WowWee Robotics™

# ROBOQUAD™

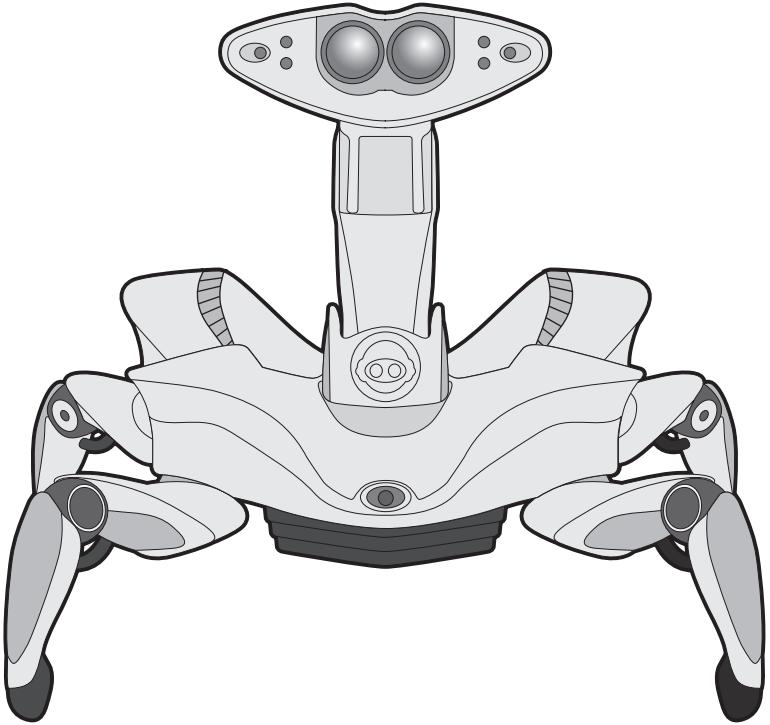
A Fusion of Technology and Personality

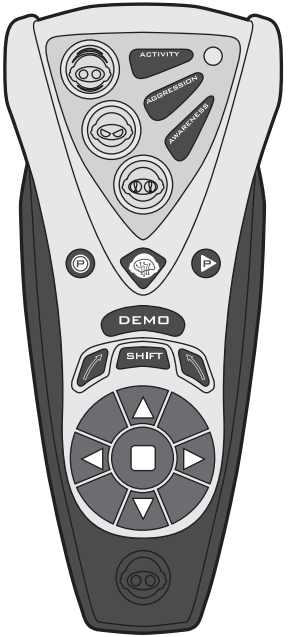
# User **Manual**

Item No. 8039 | Ages 8+

## Congratulations on purchasing your new Roboquad™ from Wowwee!

Before using this product, carefully read this manual and retain it for future reference.





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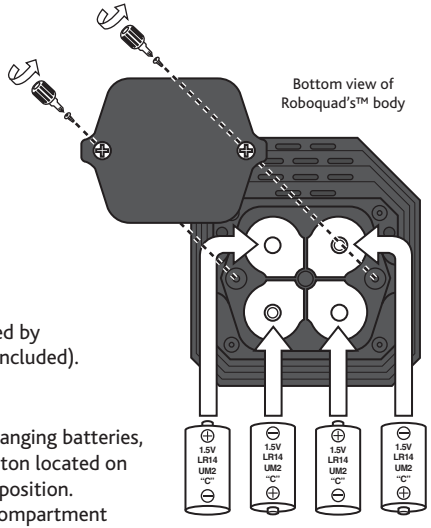
## Getting started

To use your Roboquad, insert batteries (see below), turn him on, and then try some of his functions from the remote controller, or read on to discover more about the abilities of this friendly alien invader.

## Battery Details

***Roboquad***




***Battery requirements***

Your Roboquad is powered by 4 "C" size batteries (not included).

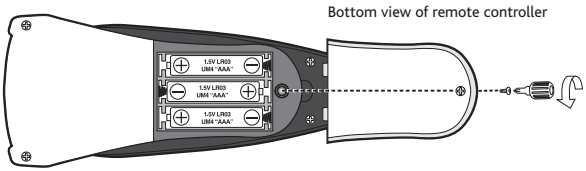
***Battery installation***

1. Before installing or changing batteries, be sure the power button located on his back is in the OFF position.
2. Remove the battery compartment cover using a Phillips cross head screwdriver (not included).
3. Insert batteries into Roboquad as shown in the diagram.
4. Replace the battery compartment cover and the screws.

***Low Power***

When Roboquad's batteries are low his animation lights will pulse in bursts of three. When this pulsing is constant, all batteries need replacing. He will not respond to commands while in this state.

***Remote controller***




***Battery requirements***

Roboquad's remote controller is powered by 3 x "AAA" size batteries (not included).

