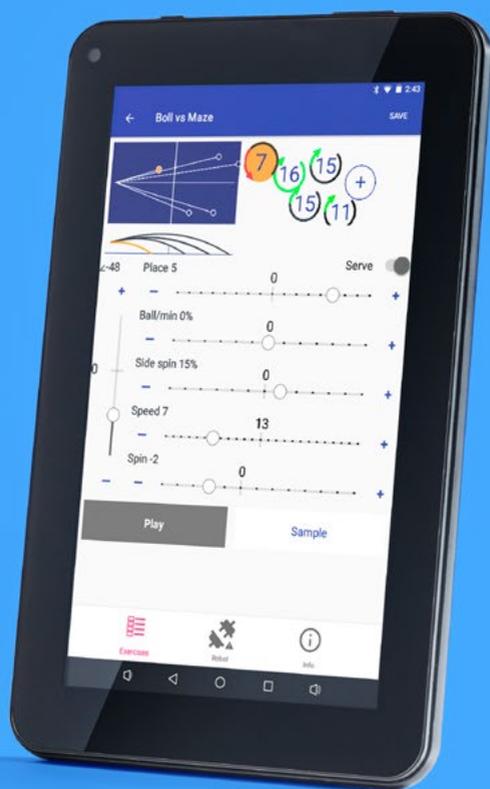


BUTTERFLY

# AMICUS PRIME

Table Tennis Robot



Owner's Manual | Bedienungsanleitung | Manuel d'utilisation

# AMICUS PRIME TABLE TENNIS ROBOT

- State of the art 3-wheel ball delivery technology provides all types of spin.
- Rigid sponge wheels with a special coating for longer durability.
- Lightweight and easily transportable. Weighs approximately 6 kg (13 lbs.).
- Random features include natural scattering of shots, random placement, or both!
- Programmed or random delivery of balls with different spin, speed, direction, and trajectory.
- Start Exercise with serve, which inserts a natural pause before each repetition.
- Limitless memory places, including 20 pre-programmed Exercises from Richard Prause.
- IFC (Individual Frequency Control) function for more natural timing of balls in an Exercise.
- Mirror play switch to quickly change Exercise for either right or left handed player.
- Alternate play and break periods (interval training) with the Cycle function.

Covered by a full 2-year Manufacturer's Warranty and 5-year guarantee of parts and service availability. See full warranty information on page 29.

## CAUTIONS

- Please read this Owner's Manual carefully before using the machine.
- This machine may only be connected to 100 - 230 V current.
- The ball throw wheels rotate at high speed. Avoid touching the wheels during operation!
- Use this product only in enclosed and dry rooms.

Used properly, your AMICUS PRIME will always be a great training partner and friend (Amicus is Latin for Friend).

# **IMPORTANT:** Please read instructions carefully prior to use!

The Control Panel chapter describes basic adjustments of the AMICUS PRIME table tennis robot. More detailed instructions can be found in the Operation chapter.

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# 1. SETUP

- a. Robot and Net Assembly
- b. Power Supply (Input: 100 – 240 V, Output: 24 V DC, 3 A)
- c. Control Tablet
- d. Control Tablet Power Supply
- e. Control Tablet Bracket

Other parts: Hex wrenches (2 and 4 mm) for wheels, Wheel Adjustment Gauge (black tube with fins), spare rubber bands for the Side Nets, Velcro strips. White, steel strips to repair of the deflector plate.

1. Place the robot on top of your table tennis table. Fold apart both sides of the net at the same time until the first stop (Photo 1A). Rotate towards you the curved tubular Support Legs into the position as seen in Photo 1B (about 15-20 cm, or 6 - 8 in., apart).
2. Rotate the entire robot 180° with the Support Legs facing away from you. From behind, grasp the robot with both hands on the bottom of the Base. Pick up the robot, angle the Support Legs downward, slip them under the end of your table tennis table, and push the robot onto the end of the table. Gently let go of the base and the robot will hang by its own weight as seen in Photo 2.

Please note that AMICUS robots are designed to fit onto 25 mm (1 in.) thick tops. If your top is less than 25 mm thick, you will need to adjust the Support Legs using the height adjusting screws. Turn the screws inward until the thickness difference between 25 mm and your particular table surface is sufficiently equalized.

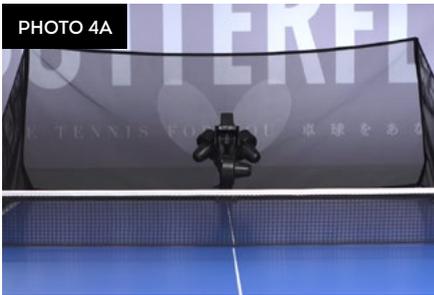
**CAUTION:** Please use the included longest Velcro strip to help secure the robot to the end of the table. This is especially important if children play around the table. The Velcro strip helps stabilize the robot to prevent it being knocked off the table.

3. Loosen the large Black Knob found on the rear of the Ball Tube. Rotate the head 180° and then pull the head upwards until the 3rd coloured ring on the tube is just visible (Photo 3A), then tighten the Black Knob to hold it in place (but not too tightly). Lastly, fasten the Head Cable coming from the head to the serial connector found on top of the Base (Photo 3B).



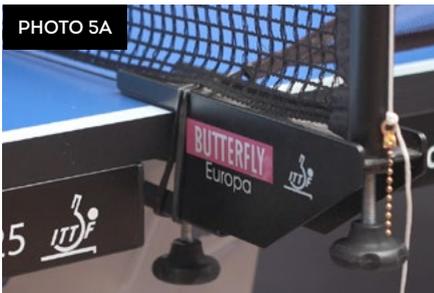


4. Standing behind the robot, grip the top points of the net and fold the net down on both sides until the net fully opens (as seen in Photo 4A). Fit the plastic Corner Brackets of the net around the corners of your table as seen in Photo 4B.



**NOTE:** You may attach the two shortest Velcro strips to the corners of your table underneath the **Corner Brackets** to help the brackets stay down and stabilize the entire net.

5. Pull a Side Net along the side line of the table and pass its thick rubber band over the top of the table's net standard (see Photo 5A). Then loop the rubber band around the Clamp Screw that holds the net onto the table. Attach the Side Net's Velcro tab to its matching piece located on the Corner Bracket as seen in Photo 5B.



6. Plug your Power Supply into a power outlet and then into the power jack on the side of the Base (See Photo 6).



## 2. CONTROL TABLET

1. **Power Button** – Used to turn the tablet on and off.
2. **Headphone Jack** – Connect headphones or earphones here. Not used for Amicus operations currently.
3. **Micro USB Port** – Can be used to connect tablet to robot with provided Control Tablet Cable or as an alternative method to charge the tablet if connected to a USB Charger.
4. **DC Power Port** – Plug in the provided Tablet Power Supply into a power outlet and then into this port. This keeps the tablet's battery charged. If unplugged, tablet has approximately 4 hours of battery time when new. We recommend leaving the tablet plugged in to power to prevent the Power Saver function from turning off the screen during play.
5. **Volume Button** – Press on the left side of this button to turn volume up and on the right side to turn volume down.
6. **TF Card Slot** – Insert an optional TF or micro SD Card here to increase storage capacity of tablet (to store more Exercises or other data).
7. **Reset slot** – Insert paper clip here to reset the tablet.
8. **Rear-Facing Camera** – Currently unused for Amicus operations, but can be used for Android operations.
9. **Speaker Outlet** – For best sound, do not cover this outlet.
10. **Front-Facing Camera** – Currently unused for Amicus operations, but can be used for Android operations.
11. **Control Tablet Holder** – Tablet mounts onto holder with 2 Velcro strips, then holder mounts onto Control Panel Bracket.

