

**CAUTION: READ
OPERATING
INSTRUCTIONS
CAREFULLY**

- **COMPONENTS.....2**
- **CONTROLS2**
- **SET-UP3**
- **PLAYING THE GAME4**
- **LEVELS OF DIFFICULTY5**
- **IMPROVING SKILLS6**
- **USING W/1929 ROBOT .7**
- **PONG-MASTER PARTIES....7**
- **PARTS LIST.....7**
- **WARRANTY & REPAIR.....8**



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PONG-MASTER[®]

ELECTRONIC INTERACTIVE TABLE TENNIS GAME
FOR FUN, EXERCISE, AND IMPROVING YOUR PING PONG GAME



OWNER'S MANUAL

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Pong-Master

Electronic Interactive Table Tennis Game

Owner's Manual

Pong-Master is an accessory you can purchase either with your Robo-Pong 2040 Table Tennis Robot or later as an additional add-on. It can also be used with Robo-Pong 2000 and the Model 1929 Newgy Table Tennis Robot (see *Using Pong-Master With A Model 1929 Newgy Table Tennis Robot*, page 7). It is not recommended for Robo-Pong 1040 or 540. It is a fun, interactive game that develops your stroke accuracy, consistency, and shot placement while at the same time having fun trying to “beat the robot”.

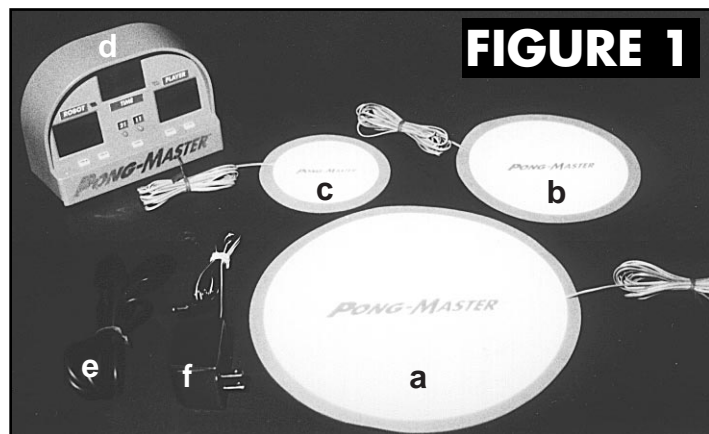
Pong-Master affords many options to set the level of difficulty so it can be challenging to beginners and professionals alike. Pong-Master is also an excellent way to introduce children and the disabled to the joys of playing Ping Pong.

The key to winning a Pong-Master game is to develop consistent and accurate table tennis strokes. Our *Training Manual* describes basic table tennis strokes and sample lessons to learn those skills. If you do not have a copy of the *Training Manual*, you may purchase or download a copy from our website, Newgy.com.

PONG-MASTER COMPONENTS

Pong-Master consists of 3 differently sized, round Sensor Targets (*a, b, c* in Figure 1) that can accurately record a “hit” made by a table tennis ball striking the sensor. The sensors are connected by wire to a Scoreboard (*d*) that keeps track of the player's score, the robot's score, and the amount of time left to finish a game. The sensors are placed on top of the table tennis table on the opposite end from the player (same side as the robot).

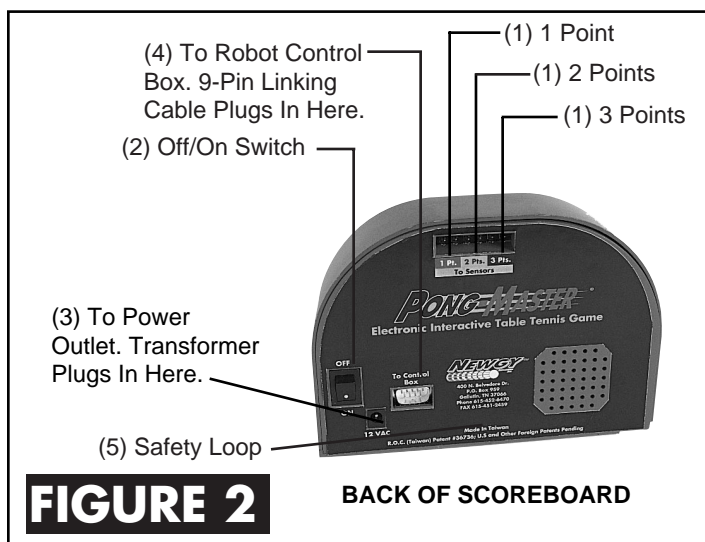
There is also a Transformer Cord (*f*) that supplies power to the scoreboard and a Linking Cable (*e*) that connects the scoreboard to the robot Control Box. Not



shown in Figure 1 is the Safety Cord used for attaching the scoreboard to your net post to help prevent damage in case it is knocked off the table.