***Battery installation***

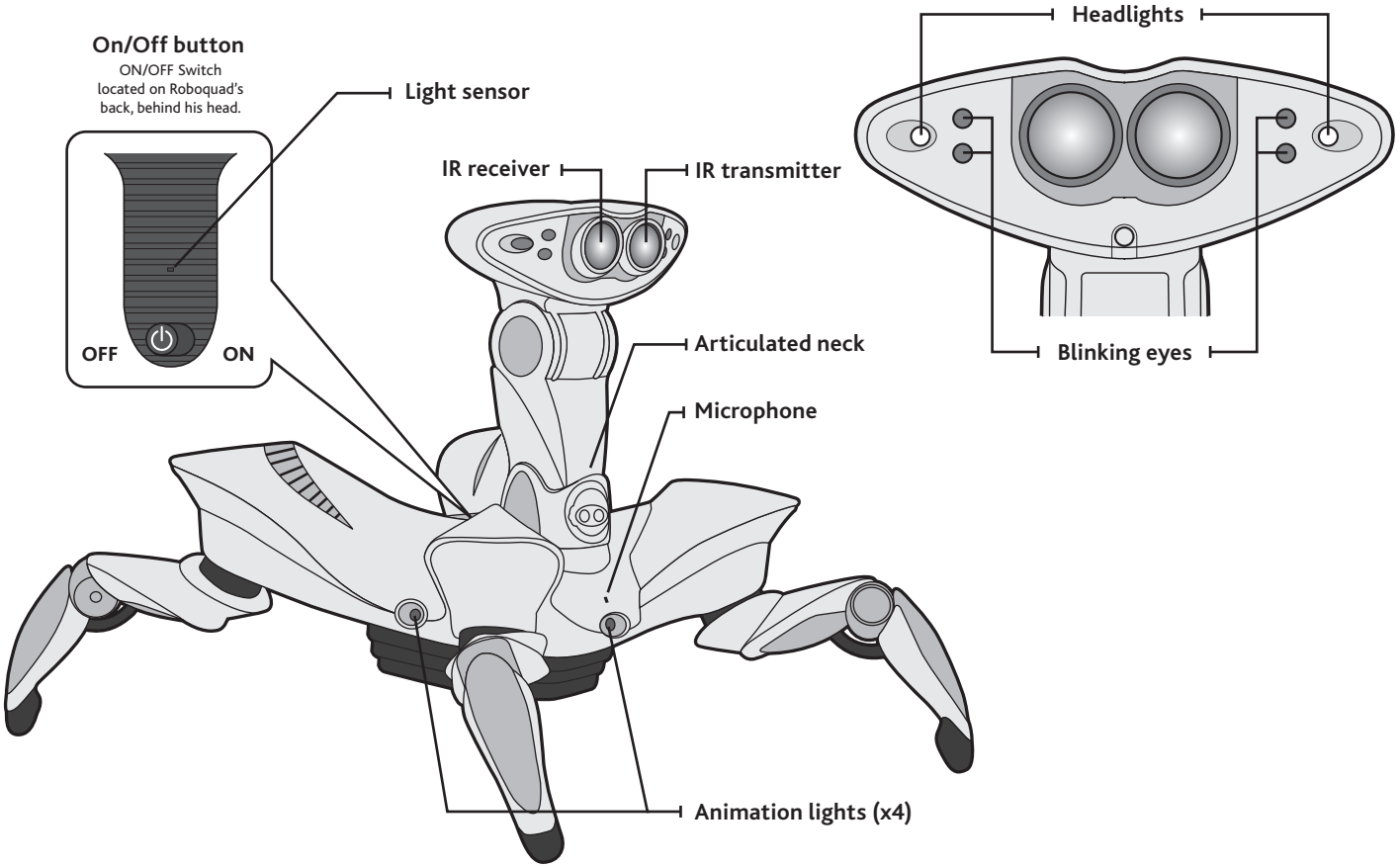
1. Remove the battery compartment cover using a Phillips cross head screwdriver (not included).
2. Insert batteries into the controller as shown in the diagram.
3. Replace the battery compartment cover and the screw.

