

**TOMY®**

**i-SOBOT™**

**i-SOBOT™**

**i-SOBOT™**  
**Instruction Manual**

**AGES: 10 +**

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i-sobot unit: Uses 3 rechargeable AAA nickel metal hydride rechargeable batteries (included)  
Controller unit: Uses 3 AA alkaline batteries (not included)

※In some cases, photos and illustrations will differ from the actual product.

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# Safety Instructions

## Meaning of warning symbols

The following symbols are used in this document. The details of these symbols should be fully understood before reading the main text.



**Danger**

If the important points marked with this symbol are not followed, an accident resulting in death or serious injury due to fire/electrocution/explosion, etc. may occur.



**Warning**

If the important points marked with this symbol are not followed, it could lead to an accident resulting in serious injury or death due to fire/electrocution/explosion, etc.



**Caution**

If the important points marked with this symbol are not followed, accidents such as electrocution could occur, causing injury or damage to objects in the vicinity.



**Warning**

If the following important points are not followed, death or serious injury due to fire/electrocution, etc. will result.

### ● Do not use in a place that is dirty, damp, dusty, or humid

If used in such a place, fire or electrocution may result. Use away from sinks, showers, and bathtubs.

### ● Do not put water or foreign objects inside

If water or foreign objects are put inside, fire or electrocution may result. If water or a foreign object does happen to get inside, immediately turn the power switch to OFF and remove the enloop batteries. Upon doing so, please consult with our customer support center.

### ● Do not disassemble or modify

This may result in fire or electrocution causing injury or malfunction.  
For internal inspections or repair, please consult with our customer support center.

### ● Do not use near open flame (i.e. kitchen stove)

Do not leave or recharge near a flame or in direct sunlight, etc. Fire or electrocution may result.

### ● Do not cover with fabric, bedding, etc.

Heat may accumulate inside, causing fire or electrocution.

For good ventilation, comply with the following:

- Do not leave on deep-pile floor coverings (carpets, rugs, etc.)
- Do not wrap in fabric
- Do not dress in clothes

### ● Keep out of reach of small children

Unexpected accidents, such as trapped fingers, swallowing of removed parts, etc. may result. This product should only be used by children under the supervision of an adult who has read the instruction manual.



**Caution**

If the important points below are not followed, bodily injury or damage to objects in the vicinity could occur.

### ● Do not put hands or fingers into movable parts of the i-SOBOT unit.

Injury may occur due to hands or fingers becoming caught.

### ● Do not place heavy objects on top of the i-SOBOT unit.

Injury may occur due to breaking or falling.

### ● Do not place or store in direct sunlight or close to a heater

Fire or malfunction may occur due to an increase in internal temperature.

### ● Do not use or store in an unstable place

Do not place on an unstable surface, a slope, or anywhere where there is a risk of falling.  
Injury or malfunction may occur due to dropping or falling over.

### ● In the event of repair, stop i-SOBOT's actions by turning the power switch to OFF, remove the enloop batteries.

### ● Do not put fragile or potentially hazardous items in the vicinity of the i-SOBOT unit.

i-SOBOT sometimes behaves autonomously, so damage to your possessions and unexpected accidents could occur.



**Danger**

**Safety precautions regarding batteries**

If used incorrectly, there is a danger that the batteries will leak, generate heat, ignite, and explode, leading to serious injury. Please be sure to comply with the following:

### ● Do not recharge or use batteries in any liquids such as water, sea water, soft drink, or soapy water.

### ● Do not place in a flame. Do not heat. Do not place near any source of heat. Do not recharge inside a hot car, etc.

### ● Do not solder. Do not short circuit or disassemble. Do not carry or store together with metal items such as coins or hairpins.

### ● Do not drop, or throw, or subject the batteries to any kind of strong impact. Do not step on the batteries. Do not pierce the batteries with a nail, etc. Do not deform the batteries.

### ● Do not use or store within the reach of infants.

※ Information regarding rechargeable batteries and charger is given separately in the instruction manual for the charger. For question specific to the rechargeable batteries and charger, please contact manufacturer's customer support center.

# Safety Instructions

## CAUTION ELECTRIC TOY

NOT RECOMMENDED FOR CHILDREN UNDER TEN YEARS OF AGE. AS WITH ALL ELECTRIC PRODUCTS, PRECAUTIONS SHOULD BE OBSERVED DURING HANDLING AND USE TO PREVENT ELECTRIC SHOCK FOR INDOOR USE ONLY

INPUT: 100-120 VAC, 50-60 Hz, 8VA.

OUTPUT: 1.2VDC, 150mA x 4

### Battery Safety Information

- Only adults should install and replace batteries.
- Switch off i-Sobot before opening battery compartment.
- Insure that battery polarity is correct, observing (+) and (-) marks on battery and product.
- Use only batteries of the type recommended (or equivalent).
- Do not mix old and new batteries.
- Do not mix alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium) batteries.
- Remove used batteries immediately. Remove batteries if i-SOBOT will not be used for a long period of time to prevent possible leakage.
- Do not short circuit terminals.
- Dispose of batteries safely. Do not dispose of batteries (or products containing non-replaceable batteries) in fire, as batteries may explode or leak.
- Periodically examine product for signs of damage to electrical parts and do not play with until damage has been properly examined.
- Only use batteries of the same or equivalent type to those recommended.
- Please retain the above information for future reference.

### Rechargeable Battery Information

- Removal and recharging of rechargeable batteries should be carried out by an adult or under adult supervision.
- Remove rechargeable batteries from product before recharging.
- Do not recharge non-rechargeable batteries.
- Do not disassemble the battery pack.
- Battery cells and charger will become hot during use and charging – take care when handling. Allow heat to disperse when charging. DO NOT COVER.
- If cells or charger become wet, dry before recharging. Take care when handling charger and batteries to avoid electric shock.
- Not intended for children under 3 years old. The batteries & charger are not toys. Check the charger and batteries regularly for hazards such as damage to the casing, cable, plug or other parts. If any damage is found, do not use until it has been replaced.
- Do not attempt to power battery products by the introduction of main supply or separate power supplies, and do not attempt to plug any part of this product into the main supply.
- To prevent a shock hazard, please disconnect from power supply before cleaning.
- Do not overcharge the battery. Use only the charger provided. Do not use other chargers to charge battery. Like any other rechargeable battery, explosion may occur, if improperly charged.
- Do not attempt to recharge the batteries by using any other method than the one recommended/supplied.
- When exhausted remove batteries from toy. This product uses a NiMH batteries, which should be recycled at the end of its life.

Charge before use and according to the charger instructions provided. Only use the rechargeable batteries supplied. The charger supplied is for use only with the 1.2V AAA/HR03 NiMH rechargeable batteries supplied. Do not attempt to charge any other type or brand of battery than those supplied. Remove the batteries from the charger once they are charged and disconnect the charger from the power outlet.

### FCC Statement

This equipment complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- 1) This equipment may not cause harmful interference, and
- 2) This equipment must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

# Precautions for Use

To avoid malfunction or damage to i-SOBOT and its controller, please take note of the following points:

- Do not use on an unstable or uneven surface where there is a risk of falling.
- Do not apply force by resting your hands or elbows on the unit.
- Do not drop or subject the unit to strong impacts.
- Do not lift, swing, or twist the unit using its head, arms, or legs.
- Do not put the unit in a place that could get extremely hot, such as direct sunlight or inside a car with the windows closed.
- Do not insert foreign objects such as paper clips inside i-SOBOT or into i-SOBOT's joints.
- Do not use outdoors.
- Do not use on highly abrasive surfaces such as rough concrete.  
Damage to i-SOBOT could occur.
- Do not use on wet or slippery floors or deep-pile carpets, etc. If i-SOBOT falls over on carpet, the fibers can easily get caught in its joints, disabling or damaging i-SOBOT.
- Do not put the unit in water.
- Do not apply excessive force that prevents i-SOBOT from moving.
- Do not apply oil to movable parts (joints, etc.).
- Do not restrict the movement of movable parts by affixing stickers, tying on ribbons, or inserting items.
- Do not disassemble or modify i-SOBOT.
- Transport i-SOBOT in its original packaging or similarly shock absorbing packaging.
- When i-SOBOT will not be used for a long period, such as while traveling, remove the batteries from the i-SOBOT unit.
- Do not use where there are strong electromagnetic waves or X-rays.
- i-SOBOT may function abnormally in sunlight or directly next to fluorescent light.
- If there are barriers between i-SOBOT and the controller, normal transmission may not be possible.
- There may be times when malfunction might occur due to the effect of infrared remote controls belonging to other devices, such as television remote controls. And, conversely, i-SOBOT's controller may affect infrared receivers on televisions, etc.
- For optimal performance the i-SOBOT robot should be operated using the rechargeable batteries included or the equivalent (NiMH 1.2V AAA high voltage rechargeable batteries).  
Never use alkaline, zinc-carbon (heavy duty) or high voltage (such as 1.7V Oxyride) batteries in the i-SOBOT robot. (Alkaline batteries may be used in the remote control unit.)

