

# 2Pitch3

## Pitching Machine

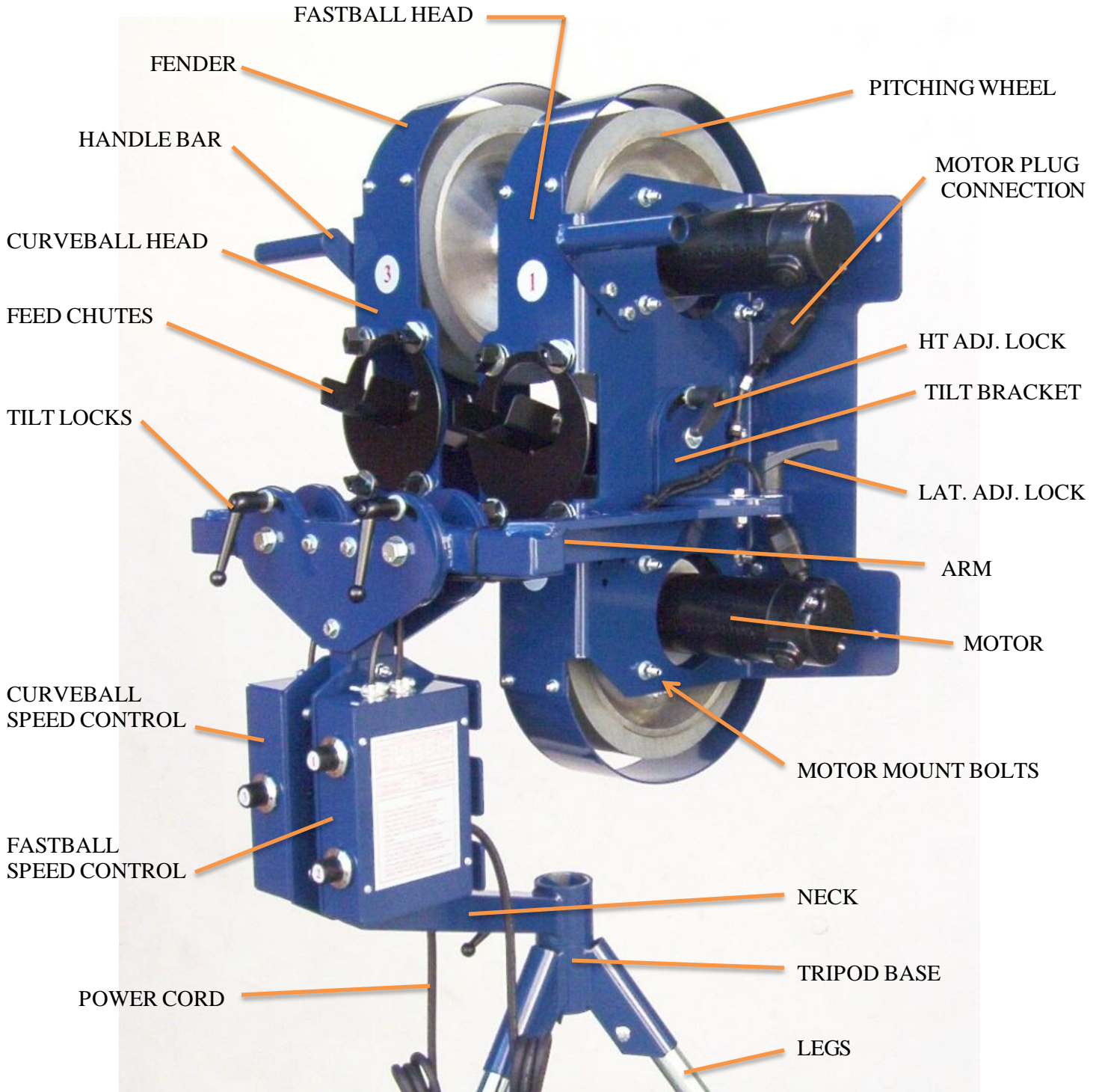
### Owner's Operating Manual

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# 2Pitch3

## PARTS OF THE MACHINE



## REMOVING CONTENTS FROM PACKAGE

1. Before removing the main parts of the machine from the boxes, set up the **Tripod Stand** assembly. If you ordered the QRL with the machine, it has been factory installed. If you ordered the Roll-Away Stand with the machine, assemble it now.

