for choosing the JorVet Hand-Held Doppler! This choice acknowledges the many advantages of the JorVet Hand-Held Doppler:

- Small, Hand-Held Size
- Great Sensitivity
- Convenient Probe Activation Button (turns Doppler On and Off)
- Automatic Power “Off”
- Two Cuff Sizes: 2.5 cm and 5 cm

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1. **Probe Connector:** To connect probe.
2. **Headset:** To connect headset. (not included)
3. **Volume Control:** To adjust volume control.
4. **Power Indicator:** Indicates power On/Off.
5. **Speaker:** Outputs Doppler sounds.
6. **Probe Holder**: For probe placement when not in use.
7. **Strap Holes**: To connect strap.
8. **Battery Cover**: For battery replacement.
9. **Probe Button**: To turn unit On/Off.
Operating Instructions

1. Open the battery cover as pictured on the left. Set a 9 volt alkaline square type battery in the unit ensuring that the positive and negative electrodes correspond to the + and – marks on the label in the battery box.

2. Connect the probe with the small dot up on the probe connector (12 o’clock), and depress the probe button to turn the unit ON.

3. Make sure the power indicator on the unit is on. Turn the volume control to minimum, then slowly turn the volume up.
4. Put the ultrasonic gel on the probe top or the patient’s skin.

5. Put the probe on the measurement area and move it slowly to locate the point where maximum Doppler sounds are heard. The flat probe should be 90 degrees placed flat on the animal’s skin over vessel.

6. Connect the headset when necessary. Headset can be used to listen to Doppler sounds. It will cut off the speaker to the room.

7. Depress the probe button again to turn the unit OFF. If the unit is left on, the power automatically shuts off in about 5 minutes. Note: The auto-off time depends on room temperature.

8. Replace the battery with a new one if the power indicator becomes dark. Use a 9 volt ALKALINE square type battery. A non-alkaline battery may cause a short.
**Directions for Use**

*Indirect Arterial Blood Pressure Monitoring With the Doppler Unit*

1. Clip the palmer aspect of the foot just proximal to the metacarpal pad. It is important to clip the fur as short as possible. Rub a small amount of ultrasound gel into the skin in the midline area where the palmer arterial arch is located. It can be palpated on large dogs and is actually just slightly medial to the midline.

2. Place a large “globe” of ultrasound gel on the non-numbered side of the Doppler flow probe. Place the probe in the location of the artery described in step one and tape it in place tightly. (Turn on the Doppler unit with the flow probe plugged into the unit. The flow probe should not be frequently disconnected from the unit as this loosens the connectors and wires in the unit).

3. Ensure that the unit is charged. A swishing sound should be heard each time the blood flows through the artery. If it is not heard use the probe as a locator and move slightly until the swishing sound is heard and then re-tape in place.

4. Make a loop in the cord of the flow probe and tape the cord to the foot/metacarpal loop” is right over the tape used to fixate the flow probe to the skin initially (as described in step two).

5. The blood pressure cuff is now placed. The cuff’s width should approximate the width and be up to two times that of the forearm (mid-radial region). It is applied so that the mid-section on the rubber blade inside the cuff is directly over the posterior medial aspect (where the radial artery is located). This can be located by digitally occluding the area and hearing the swishing sounds of the Doppler stop indicating the artery is at that location because its flow is now temporarily blocked.

6. When the cuff is applied the INDEX line on the end of the cuff should fall within the RANGE on the cuff, which is diagrammed on the inside. If outside this range the reading will be either falsely low (with cuffs too big for the size of the limb it is surrounding),
or falsely high (with the cuff too small). An estimate can be arrived at that will indicate how far off, in percentage, the cuff reading will be, taken by observing the amount of length the cuff is too small or too large compared to the entire length of the indexed area.

7. A small amount of adhesive tape is added around the cuff to prevent it from popping the Velcro and showing a falsely high reading.

8. The cuff is inflated by squeezing the rubber bulb with the air-outlet nozzle closed until the manometer reading is 20-30 mm Hg above when the swishing sound stopped. The air-outlet nozzle is slowly opened and the cuff is allowed to slowly deflate. When the swishing sound is first heard again this marks the flow of blood through the artery corresponding to SYSTOLIC PRESSURE on the sphygmomanometer. The sound should be a shorter choppier sound than was heard when the cuff was not inflated.