PONG-MASTER CONTROLS

The Scoreboard should be placed about a foot in front of the table net and close to the robot Control Box (see *front cover photo*). At this location, the Scoreboard can be attached to the Control Box, it is out of the way of balls being delivered by the robot, and it can be reached by the player at the end of the table when starting a game.



The connections on the back of the Scoreboard (see Figure 2) are:

(1) The top center connection has six 2-pin jacks for connecting the sensors. There are two 2-pin jacks for each of three point levels—1 point, 2 points, and 3 points. When the sensors are attached to these jacks, they will score the corresponding number of points when struck by a ball. You may attach all three sensors, two sensors, or only one sensor. You may attach them in any order and you may assign any point level to any size sensor.

(2) The power switch is located at the bottom left of the Scoreboard and is used to turn the Scoreboard on and off when connected to a power source.

(3) The small round jack next to the power switch (labeled “12VAC”) is used for connecting to a power

source. Plug the round end of the transformer cord into this jack, and plug the prongs of the transformer into a power outlet. The transformer is matched to the electric current in your country. **Check the label on the transformer to be sure the input specifications match your local electrical specifications.** (In the U. S., the input specifications should read "120 VAC, 60 Hz".) If not, contact Newgy Industries or your Newgy dealer to obtain the proper transformer.

WARNING: Do not plug the transformer from a Model 2000 or 1929 robot into the Pong-Master Scoreboard! Damage may result. Use only the transformer supplied with Pong-Master. The transformer output should be 12 VAC, 400 mA.

(4) The 9-pin trapezoidal-shaped jack on the back of the Scoreboard is used for connecting the Pong-Master Scoreboard to your robot's Control Box with the provided Linking Cable. Whenever your Scoreboard is hooked up to the Control Box and the Scoreboard is turned on, the Ball Frequency knob on the Control Box will not respond to changes until after a Pong-Master game has begun. The Scoreboard will automatically turn Ball Frequency on at the start of a Pong-Master game and automatically turn Ball Frequency off at the end of a game. To return to normal Control Box operations, the Scoreboard must be turned off or the Linking Cable disconnected.

(5) The small metal loop at the bottom center of the back of the Scoreboard is used for attaching the safety cord. Hook one end of the safety cord into the loop and attach the other end of the safety cord to the net post of your table.

The front of the Scoreboard (see Figure 3) has the following controls:

(1) The top center red LED is the game clock. The game clock can be set to between 1 and 10 minutes in 1 minute intervals. The amount of time for a game is changed by the use of the Time Up (7) and Time Down (8) buttons. The time must be set *before* the start of a game. You cannot adjust the game time *during* a game.

(2) The left bottom red LED keeps track of the robot's score during a game. The robot scores points based on elapsed time (see *Levels of Difficulty*, page 5).

(3) The right bottom red LED keeps track of the player's score during a game. The player scores points by striking a sensor target with a ball. The Scoreboard will accurately score the number of points assigned to a target for each target strike (1, 2, or 3 points).

(4) The two small yellow lights marked "21" and "11" indicate the number of points in the game. The center button marked "Game" (9) toggles the indicator lights between 21 and 11.