### Standard Legs:

Slide each of the 1½ diameter x 40 straight baseball legs (right) into the Tripod Base and secure them with the nuts and bolts provided, or QRL, (already installed in the Base). Hold each leg with your hand as you tighten the nut. Rotate the leg as you tighten. Tighten the nut or QRL handle until the leg will not rotate.

### Roll-Away Stand:

Slide the three legs of the Roll-Away Stand into the Tripod Base. Locate the slot on the Spindle of the Tripod Base where the Lock Handle goes. This slot is directly over what will be the front left leg.

The leg with the square tab welded onto it is the back leg which has the swivel wheel. Install all three legs, but leave the two front legs slightly loose for the time being.



FRONT LEFT LEG



BACK LEG

SWIVEL WHEEL  
ASSEMBLY

Slide the Tie Rod onto the 5/8" bolt ends (that hold the wheels on). You may need to turn the front legs slightly to get the Tie Rod onto the bolts.

Orient the Tie Rod as shown (right).  
Line up the wheel bolts, install and tighten the lock nuts.

Once the Tie Rod is secured, tighten the nuts that hold the front legs in the Tripod Base.

Install the Swivel Wheel Assembly. Insert the 1/2" bolt end up through the hole in the rear leg bracket, as shown. The large flat washer with the grease goes between the two brackets to act as a spacer.



Install the smaller 1/2" washer on the top, and install the 1/2" lock nut. Tighten the lock nut so that there is a small amount of friction when you swivel the wheel bracket from side to side. The wheel must be able to swivel, but there should be no slack.

Slide the T-handle tube with the push-pin into the square tube that is welded to the back wheel bracket. The push-pin will lock the handle in place. (The T-knob pictured is no longer part of the assembly).

The Front Leg Extension Tubes are pre-installed inside the large front leg tubes. A push-pin locks them in position. The Extensions may be extended for pitching(wheels off the ground) or retracted for transporting the machine (wheels on the ground).

The T-handle bar serves two purposes. It serves as a steering handle for when you are transporting the machine, and it also locks the rear wheel by preventing it from swiveling or rotating while pitching.

#### **USING THE ROLL-AWAY STAND:**

To pitch, lock the rear (swivel) wheel. Press the push-pin of the handle bar and slide the T-handle into the other tube (to shorten the length).

Swing the T-handle around so that the handle is between the front wheels and in the center of the Tie Rod, as shown above.

Slide the T-handle back out to extend it, and lock it in place with the tab between the two collars located in the center of the Tie Rod. Make sure the push-pin engages.

Extend the two front leg extensions. Make sure that you have at least one person steadying the upper part of the machine when you tilt it to extend the legs.

## CAUTION

You MUST have a second person steady the top of the machine when you tilt it to retract or extend the legs. The machine is very top-heavy, and it may tip over if it is not being steadied.

Also, you MUST have a second person steady the top of the machine when you transport it, for the same reason. Do not try to transport the machine on the Roll-Away Stand over rough or severely uneven ground.