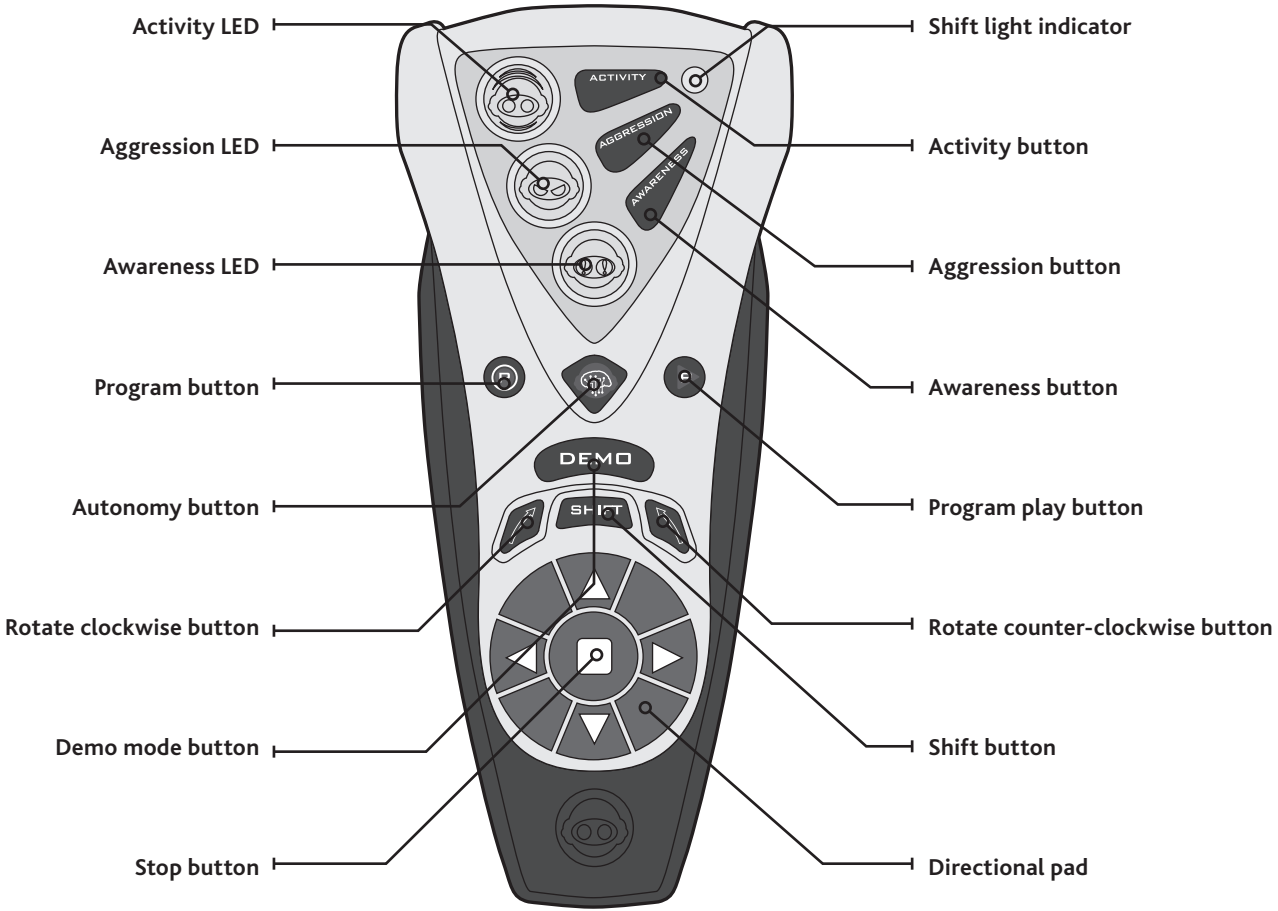
***Low Power***

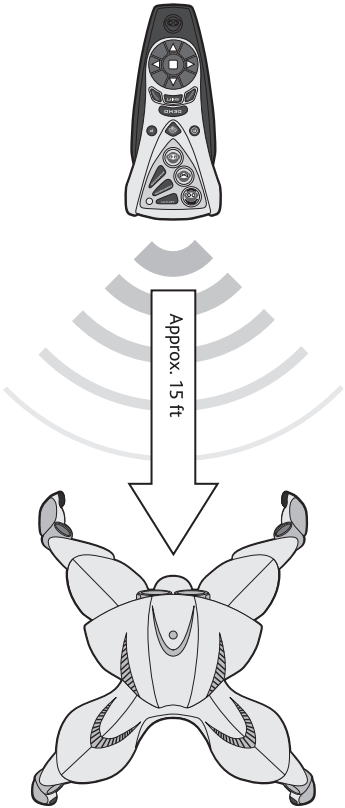
If Roboquad is not responding well to controller commands or the LEDs start to dim, you may need to replace the controller batteries.

***Attention: Important Battery Information***

- *Use only fresh batteries of the required size and recommended type*
- *Do not mix old and new batteries, different types of batteries [standard (Carbon-Zinc), Alkaline or rechargeable] or rechargeable batteries of different capacities*
- *Remove rechargeable batteries from the toy before recharging them*
- *Rechargeable batteries are only to be charged under adult supervision*
- *Please respect the correct battery and contact polarity, (+) and (-)*
- *Do not try to recharge non-rechargeable batteries*
- *Do not throw batteries into fire*
- *Replace all batteries of the same type/brand at the same time*
- *The supply terminals are not to be short-circuited*
- *Remove exhausted batteries from the toy*
- *Batteries should be replaced by adults*
- *Remove batteries if the toy is not going to be played with for some time*


On/Off button
ON/OFF Switch located on Roboquad's back, behind his head.
OFF
ON
Light sensor
IR receiver
IR transmitter
Articulated neck
Microphone
Animation lights (x4)
Headlights
Blinking eyes


Activity LED
Aggression LED
Awareness LED
Program button
Autonomy button
Rotate clockwise button
Demo mode button
Stop button
Shift light indicator
Activity button
Aggression button
Awareness button
Program play button
Rotate counter-clockwise button
Shift button
Directional pad
ACTIVITY
AGGRESSION
AWARENESS
DEMO
SHIFT




Roboquad's maximum remote control distance from the front is about 15 feet (4.6 meters).

# Remote Controller Function Chart

The Remote Controller has 4 layers (see p.9 for further details).