# 3. OPERATION

## NOMENCLATURE

To assist in clearly communicating the various features of your robot, it is necessary to define how we refer to certain elements. Here are various terms used throughout this manual:

**Ball Type** – 4 controls affect Ball Type: Spin, Speed, Side spin, and Trajectory.

**Ball Placement** – the left/right location where a ball lands, determined by the Place control.

**Basic Ball** – the ball thrown when Default game Exercise is selected.

**Current Ball** – the ball that is currently selected as indicated by an orange circle.

**Ball 1 - 10** – refers to the Ball Indicators (white circles) located along the right side of the table diagram. The ball furthest left is Ball 1, and each successive ball to the right would be named Ball 2, Ball 3, etc..

**Exercise** – a sequence of between 1 and 10 shots. Also called drill, program, or rally.

**Sequence** – 2 or more Exercises linked together, usually as a training routine.

**1 - 4 Rings** – how the head height adjustment is described. E.g., 2 Rings would mean the head height is adjusted so 2 rings (painted on the Ball Tube) are visible (see Photo 7).

## ADJUSTMENT OF HEAD HEIGHT

On most table tennis robots, the height of the head cannot be adjusted. In contrast, AMICUS EXPERT offers 4 different heights to better simulate realistic play. It is quite easy to adjust the head height. From behind the net, push the top of the net down to reach over it. Grab the curved ball tube with one hand and loosen the large Black Knob with the other hand (see Photo 7). You can then pull the tube up or push it down to adjust head height. Lock it in place by tightening the Black Knob. (Be careful not to tighten the knob too much.)



**IMPORTANT:** Before tightening the Black Knob, be sure one of the coloured rings painted on the ball tube is right at the top of the lower tube (see Photo 7). Be careful not to tighten the Black Knob too tightly—you can dent the tube if tightened too much. Failure to adjust the head height correctly can result in ball jams, double throws, missed throws, and other feed issues.

## SETTING UP YOUR TABLET

Before beginning play on your robot, it is best to connect your tablet to the internet and set your local time. Hold down the Power Button on the tablet until the Butterfly logo appears and then let go of the

button. Soon you should see the Amicus logo appear and then the Exercise List screen should appear.

Touch  at bottom to go to the Home Screen. In the resulting screen, touch . The first setting is Wi-Fi, press it. Then click on your preferred Wi-Fi network. Type in your password (if required), and press Connect. You should see Connected in the Wi-Fi list underneath your preferred network.

Go back to the Settings list by pressing  at the top left of the screen, next to Wi-Fi. Now select Date & Time. Press Select time zone and in the resulting list, select your time zone. Lastly, verify that Automatic date & time is set to On (if you don't have internet access, you can set time manually). Touch  at bottom right and then tap the Amicus app window to return to that app.

Next, verify you have the latest version of the Amicus app by touching Info () at bottom right. At top of resulting screen, touch Check For Updates. If an update is available, it will start downloading automatically. If already up to date, the message, "Is currently the latest version", is displayed at the bottom.

Lastly, connect your robot to your tablet using its Bluetooth connection. At the bottom of the Amicus app, verify that the Robot icon shows it is connected to your robot (). If it shows Unconnected () , click on that icon, and look for your robot in the Connection Manager list. Then touch Connect to establish a connection between robot and tablet. Once connected, return to the Exercise List by pressing Exercises () at the bottom.

## ORIENTING THE ROBOT TO THE CENTERLINE

After completing Step 5 on page 4, place about 50 or more 40 or 40+ balls into the Ball Collection Tray. Grab your racket and prepare to return balls from your robot. In the Exercise List of the Amicus app, press Default game, and then Play Exercise. Basic Balls should be delivered along the centerline. Observe where the balls land in relation to the centerline. Press Stop Exercise after seeing where balls are delivered. If balls are not delivered on or very close to the centerline, loosen the large Black Knob on the rear of the Ball Tube (see Photo 7) and rotate the head in the direction necessary for balls to land closer to the centerline. Repeat until all balls are landing very close to or on the centerline, then stop ball delivery.

## BALL SCREEN

Staying in the Default game Exercise, press  (see Photo 8). It turns yellow and opens the Ball Screen where you can adjust the settings for that Ball (see Photo 9). You will notice 7 settings that you can adjust:

**Place** determines the left to right placement of the Ball. Hold down the slider handle and move it back and forth. Notice that the Ball's position on the diagram at the top moves left and right across the table diagram in response to this setting. "0" corresponds with a centerline placement, -8 with an extreme angle off the left side of the table, and 8 with an extreme angle off the right side of the table.

**Ball/min %** (aka, Individual Frequency Control, or IFC) delays or accelerates the timing between Balls of an Exercise. Use this control whenever an Exercise has 2 or more Balls, and after setting Ball/min to your liking, the timing between any two shots seems too little or too much. For example, when you start with a slow, short backspin serve followed by a fast topspin shot. Or you have several fast topspins followed by a slow, high no-spin pop-up. A "0" setting would mean that the timing between shots would be as set for Ball/min. Add more time after a shot by using negative settings (this effectively reduces

the Ball/min setting for that one Ball) or reduce the time after a shot by using a positive setting (which increases the Ball/Min for that one Ball).

**Side spin** changes the orientation of the spin on the ball. The "0" setting means there is no sidespin on the ball. Every advance from "0" represents a 15° change in orientation. Settings to the right of zero are degrees of right sidespin and settings to the left are degrees of left sidespin.

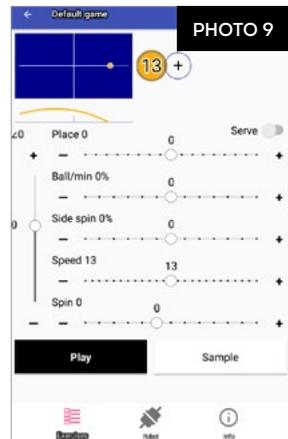
**Speed** determines how hard the ball is thrown. A setting of 1 means the speed is very slow and 25 means it's very fast, with 13 being the default speed in the middle. Please note that the number in the middle of the circle (that represents this Ball) changes in response to this setting. So a 13 in the circle means a speed of 13; whereas, a 25 means a speed of 25. The effect of this setting is shown on both the top view and side-view diagrams of the table.

**Spin** defines whether the ball has topspin, backspin, or no spin. "0" indicates no spin (dead ball) and the circle is colored grey. Positive settings mean degrees of topspin with 1 being very light topspin, and 7 being extremely heavy topspin. Please note that as topspin is increased, the circle shows a longer and longer green arrow in a clockwise direction. Negative settings mean degrees of backspin with -1 meaning light backspin and -5 meaning very heavy backspin. A longer and longer red arrow around the circle in the counter clockwise direction indicates increasing degrees of backspin.

**Trajectory** is the vertical slider along the left side of the screen. This sets the throw angle of the Ball. A "0" setting indicates a ball thrown straight out with only a slight upward angle. When this slider is moved upward, the robot will throw the ball increasingly higher. And when this slider is moved downward, it means a lower throw angle, with the lowest settings used to make the ball bounce first on the robot's end of the table (a serve). Its effect is shown on both the side view and top view diagrams.

The **Serve Switch** can be used on the first 3 Balls of an Exercise. When switched on, it introduces a 1.5 second delay before that Ball. This simulates the normal pause that occurs before the serve in an actual table tennis game. If more than one Ball is designated as a Serve, then the robot automatically picks one of those Balls and starts the Exercise with that Ball. Balls designated as Serves are colored pink.

For example, let's say Ball 1 is programmed to land in the backhand court, Ball 2 to land down the center, and Ball 3 to land in the forehand court. All 3 Balls are designated as Serves. For the first repetition of that Exercise, there will be a 1.5 second delay, the robot will serve Ball 1 to start the Exercise, and then follow that Serve with any other programmed Balls that are not designated as Serves. The second repetition will also have a 1.5 second delay, then start with Ball 2, and followed by any other Balls not designated as Serves. The third repetition will follow a similar pattern except its Serve will be Ball 3. The fourth repetition will use Ball 1 as the Serve. However, if Type RND is turned on, the serve is selected at random to start each repetition of the Exercise instead of following the exact order as just described.



