



Eversley Cricket Club

Guidance and instructions for use of the BOLA Bowling Machine

Introduction



This document sets out the instructions for use of the BOLA cricket Bowling Machine which have been extracted from the User Guide published by BOLA.

The bowling machine is a very valuable tool for cricket coaches. It is also an expensive and potentially dangerous piece of the equipment.

All persons using the bowling machine must have received appropriate training and record the use of the machine in the Log provided with the equipment.

VERY IMPORTANT

All Coaches and Machine Operators (who are not using a BOLA Stand) should wear helmets, face guards, leg and chest pads. The operator should constantly be aware of the possibility of the ball being hit straight back at him/her. Bowling Machines should only be used by qualified adults. No unsupervised use. **THINK SAFETY AT ALL TIMES.**

All batters should face the BOLA Machine protected in the same way as they would be for participating in a competitive match. Therefore, they should be wearing a minimum of; batting gloves, pads and cricket box. If the intention is to practice short pitched deliveries batters should also protect themselves with forearm guards and body and thigh pads.

It is compulsory for all batters under the age of eighteen to wear a cricket helmet and face guard when practicing with the BOLA Machine. We highly recommend that all batters wear a helmet and face guard when practicing with the machine.

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1. Health & Safety Statement

BOLA Machines are superb coaching aids for cricket, hockey and baseball. They are also great fun to use and here we offer guidelines for their safe and enjoyable operation.

We highly recommend that all coaches, machine operators and players read these health and safety guidelines.

We also highly recommend that all new customers read the instruction manual thoroughly before using their machine. A printed version is included in the machine's flight case or an online version is available at www.bola.co.uk

Coaches and Machine Operators

All Coaches and Machine Operators (who are not using a BOLA Stand) should wear helmets, face guards, leg and chest pads. The operator should constantly be aware of the possibility of the ball being hit straight back at him/her. Bowling Machines should only be used by qualified adults. No unsupervised use. **THINK SAFETY AT ALL TIMES.**

General Use for Cricket

All batters should face the BOLA Machine protected in the same way as they would be for participating in a competitive match. Therefore, they should be wearing a minimum of; batting gloves, pads and cricket box. If the intention is to practice short pitched deliveries batters should also protect themselves with forearm guards and body and thigh pads.

It is compulsory for all batters under the age of eighteen to wear a cricket helmet and face guard when practicing with the BOLA Machine. We highly recommend that all batters wear a helmet and face guard when practicing with the machine.

The BOLA Machine should be set up on short legs for all batters under the age of twelve years regardless of how tall they may be. This is because the bounce created by the machine on its full length legs will be unrealistic and unexpected by junior players. Also, remember that lengths will need to be shorter with the short legs to achieve the same bounce.

Coaches and machine operators should always familiarise themselves with the conditions before delivering any balls to a batter. In outdoor nets a grass surface will obviously change character from day to day but coaches should also be aware that artificial wickets can also change in different conditions (i.e. after a shower of rain or in very hot sun).

Visiting or traveling coaches should always arrive and set up the BOLA Machine half an hour before the start time of any session at an unfamiliar ground. This will allow time for them to assimilate the speed and bounce of the surface being used.

All adjustments to the speed and length of delivery should be made with the knowledge of the batter. There is a tendency for inexperienced machine operators to increase the speed of deliveries to 'surprise' or 'test' the batter. It should be remembered that five mph increase in speed could result in a two foot change in the length of the delivery.



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We recommend that coaches keep a chart of each player's capabilities. This will enable him to know the speed and length that each player can comfortably practice attacking and defensive shots off both the front and back foot.

There is a tendency for the machine to be set to one speed and used at that speed by all the batters taking part in the session. But a good coach has to find out each individual players capabilities and limitations and use the relevant, playable speeds.

Coaches should be aware that BOLA Bowling Machines attract attention. If you are using the machine in an open sports hall or public recreation ground please be aware that spectators will be drawn towards the machine. Ensure that all spectators are positioned in a safe area before feeding any balls into the machine.

In all drills that require two batters to be in the net during a session with the machine (usually fitness or match situation sessions) please ensure that the non-striker is alert to the ball and properly attired. Non-participants should not be allowed in the net.

Machine operators and coaches should be aware of the type and condition of balls that they are using. BOLA practice balls should be of similar age and in good condition (without the dimples worn away) to ensure an accurate repetition of each delivery. Please remember that cricket balls will leave the machine a little quicker than practice balls.

