NISSEI

Automatic Sphygmomanometer DM-3000

INSTRUCTIONS
<ENGLISH>

CONTENTS *Page*

This manual is intended to assist the user for the safe and efficient operation of the Automatic Sphygmomanometer DM-3000. The product must be used in accordance with the procedures contained in this manual and must not be used for purposes other than those described herein. It is essential to read and understand the entire manual before use.

Issued on 10. 27. 2021 A113727-1_7

Operation principles

This device is equipped with two types of measurement. AUTO measurement measures the systolic blood pressure, diastolic blood pressure, and pulse rate automatically using the oscillometric method. With MANUAL measurement, an operator uses a stethoscope to measure blood pressure using auscultatory method. When the artery is compressed by the pressure of a cuff, the artery generates a pulsation synchronizing with the pulse, which becomes the pulsation of the internal pressure of the cuff (cuff pressure). The amplitude of the pulsation changes in accordance with the magnitude correlation of the blood pressure and the cuff pressure. An oscillometric blood pressure monitor determines systolic and diastolic blood pressures based on the change pattern of the amplitude of the pulsation that appears when the cuff pressure is gradually changed. Furthermore, with auscultatory method, a stethoscope is used to detect the Korotkov sounds generated when the cuff pressure is gradually changed. The blood pressure is determined according to the pressure values at appearance and disappearance of the Korotkov sounds.

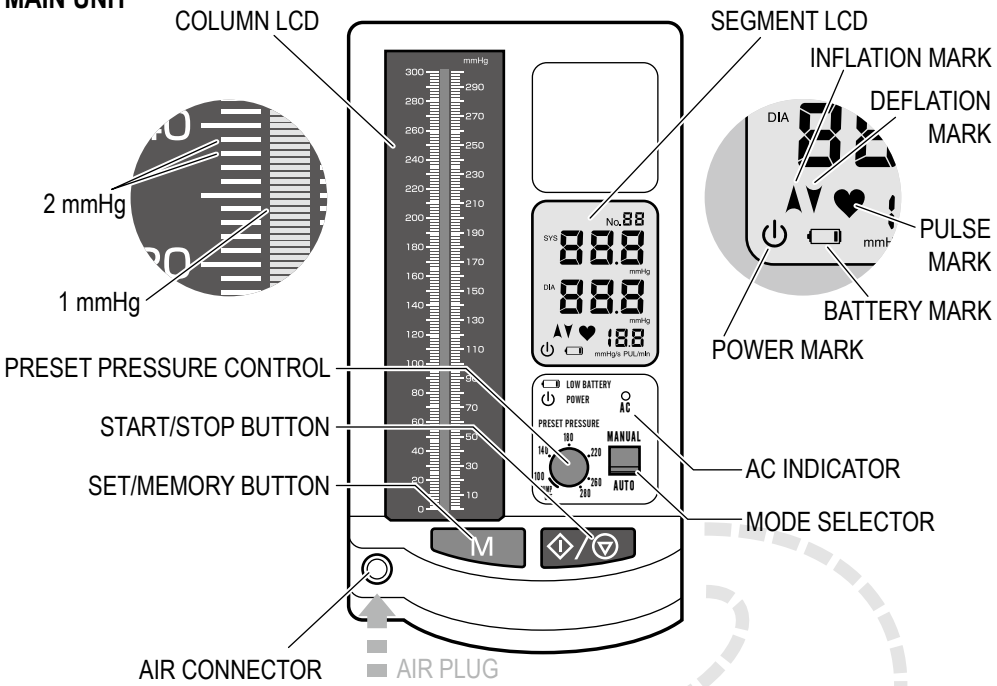
Intended purpose and Indication for use

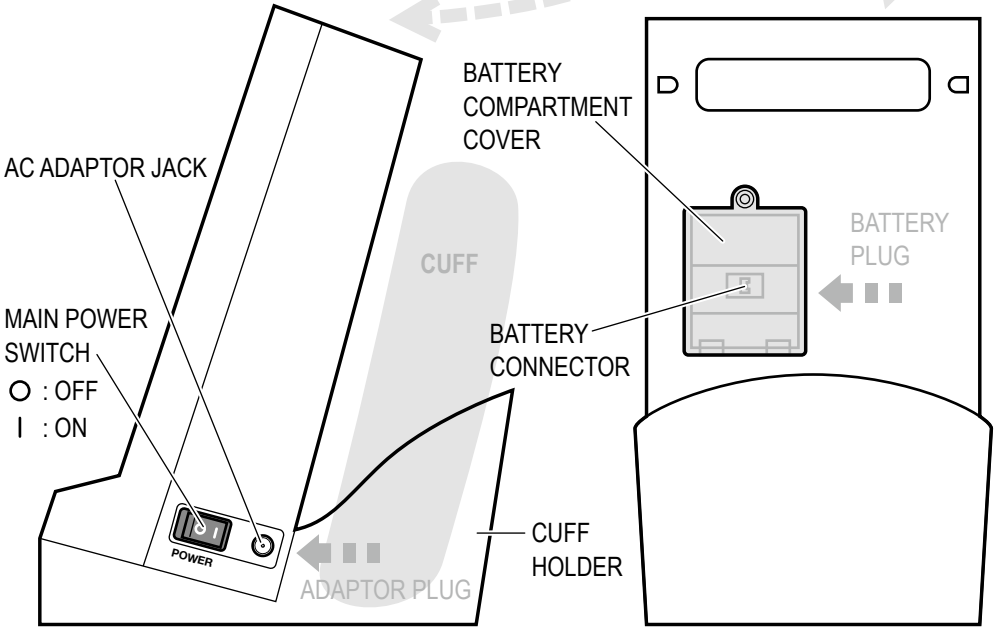
This product is intended for noninvasive measurement of systolic and diastolic blood pressure by automatic measurement, with applying the cuff on patient's upper arm, with oscillometric method and manual measurement with auscultatory method and determination of pulse rate in professional healthcare facility. This product is not designed for neonatal use. Please consult with the doctor or physician to use this product to take blood pressure of person in pregnancy or under pre-eclamptic condition. The automatic measurement of blood pressure is intended to be taken for adults only. For taking blood pressure measurement of children with auscultatory method, please consult with the doctor or physician.