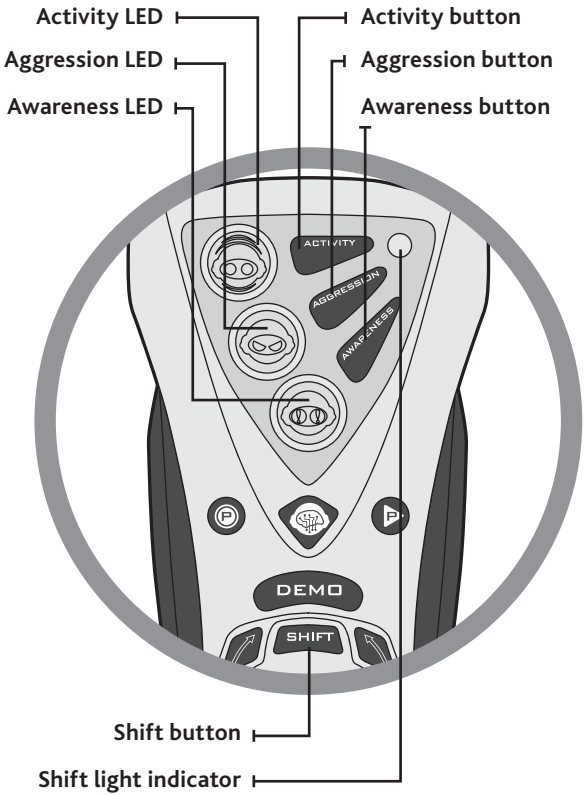
Level 1. Unshifted | Level 2. Shift-**Green** | Level 3. Shift-**Orange** | Level 4. Shift-**Red**

| *Activity button* | *Aggression button* | *Awareness button* | *Autonomy button* | *Program button* | *Program button* |
|---|---|---|---|---|---|
| Activity toggle | Aggression toggle | Awareness toggle | Autonomy On/Off | Program | Program play |
| Smart-scan | Roar | Scan left for nearest object | Guard mode | Program back | Sound & vision sensors On/Off |
| Twitch BodyCon | Attack | Scan right for nearest object | Approach nearest object | Program erase | Dizzy BodyCon |
| High stance | Aggressive stance | Aware stance | Escape walk | Volume down | Volume up |

| *Demo button* | *Rotate clockwise button* | *Rotate counter-clockwise button* | *Forward* | *Backward* | *Right* |
|---|---|---|---|---|---|
| Dance demo | Rotate clockwise* | Rotate counter-clockwise* | Walk forward* | Walk backward | Right crab walk* |
| Movement demo | Clockwise 4 steps | Counter-clockwise 4 steps | Forward 4 steps | Backward 4 steps | Right crab 4 steps |
| Leg check | Single shot | Burst | Stomp walk | Surprise BodyCon | Right legs IN |
| Wave | Head clockwise | Head counter-clockwise | Head up | Head down | Right legs OUT |

| *Left* | *Stop button* | *Top right* | *Top left* | *Bottom right* | *Bottom left* |
|---|---|---|---|---|---|
| Left crab walk* | Stop *(double tap for full reset)* | Top right shuffle | Top left shuffle | Bottom right shuffle | Bottom left shuffle |
| Left crab 4 steps | Leg reset | Right strafe | Left strafe | Right turn roll | Left turn roll |
| Left legs IN | Full reset | Right forward leg IN | Left forward leg IN | Right backward leg IN | Left backward leg IN |
| Left legs OUT | Sleep mode toggle | Right forward leg OUT | Left forward leg OUT | Right backward leg OUT | Left backward leg OUT |

***2 speeds, press again to change speed.***




## 1. Shift

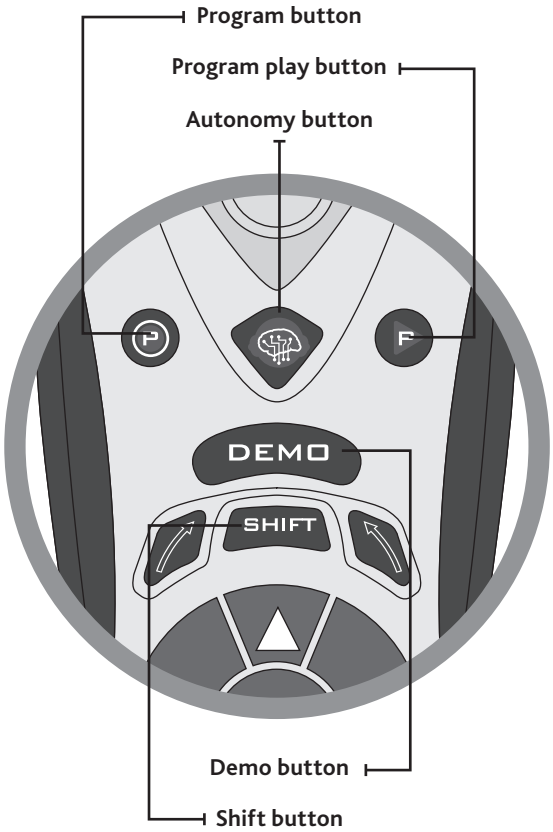
***Shift levels***
The tricolor LED shift light indicates the shift layer in use. There are 4 levels:

| | |
|---|---|
| *Level 1* | Unshifted |
| *Level 2* | Shift-Green |
| *Level 3* | Shift-Orange |
| *Level 4* | Shift-Red |

The shift light stays on for around 20 seconds after the last button press, unless the shift is pressed again or pressed until the LED goes back to blank.