**DO NOT PITCH TO BATTERS WITH THE FRONT WHEELS ON THE GROUND OR THE REAR WHEEL UNLOCKED.**

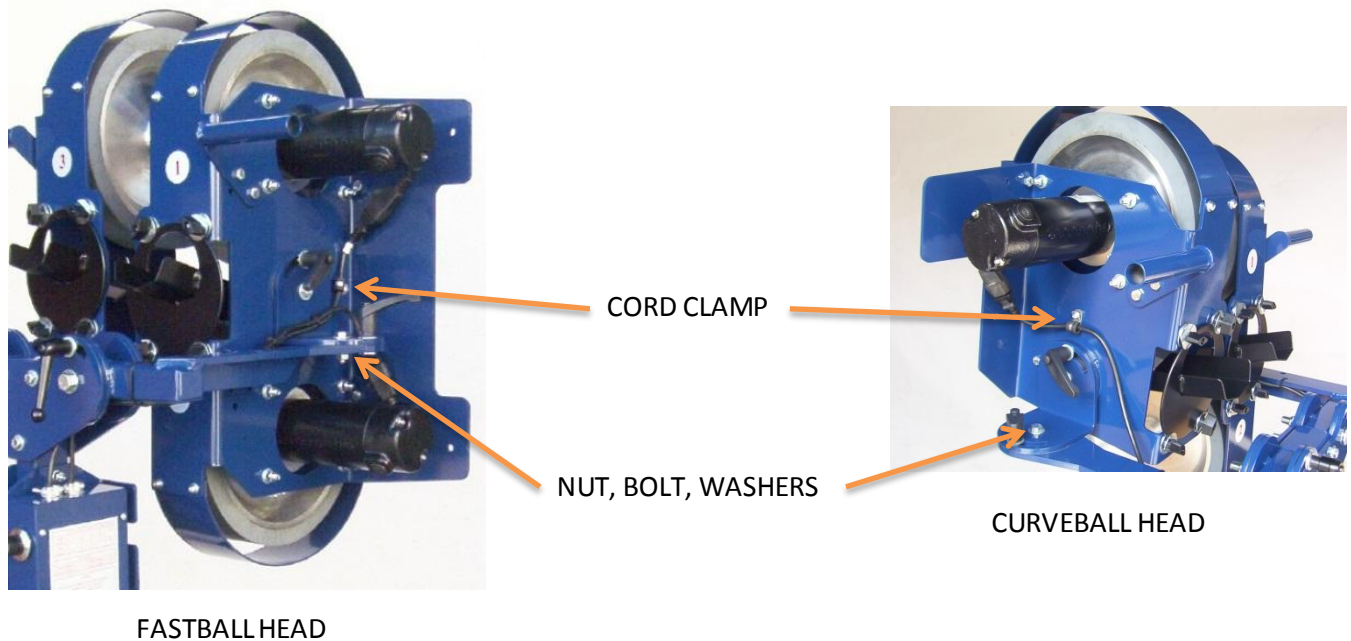
The T-handle may be held between the front wheels or in the opposite position behind the machine when transporting. The rear wheel is unlocked when the T-handle is raised.

Your Roll-Away Stand is ready to use.

2. Remove the lock handle, carriage bolt, and washer, which have been pre-installed, from the Tripod Spindle.
3. After setting up the Tripod Stand, remove the Neck Assembly from the box/crate (box #3), and place it on the Tripod Base, as shown (Parts of the Machine).
4. Install the 3/8" x 1" carriage bolt from the inside of the Spindle. Slip the flat washer(s) onto the bolt from the outside, then thread the Lock Handle back onto the bolt. The carriage bolt may be rotated in increments of 90 degrees. If you want to change the lever angle of the Lock Handle, loosen the handle about 1/4", enough to allow the carriage bolt to be pushed out of the slot on the inside of the Tripod Spindle. Once the square pilot of the carriage bolt is free from the slot, rotate it as needed, then tighten the Lock Handle back onto the bolt.
5. Set the Arms in the proper position. Loosen the Arm Tilt Lock handle for each, and rotate the Arm into the horizontal position, as shown (Parts of the Machine). Tighten the lock handle.
6. Before removing the machine heads from boxes #1 and #2, remove the lock nut, washer, and bolt from the Tilt Bracket, as shown (below), and remove the lock handle, bolt, and washer.



## HEAD INSTALLATION



7. There are four  $\frac{1}{2}$ " hex nuts holding the body of each machine head to the wooden pallet (in boxes #1 and #2). Remove the nuts and washers, and (using two people to lift it), lift the machine head out of the box and place it directly onto the Arm. Install the Curveball Head (box #2) first, for balance.
8. Insert the bolt down through the top of the Tilt Bracket and through the Arm. There must be one washer on top, underneath the head of the bolt, and one washer on the under side. Slide the washer on from underneath, and thread the locking nut onto the bolt.  
  
The locking nut is designed to go on with some difficulty. The threads of the nut are altered so that when the nut is tightened, it will not loosen up on its own. When tightening the lock nut, get it tight enough so that there is no slack in the joint, but not so tight that the head cannot swivel from side to side.
9. Re-install the lock handle. Insert the carriage bolt up through the bottom of the Arm plate through the square hole. Slide the flat washer onto the bolt (on top) with the smoother side of the washer against the paint, and thread the lock handle onto the bolt.
10. Connect the plug connection from the motor to the cord that comes up from the Speed Control Box.
11. Secure the cord to the Frame, as shown, with the Cord Clamp.

