Hadeco

BiDop7

Quick-Start T.B.I Guide

briggatemedicalcompany

INDEX

INSTRUCTIONAL VIDEO

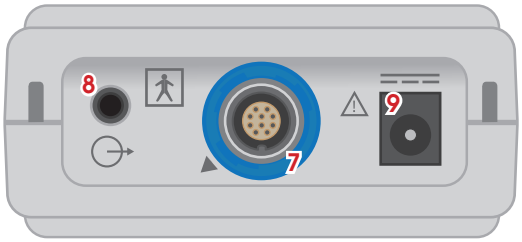
We have produced a demonstrational video that details the procedure to perform a Toe Pressure Study using the Hadeco Dopplers. The video performs the demonstration using the ES100V3 model however the instructions given are also applicable to both the Smartdop 45 and BiDop7 models.

ES100V3 T.B.I. Kit

Smartdop 45 T.B.I. Kit

BiDop7 T.B.I. Kit

MAIN FEATURES & CONTROLS



1. Colour LCD Display
2. Speaker Volume Controls
3. Menu Mode Button
4. Navigational buttons when in Menu or Freeze Modes
5. Enter Button to activate listed menu option
6. On/Off Button
7. Probe Connection Port
8. USB interface port (Cable & Software sold separately)
9. AC Power Connection
10. 8MHz Probe
11. Probe Button
12. Speaker
13. Headphone Port

Other Items Required

- Sphygmomanometer with detachable Arm and Toe Cuffs
- PG-30 PPG Probe
- PPG Toe Clip or Tape to attach PPG Probe to Toe

For a more detailed explanation on the Features and Controls for the BiDop7, please refer to the Operating Manual supplied with the unit.

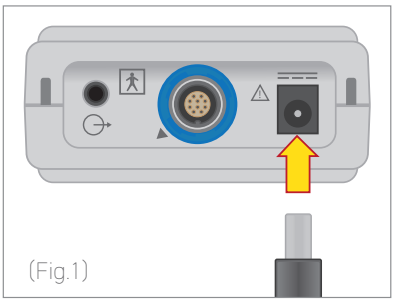
INITIAL SET-UP

QUICK START

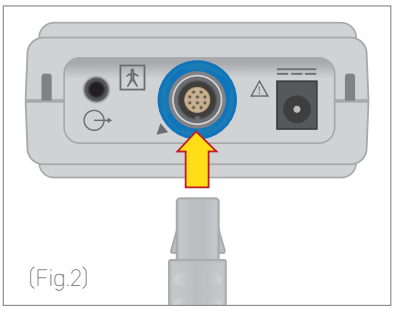
1. Ensure the device is switched OFF and plug-in the AC Adapter Connector to charge the battery prior to use (Fig.1). "CHARGING" will be shown on the LCD Screen and will disappear once the battery is fully charged.

2. Once the battery is charged, remove the AC Adapter Connector and switch on the device by pressing the On/Off Button.

3. Connect either the 8MHz Probe or PG-30 PPG Probe into the Probe Connection Port (Fig.2). Simply push the connection into the device until it "clicks" securely in place. To remove the Probe from the device - pull the base of the Connector away from the doppler to dis-engage and remove it.



(Fig.1)



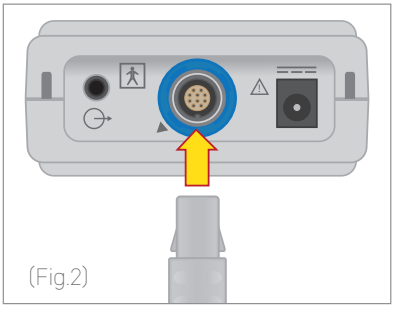
(Fig.2)

DOPPLER VELOCITY WAVEFORM

1. Insert the 8 MHZ probe into the unit.

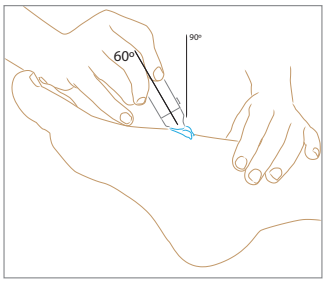
2. Palpate relevant pulse and apply ultrasound gel (Fig.3).