## 2. Personality settings - *Activity, Aggression, Awareness*

| | *Activity button* | *Aggression button* | *Awareness button* |
|---|---|---|---|
| *Unshifted* | Activity toggle | Aggression toggle | Awareness toggle |
| *Shift-Green* | Smart-scan | Roar | Scan left for nearest object |
| *Shift-Orange* | Twitch BodyCon | Attack | Scan right for nearest object |
| *Shift-Red* | High stance | Aggressive stance | Aware stance |




## 3. Program button and Program play button

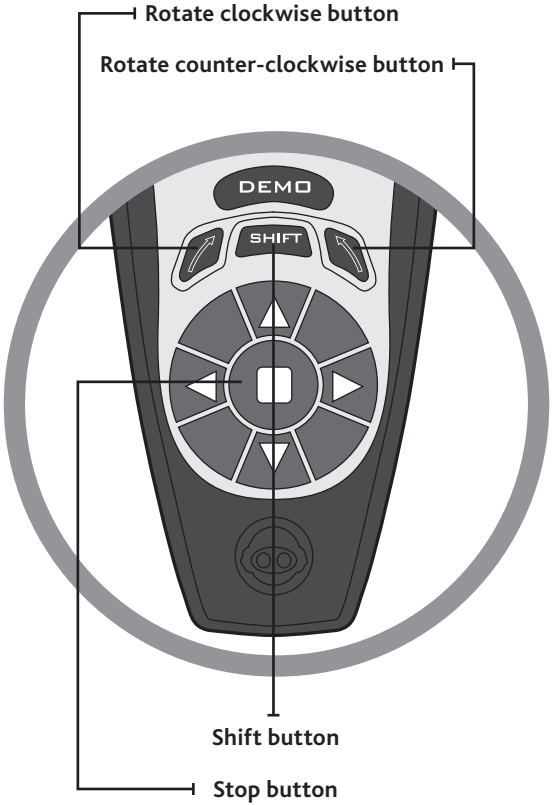
| | *Program button* | *Program play button* |
|---|---|---|
| ***Unshifted*** | Program | Program play |
| ***Shift-Green*** | Program back | Sound & vision sensors On/Off |
| ***Shift-Orange*** | Program erase | Dizzy BodyCon |
| ***Shift-Red*** | Volume down | Volume up |

## 4. Autonomy

| | *Autonomy button* |
|---|---|
| ***Unshifted*** | Autonomy On/Off |
| ***Shift-Green*** | Guard mode |
| ***Shift -Orange*** | Approach nearest object |
| ***Shift-Red*** | Escape walk |

## 5. Demo button

| | *Demo button* |
|---|---|
| ***Unshifted*** | Dance demo |
| ***Shift-Green*** | Movement demo |
| ***Shift-Orange*** | Leg check |
| ***Shift-Red*** | Wave |



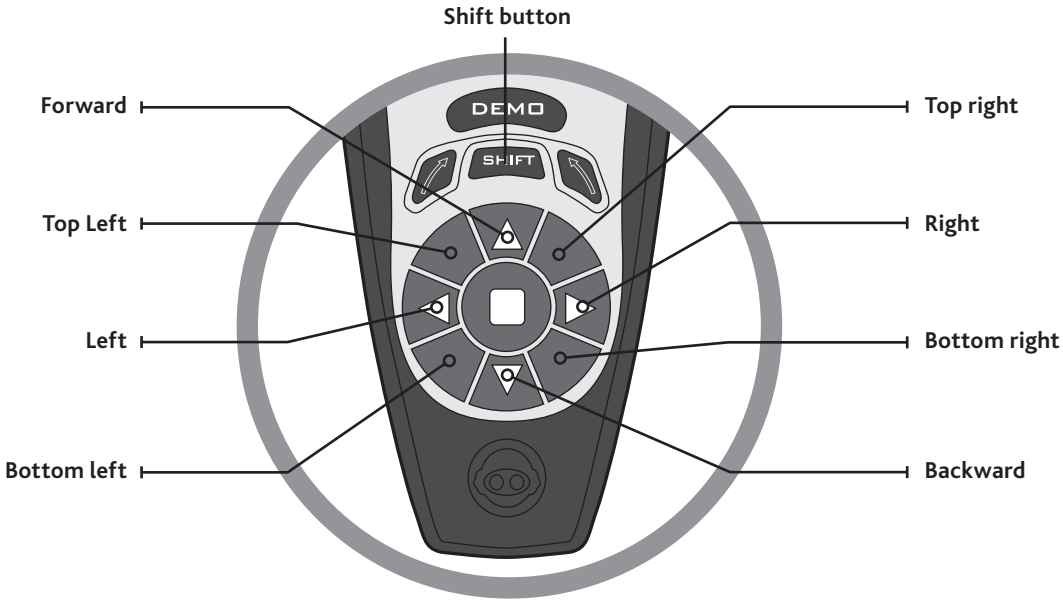

## 6. Rotation buttons

| | *Rotate clockwise button* | *Rotate counter-clockwise button* |
|---|---|---|
| ***Unshifted*** | Rotate clockwise* | Rotate counter-clockwise* |
| ***Shift-Green*** | Clockwise 4 steps | Counter-clockwise 4 steps |
| ***Shift-Orange*** | Single shot | Burst |
| ***Shift-Red*** | Head clockwise | Head counter-clockwise |

***2 speeds, press again to change speed.***

## 7. Stop button

| | *Stop button* |
|---|---|
| ***Unshifted*** | Stop *(double tap for full reset)* |
| ***Shift-Green*** | Leg reset |
| ***Shift-Orange*** | Full reset |
| ***Shift-Red*** | Sleep mode toggle |