Your 2Pitch3 is ready to use.

## **IMPORTANT**

Your 2Pitch4 machine is designed to throw different types of balls. There are different GAP settings and adjustments for each. Carefully read and understand the section on GAP Selection and GAP Settings before operating the machine. Improper set up may damage the machine.

## **IMPORTANT**

Inspect the machine to make sure nothing has been damaged or shifted out of adjustment during shipping. Report any damage immediately. Save the packaging crate and all of the packing materials in case you ever need to transport your machine for repair at a later date. Packaging items of this size and weight is very difficult if you do not have the proper materials.

**Store your Operating Manual CD in a place where you can find it and refer to it.**

**ALWAYS USE A SURGE PROTECTOR TO AVOID ELECTRICAL DAMAGE.**

## **CAUTION**

**DO NOT set both wheels on the Fastball head at 100% power when pitching to batters.** This will produce a knuckleball in excess of 100 mph, which would be very dangerous.

We strongly recommend that you do not set the machine any faster than 90% when pitching to batters. With the top wheel at 80%, and the bottom wheel at 100%, this will produce a fastball of over 90 mph.

Using excessive speeds for amusement can be very dangerous, and it is strongly discouraged. For your safety, we ask that you use this machine only for its intended purpose. Select speeds that are no greater than the ability level of the batters, and supervise children when they are using the equipment. Make sure they are using it properly and safely and not taking unnecessary risks.

We also recommend that speeds of above 60 mph NOT be used when pitching at Little League distance or softball distance (40-46 feet).

# **WARNING**

This machine is NOT guaranteed to 100% accurate. Although each machine is thoroughly inspected and tested before leaving the factory, occasional errant pitches may occur (and should be expected), due to balls in poor condition, moisture or debris, careless or negligent use, improper settings, improper maintenance, mechanical failure, or other factors.

**EXPECT TO HAVE TO REACT TO ERRANT PITCHES IN THE SAME WAY YOU WOULD IF YOU WERE BATTING OFF A REAL PITCHER.**

It is important to make sure that all safety precautions are taken, and to instruct all participants on proper operating procedures and rules prior to allowing them to use your machine. It is your responsibility to make sure that your machine is maintained in proper operating condition.

## **SAFETY INSTRUCTIONS**

1. Never use this machine in wet or moist conditions.
2. Never stand or walk in front of the machine while it is running.
3. Wear eye protection when manual feeding.
4. Keep hands away from all moving parts.
5. Wear a batting helmet when batting.
6. Turn the machine OFF and wait for the wheels to stop rotating before making adjustments to the machine (other than speed and location).
7. DO NOT attempt to stop the wheels from rotating, and DO NOT touch anything to the wheels, even after turning OFF the machine.
8. Place a protective screen in front of the machine to protect the machine and operator. The warranty does not cover damage from batted balls.
9. If any unusual or loud noises occur with the machine, disconnect the power immediately and discontinue use until the cause can be resolved.

## **GAP SELECTION**

The term "GAP" refers to the space between the pitching wheels. This machine will throw different types of balls. However, a different GAP may be required for each. For example, a softer dimpled baseball may need a tighter GAP than a harder dimpled baseball or a real baseball.

**It is not necessary to change the GAP very often, if at all, unless you plan to use different types of balls.** For example, if you are going to pitch only leather baseballs and/or BATA Dimpled Baseballs, you can leave the GAP at the factory setting. If you are going to pitch softer brands of dimpled baseballs, you may need to change the GAP to accommodate the softer ball. Just be sure to change the GAP back if you are going to use harder balls.



When the machine is new, it is factory set for real baseballs and BATA Dimpled Baseballs. The motor mount bolt goes through slots in the frame that are elongated about 2/10". You can't see the slots because the flat washers cover the slots.

All four motor mounts are set at the tops of the slots. If you need to adjust the GAP, you will adjust the position of the Upper Motor Mount.

To change the setting, using a 1/2" wrench, loosen all four motor mount nuts (just enough to allow the motor mount to slide), and position it as needed. Tighten the nuts to secure it.