When coaching shot-making against short pitched deliveries always begin the session using BOLA HiViz balls. These are softer than standard balls and will bounce higher and leave the pitch slightly slower.

A BOLA Bowling Machine Stand provides the perfect platform for coaches and a Perspex screen to protect against the shot that is struck straight back at them. If a stand is not available use a stable platform of approximately 75cm in height. We recommend a sturdy, domestic kitchen step which will have a flat non-slip surface and allow the operator to dismount quickly if need be.

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2. Bola Assembly Instructions

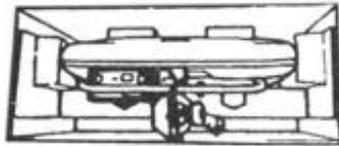


Fig 1



Fig 2

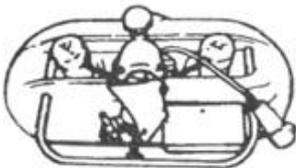


Fig 3



Fig 4



Fig 5

The assembly procedure is the same for all machines except hockey.
Untie the string around the stainless steel handle (fig. 1) and remove BOLA from its carrying case (fig. 2).

Place BOLA upside down on the floor on its plastic lid (fig. 3). It is wise to protect the finish of the plastic by placing some carpet or foam on the floor beforehand.

Slacken the ball joint clamp knob (fig. 4) and position the tripod head to accept the legs (as in fig. 5). Then re-tighten the ball clamp knob.

Insert legs into the two lower leg sockets (fig. 6) ensuring that they are correctly located. The weight of these two legs will rock the machine towards you until the legs touch the floor. Insert the third leg into its socket and having checked that this is also correctly located tighten the leg clamp knob. This will be made easier if you support the third leg with your shoulder (fig. 7).

Give all these three legs a firm twist to check that they are firmly in place (they should not move). If they are still loose tighten the clamp some more.

Stand the BOLA upright (fig. 8) by lifting from behind the machine and pivoting it on its two back legs until it stands firmly on all three legs in the upright firing position (fig. 9). BOLA can now be manoeuvred into the desired position in the crease.

IMPORTANT: Before using your BOLA please ensure that the battery or power pack underneath the machine is protected from balls driven back along the ground, which may cause damage.



Fig 6



Fig 7

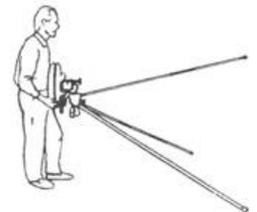
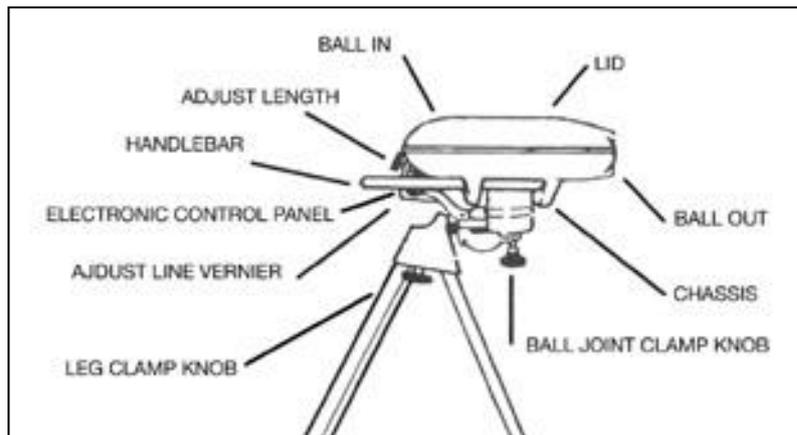


Fig 8



Fig 9





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3. Operating Instructions

On its standard legs the BOLA delivers a ball from about 2.3 metres (1.6 metres for baseball). Extra sets of legs are available if different heights are required. Before operating your BOLA a stable platform of approximately 75cm in height is required on which the coach can stand to feed and operate the machine safely.

Protective helmets and padding must be worn by the operator and batsmen.

A bucket for the balls is also recommended which can be hung on the hook on the tripod head. **POWER PACK** (Optional on all models)

POWER PACK OPTIONAL ON ALL MODELS

BOLA will operate from any 12V DC source. To enable operation from 240V* AC outlets you will need the BOLA power pack. The power pack is a transformer with a smoothed DC Output. Also built into the power pack is a battery charging circuit, which will recharge and 12V lead/acid battery.

To use the machine from a 240V* AC power source, plug the BOLA power pack into the mains outlet and connect to the machine. The power pack will become warm in use, but this is normal - the aluminium box is designed to sink heat away from the components inside.