※ Information regarding rechargeable batteries and charger is given separately in the instruction manual for the charger.

For questions specific to the rechargeable batteries and charger, please contact the manufacturer's customer supportcenter.

# Table of Contents

■ Safety Instructions .....	01
■ Precautions for Use .....	04
■ Table of Contents .....	05
■ Introducing i-SOBOT .....	06
■ Contents of Set .....	06
■ Part Names .....	07
■ Before Operating i-SOBOT .....	10
■ How to Start Up .....	13
■ The Four Modes .....	15
■ Remote Control Mode .....	17
■ Program Mode .....	21
■ Special Action Mode .....	26
■ Voice Control Mode .....	27
■ How to Make Adjustments .....	29
■ Troubleshooting .....	32
■ Main Specifications .....	34

# Introducing i-SOBOT

## What is i-SOBOT?

i-SOBOT is the smallest fully bipedal humanoid robot ever mass produced. It is endowed with 17 custom developed servo-motors, 19 integrated circuit chips, a built in gyro-sensor, voice command recognition, and a speaking vocabulary of over 200 words and phrases. It is capable of smooth and sophisticated bipedal movement which includes forward, backward or side-to-side walking, as well as dancing, standing up from a prone position, calisthenics and many other actions requiring human-like self-powered articulation. The robot can be controlled in multiple ways, either by preprogrammed actions, user programmed actions, real-time remote control or voice commands.

## Contents of Set

● i-SOBOT (robot unit) ...1



● Rechargeable battery charger  
Instruction manual...1

● Controller...1



● Exclusive hexagonal driver ...1



● Quick Reference Card ...1

● Instruction manual  
(this document)...1

● Rechargeable batteries  
(nickel metal  
hydride battery)...3



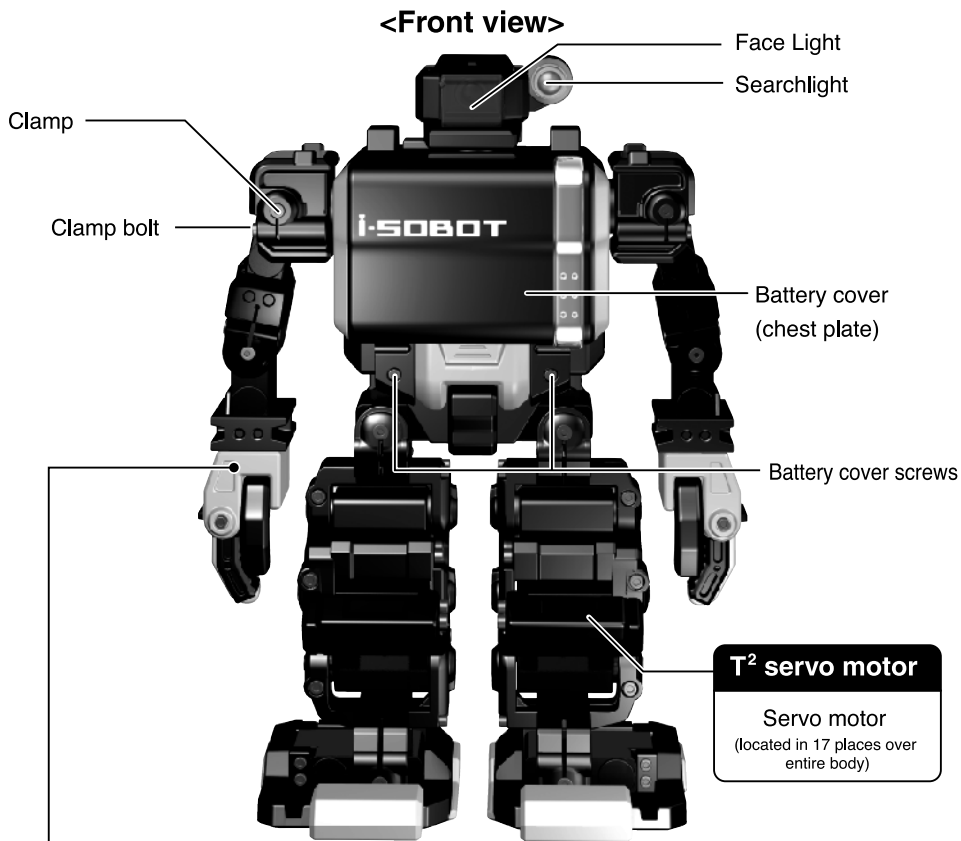
● Rechargeable battery  
charger ...1



※Actual product may vary slightly from the illustrations and photographs.

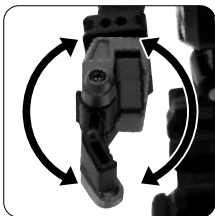
# Part Names

## i-SOBOT



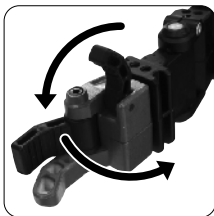
Wrist and fingers are not controlled by the controller, but may be moved manually.

Wrist



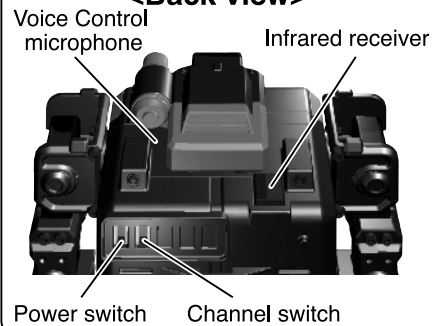
Capable of 90° rotation in each direction.

Thumb/Middle finger



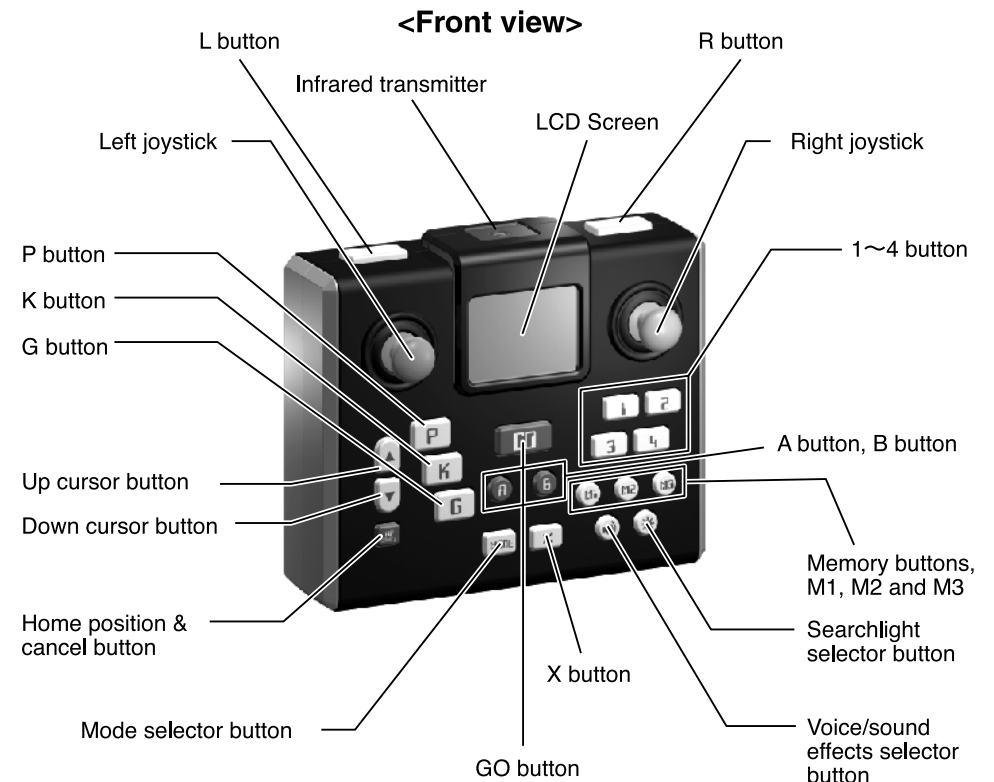
Approximately 90°movable range.

