

# Instruction Manual

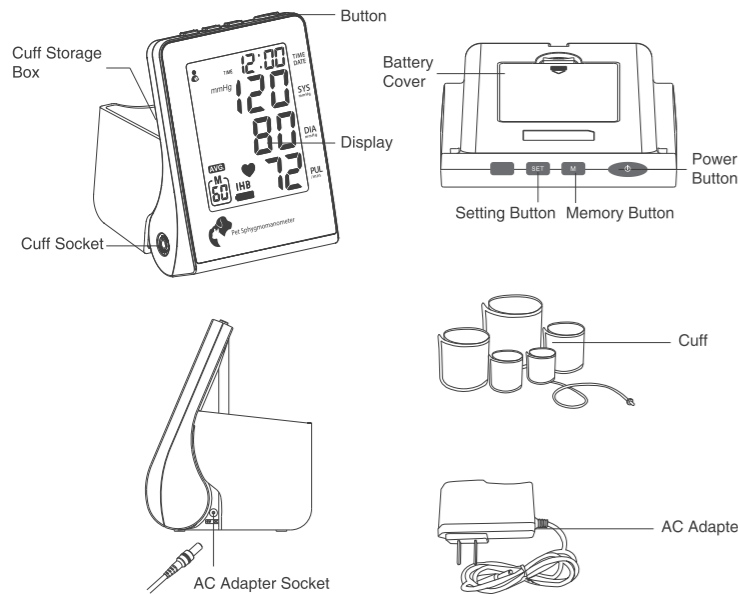
## Veterinary Digital Blood Pressure Monitor

Model: P10E



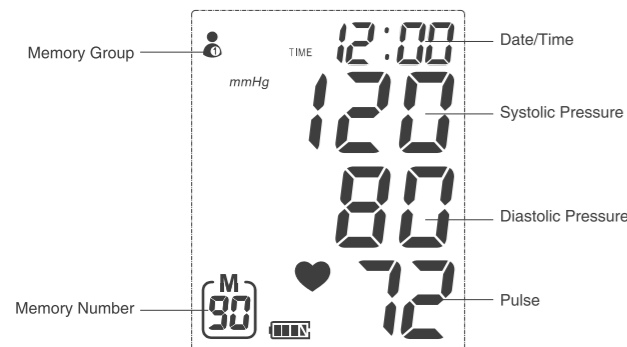
- Thank you for purchasing AVICHE'S P10E Veterinary Digital Blood Pressure Monitor.
- Please read the instruction manual thoroughly before using and maintenance.
- Keep the instruction manual properly for future reference.
- The illustrations in this manual are all renderings.

### I. Product Parts Introduction



### II. Icons Instruction

#### Icons in Display

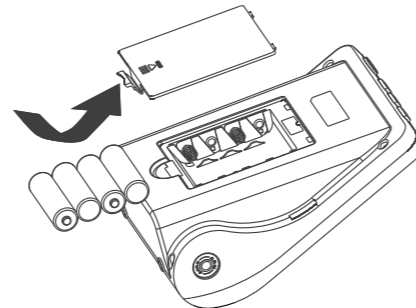


### Display Symbols

	Storing or reading memory symbol
	Low battery symbol, replacing battery
	Pulse symbol
	Memory group 1
	Memory group 2
	Average of latest 3 readings
	Inflating error
	The pressure is more than 300mmHg when inflate manually
	Measuring error

### III. Inserting and Replacing Batteries

- Remove the battery compartment cover according to the arrow direction.
- Insert 4pcs AA batteries with correct polarity, then put on the battery cover.

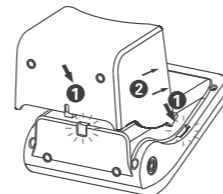


#### Attention:

- Replace the batteries when indicating low battery symbol or no display after switching on machine.
- Please make sure adapter unconnected when replacing the batteries and battery polarity is correct. Never use new and old batteries at the same time.
- Remove batteries from device when not in operation for more than 3 months.
- Attached batteries is for testing only, we advise good alkaline batteries.
- Do not use the power adapter with a dry battery at the same time.
- Battery life will change with the ambient temperature, shorter in cold situation.
- Please dispose batteries according to local environmental protection law.
- Batteries are hazard objects, don't dump them into regular trash.
- Use only the approved arm cuff for this device. Use of other arm cuffs may result in incorrect measurement results.

### IV. Installing Cuff Storage Box

- Align the three card slots on the armband storage case with the three corresponding grooves in the back of the monitor.
- Push the box up.



