

Table Tennis Robot **AMICUS ADVANCE**



Important: Please read instructions carefully before using the equipment.

The chapter Control Panel (Quick Reference Guide) outlines the basic functions for operating the Table Tennis Robot AMICUS ADVANCE.

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From novice to professional, from defender to attacker, ... ideal for every type of player and every level of play

Congratulations, you are now the owner of a Butterfly table tennis robot! The manufacturer offers a full 2 year guarantee as well as a 5 year service plan covering repairs and replacement parts, effective from the date of purchase. Please ensure you keep your receipt!

Special features:

1. Unique worldwide innovation: Ball delivery with state of the art three-wheel technology
2. The wheels are manufactured using rigid sponge with a special coating

3. Compact, solid, functional construction (6kg)
4. A large all-round collection net
5. Well designed and user-friendly control panel
6. Variable ball placement, adjustable to desired spin, speed and trajectory
7. Automatic correction of length of ball delivery
8. Memory and AFC (Automatic Frequency Control) functions
9. Remote control
10. All functions adjustable from the

11. Adjustable height of ball delivery

Please note:

12. Please read this instruction manual carefully before using the machine!
13. The Table Tennis Robot may only be connected to a 100-230V power supply
14. The projection wheels rotate at high speed therefore avoid touching the wheels while the machine is running as this can cause injury!
15. The Table Tennis Robot, AMICUS ADVANCE, should only be used in closed and dry rooms!

Instruction manual

1. Assembly

The following components are included with the robot and must either be assembled or connected to the machine prior to its use.

- a) Base unit with collection net
- b) 24V DC power adapter
- c) Control unit
- d) Extension cable
- e) Control unit holder

Other components: Allen keys, projection wheels, tube for wheel adjustment, spare rubber for the collection net, Velcro strips for securing the collection net.

1. Place the base unit on the table in an upright position (connections facing you). (Fig. 1). Open out the net supporting frame into Position 1. (Fig. 2); the metal poles facing you are for securing the base unit to the table as seen in the photograph.

2. Attach the base unit to the table with the aid of the preassembled holder (see photograph) and rotate the head by loosening

the large screw on the base unit, turning it in the opposite direction (180 degrees).

3. Standing behind the machine, fold down the net supporting frame completely by gripping the top part of the frame on each side and pulling the sides apart until fully extended (Fig. 3) Attach the plastic corner

pieces to the corners of the table (Fig. 4)

4. Then pull the ends of the ball collection net between the table tennis net posts and its supports, and secure the rubber bands to the clamp screws. Secure the velcro strips, which are attached to the side of the ball collection net, to their counterparts fixed to the plastic corner pieces.

5. Connect the extension cable and the adapter to the appropriate connections found on the side of the base unit (Fig. 7). The cable on the opposite side of the table is then connected to the control unit which you should then mount onto the players-side of the table. (Fig. 8.)



2. Control Panel (Quick Reference Guide)

With the help of rotary switches 1-6 above and the buttons, it is possible to program six different landing spots, for example Ball 1 P middle, Ball 2 P left, Ball 3 P right, Ball 4 P right.

Trajectory: Trajectory regulation

Button A: Setting balls 6-1

Button B: Setting balls 1-6

Memory: Saving rallies and exercises

Side-Spin: Sidespin regulation (left → Side-spin left; 0 → no Sidespin; right → Side-spin right)

Speed: Speed regulation (1 → slow; 19 → fast)

Spin: Spin regulation (-4 → extreme backspin; 0 → no spin; 5 → extreme topspin)