### <Back view>



# Part Names



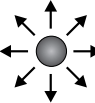
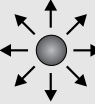










## Controller



### <Back view>



# Part Names

Name	Icon	Function
L button		Records/locks position of arms
R button		Switches joystick to arm control (moves arms into home position)
Left joystick		Operates walking With R button pressed, operates left arm
Right joystick		Operates head and hips With R button pressed, operates right arm
P button		Used in combination with 1~4 buttons
K button		Used in combination with 1~4 buttons
G button		Used in combination with 1~4 buttons
1 button		Used to input actions
2 button		
3 button		
4 button		
M1 button	—	Registers programmed action patterns
M 2button	—	
M 3button	—	
A button		Used to input actions
B button		
GO button		Executes special actions and transmits program decisions and data; Repeats the last action in RC-Mode and SA-Mode
Mode selector button	—	Selects mode
Up/down cursor buttons	—	Selects block screen in program mode
X button	—	Erases program; returns each mode to its initial state
Home position & cancel button	—	Cancels each action (returns posture to home position)
Voice/sound effects selector button	—	Selects ON/OFF for voice/sound effects
Searchlight selector button	—	Selects AUTO/ON/OFF for searchlight

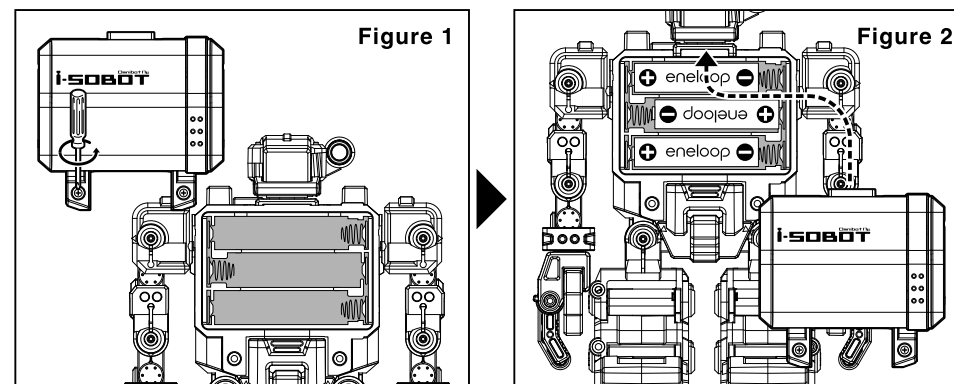
# Before Operating i-SOBOT

## Preparing i-SOBOT

### ● How to install rechargeable batteries

Loosen the screws affixing the battery cover to i-SOBOT's chest using a Phillips screwdriver and remove the battery cover. (Figure 1)

Insert the three rechargeable AAA batteries (included), ensuring the "+" and "-" are correctly aligned. Replace the battery cover and tighten the screws firmly using a Phillips screwdriver (Figure 2)



#### Caution

※ The 3 rechargeable AAA batteries provided are not charged.  
Before using the batteries for the first time, fully charge them using the charger provided.



#### Important Note

※ Never use alkaline, zinc-carbon (heavy duty) or high voltage (such as 1.7V Oxryde) batteries.

### ● How to use the batteries charger

For details, please refer to the separate charger instruction manual (Nickel Metal Hydride Battery Charger Instruction Manual).

### ● About Auto-sleep

If i-SOBOT is not operated for six minutes, the main light and searchlight on the head will automatically turn off and i-SOBOT will automatically enter "Sleep Mode" meaning it will stop functioning to conserve power. Since the power switch is ON when this happens, in order to "wake up" i-SOBOT, turn the power switch once to OFF and then again to ON.

In voice control mode, auto-sleep may not work depending on the surrounding environment.



#### Important Note

※ A small amount of power is consumed during auto-sleep mode.  
Please ensure that the power switch is OFF when not in use.

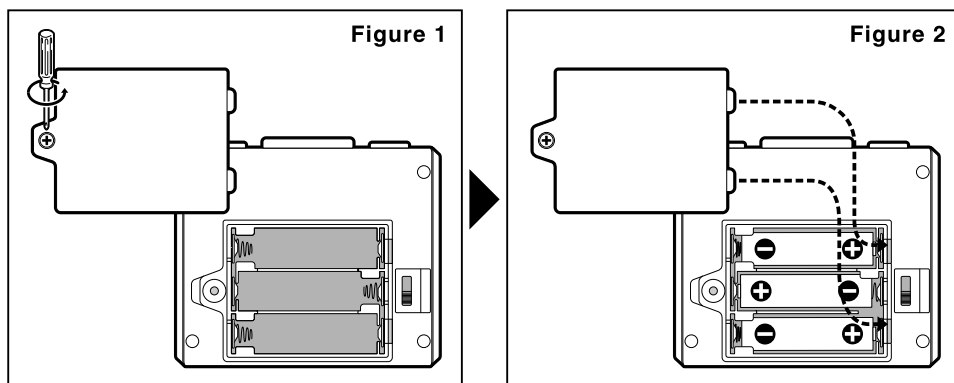
## Before Operating i-SOBOT

### Installing the batteries

Loosen the screws holding the battery cover to the back of the controller using a Phillips screwdriver and remove the battery cover. (Figure 1)

Insert 3 alkaline AA batteries (not included), ensuring the "+" and "-" are correctly aligned. Replace the battery cover and tighten the screws firmly using a Phillips screwdriver. (Figure 2)

#### ● How to install batteries



#### ⚠ Caution

※ When dead batteries are replaced, all memory programmed into the controller will be lost.

#### ⚠ Note

※ Never use batteries other than alkaline batteries such as Oxryde batteries and rechargeable batteries.

#### ● Power-saving mode

The controller goes into power-saving mode if it has not been operated for 1 hour. Press any button and the previous screen will be restored.

#### ⚠ Note

※ A small amount of power is consumed during power-saving mode. Please ensure that the power switch is OFF when not in use.

## Before Operating i-SOBOT

### Operating conditions

- i-SOBOT's walking and actions are easily affected by the condition of the operating surface. i-SOBOT may not walk or perform actions correctly due to poor condition of the operating surface.

#### ⚠ Note

※ Operate i-SOBOT on a smooth, flat surface with no variations in level. i-SOBOT may be unable to operate normally on uneven carpet, rugs, tile, etc.

- i-SOBOT's actions can be unpredictable. When operating i-SOBOT on a table, ensure that i-SOBOT is at a safe distance from the edge of the table at all times.
- Do not operate in direct sunlight.
- Through normal operation, the clamps on the servos may slip out of alignment over time. Refer to P.29 "How to Make Adjustments", and adjust the clamps before operating, if needed.

### About the infrared controller

Point the controller's infrared transmitter at i-SOBOT's infrared receiver to operate.

The infrared controller has a range of approximately 4.5ft at an angle of 30°.

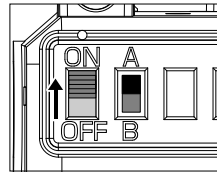
i-SOBOT may function abnormally in sunlight or directly next to fluorescent light.

Normal operation may not be possible if there are objects between i-SOBOT and the controller. Other infrared controllers, such as those used by televisions, may cause i-SOBOT to function abnormally. Conversely, i-SOBOT's controller may affect infrared receivers on televisions, DVD players, radio, etc.

# How to Start Up

## Switching i-SOBOT On

Turn the power switch to ON and set the channel to either A or B. Upon start up the main light and searchlight on i-SOBOT's head will turn on and a demo action will be performed.



Power switch and channel switch on i-SOBOT's back

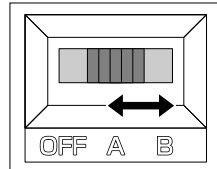
※When the power switch is ON, i-SOBOT will immediately move into the home position. Stand i-SOBOT on a flat surface before turning the power switch ON.



**Caution**

## Switching the Controller On

Select either A or B to match i-SOBOT's channel. When switched on, the title screen will be displayed on the LCD.



Switch on reverse of controller (Power switch)

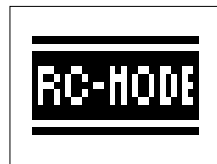
※Ensure that i-SOBOT and the controller are set to the same channel. If i-SOBOT and the controller are set to different channels, i-SOBOT will not respond.



**Caution**



Title screen



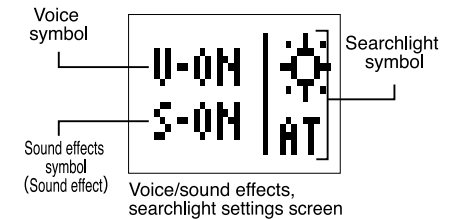
Remote control mode screen

When the controller is first switched to ON, it will start remote control mode. To change modes, refer to page 16 "Changing Mode"

# How to Start Up

## How to set voice/sound effects and searchlight

Initially the searchlight is set to AUTO and voice/sound effects are set to ON. To change settings, press the voice/sound effects selector button or the searchlight selector button.