This device is designed for medical staff use in medical institutions. The product is not intended to be used either outside the healthcare facility, during professional transportation of a patient outside the healthcare facility or home healthcare environment.

PARTS AND PRODUCT COMPONENTS

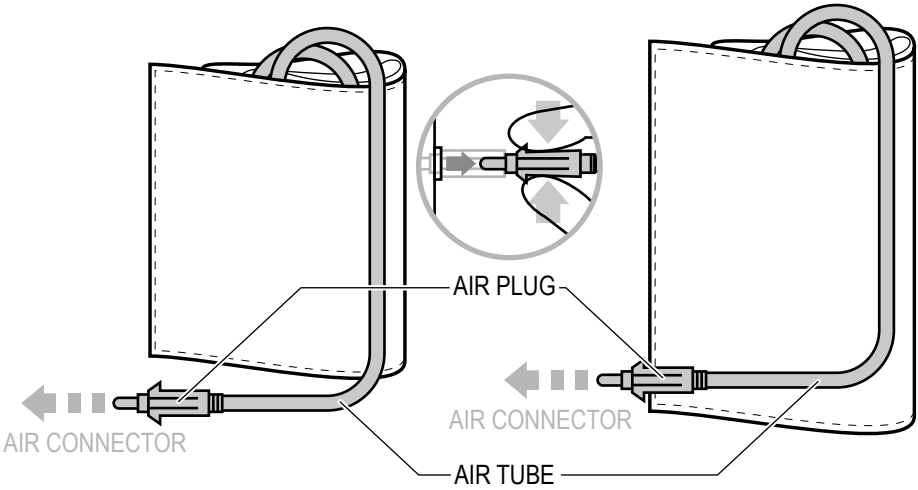
MAIN UNIT





REGULAR SIZE CUFF
for arm circumference of 22 to 32 cm

LARGE SIZE CUFF
for arm circumference of 32 to 42 cm



Order No.: NPDM3000-010

CUFF SHELL : NPDM3000-030

BLADDER : NPDM3000-040

AIR PLUG : B112784-1

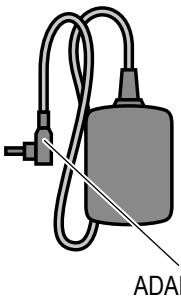
Order No.: NPDM3000-011

CUFF SHELL : NPDM3000-031

BLADDER : NPDM3000-041

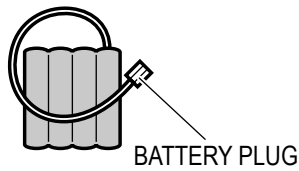
AIR PLUG : B112784-1

AC ADAPTOR



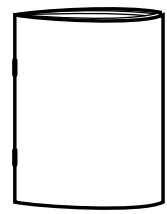
Order No.: NPDM3000-001(EU)
NPDM3000-002(UK)

RECHARGEABLE NICKEL METAL HYBRID (NiMH) BATTERY



Order No.: NPDM3000-005

INSTRUCTION MANUAL



GENERAL PRODUCT INFORMATION

DM-3000 is an automatic sphygmomanometer intended for measurement of systolic and diastolic blood pressure and pulse rate in adult patients, i.e., age 12 and above. This product is not designed for neonatal use and inaccurate readings may result if it is used on children.

►*PRODUCT FEATURES*◄

COLUMN LCD and SEGMENT LCD

The pressure can be read in the column LCD height and as digital value in the segment LCD.

"AUTO" and "MANUAL" Modes of Measurement

Determination of blood pressure can be made either automatically by the oscillometric method or manually by the Auscultatory method using a stethoscope.

COMPARISON TABLE

MODE	cuff inflation	deflation rate	saving result
AUTO	automatically performed to preset pressure value	maintained at 4.0 to 4.9 mmHg/sec	seven measured results automatically saved in memory.
MANUAL	automatically performed to preset pressure value or manually performed with inflation bulb*	maintained at preset rate: 2.5, 4.5 or 6.5 mmHg/sec	———————

* Inflation bulb is not included in the product.

Regular and Large Size Cuffs

The regular size cuff will accommodate an upper arm circumference range of approximately 22 to 32 centimeters and the large size cuff will accommodate that of approximately 32 to 42 centimeters.