Underneath all the sliders are 2 buttons, **Play** and **Sample**. To test your settings for a Ball, touch **Sample**. It will change to **Stop sample** and the robot will throw samples of the Current Ball repeatedly at the rate determined by the Ball/min setting. When you are finished sampling the Current Ball, touch **Stop sample** and ball delivery will stop. Keep repeating this process until the Current Ball is to your liking. Use **Sample** to have the robot throw only the Current Ball.

When you touch **Play**, you will be switched to the Exercise Screen, and the **Play Exercise Button** changes to a red **Stop Exercise Button**. Balls will be thrown out in order from Ball 1 to however many Balls are programmed for that Exercise (unless **Place Random** is selected.) Use **Play** to have the robot throw all Balls in an Exercise.

**Best Practices:** We highly recommend that you do **not** save any changes to the Default game Exercise. This Exercise is handy to use whenever you want to Calibrate your robot. So when exiting the Exercise Screen, if you get a **Save Exercise alert**, choose **Close Without Save** (more about saving exercises on).

Furthermore, if you are editing the settings for any pre-programmed Exercise, be certain you want to permanently change that Exercise. If you want to keep the pre-programmed Exercises as programmed at the factory, always select **Close Without Save**, or alternatively, save it under an alternate name by tapping **Save** at the top right, then **Save As**. **Save As** allows you to create a new name for your modified Exercise and keeps the original Exercise unchanged.

When changing settings, large adjustments are most easily accomplished by moving the slider control with your finger. For fine adjustments, touch the + or - symbol at either end of the slider. Doing so will increase/decrease the settings by 1 unit for every touch.

## EXERCISE SCREENS

After learning the controls in the Ball Screen, return to the Exercise List by tapping **Exercises** (☰) at bottom left of the screen. All saved Exercises will appear in this list. By looking at the diagram for each Exercise, you can quickly determine the number of balls in the Exercise, the order of balls and their placements, the speed of the balls, and the spin on each ball (see Photo 10).

Scroll this screen by lightly touching it and moving your finger up or down. Notice that this list includes Exercises named **Default** game and then 20 Exercises named **Exercise 79** to **Exercise 99**. These are all of the pre-programmed Exercises that come with your Amicus Prime. These Exercises were created by well-known Butterfly Coach **Richard Prause**. Coach Prause recommends these drills for any player learning table tennis as a base upon which to develop more advanced skills.

As noted in the previous section, we recommend you don't overwrite these pre-programmed Exercises by using the **Save** command (use **Save As** instead). However, modifying these Exercises is permitted. If you choose to do so, please write down the settings for each Ball in that Exercise so you can reprogram the settings if you ever decide to return to factory settings.

For purposes of learning about the settings available in the Exercise Screens, touch **Exercise 79**. The **Play Exercise Screen** appears (see Photo 11). At the top of this screen are a top view and a side view

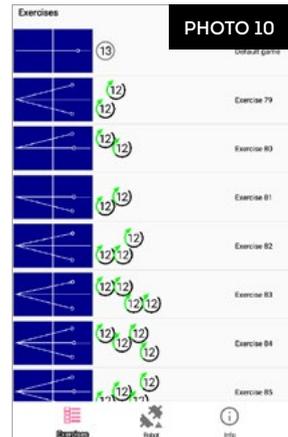


diagram of the Exercise. From these 2 diagrams, you can quickly see that this Exercise throws the 1st ball to the left corner and the 2nd ball to the right corner. Both balls have light topspin, a medium speed of 12, and a mid-table landing spot (about halfway between the table net and your endline). There is also a brief written description of the Exercise below the side view diagram (which can be edited by touching it).

Begin playing this Exercise by touching the Play Exercise Button. The app changes screens and shows a red Stop Exercise Button. After a momentary delay, the robot will begin throwing the balls in the order they are shown in the top view diagram, with the first ball closest to the table and each successive ball further away. As each Ball is thrown, the ball symbol and trajectory lines turn yellow to indicate the Current Ball. After playing this Exercise for a short while, stop ball delivery by touching Stop Exercise.

Next, let's explore the **Random** options. Touch the Random Button. A popup window appears with Scatter, Place RND, and Type RND checkboxes. Touching the checkbox in front of each option will result in a checkmark, indicating that option is selected (see Photo 12). Here's an explanation of each option:

1. **Scatter** – This option is similar to the less precise shots that a human might deliver. Without Scatter, the robot typically delivers shots within an area approximately 13 cm (5 in.) in diameter. But with Scatter, balls are delivered in an enlarged area of approximately 40 cm (16 in.).
2. **Place RND** – This option requires at least 2 Balls in an Exercise. It has no effect on 1-Ball Exercises. When selected, the robot randomly selects one of the Placements programmed for the Exercise and throws the ball there in an unpredictable order. Using Exercise 79 as an example, the normal order for ball throws would be left-right-left-right. With Place RND selected, placements are random, so something like right-right-left-right-left-left-left.
3. **Type RND** – This option randomizes Ball Type (see page 8). So if, for example, Ball 1 is medium speed light backspin and Ball 2 is fast heavy topspin, and Type RND is checked, the robot will throw balls such as medium speed light topspin, fast heavy backspin, or medium speed heavy topspin in addition to the Ball Types that are programmed (medium speed light backspin and fast heavy topspin). Use caution when using this option, as it is impossible to read the robot as you would a human. So if you end up just guessing at the type of ball being delivered, it is not advisable to continue using this option as it is only teaching you to guess what type of ball is coming at you, not something you want to do if you want to improve.



You may also select 2 or all 3 options. For instance, selecting both Scatter and Place RND will enlarge the landing spot and randomize the placement of each ball. Tap outside of the popup window to make the popup go away and the selected options will be shown on the Random Button (see Photo 13).

**Cycle** is a useful feature as it emulates interval training on your robot. Interval training is widely regarded as one of the best ways to maximize the effectiveness of your table tennis training. Interval training alternates intense, all-out periods of exercising (referred to as the Play period) with shorter periods of rest (referred to as the Pause period). This is the same type of rhythm that occurs naturally in a table tennis game—you serve, followed by several quick shots in the rally, and then the rally ends and you wait a few seconds until the next serve begins the cycle again.

To use the Cycle function, tap the Cycle Button. A popup window appears. At the top of this window are some quickset options—20, 40, 60, and 80. Touching one of these options will set the Play period at the number selected (in seconds) and the Pause period at one half that time. This will be reflected in the 2 sliders below (see Photo 14).

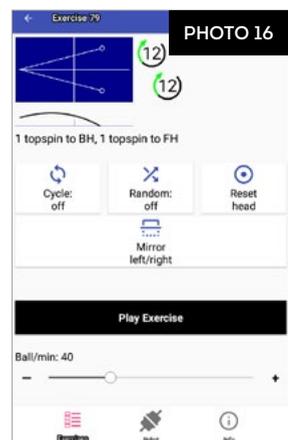
To set customized Play and/or Pause periods, move one or both slider handles until you see the desired number of seconds. The Play period ranges from 10 to 120 seconds, and the Pause period ranges from 5 to 60 seconds. And like the sliders in the Ball Screen, tapping the + or - symbols at the ends of the sliders will advance the setting by 1 unit.

Tapping outside the popup window will reveal that the length of the Play and Pause periods are shown on the Cycle Button. For example, if Play is set to 40 and Pause at 20, 40/20 is shown below Cycle (see Photo 15).

The **Mirror** Button is a handy feature. It is used to match the backhand (BH) and forehand (FH) sequence of shots in an Exercise with the playing hand of the user. To illustrate, Exercise 79 is programmed for a right-handed player so that Ball 1 is thrown to the left corner (a right-hander's BH) and Ball 2 to the right corner (a right-hander's FH). This is reflected in the top view diagram of that Exercise (Ball 1 goes to the BH and Ball 2 to the FH).