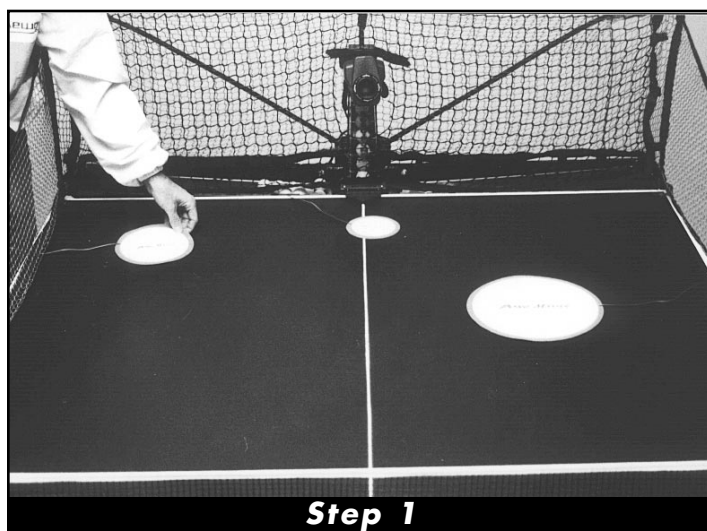
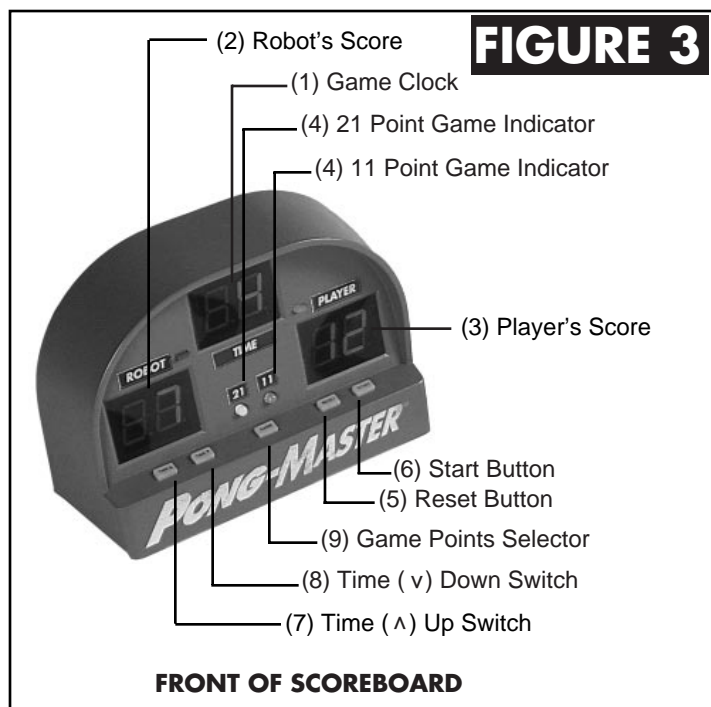
(5) The "Reset" button is used at the end of a game if the player wishes to reset the game options (amount of time or game points) before starting another game. You may also press this button if you want to stop in the middle of a game before time has expired.

(6) The "Start" button, of course, starts a game. There is an approximate 3 second delay between the time the Start button is pushed and balls begin to be delivered by the robot. This delay allows the player to get set. After one game is finished, the Start button may be pressed again to start a new game using the same settings as the previous game.

NOTE: The only time the Scoreboard will permit instructions from the Control Box to reach the robot is *during* a game. Therefore, if you wish to change the settings on the **Control Box**, you must do so either during a game (not recommended because your aim will be temporarily distracted as you make the adjustments and you will lose time off the game clock) or you must first turn the Scoreboard off, adjust the Control Box settings, and then turn the Scoreboard back on before starting the next game.

PONG-MASTER SET-UP

(Step 1) Select the number and size of sensors to play with. Place the sensors at various points on the robot's end of the table.



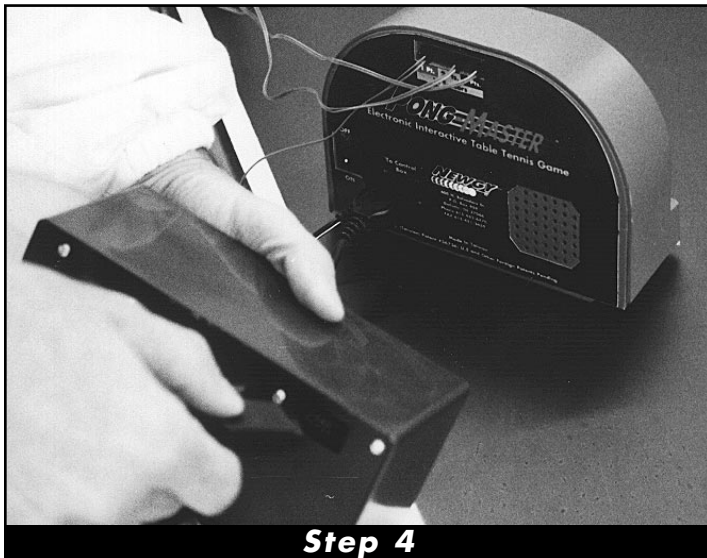
(Step 2) Choose the number of points scored when a sensor is struck by plugging that sensor into the appropriately labeled jack on the back of the Scoreboard. There are two jacks each for 1 point, 2 points, and 3 points.