Operation with AC Adaptor or Rechargeable Battery

DM-3000 is powered by either an AC adaptor or rechargeable nickel metal hybrid (NiMH) battery.

►*PRODUCT SPECIFICATIONS*◄

Model	:	DM-3000
Operating Principle	:	Oscillometric method (AUTO measurement) / auscultation (MANUAL measurement)
Indicator	:	300 digits column LCD and 10 digits segment LCD
Pressure Indicating Range	:	0 to 300 mmHg (cuff pressure)
Measuring Range	:	50 to 250 mmHg (systolic) 40 to 180 mmHg (diastolic) 40 to 160 bpm (pulse rate)

Accuracy	: ±3 mmHg (cuff air pressure) ±5% of reading (pulse rate)
Inflation	: Automatic inflation
Deflation	: Electric control valve
Exhaust	: Automatic exhaust valve
Power Supply	: 7.0 VDC AC adaptor (MODEL UM318-0725) or 4.8 VDC rechargeable NiMH battery
Memory	: seven measurement results
Operating Environment	: +10°C to+40°C, 15% to 85% RH (noncondensing)
Storage Environment	: -20°C to+60°C, 15% to 85% RH (noncondensing)
Coverage Arm Circumference	
Regular Size Cuff	: 22 to 32 cm
Large Size Cuff	: 32 to 42 cm
Main Unit	
Weight	: Approx. 1350 g, without AC adaptor or battery
Size	: 136 x 228 x 276 mm (W x D x H)
Protection against electric shock	: Internally powered equipment / Class II equipment, Type BF applied part
Classification of safety level when used in air/flammable anesthetic gas, oxygen, nitrous oxide/ flammable anesthetic gas.	: Not suitable for use in these environments
Mode of operation	: Continuous operation
Classification	: Class II / Internally powered equipment
Expected service life	: 5 years
Key to Symbols	: Type BF equipment
	: Class II equipment
	: Important; read operating instructions.
	: The used electrical and electronic products are not household waste. Follow your national/local recycling rules to dispose of them properly. In the EU countries, please refer to waste management symbol(s) marked on the package or the instrument.

*Accuracy is guaranteed with the measured values that are within the measuring range.

- This device complies with EN1060-1:1995+A2:2009 Non-invasive sphygmomanometers Part 1: General requirements and EN1060-3:1997+A2:2009 Non-invasive sphygmomanometers Part 3: Supplementary requirements for electro-mechanical blood pressure measuring system
- For the measurement in AUTO mode, the measurement accuracy of the device has been proven according to ISO 81060-2 protocol. In the clinical study, K5 was used for the determination of diastolic pressure values at all auscultatory measurements.
- This device is intended for use in the environment with one atmospheric pressure.

Specifications are subject to change without notice due to improvements in performance.

WARNING, PRECAUTION, and CONTRAINDICATION

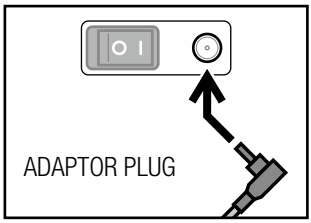
WARNINGS & PRECAUTIONS

- **Please carefully check patient's conditions in advance to the measurement if he / she is under dialysis therapy or on anticoagulants, antiplatelets or steroids. Use of this instrument under such conditions could cause internal bleeding.**
- **This product is not also intended to be used with HF surgical equipment.**
- **The system may fail to yield specified measurement accuracy if operated or stored in temperature or humidity conditions outside the limits stated in the specifications section of this manual.**
- **Use of this product in areas near mobile phones, microwave ovens or other devices with strong electromagnetic field may cause malfunctions.**
- **Make sure that inflation of the cuff is not causing prolonged impairment of blood circulation. Also, be cautious about temporary loss of the functions of any other medical equipment if any monitoring equipment is used on the same limb with the blood pressure measuring cuff.**
- **To avoid harmful injury due to interfered blood flow from cuff inflation, make sure that AIR TUBE is not kinking or compressed before measurement. Otherwise, cuff inflation may not be conducted properly and prolonged.**
- **Make sure that the cuff is not causing any irregular skin condition of the patient. In case any pain, redness, swelling, sign of allergic reaction, or any other irregular condition on the patient's arm, please stop using the device, and contact with the manufacturer or the dealer.**
- **To avoid any possibility of accidental strangulation, keep this product away from children and do not drape AIR TUBE around your neck.**
- **Because the product includes precision parts, avoid extreme temperature variations, humidity, altitude, shock, dust, lint, and direct sunlight. The performance of the product may be affected.**
- **Make sure that the operator is at the position that the patient's condition can carefully be monitored during measurement.**
- **Consult with the doctor or physician to use this product to take blood pressure of person in pregnancy or under pre-eclamptic condition.**
- **In case any smoke, spark, or ignition of the device is found during the use of the product, immediately stop using the device, and contact with the manufacturer or the dealer.**