However, if you're left handed, the default order throws Ball 1 to your FH and Ball 2 to your BH. To correct the placement of shots, tap the Mirror Button and the placement of shots in the top view diagram will be flipped (see Photo 16), with Ball 1 directed to the right corner (a left-hander's BH) and Ball 2 to the left corner (a left-hander's FH).

An alternative use of this button is to create a new sequence of placements without having to create a new Exercise. So in the above example, if a right-handed player wanted to start Exercise 79



with a FH instead of a BH, tapping the Mirror button would be the quickest way to create an Exercise with the desired placements.

The **Reset Head Button** causes the Head to go through its orientation procedure. Use this as your first troubleshooting step if there is an irregularity in the way balls are thrown out. For instance, the Exercise top view diagram indicates a ball should be delivered to the right corner, but instead, it is delivered to the center, thrown into the table net, or popped up high.

Pressing the **Video Button** (see Photo 17) will show the Exercise being demonstrated by a live player so the user can see someone doing the drill properly to understand what strokes and footwork are to be used for each Ball in the Exercise. The Video Button will only show if a video demonstration is available for the selected exercise.

Pressing this button opens a full screen video of the Exercise in landscape orientation. The video begins playing automatically and loops over and over so you can study the demonstrator's movements and strokes. After watching the video, exit the video by touching the Return icon (⏪) at the bottom. This will return you back to the Play Exercise Screen.

The **Ball/min** slider is used to control the frequency, or rate, of delivery. Default is 40 Balls Per Minute (BPM), which is a good starting rate. This control ranges from 5 to 120 BPM. 60 is the average topspin counter rate. 30 - 45 is often used for beginner/novice training. Lower settings can be used for serve return, 3rd ball attack, & other specialized drills. This control can be changed either with ball delivery stopped or while balls are being thrown.

Touch the **Start Exercise Button** to begin playing the Exercise at the rate shown on the Ball/min slider. The app changes screens and a red Stop Exercise Button appears (see Photo 18). After a momentary delay, balls begin to be thrown in the order shown in the top view diagram (unless Place RND is turned on). When the last Ball of an Exercise is thrown, the Exercise repeats automatically. To stop ball delivery, touch the **Stop Exercise Button**. Once touched, the screen changes back and the black Start Exercise Button appears.



## CHANGING SETTINGS DURING PLAY

An advantage of the Amicus design is that it is possible to change some settings for all Balls in an Exercise at one time. To do so, the robot must be delivering balls and the red Stop Exercise Button must be visible (see Figure 18). Without stopping play, tap the + or - symbols to adjust the Trajectory or Speed for all balls in a drill.

To better understand this function, let's say that Ball 1 has a Trajectory of 10 and a Speed of 10 and Ball 2 has a Trajectory of -20 and a Speed of 20. If you tap the Trajectory + symbol twice, Ball 1's Trajectory will change to 12 and Ball 2's trajectory will change to -18. Tapping the Speed - symbol once results in

the Speed for Ball 1 changing to 9 and for Ball 2, to 19.

If all Balls in an Exercise are the same Spin, the Spins adjustment appears and allows you to step up or down the amount of Spin on all Balls. So if the Spin was set to 1 for Ball 1 and to 2 for Ball 2, tapping the Spins + symbol once would change the Spin for Ball 1 to 2 and for Ball 2 to 3.

In addition, you may freely change the Ball/min setting either by moving the slider handle or tapping the + or - symbols. Cycle, Random, and Mirror can all be turned on/off or adjusted during play also.

## CREATING A NEW EXERCISE & MODIFYING AN EXERCISE

Touch Exercises (☰) at the bottom of the screen to go to the Exercises List. Touch New at the top right. A new Play Exercise Screen appears with only Ball 1. Tap on the ball symbol and then change the parameters of Ball 1 according to the instructions in the Ball Screen section. Sample the Ball if you like.

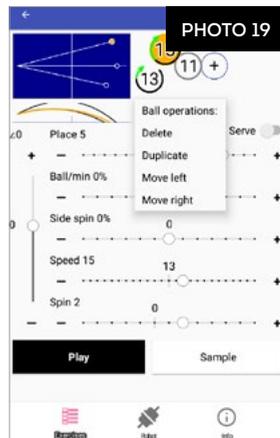
Then tap the + symbol to the right of Ball 1. This will create Ball 2. It will be a copy of Ball 1. Tap its symbol, change its parameters to your liking, and then sample it if desired. Repeat this process, adding as many balls as you wish. If you run out of room on the right side of the screen to show all Balls, simply touch the area to the right of the table diagram and slide your finger left to show more Balls.

When you're done adding all Balls, touch Play to test all Balls in the Exercise and see if it plays as expected. If not, tap each Ball that needs to be changed, change the parameters accordingly, and then Sample the Ball. After all Balls that need changing are changed, touch Play to play the entire Exercise. Repeat this process until the Exercise is as desired.

If, during this editing process, you need to either delete a Ball, or change the order of balls, touch and hold down on the symbol for the appropriate Ball. In a couple of seconds, the Ball Operations popup menu appears (see Photo 19). This menu will then allow you to Delete, Duplicate, Move Left, or Move Right the Current Ball.

**Delete** is self-explanatory. **Duplicate** copies all settings of the selected Ball and places it immediately after the selected Ball. If you want to copy a Ball and place it at the end (furthest to the right), select that ball and tap the + symbol after the last Ball.

**Move Left** and **Move Right** commands are used to change the order of balls. In the Photo 19 example, Ball 2 (🟡) is selected. If you choose Move Left, Ball 2 will become Ball 1, and Ball 1 becomes Ball 2, and the order of Balls becomes 🟡 - 🟢 - 🟠. If Move Right is chosen, then Ball 2 becomes Ball 3 and Ball 3 becomes Ball 2 and the order changes to 🟢 - 🟠 - 🟡.



## SAVING AND DELETING AN EXERCISE

After verifying that the Exercise runs the way you intend it to, please save that Exercise so it is stored in memory and added to the list of Exercises in the Exercise List (☰). From either the Ball Screen or the Play Exercise Screen, tap Save at the top right. A popup menu appears with 4 options: Save, Save As, Save To Sequence, and Revert Changes (see Photo 20).

If **Save** is chosen for a new Exercise, a dialog box appears and requests that you enter a name for the Exercise and also a Description. After you enter that information, tap Save at the bottom right of that dialog box. If Save is chosen for an Exercise that has previously been saved, then the older saved version is immediately overwritten with any changes you have made since the last time it was saved.

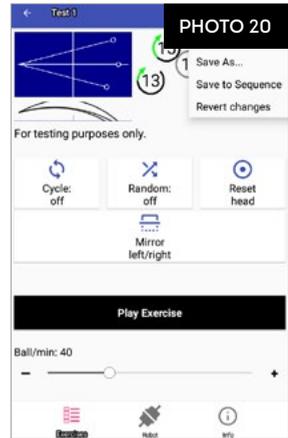
**Save As** is the safer method to save a file because it does not overwrite the existing Exercise (the original Exercise is kept unchanged, and a new Exercise is created with the new modifications). However, please be sure to provide a unique name for the modified Exercise so the name will not conflict with the name of another Exercise.

**Save To Sequence** saves an Exercise to either a new or existing Sequence. Sequences are described in the next section.

**Revert Changes** throws out any new modifications and keeps the Exercise as it was last saved.

If you do not use one of the above save options from the Save popup menu, and then you try to exit the Play Exercises Screen, or try going directly to the Exercises List from the Ball Screen, you will be presented with a Save Warning dialog box (see Photo 21). You can choose to either Save and Close (the same as Save, above) or Close Without Save (same as Revert Changes, above).

To **Delete** an Exercise, tap Exercises (☰) at bottom left to go to the Exercise List. Tap Edit at top right. Find the Exercise you want to delete by scrolling the list. Once located, touch the listing and slide your finger to the left. A red stripe will appear with a trash can icon and a Delete dialog box will appear (see Photo 22). Tap Delete at bottom right of that dialog box to permanently delete the Exercise. Or tap Cancel if you decide not to delete the Exercise.