## 8. Directional pad

| | *Forward* | *Backward* | *Right* | *Left* | *Top right* | *Top left* | *Bottom right* | *Bottom left* |
|---|---|---|---|---|---|---|---|---|
| ***Unshifted*** | Walk forward* | Walk backward | Right crab walk* | Left crab walk* | Top right shuffle | Top left shuffle | Bottom right shuffle | Bottom left shuffle |
| ***Shift-Green*** | Forward 4 steps | Backward 4 steps | Right crab 4 steps | Left crab 4 steps | Right strafe | Left strafe | Right turn roll | Left turn roll |
| ***Shift-Orange*** | Stomp walk | Surprise BodyCon | Right legs IN | Left legs IN | Right forward leg IN | Left forward leg IN | Right backward leg IN | Left backward leg IN |
| ***Shift-Red*** | Head up | Head down | Right legs OUT | Left legs OUT | Right forward leg OUT | Left forward leg OUT | Right backward leg OUT | Left backward leg OUT |

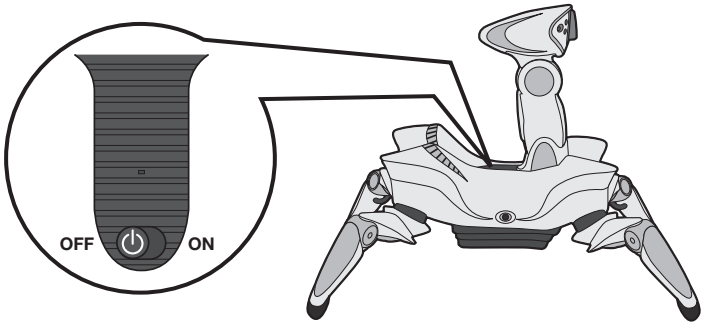
***2 speeds, press again to change speed.***

## Terminology

The term 'BodyCon' is used throughout this manual. A BodyCon describes a motion associated with a specific sound.

## Power on / off

Roboquad's power button is located on his back. Slide the button to turn him on or off.




## Sleep and power down

| | *Stop button* |
|---|---|
| ***Shift-Red*** | Sleep mode toggle |

***Sleep mode***

If your Roboquad does not receive a signal from the remote controller for around 5 minutes, he will go into sleep mode.

***Sleep mode toggle***

You can manually put Roboquad into sleep mode by pressing the Sleep mode button combination. Press once to make Roboquad enter sleep mode. Press the stop button at any shift layer to wake up Roboquad (none of his user programming will be affected).

***Power down***

Roboquad will automatically power down and forget all user programming after around 24 hours in sleep mode.

## Stop and reset

| | *Stop button* |
|---|---|
| ***Unshifted*** | Stop *(double tap for full reset)* |
| ***Shift-Green*** | Leg reset |
| ***Shift-Orange*** | Full reset |

***Stop***

Press to stop Roboquad from performing his current action.
Press again within around 6 seconds to perform a full reset to his default position.

***Resets***

**Leg reset**

Roboquad will reset his legs to the default (start-up) position.

**Full reset**

Roboquad will reset his legs and head to the default (start-up) positions. This can also be done by double tapping the stop button.

**Twitch**

With a high Activity setting Roboquad will twitch after a reset.

| | *Forward* | *Backward* | *Right* | *Left* | *Top right* | *Top left* | *Bottom right* | *Bottom left* |
|---|---|---|---|---|---|---|---|---|
| ***Unshifted*** | Walk forward* | Walk backward | Right crab walk* | Left crab walk* | Top right shuffle | Top left shuffle | Bottom right shuffle | Bottom left shuffle |
| ***Shift-Green*** | Forward 4 steps | Backward 4 steps | Right crab 4 steps | Left crab 4 steps | Right strafe | Left strafe | Right turn roll | Left turn roll |
| ***Shift-Orange*** | Stomp walk | Surprise BodyCon | Right legs IN | Left legs IN | Right forward leg IN | Left forward leg IN | Right backward leg IN | Left backward leg IN |
| ***Shift-Red*** | Head up | Head down | Right legs OUT | Left legs OUT | Right forward leg OUT | Left forward leg OUT | Right backward leg OUT | Left backward leg OUT |

****2 speeds, press again to change speed.***

| | *Clockwise button* | *Counter-clockwise button* |
|---|---|---|
| ***Unshifted*** | Rotate clockwise* | Rotate counter-clockwise* |
| ***Shift-Green*** | Clockwise 4 steps | Counter-clockwise 4 steps |
| ***Shift-Red*** | Head left | Head right |

****2 speeds, press again to change speed.***

### *Walking*

You can make Roboquad walk in a variety of ways by pressing the directional pad in 4 directions (forward, backward, left and right) when unshifted or in shift-green.

### *Speed change*

While Roboquad is moving forward, right, left, rotating right or rotating left press the same button again to change to his next speed. Each press will toggle between Roboquad's two walking speeds.

***Note:*** **At the end of the walk, Roboquad will perform a full reset.**

### *Independent leg movement*

Move Roboquad's legs in pairs (both left or both right) or independently using the directional pad.

***CAUTION:*** **When turning all legs under Roboquad's body, there may be a slight chance that Roboquad will get unbalanced.**

### *Head movement*

In shift-red, forward and backward will move Roboquad's head up or down, and the rotate clockwise/counter-clockwise buttons will turn his head left or right.