### ● Setting voice and sound effects

When the settings screen is displayed, you can select voice and sound effects by pressing the voice/sound effects selector button.

	LCD		
Voice/sound effects ON	V-ON	S-ON	Voice and sound effects are emitted according to i-SOBOT's status.
Voice ON, sound effects OFF	V-ON	S-OFF	Voice only is emitted according to i-SOBOT's status.
Voice OFF, sound effects ON	V-OFF	S-ON	Sound effects only are emitted according to i-SOBOT's status.
Voice/sound effects OFF	V-OFF	S-OFF	Voice and sound effects are not emitted.

※ Some sound effects are embedded in i-SOBOT's voice programming. In such cases, sound effects will be emitted, even if sound effects are set to OFF.

### ● Setting searchlight

When the settings screen is displayed, you can select the searchlight by pressing the searchlight selector button.

	LCD		
Searchlight AUTO	AT		Turns on or blinks according to i-SOBOT's status.
Searchlight ON	ON		Searchlight remains on.
Searchlight OFF	OFF		Searchlight is off.

Once various settings have been selected point the controller's transmitter at i-SOBOT's receiver and press the GO button. Settings will be finalized and transmitted to i-SOBOT.

※To ensure settings are transmitted properly, point the controller's transmitter at i-SOBOT's receiver. If the settings are not transmitted or received properly, i-SOBOT's status may differ from the screen display on the controller.

※Voice and sound effects settings are only valid in remote control mode, program mode, and special action mode. In voice control mode, settings are invalid. Also, voice and sound effects urging caution during auto-sleep will always be emitted.

※Settings should be made when the initial screen of the respective mode is displayed. If done while inputting in any mode, the input operation will be cancelled.

- When you want to check the current setting status, press the voice/sound effects selector button or the searchlight selector button.
- When i-SOBOT's power switch is turned off, i-SOBOT will return to its initial settings. Also, when the controller is turned off, the display will return to its initial setting.

※If the controller is turned off and then on again while i-SOBOT's power switch is in the ON position, or, conversely, if i-SOBOT is turned off and then on again while the controller is turned on, i-SOBOT's status will differ from the display on the controller.



## The Four Modes

### Auto Movements

If given no commands, i-SOBOT will automatically perform the following pre-sleep mode actions in all four modes.

Status	i-SOBOT's Action
Not operated for 30 seconds	First Pre-Sleep Mode Action
Not operated for 1 minute	Second Pre-Sleep Mode Action
Not operated for 2 minutes	Third Pre-Sleep Mode Action
Not operated for 4 minutes	Fourth Pre-Sleep Mode Action
Not operated for 6 minutes	Fifth Pre-Sleep Mode Action then enter auto-sleep and power-saving state. To play again, turn the power switch once to OFF and then back to ON. If not playing, turn the power switch OFF.

### About the home position / cancel button

In all modes, the home position / cancel button will override any commands that have already been sent by canceling the action and returning i-SOBOT to the home position.

Please be aware the home position / cancel button will return i-SOBOT to the home position using the shortest movement. Therefore, if home position / cancel button is pressed while i-SOBOT is in certain positions such as standing on one leg, performing a fast movement, or performing an action in a prone position i-SOBOT may fall over or otherwise be unable to assume the home position.

Do not press the home position / cancel button if i-SOBOT has fallen over or has been intentionally laid on its side by the user.

### Indicators of Low Batteries

Nickel metal hydride (NiMH) batteries should never be completely exhausted.

If they are over-drained they will not recharge to full capacity. Since even in sleep mode, i-SOBOT uses a small amount of power, if i-SOBOT goes into sleep mode with low batteries this could over-drain the batteries.

To prevent the batteries from being over-drained, take note of the indicators that batteries are becoming low and should be recharged:

- One of the first indicators of low batteries is a reduction in quality and / or distortion of i-SOBOT's sound, particularly during actions requiring use of many servo-motors at once.
- As the batteries become weaker, i-SOBOT's motors will not function properly and may not be able to perform some actions normally.

#### Low Battery Sleep Mode

- Finally i-SOBOT will prepare to enter low battery sleep mode by flashing the face light, slumping forward and emitting a beeping warning sound three times, then enters sleep mode. When this happens, turn i-SOBOT OFF immediately and recharge the batteries before operating i-SOBOT again.



#### Important Note

Do not operate i-SOBOT again after the low battery warning or after it goes into forced sleep mode without recharging the eneloop batteries. Even though it may appear to function normally again temporarily after being turned OFF and ON, this could over-drain the eneloop batteries and irreparably damage them.

## The Four Modes

### Changing mode

i-SOBOT has four modes of control, providing a wide variety of operation.

Point the controller at i-SOBOT and press the mode selector button. Each time the mode selector button is pressed, the mode will change in the order shown below, and the LCD will show which mode is currently selected. When i-SOBOT receives a mode selection it will indicate the current mode using voice and pose.



#### Note

※ If voice sound effects are turned off, the mode will be indicated using pose only.

### Remote Control Mode



i-SOBOT is operated using the controller's joysticks and buttons.

Details on P12

### Program Mode



Actions can be combined and programmed.

Details on P16

### Special Action Mode



Performance type actions, such as dancing and imitating animals, are executed.

Details on P19

### Voice Control Mode



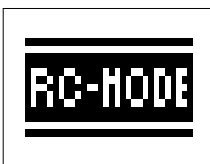
i-SOBOT is operated using words (voice) instead of the controller.

Details on P20

# Remote Control Mode

In remote control mode, i-SOBOT is operated using the controller's joysticks and buttons. If a program has been inputted using program mode (see P21), that program can be executed.

**Note: i-SOBOT may not always move in precisely the directions indicated below. For example, for "Walk Forward" i-SOBOT may not walk in a perfectly straight line.**

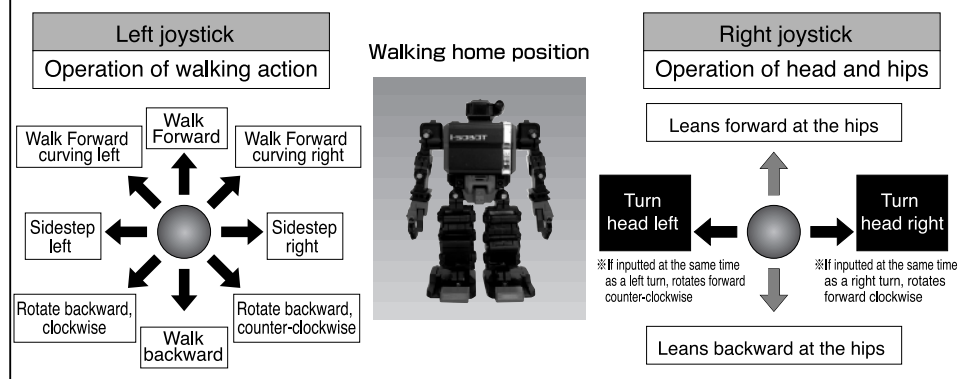


Initial screen in remote control mode

## Basic operation using joysticks

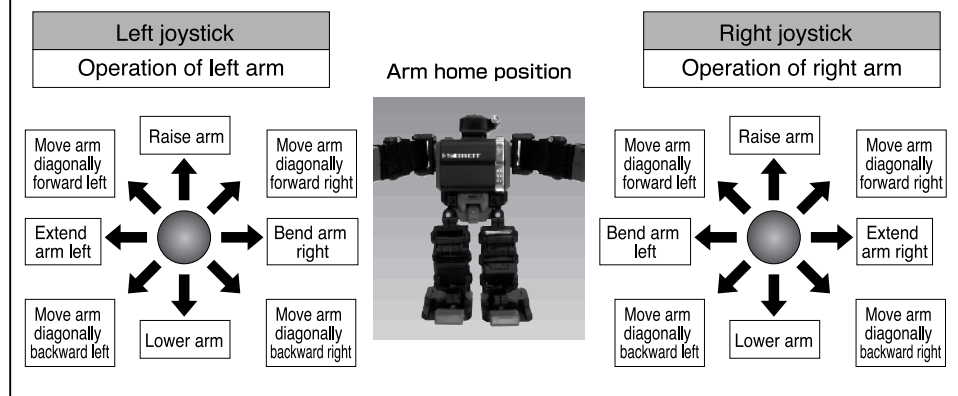
The joysticks ordinarily operate the head, hips and walking action. However, while the R button is pressed, the joysticks operate both arms.

