Ultrasound Technologies

120 Range of Pocket Dopplers

Introduction

The **fetatrack 120** and **fetatrack120+** are Pocket Doppler fetal heart detectors designed to suit the needs of the General Practitioner or Midwife for routine antenatal heart rate detection. The **fetatrack 120** is a dedicated fetal heart detector with integral 2 MHz transducer and audio presentation of the fetal signal while the **fetatrack 120 +** adds digital fetal heart rate detection and rate display to the **fetatrack 120** and is supplied with an integral 2 MHz transducer. They both have a built in loudspeaker to provide audio presentation of the fetal signal with the **fetatrack 120 +** adding fetal heart rate (FHR), displayed on the LCD display and an RS232 data port for the transfer of data to a PC to review the fetal heart rate traces.

The **vascutrack 120** is a vascular flow detector designed to suit the needs of the General Practitioner, Vascular specialist, Chiropodist or Podiatrist for routine flow detection. It includes an integral 5 or 8MHz vascular probe and provides the user with an audio presentation of the vascular flow signal and an analogue waveform output for connection to a suitable printer.

The instrument is supplied complete with the following:
Doppler Instrument with integral 2 , 5 or 8MHz transducer
9V battery (6LR61)
Operating instructions
Doppler size coupling gel
Soft carry case
The following symbols have been used on the instrument and are defined according to BS EN60601-1-1990

 **Type B equipment**

 **Consult accompanying documents**

Before using your Pocket Doppler for the first time, please read these operating instructions carefully.

fetatrack 120

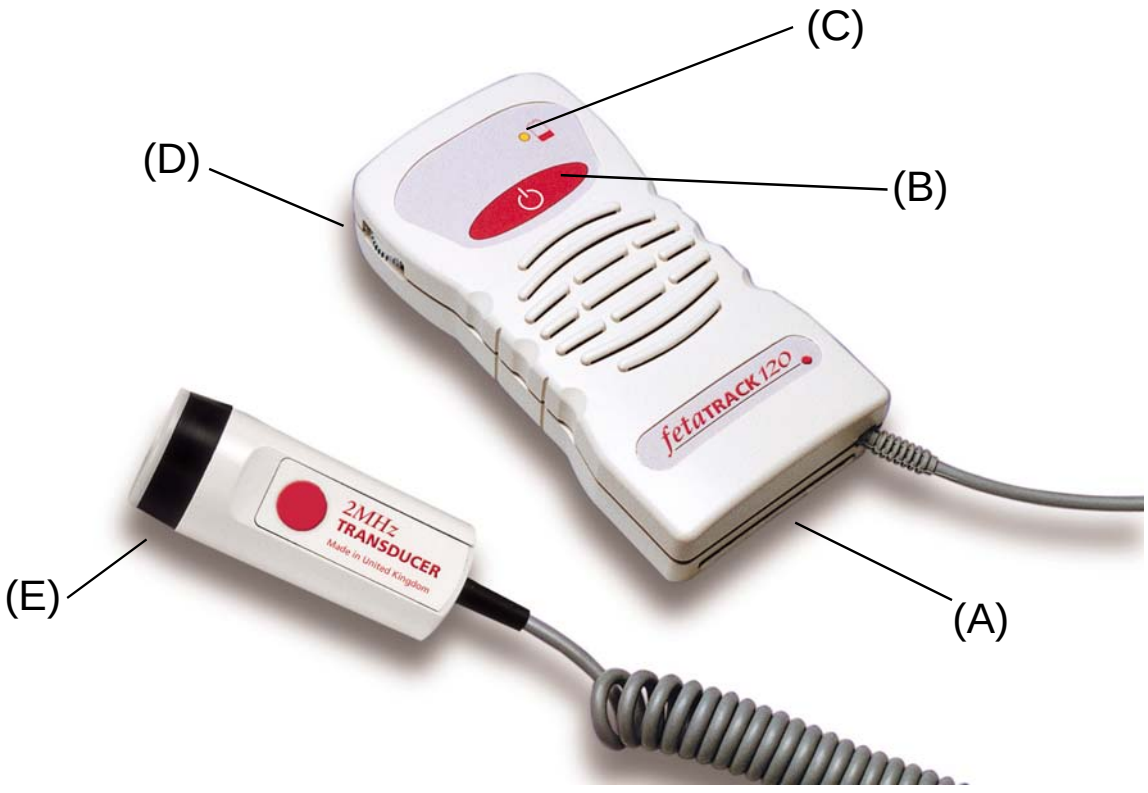
The **fetatrack 120** is powered from a single 9 volt alkaline battery (type 6LR61). To insert or change the battery, slide off the battery cover **(A)** and withdraw the battery and connector. Carefully remove the battery from the connector and snap the new battery into position taking care to ensure correct orientation. Place the battery and connector back into the battery compartment and refit the battery cover.

