | | Result===========Reset |

1.3 FUNCTIONS

Start Button	Starts a test. After ? number of seconds the test stops and displays the result.
Reset Button	Resets the device for the next test.
Set -	Decreases the test time (Default 5 seconds)
Set +	Increases the test time (Default 5 seconds)

Shaft/millimetres

When the saft is within 2mm from zero the display will show:

Ready================   - Ready for testing

Between 2 and 20mm the display will show:

====================   - Within working range

Under 0mm the display will show:

Under=============   - Under working range

Over 20mm the display will show:

=============Over   - Over working range
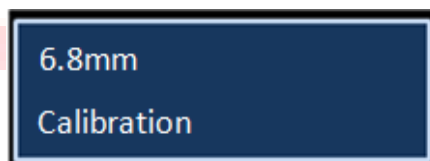

CHAPTER 2

2.1   CALIBRATION

CAUTION

On the back panel is a toggle switch. Moving the switch On (Down) switches the device into calibration mode.

Functions:

Start Button	Store the calibration results.
Reset Button	Zeros the device.
Set -	Decrease the span.
Set +	Increases the span.)

6.8mm

Calibration

1. REMOVE the needle and weight.
2. Press and hold the "Shaft release"
3. While holding the shaft release in. Gently move the "Shaft" up or down until the display shows close to 0.0mm.
4. Release the "Shaft release".
5. With a calibration block 10 to 20mm (Default 15mm).
6. Use the "Fine adjustment" to raise or lower the head until the block just fits between the Shaft and base.
7. Press the "Zero Button" (Reset).

8. Press the "Shaft release" and allow the shaft to rest on the base.
9. Take not of the reading.
10. If required use the "Set" buttons to adjust the reading.
11. Use the "Store Button" (Start) to save the calibration.
12. Switch the calibration switch Off (Up) to exit calibration mode.

15.0mm

Calibration