Step 2

(Step 3) Plug the Scoreboard into a power outlet.

(Step 4) Connect the Scoreboard to the Control Box with the provided cable. Attach Control Box to table.



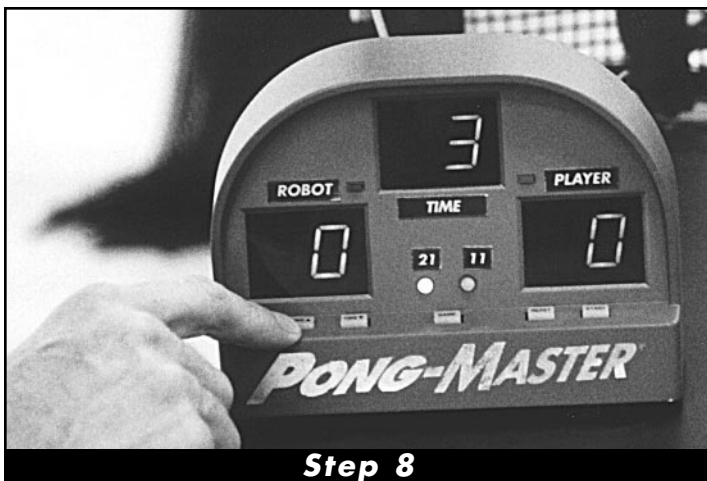
Step 4

(Step 5) Connect the safety cord from the back of the Scoreboard to the net post of your table.

(Step 6) Before turning the Scoreboard on, set your robot to the type of shot you wish to practice (see your robot Owner's Manual), then turn the Control Box "off."

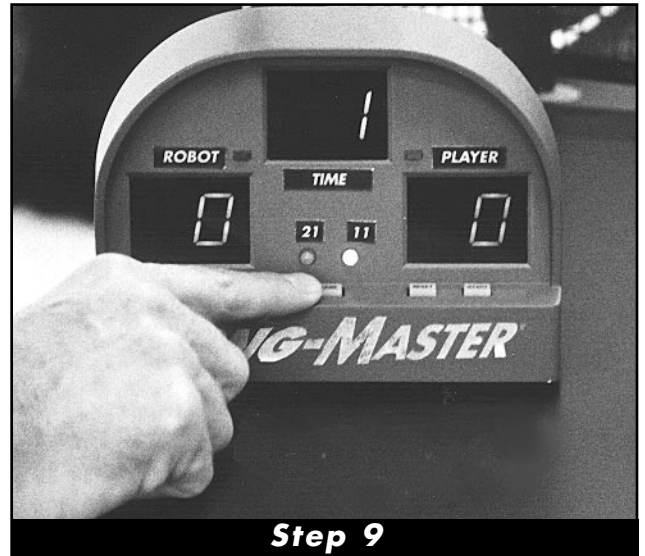
(Step 7) Turn the Scoreboard "on."

(Step 8) Set the number of minutes for your game.



Step 8

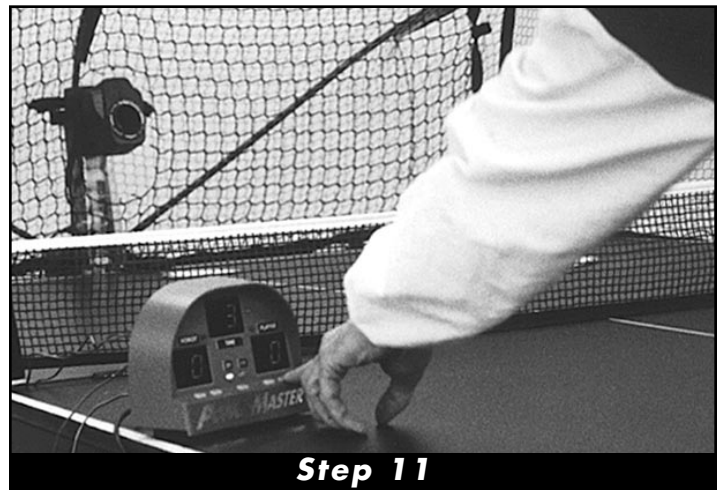
(Step 9) Select either a 21 or an 11 point game.