- Normal (R button not pressed): Head, hips and walking action can be operated.



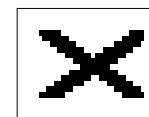
※Pressing the R button switches from standing home position to arm home position.

- R button pressed: Both arms can be operated.



# Remote Control Mode

Various actions are performed by inputting combinations of buttons 1,2,3 and 4 with buttons P, K and G. Inputted commands are shown on the controller's display together with an icon. To repeat an action, press the GO button and the action will be performed again. After one action has been completed, input the next action. (If inputted during the previous action, i-SOBOT may fall over. If an invalid button is inputted, an "X" will appear).



Error screen

## Martial arts type actions

i-SOBOT is capable of a wide variety of martial arts actions.

Inputting combinations of 1~4 buttons and P button

Action name	Input
Left punch	1 P
Right punch	2 P
Left back hand	3 P
Right back hand	4 P
Left-right one-two punch	1 2 P

Action name	Input
Right-left one-two punch	2 1 P
Left chop	1 1 P
Right chop	2 2 P
Two-handed downward chop	3 3 P
Two-handed upward chop	4 4 P

Action name	Input
Punch combination	1 2 3 4 P
Left back fist oblique dropdown	1 4 P
Right back fist oblique dropdown	2 3 P
Multi-slap	4 3 P
Double backhand	3 4 P

Inputting combinations of 1~4 buttons and K button

Action name	Input
Left roundhouse	1 K
Right roundhouse	2 K
Left forward kick	3 K
Right forward kick	4 K
Left side kick	1 1 K

Action name	Input
Right kick	2 2 K
Left back kick	3 3 K
Right back kick	4 4 K
Left & right roundhouse	3 1 K
Right & left forward kick	4 2 K

Action name	Input
Left-right kick sequence	1 2 K
Right-left kick sequence	2 1 K
Kick combination	1 2 3 4 K
Left high kick	1 3 K
Right high kick	2 4 K
Splits 1	3 4 K

Inputting combinations of 1~4 buttons and G button

Action name	Input
Left guard	1 G
Right guard	2 G
Two-hand guard 1	3 G
Two-hand guard 2	4 G

Action name	Input
Left dodge	1 1 G
Right dodge	2 2 G
Duck	3 3 G

Action name	Input
Backward sway	4 4 G
Up-sweep block	1 2 G
Splits 2	3 4 G
Guard combination	1 2 3 4 G

- Return to standing position from a prone position

If i-SOBOT is lying down or has fallen over, press A button or B button.

**Caution** ※Do not press if i-SOBOT has not fallen over.

Status	Action name	Input
If fallen forward	Stand up 1 (from a face down position)	A
If fallen backward	Stand up 2 (from a face up position)	B

- Zero Position

The zero position will be held until the user inputs the next action. To release, press the HP/Cancel button.

This is i-SOBOT's tuning and adjustment position. It is not normally used. For details, refer to P29 "How to Make Adjustments".

# Remote Control Mode

## ● Common Phrases & Greetings

These actions are input with a combination of 1~4 buttons and the A buttons.

Action name	Input	Action name	Input	Action name	Input
Affirm	1 A	Greet 4	2 3 A	Respect	1 1 A
Disagree	4 A	Bye 1	3 1 A	Thanks 1	4 1 A
Good Morning	1 2 A	Bye 2	3 2 A	Thanks 2	4 2 A
Greet 1	1 3 A	Bye 3	3 3 A	Love 1	1 1 1 A
Greet 2	2 1 A	Bye 4	3 4 A	Love 2	2 2 2 A
Greet 3	2 2 A	Bye 5	1 4 A	Love 3	3 3 3 A

## ● Emotional Actions

These actions are input with a combination of 1~4 buttons and the B button.

Action name	Input	Action name	Input	Action name	Input
Excited 1	1 4 B	Regret 1	2 4 B	Beg 1	4 1 B
Excited 2	2 1 B	Regret 2	3 3 B	Beg 2	1 1 3 B
Excited 3	2 2 B	Regret 3	3 4 B	Merry	1 2 1 B
Excited 4	1 2 2 B	Worry	3 2 B	Hilarious	1 3 4 B
Party	1 3 B	Pain 1	4 2 B		
Amazed	1 2 4 B	Pain 2	4 4 B		

## ● Showcase Actions

These actions are input with a combination of 1~4 buttons and the A, B and K buttons.

Action name	Input	Action name	Input	Action name	Input
Hide N Seek	3 1 B	Too Sexy	2 1 2 B	Show Off 3	2 3 4 B
You Like?	1 2 4 A	Clink	2 1 3 B	Show Off 4	2 4 1 B
Mystery 5	1 3 1 A	Relax	2 2 1 B	Comin' Through	2 4 2 B
Tipsy	1 3 2 A	Soccer 1	2 2 3 B	Catch	2 3 B
Tickle Me i-SOBOT	1 4 1 B	Soccer 2	4 2 K	Pose 1	4 1 1 A
Tired Feet	1 4 2 B	Soccer 3	3 1 K	Pose 2	4 1 2 A
Need a Break	1 4 3 B	Lift	2 2 2 B	Pose 3	4 1 3 A
Wave 1	1 4 4 B	Count on Me	2 2 4 B	Mystery 1	1 2 3 B
Wave 2	2 1 1 B	Articulation	2 3 1 B	Mystery 2	1 3 1 B
Applause	1 3 3 B	Show Off 1	2 3 2 B	Mystery 3	1 3 2 B
I'm So Excited	1 1 4 B	Show Off 2	2 3 3 B	Mystery 4	4 3 B



**Note**

※ Some commands have multiple actions so the same command may not elicit the same response every time.

# Remote Control Mode

## Locking the position of the arms

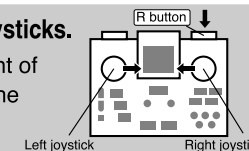
When operating the arms using the joysticks, pressing the L button will record the position of the arms and lock them in place. If a walking position is performed using the left joystick, i-SOBOT is able to walk while maintaining the arm position. To release the arms, press the R button once and then press the L button.

## ● Walking with arms locked in preferred position.

Here is one example of operation with the arms in a locked position using the L button.

### 1 While pressing the R button, move the arms using the joysticks.

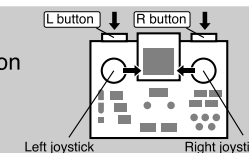
Ordinarily, the joysticks control walking actions and movement of the head and hips. However, while the R button is pressed, the joysticks can be used to operate the arms.



1

### 2 Lock the arms in the preferred position.

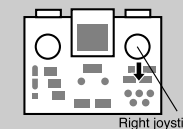
When the arms are in the preferred position, press the L button to lock the arms in position.



2

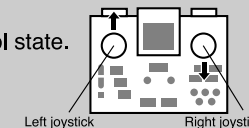
### 3 Walk using the left joystick while maintaining the arm position.

After releasing the R button, use the joystick to walk in whichever direction you like.



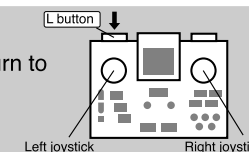
3

### 4 Afterwards, press the R button and the arms will be in Control state. At this stage, the position of the arms is still locked.



4

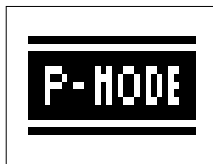
### 5 Press the L button and the arms will be released and will return to their home position.



5

# Program Mode

In program mode, action patterns can be inputted and combined from remote control mode (except for some actions) and special action mode, allowing for more complicated action patterns to be programmed. One action sequence can be programmed into each of the three memories, designated by the M1~M3 buttons. Each memory is made up of 80 memory blocks, with each block usually equivalent to one action, except for arm actions, which require two blocks per arm movement. The three memories can be combined for a total of up to 240 actions (less if arm movements are programmed).



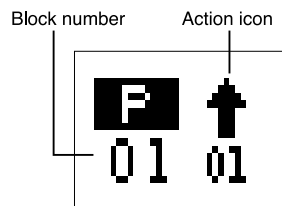
Initial screen in program mode

**Note** ※ Actions “Stand up 1” and “Stand up 2” in remote control mode are for use when i-SOBOT has fallen over and cannot be used in program mode.

