Robot Companion is a fun, easy-to-understand, hands-on guide that will have you using your own robots in no time. The robots in this book include the "Omnibot Robot," the "Tony Robots," and even a robot that carries a child on wheels!

You will learn how to find your robot, how to identify a robot by country through frequency allocation, where to buy parts, how to program your robot to perform tasks, and more. This book's companion website includes software program files, parts lists, and links to online parts suppliers.

The robot companion contains a diverse set of information and pictures of the robot to familiarize a person with that robot. This approach is used because so little information on the robots from the 1980's exists today, and it will be helpful with the information instructions or manual.

They dance, tell jokes, and even clean your carpet! From the tiniest robot to gigantic factory machines, robotics is all around you. This technology isn't just for science fiction anymore; it's real and more relevant than ever. With stunning visuals and energetic, impactful design, readers won't stop until they've learned everything there is to know about robotics.

You'll be led step-by-step through the book. Along the way, you'll learn about robotic systems that use the same principles you're learning to use on your robot, and you'll get a glimpse into the future of robots.

Here is an example proposed:

I dream........ When I was created or born in the 1980's, I was one of the few and select robots that had a purpose, to play, teach and entertain. I was young, didn't have a onboard computer, but didn't need one at the time. Besides, they were not readily available and need by me for my purpose. Who says a robot must always have a computer.

I could move around in all directions, learn, teach, sleep, wake up and move around to pre-programmed functions, tell time, talk from others, talk on my own after pre recording, had my own limited language, carry things, sing and entertain. I stimulated people to dream of new ideas for science and technology when they were young. Young minds looked at me and taught of ways to improve and give me more functions, grew up and invented them, but put them on others.

I dreamed of growing up and doing more things, I waited and waited. Even though I traveled around the world, was international in all areas, (all countries knew of me or sold me) my brothers and sisters did became famous through the movies, and I was regulated to my everyday tasks.

So I waited and dreamed of growing up and doing greater things. It has been over twenty-three years and to a robot that is like being over a (100) hundred years old. I have been put in attics, garages, and basements thrown away into the junkyards and forgotten.

But I am persistent, I still live and still I dream. I will survive; I am tough, versatile and have hopes and dreams of my purpose for a future.

I wait and I dream........ Tomy ® Omnibot ®

Tomy has created toy robots throughout the years and in the 80's created a line of small personal robots. It is truly astounding what they were able to accomplish utilizing the resources at the time to manufacture and sell this product line.

The Omnibot had a cassette tape player built into the chest area of the robot, which slid out like a drawer to reveal the cassette and could record and playback sequences of commands, as well as regular audio recordings.

The built in digital clock with timers and alarms allowed the playback of movement recordings at specified times. It could broadcast speech from the remote control handset through a speaker on the robot, and was shipped with a cardboard "home" base, which was suggested, to be taped to the floor and used as a reference point for programming.

The Omnibot carried a specially made tray, which slotted into its claws, and could carry objects.
Omnibot 2000 - 5405 by Tony®

Tony® has created many toy robots throughout the years and in the 80's created a line of small Personal robots. They don't have a true onboard programmable computer but are fun nonetheless. The top of the line was the Omnibot which could pour drinks on a special serving tray. The programming is done by recording the movement commands to a regular cassette tape which can be played back at certain times by using the built-in clock.

Years produced: 1984 - 1988, Original price: $600.00

Specifications:

1. Tape recorder two tracks, mono tape type; normal tape speed: +/ - 0.3% deviation; less than 0.3%
2. Alarm clock display: LCD; accuracy: +/- 3 sec/day power: 1.5v AA battery duration: typical 3000 hours
3. Recharger coax plug-in: 120vac, out (negative middle), 6vdc 300ma
4. Main Battery type: closed, lead gel-cell power: 6v, 4.0ah
5. General Operating time: 4 hours Load display: Red light, shows discharge at 5.7v operating temp: 5 deg - 40 deg celsius
6. Microphone type: dynamic, 300 - 600 ohms
7. Operating R.C frequency: The Remote came in 3 Frequencies: 49.860 Mhz (US), 27.145 Mhz (Europe), 49.860 Mhz (TAL)
8. External outlets: Output 6vdc Speaker: 8 ohms R/C output 5vdc, 800ma Timer: output 6vdc, 100ma Sensor: only for Tony accessory
9. Bulbs for eye-lights 2.8v, 200ma use not more than 3v 250ma 10. Remote Control 4 * 1.5v (AA)

Miscellaneous: Battery Size: 2 3/4" L x 1 3/4" W x 4" H; Battery and Charger info: Omnibot 2000 requires two (2) AA batteries to run the tape deck and four (4) AA batteries for the remote. The main power supply is the 6-volt 4-Amp Hour rechargeable sealed battery, The Charger is a 6 Volt 300 ma.
Omnibot 2000 - 5405 by Tony®