If for any reason the power pack appears not to function, check the 5A fuse in the power pack and the fuse in the 3 din mains plug (UK only).

To recharge your 12V battery with the BOLA battery/machine cable attached, plug the grey battery plug into the grey outlet socket (with the power pack plugged into the mains). While the battery is taking charge the green light on the power pack will come on.

Under no circumstances should the battery cable be plugged into the power pack whilst it is not connected to a battery, as this risks short-circuiting the two terminals, which will blow the power pack fuses.

Your battery will be sufficiently recharged after 8-12 hours to be used again, but a full charge may take up to 36 hours. The battery should not be left charging for longer periods without regularly checking the voltage (max. 15V). If your battery continues to take a charge after extended periods of charging, please contact your local battery supplier.

*Or 110V if specified on order.

BATTERY RECOMMENDED BATTERY - THE BOLA SEALED 12V LEISURE BATTERY

It is recommended that, whilst it is possible to use the machine from the mains electricity supply, you use the machine from a 12V battery as this greatly increases portability and eliminates any risks associated with using mains powered equipment in a damp environment.

BOLA will run from any 12V battery (car batteries etc.) although we strongly recommended the use of a deep cycle or traction battery rated at 60-100 amp/hrs. These batteries are designed to cope with prolonged discharge and recharge cycling, and are available for the caravan and marine markets. They are often described as 'leisure' batteries.

If the BOLA circuitry appears to become unstable after prolonged use on the battery, we suggest that the battery voltage is checked or the battery recharged. The machine is designed to run on a minimum of 11V (flat battery), but below this voltage the circuitry will not function.

Important: Never leave a lead acid battery in a flat or discharged condition! Your battery should be recharged as soon as possible after use.

CONTROL PANEL

All BOLA models have a microprocessor for its speed control functions. Adjustments can be made by the operator via membrane switches. The panel is fairly self-explanatory. Ball speed is displayed in miles per hour in the 'Speed' window and the amount of swing or spin in the 'Bias' window. Two Tricolour LEDs light and change colour giving further indication of bias and the expected effect. A green 'Ready' LED comes on once the machine has achieved your selected speed and bias settings.





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It should be noted that the machine will try to attain the settings that you select regardless of whether it is within its capability. Increased amounts of bias will reduce the maximum attainable speed. The top speed with maximum bias is approximately 55 mph! The 'Ready' light will stay out until the machine reaches your selected setting but this should not be for any longer than 30 seconds. After this time, steadily reduce speed or bias until the 'Ready' light comes on.

ON

Push the 'On' button to switch on the machine. As long as a power source (Power Pack of Battery) is connected to the machine, when the 'On' button is pushed the machine will perform a quick self test and set the speed to 30 mph with no bias (swing of spin). In the case of a power interruption (power cut or failure), a trip switch will turn the machine off automatically. It will not restart until the power supply is restored. The red Power LED is lit whenever the machine is switched on.

OFF

The 'Off' button switches the machine off and resets all speed and bias (spin or swing) settings.

BALL SPEED

When the machine is switched on, the default speed setting is 30 mph. The speed buttons ('+' and '-') allow you to increase or decrease the speed. The '+' button will increase speed. The '-' button will decrease the speed. Pushing the buttons once briefly will adjust speed up or down in 1 mph increments. Pushing and holding the buttons will continue to adjust the speed up or down as long as the button is held down. The speed ranges from 15 mph to 95 mph (for the 'Professional' model). The speed selected is indicated in the 'Speed' window. The 'Ready' light comes on when the selected speed is reached. Do not put balls into the machine until the 'Ready' light has come on.

A secondary effect of adjusting speed is that the length of the delivery changes as well. If you increase the speed you also increase the length of delivery. If you reduce speed, the length shortens. This can be compensated for with the Ball Joint and Vernier adjusters.

BIAS - SWING AND SPIN

When the machine is switched on, the default bias setting is 0 and is displayed in the Bias window. Pressing the bias buttons ('L' - left and 'R' - right) adjusts the amount of bias between the ball delivery wheel speeds to produce swing and spin (with the delivery head

angled). The left button will move and swing the ball to the left (away from the right handed batsman) and with the delivery head angled down to the right produce leg spin.

The right button will move and swing the ball to the right (in to the right handed batsman) and produce off spin with the delivery head angled down to the left. To reduce the amount of bias selected use the opposite button.