CONTRAINDICATIONS

- **Do not use this product along with implantable and wearable medical electrical equipment such as pacemaker, defibrillator, or electrocardiographic monitor.**
- **Do not use this product in an explosive environment such as near flammable anesthetics or inside oxygen chamber.**
- **Do not use cuffs or accessories other than those specified by the manufacturer. Otherwise, correct measurement readings cannot be obtained.**
- **Do not apply the cuff over wounded arm, arm under an intravascular access or therapy or an arterio-venous shunt, or arm on the side of a mastectomy or lymph node clearance. Otherwise injury may be resulted.**
- **Do not make measurements repeatedly to avoid harmful injury due to interfered blood flow from cuff inflation.**
- **Do not drop or strike the product. Make sure not to expose it to moisture. This product is not water resistant.**
- **Do not press the display or place the monitor with display face down.**
- **Do not take out batteries or unplug the AC adaptor when the monitor is turned on. Make sure to switch off the monitor before removing batteries or AC adaptor.**
- **Do not touch the output plug of AC adaptor during measurement.**
- **Do not disassemble or modify the product.**
- **Do not inflate the cuff when it is not wrapped around patient's arm.**
- **Do not apply the cuff on the limb which the intravenous drip infusion is implemented.**
- **Do not take measurement of neonate in any case. Do not take measurement of children for automatic measurement.**

OPERATION WITH AC ADAPTOR



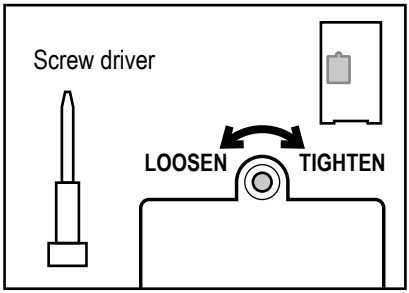
Connect AC ADAPTOR PLUG to AC CONNECTOR.

Plug AC ADAPTOR in the power socket.
AC INDICATOR is lit when AC ADAPTOR is connected correctly.

OPERATION WITH RECHARGEABLE NiMH BATTERY

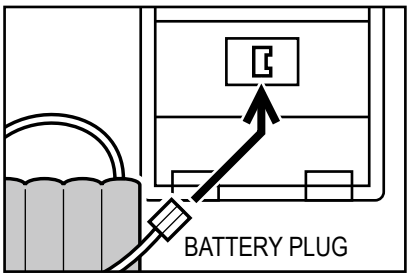
The battery supplied with the product is not charged and needs to be charged for about 4 hours before use.

Turn off the power and unplug AC ADAPTOR before inserting the battery.
Make sure " O " side of MAIN POWER SWITCH is pressed down.



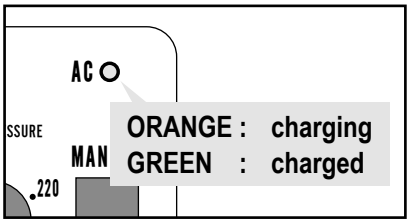
Remove BATTERY COMPARTMENT COVER by loosening and removing the screw.

Connect BATTERY PLUG to BATTERY CONNECTOR inside the battery compartment and insert the battery.



Put back BATTERY COMPARTMENT COVER and close it by inserting and tightening the screw.

Connect AC ADAPTOR PLUG and plug AC ADAPTOR in the power socket to charge the battery.
The battery will be charged regardless whether the device is turned on or off.



Orange light of AC INDICATOR indicates that the battery is being charged.
The battery is fully charged after approximately 4 hours.

Unplug AC ADAPTOR when the light turns green this indicates the battery is charged.

The color of AC INDICATOR may fluctuate from green to orange if DM-3000 is operated while charging battery, this does not indicate a problem.

BATTERY MARK

BATTERY MARK flashes in the segment LCD when the battery charge is low.
Only a few more measurements remain before the battery runs down.

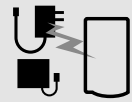
BATTERY MARK

Stops flashing and becomes steady. The battery is exhausted and must be recharged.
Measurement cannot be made.

Battery life

Life of the rechargeable NiMH battery is approximately 2 years. However it may vary depending on operating conditions. Replace the battery when BATTERY MARK is displayed often or when frequent charging of the battery becomes necessary.

Tips on prolonging the battery life

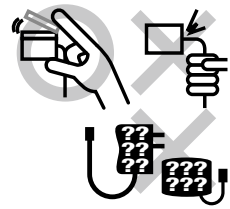


The device is powered by AC ADAPTOR when it is connected; the installed battery is not used if AC ADAPTOR is connected.

- **Remove the battery when operating the device with AC ADAPTOR for extended period of time or when the battery does not need to be charged.**
- **Avoid charging the battery if it is not completely exhausted.**

Do not forcibly remove the battery or pull out the plugs holding cords and cables.

Use manufacturers dedicated AC adaptor and battery only.
Contact your supplier if they become damaged or need replacing.



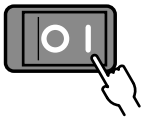
POWER MARK

The device goes to energy saver mode when it is left turned on and not operated for approximately 3 minutes. The mark will be displayed for an hour and then disappear. Make sure to turn off the device by pressing " O " side of MAIN POWER SWITCH down after each use especially when the device is powered by the battery.