To switch on the **fetatrack 120** press the switch located on the front of the **fetatrack 120** unit **(B)**.

The **fetatrack 120** will stay on for approximately 5 minutes or until the on/off switch is pressed again.

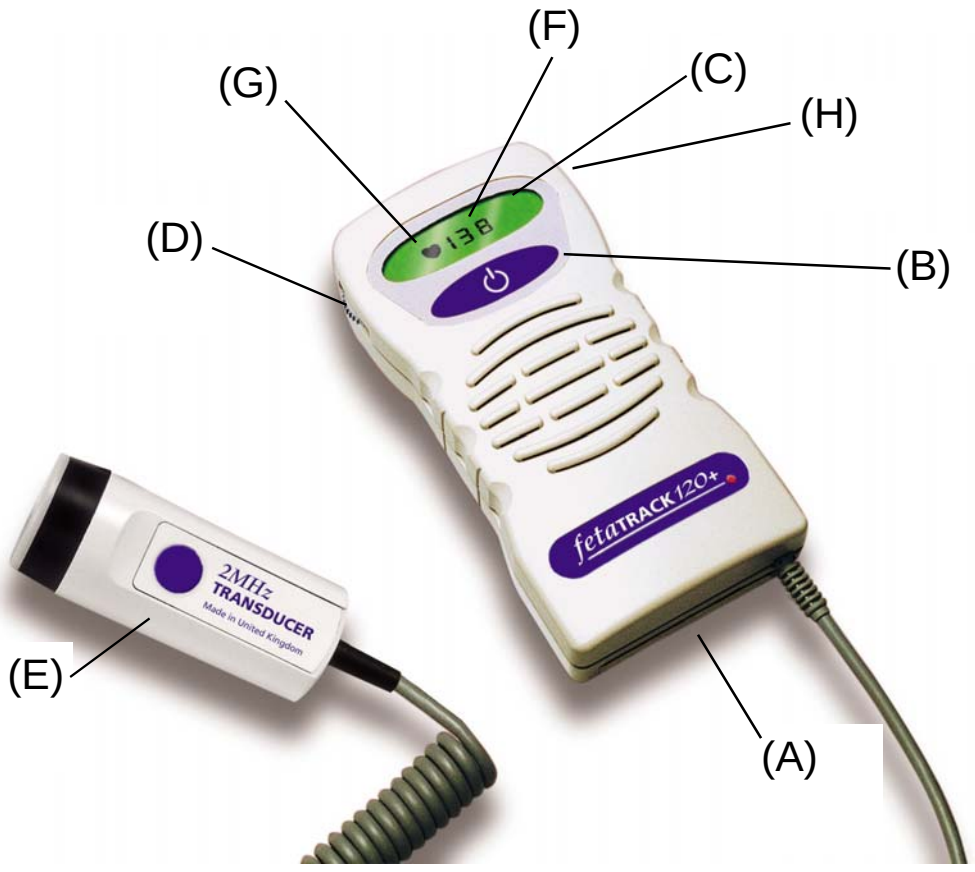
With the unit on, the volume can be adjusted by the rotary volume control on the edge of the unit, **(D)**.

The fetal heart signal is detected using the 2MHz fetal transducer **(E)**. A Yellow LED **(C)** indicates the condition of the battery, when illuminated constantly, battery replacement is recommended. The LED will flash momentarily when the unit is first turned on.