## Programming procedure

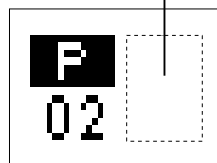
**1. Select program mode using the mode selector button.**

**2. Input the first action. The inputted action will appear in block “P 01” in the LCD screen.**



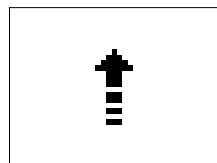
Empty block

**4. Input the next action using the controller. The inputted action will appear in block “P 02” in the LCD Screen.**



**5. Repeat steps 3-4 until you are finished programming. A maximum of 80 actions per sequence may be inputted.**

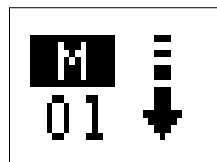
**6. Use the GO button to confirm the inputted program's operation and transmit the program to i-SOBOT.**



Program transmission screen

**Note** ※ Transmitting programmed data from the controller to i-SOBOT takes about 5 seconds per memory sequence.

**To modify a program, use the up/down cursor buttons to display the action being changed and input a new action or press the “X” button to cancel the action.**



M button registration screen

**7. Storing an action sequence into memory:**

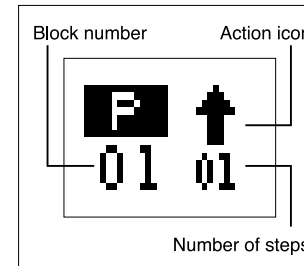
**When programming is complete select and press the desired memory button (M1~M3) to store the program. Any previously stored programs will be overwritten.**

## Left joystick

### [Example] Programming the i-SOBOT to Walk

#### 1 Input using left joystick.

When the empty block screen is displayed, move the left joystick in the direction i-SOBOT should walk. The number of steps will be shown on the LCD screen. As the joystick is held down the number of steps increases. A maximum of 20 steps can be set in one block.



Sample input screen Forward movement

#### 2 Confirm program status

The type of “walking” and the number of steps performed are displayed on the LCD.

#### 3 Record program

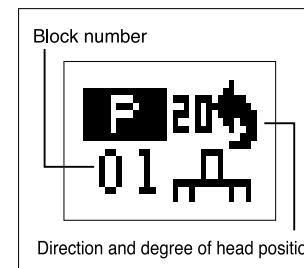
Press the down cursor button to add the action to the sequence and proceed to the next empty block. To change the action, input a new command and the previous command will be erased.

## Right joystick

### [Example] Programming the i-SOBOT to move its head

#### 1 Left-Right input using right joystick.

When the empty block screen is displayed, move the right joystick left or right to input the direction and degree of the “head position”. The position of the head can be changed in 20° intervals by moving the right joystick in the direction that you wish to face.



Direction and degree of head position

#### 2 Confirm program status

The direction and degree of the inputted “head position” are displayed on the LCD.

#### 3 Record program

Press the down cursor button to add the action to the sequence and proceed to the next empty block. To change the action, input a new command and the previous command will be erased.

Sample input screen Head position set at 20° left

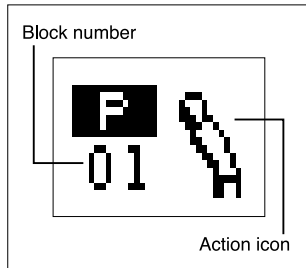
# Program Mode

Right joystick

## [Example] Programming i-SOBOT for "forward lean" and "backward lean"

### 1 Up-down input using right joystick.

When the empty block screen is displayed, move the right joystick up to program a "forward lean" or down to program a "backward lean". i-SOBOT has 3 different "forward lean" settings. The "backward lean" has just 1 setting.



Sample input screen  
Forward lean, level 2

### 2 Confirm program status

The inputted action and angle are displayed on the LCD.

### 3 Record program

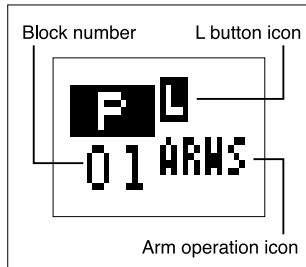
Press the down cursor button to add the action to the sequence and proceed to the next empty block. To change the action, input a new command and the previous command will be erased, and the new command will be inputted.

L button Left joystick / Right joystick R button

## [Example] Programming i-SOBOT to move arms using the L button

### 1 While pressing the R button ("ARMS" is displayed in the empty block screen) move the arms to the desired position and record position by pressing the L button.

The shortest action to reach that locked position will be inputted.



Sample input screen  
Recording arm position using L

### 2 Confirm program status

The L button icon is displayed on the LCD.

### 3 Record program

Press the down cursor button add the action to the sequence and proceed to the next empty block. To change the action, input a new command and the previous command will be erased.



**Note**

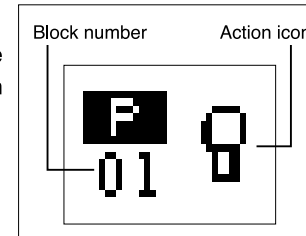
※Arm programs use up 2 blocks of memory, reducing, the total number of action blocks available.

1 2 3 4 P K G A B

## [Example] Programming "Other Remote Control Remote control Actions and Special Actions"

### 1 Input the button sequence

When the empty block screen is displayed, input the code (button sequence) for the desired action as shown in this manual or the Quick Reference sheet.



Sample input screen  
Right punch



**Note**

※For Special Actions, "GO" is part of the code and should be included when inputting the button sequence for programming.

### 2 Confirm program status

The type of action corresponding to the inputted button operation is displayed on the LCD screen.

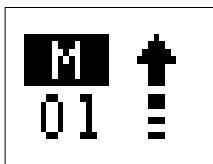
### 3 Record program

Press the down cursor button to add the action to the sequence and proceed to the next empty block. To change the action, input a new command and the previous command will be erased.

# Program Mode

## Executing Programmed Sequences

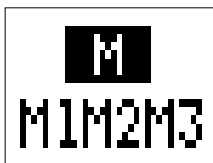
To execute an action sequence programmed in memory, press the desired M (1~3) button. Press the GO button to transmit the stored program data to i-SOBOT. i-SOBOT will confirm reception of the memory data with a beep.



M1 button transmission screen

To execute several memory sequences stored in several M buttons successively, press the M (1~3) buttons in the desired order of performance, then press GO.

**Note** ※A maximum of three memory sequences (3 M buttons of any combination) can be executed at once.



Input screen for input of buttons M1~M3 in that order

### ● Input example: For single action pattern (M1 button)

M1 button → GO button → Performance

### ● Input example: For a combination of multiple action patterns

M1 button → M2 button → GO button → Actions performed in order of input

M3 button → M3 button → M2 button → GO button → Actions performed in order of input

**Important Note** ※Transmitting programmed data from the controller to i-SOBOT takes about 5 seconds per memory sequence. Therefore, if one, two or three memory sequences are transmitted, the total transmission time will be about 5, 10 and 15 seconds, respectively. During the entire transmission time it is important to keep the controller in proximity of i-SOBOT and aimed at the IR receiver until i-SOBOT confirms reception with a beep.

## Program confirmation, revision and copying

The content of a memory sequence that has been stored to an M button can be confirmed/revised and copied to another M button.

### ● Confirming and revising a memory sequence

- 1 Press the M button in which the sequence is registered.
- 2 Press the up cursor button and the stored sequence's block screen will be displayed. Use the up/down cursor buttons to move to a different memory block.
- 3 To change the action of a program block, display that block's screen and press the X button. The action inputted in that block will be erased.
- 4 After erasing the block, input a new action.

### ● Copying a memory sequence

- 1 Press the M button in which the sequence is registered.
- 2 Press the up cursor button and the registered sequence's block screen will be displayed.
- 3 Press the M button in which you wish to register the copy and the sequence will be copied.

※If the M button to which the copy is sent already has a memory sequence registered in it, the previous data will be overwritten.

# Special Action Mode

Special Action Mode allows i-SOBOT to perform various preprogrammed actions. These actions can also be incorporated into action patterns (blocks) in program mode (see P21).



Initial screen for special action mode

## Performing special actions

Input the A and / or B button sequence for the desired action, then press the GO button.

Action name	Input	Action name	Input
Forward Somersault	A GO	Random Animal Imitations: Dog; Cat; Eagle; Rooster; Gorilla	A B B GO
Headstand Exercises	B GO	Tropical Dance	B B A GO
Exercises	A B GO	Giant Robot	A B A GO
Air Drum	A A A GO	Western Movie Scene	B A B GO
Air Guitar	B B B GO	Random Performance 1: Banzai!; Japan Cheer 1; Japan Cheer 2;	B A B GO
Random Performance 2: Martial Arts; Tai Chi	A A A A GO		

## If the A / B button sequence is input incorrectly

Press the X button and you can erase the button operation that has been inputted so far. Input A button/B button again.