Memory Place: Choice of up to 10 previously saved exercises

Ball/min: Regulation of the ball frequency

RND: Choice of 3 random functions

AFC: Automatic frequency regulation when playing with varied spin

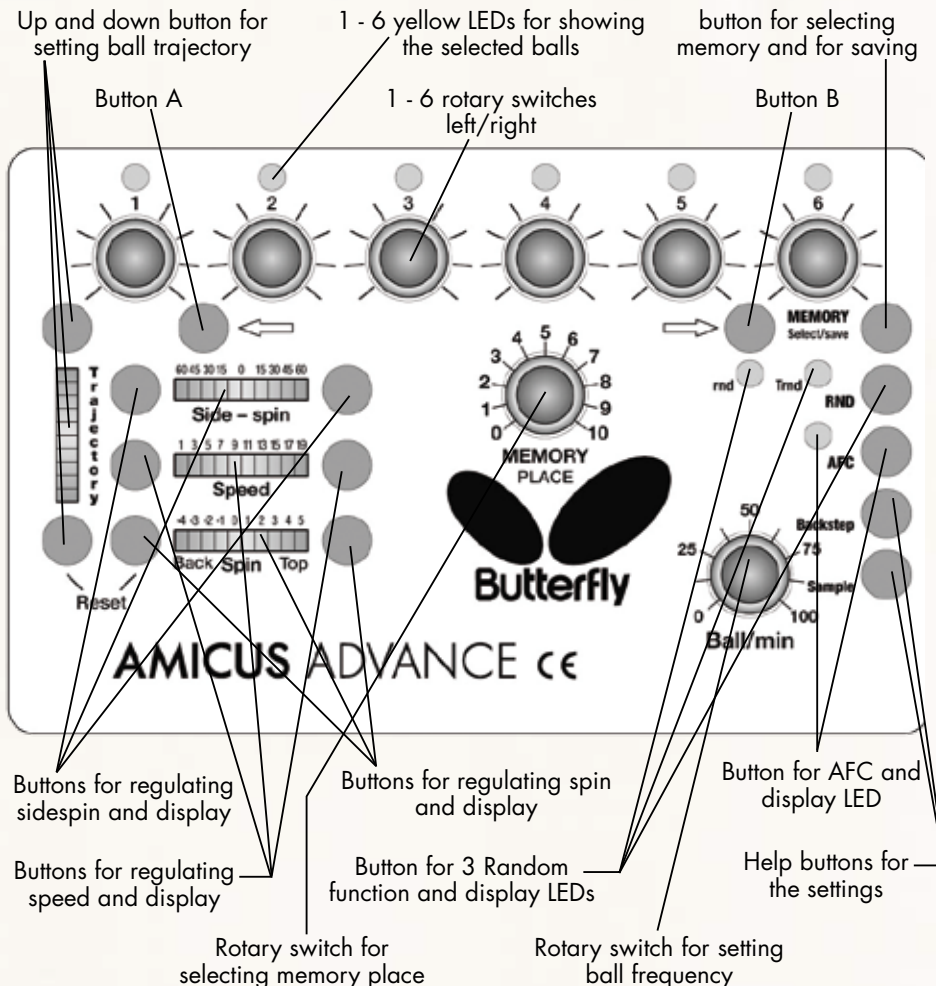
Backstep: Automatically uses the setting for the previous ball for the next ball to be set

Sample: 1. Simulated with longer push a ball throw with the currently set.

2. During an exercise, the Button is used by pressing briefly as a Start/Stop function.

Advice:

When executing an exercise starting with service, both the trajectory and speed of the ball are to be adjusted in low position, whereas the height of the head in rather high position.



3. Operation

Switching on the Machine

Fill the "ball container" with a sufficient quantity of balls (50-60 balls) and then turn the Ball/min rotary switch to the "0" position before turning on the power. After turning on the power, the robot will carry out a brief self test (approximately 10 seconds) and the control unit will then automatically switch to the basic setting. By turning the "Ball/min" rotary switch to a higher position the projection motors will start to work and the robot will start releasing balls.

The height of the projection head

As with all the Amicus robots, the height of the robot head can be adjusted as follows: Loosen the hand screw on the back of the tube which holds the projection head. The tube can be moved up and down as required. (Fig. 8) Finally adjust to the desired height ensuring that the top of the outer tube lines up with one of the markings on the inner tube then tighten the hand screw (Fig. 9)

Ball Placement

1. Ball delivery to a specific point on the table

After turning on of the robot, the first yellow light is flashing and the control unit will automatically switch to the basic setting. The parameters of this ball (Trajectory, Sidespin, Speed and Spin) can be changed with the help of the buttons for setting the trajectory, sidespin, speed and spin. The landing spot can be continuously set using the rotary switch for left/right placement. Pushing the "Sample" button the machine

gives an actual ball (one that is set momentarily) during the setting procedure.

2. Programmed ball delivery to various points on the table

With Button B "→", at least two balls (max. 6) must be selected. Then various targets can be chosen by means of the corresponding left/right switches. The flashing LEDs indicate which ball will be delivered next. By pressing Button A "←" the number of balls can be reduced. After the end of each "round" the ball delivery will commence again from the beginning.

