

D900/D920

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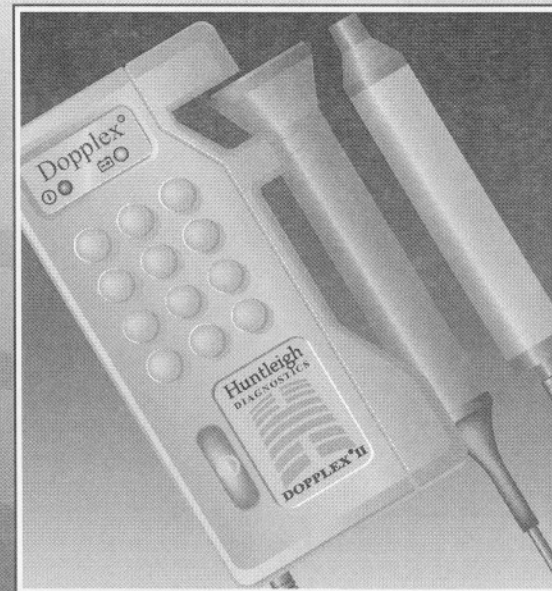
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Medical Devices Directive 93/42/EEC

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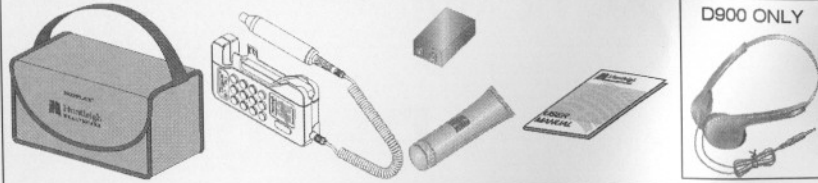
DOPPLEX® HIGH SENSITIVITY POCKET DOPPLERS

MULTI-LINGUAL USER MANUAL

DIAGNOSTIC Products Division

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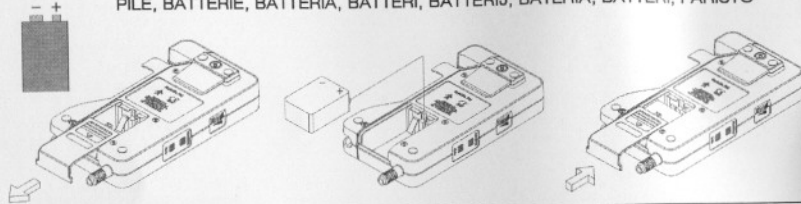
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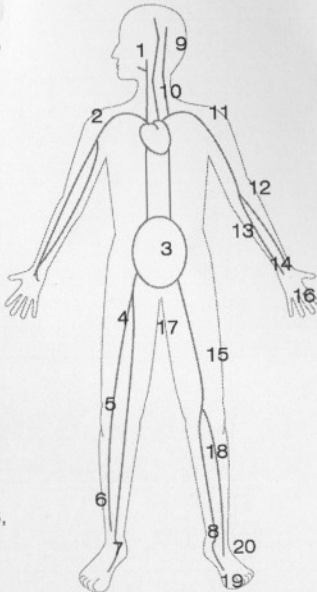
D900 ONLY

BATTERY

PILE, BATTERIE, BATTERIA, BATTERI, BATTERIJ, BATERÍA, BATERI, PARISTO



- | | |
|---|---|
| 1 Jugular Vein VP4HS, VP5HS | 11 Subclavian Artery VP4HS, VP5HS |
| 2 Subclavian Vein VP4HS, VP5HS | 12 Brachial Artery VP8HS, EZ8 |
| 3 Fetus OP2HS, OP3HS | 13 Ulnar Artery VP8HS, EZ8 |
| 4 Femoral Vein VP4HS, VP5HS | 14 Radial Artery VP8HS, EZ8 |
| 5 Great Saphenous Vein VP5HS, VP8HS, EZ8 | 15 Femoral Artery VP4HS, VP5HS |
| 6 Small Saphenous Vein VP8HS, EZ8 | 16 Digital Artery VP8HS, VP10HS, EZ8 |
| 7 Posterior Tibial Veins VP8HS, VP10HS, EZ8 | 17 Penis VP8HS, VP10HS, EZ8 |
| 8 Posterior Tibial Artery VP8HS, EZ8 | 18 Popliteal Artery VP5HS |
| 9 Vertebral Artery VP4HS, VP5HS | 19 Metatarsal Artery VP8HS, VP10HS, EZ8 |
| 10 Carotid Artery VP5HS, VP8HS, EZ8 | 20 Dorsalis Pedis Artery VP8HS, VP10HS, EZ8 |



WARNING/CAUTIONS & SAFETY

Do not use Dopplers in the presence of flammable gases such as anaesthetic agents.

Do not use in the sterile field unless additional barrier precautions are taken.

Do Not :

- Immerse in any liquid, (except D920 probe)
- use solvent cleaner,
- use high temperature sterilising processes (such as autoclaving),
- use E-beam or gamma radiation sterilisation.

This product contains sensitive electronics, therefore, strong radio frequency fields could possibly interfere with it. This will be indicated by unusual sounds from the loudspeaker. We recommend that the source of interference is identified and eliminated.

Do not use on the eye.

If outputs 1 and 2 are used simultaneously, the system should comply with EN60601-1-1. Any equipment connected to outputs 1 or 2 should comply with EN60601-1, EN60950, EN60065, EN60335 or EN61010.

Do not dispose of batteries in fire as this can cause them to explode.