Tony® has created many toy robots throughout the years and in the 80s created a line of small Personal robots. They don’t have a true onboard programmable computer but are fun nonetheless. The top of the line was the Omnibot which could pour drinks on a special serving tray. The programming is done by recording the movement commands to a regular cassettes tape which can be played back at certain times by using the built-in clock. Years produced: 1984 - 1985; Original price: £600.00

Omnibot 2000 - Tray
Omnibot 2000 - Battery
Omnibot 2000 - Charger
Omnibot 2000 - Base

Omnibot 2000 - Cassette
Omnibot 2000 - Bottom Draw
Omnibot 2000 - Accessories Port
Omnibot 2000 - Controller Battery Compartment

Omnibot 2000 - Click to Enlarge
Omnibot 2000 - Click to Enlarge
Omnibot 2000 - Click to Enlarge
Omnibot 2000 Box
Omnibot 2000 Box

Omnibot 2000 - Insert # 1
Omnibot 2000 - Insert # 2
Omnibot 2000 - Insert # 1
Omnibot 2000 - Insert # 2
Omnibot 2000 - Click to Enlarge
The Old Robots Web Site

Omnibot 2000® - 5405 By Tony®

Omnibot® 2000 - 5405 by Tony®
Tony® has created many toy robots throughout the years and in the 80's created a line of small Personal robots. They don't have a true onboard programmable computer but are fun nonetheless. The top of the line was the Omnibot which could pour drinks on a special serving tray. The programming is done by recording the movement commands to a regular cassette tape which can be played back at certain times by using the built-in clock.

Years produced: 1984 - 1988; Original price: 600.00

Specifications

1. Tape recorder two tracks, mono tape type: normal tape speed: +/- 0.3% deviation: less then 0.3%
2. Alarm clock display: LCD accuracy: +/- 3 sec/day power: 1.5v AA battery duration: typical 5000 hours
3. Recharger coax plug (negative middle) in: 120vac out: 9vdc, 300ma
4. Main Battery type: closed, lead gel-cell power: 6v, 4.0Ah5. General Operating time: 4 hours Load display: Red light, shows discharge at 5.7v operating temp: 5 deg - 40 deg celsius
6. Microphone type: dynamic, 300 - 600 ohms
7. Operating R/C frequency: 27.125 mhz
8. External outlets: Output: 6vdc Speaker: 8 ohms R/C output: 5vdc, 800ma Timer: output 6vdc, 100ma Sensor: only for Tony accessory
9. Bulbs for eye-lights 2.8v, 200ma use not more than 3v 250ma 10. Remote Control 4* 1.5v (AA)

A built-in digital clock
A built-in Cassette Unit
A programmable alarm system with 3 different alarm sound
A programmable cassette system to start & stop tapes at any time
A memory capable of holding 7 different programs
An onboard speaker to mix your voice with pre-recorded music
Remote control operation with the Master Control Unit
Program movement, voice, and robot sounds onto tapes that can be played back for later execution
Automated arm, wrist, hand, and head
A motorized tray for carrying and delivering objects and serving drinks
Audio strobe Headlight eyes
Accessory Interface Panel for optional Omnibot accessories
External jack for adding on a speaker

Remote Features: The Master Control Unit (MCU) has an antenna with its power switch & indicator. It has a button to push in to talk through its microphone to the robot in which the robot will respond with eyes flickering. It has all the buttons to control the robot as follows: LEFT side of remote has arm up/down, wrist left/right, finger open/clamp, head right/left; RIGHT side of remote controls movement of robot to go forward/reverse, left/right turn, then the gear change in speed; also buttons for tape start/stop, omnibot sounds, light on/off key.

The Remote came in 3 Frequencies:
49.860 Mhz (US)
27.145 Mhz (Europe)
40.680 Mhz (TAL)

Remote Control Commands:

Power Switch On/Off
Arm Control - up/down - wrist clockwise/counterclockwise
Direction - Forward - Back - Left - Right
Finger Open - Finger Close - Head Right - Head Left
Gear Change
Tape Start/Stop
Omnibot Sounds
Light On/Off *Eyes

Battery Size: 2 3/4" L x 1 3/4" W x 4" H
Battery and Charger info: Omnibot 2000 requires two(2) AA batteries to run the tape deck and four(4) AA batteries for the remote. The main power supply is the 6-volt 4-Amp Hour rechargeable sealed battery. The charger for the robot is a 6Volt 300ma.

Detailed specific information for this Robot is contained in the Instruction Manual and is available on this site. The Omnibot series robots have similar functions, but the detail information can be different. This can also apply to the same model of manufactured robots, for later releases did vary with the robot. I suggest that you download the manuals for specific information.
INFRARED SENSOR - No. 5412
Ideas for your new INFRARED SENSOR accessory: Your robot can show off at yard sales, advertise specials, and carry goods on his tray. Stuck in a dark corner? Don’t panic. Let your robot buddy lead the way as he steers you out of the darkness with his INFRARED SENSOR!