Step 9

(Step 10) Turn the Control Box "on".

(Step 11) Pick up your paddle and press the "Start" button. You'll have approximately 3 seconds before the game starts. Just before the robot starts delivering balls, Pong-Master will sound a warning "beep". You're now playing Pong-Master! See if you can beat the robot by scoring 21 points (or 11 points if selected) before the robot does.



Step 11

(Step 12) To start a new game with the same settings, press the "start" button. To change the Scoreboard settings, press "reset", change the settings, then press "start".

PLAYING THE GAME

You score points by making your shots strike the sensors. Every strike will award you 1 to 3 points, which is reflected by the player's score on the Scoreboard. The robot scores points based on the amount of time it takes to play the game (see Chart A, next page). If you score 21 points first, you win and Pong-Master will play you a victory song! If the robot wins, it plays an antagonistic ditty!

Just like in an actual game, you must win by 2 points. If the score becomes tied at 20-20, the game will continue until either the robot or player is 2 points ahead, even if the time on the game clock has expired.

CHART A										
NUMBER OF SECONDS FOR ROBOT TO SCORE ONE POINT										
Game Minutes	1	2	3	4	5	6	7	8	9	10
21 Point Game	3	6	9	11	14	17	20	23	26	29
11 Point Game	5	11	16	22	27	33	38	44	49	55

CHART B						
SAMPLE DIFFICULTY LEVELS FOR PONG-MASTER CONTROLS						
	Beginner	Novice	Intermediate	Advanced	Expert	Master
Game Minutes	10	8	5	3	2	1
No. Of Sensors	3	3	3	2	1	1
Sensor Points	Large-3 Medium-3 Small-2	Large-2 Medium-2 Small-3	Large-1 Medium-1 Small-3	Large-0 Medium-1 Small-2	Large-0 Medium-1 Small-0	Large-0 Medium-0 Small-1
Sensor Placement	Grouped in middle of table	Scattered middle of table	Lg. & med.- middle, Sm.- end of tbl.	End of table	Corner of table	Corner or side of table
Game Points	11	11	21	21	21	21

CHART C						
SAMPLE DIFFICULTY LEVELS FOR ROBO-PONG CONTROLS						
	Beginner	Novice	Intermediate	Advanced	Expert	Master
Spin	Backspin	Backspin	Topspin	Topspin	Topspin	Sidespin
Ball Speed	2	3	5	7	10	10
Head Angle	G	G	F	E	D	D
Ball Frequency	4	5	5	6	8	10
Oscillation	Off	Off	Off	On	On	On

LEVELS OF DIFFICULTY

Pong-Master provides many options to match the difficulty of the game to your present ability. The number of options is almost endless. With some experimentation, you'll soon find the settings that are challenging for you.

The first option is to adjust the amount of time for a game. The game clock can be adjusted from 10 minutes (least difficult) to 1 minute (most difficult) in 1 minute intervals. As you increase the amount of time for a game, the longer it takes the robot to score one point. This control also works hand in hand with the Game Point control. A normal game would be to 21 points. But with Pong-Master, you have the option to set it for an 11 point game so it takes longer for the robot to score a point (see *Chart A*).

A second option is the number of sensors selected. This may range from 1 to 3. The more sensors selected, the easier it is for you to score.

A third option is the sizes of the sensors. There are three sensor sizes—small, medium, and large. The larger the sensor size, the easier it is to strike and score a point.

A fourth option is to set the point levels for the sensors. You can choose to award 1, 2, or 3 points for each strike of a sensor. There are two jacks for each point level, so you could, for example, plug sensors into both the 3 point jacks and another sensor into a 2 point jack for an easy game. You could choose a harder game by plugging two sensors into the 1 point jacks and the third sensor into a two point jack. A common arrangement is to set the larger sensor to

award 1 point, the medium sensor 2 points, and the small sensor 3 points. The most difficult arrangement would be to use only one sensor.