3. Position probe on pulse and angle at approximately 60 degrees to the vessel (Fig.3). Adjust the probe angle until clear, crisp sounds are heard and a defined waveform is visible on the LCD display (Fig.4). You can freeze the waveform and save using the Probe Button and menu selection to upload the test to the Smart V Link software (sold separately).

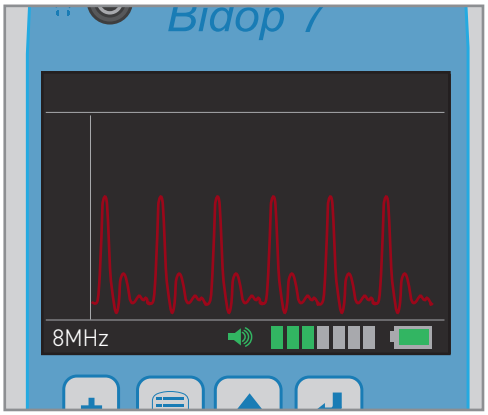


(Fig.2)

(Fig.3)



(Fig.4)



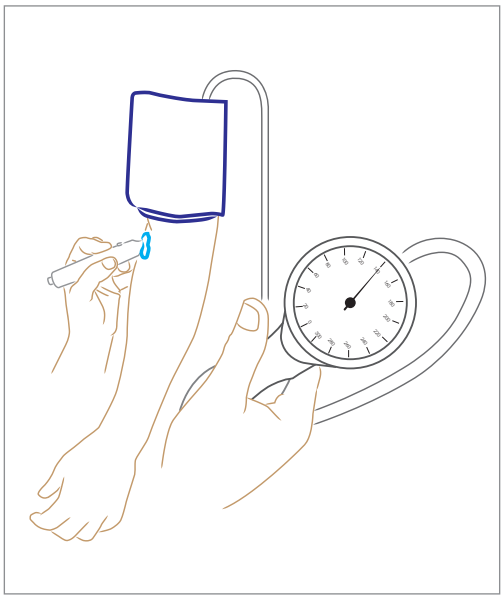
OBTAINING A.B.I & T.B.I READINGS

BRACHIAL PRESSURE

1. Apply the Arm Cuff. Follow the same process as displayed on page 2 to locate the pulse waveform.

2. When the waveform is steady and clear inflate the cuff using the sphygmomanometer 20 mmHg above the point of sound cessation and flat lining of the waveform. Slowly deflate the cuff at a rate of 2-3 mmHg per second.

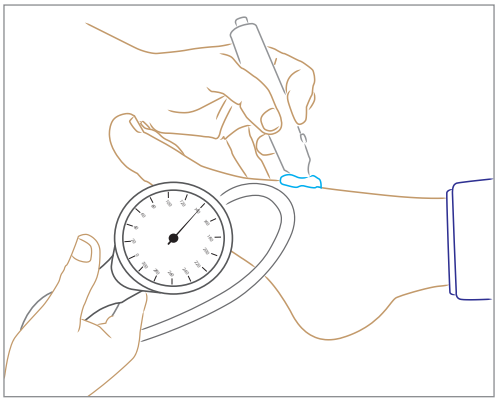
3. Identify the brachial pressure at the point of the return of the waveform and sound. Repeat both arms and use the highest pressure for the ABI calculation.



ANKLE PRESSURE

1. Apply the cuff to the ankle. Follow the same process as above to locate the various pulse waveforms of the feet i.e. dorsalis pedis and posterior tibial.

2. Repeat the same process of cuff inflation and deflation as the brachial pressure and note the two pressures to be used in the ABI calculation.