9. The cuff deflation is continued slowly as the characteristics of the swishing sound are carefully monitored. A light “backward” sound or diastolic “swish” sound is again heard (or as it is again sounded prior to any cuff inflation) corresponding to DIASTOLIC PRESSURE when a very mild amount of “backflow” in the artery occurs. The diastolic pressure is not always evident.

10. Diastolic pressure can be detected by closely watching the dial of the manometer. If it oscillates reproducibly at certain times on the deflation cycle, this corresponds to within 10mm Hg of the diastolic pressure (by sound). For accuracy, when the diastolic sound cannot be heard, pressure is simple recorded as “systolic all the way down.” This is especially frequent during periods of high stress when the vessels are under significant catecholamine influence and are acting “stiff,” or in very small or cold patients where the vessels are simple to small to allow sound change detection.

Normal systolic values of dogs and cats range from 110-160mm Hg.
Cleaning Instructions

1. Probe
   - Remove the Doppler gel from the probe head after use.
   - Clean or disinfect the probe using a cotton ball soaked in alcohol.
   - Consult manufacturer before using any other chemical disinfectants.

2. Main Unit
   - To clean main unit, use a little water and wipe with a soft dry cloth.

Warranty

• This equipment is guaranteed for a period of one year after the date of purchase when used under normal conditions.

• In the event of any trouble during the warranty period, please contact the dealer from whom you purchased the unit.

• In case the warranty period is over, please contact the dealer for a charged service

THE WARRANTY CARD MUST BE RETURNED WITHIN TWO WEEKS OF PURCHASE!
Cautions

◆ Probe
The standard probe is for transcutaneous use only. The probe transducer is a very thin and delicate part. Please take care not to drop or hit the probe tip. The probe cover also prevents against switching “On” when storing unit after use.

◆ Ultrasound Gel
Always use an ultrasound gel. Using other materials such as baby oil or cream may not produce the correct Doppler sounds and may damage the probe.

◆ Battery
When battery is low, the power indicator becomes dark. Also there will be no speaker sounds. Replace the battery if these conditions exist. Use a 9 volt alkaline square type battery. A non-alkaline battery may cause a shortage of power.
Package Contents

The JorVet Hand-Held Doppler package includes the following items:

- Flat probe (includes probe tip holder) . . . . . . . . . . . . . . . . . . . . . . . . J-563D1
- Mini Doppler Detector Unit . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . J-563D2
- Sphygmomanometer for Mini Doppler . . . . . J-563D3
- 2.5 cm Cuff . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . J-563D4
- 5.0 cm Cuff . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . J-563D5
- Headset for Doppler . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . J-563D8
- Hadeco Carrying Case
- 9 volt Alkaline Battery
- Adjustable Strap
- Ultrasonic Gel
- Operating Manual
- Use of the Doppler for the Feline Patient Booklet
- Warranty Card
## Specifications

<table>
<thead>
<tr>
<th>Probe:</th>
<th>Model:</th>
<th>Freq.:</th>
</tr>
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<tbody>
<tr>
<td>J-563D1</td>
<td>Flat probe</td>
<td>8 mHz</td>
</tr>
</tbody>
</table>

### Battery:
DC 9 volts, Alkaline square type

### Battery Life:
Approximately 3 hours (Alkaline)

### Auto Shut-Off:
Automatic after approximately 5 minutes of inactivity. Varies with room temperature.

### Probe Button:
Power On/Off

### Speaker Output:
200 mW or more

### External Outputs:
- Headset: Cuts off speaker (3.5mm jack)

### Dimensions:
- **Main Unit:** 75mm(w) x 140mm(d) x 25mm(h)
- **Probe:** 20mm (diam.) x 105mm (L)

### Weight:
Approximately 270 grams
(includes battery and probe)
Principles of Doppler Flow

The JorVet Doppler is designed to receive blood flow velocity information by ultrasound. A specific frequency is transmitted from the probe to the patient.

Technically the transceiver amplifies a high frequency oscillation output for transmission to the transducer. The voltage is converted by a piezoelectric crystal (transducer) to ultrasound. The ultrasound beam is transmitted to blood cells flowing through the arteries or to beating fetal hearts. The ultrasound beam is reflected by the red blood cells or by moving structures, and received by the crystal in the transducer which converts the ultrasound into a voltage. A Doppler shift occurs between the emission and reception of the ultrasound beam.

Advantages of using Doppler flow detectors include ease of application, portability, applicability to hypotensive animals, and usefulness as an audible monitor of the arterial pulse and peripheral blood flow.