TRACER TAPE - No. 5413
Ideas for your new TRACER TAPE accessory: Your robot can deliver memos and secret messages and personal notes. Just plot a course to deliver routine correspondence with a tape.

PHOTO SENSOR - No. 5414
Ideas for your new PHOTO SENSOR accessory: Even in the dark, your Securitroid will be ready to catch a thief! Have your robot come to life just by flipping off or on a light. Your mechanical pal makes a great alarm when the sun rises!
ULTRASONIC SENSOR - No. 5415

Ideas for your new ULTRASONIC SENSOR accessory:

Amaze your friends! Hold the transmitter out of sight and your mechanical man will follow you everywhere... like magic!

Your robot can show-off at yard sales, advertises specials, and carry goods on his tray.

Let your robot race with your baby brother or sister! See who's the fastest.

SECURITY DETECTOR - No.

Even in the dark, your Securitroid will be ready to catch a thief!

Robo Link -

Omnibot Microphone
Omnibot Microphone for Omnibot 2000, Omnibot, and Hearoid!

Robo Link for Omnibot 2000, Omnibot, and Hearoid!
Detailed specific information for this Robot is contained in the Instruction Manual and is available on this site. The Omnibot series robots have similar functions, but the detail information can be different. This can also apply to the same model of manufactured robots, for later releases did vary with the robots. I suggest that you download the manuals for specific information.
The above figure is the contacts in the Omnibot 5402 that needs to be replaced. They are corroded and not usable. (Replace)

The above figure is the contacts in the Omnibot 5402 that has been replaced. They are corroded and not usable. (Replace)

The above figure is the contacts in the Omnibot 5402 that needs to be replaced. They are corroded and not usable. (Replace)

The above figure is the contacts in the Omnibot 5402 that has been replaced.

Refurbished - Replacement Contact for the Omnibot Family Robots

The following figure on the left is contacts taken from a Omnibot 5402 Controller that is corroded and not usable. It has to be replaced.

The following figure on the left is contacts taken from a Omnibot 5402 Controller that was corroded and not usable. It has been refurbished and can now be reused.

NEW - Replacement Contact for the Omnibot Family Robots

Step #1. Omnibot 5402 contacts created from scratch. It uses contact material to create the blanks.

Step #2. Bend the contacts at the appropriate points

Step #3. Using a punch indent the contact and then using a drill with a proper bit drill the holes in the contact.

Step #4. Heat treat the contact. You now have a finished part.

Step #5. Cut the contacts at the appropriate points

Step #6. Using a punch indent the contact and then using a drill with a proper bit drill the holes in the contact. You now have a finished part.

Use Brass 2/56 HEX MACR SC screws and nuts to fasten the battery contacts.
Replacing Heartoid Omnibot Battery Contacts.

1. Check the wires to ensure that you know how they are hooked up. These batteries are wired in parallel.

2. Make sure that the batteries are removed from the rear housing.

3. Place the housing flat on the table. Use a #44 drill bit and gently drill the rim off the eye lid that holds the battery contacts in place.

4. DO NOT drill through the battery contacts or the plastic housing.

5. Once the eye lid is removed take a punch smaller than the hole and gently tap all four of the eye lid out.

6. This picture shows the eye lid removed from the housing and battery contacts.
7. Gently pry the battery contacts out.

8. Remove the battery contacts and wires and plug.

9. This is what the contacts with wire and plug will look like. Replace the battery contacts and solder the wires to the contacts.

10. After cleaning the housing reinsert the new battery contacts and wires in the housing.

11. Use Brass 2/56 HEX MACH SC screws and nuts to fasten the battery contacts.

12. This is what the finished product will look like.
13. This is what the finished product will look like.

14. Install batteries into the robot housing.

15. Use a multimeter to check conductivity both at the rear and the plug. The operation is finished.

BEFORE

Shown above are some examples of contacts that are in the robots and controllers. This is one reason that they do not power up.
Shown above are some examples of contacts that have been replaced in the robots.
1. Make sure the robot is shut off. Open the rear door and remove the battery retainer and the large 6 V 4 AH DC rechargeable battery and the two small AA battery’s. Close the door.

2. Turn the robot on to his back make sure that the head is free and not supporting the robot, then remove the six screws from the bottom of the robot keeping the base and housing together.

   Keep these longer screws separate to reinstall the base.

3. Separate the bottom base slowly from the housing and remove the draw from the robot.

4. Turn the base and unplug the three plugs from the drive box that go to the robot. Make sure that you record where the plugs go.

5. Remove the screws from the base housing of the robot. With wires still attached, separate the base housing from the robot, turn it and lay it flat on the table. Do not try to remove it yet.