3. "rnd" Random ball delivery to various points around a specific point

In case the rnd is switched on with the Button for random function (RND) then the ro-



bot plays the set rally (described above) but not exactly to the set places, but to 20 cm big surrounding of those, which is closer to the real game. Do not set the ball placing to the edge of the table when using the "rnd", because the machine can throw the balls near the table by reason of the ball spread! (It is enough the assigned one ball to this function.)

4. "RND" Random ball delivery to various points on the table

In case switching on the Rnd (pushing once more the RND button) the machine doesn't throw anymore the set balls in their set order, but in random way, jumping here and there among the designated balls. Therefore it can not be foreseen where the robot throws the next ball. It is sure only the fact that the balls are thrown to one of the set places. (It needs at least 2 assigned balls to use this function.)

5. Combining "Trnd" and "rnd"

The "Trnd" and "rnd" functions can be combined by pressing Button RND for a third time. In this case the set points are chosen at random (RND) and the balls will be delivered randomly within a 20cm diameter circle of the set points, simulating a real match situation.

AFC function

The new "AFC" (Automatic Frequency Control) function can be selected if there are different types of balls selected within an exercise. When the AFC function has been

selected the ADVANCE automatically adjusts the time intervals between individual balls with varied spin. This function takes into consideration whether the previous ball was delivered fast or slow and with back-spin or topspin. It can therefore simulate a real match situation by delivering the next ball earlier or later accordingly.

Note: This function was developed based on the fact that fast balls are generally returned quickly whilst returns of slow and shorter balls require more time.

Memory

The settings described in the Control Panel Quick Reference Guide enable a ball sequence or rather exercise to be programmed. All exercises will, however, be lost once the machine is switched off. As the programming of exercises can be quite time-consuming, the AMICUS ADVANCE offers the option of saving them, enabling them to be called upon at any time.

Saving exercises in the memory

Turn the "MEMORY place" rotary switch

to the position where you want to save the exercise on the control unit (places 0-10). Hold down the "MEMORY Select/save" button (approx. 2 secs) until the light starts to flash. The flashing LED means that the exercise has been saved in the memory.

Retrieving the saved exercise from the memory

First select the program you require by turning the "MEMORY place" button accordingly. By quickly pressing the "MEMORY Select/save" button, the program number will now appear on the control unit to which the switch is currently pointing.

All the lights will now start flashing, indicating that the robot is operating in memory mode and is now ready to play the exercise from the memory. Turn the „Ball/min" rotary switch to start the exercise. The only settings which can now be adjusted are: "Ball placement", „Ball/min", „AFC" and „RND". It is not possible to change the parameters of the other ball settings.

Changing programs in the Memory

It is possible to change the ball sequences

in the programs which have previously been saved by using the „Backstep" button. This should be activated for the specific ball which you would like to adjust within the program which has just been retrieved from the memory. After changing a ball's settings, the program can now be saved again in the memory by pressing the „MEMORY select/save" button.

Ball characteristics

The set Spin, Speed, Side-Spin and trajectory apply for each programmed ball in the same way.

Ball-frequency

By turning the „rotary switch for ball-frequency" you can adjust the quantity of ejected balls per minute. The AMICUS throws more balls out if the frequency is set higher.

Switch off

Disconnect the power supply when the robot is not used for a longer period of time; the AMICUS should never be left alone switched on.

4. Maintenance and Repair

Important:

Always unplug from the mains before carrying out any maintenance or repairs.

Ensure that whilst operating the robot small objects such as hair and broken balls etc do not find their way into the collection net and subsequently into the machine, because this can lead to ball jams.

The ball projection wheels are very durable and will last for at least 500 hours. Nevertheless, these wheels will finally wear off after intense use. One sign for a worn wheel is that the machine releases the balls at irregular lengths at high speed. This means that the surface of the wheels does not have enough grip on the balls. For that reason, the distance of the wheels has to be adjusted. To do this first remove the adjustable plastic tube from its holder which can be found between the projection wheels (Fig.



10). First loosen the black adjusting screw next to the protective cover of the lower motor (Fig. 11) with the bigger allen key provided with the accessories. Push the motor up towards the adjustable tube, gripping its cover, until the wheels touch the tube. (Fig. 12) Repeat this for the two upper motors.