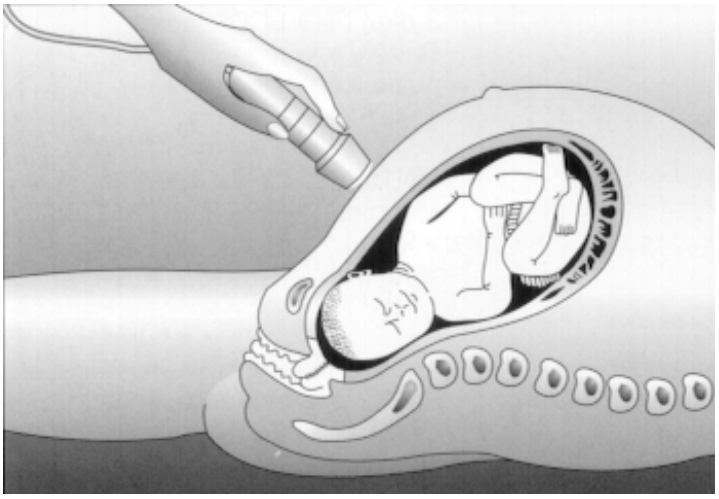
fetatrack 120+

The **fetatrack 120+** operates in a similar manner to the **fetatrack 120**.
The unit is turned on by pressing the on / off control **(B)**, the system micro-controller monitors the detected signal and turns the unit off when no signal has been detected for approximately the last 2 minutes.
The LCD displays battery condition and fetal heart rate **(F)**. A battery icon **(C)** is displayed when the battery requires changing.
The fetal pulse icon **(G)** flashes at approximately the same rate as the detected fetal heart.
Serial RS232 connection can be made by attaching the optional serial link cable to socket **(H)** - contact supplier for further details.



Fetal heart detection

The **fetatrack 120** / **120+** can be used to detect the beating fetal heart from approximately the 10th week of gestation, though this will vary between patients.
Apply a liberal amount of coupling gel to the area just above the symphysis pubis and position the transducer face flat against the abdomen. Tilt the transducer slowly until the fetal heart is heard in the loudspeaker or headset (in early pregnancy the headset helps to eliminate ambient noise making it easier to detect the weaker signals). Later on in pregnancy the best signals are generally found higher up the abdomen. The same procedure should be adopted as above.
Avoid sliding the transducer over the abdomen as this results in an increase in the background noise and makes it more difficult to detect the fetal heart sounds.



The **fetatrack 120** / **120+** may be used to locate the position of the placenta, thus aiding in the early diagnosis of placenta praevia or eliminating placental site where amniocentesis is to be performed.
The sound from the placenta is an indistinct swishing, caused by bloodflow in many vessels. There is no distinct beat pattern to the sound.
The vessels of the umbilical cord give rise to a higher pitched sound than the normal fetal heart, with pulsations at the fetal rate.