6. Leave the wires for the tray and remove the wires and plugs that go to the external Jacks board on the base housing from the robot.

7. Remove the base housing from the robot.
8. Open the rear door and remove the two plugs from the accessories interface board on the door. These two plugs and harness will have to be pushed into the robot. Close the door.

9. Remove the six screws from the back of the robot, and spread it apart slowly and very little (1 inch). (BE CAREFUL)

10. Spread the body apart just far enough to remove the left arm, put it down, and lift the head out. The robot back is still attached to the front by the wiring and the right arm can slip cut and hill (BE CAREFUL)

11. Unplug the head from the circuit board, two plugs, and put the head down.
12. Un-plug the right arm cables from the circuit board, two cables and plugs.

13. Remove the right arm from the body and put it down.

*(ANTENNA - If your robot has a back antenna you have to detach it at this stage.)*

14. The robot back is still attached to the front. You have to un-plug the front housing from the back housing by disconnecting the remaining wires. Take special care in disconnecting the clock wires for these are push in connectors and it is easy to damage them.

15. Push the one plug and harness to the outside of the robot. Push the other two plugs and harness to the inside of the robot. With all of the plugs and harness clear from the rear door, remove the rear door.

16. Separate the back housing from the front housing.

17. You have now disassembled the major components of the robot. Disassembly of the components will be addressed separately. To reassemble the robot reverse the procedure.
Failure in properly remove the wires can result in damage to the connector and it will have to be replaced.

The following figures are pictures of the connectors in the robot.

14a. The following connectors has some unique problems. The power input socket must be raised to remove the wire. (Failure to raise the connector to unlock it will result in damage to the connector and it will have to be replaced)

1. Raise the Red/Black input sockets. (The socket will raise about 1/4") Do not force it.
2. Remove the wires.

14b. The clock power input wires connector is a (one way, one time) wire push-in connector. There is a way to unlock the connector, but failure will result in damage to the connector and it will have to be replaced.

There is a 80% chance that this will work depending on how gentle and accurate you are, and the connector itself. (Yes eight out of ten times I have been successful, but remember the other 20%) You will also need a Dental pick to remove the wires from the socket.

1. Insert the dental pick next to the wire and gently (very little pressure) press the wire down a touch, and rotating the wire gently pull it out. You might have to do this more than once but do not jam the dental pick in the socket. This will bend the contact and destroy the socket.
2. Repeat the process on the other wire.

14c. The other connectors have normal plugs and sockets that are keyed. Remember how they are positioned and record it for you will have to assemble the robot later.
The Old Robots Web Site

Omnibot 2000® - 5405 By Tomy® Parts

FYI - Shown is the robot without the trey to show you what the trey looks like inserted into the robot.
There is no warranty expressed or implied with this procedure. By using any information from this web site, you agree not to hold responsible this site, me, nor any of its representatives, for any injuries and/or damages, both physical and/or psychological, that may arise from the use and/or misuse of anything derived from this site. The user further agrees that such information/pictures does not constitute any guarantee of accuracy, safety or reliability, and that cannot be held responsible for any way. The user agrees to proceed at their own risk.
The Omnibot 2000 Robot With And Without Tray

Robot Base Extension / With Tray
FYI - Shown is the robot with the tray attached to show you what the tray looks like inserted into the robot.

Robot Base Extension / Without Tray
FYI - Shown is the robot without the tray to show you the robot looks like with and without the tray.

Disassemble the Omnibot 2000 Tray

Testing the Omnibot 2000 Tray

1. Hook up a 6V 4.0 AH battery to the tray. The negative side go to the terminal closest to the switch and the positive goes furthest from the switch.

2. Press the switch and hold it down for a few moments. The internal area that hold the glass on the tray should start moving and go through a complete cycle.

3. If the tray does not go through a complete cycle it is broken.

Cleaning the Omnibot 2000 Tray

4. Place the tray flat on the table.
5. Take the two screws out from the centre of the turn table and remove the bracket.
6. Remove the four travelling rings from the turn table.
7. Clean the guides in the table and rings from the table.

Note: In the disassembly process leave the rings out and go to the next step. If you are only cleaning the table insert the rings and reverse the process.
Continuing Disassembly the Omnibot 2000 Tray

8. Turn the tray over and unscrew 10 screws and lift off the back.

9. Remove the six screws from the tray housing.

10. Separate the tray slowly and turn over and lay it on the table. Do not stretch the wire that attach to the tray top.
11. Remove the four screws from the gear assembly and separate it carefully. The gears are attached to both sides of the gear box.

BE CAREFUL.

12. Inspect the box to insure that the gears mesh correctly and there are no stripped teeth on the gears. In this picture the gear on the motor is not meshing with the other gear. It is loose and slipped forward on the motor shaft.