A fifth option is arranging the sensors on the table. The least difficult arrangement would be to group all the sensors together in the middle of the table. Placing the sensors around the edges of the table or very close to the net will make the game more difficult. (See *Using Pong-master To Improve Skills* on page 6.)

As you can see, there are countless ways to adjust the level of difficulty. Chart B gives some sample settings for Pong-Master controls to obtain the different levels of difficulty ranging from beginner to master.

Besides the options you have to set the Pong-Master controls, you may also adjust the difficulty of a game by selecting the type of shot the robot delivers to you. The various parameters here are the type of spin, the speed of the ball, the height of the ball, the frequency of ball delivery, and whether the ball is delivered consistently to one spot or randomly to many spots.

The type of spin can be backspin, topspin, or sidespin. Backspin returns are usually the easiest to aim because the ball travels slowly and in a straight line. Topspin is a little more difficult because the ball can travel much faster. Sidespin is most difficult to place accurately because it causes the ball to jump sideways off your paddle and is therefore hard to hit back in a straight line.

Ball speed and ball height are easier to understand. The faster the speed of the ball, the harder it is to make the ball go to a particular spot. The higher the ball is delivered, up to shoulder level, the greater the possible angles to hit a target.

The frequency of ball delivery has a variety of effects on the difficulty of the game. If the frequency is too low, you can aim your shots more accurately, but you have fewer chances to score. If the frequency is too high, your aim will diminish, but you have more chances to score. The frequency is best set at the highest level at which your aim is reasonably accurate.

Turning oscillation on makes it more difficult to hit your targets because the ball is delivered to a different spot every time. You must not only have an accurate stroke, but you must be able to move quickly to a new position and get steady before the ball arrives. Turning oscillation off simplifies the game tremendously because you can just stand in one spot to wait for the ball and you can concentrate more fully on your stroke technique.

Chart C on the previous page gives you some idea on how to set the robot controls for the different degrees of Pong-Master difficulty.

USING PONG-MASTER TO IMPROVE SKILLS

One of the most important skills for winning at table tennis is placing the ball where you want it to go. Ball placement is one of the factors separating the novice player from the pro. The novice player is happy just to get the ball back across the net. The pro knows exactly where on the table he needs to place the ball to score a point or keep the opponent from attacking it strongly.

Pong-Master is an excellent aid to learning placement and accuracy. Not only will you learn new, valuable playing skills, but you'll also be having fun and enjoying the challenge of competition.

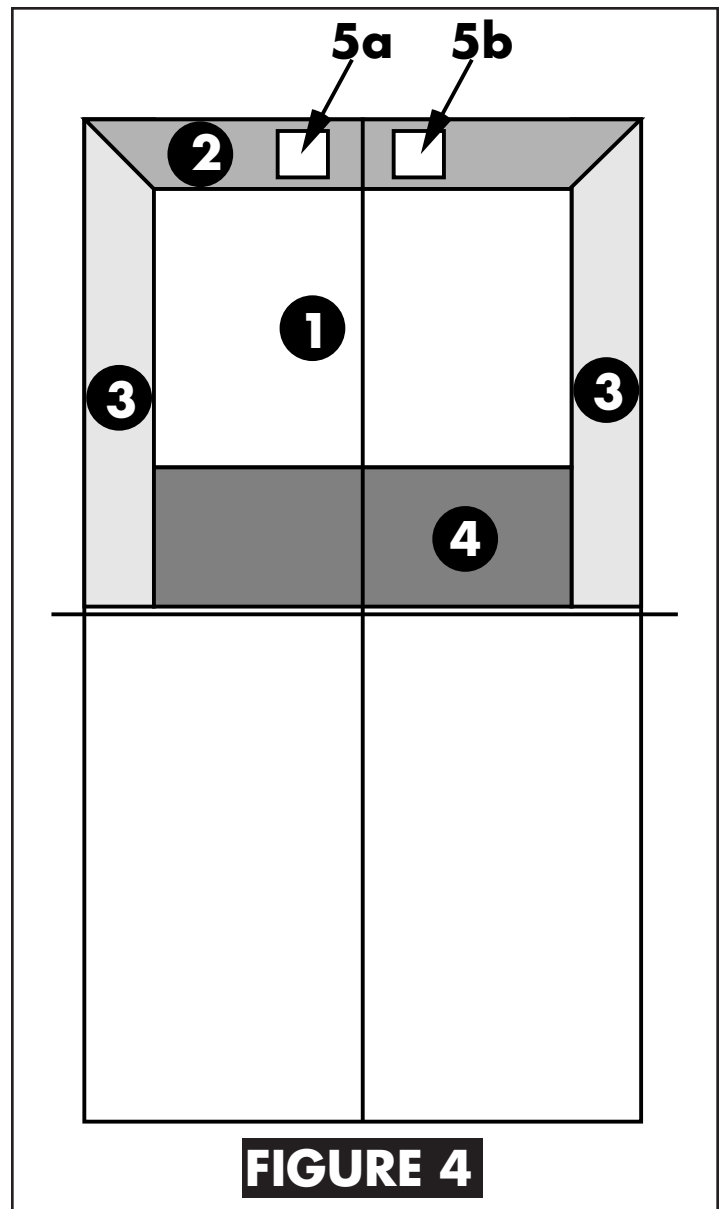
The first step to better shot placement is to develop a good stroke. Refer to the *Robo-Pong Training Manual* that came with your 2040 robot (or purchase/download it at <http://www.newgy.com/Products/trainingmanual.asp>) to see how the basic strokes of table tennis are performed. Practice these strokes until they feel comfortable and you are able to consistently aim the ball in a general direction. Pros often spend several years perfecting a stroke, so don't be surprised if it takes you a while to achieve good strokes.