vascutrack 120

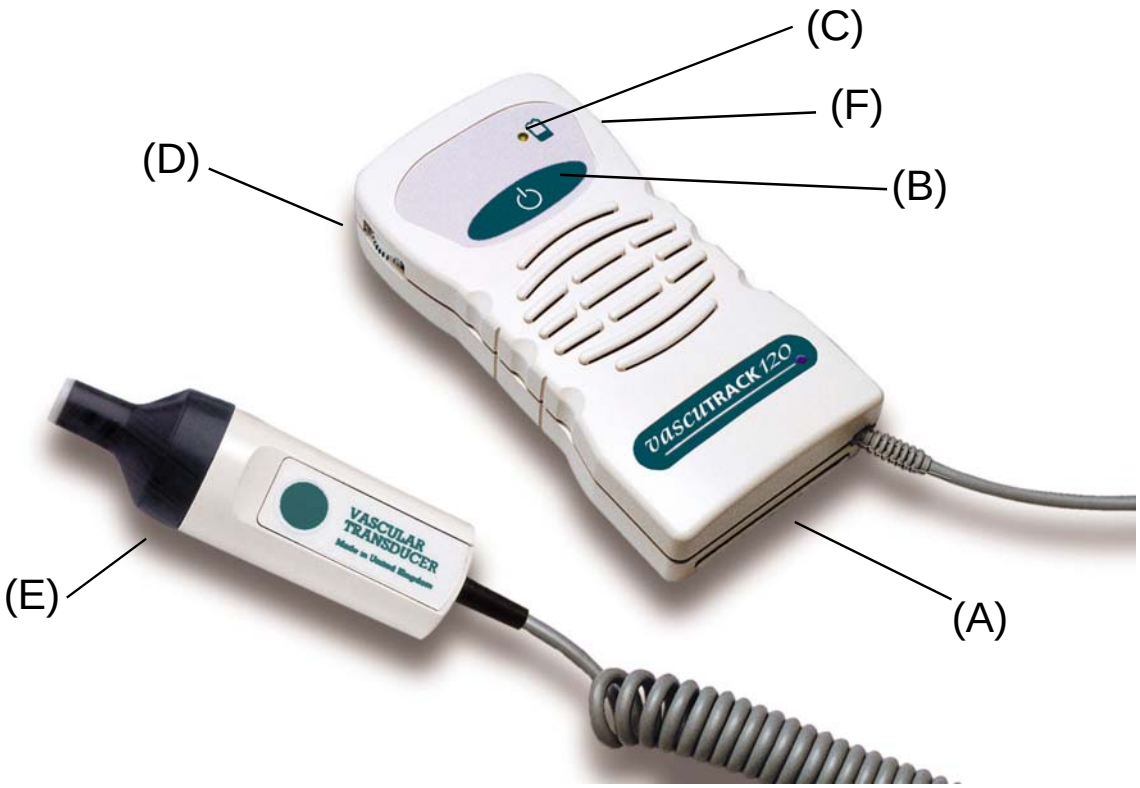
The **vascutrack 120** is powered from a single 9 volt alkaline battery (type 6LR61). To insert or change the battery, slide off the battery cover **(A)** and withdraw the battery and connector. Carefully remove the battery from the connector and snap the new battery into position taking care to ensure correct orientation. Place the battery and connector back into the battery compartment and refit the battery cover.

To switch on the **vascutrack 120** press the centre of the membrane switch located on the front of the **vascutrack 120** unit **(B)**, the unit will stay on for approximately 5 minutes or until the on/off switch is pressed again.

With the unit on, the volume can be adjusted by the rotary volume control on the edge of the unit **(D)**.

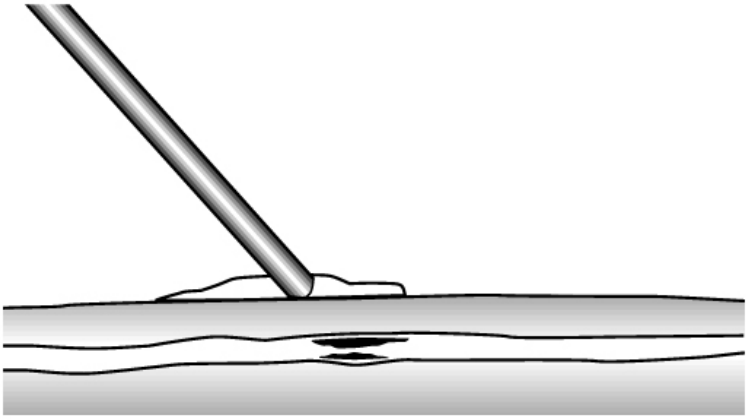
The blood flow signals are detected using the vascular probe **(E)**.

A Yellow LED **(C)** indicates the condition of the battery, when illuminated constantly, battery replacement is recommended. The LED will flash momentarily when the unit is first turned on. Velocity signals can be printed on a suitable printer or ECG with an analogue input by attaching the unit optional printer cable to socket **(F)** - *contact supplier for further details*



Vascular flow detection

The **vascutrack 120** is used to detect both surface vessels, deeper arteries and veins using either the 5MHz or 8MHz transducers.
To obtain the best signal, apply a liberal amount of coupling gel to the area of the vein or artery under investigation. Tilt the transducer at approximately 45 degrees to the vessel. Arteries give a high pitched pulsatile sound, with veins giving a sound like a roaring wind.
The optional headset helps to eliminate ambient noise, making it easier to detect the weaker signals.