13. A test and closer view of the motor shows that it is loose on the shaft.
Repair of the Omnibot 2000 Tray/Motor Gear

14. Remove the motor with the gear and repair.
15. Fasten the gear to the motor shaft through knurling the motor shaft. Remember this is an old gear and reinstall the motor/gear.

To Reassemble reverse the procedure

1A. This switch can be damaged if the gear travels in the wrong direction. It allows the tray to retain power on the motor until it goes through one cycle.

2A. This is the cam that travels in the counterclockwise direction.

3C. This gear moves the travelling belt in the tray. Use this gear to move the belt. Do not move it unless needed.

4D. This is the gear/cam that moves the tray platform up and down when it is aligned.

There is no warranty expressed or implied with this procedure. By using any information from this website, you agree not to hold responsible this site, me, nor any of its representatives, for any injuries and/or damages, both physical and/or psychological, that may arise from the use and/or misuse of anything derived from this site. The user further agrees that such information/pictures does not constitute any guarantee of accuracy, safety or reliability, and that cannot be held responsible in any way. The user agrees to proceed at their own risk.
This process addresses the Mechanical Disassembly of the Robot and does not address the Electronics. Accompany this Procedure is additional pictures that you can expand to see more details as needed. This Robot has IC's and Transistors and are of the earlier designs. Static discharge can damage the electronics. It is recommended that you have and use a Static grounding wrist strap.

The Omnibot 2000 Robot Head

Disassembly the Omnibot 2000 Head

We will start from the point that the robot has been disassembled and the head is separate from the rest of the parts. (See Omnibot 2000 Disassembly Procedure covered separately) The parts below are the head assembly.

Click to enlarge
This is the Omnibot 20060 robot head after it is removed from the robot.

Click to enlarge
Remove the four screws from the insert.

Click to enlarge
Be careful not to damage this switch.

Click to enlarge
Lift the insert motor assembly from the head.

Click to enlarge
This is the head motor assembly.

Click to enlarge
The Head Assembly Schematic.
This process addresses the Mechanical Disassembly of the Robot and does not address the Electronics. Accompanying this procedure are additional pictures that you can expand to see more details as needed. This Robot has IC's and Transistors and are of the earlier designs. Static discharge can damage the electronics. It is recommended that you have and use a Static grounding wrist strap.

The Omnibot 2000 Drive Train

Omnibot 2000 Drive Train  Omnibot 2000 Drive Train  Omnibot 2000 Drive Assembly

Pictures of the Omnibot 2000 Drive Train

We will start from the point that the robot has been disassembled and the drive train is separate from the rest of the parts. (See Omnibot 2000 Disassembly Procedure covered separately)

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The Old Robots Web Site

Omnibot 2000® - 5405 By Tony®

Robo Link

Robo Link for Omnibot 2000, Omnibot, and Hearoid!

Omnibot Microphone

Omnibot Microphone for Omnibot 2000, Omnibot, and Hearoid!

INFRARED SENSOR - No. 5412

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Even in the dark, your Securireid will be ready to catch a thief!
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Amaze your friends! Hold the transmitter out of sight and your mechanical man will follow you everywhere... like magic!
Your robot can show-off at yard sales, advertise specials, and carry goods on his tray.
Let your robot race with your baby brother or sister! See who's the fastest.
SECURITY DETECTOR - No.
Even in the dark, your Seuitroid will be ready to catch a thief.
The Old Robots Web Site

Omnibot 2000® - 5405 By Tony®

Replacement: Sealed Lead Acid Battery
Replacement: Sealed Lead Acid Battery
Original Omnibot Sealed Lead Acid Battery
Replacement: Sealed Lead Acid Battery

The above Battery is for the Tony Robot Family. Special attention must be taken for the plug polarity.

Plugs and Jacks Polarity: Special attention must be taken for the plug polarity. (Original Equipment)

2.5 mm CO-AX Plug

Radio Shack®
Robie Sr.®

Battery Charger 60-2398
6VDC 400 mA

Omnibot® Series
Omnibot®5402:
Hexroid;® Omnibot® MK II,
Omnibot® 2000 5405
TAMRANDIO® 25A-3532
6VDC 400 mA

Battery for TXR-002
Tony Zenergy 6N-1201A
6 Sanyo N-1201A nicad cells making 7.2 volts at 120mA.

The above Battery is for the Tony Armstrong® Mobile Command Powerside 6026 & TXR-002®. Special attention must be taken for the plug polarity.

Battery Chargers: Special attention must be taken for the plug polarity. (Original & Replacement Equipment)

Battery Chargers will range from 300mA to 600mA for lead acid batteries. See battery specifications and their recommendations. Special attention must be taken for the plug polarity.
You can program your Omnibot® 2000, Omnibot® 5402, Hearoid® and Robie® Sr. Robots in three different ways. One is from the Robot itself, two is from a Dual Cassette Player and Recorder which is (Analog to Analog) or the third way is from a Computer to a Cassette Recorder, that is from (Digital to Analog). Of the three the first and second way is inexpensive, quick, simple and less prone to errors. The first way is contained in the users manual and is under the download page. I will show both the second and third ways here.