The device activates from sleeping mode when either START/STOP BUTTON or SET/MEMORY BUTTON is pressed. It is recommended to activate the device by pressing SET/MEMORY BUTTON since the device could start inflation if START/STOP BUTTON is pressed. Press START/STOP BUTTON again and stop inflation if the cuff is not wrapped around arm.

TAKING BLOOD PRESSURE

Turn on the device by pressing " | " side of MAIN POWER SWITCH.



Push the MODE SELECTOR downward and set to "AUTO".
See page 13 for "MANUAL" measurement.

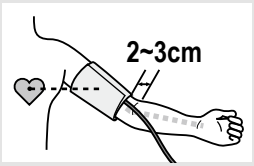
Set the initial inflation value with the PRESET PRESSURE CONTROL.

Select the pressure approximately 30 to 40 mmHg above expected systolic pressure.
Pressure can be set between 100 mmHg and 280 mmHg. Cuff is not inflated when the knob is set below 100 mmHg, "PUMP OFF".
Set the pressure at 180 mmHg if patient's systolic pressure is difficult to predict.
The cuff will be re-pressurized to a higher value if the preset pressure is too low for blood pressure to be taken during cuff deflation.

Apply the cuff to patient's arm.
Choose the right size of cuff for your patient.

ARM CIRCUMFERENCE	CUFF SIZE
22 to 32 cm	REGULAR
32 to 42 cm	LARGE

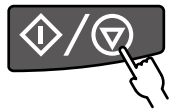
Find a chair and a table so that the patient can be comfortably seated with patient's back and arm supported. Legs should not be crossed and feet kept flat on the floor.



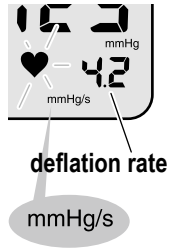
The lower edge of the cuff should be about 2 to 3 cm above the inner elbow and the AIR TUBE should be on the inner part of the arm over the brachial artery.
Press the surface of the cuff to make sure that the hook and loop fastens securely.
The cuff should be wrapped loosely enough so that two fingers can be placed between the cuff and patient's arm. If the cuff is wrapped more tightly or loosely than this, inaccurate blood pressure readings may result.

If your patient is wearing a shirt that might restrict circulation in his/her upper arm or he/she rolls his/her sleeve up over the upper arm, the blood flow could be restricted, preventing accurate measurement.

Press START/STOP BUTTON.

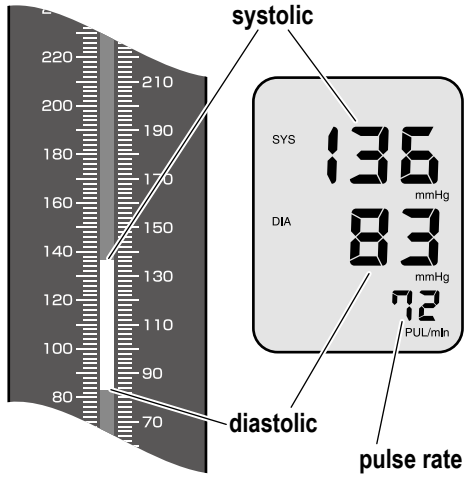


The cuff is inflated automatically after zero settings appear on display.
Pressurization stops when pressure reaches the preset pressure value and pressure starts to descend.
Heart mark flashes in the segment LCD synchronizing detected pulse.
Deflation rate is displayed at the lower right corner of the segment LCD.



Press the START/STOP BUTTON if the measurement needs to be interrupted.
The device will stop the measurement process during any course of measurement procedure and rapidly release air from the cuff.

Residual air is rapidly exhausted from the cuff when measurement is completed.
Blood pressure and pulse rate are displayed.



Turn off the device by pressing " O " side of MAIN POWER SWITCH.

The device will go into energy saver mode after approximately 3 minutes even if the SWITCH has not been turned off. See page 10.

POWER MARK

Make sure your patient is relaxed, has taken at least 5 minutes of rest before measurement and refrains from talking or moving during measurement.

Ensure that the cuff is kept at the height of patient's heart during measurement.

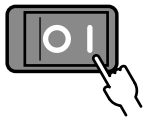
Do not execute repeated measurements since congestion of blood could result in inaccurate measurements. Allow patient's arm to rest for at least 5 minutes.

"MANUAL" MEASUREMENT MODE

When you want to take your patient's blood pressure using the Auscultatory method with a stethoscope, set the device to "MANUAL" mode.

MAKING "MANUAL" MEASUREMENT

Turn on the device by pressing " | " side of MAIN POWER SWITCH.



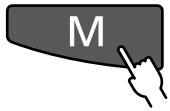
Move MODE SELECTOR upward and set the device to "MANUAL".

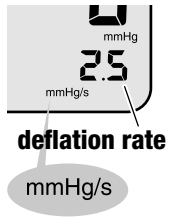
Set the initial inflation value with the PRESET PRESSURE CONTROL.

Details on preset pressure … page 11

Press SET/MEMORY BUTTON to confirm and/or select the appropriate deflation rate.

The deflation rate is displayed at the lower right corner of the segment display.
The deflation rate can be selected from 2.5, 4.5 and 6.5 mmHg/sec.
The set deflation rate returns to the default value of 4.5 when the device is turned off.