It is also usual for the **vascutrack 120** to be used in association with a pressure cuff and sphygmomanometer to indicate the location and extent of arterial occlusion in the form of ankle/brachial pressure index and segmental pressures.
Due to the variation of leg blood pressure over a wide range with the systemic pressure, the actual values are less useful than the pressure index, which relates the ankle pressure to the pressure obtained at the brachial artery. Using the **vascutrack 120** to measure both pressures will ensure compatibility. In cases where patients have peripheral arterial disease using the **vascutrack 120** , due to its high sensitivity, can be the only technique suitable for the measurement of leg blood pressure.

$$\text{Pressure Index} = \frac{\text{Ankle systolic pressure}}{\text{Brachial systolic pressure}}$$

Normal - ankle systolic pressure > brachial pressure.
Normal pressure index >1
Abnormal pressure index <1

Specification

	Fetatrack 120	Fetatrack 120+	Vascutrack 120
Ultrasound			
Frequency	2 MHz continuous wave	2 MHz continuous wave	5, 8 MHz continuous wave
Transducer	2 crystal narrow beam	2 crystal narrow beam	2 crystal narrow beam
Output Power	<10mW/cm2	<10mW/cm2	<20mW/cm2
Audio Response	300Hz—1KHz	300Hz—1KHz	300Hz—4KHz
Fetal Heart Rate		Multipoint real time autocorrelator 50—210 bpm	
Unit Controls			
Keys	2 keys of unit on / off	2 keys of unit on / off	2 keys of unit on / off
Controls	Rotary Volume	Rotary Volume	Rotary Volume
Indicators	Yellow LED for battery low	LCD Display with icon for battery low and pulse	Yellow LED for battery low
Power Supply			
Battery	9V Alkaline Manganese (MN1604 / PP3)	9V Alkaline Manganese (MN1604 / PP3)	9V Alkaline Manganese (MN1604 / PP3)
Expected Life	>9h	>6h	>9h
Output			
Headset	Audio output to optional headset	Audio output to optional headset	Audio output to optional headset
Communication		RS232 Interface	Analogue Waveform
Enclosure			
Material	ABS	ABS	ABS
Dimensions	150 x 75 mm	150 x 75 mm	150 x 75 mm
Weight	290g	290g	290g
Safety			
Classification	Type B—IEC 60601-1-1990	Type B—IEC 60601-1-1990	Type B—IEC 60601-1-1990

Care of your doppler

After each use carefully wipe excess coupling gel from the transducer with a soft tissue. Never use alcohol or any other solvent to clean any part of the Pocket Doppler, as these may cause damage. If cleaning becomes necessary wipe the Pocket Doppler with a damp cloth moistened with a mild detergent or Milton.
The transducer face is very delicate and may be damaged by dropping.

Simple fault finding

In the unlikely event of instrument failure, the following simple checks may be made before contacting your supplier for further advice.

- Turn the volume control to maximum. (unplug any headset)
- Turn the unit on and observe the Battery Low indicator, if it does not illuminate, replace the battery and try again.
- If the Battery Low indicator illuminates and then goes out (normal operation) stroke the transducer face.
- If no audio signal is heard in the loudspeaker consult your supplier.

When contacting your supplier with a problem please have available the instrument type and serial number. The serial number can be found inside the battery compartment.

Service

A service manual for this equipment, which includes circuit diagrams, parts lists and test procedures, is available and may be purchased from your supplier or directly from Ultrasound Technologies Ltd.

Warranty

Your Pocket doppler is warranted for a period of 3 years against defects in material and workmanship. Any instrument that proves to be defective within that period will be repaired or replaced free of charge, provided that:

i) the instrument has not been damaged accidentally or by misuse or mishandling.
ii) no unauthorised attempts at repair have been made.
iii) the goods are returned to Ultrasound Technologies Ltd or its authorised representative freight pre-paid.

Under no circumstances whatsoever shall Ultrasound Technologies Ltd have any liability for loss or for any indirect or consequential damage.

This Equipment complies with the essential requirements of the European Council Directive 93/42/EEC

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Emissions

Care has been taken through the design and manufacturing processes to minimise the EM emissions that may be produced by this equipment. However, in the unlikely event that the unit causes an EM disturbance to adjacent equipment, we suggest that the procedure is carried out ‘out of range’ of the affected equipment.

Immunity

If the user has any doubt regarding the unit’s EM immunity during routine operation, we suggest that the source of EM disturbance is identified and its emissions reduced.
If the user has any doubt regarding the identification and resolution of adverse EM conditions, please seek advise from Ultrasound Technologies Ltd.

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