At the bottom of this page contain links to files that can be downloaded. This is an ongoing process and the files will be upgraded as improvements are made.

Demo and Operating Program files for the Omnibot® 2000, Omnibot® 5402, Hearoid® and Robie® Sr. Robots is stored in wav format (1st Copy).
You can download and copy these files directly to a cassette, and use them to check your robot.

Please give feedback to improve these Recommendations and Files for the next user.

There is no warranty expressed or implied with this procedure. By using any information from this web site, you agree not to hold responsible this site, me, nor any of its representatives, for any injuries and/or damages, both physical and/or psychological, that may arise from the use and/or misuse of anything derived from this site. The user further agrees that such information/pictures does not constitute any guarantee of accuracy, safety or reliability, and that cannot be held responsible for any way. The user agrees to proceed at their own risk.
I have an Omnibot but lost my controller and my Omnibot® does not work without it. Not true! Download your Demo Program to check Omnibot® Robot and Operating Programs to have it work without a controller in different conditions. To program your robots you will need both hardware and software.

Omnibot® Controller Welcome! But Not Necessary. You can also make your own tapes without a controller by just downloading a program and modifying it. This is not new it has always been available but is a little used function.

A whole world has re-opened for the Omnibot® owners. You can move into a world where audio tone, sequence and timing, with simple programs on your computer, can be used to create cassette tapes. This programming will breath life into your Omnibot® and let it become your stand alone Robot.

For you to copy and edit the program tapes from your robot with your computer you must first recognize that your computer must be set up to handle audio files. Computers and their associated hardware (Video and Audio boards and drivers) do not always support the whole range with quality reproduction of your recorder programs. You need special recording software and hardware and conversion plugs and jacks for this process.

The following is recommended if you want to successfully transfer files from your audio cassette to and from your computer. Examples are shown and specific hook-up for different equipment and software will vary.

The following are some of the recommendations to copy and create programmed tapes. This has been successfully done but is not always 100% successful. Follow the recommendations and the steps and you should get the same results. (Remember different computers act different.)

Please give feedback to improve these Recommendations and Files for the next user.

SOFTWARE
- Use State of the Art Recording Technology Software
  - &or
- READ THE INSTRUCTIONS AND INFORMATION THAT COMES WITH THIS SOFTWARE.
- If you are recording the Omnibot Mono tape, be sure to record it Mono mode.
- A recording made with a 44100-sampling rate will carry frequencies up to 20000 Hz.
- Record and edit the tape before saving. Save only once from the original in MPG -wav format, because you lose audio quality every time you save the file.

HARDWARE
- A good Mono or Stereo Cassette Recorder with an Auxiliary (AUX.) input.
- A high quality tape is necessary.
- The appropriate shielded plugs, jacks and cables for the recorder. The key word is shielded.
- The computer.

PROCESS
- Computer & Recorder - Hook up the cassette recorder to the computer and test the process of recording to and from the computer.
- Omnibot® Robot - Insert a cassette tape in the Omnibot® Robot and following the instructions (1) in that manual. Record and create a programmable tape.
- Transfer the cassette to the recorder and then transfer the program to the computer with the recommended software.
- Record and edit the cassette tape on the computer and save it directly to the recorder, then save it to the computer.
- Insert the programmed cassette into the Omnibot® robot and activate using the instructions (1) that come with the Omnibot® robot.

Demo and Operating Program files for the Omnibot® 2000, Omnibot® 5402, Hearoid® and Robie® Sr. Robots is stored in wav format (1st Copy). You can download and copy these files directly to a cassette tape, and use them to check your robot.

(1) Use and follow the instructions and procedures in the Omnibot® 2000, Omnibot®, Hearoid® and Robie® Sr.® Operating Manuals to create your program tape.
Special Thanks go to Avery Penarrun from Apenwarx, for now you can utilize several means to control the Robie Sr.® Robot. I have utilized his program to create the Computer Program and Control for the Omnibot 5402® Robots. All of the following programs modifications/examples has been created, tested, completed, and do work.

**EXAMPLES:**
- With the Original Controller. (See the Operating Manual)
- Without a Controller, but with Original Tape. (Analog to Analog)
- Without a Controller, with original tape from the internet. (Digital to Analog)
- With/Without controller with computer on-line or off-line. (Computer Programming and Control - Preferred Method)

**COMBINATIONS:**
- With the Original Controller.
- With a 49 MHz Two Way Radio. (Modifications will be necessary)
- Operating R/C frequency:
  - Remote 3 Frequencies: 49.860 MHz (US), 27.145 MHz (Europe), 40.680 MHz (TAL).
- With a Computer with #d1 or #d2 and/or #d4, #d5, #d6. (Software will be necessary)
- With the Internal Cassette with #d1 or #d2 or #d3.
- With an External Cassette with #d1 or #d2 and #d3.
- With an External CD with #d1 or #d2 and #d3.
- With any or all of the combinations above.