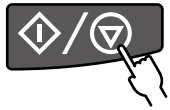


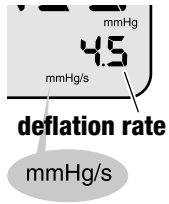
Apply the cuff and stethoscope to patient's arm in the same manner as the usual Auscultatory method.

The patient should have the same measurement posture as the one for "AUTO" measurement.

Press START/STOP BUTTON.

The cuff is inflated automatically after zero settings appear on display.
Pressurization stops when pressure reaches the preset pressure value and pressure starts to descend.
Deflation rate is displayed at the lower right corner of the segment LCD.

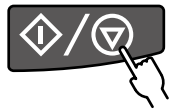




Press the START/STOP BUTTON if the measurement needs to be interrupted.
The device rapidly exhausts air from the cuff.

If cuff inflation was not sufficient, press and hold down START/STOP BUTTON once deflation has started and the cuff is pressurized again. Pressurization will continue while the button is pressed. Pressure does not exceed 290 mmHg.

Press START/STOP BUTTON when blood pressure is taken to exhaust residual air rapidly from the cuff.



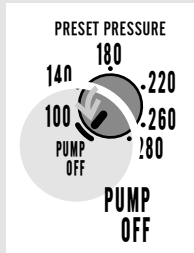
Turn off the device by pressing " O " side of MAIN POWER SWITCH.

The device will go into energy saver mode after approximately 3 minutes even if the SWITCH has not been turned off. See page 10.

POWER MARK

Manually pressurizing the cuff with inflation bulb

Disconnect AIR PLUG from DM-3000 original cuff and connect it to the cuff to use. Insert AIR PLUG into AIR CONNECTOR. Push the MODE SELECTOR upward and set to "MANUAL". Set the PRESET PRESSURE CONTROL to "PUMP OFF" and press START/STOP BUTTON. Start measurement after INFLATION MARK is displayed. To use control valve of the inflation bulb most effectively, set the deflation rate at 2.5 mmHg on DM-3000.



* Inflation bulb not included with DM-3000.

MEMORY FUNCTION

Seven measured results and their average obtained in "AUTO" mode are automatically saved in the memory. When the results exceed 7, the oldest data will be deleted to record a new result.
The results are not saved when the measurements are performed in "MANUAL" mode.

Recalling measured data

1. **Turn on the MAIN POWER SWITCH and set the device to "AUTO" with MODE SELECTOR.**
   An average of the stored results is displayed first.
2. **Press "M" button to recall stored data one by one. Figure following "No." indicates sequence of data, the larger the number, the older the data. However, maximum data can that be stored is 7.**

Deleting stored data

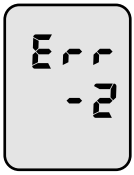
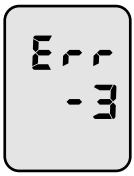
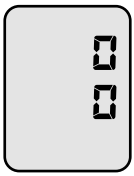
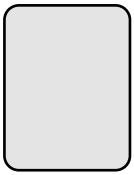
Deleting a single data

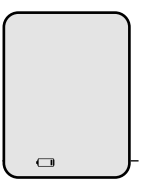
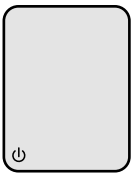
1. **Recall a data to be deleted.**
2. **Press and hold down "M" until the LCD Display starts flashing and the data disappears subsequently.**
3. **New average is recalculated on remaining data and stored.**

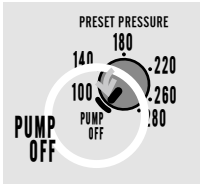
Deleting all data

1. **Recall Average following Data Recalling procedure.**
2. **Press and hold down "M" till the LCD Display starts flashing and the data disappears subsequently.**

ERROR DISPLAYS AND TROUBLESHOOTING

ERROR SYMBOL/SYMPTOM	CAUSE	REMEDY
	OVER-PRESSURIZATION; The cuff was inflated to the maximum pressure because of movement of body etc.	Make sure that the patient stays still during measurement.
	MEASUREMENT ERROR; Measurement could not be made because of moving or talking during measurement.	Make sure the patient remains still and quiet during measurement.
	INFLATION ERROR; AIR PLUG is not correctly inserted. Noise was detected.	Reinsert AIR PLUG and make sure that it is securely inserted. Make sure that the patient stays still during measurement.
	DEFLATION ERROR; Movement or talking was detected during measurement. Extreme changes in pressure occurred during measurement.	Make sure the patient remains still and quiet during measurement. Do not let the patient move during measurement.
	CHECKING MODE; See page 22.	Turn off the device once and then turn it on again to make measurement.
 Nothing is displayed when MAIN POWER SWITCH is pressed down on its " | " side.	NO POWER; AC ADAPTOR is not correctly connected. Battery is exhausted. DM-3000 was left turned on but has not been operated for over an hour.	Reinsert AC ADAPTOR and make sure that it is securely inserted. Charge the battery or use AC ADAPTOR. Turn off the device or press START/STOP BUTTON or SET/MEMORY BUTTON to activate the device from sleeping mode.