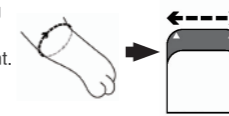
### V. Measurement Methods

In order to accurately measure the blood pressure of dogs and cats, it is necessary to select the appropriate cuff measurement site and size. The following is a detailed description of cuff selection, cuff winding position and method, how to measure blood pressure and precautions in measurement, and the normal blood pressure range of dogs and cats. Be sure to read this section carefully before using the monitor to measure blood pressure for dogs and cats.

#### How to select the cuff?

- According to the ACVIM Association of the United States, the cuff with a width of 30 to 40% of the circumference is selected, and the length of the air pocket can be 100% around the lower limb, and the blood pressure can be accurately measured.
- The choice of the size of the cuff: the width of the cuff is about 40% of the length of the dog's forelimb circumference and about 30% of the length of the forelimb of the cat.

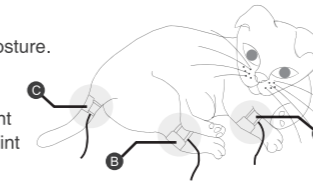
- There are five different sizes of the cuffs in the packing list. Users can choose which one is suitable to use by themselves after measuring them as shown on the right.



#### Choose the measurement posture and position (for cats as an example)

The priority order for measuring posture is: kneeling posture > sitting posture > standing posture. The measurement position is as shown on the right, and the best choice is: A>B>C.

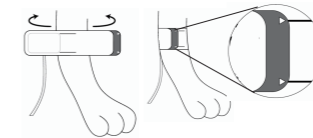
- A. Fore Leg: the above of the forefoot ankle joint
- B. Hind Leg: the above of the hind foot ankle joint
- C. Tail: root



#### How to wrap the cuff?

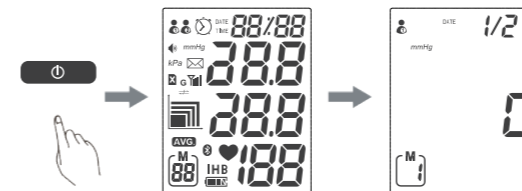
As shown on the right.

- Try to find the location of the blood vessel.
- Use a ruler to confirm the size of the part to be tested.
- Select the cuff of the appropriate size.
- The end of the cuff must be aligned with the baseline on the cuff when wrapping the cuff.
- Do not over-tighten it when wrapping the cuff.
- Attach the cuff and confirm the cuff airbag position corresponds to the blood vessel position.
- Be careful not to bend or knot the air tube after the cuff is wrapped.
- Connect to the monitor after the cuff is wrapped.

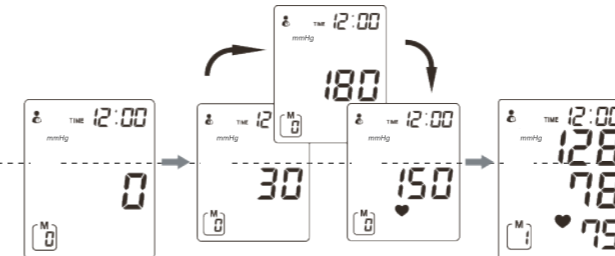


#### How to measure blood pressure

- Wrap the cuff in the correct way around the measurement area of the dog or cat.
- Confirm the connection of blood pressure monitor is correct.
- Press to start measuring.



- The monitor will automatically pressurize to the appropriate blood pressure value according to different blood pressure fluctuations of dogs and cats and then start depressurization measurement. please keep the dog and cat as quiet as possible, no movement, and always pay attention to whether the cuff slides down during the measurement. After finishing the measurement, the monitor will automatically display and store the measured systolic blood pressure, diastolic blood pressure and pulse rate.

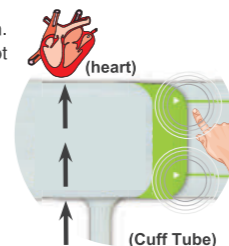


#### Note:

- During the measurement, the pressure change value is displayed in the SYS field.
- After the measurement is stopped or completed, it takes about 3 to 5 seconds to perform the deflation.
- Usually the measurement time is about 30-90 seconds depending on the size of cuff. If the captured blood flow rate is unstable, a secondary pressure measurement may be required, and then the measurement time will be lengthened.

#### Operation precautions

- Please connect the cuff to the monitor before power on.
- Insert the cuff connector into the air tube socket. Do not use excessive force or rotate the jack.
- To ensure the measurement accuracy, ensure the cuff is at the same heart height of cats and dogs as shown on the right.
- Please pay attention to the actual wrapping measurement range of the cuff during the measurement. Make the aid with hands to avoid the measurement failure caused by the anti-slip.
- Some dogs and cats have different measurement points, please confirm the measurement site is it right.
- Dogs and cats with so much fur are not suitable for selecting the root of the tail as the measurement site. Recommend to do the shave before measurement to avoid



affecting the measurement results.