**A. With the Original Controller.**

Robie Sr.® or Omnibot 5402® works with his controller (figure 6). You could record a program onto a cassette tape (figures 8, 9) and play it back, and he'd do what you programmed him to. You can modify the controller and move into the world of computers and programming, without the robot activated.

**d2. With a 49 MHz Two Way Radio.** (figures 2, 3) (Modifications will be necessary and use of (#d3).

**Note:** Operating R/C frequency: (The Remote came in three Frequencies: 49.860 MHz (US), 27.145 MHz (Europe), 40.680 MHz (TAL)). This modification does not deal with the Europe (EU) or Asia (TAL) frequencies, due to the fact that the equipment and software was not available. However the software should work if you can obtain a Two Way Radio operating on those frequencies.

**A. What to do for present day control?** Get a 49 MHz Two Way Radio that broadcast and received on the same frequency as Robie Sr.® or Omnibot 5402® to replace the original controller that will work with your robot. Add a switch and an audio jack in parallel with the microphone, so that you can switch between the two, thus allowing you to input and transmit whatever signal you want to over the airwaves to control Robie Sr.® or Omnibot 5402®

**d3. With a Computer with (#d1) or (#d2) and/or (#d4, #d5, #d6).** (Software will be necessary)

A. With the computer and software you can run to the external cassette (#d5) or the CD recorder's (#d6) (figures 4, 5) or through the original controller or the 49 MHz Two Way Radio directly to the robot, and/or to the internal cassette (#d4), or all of the above. What this gives you is the ability to create a cassette tape to the robot without the controller directly through cables and adapters (figure 7) from the computer. With the controller or the 49 MHz Two Way Radio this can bring you into the age of CD's that is readily available today and eliminate the need for the cassette. Audio cassettes are not readily available today, and not easy to hook up to a computer and connect to the internet to read and write.

Your upgrade is now complete and your next step is to downloaded a.wav recording of Robie Sr.® and Omnibot 5402® original demo tape (it's important to use plain .wav format, as mp3 compression risks disrupting the pure signal) and burned it to a CD.

To resolve these issues you need a means of communicating, recording, playing and programming.
SOFTWARE:

The software program is an extremely basic form of frequency shift keying where there is one frequency for each button on the remote control. The sound would be emitted from the remote for as long as you held down the button or nudged the joystick in a particular direction.

From the Robie Sr.® or Omnibot 5402® 1980’s remote control, the control mechanism is still exactly how most remote control devices work to this day.

The remote control would form the sounds it wanted to send, then modulate them to 49 MHz FM (the usual frequency used by consumer remote control devices in the past). The robot would receive the signal, demodulate it back to listenable sounds, then recognize the different frequencies.

In the case of a tape program, it would simply skip the modulation/demodulation steps and process the sounds directly from the tape.

Computer Controller Programs

Programming: Add a computer and software. (figure 11, 12)

Computer Control is the last step: Once you have a digital file and the ability to transmit from any audio equipment you want, the real answer is clear: computer control!

Use the application in Delphi, thanks to the TJvWavePlayer component in the awesome open source JVCL library by Avery.

After clicking the "Sound On" button, any sound from my computer can now be beamed into Robie Sr.® or Omnibot 5402®, so I can have him move around and play astonishingly low-fidelity MP3s at people!

For further information on the Robie Sr.® or Omnibot 5402® Computer Controller Conversions, please Email me.
Programming The Omnibot® Family Of Robots (Analog to Analog)

This process uses a Dual Cassette Player and Recorder which is (Analog to Analog). This way is inexpensive, quick, simple and less prone to errors. Their is a BUT. You will need an Originally Recorded Cassette Tape.

Now you can program your Omnibot® and have it work without a controller. You can take a pre-existing program tape and create a second tape to run your Omnibot® Robot with new different conditions.

This process is not new, it has always been available but is a little used function. A whole world has re-opened for the Omnibot® owners.

You can move into a world where audio tone, sequence and timing, with simple editing and recording, can be used to create new program tapes that will breath life into your Omnibot® and let it become your stand alone Robot.

To program your robots you will need an original recorded cassette tape and a Dual Record and Play Cassette Player. Omnibot® Controller Welcome! But Not Necessary. Use your Demo Cassette Program to check your Omnibot® Robot and your Operating Programs to have it work without a controller.

The following are some of the recommendations to copy and create programed tapes. This has been successfully done but is not always 100% successful. Follow the recommendations and the steps you should get the same results. (Remember different Robots and Cassette Recorders can act different.)