## SEQUENCES

With Amicus Prime, you can string together 2 or more Exercises into a Sequence. Up to 10 Exercises can be saved in each Sequence. For each Sequence, one repetition for each included Exercise is played in a loop. For example, if Exercises 1, 2, and 3 are saved into a Sequence, when that Sequence is played, one repetition of Exercise 1 is played, followed by one repetition of Exercise 2, and followed by one repetition of Exercise 3. The Sequence then begins again, playing 1 repetition of Exercises 1, 2, & 3 in that order until play is stopped.

There will always be 10 mini table diagrams shown for each Sequence listed, even if a Sequence does not include 10 Exercises. Open spots for Exercises are colored in light blue while filled spots are dark blue. Figure 23 shows 3 Sequences, each one having 3 filled spots.



## PLAYING A SEQUENCE

To better understand Sequences, tap on the pre-programmed one in the Exercise List. This will open a Play Sequences Screen (see Figure 24), similar to a Play Exercises Screen. Study the table diagrams to understand what Exercises are included and their order. Once you have a mental image of the Exercises, touch the Play Sequence Button, leaving Ball/Min set to the default 40 setting. It takes approximately 10 seconds for the Sequence to load and begin playing.

Play Sequence plays a series of Exercises in a row instead of a series of Balls in a row like Play Exercise does. Play Sequence begins with one repetition of the 1st Exercise shown and continues with one repetition of every other Exercise shown in the order shown. When it reaches the last Exercise, it loops back to playing the 1st Exercise and continues this order until the Stop Sequence Button is touched to stop play.

In a similar fashion, you can use the Random Button to randomly play the Exercises out of their normal order. With Random on, as an example, let's say Exercises 1, 2, and 3 are saved into a Sequence. When played, the order could be something like 2-3-3-1-1-2-3; whereas, with Random off, the order would always be 1-2-3-1-2-3.



Cycle can also be used with Sequences in a fashion almost exactly the same as used in Play Exercise (see page 10). And the Reset Head Button functions the same (see page 13).

## CREATING AND SAVING SEQUENCES

There are 2 ways to create a Sequence:

1. From the Exercise List, select the first Exercise to be included in the Sequence and open its Play Exercise Screen. Tap Save at top right, then Save To Sequence. In the resulting dialog box, tap one of the already saved Sequences (if one is already saved) and the Exercise will be added at the end of the line to other Exercises already saved in that Sequence.
2. If you select New Sequence in the Save dialog box, it will be added as the first Exercise in the Sequence and you should name the Sequence.

Continue adding additional Exercises, in the order you want them to play, until you have no more Exercises to add. An additional method is to click on the next open spot in the Sequence diagram and then proceed to build a new Exercise from scratch, following directions in the Ball Screen section. Such Exercises will be saved directly into the Sequence by tapping Save at top right, then Save in the resulting popup window.

## EDITING AND DELETING SEQUENCES

Once a Sequence is created, you can edit it by changing the order of the Exercises, delete an Exercise, and even modify Balls within each Exercise. To change the order of Exercises, open the Play Sequence Screen. Then hold down on the Exercise you want to move. After a second or two, a popup menu will appear. Select Move Left or Move Right to change the order of Exercises. Continue this same process for each Exercise you want to move until all Exercises are in the order you wish.

If you want to delete a particular Exercise from a Sequence, follow the above procedure, but select Delete from the popup window. And if you want to copy an Exercise, so it appears more than once in the Sequence, select Duplicate, and a copy of that Exercise will be inserted immediately after the selected Exercise.

To change parameters for individual Balls within an Exercise, tap on an Exercise in the Play Sequence Screen and then proceed to make changes as described in the Ball Screen section (see page 8). After making any changes to a Sequence, be sure to save your changes by using the standard Save command at top right.

To delete an entire Sequence, go to the Exercise List, tap Edit at top right and locate the desired Sequence in the list. Then touch the Sequence and slide your finger to the left. A red stripe will appear and a delete dialog box will appear. Tap Delete to permanently remove the Sequence.

## EDITING AND SAVING EXERCISES WITHIN A SEQUENCE

If an Exercise appears within a Sequence, but is not saved as an individual Exercise, it is possible to do so with a few commands. Open the Play Sequence Screen. Tap on the Exercise you want to save. Then tap Save at top right. In the resulting popup window, select Save As. Give the Exercise a unique name in the dialog box and then tap Save. The Exercise will be saved as a stand alone Exercise and placed at the bottom of the Exercise List.

## MODIFYING THE EXERCISE LIST

There are several functions within the Exercise List that need to be pointed out. As pointed out many times previously, the quickest way to access the Exercise List is to tap on Exercises (☰) at the bottom right. All Exercises and Sequences are saved to and stored in this list (this list is essentially the robot's memory). Besides just storing these items for easy access, you can also perform several functions from this screen.

1. To create a new Exercise, tap New at top right and follow the instructions under Ball Screen (see page 8).
2. To change to order of the Exercises and Sequences, tap Edit at top right, then hold down on the item you want to move, then move it up or down in the list to the desired position, then let go. Tap Done at top right.
3. To rename an item, or edit the item's description, tap on the equal (=) symbol to the far right of the item. This opens a dialog box to enter or modify an item's name or change its description.
4. If you know the name of the Exercise you want to locate, tap the magnifying glass icon at top right, then type in a word or words in the item's name. A list of all items matching that word, or those words, will appear above the keyboard. When finished with your search, tap the X at top right to exit the search function.
5. Delete an items by dragging left on the item and in the resulting dialog box, tap Delete.
6. If you have set up an email, FaceBook, and/or other social media account on your tablet, share items by tapping Edit at top right. Then tap the checkbox at far right for each Exercise you want to share. Then tap Share at top right. A list of your email and social media programs will appear. Select the ones you want to share, then in the resulting windows, type in your message and attach the files.

## CONNECTION MANAGER

The Robot icon (👤 or 🤖) at bottom center reveals whether or not your tablet is connected to your robot. Many times, the tablet automatically establishes a Bluetooth connection with the robot when the Amicus app is first launched, when the power to the Base is cycled on/off, and at other times. When a connection is established, (👤) is shown, but when it is broken, (🤖) is shown.

When a broken connection is indicated, try these things:

1. Tap the Robot icon and in the resulting screen (the Connection Manager), touch Rescan at top right. If the tablet establishes a connection, it will show a list of all Amicus Prime robots within Bluetooth range. Select yours and tap the associated Connect button.
2. If no robots appear after rescanning, close the Amicus app on the tablet and then reopen it.
3. If restarting the app doesn't work, cycle power on/off to the robot by unplugging and then re-plugging into power.
4. If all the above fails, try restarting the tablet by holding down the power button until the screen goes blank, wait about 10 seconds, and then press the power button to turn the tablet back on.

If the Robot icon indicates a connection, there are several other functions that are available by clicking that icon. They are discussed in below.

## CALIBRATION

All robots differ to some degree as all motors can vary from the manufacturer, but even more so as they age. In addition, the wheels will wear differently depending upon use. Calibration harmonizes the mechanics (the Head and Base) with the electronics (the Control Tablet). This is especially important if the Control Tablet or Head are replaced.

To check Calibration, tap the Robot icon at bottom center. On the resulting screen, there will be a Calibrate Button (provided there is a connection with the robot—see above). Tap this button. And then follow the onscreen directions.

**IMPORTANT:** Be careful not to perform other operations with the tablet during calibration because it can cause the app to crash and the robot to shut down, for safety reasons!