## Repeating the same special action

After completing the special action, if you wish to repeat the same action, press the GO button. The command will be transmitted to i-SOBOT again.

**Note** ※The previous button input displayed on the LCD will be sent. In the case of actions performed at random, the same action may not necessarily be performed again.

## Voice Control Mode

In voice control mode, the controller is not used. Instead, i-SOBOT is operated using 10 voice commands.

### Important Note

※The recognition rate can fluctuate widely depending on the surrounding environment as well as the nature and loudness of the voice. It is important to use voice control mode in an area free of surrounding sounds and for the person commanding i-SOBOT to speak in a clear voice so it is easy for i-SOBOT to understand the commands.



Initial screen for voice control mode

### Operating by voice

In voice control mode, i-SOBOT's searchlight indicates the status. When i-SOBOT is first changed to voice control mode, he needs a moment to prepare to receive the voice command.

When i-SOBOT is ready to receive a voice command, the searchlight will turn on.

After the searchlight indicator turns on, within 3 feet of i-SOBOT speak in a moderately loud, clear voice. If your voice is too loud or too soft, i-SOBOT will be unable to understand your command.

Control words	Action	Control words	Action
Go forward	Walks forward	How are you?	Responds appropriately
Turn left	Rotates left	What's up?	Responds appropriately
Turn right	Rotates right	i-SOBOT	Responds appropriately
Back up	Steps back	Look out!	Responds appropriately
Action, start	Performs either one of the special actions at random or one of 2 secret actions.	Make me laugh	Responds appropriately

### Note

※In voice control mode, the controller is not generally used. However, the A button (Stand up 1), B button (Stand up 2), and home position / cancel button can be used in this mode.

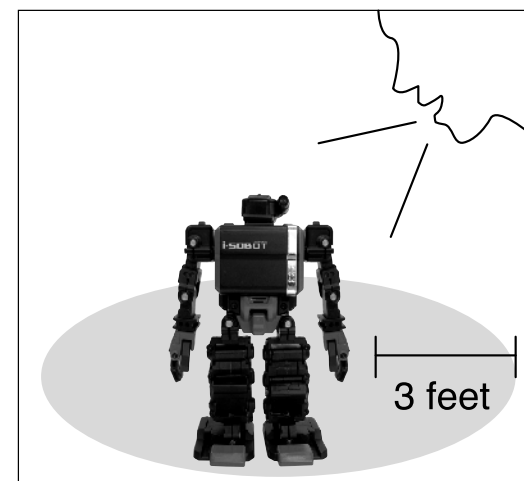
### Status of LED

	Face	Searchlight
Preparation	Blinking	Turns on when able to hear
Cannot receive / understand command	Blinking	Blinking
Command received / understood	Immediately performs action	

## Voice Control Mode

### In these situations...

- 1) When command is recognized: i-SOBOT immediately begins the action.
- 2) When command is not recognized: Searchlight blinks, and occasionally i-SOBOT performs an action to show that he has not understood the command.
- 3) When a completely different word is spoken: Searchlight blinks, and i-SOBOT makes no response.



# How to Make Adjustments

It is normal that over time i-SOBOT's joints (servo hinges) will slowly slip out of alignment or they might suddenly become out of alignment if i-SOBOT is dropped or subject to other shocks. When joints are out of alignment, i-SOBOT may not be able to perform actions correctly. This can be corrected by adjusting the clamps on i-SOBOT's joints.

## Clamp Adjustment

### Zero Position

In order to check joint alignment, i-SOBOT must be put into the "zero position." Do this by turning i-SOBOT's switch to ON and inputting "4, 4, 4, B" while in remote control mode. This position puts i-SOBOT into a standing "T" posture, with arms and legs aligned as shown in the diagram below.

### Guide marks

In zero position, small guide marks, shown in the diagram, can be examined and, if any are out of place, can be adjusted using the adjustment method, as shown.

Guide marks are small raised triangles (on the joint clamps) and raised lines (on servo-motors) molded onto i-SOBOT's parts. The guide marks are the same color as the molded parts and can be difficult to see at certain angles and in poor lighting. To spot them, examine i-SOBOT under good lighting, up-close from the perspectives of the schematic diagrams.

- Diagram 1 shows an example of a guide mark triangle and line being out of alignment. Diagram 2 shows what the guide marks should look like if properly aligned.

Schematic Diagrams of Zero Position and Guide Marks.

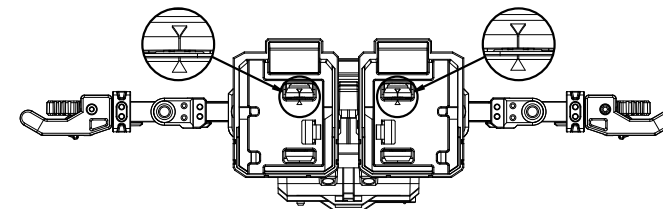
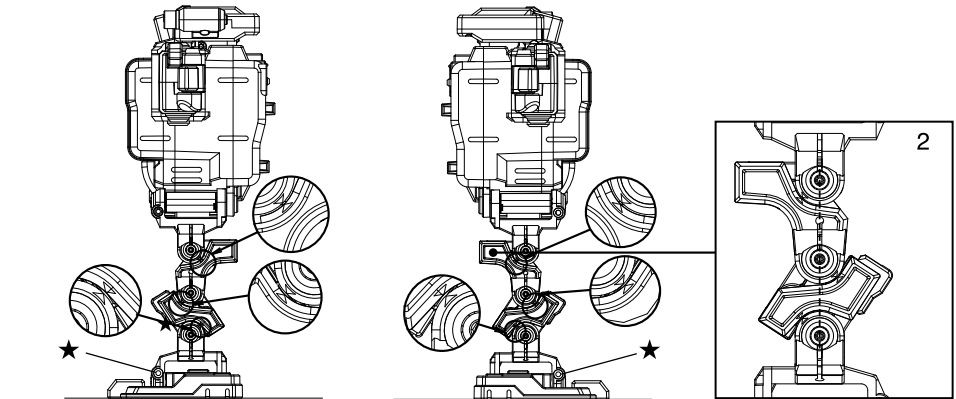
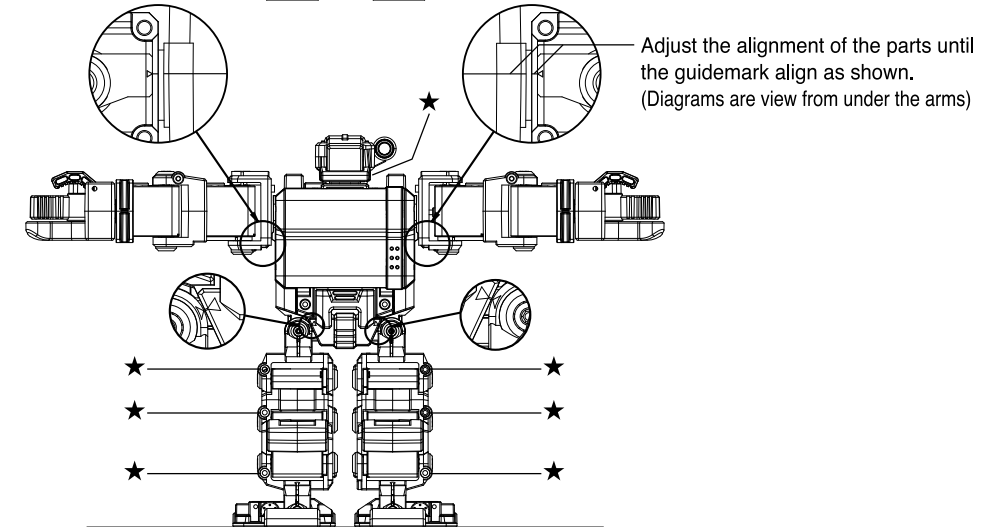
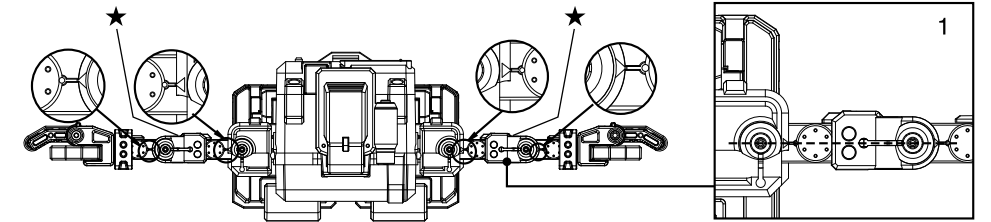
### Schematic Diagram Notes

**Arms:** Notice how the servo-motor axles in the arms should form a straight line, as shown in the top diagram and expanded Diagram A show.