Please give feedback to improve these Recommendations and Files for the next user.

SOFTWARE

- NONE IS NECESSARY
  - Record from the original tape, stopping and starting the recorder, while you select from the original tape what you want to record. This will take some trial and setting until you get the experience.
  - If you use software to monitor what you are doing, use State of the Art Recording Technology Software
  - READ THE INSTRUCTIONS AND INFORMATION THAT COMES WITH THIS SOFTWARE
  - If you are recording the Omnibot Mono tape, be sure to record in Mono mode.
  - A recording made with a 44100 sampling rate will carry frequencies up to 20000 Hz.

HARDWARE

- A good Dual Mono or Stereo Cassette Player and Recorder.
- A high quality tape is necessary.
- The Omnibot® Robot in good working condition.

PROCESS

- Cassette Player & Recorder - Hook up the cassette player and recorder, and test the process of recording between cassette tapes.
- Omnibot® Robot - Insert a cassette tape in the Omnibot® Robot and following the instructions (1) in that manual.
  - Record and create a programmable tape. (If you have a controller, if not get a tape from someone that can record and has a controller.)
  - Record from the original tape, stopping and starting the recorder, while you select from the original tape what you want to record. This will take some trial and setting until you get the experience.
- Insert the programmed cassette into the Omnibot® robot and activate using the instructions (1) that come with the Omnibot®

(1) Use and follow the instructions and procedures in the Omnibot® 2000, Omnibot®, Hearoid® and Robie Sr.® Operating Manuals to create your program tape.

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Omnibot 2000 Head Assembly

To Main Circuit Board
P1
1. Green
2. Green

P2
1. Brown
2. Black
3. Red
4. Orange

C1
M
S1
L1
L2

Omnibot 2000 Drive Assembly
Brown
1.
2.

Red
3.
4.

Orange
Yellow
Blue
1.
2.

One Direction ONLY
Reversing polarity can damage sensor switch

Purple
1.
2.

Gray

Blue
1.
2.

Hi-Low Speed
Hi-Low Sensor Switch

Left Wheel
M

Right Wheel
M
OmniBot 2000
腕ききロボット オムニボット2000
動いた。握った。注いた。
ダイナミックなのです。
腕のみせざるをえます。

OmniBot SERIES
PERSONAL ROBOT
TOMY
身長65cm、体重10kg。
体がデッカイ、腕がスゴイ、目がスルドイ。

特技もデッカイ、体がデッカイ
ロボットを超えたロボットだ。

標準小売価格：本体38,000円、電話台電話販売18,000円

TOMY
株式会社トミー
〒124 東京都新宿区豊島3-19-3

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RB Robotics® Still produces the RBX5®
Androbot® Produced the Topo®, Fred® and BOB® robots Educational and Personal Robots.
CBS Toys Produced for IDEAL TM the Electronic Maxx Steele TM Personal Robot
All Other® Companies That Manufacture The Robots, or Companies That Claim Ownership
Heathkit® Produced the Hero®, Hero Jr®, Hero 2000®, and the Hero Arm Trainer®. Formerly from Heathkit, then Mobile Ed Productions, Now Proudly brought to you by the Robot Workshop!

Tomy Co Ltd. produced the Omnibot line of robots from 1982 up until 1986
tomy Co., Ltd. - In Japanese, K.K. Takara-Tomy Founded March 1, 2006. Headquarters HQs in Japan, United States, United Kingdom, France, Hong Kong, Thailand, TOMY Co., Ltd. is the legal English name for the same company. Tomy has distributed and marketed Omnibots worldwide.

Tomy produced the largest robot line of the 80's. Tomy was very successful compared to other companies, and therefore many attempted to copy Tomy's robot image (decals, colours). Robots Produced not limited to, but include: Omnibot®, Omnibot® 2000, Hearroid® (TTC), Omni Jr®, Robo® Vidro® Chatbot®, Crackbot®, Dustbot®, Hootbot®, Dingbot®, Flipbot®, Spotbot®

Radio Shack® produced not limited to, but include: Robo® Sr, Robo® Jr, Robo® The Talking Robot, Mobile Armatron®, Armatron®, Super Armatron®, and the Z-707 Iron Claw®

Axton produced robots from 1984 up until 1986/7 Axton produced a number of robots that include: Compurobot / George, Dogbot, Spybot, Talkbot. Compurobot was marketed as George in the UK by CGB, but was Axton design. The Axton Company was founded by Nolan Bushnell (creator of Atari, Androbot Inc.) In 1984. Axton was largely sold to Hasbro.

The pictures used are originals taken, manufactured or created from my robots, composite of pictures made by me, the manuals, instruction sheets, pictures or information sent to me. Advertisement and letters saved from the 1980s, Magazines no longer printed, and pictures from the internet from other hobbyists.

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