There are 9 bias settings available on both the left and right buttons, which are indicated 1 to 9 in the 'Bias' window. The Tricolour LEDs above and the bars beside the display give an indication of the expected effect. The 9 settings will give the following effects: There are 9 bias settings available on both the left and right buttons, which are indicated 1 to 9 in the 'Bias' window. The Tricolour LEDs above and the bars beside the display give an indication of the expected effect. The 9 settings will give the following effects:

Setting 0 will give a straight delivery. Settings 1 and 2 (Tricolour - green) will give a fairly straight delivery. The small amounts of bias will rotate the ball, stabilise it in flight and thereby improve accuracy a little but will give little discernible swing. Settings 3, 4, 5, 6 and 7 (Tricolour - orange) will give increasing amounts of swing. Settings 8 and 9 (Tricolour - red) are for spin (with the delivery head angled).

The secondary effect of adjusting the bias setting is to change the line of delivery. Pressing the left button will adjust the line to the left. Pressing the right button will adjust the line to the right. These can obviously be compensated for with the ball joint and Vernier adjusters. Bias buttons can also be used for intentional line adjustment. MACHINE FUSE

The replaceable 35A fuse should be checked if BOLA does not operate. The fuse protects the circuitry from abuse or from any internal or external short circuit.

POWER INDICATOR

A red LED indicates whether there is power into the machine. If there is no red light when the machine is plugged in, check the 35a machine fuse and all cable connections and fuses (power pack and mains plug).

AUTOMATIC FEED POWER SOCKET

A power socket (3pin DIN) on the left hand side of the control panel exists for the power output to the BOLA automatic feed, and is not for any other use.



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LINE AND HEIGHT ADJUSTMENT

BALL JOINT (ALL MODELS EXCEPT HOCKEY)

The BOLA delivery head is mounted on a large ball joint, which allows almost infinite adjustment of line, length and angle of delivery.

Slacken the large knob at the front of the machine to loosen the ball joint clamp. This allows you to select the desired position for the delivery head before retightening the clamp.

When using the machine you may find it useful to leave the ball joint loosely clamped to allow some movement for fine line and length adjustment.

VERNIER LENGTH ADJUSTMENTS

For fine line adjustment, turn the small black knob clockwise to move the line of delivery to the left, and anti-clockwise to move it to the right.

Please note: When the machine is set up for spin, the Vernier controls will have different effects on line and height.

DELIVERY VARIATION

You will notice that even with the ball joint firmly tightened there is still some movement of the delivery head. This allows the operator to simulate a match situation and vary the line and length of individual deliveries.

To do this, use the handlebar to temporarily move the head and alter line and length as required. When the handlebar is released, the handlebar will return to its original position (as long as the ball is firmly clamped).

VERY IMPORTANT

It should be remembered that a cricket bowling machine is potentially very dangerous if it is not operated responsibly. Under no circumstances should children without the supervision of qualified adults use the machine.

All batsmen, machine operators and attendants must wear protective clothing (helmets with face guards, pads etc.) and be constantly aware of BOLA and the batsman. After any adjustment of line, length or speed, feed a ball through the machine with no batsmen to ensure that the adjustments have been made correctly.

GUIDELINES FOR THE USE AND CARE OF YOUR BOLA

Always be aware of the ball speed of the machine - increases in speed should only be at the request and full knowledge of the batsman. Remember that the bowling machine is purely for the benefit of the batsman - not the operator.

When feeding your BOLA hold the ball high and, when you are sure the batsman is ready, place the ball in the hole. Ensuring that you do this as consistently as possible. This will give the batsman every chance to time his stroke correctly.

Do not use the machine in wet weather.

Do not cover the lid or wheels of the machine without advice from the factory. The wheels are carefully balanced to aircraft standards.

Do not remove the control panel or interfere with its fastenings. There are no user serviceable parts inside. Do not move your BOLA without first ensuring that all three legs are firmly located.

Deposits on the wheels will not effect the performance of the machine and can be safely ignored. However, if there is build up of residue on the ball guide track between the wheels, this should be carefully removed with a long scraper or putty knife, with the machine switched off.

Keep sparks and flames away from the battery (i.e. no smoking).

Your battery contains dilute sulphuric acid, which is corrosive. Flush with water if splashed on skin or in the eyes and get immediate medical attention.

During charging, your battery gives off explosive gasses. It should be charged in a well-ventilated area (not a living area) so the air can gas freely to the open air. Avoid any possible source of sparks while charging. Keep the battery away from children.

STORAGE

Do not allow the machine to rest for prolonged periods on its plastic lid, as this will distort the ball guide and cause poor performance.