**NOTE: FAILURE TO SET THE GAP PROPERLY MAY DAMAGE THE MACHINE.**

The following information is somewhat technical and wordy. Please don't let it confuse you. We are including it for future reference. When your machine is new, most of it will be irrelevant. Keep your Operating Manual for future reference.

If, at some point, the pitching wheels have worn significantly, or you are using a ball that is either not a regulation baseball or a BATA Dimpled ball, you may experience inconsistent or errant pitching. The following information may help you trouble-shoot the situation.

If the GAP is too loose, the wheels will not grip the ball tightly enough to pitch it accurately and consistently. This results in pitches that sometimes "die" and fall short of the target, and/or miss the strike zone left or right.

If the GAP is too tight, it will put excessive stress on the motors, resulting in damage to the motors, shortening the life of the motors at the very least, bending or breaking the motor shafts at worst. It will also cause erratic pitching.

There are literally dozens of different brands of dimpled balls on the market, and they are NOT all the same.

A regulation leather baseball has a hardness of about 90 (Rockwell A scale) when new. BATA Dimpled Baseballs have a hardness of about 84. Some dimpled baseballs (other brands) are as soft as 50.

Our machines are designed and calibrated to pitch our dimpled balls and regulation leather balls. We have made adjustments available on the machines to accommodate other softer varieties of balls, but we cannot guarantee that our machines will pitch them properly.

You've just spent a lot of money on a pitching machine. Buying balls at your local store to save \$5 on a dozen balls might not be a good idea. Your best bet is to use balls that are proven to provide quality results with the machine that you purchased. BATA Dimpled balls pitch very well in BATA machines, therefore, we recommend that you use BATA Dimpled balls in your machine (or regulation, high quality leather balls. Low seams are better than high seams).

Your machine is factory set at the predetermined GAP setting:

**FASTBALL HEAD:**

Leather Baseballs: **(Both upper and lower motor mounts at top of slots): 2.15" (2-5/32)**

**CURVEBALL HEAD:**

Leather Baseballs: **(Motor mount set at the top of the slots): 2.31" (2-5/16")**

## GAP

When your machine is new and the wheels are still full size (no wear), you can pitch leather baseballs and BATA Dimpled Baseballs at the upper (factory) setting up to full speed. Once the pitching wheels have worn down some, you may need to adjust the GAP if you want to pitch at high speeds. See “MEASURING THE GAP WITH WORN WHEELS” (below).

If you are pitching real leather baseballs, the upper motor mounts must be in the UP position (top of the slots). If you are pitching softer dimpled balls, you may need to lower the upper motor mount some in order to get enough compression to grip the ball properly, especially if you are pitching at high speeds. Again, this depends on the hardness (and outer texture) of the ball.

Try your dimpled balls at the standard setting first. If you are pitching at high speeds, you may need to close the GAP some. The tell-tale sign that the GAP is not tight enough is that some of the pitches will look like change-ups. If all of the pitches seem to die and fall short, and seem slower than expected, it is likely that the GAP is way too loose.

If some of the pitches come out at the expected speed, but some die and look like change-ups, the GAP is probably just a little loose. We recommend closing the GAP about 1/16” at a time until you get consistent pitching. Once you have determined the ideal GAP to match your dimpled balls, make a note of it. When the wheels wear, you may need to re-adjust the GAP.

## MEASURING THE GAP WITH WORN WHEELS

After a lot of use, you will notice a “concave dip” being worn into the rubber on the wheels. This is normal. (See photo, below right).

As the dip becomes deeper, the GAP becomes wider. There may come a time when you will need to make adjustments to the machine to reduce the GAP. When the wheels are new, the GAP at the edge of the wheels is the same as the GAP in the center. Once the wheels have worn, the measurement will be different.

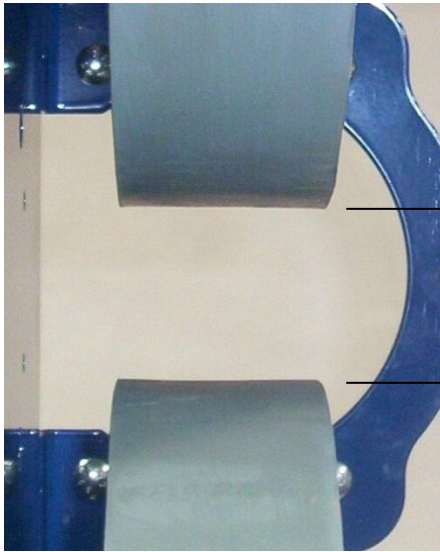
How much can the wheels wear before you have to adjust the GAP? That depends on how fast you’re pitching the ball. At lower speeds, a wider GAP will still work. At higher speeds, too wide of a GAP will allow too much slippage, and inconsistent pitching will occur.