Do not attempt to recharge normal dry-cell batteries. They may leak, cause a fire or even explode.

Dopplex Dopplers are screening tools to aid the healthcare professional and should not be used in place of normal vascular or fetal monitoring. If there is doubt as to vascularity or fetal well-being after using the unit, further investigations should be undertaken immediately using alternative techniques. We recommend that exposure to ultrasound should be kept As Low As Reasonably Achievable - (ALARA guidelines). This is considered to be good practice and should be observed at all times.

Audio Dopplex (D920)

The main unit is not waterproof and must not be immersed. For underwater use where contamination or cross-infection may occur, additional barrier precautions must be taken.



Means Attention consult this manual. Refer to safety section.

GENERAL OPERATION & MAINTENANCE

Refer to diagram on inside front cover for Doppler Measuring sites and Recommended Probes.

Indicators

Green LED - indicates power ON.
Yellow LED - flashes when battery is low.

During Use

An automatic noise reduction feature operates on low level signals to improve sound quality.

To replace battery see diagram.

After Use

1. Press and release the On/Off button. If you forget to switch the unit off, it will automatically shut-off after 5 minutes.
2. Refer to the cleaning section before storing or using the unit on another patient.
3. Store unit together with probe and accessories in the soft carry case provided.

The control unit and the body of the probe are robust and require no special handling. However, the probe tip is delicate and must be handled with care.

Cleaning

Remove excess gel before parking the probe. Clean with a damp cloth impregnated with mild detergent. Do not allow fluid to seep into either unit.

For disinfection use a soft cloth with Sodium Hypochlorite 1000ppm or alcohol.

Alcohol saturated swabs can be used on the probe tip.

Please be sure to check your local control of infection policies, or any equipment cleaning procedures.

Phenolic, detergent based disinfectants containing cationic surfactants, ammonia based compounds, or antiseptic solutions such as Steriscrol or Hibiscrub should never be used on any part of the system.

Coupling Gel

Use water based ultrasound gel ONLY.

OPERATING INSTRUCTIONS VASCULAR

Clinical Use

Apply a liberal amount of gel on the site to be examined. Place the probe at 45° to the skin surface over the vessel to be examined. Adjust the position of the probe to obtain the loudest audio signal. High pitched pulsatile sounds are emitted from arteries while veins emit a non-pulsatile sound similar to a rushing wind. For best results, keep the probe as still as possible once the optimum position has been found. Adjust the audio volume as required.

Waveform Recording (Mini only)

The Mini Dopplex can be connected to a chart recorder by using a suitable lead that plugs into the Waveform socket. (For more information on the chart recorder, refer to the manufacturer's handbook).

Cal Function

The baseline and sensitivity of the chart recorder can be set up using the Cal function. This generates a zero velocity baseline and a sequence of pulses as shown below:



Two levels of calibration pulses are provided. While Cal is active, calibration tones synchronised to the calibration pulses are superimposed on the audio signal.

If the button is pressed and held, then the calibration sequence is repeated. When the calibration sequence is complete, normal operation is resumed.

Probes

Five probes are available for vascular examinations:

VP4HS	4MHz \pm 1% for deep lying vessels
VP5HS	5MHz \pm 1% for deep lying vessels and oedematous limbs
VP8HS	8MHz \pm 1% for peripheral vessels
VP10HS	10MHz \pm 1% for specialist superficial applications.
EZ8	8MHz \pm 1% "Widebeam" for peripheral vessels.

OPERATING INSTRUCTIONS OBSTETRICS

Clinical Use

Apply a liberal amount of gel to the abdomen. Place the faceplate of the probe flat against the abdomen above the symphysis pubis. Adjust the probe to obtain an optimum audio signal ideally by angling the probe around. Avoid sliding it over the skin.

In early pregnancy a full bladder may improve sound detection. In later pregnancy the best signals are generally located higher on the abdomen. The fetal heart sounds like a galloping horse at approximately twice the maternal rate. A wind-like sound is heard from the placenta.

The Dopplex units can detect fetal heart sounds from as early as 9 to 10 weeks gestation.

Note that early detection (9-12 weeks) is highly dependent on operator skill and other factors and may not always be possible.

Mini Dopplex only

Obstetric mode is automatically selected when an obstetric probe (OP2HS or OP3HS) is connected to the control unit.

In this mode the waveform output and Cal function are disabled.

Audio Dopplex (D920)

The Audio Dopplex has a 2MHz waterproof probe for underwater use.

Probes

OP2HS	2MHz \pm 1%
OP3HS	3MHz \pm 1%

WARRANTY & SERVICE

Hunteleigh Healthcare's standard terms and conditions apply to all sales. A copy is available on request.

These contain full details of warranty terms and do not limit the statutory rights of the consumer.

Service Returns

If for any reason your Dopplex Unit is being returned, please:

1. Clean the product, as described in the cleaning section.
2. Pack it in suitable packing.
3. Attach the decontamination certificate (or other written statement declaring that the product has been cleaned) to the outside of the package.
4. Mark the package "Service Department - Mini/Audio Dopplex".

UK

For further details refer to the NHS document HSG(93) 26.

For service, maintenance and any questions regarding this, or any other Hunteleigh Healthcare Dopplex product, please contact:

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Or your local distributor:

Manufactured in the UK by Hunteleigh Healthcare Ltd. As part of the ongoing development programme the company reserves the right to modify specifications and materials of the Mini Dopplex or Audio Dopplex without notice.

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