- It is recommended for cats to choose the front limbs to measure blood pressure since their blood vessels are thin. Users can also choose the tail as measurement site for another reference.
- Do not move the cuff position and the air tube to avoid affecting the measurement results during the measurement.
- Recommend two persons to measure the blood pressure for cats or dogs since they belong to insecure animals. Among them, one person concentrates on appeasing the dog or cat, assists in fixing the measurement site, tries to keep the dog or cat quiet, and measures the blood pressure in the most quiet state of the dog or cats (the dog or cat tend to be nervous and the blood pressure will be higher when they are facing to the stranger or animal hospital staff); The other person operates the monitor and it is recommended to take measurements under anesthesia.
- During the measurement process, if the dog and cat being tested is over-excited, it is recommended to pause the measurement to make them quiet firstly, and then make the measurement after 5-10 minutes.
- In order to obtain accurate measurement results, at least 5 measurements should be taken. When calculating the measured values, the user should remove the highest and lowest data of the measured values to obtain the average value of other data. This value is the reference value for blood pressure measurement.

#### Normal blood pressure range of dogs and cats

In the clinical diagnosis of animals, If the systolic blood pressure is greater than 150mmHg, it can be suspected as hypertension; If higher than 160-170mmHg, it can be diagnosed as hypertension; For cats, when diastolic blood pressure is higher than 100mmHg, It can also be confirmed as hypertension. During anesthesia, the systolic blood pressure is usually maintained above 80 mmHg.

#### Cat's normal blood pressure

The normal blood pressure value of the cat is not limited by breed. It is recommended to measure the blood pressure of a cat by measuring the blood pressure value over multiple time periods measuring and then evaluate it. According to the research report, the normal systolic blood pressure of the cat is about 124mmHg, and the diastolic pressure is about 84mmHg. In addition, Users can also refer to other studies of the blood pressure of the cat.

- Systolic blood pressure: 125±11mmHg
- Diastolic blood pressure: 89±9mmHg (Brown et al, 1997)
- Systolic blood pressure: 123±14mmHg
- Diastolic blood pressure: 88±15mmHg (Curtet, 2001)
- Systolic blood pressure: 125±12mmHg
- Diastolic blood pressure: 86±15mmHg (Weber et al, 2002)

#### Dog's normal blood pressure

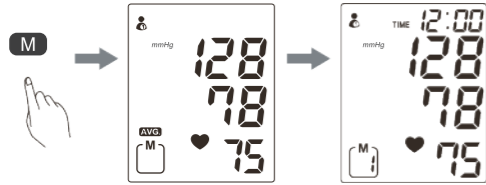
The normal blood pressure of a dog will vary depending on the breed. In general, golden retrievers, Labrador dogs, and large breeds have lower blood pressure, while like gray dogs and the generally good runners usually have higher blood pressure. The average systolic blood pressure of dogs is about 133mmHg and the diastolic blood pressure is 75mmHg.

The following table shows the blood pressure values of 1,782 healthy dogs of different breeds measured by oscillometric amplitude method and then calculated and averaged. Therefore, the overall average is only considered as a reference point. For the individual or specific breed, user should confirm specific normal blood pressure value.

Dog's Normal Blood Pressure Reference			
Breed	Systolic (mmHg)	Diastolic (mmHg)	Pulse Rate
Labrador	118±17	66±13	99±19
Golden Retriever	122±14	70±11	95±15
Big White Bear	120±16	66±6	95±15
Yorkshire	121±12	69±13	120±14
West Highland Terrier	126±6	83±7	112±13
Border Collie	131±14	75±12	101±21
Charlie King Longhaired Hound	131±16	72±14	124±24
German Shepherd Hound	132±13	75±10	108±23
Sleuth Hound	136±16	76±12	104±16
Bull Terrier	134±12	77±17	122±6
Chihuahua	134±9	84±12	109±12
Mini Dog	136±13	74±17	117±13
Pomeranian	136±12	76±13	131±14
Migru	140±15	79±13	104±16
Dachs Hound	142±10	85±15	98±17
East African Hound	143±16	88±10	98±22
Grey Hound	149±20	87±16	114±28
Directional Hound	145±17	83±15	102±14

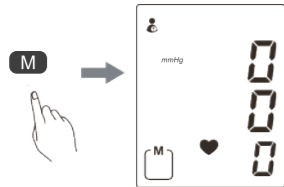
## VI. Reading Memory

- When you press **M** button, the first display is the average of the latest 3 measured value.
- Press **M** button again, it will display the record of the previous time.