**Legs:** Notice how the servo-motor axles in the legs should form a straight line as shown in Diagram B and how the guide marks in the legs should be aligned, as shown in the middle diagrams.

**Feet:** Notice how the feet should be aligned when viewed from the front, side and bottom and how the guide marks on the bottom of the feet should be aligned, as shown in the middle and bottom diagrams.

### ● Match mark diagram

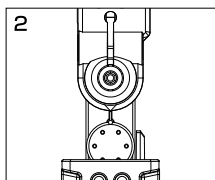
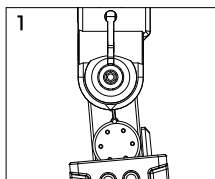




# How to Make Adjustments

## Clamp adjustment

- 1 Turn i-SOBOT's power switch to ON, and put i-SOBOT into zero-position. At this time, check that i-SOBOT has assumed the correct cross-shaped position (zero-position) and all servo joints are aligned in a straight line.
- 2 By observing the guide marks, check to see that each joint is in alignment. If one is not aligned, use the included 1.5mm (L-15) Allen wrench to loosen the joint clamp's bolt.
- 3 Adjust the alignment of the parts until the guide marks align as shown in Figure 2.
- 4 Check that the guide marks align when i-SOBOT assumes the O-position and tighten the clamp bolt using the Allen wrench.
- 5 When all adjustment is completed, use the HP/Cancel button to return i-SOBOT to home position and resume normal operation or turn i-SOBOT's power switch to OFF.



## Neck adjustment

- 1 Turn i-SOBOT's power switch to ON, and put i-SOBOT into zero-position.
- 2 Loosen the cap bolt below the searchlight.
- 3 With i-SOBOT still in the zero-position, turn the neck to the center.
- 4 Lightly tighten the cap bolt using the Allen wrench.
- 5 Use the HP/Cancel button to return i-SOBOT to home position to resume normal operation or turn i-SOBOT's power switch to OFF.



## Shoulder adjustment

- 1 Turn i-SOBOT's power switch ON, and put i-SOBOT in the zero-position.
- 2 If the angle of either shoulder has slipped from the zero-position, loosen the two front and rear shoulder cap bolts. Both bolts are in curved slots. (The front shoulder cap bolt is shown in the diagram.)
- 3 When both bolts are loosened, the angle of the shoulder can be adjusted to the normal zero-position as shown in the zero position diagram.
- 4 When the shoulder angle is correct, re-tighten both cap bolts.
- 5 Use the HP/Cancel button to return i-SOBOT to home position to resume normal operation or turn i-SOBOT's power switch to OFF.



### Important Note

※Tighten the clamp bolts and cap bolts only as much as necessary to create a proper hold. DO NOT over-tighten them or this could damage the parts.

# Troubleshooting

Problem	Steps		Reference page	
Does not move	Initial setting	Controller	Install new batteries (3 x AA), checking that the polarities are correct. Turn the switch to A or B, to match the i-SOBOT unit.	P11 P13
		i-SOBOT unit	Replace with new AA batteries. Do not use a mixture of old and new batteries or batteries with different properties. ※When the batteries are removed, memory will be erased.	P11
	Remote control mode	i-SOBOT unit	At first, the rechargeable (3 x AAA) batteries are not charged. Charge the batteries before using for the first time. ※For details, please refer to the separate charger instruction manual.	P10
			Correctly install the charged rechargeable batteries (3 x AAA) (included).	P10
			Turn the i-SOBOT unit switch ON.	P13
			Turn the switch to A or B, to match the controller.	P13
			Infrared cannot be received in direct sunlight. Use indoors away from sunlight.	P12
			On rare occasions, i-SOBOT may be unable to receive the infrared due to interference from an inverter lighting device. Try changing the light or use in another room.	P12
		Controller	Match the modes of the controller and i-SOBOT.	P16
	Special action mode	Controller	Infrared is used for communication between the controller and i-SOBOT. Make sure there are no objects between i-SOBOT and the controller that may block communication. Point the controller's transmitter directly at the receiver on the i-SOBOT unit.  To make i-SOBOT perform an action, press the buttons in the set order. Refer to the instruction in this manual or the Quick Reference sheet and press the buttons accordingly.	P12 P26
i-SOBOT unit		Match the modes of the i-SOBOT unit and the controller.	P16	
Voice control mode	Controller	Set i-SOBOT unit to voice control mode using the controller.	P16	
	i-SOBOT unit	i-SOBOT will emit a voice and perform an action according to the mode. Check that the modes match.	P16	
		The microphone is located on the left shoulder of the i-SOBOT unit. Check that nothing is blocking the microphone.	P07	
		i-SOBOT unit can recognize 10 commands. It cannot recognize other words. Pronounce the commands clearly and correctly.	P27	
		i-SOBOT unit can recognize a limited range of volumes.	P27	
		Voice commands can not be recognized in a noisy place. Use in a quiet area.	P27	
		Magnetic items near i-SOBOT can make it unable to hear commands. Try again in a different location.		
		Controller	Set the mode of the i-SOBOT unit to program mode using the controller.	P16
Program mode	Controller	Infrared transmission is used for communication between the controller and i-SOBOT. With infrared transmission, communication is not possible if there are objects in the way. Point the controller's transmitter directly at the receiver on the i-SOBOT unit.	P12	
		Infrared is used for communication between the controller and i-SOBOT. It takes approximately 5 to 15 seconds to transmit a created program to the i-SOBOT unit. (5 seconds per memory sequence, up to three sequences). During transmission, try to maintain the distance and angle between the controller's transmitter and the infrared receiver on the i-SOBOT unit.	P12	
		When the batteries run out and are removed, contents of memory are erased.	P11	
	i-SOBOT unit	Match the modes of the i-SOBOT unit and the controller.	P16	

# Troubleshooting

Problem	Steps		Reference page
Malfunction	Controller	Replace batteries with new AA batteries. Do not use a mixture of old and new batteries or batteries with different properties.	P11
		Check if there are foreign objects caught in the buttons or joysticks	
		If more than two A/B band transmitters are used simultaneously, they may cause interference.	P13
		If another infrared transmitter (TV remote control, etc.) is used simultaneously, it may cause interference. Do not use simultaneously.	P12
Does not move properly	i-SOBOT unit	In the zero position, if the guide marks are out of alignment, i-SOBOT may be unable to move correctly. Follow instructions in order to make adjustments as necessary.	P29
		Is some i-SOBOT component broken? The i-SOBOT unit has a modular structure consisting of torso, right arm, left arm, right leg, and left leg. Repair or replacement involves the respective module's entire assembly (in the case of a broken leg, both legs must be replaced together.)  Further information is available as follows: Visit the i-SOBOT Website <a href="http://www.isobotrobot.com">www.isobotrobot.com</a> Call i-SOBOT Customer Service 1-877-369-8939 (9:00AM-6:00PM CST)	

## Important Battery Information

**For best performance with the i-SOBOT robot, use the rechargeable batteries included.**

**DO NOT use alkaline, zinc-carbon (heavy duty) or high voltage (such as 1.7V Oxyride) batteries in the i-SOBOT robot. (Alkaline batteries may be used in the remote control unit.)**

The robot unit will not function properly with alkaline, zinc-carbon or high voltage batteries and in some cases these batteries may damage some components.

**If an additional set of batteries is needed, TOMY recommends purchasing AAA rechargeable batteries with the following specifications:**

**NiMH 1.2 V AAA (HR03) Rechargeable Batteries**

**Note:** Follow the full battery use and safety instructions in this Instruction Manual and always follow the manufacturer's instructions for rechargeable batteries.

# Main Specifications

## ■ i-SOBOT (unit)

Total height ..... 6.5"  
 Total width ..... 3.94"  
 Depth ..... 2.64"  
 Weight ..... .77lb

Uses 17 servo motors

Equipped with gyro-sensor

Equipped with speakers

Uses 3 AAA nickel hydride rechargeable batteries (included)

## ■ Controller

Total height ..... 3.39"  
 Total width ..... 3.94"  
 Depth ..... 1.57"  
 Equipped with liquid crystal monitor ..... 16×32pixel  
 Infrared control (simultaneous control of 2 units possible)  
 Maximum motion memory ..... 240

## ■ Servo motor

Total height ..... 21.86"  
 Total width ..... 21.0"  
 Depth ..... 8.33"  
 Rotational speed of motor (rpm) ..... 22.4  
 Rotational speed of servo (rpm) ..... 31