To measure the GAP on new wheels, take a ruler or tape measure and measure from the edge of one wheel to the other (or Pad) at the closest point. When the wheels are new, this measurement will be about 2.15” on the 2-wheel head (with the GAP at the factory Baseball setting), and 2.31 on the curveball head.

When the wheels are worn, you must do a calculation to determine the ideal GAP. The ideal GAP will be the average between the measurement at the edges of the wheels and the bottoms of the concave dips (as shown below, lower right).

The best way to measure to the bottoms of the dips is to make a gage out of cardboard or something similar, and cut it to the dimension that you want. Move the motor until the space is the same width as your gage, then secure it in place by tightening the bolts.

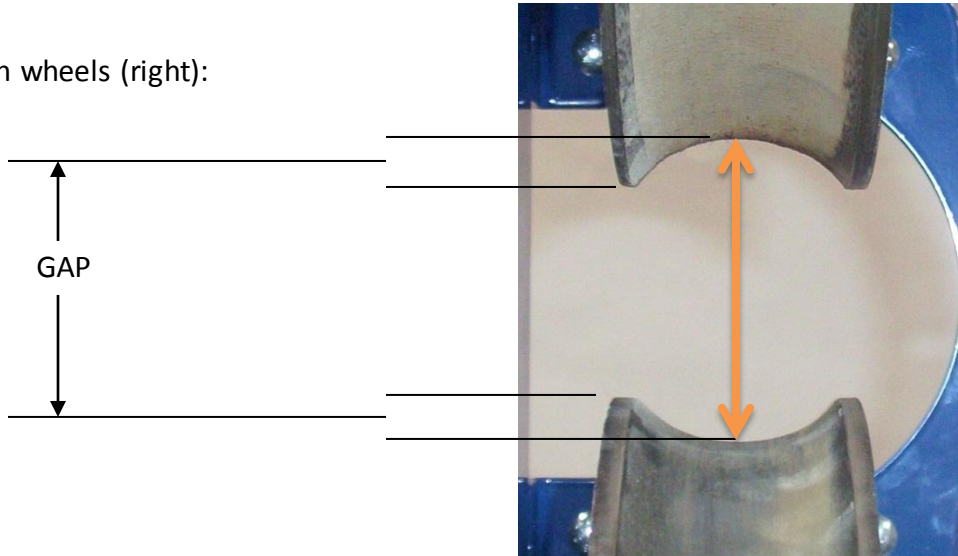
## WORN WHEELS ON THE 2-WHEEL HEAD



New wheels (left):



Worn wheels (right):



If, for example, if each wheel has  $3/8$ " of wear, there would be a total of  $3/4$ " of wear in the two wheels combined. If you divide the total combined wear ( $3/4$ " ) by 2, that gives you an average wear of  $3/8$ ". So, you would need to reduce the GAP by a total of  $3/8$ ". There are a couple of different ways to accomplish this.

One way to reduce the GAP is to move the upper motor mount within the  $2/10$ " elongated slots. However, this would only reduce the GAP by a maximum of  $2/10$ ". If you need to reduce the GAP by more, you would need to use the "Inside" adjustments.