## VII. Deleting Memory

- Press **M** button for 3 seconds, all records will be deleted.



ⓘ Note:

- You can not delete only some of the values; all stored results will be cleared if you press deletion. (You can make record for future reference before deleting).
- The measuring values in the monitor will not get lost if batteries are taken out.

## VIII. Safety Cautions

- \* Please follow this safety precaution to use and operate the equipment correctly.
- \* The following safety precautions are taken to prevent the occurrence of danger and damage.
- \* The detailed security specifications are as follows:

Damage caused by improper use	This symbol indicates a mandatory observance of the item	This symbol indicates an absolutely forbidden item
Mandatory compliance	Before starting the measurement, please make sure that the inflation pressure of the cuff does not cause the dog and cat symptoms to deteriorate.	
	When the dog and cat are in state of exciting, the blood pressure cannot be accurately measured. Please make the measurement when they keep quiet and not moving.	
	If you have medical treatment for dogs and cats, it may affect the measurement results, please use with caution.	
	In the environment of electrocautery, the measurement results may be affected. Please use it with caution.	
Absolutely prohibited	This device is not recommended for use in an MRI environment.	
	To avoid the risk of fire and explosion, do not operate this equipment in a highly flammable environment.	
	Please stop the measurement if the edema or congestion of measurement sites occurs due to continuously multiple measurement. User can continue to do the measurement after returning to the normal condition.	
	Do not use a cuff that is authorized.	
	Do not use an adaptor that is authorized to charge.	
Do not operate the device with wet hands to avoid electric shock or equipment malfunction.		
Do not attempt to press the button with a sharp object, please press it with your fingertips.		

## IX. Operation Requirement

Operator:  
This device is intended to be a certified veterinary practitioner.

Operating Environment:  
This monitor should be operated under normal conditions and is not currently suitable for use in nuclear magnetic resonance MRI environments. Please refer to the specifications section of this manual to use.

## X. Warnings

- Battery leakage may damage the machine body, remove the batteries if the product will not be used for a long time (above 3 months).
- Do not inflate before wrapping the cuff.
- Users can not judge the results and care by themselves, please refer to the veterinarian's instruction.
- Be sure to use an adapter with specifications as shown in this manual.
- Please be sure to use AC100-240V power source.
- Please don't use wet hand to pull out the power adapter in case of electric shock.
- Avoid using mobile phone near the device as it may cause malfunction.
- Do not use this device in electromagnetic fields. It may result in incorrect measurement results.

## XI. Troubleshooting

If there are following abnormal phenomenon, you may refer to the corresponding solutions:

Abnormality	Reason	Checkout
Press the <b>⏻</b> button, no display	Batteries low	Replace all the batteries
	Check if the batteries are installed with the correct polarity	Re-install the batteries
LCD shows E1, abnormal inflating "E1"	Check if the Cuff tube connector is firmly fixed	Reinsert the tube connector
LCD shows measuring error "EE" or abnormal high (low) blood pressure value	Check if the cuff fixed Well	Refix the cuff
	Check if animal keep quiet in the measurement	Keep quiet and take measurement again

## XII. Maintenance

- Main Unit
  - To protect the sphygmomanometer from damage, do not expose the monitor to high temperatures, humidity, moisture, or direct sunlight. Avoid hitting and dropping.
  - Please turn off the power before cleaning. If there is a connection adapter, please remove it.
  - To keep the machine clean, please use soft dry cloth to clean it. Do not use diluent, alcohol, petrol and other chemical reagent to clean the device body and cuff.
  - If the appearance of the monitor is damaged and seriously damage the function, please contact the sales agent or manufacturer to repair.
  - The calibration interval is 1 year. Users can do it in advance if necessary. The device must be tested and calibrated after repair.
- Cuff
  - The cuff is a disposable cuff that will adhere to the animal's hair after use. Please remove the cuff and replace it with a new cuff.
  - Do not soak or wipe the cuff with any liquid, such as solvents, bleach, etc.
  - Do not wipe the velcro bonding area to avoid affecting the viscosity when wiping the appearance.
  - Do not store the cuffs in a curled manner when storing them. It is recommended to store the cuff portion in a flat manner.
  - If the cuff or air tube is damaged, please replace it as soon as possible.
  - The cuff itself is a consumable item. If the velcro is degummed, displaced or not firmly bonded, please replace it as soon as possible.
  - Do not fold the cuff or air tube tightly.
- Adaptor
  - Please use the authorized adaptor.
  - Do not attempt to open, repair any part, if any problems, contact with the distributor or manufacturer of this monitor.