## THE REMOTE SWITCH

The small wireless remote has a range of 4–5 m (13–16 feet) and has the following functions:

1. If Ball/Min on the Control Tablet is set to "0"; pushing START on the remote throws 1 ball of the Current Ball shown on the Control Tablet (similar to Sampling a ball). For multi-ball Exercises, this means that you can sample each Ball by repeatedly pressing the Start button to cycle through each Ball of an Exercise.
2. If Ball/Min on the Control Tablet is not set to "0", pushing START on the remote will cause the Exercise shown on the Control Tablet to start playing at whatever frequency the Ball/Min is set (same as pressing Start Exercise on the Control Tablet).
3. The 2 middle buttons increase (+) or decrease (–) Ball/Min by 1 increment for each press. Or hold one of these buttons down for rapid acceleration of Ball/Min.
4. Press the bottom red STOP button to stop ball delivery (same as Stop Exercise on the Control Tablet).



## LINKING THE REMOTE TO THE CONTROL TABLET

Each remote is linked to an individual Control Tablet. This linkage is done at the factory and each Control Tablet and Remote pair is kept together throughout the manufacturing process. In case you buy more Remotes or a new one, you need to link each Remote to your Control Tablet. To start the linking process, tap the Robot icon and in the resulting screen, touch the Learn Remote Button. The button will start counting down from 10 seconds. During this countdown, press any one of the 4 buttons on the remote. After the countdown has ended, the remote should be linked to the Control Tablet.

Up to 4 remotes can be linked to the same tablet. For every additional remote, a different button on the remote must be pressed during the Learn Remote countdown.

## CHANGING THE BATTERY IN YOUR REMOTE

The Remote is powered by two 3 V, CR2016 button cell batteries. After long use, the batteries will run down and will need to be replaced. After purchasing replacement batteries, open your remote by inserting a coin or flathead screwdriver in the slot located on the wide end of the Remote and twisting to pop it open.

Remove the circuit board containing the battery. With your thumbnail, pull the battery holder away from the circuit board. Pop the two depleted batteries out of the battery holder and replace with fresh batteries. When inserting into the battery holder, be sure the positive side (+) of both batteries face up. Re-insert the battery holder into the circuit board.

Reassemble the circuit board into the top housing (battery side up). Position the U-shaped metal piece around the outside of the top housing. Then place the bottom housing on top and press the top and bottom housings together, starting at the narrow end and working your way to the wide end until the housings snap in place.

## OTHER FUNCTIONS OF THE ROBOT SCREEN

There are 3 other functions of the Robot Screen that we have not covered yet:

1. The **Disconnect Button** can be used whenever you desire to break the Bluetooth connection between Control Panel and Robot. Disconnection can also be accomplished by quitting the Amicus App, powering down the control Tablet, or powering down the robot.
2. At the top left of this screen is reported some important information about the Bluetooth signal strength (handy for troubleshooting connection problems), Hardware and firmware versions (helpful to know if you have the latest hardware), the Serial Number of your device, and finally, the Bootloader version (a critical piece of software that loads the operating system).
3. The **Firmware Update Button**. When your firmware is current, this button shows, You have the latest firmware! If you don't see that message, tap this button, and provided you have an internet connection, the tablet will retrieve the latest firmware and install it automatically. The update process can take 8-10 minutes, and it is very important that you never power off the tablet during that process (please have the tablet plugged into power or plenty of battery life before starting). It is also recommended to not use the tablet for anything else during updating and let the update process end completely before doing anything else with the tablet.

## FUNCTIONS OF THE INFORMATION SCREEN

Access the Information Screen by tapping on the Info icon (ⓘ) at bottom right. This will open the Information Screen. All functions on this page require an internet connection. This screen has the following functions:

1. The **Support Website Button**, when touched, will take the user to the Butterfly Amicus webpage where the latest news on this line of robots is posted. You can also obtain additional exercises by visiting this webpage.
2. If you have an email account setup, you can use the **Report An Issue Button** to send an email mes-

sage directly to the Amicus Support. Also can be used for downloading and sending Exercises and Sequences.

3. The **Check For Update Button** is used to check for and install the latest Amicus app. Takes only about 1 minute on most networks. This is different than the firmware update available on the Robot Screen.

## 4. TAKE DOWN, STORAGE, & TRANSPORT

Upon finishing your training session, power off your robot by unplugging from power; or alternatively, plug your robot into a power strip and use the switch on the strip to turn power off.

*If you're ready to remove your robot from the table temporarily, please follow these steps:*

1. Unplug the Power Supply from the outlet and the base. Roll this cable up and place it temporarily on your table.
2. Disconnect the rubber bands that connect your Side Nets to your table. Place the Side Nets in the Ball Collection Tray.
3. Fold up the Net until the first stop of the folding mechanism. Unhook your robot from your table and set it on your table with the open side facing you.
4. Place your rolled-up cable, Control Tablet, and Control Tablet Bracket in the center area of the net on top of the balls (you do not need to remove the balls).
5. Stand your robot upright on the floor off to the side of your table or in a nearby closet. When you're ready to train again, it's a quick, easy matter to set your robot back up on your table.

*If you're removing the robot for transport or long-term storage, we recommend placing your robot into the included Carrying Case with these additional steps:*

6. Remove the cable, tablet, bracket, and balls from the center area and place those items in the storage pockets of the Carrying Case. The Carrying Case is also a handy place to store this manual, spare parts, tools, and other items that came with your robot.
7. Loosen the Black Knob on the rear of the Ball Tube, turn the head around 180° so it faces into the net, and lower the head to 1 ring. Then retighten the knob. Also rotate the 2 curved tubular Support Legs backward so they point back into the net.
8. Finish folding up the net until the two Net Corner Brackets touch and their mating Velcro pieces adhere to one another. You may need to help the Net Uprights fold down. You can also stuff parts of the net that are sticking out into the central part of the net.
9. Lay the robot, net side down, into the Carrying Case and secure in place with its 2 straps.



# 5. MAINTENANCE & REPAIR

## CAUTIONS

1. Before performing any maintenance or repairs, unplug your robot from power.
2. Be sure no objects like dented balls, hair, string, etc. fall into the net and then work their way into the machine where they can cause ball jams or interfere with correct operation.
3. Table tennis robots work best with clean, worn balls. When adding new balls, please wash the gritty manufacturing powder off them first with warm, soapy water, then rinse and dry before using. (Butterfly brand balls are pre-washed at the factory so this step is unnecessary with new Butterfly balls.) Keep your playing area clean to prevent balls that have rolled on the floor from picking up dirt and introducing that dirt into the machine.
4. The wheels have a special coating that prolongs their lifetime. Do not attempt to clean the wheels with any chemical, as the chemical can be detrimental to the coating.
5. Amicus robots are designed for use in clean, dry, indoor rooms. Do not use outdoors or in any wet or damp environment. Avoid leaving your robot in a hot car or trunk.
6. Use only 40 or 40+ balls in your robot. The better ball you use (ITTF-approved 3-star are best), the more consistent your robot can throw that ball.

## CHECKING & ADJUSTING WHEEL CLEARANCE

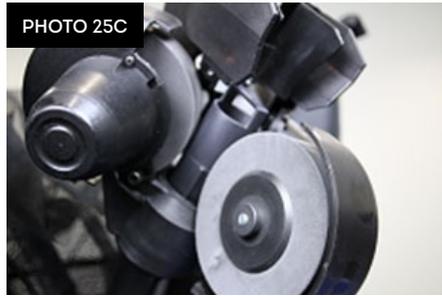
AMICUS wheels are very durable (at least 1000 hours). But eventually, these wheels will wear down after long or intense use. As the wheels wear down, the space among the 3 wheels enlarges, causing the wheels to lose their grip on the ball. Dropping the robot or other similar trauma during transport or use can also cause this. One sign that the space among the wheels needs to be adjusted is that the machine releases the balls at irregular lengths at high speed. When the length of the ball throws becomes irregular, the space among the 3 wheels needs to be adjusted.

To check the space among the wheels, place the Wheel Adjustment Gauge (black tube with 3 fins) in the space among the 3 wheels, fins end first, and so the fins do not touch any wheel (see Photo 25A). Now move it in and out. If the distance is correct, the gauge can be moved in and out easily and with the wheels just barely touching the outer surface of the gauge (wheels may turn slightly as the gauge is moved). If the wheels do not grip the gauge at all, or conversely, they tightly grip



the gauge, then wheel adjustment is called for.