TOE PRESSURE

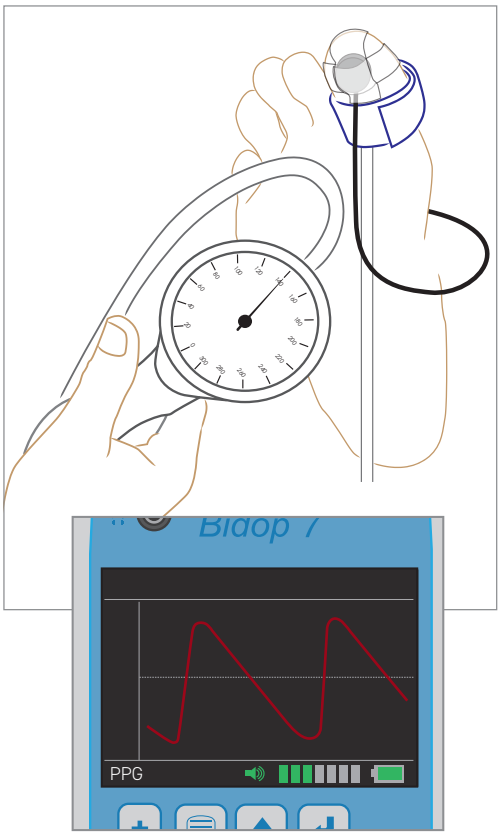
1. Apply the digital cuff as low as possible on the toe to expose as much of the apex.

2. Position the PPG Probe, ensuring complete contact between the sensor and the skin. Hold in place with either tape or the PPG Clip. The orientation of the sensor is not relevant. Keep the PPG Probe cable clear of interference by taping it to the dorsum of the foot.
PLEASE NOTE: DO NOT APPLY ULTRASOUND GEL

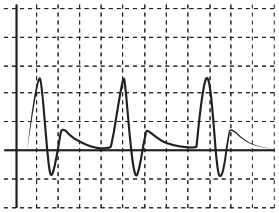
3. When a clear and steady waveform is obtained inflate the cuff. Aim to inflate with one squeeze ONLY on the sphygmomanometer This prevents over inflation and potential destruction of the cuff. Loosen the sphygmomanometer so that it automatically deflates at a controlled and steady rate of approximately 2-3 mmHg per second.

4. Note the return of blood flow when the sound changes and the waveform returns. This can then be used in the TBI calculation.

5. Repeat on the contralateral limb.

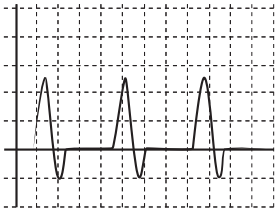


DOPPLER WAVEFORMS - INTERPRETATION



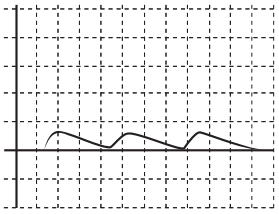
TRIPHASIC (Normal)

- Triphasic sounds indicate bi-directionality and a compliant artery at the point of probe contact.
- The first long sound is the systolic forward component.
- The second short sound is the reversal component and is seen below the baseline of the waveform print out. It is thought to occur upon closure of the aortic valve.
- The third sound indicates wall motion characteristic of a compliant artery.



BIPHASIC (Normal to Mild PAD)

- Biphasic sounds indicate bidirectional flow velocity having both forward systolic and reverse diastolic component but no third component.
- While they are considered normal, the lack of the third component may indicate minor to moderate blood flow impairment or simply improper probe angle this is why it is important to carefully adjust the probe to obtain the best sounds.



MONOPHASIC (Severe PAD)

- Monophasic sounds are low frequency sounds having a single cycle. They are low in intensity and indicate severe disease.

ABI

Ankle Brachial Indexes provide quantitative measurements of peripheral circulation. However, elevated readings >1.3 are common with patients with diabetes due to calcification of the vessels which results in an invalid reading.

$$\text{ABI} = \frac{\text{ankle systolic blood pressure}}{\text{brachial systolic blood pressure}}$$

Peripheral arterial disease (PAD)	<0.9
Mild PAD	0.7-0.9
Moderate PAD	0.4-0.69
Severe PAD	<0.4

TBI

Toe Brachial Indexes are now commonly used as the chance of an invalid reading due to calcification of the vessels is less likely when compared with ankle pressures.

$$\text{TBI} = \frac{\text{toe systolic blood pressure}}{\text{brachial systolic blood pressure}}$$

Normal	0.65-1
Severe/Critical PAD	<0.2

Absolute Toe Pressures

Absolute toe pressures are also used to indicate wound healing potential.

Absolute toe pressures >30mmHg indicate there is an increased chance of healing.