1. If the distance can no longer be adjusted, the ball projection wheels have to be replaced. You should therefore loosen the screws (Fig. 13) located in the wheel mounts using the smaller allen key provided with the accessories; this applies to all three wheels. Now remove the "adjusting screws" on the two upper motors (it is not sufficient just to loosen them) (Fig. 14) Then rotate the two upper motors away from the projection hole. Grip the outer casing to enable the removal of the projection wheels from the axis of the motor. (Fig. 15) The plastic disc can now be removed from the motor shaft. (Fig. 16.a, b.) Remove the plastic disc from the projection wheel (which is held together

by three screws) and replace it with a new one. Slide the new wheel onto the end of the axis (Fig. 16), and tighten the screw. Then adjust the correct distance between the wheels with the help of the adjustable tube as described above.

2. If a ball jam should occur, the machine will try to remove the jam automatically by turning the motor and the projection wheels backwards and forwards (7 - 8 times). Should for any reason the feeding motor and both projection motors jam at the same time, the machine will stop to prevent any damage to the motors. In this case, all six yellow lights will start to flash on the control unit. You will have no alternative but to remove the head from the machine together with any damaged balls located in the bottom section of the robot with the aid of a pencil or screwdriver, etc. (Fig. 17)



5. Error Management

Problem	Solution
The robot does not function once assembled	a) No power supply? b) Blown fuse → replace the fuse in the control unit c) Check whether the cable plugs on the bottom of the control unit have been plugged in correctly.
	When the small green control light found on the adapter is not lit, despite being connected to the mains, this means that the adapter is damaged and has to be replaced.
	Is Rotary Switch V for ball frequency set to „0“? → Turn it up.
Length of ball delivery is irregular	a) Check distance between the projection wheels, are the wheels worn? b) Incorrect assembly: Are the tubes and the robot head securely in place? c) The pin for regulating the length "is stuck" → lubricate it with some silicone.
The balls are suddenly being delivered irregularly and with varying length	a) Restart b) A damaged ball or other foreign body is obstructing the transport of balls to the projection wheels → remove. <i>The silver sign found on the tube of the robot head was not put exactly to the top margin of the body tube. Put of the signs exactly to the top margin of the tube!</i>
Ball jam; the yellow light is flashing on the control unit	A damaged ball or foreign body is obstructing the transport of balls to the projection wheels → remove.
Random function (RND) on the control unit cannot be activated; green indicator light does not light up	At least two balls must be activated and at least two yellow indicator lights must be on.
Balls are stuck between the ball projection wheels, the control unit switches itself off.	Pull out the adapter from the mains, remove all balls from between the projection wheels, set the Ball/min button to the "0" position, then resume play.

Attention:

If you are not able to resolve the problems with the help of this checklist, a specialist must be consulted! Please contact your specialist supplier or the Butterfly service centre (address is located on the side). Always contact a competent specialist

if the power cable is defective or if the fuse blows again immediately after being replaced. Failure to do so will invalidate your claim for a refund during the two year guarantee period.



6. List of Replacement Parts

List of Replacement Parts

mobil-100 Base unit with collection net
mobil-101 Robot head
ADVANCE 102 Control unit
mobil-103 Holder for control unit
mobil-104 DC adapter (24V, 2.5A)

mobil-105 Extension cable
mobil-106 Projection motor
mobil-107 Feeding motor
mobil-108 Oscillating head motor
mobil-109 Motor for height adjustment
mobil-110 Projection wheel

mobil-111 Axis for projection wheel
mobil-112 Ball placement mechanism
mobil-113 Motor casing (3 part)

Further replacement parts upon request!

7. Technical Data

Mains Power Supply: 100-230V, 50-60 Hz transformer, approximately 40 W

The robot should only be operated indoors within a temperature range of 0-40°C.

Weight: 6 kg (with net)

Overall dimensions (with net): Height 0.75m; Width 0.28 m; Depth 0.25 m

The electrical adapter device was subject to a test for the approval of electrical

appliances and was found to conform to the standard outlined below:

Conformity with the Low Voltage directive 73/23/EEC

As last amended by EEC Directive 93/68/EEC

Registration No.: AN 50091861 0001

Report No.: 17004848 001

As is evident from Test Report Nos. NTEK-2010NT1115351E and NTEK-2010NT1115353SS

The robot AMICUSADVANCE is permitted to bear the CE trademark.

Further product information and the product video are available on butterfly.tt/amicus



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Amicus Video