Do not subject your BOLA to extremes of temperature or damp. Ideally, it should be stored in its carrying case in a clean, dry environment to prevent undue damage.

MAINTENANCE

Occasional light applications of grease to the leg clamp and ball joint spindles will ensure long-term smooth operation.

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4. Some examples of available deliveries

The diagram illustrates various bowling machine settings categorized by delivery type and machine orientation.

Machine Orientation:

- Machine Delivery Head Vertical:** The machine is set up on a tripod with the delivery head upright.
- Machine Delivery Head Angled:** The machine is set up on a tripod with the delivery head tilted at an angle.

Deliveries:

- STRAIGHT:** Shows a vertical ball trajectory and a control panel with speed 60.
- OUTSWING:** Shows a ball trajectory curving away from the right side of the pitch and a control panel with speed 60.
- INSWING:** Shows a ball trajectory curving towards the right side of the pitch and a control panel with speed 60.
- SPIN (Machine Delivery Head Angled):**
 - OFF BREAK:** Shows a ball trajectory curving away from the right side of the pitch and a control panel with speed 38.
 - LEG BREAK:** Shows a ball trajectory curving towards the right side of the pitch and a control panel with speed 38.
- Machine Delivery Head Vertical:**
 - TOP SPIN:** Shows a control panel with speed 50.
 - BACK SPIN:** Shows a control panel with speed 50.



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5. Check list

1.	Before the coaching session your coaching session plan should set out the goals of the session and how you plan to use the bowling machine.	
2.	Check that all those who will be operating the machine have received training and have accepted the obligations and instructions regarding correct and safe use of the machine.	
Before use		
3.	Ensure the machine has been correctly assembled and is secure.	
4.	Check the immediate surroundings, ensure any nets are completely in place and there are no obstructions especially where the balls are likely to pitch.	
5.	Ensure that all batsmen and other persons have the correct equipment (pads, helmet etc.).	
6.	Send a number of 'Test' deliveries without the batsmen to check trajectory and speed.	
During the session		
7.	Be vigilant.	
8.	Always ensure the batsman acknowledges they are ready before placing the ball in the machine.	
After the session		
8.	Once the session is complete ensure the machine is disassembled and ALL the balls are placed back in the container.	
9.	Record the use of the machine in the Log.	



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6. Coaching tips

- A. Before starting consider why you are using the bowling machine.
 - Insufficient bowlers or consistency of bowling?
 - Practice 'grooving' a particular shot?
 - Dealing with a specific issue (eg difficulties in facing left arm over or full pitch)?
- B. Batch the deliveries in sets, say 5 or 6 (an over's worth) and discuss the shots with the batsman.
- C. Carefully observe the key aspects of the batting mechanics for each delivery – use a note pad.
- D. Consider using video /video analysis to support the session.
- E. Give the next batsman plenty of notice to pad up to reduce wasted time.

7. Perspective from Pitchvision:

<http://www.pitchvision.com/how-to-practice-with-a-bowling-machine>

Having a bowling machine to practice with is a mixed blessing. Yes. It's way more accurate than any bowler can hope to be, but it also changes the way you bat. Sport boffins recently tested the difference between batting against bowlers and machines, finding the batsmen naturally adjust their backlift when facing the machine (pdf). That means you need to be cautious when practising with the Bola.

Developing Unconscious Reaction

Facing a human bowler gives you a wide range of tiny clues: The effort in their face and shoulders as they run up, seam position, delivery stride and wrist position. All these are processed by your brain in a split second to give you an idea of where the ball will be before it has even been released. It's why top batsmen seem to react so fast. They are not just reacting, they are second guessing based on previous experience and tiny cues the bowler gives them. It's also why, according to Malcolm Gladwell's Blink, there is a tennis coach in the US who can tell if a player is about to fault before they serve. It's subconscious though, so he has no idea how. There is no way a bowling machine can do the same thing, so when you are facing it you are not learning how to unconsciously read the bowler like the coach can read the tennis player.

Batting Drills and Learning Movements

The bowling machines strength is that it can put the ball in the same place as many times as you like. That means you can drill a particular shot until you can do it instinctively with balance, coordination and timing. Here you are developing the 'muscle memory' you need to be able to actually execute the shot after you have picked the line and length. What do you get when you put all this together? I would recommend facing real bowlers as much as you can, ideally in practice games as this is the most realistic practice you can get. Use the bowling machine to support this by using it to drill the same shot until it feels right or learn new shots from scratch. This way you get all the technique development benefits you can from the machine, while improving your unconscious reactions against real bowlers.