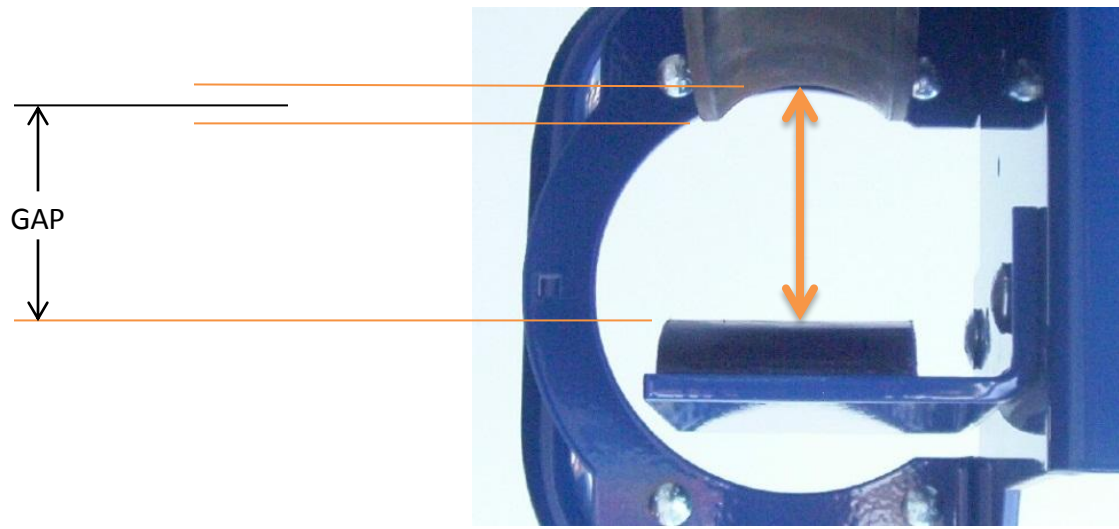
In order to adjust the GAP using the Inside Adjustments, you must remove the pitching wheels. The bolts that are used for this adjustment are located between the wheel and the motor mount. They are not visible without removing the wheel.

To remove the pitching wheels, using a 3/16" Allen wrench, loosen (do not remove) the set screw about 1/2 of a turn. The set screw tightens against the shaft key (the square pin between the motor shaft and the wheel hub). (Photo below). **Do not hit the wheel to remove it. This would damage the motor.**

When resetting the motor positions within the Motor Mounts (to reduce the GAP), move each one the same amount. For example, if you need to reduce the GAP by 3/8", move each motor 3/16".

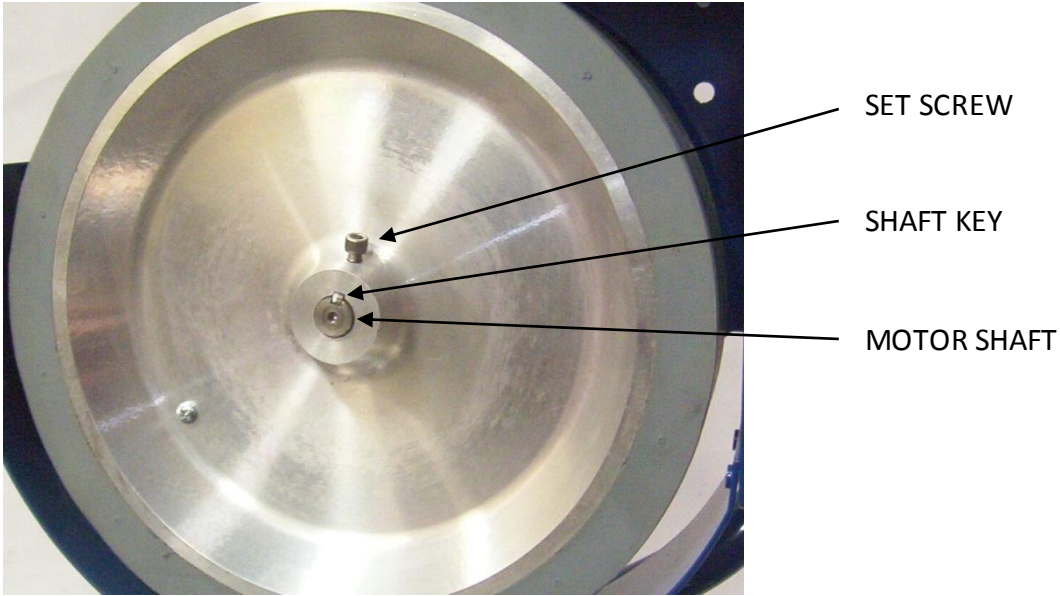
### WORN WHEEL ON THE CURVEBALL HEAD

Just as there is a calculation for the Fastball head GAP, there is one for the Curveball head. In simple terms, you will divide the depth of the concave dip by 2 to figure out the ideal GAP.