Once you have developed a stroke to the point where you can make your return go either crosscourt or down-the-line at will, you are ready to refine that stroke by improving your accuracy. This is when Pong-Master becomes a valuable aid.

Pong-Master will give you immediate feedback on how accurate your shots are. By intelligently placing the sensors, you can work on placement skills that produce better results in actual games of regular table tennis.

Where do you want to place the ball in table tennis? Figure 4 shows a table tennis table divided into several zones. **Zone 1** is the "Easy Zone". Balls placed in the easy zone are easy for your opponent to return, often with a powerful attack. Stay away from the easy zone!

Zone 2 represents balls that are hit deep toward the very end of the table. Balls hit to this zone force the



opponent away from the table and reduce the possible angles at which your opponent can return the ball.

Zone 3 represents balls hit off the side of the table. These severe angle shots force the opponent to move a great distance, normally causing a weak return unless s/he is very quick afoot.

Zone 4 represents balls that are returned short and very close to the table net. Balls hit to this zone must not only be short, but very low to the net to be effective. If your return goes back high and lands in this zone, it will promptly be "creamed". The most common type of shots hit into this zone are short, spinny serves, touch returns of short balls, usually underspin, and drop shots when the opponent is back away from the table. Balls hit to this zone are very difficult for the opponent to attack as long as they are very low.

Zones 5a and 5b represent two special zones — the switch point of your opponent. 5a represents the switch point of a typical left handed player and 5b represents the switch point of a typical right-handed player. The switch point is that zone where your opponent must decide whether to use a forehand or a backhand.

Balls hit to this zone force the opponent to move and/or return the ball from an awkward position. They may cause your opponent to hesitate momentarily as he decides whether to use his forehand or backhand. These zones are not stationary—they vary with the position of your opponent. Just remember to aim at the elbow of your opponent's playing arm.

When placing the Pong-Master sensors on the table, consider carefully the above information in deciding where to put them. Decide before starting a game what stroke you want to practice and what kind of placement you want to learn with that stroke. Keep the sensors away from the easy zone for best results. Practice placing your shots into the "hard zones" and you'll quickly see good results when you play a regular game.

USING PONG-MASTER WITH A MODEL 1929 NEWGY TABLE TENNIS ROBOT

If you have a Model 1929 Newgy Table Tennis Robot, you may also enjoy the fun and benefits of playing Pong-Master. However, the 1929 was produced before Pong-Master was invented, so its Control Box works independently from the Pong-Master Scoreboard. When you use Pong-Master with the 1929, you must manually turn the Control Box on at the start of the game and turn it off at the end of a game.

It is easy to determine if you have a 1929 Control Box (part # 753-350). Its case is made of black plastic and it does not have a 9-pin connector on its bottom. The case of a Model 2040 Control Box (part # 2000-224) is colored gray and it does have a 9-pin connector on its bottom. The 2040 Control Box is compatible with the 1929 robot, so it is possible to upgrade your robot and enjoy all the features of Pong-Master simply by purchasing a 2040 Control Box (call Newgy Customer Service for details).