ERROR SYMBOL/SYMPTOM	CAUSE	REMEDY
 FLASHING	LOW BATTERY; Battery is weak.	Charge the battery. Only a few measurements can be made before the battery runs down.
 STEADY	BATTERY ERROR; Battery is exhausted.	Charge the battery. Measurement cannot be conducted.
	The indication appearing at all LCD segment test, which is performed when the unit is turned on, does not indicate low battery or battery error. 	
 	ENERGY SAVER MODE; The device was left turned on and has not been operated for over approximately 3 minutes.	Turn off the device or press START/STOP BUTTON or SET/MEMORY BUTTON to activate the device from sleeping mode. Make sure to turn off the device by pressing " ○ " side of MAIN POWER SWITCH after use.
Measurement is interrupted once and the cuff is inflated again.	When the preset pressure value was not high enough to make measurement or when noise was detected, the cuff is pressurized again to a higher level. Patient moved during measurement.	This does not indicate a problem. Make sure that the patient stays still during measurement.
Blood pressure is different each time. The reading is extremely low (or high).	Patient is not being measured with correct posture. Blood pressure readings constantly vary with time of measurement and physical and mental condition.	Make sure that the patient is being measured with correct posture. See NOTES ON BLOOD PRESSURE.

ERROR SYMBOL/SYMPTOM	CAUSE	REMEDY
Pulse rate is too low (or too high).	Patient moved during measurement. There was not enough rest taken before measurement.	Make sure that the patient stays still during measurement. Allow your patient to rest for more than 5 minutes.
Measurement result cannot be recalled or it is not stored.	Blood pressure was taken in "MANUAL" MODE.	Measurement result is saved only when it is taken in "AUTO" mode.
Cuff inflation does not start.	Battery is exhausted. PRESET PRESSURE CONTROL is set to "PUMP OFF". 	Measurement cannot be made when BATTERY MARK is displayed. Recharge the battery. Air pump does not operate when PRESET PRESSURE is set to PUMP OFF. Turn PRESET PRESSURE CONTROL and select appropriate pressure between 100 and 280 mmHg for automatic inflation.
AC INDICATOR is lit even when DM-3000 is turned off.	The battery is inserted.	AC INDICATOR also indicates whether the battery is being charged or not.
The column LCD is dim or its brightness is not steady.	DM-3000 is operated with the battery.	Difference in voltages between AC ADAPTOR and the battery lead to differences in LCD brightness. This does not indicate functional problem.

If you cannot get correct measurement with the methods above, do not tamper with the internal mechanism. Contact your supplier. If the unit malfunctions, please return it to the supplier or an authorized service representative for servicing according to the warranty. The manufacturer provides service data to qualified suppliers.

NOTES ON BLOOD PRESSURE

Blood pressure is the force exerted by the heart in pumping the blood through the arteries and the resistance by the veins to this flow.

Blood pressure varies all the time, influenced by mental and physical factors and is never constant.

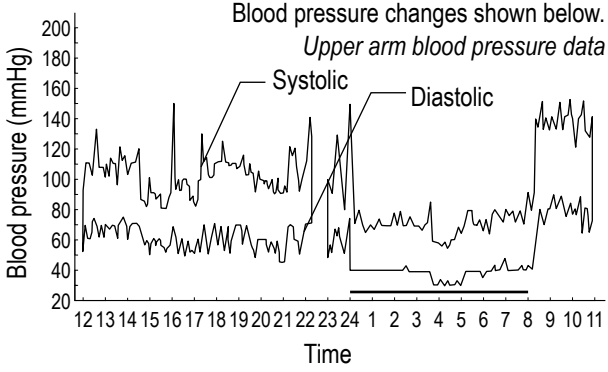
In general, blood pressure is highest during the working hours and gradually decreases during the afternoon and evening hours. It is low during sleep and increases at a relatively fast rate after arising from bed.

Causes for Changes in Blood Pressure

- Body movement
- Conversation
- Mental Tension
- Nervousness
- Emotions
- Eating
- Drinking Alcohol
- Smoking
- Measurement posture
- Recent Urination or Bowel Movement
- Room temperature
- Changes in the surroundings such as movement or noise, etc.

Blood pressure changes shown below.

Upper arm blood pressure data



Blood pressure measured at hospital or clinics tends to be higher than when it is measured at one's home, this symptom is known as "White Coat Syndrome".

Being in a hospital could cause mental tension and therefore lead to higher blood pressure than that taken under relaxed condition at one's own home.

Judgment such as a change of dosage of a drug based on measurement results should not be made by patients on their own without professional consultation.

Blood pressure classification by WHO (1999)

180~	**Hypertension (severe)**					
160~179					**(moderate)**	
140~159					**(mild)**	
130~139	**High Normal**					
120~129	**Normal**					
~120	**Optimal**					
SYS / mmHg / **DIA**	~ 80	80 ~ 84	85 ~ 89	90 ~ 99	100 ~ 109	110 ~

Blood pressure should be taken after approximately five minutes of rest, under relaxed conditions and in a quiet environment.

Exercise, eating, drinking alcohol, smoking and other activities that effect blood pressure should be avoided prior to measurement.

Cuff measurement position should be at the height of the heart to obtain correct measurement results. If the cuff is lower (higher) than the heart, the measured reading tends to become larger (smaller).