## XIII. Specifications

Product name	Veterinary Digital Blood Pressure Monitor	
Model	P10E	
Power supply	4 "AA" batteries 1.5V	
	AC Adaptor Power line Input: AC100-240V 50/60Hz 8W Output: DC6V 1A	
Measuring method	Oscillometric method	
Measure range	Pressure: 0-280mmHg (0-37.3kPa)	
	Pulse: 40 to 199 beats/min	
Accuracy	Pressure: ±3mmHg (±0.4kPa)	
	Pulse: ±5% of display reading	
Pressure sensor	Semiconductor	
Inflation	Automatic	
Deflation	Automatic	
Memory groups	2 groups, each group has 90 readings	
Transportation and storing environment	Temperature: -20°C~+55°C	
	Relative humidity 10%RH~90%RH	
Device weight	About 435g (without batteries and adapter)	
Overall dimension	126(L) x 120(W) x 160(H) mm	
Automatic off time	1 minute	
Operation method	Continuous operation	
Equipment category	Class II, internal electric source	
ⓘ	Read the instruction manual	
Software version	Rcw01	
Disinfection, sterilization method	According to the method provided by manufacturer	
Safety sort	Equipment that cannot be used in the presence of a mixture of flammable anesthetic gas and air or a mixture of oxygen or nitrous oxide	
	Temperature	5°C~40°C
Operating environment	Relative humidity	≤80%RH
	Atmosphere pressure	80.0kPa~105.0kPa

### Packing List

Item description	QTY
Veterinary digital blood pressure monitor	1pc
Cuff 3-6cm+ hose 20 cm	1pc
Cuff 4-8cm+ hose 20 cm	1pc
Cuff 6-11cm+ hose 20 cm	1pc
Cuff 7-13cm+ hose 20 cm	1pc
Cuff 8-15cm+ hose 20 cm	1pc
Power adaptor	1pc
Cuff connecting tube	1pc
Instruction manual	1pc
Inspection certificate	1pc

AVICHE remains the right to change the technology and appearance of the products and is subject to change without prior notice. Thanks for the understanding.

## XIV. After-sales Service and Warranty Card

- Implement the national policy of Three Guarantees.
- Free maintenance will be provided by AVICHE in case of quality problems within one year from the date of purchase. In case of such issues over one year, Users can seek services by right of invoice and warranty card to the after-sales service departments, branch offices and distributors of AVICHE, where the spare parts for maintenance will be provided with reasonable charges. If users can not provide invoice, the warranty period will be identified by extension of 13 months from the date of production.
- The followings are not covered by the warranty:
  - 3.1 The Vulnerable Consumables.
  - 3.2 The liquid leaked by the users enters into the device to cause abnormal operation.
  - 3.3 Trouble caused by unauthorized demolition, repair or transformation of device.
  - 3.4 Trouble caused by accidentally falling down in use or handling.
  - 3.5 Trouble caused by the failure to operate in accordance with the correct operations in user manual.
  - 3.6 The damage caused by unpredictable natural disasters (such as fire, earthquakes, floods, etc.).

### Veterinary Digital Blood Pressure Monitor Warranty Card

Model No.		
Warranty Period	From	M/ D/ Y to M/ D/ Y
Purchaser	Name	
	Address	
	Phone	
Sales Unit	Name	
	Address	
	Phone	
After-sales Service Instructions	1. Warranty a) Since the date of purchase, the warranty period will last for 1 year, and free maintenance will be provided (except for force majeure and human factors). b) The affiliated gifts will not be covered within the warranty. c) Proof: Purchase records, shopping certificate, and invoice. 2. Spare Parts Spare parts will be provided free of charge within the warranty period, and is subject to charges out of warranty period. 3. Contact Information for After-sales Service Service Hotline: +86-400-800-9850	

AVICHE Shandong Medical Technology Co., Ltd.

**Distributed by:** AVICHE Shandong Medical Technology Co., Ltd.  
**Manufacturer:** AVICHE Shandong Medical Technology Co., Ltd.  
**Address:** Building D1-1, Yinfeng Biological City Industrial Park, No. 1177 Chunlian Road, High-tech Zone, Jinan City, 250104, China  
**Service Hotline:** +86-400-800-9850

**Product Serial Number:** See the label on the bottom of monitor  
**Service life:** 2 year  
**Issued Date:** September 2, 2022  
**Version Number:** Version 2.0