To adjust the wheels, push the gauge into the end of the Ball Tube where the ball comes out so it is held rigidly in place. Then use the 4mm hex wrench found in the accessories to loosen the hex screw near the cover of the motor (see Photo 25B). Now move the motor (gripping its cover) either towards or away from the gauge until the wheel barely touches it (see Photo 25C). Lastly, tighten the 4mm hex screw to hold the wheel in place. Do this with all 3 motors.



**Please note:** The diameter of the adjusting tube is 35mm, which is the ideal amount of space among the 3 wheels. The robot functions correctly up to a diameter of 37 – 38mm.

## REPLACING THE WHEELS

When the wheels can't be adjusted anymore, or the special coating on the wheels has worn off, the wheels should be replaced. To do so, start with the lower wheel. Using the smaller 2mm hex wrench, loosen the small setscrew that holds the wheel onto the shaft of the motor (see Photo 26A) Before taking it off, check and memorize the exact position of the wheel on the shaft of the motor. Pull the wheel off the motor shaft and remove the three #1 Phillips screws that hold the foam wheel onto the hard plastic hub. Remove the wheel from the hub and replace with a new wheel. Then refasten the hub to the wheel. Slip the wheel assembly onto the motor shaft until the position of the original wheel is reached.. Tighten the setscrew.

Now manually spin the wheel to be sure it is not rubbing on any surface. If so, loosen the setscrew and slightly move the wheel's position on the shaft and try again until the wheel no longer rubs on any surface. Lastly, tighten the setscrew securely.

For the upper motors, the procedure is a little bit different. Begin by removing the 4mm hex adjustment screw (see Photo 26B). Grab a hold of the motor cover, and pivot the entire motor mechanism away from the Ball Tube (see Photos 26C & 26D). Now you can remove the old wheel and push the new wheel on the motor shaft, and then refasten the wheel onto the motor shaft using the same procedures as described above for the lower wheel, then replace and tighten the 4mm hex screw.

These upper wheels may not be as easy to remove from the shaft, or put back on the shaft, due to the close proximity of the Head Panel and the Oscillation & Trajectory Motor Cover. But because the wheels are foam, the wheel can be removed and replaced with a little force to bend the foam out of place. If removing the wheel is too difficult, you can remove the Oscillation & Trajectory Motor Cover to provide more room for wheel removal and replacement.

Even if only one of the upper wheels has been damaged, we recommend replacing all upper wheels at once, to ensure the robot does not become inaccurate After replacing wheels, adjust the wheel spacing as described in the previous section, Checking and Adjusting Wheel Clearance.

PHOTO 26A



PHOTO 26B

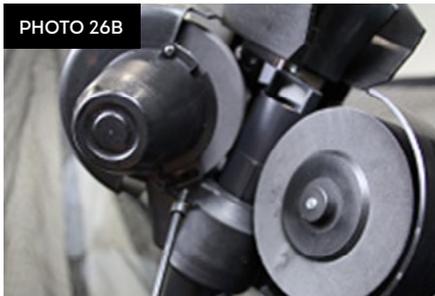


PHOTO 26C



PHOTO 26D



## BALL JAMS

Your robot is equipped with a special system to detect and react to problems in the ball channel. When the system detects a problem, it will attempt to automatically clear the ball jam by turning the Ball Feed Motor and the wheels forward and backward 7 - 8 times.

If the error can't be resolved so, all motors stop and the system shows an error code on the display (Er1 or Er2). Er1 indicates a problem in the base of the robot, and Er2 indicates a problem in the head of the robot (see Troubleshooting, p. 25).

To begin troubleshooting, first disconnect power. For an Er2 code, check that a ball is not stuck among the 3 wheels (commonly occurs after moving the head height down). If so, simply remove those balls by hand and resume normal operations.

For an Er1 code, remove the head by disconnecting the Head Cable, loosening the large Black Knob on the rear of the Ball Tube, and pulling up on the head. Then tilt the entire net system forward to expose the access slot on the Base Bottom, (see Photo 27). Take a long rod-like tool (screwdriver, dowel, etc.) that is about 30 cm (12 inches) long, insert it into the access slot, and push balls out the top of the lower Ball Tube.

PHOTO 27



Once clear of balls, with the help of a flashlight, inspect inside the ball channel and clear out any foreign objects or dirt. With the ball channel empty, test ball feed to see if the ball stirring mechanism rotates when Ball/Min is turned up. Without any balls in the machine, the ball stirring mechanism should rotate approximately 11 – 12 times before it stops automatically. If so, place balls back in machine and resume normal operations. If not, it is indicative of problems with the Ball Feed Motor and/or the Ball Feed Mechanism and you should contact your an AMICUS Service Center for further assistance.

## OTHER MAINTENANCE

After a lot of use, the White Strip found on the inside upper surface of the Deflector Plate can wear out and the machine becomes inaccurate. In such a case, without removing the Deflector plate, clean the White Strip with isopropyl alcohol to remove all dirt. After long use, the White Strip can develop an indentation where the balls repeatedly strike it. Once this indentation appears, it is time to replace the White Strip (ball trajectory will become less consistent). Contact your AMICUS Service Center for a replacement White Strip and replacement instructions.

The rest of the machine needs no maintenance. However, you can remove dirt and dust from the surface of the robot with a moist cloth and a mild, water-based cleaner as necessary.

## 6. TROUBLESHOOTING

PROBLEMS	SOLUTIONS
1. Head or Support Legs point towards net.	<b>A.</b> Loosen the large Black Knob on the rear of the Ball Tube, then rotate head 180° so head points away from net. Grasp Support Legs and rotate them away from net.
2. The robot does not function. No lights, no sound, no movement.	<b>A.</b> Check that tablet is connected to robot. <b>B.</b> Plug Power Supply into power outlet and connect other end to power jack on the Base (see Photo 6A). <b>C.</b> Is green LED on Power Supply lit? If not, check outlet for power. If power is present, replace Power Supply.
3. Control Tablet powers up, but no balls are thrown.	<b>A.</b> Set Ball/Min higher than zero. <b>B.</b> Tap Start Exercise or Start Sequence to start ball delivery.
4. Balls thrown to wrong places.	<b>A.</b> Are there rubber bands around the Deflector Plate and/or is there a blue foam pad above it? If yes, remove those parts so Deflector Plate can move freely. Those parts are used only during transport. <b>B.</b> Is Random on? If so, turn off. <b>C.</b> Unplug Head Cable and then re-plug. <b>D.</b> Check pins of Head Cable for any that are bent or missing. There should be 15 pins. <b>E.</b> If robot throws balls further to one side than the other, Deflector Plate may need to be adjusted or replaced. Call your Amicus Service Center.