There should be no speaking or moving during blood pressure measurement. Otherwise correct measurement results cannot be obtained.

The ambient temperature should be approximately 20˚C for blood pressure measurement.

Any shirt or accessories that might restrict circulation in the upper arm should be taken off for blood pressure measurement.

Sleeves rolled up over the upper arm will restrict the blood flow and lead to inaccurate measurement.

Measurement of blood pressure should not be repeated immediately since congestion of blood could result in inaccurate measurement. There should be at least 5 minutes between measurements.

CARE AND MAINTENANCE

Because the device includes precision parts, care should be taken to avoid extreme temperature variations, humidity, shock, dust, and direct sunlight. Do not drop or strike the device. Make sure not to expose the unit to moisture. This unit is not water resistant.

Use only a soft, dry cloth to clean the device. Do not use gasoline, paint thinner, chemicals such as strong soda, strong acids, oxidizing agents and reducing agents, or other strong solvents on the unit. Since the cuffs may absorb perspiration and other fluids, inspect them for stains and discoloration after each use. Cotton cuff shells are hand/machine-washable. Take out bladders from inside the cuffs before washing cotton shells. Use common detergents. Air dry thoroughly.

When storing the device, do not place heavy objects on it and do not coil AIR TUBE too tightly. In case the product is stored in the environment with ambient temperature above 40˚C or below 10˚C, please leave it for at least 2 hours before taking a measurement. Remove the battery if the device is to be stored for an extended period of time. Keep the batteries out of reach of children.

Do not inflate the cuff when it is not wrapped around an arm.

Do not disassemble or modify the device.

We suggest that the device be checked every 2 years. This operation may only be performed by the manufacturer or by authorized agents of the manufacturer.

Stop using the device immediately and contact your dealer or the manufacturer in case any visible damage is found on the device.

This device is not designed for self-use by unspecified persons in public areas.

Any serious incident occurred in relation to the device should be reported to the manufacturer and the competent authority in your country/area. If you have no contact information of such authority, please contact the manufacturer or EU authorized representative whose contact information is indicated in this instruction manual.

Checking pressure accuracy

Connect a cuff wrapped around a firm cylinder to DM-3000 and a standard manometer.

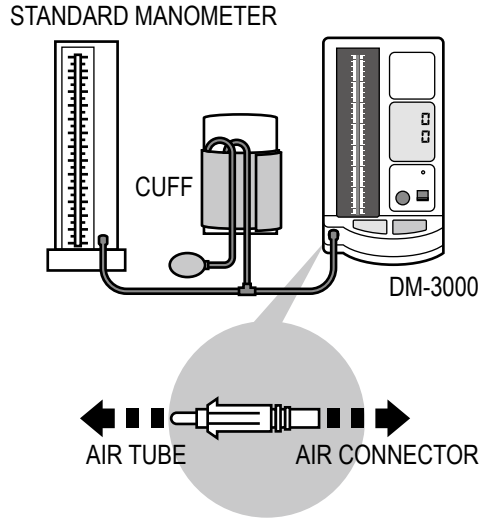
Turn on DM-3000 while pressing and holding START/STOP BUTTON down.

Release the button after the initial display (all segment display) disappears.

Two " 0 "s are displayed and DM-3000 is in CHECKING MODE.

Inflate the cuff with an inflation bulb and compare the readings.

Pressure accuracy is to be ±3mmHg. Contact dealer if accuracy of your DM-3000 is invalid.



TECHNICAL DESCRIPTION FOR ELECTROMAGNETIC DISTURBANCES

DM-3000 complies with the Electromagnetic Disturbances standard, IEC60601-1-2:2014.
As a medical electrical equipment, special precautions regarding the electromagnetic disturbances shall be taken at usage of the device according to the information provided below.

- The device is not intended for use in environments where the intensity of electromagnetic disturbance is high, such as near active HF surgical equipment and MRI (magnetic resonance imaging) equipment etc.
- Use of the device adjacent to or stacked with other equipment must be avoided because it could result in improper operation.
- Use of accessories other than those specified or provided by the manufacturer could result in increased electromagnetic emissions or decreased electromagnetic immunity of the device and result in improper operation.
- Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used at least 30cm away from any part of the device, including specified cables. Otherwise, degradation of the performance of this equipment could result.

WARRANTY AND SERVICE

NISSEI warrants the product for two years from the date of purchase for functionality and accuracy without charging cost for inspection, adjustment, repair and labour. Evidence of date of purchase is required for warranty claims.

However, this warranty does not cover defects resulting from,

- damage caused by wear or misuse,
- damage caused by unauthorised repair or modification or
- damage caused by natural disaster, violent action or war.

Also, cuffs, including cuff shells, bladders, tubes and plugs, are not covered by this warranty except for defects in manufacture.

Purchaser shall bear transport or shipping related costs.

NISSEI is not liable for any consequential damages caused by DM-3000, direct or indirect, economically or biologically.

NISSEI CE 0123

Manufacturer:

NIHON SEIMITSU SOKKI CO., LTD. 2508-13 Nakago Shibukawa Gunma 377-0293 Japan

web site http://www.nissei-kk.co.jp/english/

EC-Representative:

MDSS GmbH Schiffgraben 41, 30175 Hannover, Germany