These quantitative measurements can assist in establishing a baseline to track a patient's progress over time, as well as being an excellent screening tool to identify potential foot health risk.

Reference: International Working Group on the diabetic foot, 2011

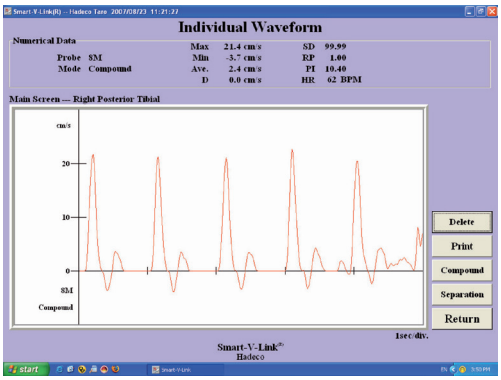
ALSO AVAILABLE:

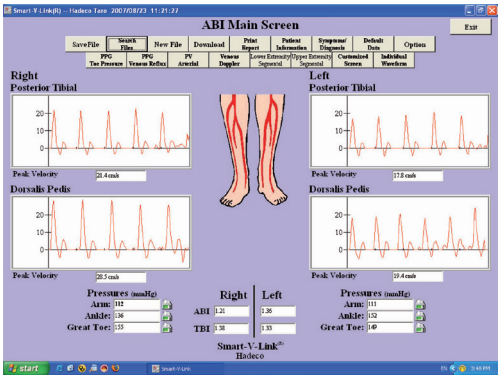
Hadeco

Smart-V-Link Software

for use with Smartdop 30EX/Smartdop45/ES100V3/BiDop7

- Allows for creation of detailed patient reports in pdf format - ideal for referrals
- Fully auto-gain controlled waveform by computer
- ABI, TBI and arterial blood flow velocity
- Real-time vascular waveform display
- Data storage for future reference
- Standardised testing modules for easy operation and documentation
- Includes specially designed USB interface cable to link Doppler to PC
- Requires Windows 7/8.1/10





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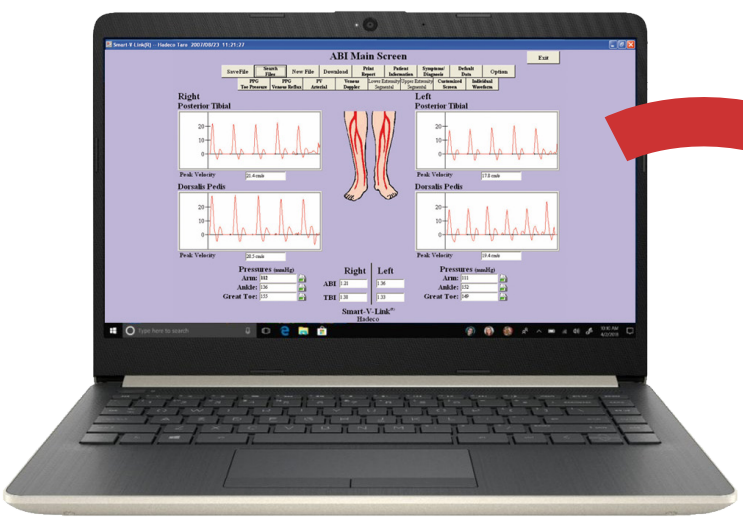
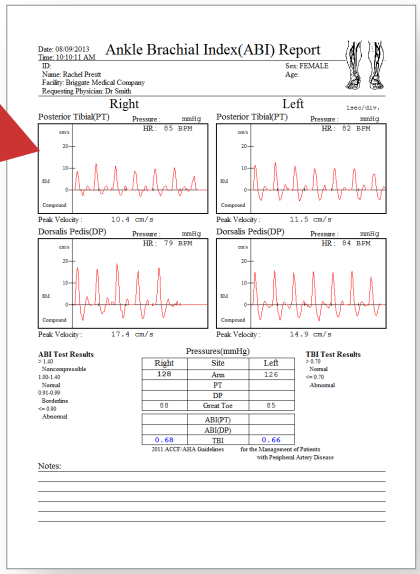
Contact Briggate Medical for pricing





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