If you choose to use Pong-Master with a 1929 Control Box, there are a few deviations from the previous instructions you should be aware of:

(1) You will not use the Linking Cable supplied with the game.

(2) To begin a game, set your robot for the type of shot you want, then turn the Control Box off. Press the "Start" button on the Pong-Master Scoreboard. You will have 3 seconds to quickly turn your Control Box on and get ready to return the balls. Even though the robot will begin to deliver balls immediately, the game clock will not start and the sensors will not be activated until the Scoreboard sounds its warning beep to begin the game.

(3) At the end of the game, you must manually turn the Control Box off.

(4) You do not need to turn the Scoreboard off before making adjustments to the Control Box settings.

PONG-MASTER PARTIES

Pong-Master is too much fun to keep to yourself. Make sure your entire family gets in on all the fun and excitement. Table tennis is an easy game to learn and a hard game to master. Even small children can learn basic strokes well enough to beat Pong-Master at its simpler settings. Most disabled individuals can do the same also.

When you're ready to really have some fun and show off your table tennis prowess, turn off the TV, round up your family and gather them around the table tennis table. Or invite some of your buddies over to have a good time. Have your robot and the Pong-Master game set-up at a fairly simple level. You can go first to demonstrate how easy it is to win and how to play the game. Then everyone else takes a turn. Record everyone's score after each game. After everyone has gone once, whoever got the best score against the robot wins that round!

After several rounds, start handicapping the better players by making them play with smaller targets or with less time. To keep things moving, change the robot settings occasionally. Show your family or friends how to return the different spins. For a real challenge, make the robot oscillate while playing a Pong-Master game. The variations are almost endless.

Get out of the TV/video game rut! Get active and get healthy the fun way. Pong-Master is a game the whole family will enjoy for years to come!



A Pong-Master Party! Fun For The Whole Family

PONG-MASTER PARTS LIST

Part #	Item	Qty.
2010-400	PM Scoreboard	1
2010-402	PM Large (10") Sensor Target	1
2010-404	PM Medium (6") Sensor Target	1
2010-406	PM Small (4") Sensor Target	1
2010-408	PM Transformer Cord	1
2010-410	PM Linking Cable	1
2010-414	PM Owner's Manual	1
2010-416	PM Safety Cord	1

OWNER'S MANUAL

SERVICE AND REPAIR

HOW TO ORDER REPLACEMENT PARTS

WARRANTY



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PONG-MASTER®

ELECTRONIC INTERACTIVE TABLE TENNIS GAME

Thank you for purchasing Pong-Master. We inspect our products to be sure they are of high quality and free of defects. However, if you need service or advice on your robot, please contact our Customer Service Department at the address and telephone number at the lower left corner of this page.

Please call us before you send in your game for repair. Often, repairs can easily be handled on the phone. If, after talking with our Repair Department, you need to send in your game, be sure to include a brief note describing the problem and your phone number and shipping address.

You may order from our Customer Service Department a current parts price list. If you know which part you want to order (see page 7), you may order it by phone if you have a credit card (Visa, MasterCard, Discover, or American Express; \$10 minimum). Otherwise, you will need to fill in a parts order form and include a check or money order along with your order.

Be sure to keep your purchase receipt. We suggest you keep your receipt with this manual and record the following information:

Date Purchased _____ Serial # _____

Dealer Name _____ City, State _____

LIMITED 1 YEAR WARRANTY

Manufacturer warrants to the original retail purchaser, this product to be free from defects in material and workmanship for a period of 1 year from date of purchase.

Should this product become defective due to material or workmanship during the warranty period, contact our Customer Service Department describing the defect. Always provide your serial number. We will provide you with return authorization and shipping instructions. If you are asked to return the product, pack it securely and ship it **PREPAID**.

If defective as provided by the terms of this warranty, we will, at our option, repair or replace the product and return it to you prepaid.

This warranty is not transferable and does not cover normal wear and tear, or damage caused by improper handling, installation, or use. This warranty is void if the product is in any way abused, damaged, or modified from its original state.

This warranty gives you specific legal rights, and you may have other rights which may vary from state to state.