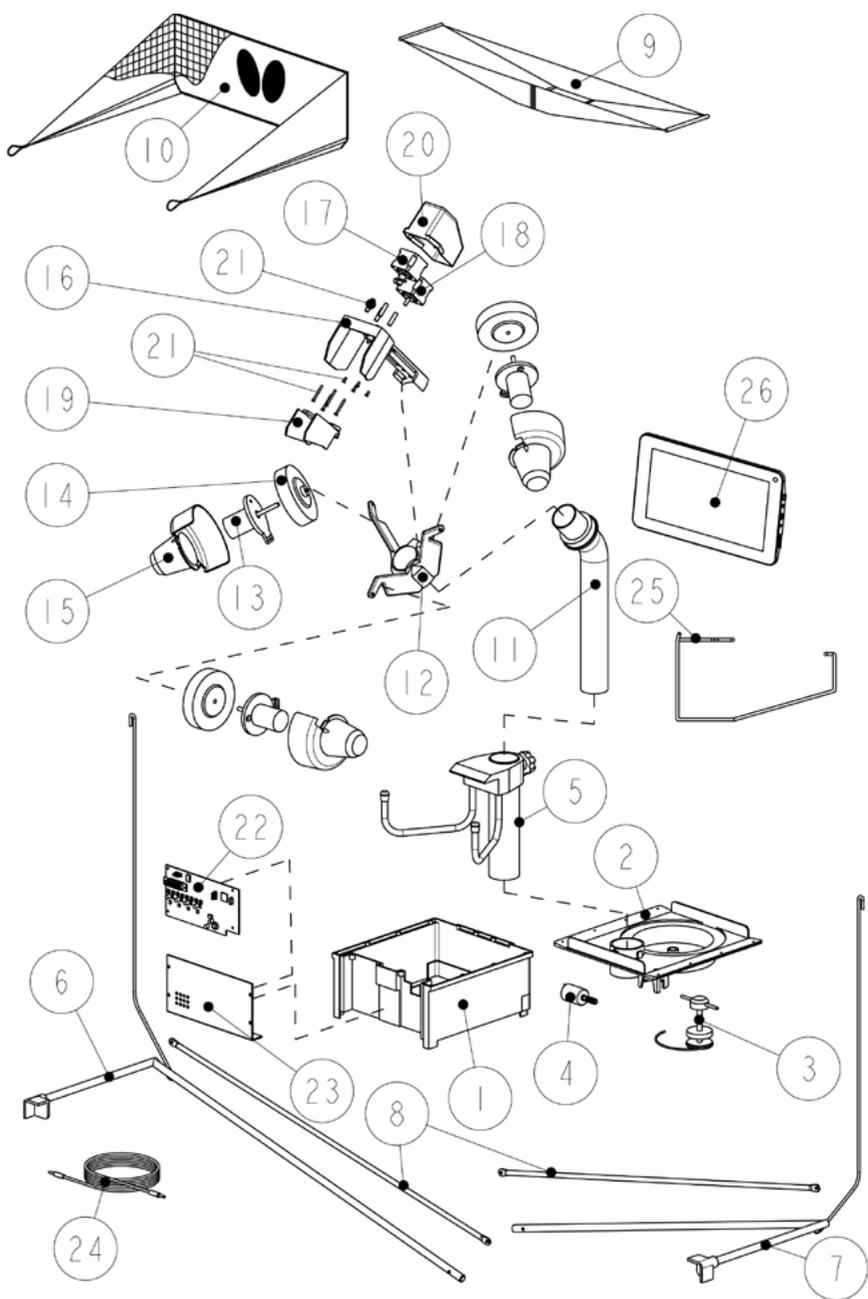
<p><b>5.</b> Balls thrown at irregular depths.</p>	<p><b>A.</b> Check wheel clearance.  <b>B.</b> Wheels worn. Replace all 3 wheels.  <b>C.</b> Clean White Strip on Deflector Plate with isopropyl alcohol. Replace if worn.</p>
<p><b>6.</b> Double throws or missed throws.</p>	<p><b>A.</b> Head height improperly adjusted.</p>
<p><b>7.</b> Random Place won't turn on.</p>	<p><b>A.</b> Exercise needs at least 2 Balls. If only 1 Ball LED is lit, add a second Ball.</p>
<p><b>8.</b> Er1 shown on display.</p>	<p><b>A.</b> Defective or oversized ball or foreign object jamming the lower ball channel. Clear channel and test ball feed.  <b>B.</b> Dirty or unwashed new balls are being used. Clear ball channel of balls, then wash the balls to remove grit, rinse, and dry before placing back into robot.  <b>C.</b> Is a foreign object or ball preventing the Ball Stirring Springs from moving? If so, remove that foreign object or ball.  <b>D.</b> Was Black Knob tightened too much, denting the upper Ball Tube? Disconnect the head, and roll a ball up and down the Ball Tube to check if it is obstructed. If so, call your Amicus Service Center.  <b>E.</b> Bad Ball Feed Motor, broken gears or motor support. Call your Amicus Service Center.</p>
<p><b>9.</b> Er2 shown on display.</p>	<p><b>A.</b> Is ball stuck among the 3 wheels? If so, turn off power, and then remove that ball.  <b>B.</b> Bad Ball Throw Motor. Replace.</p>
<p><b>10.</b> Er3 shown on the display.</p>	<p><b>A.</b> Overheated electronics. Switch off power and wait several minutes. If Er3 disappears, resume operations. If Er3 remains, call your Amicus Service Center.</p>

**Attention:** If you are not able to solve the problems with the help of this Troubleshooting chart, please consult your Amicus Service Center. If you see any exposed wires on the Power Supply, disconnect from power immediately and replace the Power Supply. Failure to do so could result in serious harm.

# 7. LIST OF REPLACEMENT PARTS

ID #	Part #	Part Name
1-10	mobil-100	Net & Base Assembly
1		Base Bottom
2		Base Top
3		Ball Feed Gear Assembly
4	mobil-107	Ball Feed Motor
5		Front Support Assembly
6		Left Net Frame
7		Right Net Frame
8		Tensioning Arm
9		Ball Collection Tray
10		Ball Catching Net
11 - 21	mobil-101	Robot Head Assembly
11		Ball Tube
12		Robot Head Central Support
13	mobil-106	Ball Throw Motor
14	mobil-110	Ball Throw Wheel
15	mobil-113	Ball Throw Motor Cover
16		Directional Mounting Plate
17	mobil-108	Placement Motor
18	mobil-109	Trajectory Motor
19	mobil-112	Deflector Plate
20		Directional Motors Cover
21		Trajectory Motor Bushing
		Trajectory Motor Screw

ID #	Part #	Part Name
22		Power Circuit Board
23		Power Circuit Board Cover
24	mobil-105	Control Panel Cable
25		Control Panel Bracket
26	start-102	Start Control Panel
27	expert-102	Expert Control Panel
28	prime-102	Prime Control Tablet
39	mobil-104	Power Supply (24 V, 3 A)
30		Power Supply AC Cord, Euro
30		Power Supply AC Cord, UK
30		Power Supply AC Cord, US
31		Tablet Charger Cable, Euro
31		Tablet Charger Cable, UK
31		Tablet Charger Cable, US
		Net Corner Brackets
		Black Knob
		Side Net Rubber Band
		Trajectory Worm Gear
	mobil-111	Throw Wheel Hub
		Deflector Plate White Strip
Additional replacement parts on demand!		



## 8. TECHNICAL DATA

Electrical Specifications: 100 – 230 V, 50 – 60 Hz AC, approximately 60 W

Can be operated in a temperature range of 0–40°C (32–104°F).

Weight: 6 kg with net (13.2 lbs.). Overall dimensions (folded, with net): Height 0.75 m, Width 0.28 m, Depth 0.25 m (2.5 x 0.9 x 0.8 feet).

An examination was done for the Power Supply:

Conformity with Low Voltage Directive 73/23/EEC, as last amended by EEC Directive 93/68/EEC—Registration #: AN 50091861 0001, Report #: 17004848 001.

Also Test Reports # NTEK-2010NT1115351E and NTEK-2010NT1115353SS.

The AMICUS PRIME table tennis robot is permitted to bear the CE trademark.

Manufacturer: Tamasu Butterfly GmbH, Kommunikationsstr. 8, 47807 Krefeld, Germany

## 9. WARRANTY INFORMATION

### FULL 2-YEAR MANUFACTURER'S WARRANTY

Manufacturer warrants to the original retail purchaser this product to be free from defects in material and workmanship for a period of 2 years from date of purchase.

Should this product become defective due to material or workmanship during the warranty period, contact an Amicus Service Center describing the problem. Always provide your serial number. We will provide you with return authorization and shipping instructions, or provide a replacement part and instructions for replacement. If you are asked to return the product, pack it securely.

If defective as provided by the terms of this warranty, we will, at our option, repair or replace the product and return it prepaid (areas outside a service center's assigned territory will carry a shipping charge).

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 that may vary from state to state, or country to country.



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