### *Rotation walking*

Pressing one of the rotate buttons when unshifted will rotate Roboquad clockwise or counter-clockwise. By pressing the same direction button again, you can toggle between Roboquad's two turning speeds.

***Note:*** **At the end of the rotation, Roboquad will perform a full reset.**

The same buttons in shift-green will rotate Roboquad for only four steps.

## State buttons

| | *Activity button* | *Aggression button* | *Awareness button* |
|---|---|---|---|
| ***Unshifted*** | Activity toggle | Aggression toggle | Awareness toggle |

## Introduction

Roboquad's autonomous behavior is determined by his personality setting. His reactions will vary depending on the three settings (Activity, Aggression and Awareness) which you can change using the remote controller.

## LEDs

Each personality setting has its own tricolor LED. You can press any State button to enable the state lights, but this will only toggle through the personality button states. The tricolor LEDs show the current state of the personality settings. The setting colors are:

- ***Green*** = Low
- ***Orange*** = Medium
- ***Red*** = High

The personality settings will reset to their default settings when the remote controller powers down or the batteries are replaced. The default setting for all personalities is Low.

Roboquad changes his personality when the personality buttons are pressed on the remote controller. If Roboquad does not receive the signal, his personality will not be altered but the controller will think it has. If this occurs, Roboquad will update his on-board personality with the controller the next time a personality button is pressed and he receives the signal.

## Activity

This button will toggle through Roboquad's activity personality settings. This mainly affects his autonomous mode.

With a high Activity level Roboquad will spend more time exploring in autonomous mode.

Lower levels will make him more docile in autonomous mode.

## Aggression

This button will toggle through Roboquad's aggression personality settings. This affects how he reacts to sensor inputs.

With a high Aggression level Roboquad has more aggressive responses.

At lower levels he is more nervous.

## Awareness

This button will toggle through Roboquad's awareness personality settings. This affects the range of his scanner and how much he uses it in autonomous mode.

With a high Awareness level Roboquad will use longer scanning distances for his obstacle avoidance, guard mode and smart-scan. He will also spend more time scanning in autonomous mode.

At lower levels his scanning range is reduced.

## Sensors

***Note:*** **For more on Roboquad's vision system, see Scanning on p.18**

***Program play button***

| | |
|---|---|
| ***Shift-Green*** | Sound & vision sensors On/Off simultaneously |

This button will toggle Roboquad's sound and vision sensors simultaneously on or off. Sensors cannot be turned off independently, even when Roboquad switches his sensors off due to too many sound or vision distractions.

***Light sensor***
Roboquad will react to changes in ambient light. His reactions depend on his personality settings.

Light changes always act as an interrupt for anything Roboquad is doing, with the exception of:

- **program mode**
- **program playback**
- **guard mode**

***Sound sensor***
Roboquad will react to sharp sounds when his sound sensor is turned on and he is not moving. Roboquad's sound sensor is on during:

- **autonomous mode during rest periods**
- **guard mode** *(when he is not moving)*
- **normal mode** *(when he is not moving)*

When Roboquad detects a sound he will perform a listening BodyCon. He will then scan for the nearest item (see Scanning, p.18) and if an object is detected, Roboquad's personality settings determine his reactions.

Continually triggering Roboquad's sound sensors 5 times in a row will turn the sound and vision sensors off.

## Autonomy

***Autonomy button***

| | |
|---|---|
| ***Unshifted*** | Autonomy On/Off |

***Autonomy***
The autonomy button toggles Roboquad's autonomous mode on or off. In autonomous mode, Roboquad will wander through his environment, scanning and avoiding obstacles.

***Obstacle avoidance***
If his awareness and activity are high, Roboquad will perform his escape walk when blocked by an obstacle, then start roaming again. If he is continually blocked three times, he will perform a frustrated sound.

***Exiting autonomy***
Pressing any button except for Activity, Awareness and Aggression will exit Roboquad from autonomous mode.

## Guard mode

| | *Autonomy button* |
|---|---|
| ***Shift-Green*** | Guard mode |

***Entering guard mode***
Pressing the autonomy button in shift-green will put Roboquad into guard mode. He will move into his aware stance to look and listen for any disturbances.

When Roboquad is put into guard mode, he will give you a short time to leave the area (around 7 seconds) before he fully enters guard mode. He will do this by counting down and performing an entry alert sound.

***Guard mode scanning***
The awareness level determines the scanning routine used in guard mode:

- **Awareness Low:**
  - *Scanner uses short distance.*
  - *Head stays stationary*

- **Awareness Medium:**
  - *Scanner uses medium distance.*
  - *Head scans back and forth periodically.*

- **Awareness High:**
  - *Scanner uses maximum distance.*
  - *Head scans back and forth periodically.*
  - *Roboquad will occasionally turn to face a different direction.*

The sonic sensor is turned on in guard mode whenever Roboquad is not moving.

***Reactions***
Roboquad will react to any sound or the presence of any object within his scanning range. If there is a program in Roboquad's memory then he will perform the program when disturbed.

If no program is in Roboquad's memory, then he uses the default reactions of the aggression level he is in.

If the Aggression or Awareness level is changed while Roboquad is in guard mode then the scanning routine or default reactions are updated without exiting guard mode.

***Exiting guard mode***
Roboquad can exit from guard mode in four ways:

1. Pressing the stop button during guard mode will end guard mode.
2. Roboquad will exit guard mode if he is disturbed 10 consecutive times.
3. Guard mode will time out after 20 minutes and Roboquad will go into sleep mode.
4. When inputting demo in program mode, there is a slight chance that Roboquad will exit guard mode after playing the demo.

## Demos

| | *Demo button* |
|---|---|
| ***Unshifted*** | Dance demo |
| ***Shift-Green*** | Movement demo |

***Dance demo***
Roboquad will perform his dance demo.

***Movement demo***
Roboquad will perform a series of movement demonstrations.

## Volume

| | *Program button* | *Program play button* |
|---|---|---|
| ***Shift-Red*** | Volume down | Volume up |

Roboquad's volume can be adjusted using the program buttons in shift-red. There are 4 volume level settings: mute, low, medium and high.

When he is powered on, Roboquad's default volume setting is high.

## Scanning

| | *Activity button* | *Awareness button* | *Autonomy button* |
|---|---|---|---|
| ***Shift-Green*** | Smart-scan | Scan left for nearest object | |
| ***Shift-Orange*** | | Scan right for nearest object | Approach nearest object |
| ***Shift-Red*** | | | Escape walk |

***Introduction***
Roboquad's 'deep IR scanner' vision system enables him to see across 6 different scanning ranges, from right in front of his face to about several feet (1 meter approx.) away. Roboquad has several different sequences he performs that help him to assess distances, obstacles and threats. This section will cover how Roboquad uses these scanning sequences.

***Note:*** **Scanning times are not as long as normal when Roboquad is in Program mode.**

***Smart-scan***
Roboquad will enter his active/high stance and perform a first pass scan. He will make more scan passes and if anything within his vision changes from the first pass scan (ie. appears or disappears), he will react according to his Aggression and Activity levels.

Since this is a personality-based scan (he often uses it in Autonomy Mode), he will sometimes choose to react to objects that do not appear or disappear, especially when the Awareness is set high.

***Scan (left /right) for nearest object***
Using this scan, Roboquad will look for the nearest object and turn to face it. He will start scanning from side to side using his medium range scan, with his head starting centrally. When he sees something, he will acknowledge it with a nod of his head and if he needs to, turn to face it. If the object is in front of him, he will remain stationary.

***Approach nearest object***
Roboquad will scan his surroundings, moving his head back and forth to find the nearest object. He will make a few scanning passes, scanning at an increased range with each pass. If he finds something he will turn and move towards it, stopping when he reaches it.

***Escape walk***
Roboquad scans all around him to find the easiest escape route. The sound you hear is feedback from the IR reflecting off anything he sees. He will choose the largest space and move towards it. If he sees no gaps he will turn and repeat the scan behind him.

When his Awareness is medium or high, he will often use this scan to find an exit when he encounters obstacles.

***Flinch***
Roboquad will flinch if an object approaches his face very quickly. He can be flinched in normal mode and when moving forward. If Roboquad is flinched, he will perform a flinch reaction. After each flinch he will reset and start again. After 3 flinches in a row Roboquad will turn his sound and vision sensors off.

## Programming

| | *Program button* | *Program play button* |
|---|---|---|
| ***Unshifted*** | Program | Program play |
| ***Shift-Green*** | Program back* | |
| ***Shift-Orange*** | Program erase | |

**** Deletes the last command from the program***

***Program***

**Entering program mode**

To enter program mode, press the program button. Roboquad is ready to remember your command inputs.

**Programming Roboquad**

Roboquad can be programmed up to 40 commands. For each command you enter, Roboquad will perform the move and confirm it with an "affirmative" sound. Roboquad will add each new command you enter to the end of the programming sequence. To delete the last command, press the program button in shift-green.

**Clearing a program**

The entire program can be cleared by pressing the program button in shift-orange.

The following functions will alter from their original function when included in a program:

- **Stop will become a pause when entered into a program**
- **Walks will reduce to 8 steps in program mode**
- **Scan functions will perform fewer scan passes**

The following functions cannot be included in a program:

- **Autonomy**
- **Guard mode**
- **Smart-scan**
- **Volume control**
- **Sleep mode**
- **Sensors on/off**
- **Personality state level buttons**
  *(the levels on the remote controller will not alter when in program mode)*
- **any of the programming functions**

***Playing the program***

The user can play back a program at any time by pressing program play. If a program is not present, Roboquad will sound a "negative" to the request.

***Exiting program mode***

Pressing the program play button will exit Roboquad from program mode, playing a program if one is stored.

Roboquad will exit program mode automatically approximately 20 seconds after the last program command is given. If no command has been entered, Roboquad will exit into normal mode. If a command has been entered, Roboquad will perform the routine.

***Note:*** **The program memory is cleared when Roboquad powers down after approximately 24 hours in sleep mode or when turned off.**

## Support

If you have questions about Roboquad that are not answered here, refer to the official Roboquad website for more information and frequently asked questions: **www.roboquadonline.com**

**CAUTION**
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**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 and 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 outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or experienced radio/TV technician for help

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**We recommend that you retain our address for future reference.**
**Product and colors may vary.**
**Packaging printed in China.**
**This product is not suitable for children under 3 years because of small parts - choking hazard.**

**MADE IN CHINA.**

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