If, for example, if the wheel has 3/8" of wear, divide the total wear (3/8") by 2, that gives you 3/16". So, you would need to reduce the GAP (move the wheel and motor closer to the Compression Pad) by a total of 3/16".

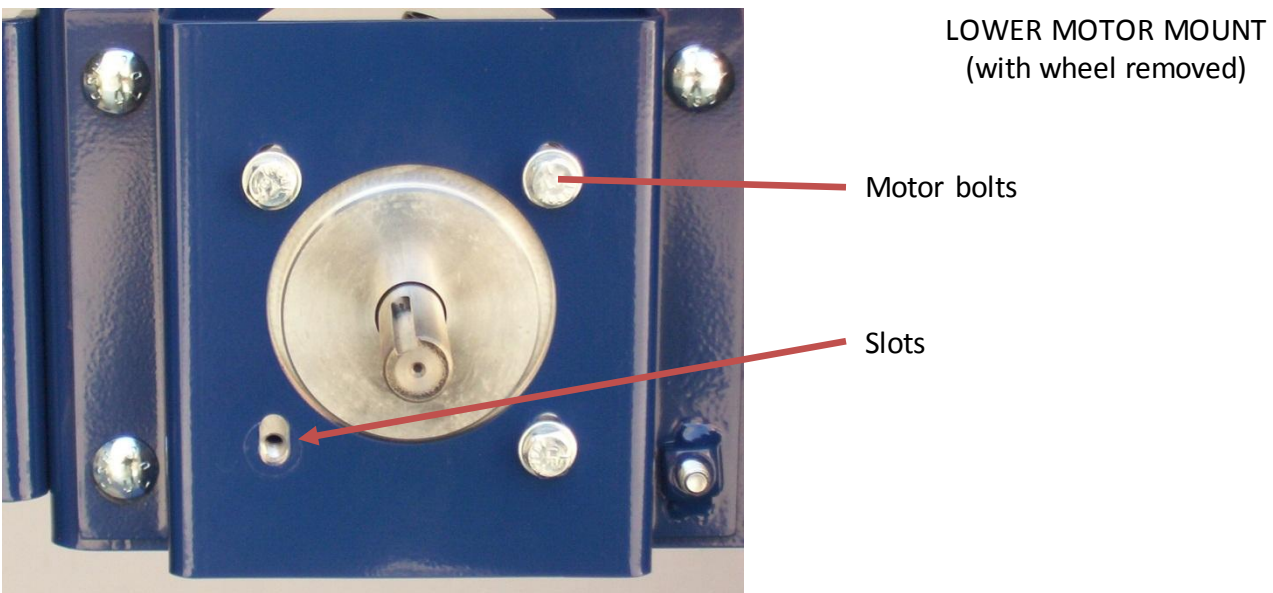
On the curveball head, the factory setting for leather baseballs is 2.31" (2-5/16"). If you are reducing the GAP by 3/16", you would add 3/16" to 2-5/16", giving you 2-1/2" at the deepest part of the concave dip.



Once the set screw is loosened, slide the wheel off the end of the motor shaft. If it does not come off easily, you may need to use a wheel-puller to get it off. Some WD-40 may also help. **DO NOT hit the wheel with anything to get it off. This would damage the motor.**

Once the wheel is off, you will notice that there are four bolts that hold the motor in the motor mount. These bolts go through slots as well. The slots are elongated  $\frac{1}{4}$ ". We use these slots to factory set the GAP properly, but there is still about  $\frac{2}{10}$ " of adjustment available on each motor.

## INSIDE ADJUSTMENTS



Once you have the motors repositioned as needed, tighten the motor bolts. Be careful not to over-tighten them. The motor mounting face is made of aluminum. Then, slide the wheels back on the motor shafts, position the wheels properly on the motor shafts, insert the shaft keys, and tighten the set screws.

## WHEEL POSITION

One of the periodic checks that must be done is the position of the wheels on the motor shafts. This is very important for two reasons.

First, the wheel must be positioned properly so that it is centered to the feed chute.

Second, if the wheel is not properly positioned, the hub of the wheel may rub against the face of the motor, which can cause damage to the machine.



PROPER POSITION



IMPROPER POSITION

To correct it, using a 3/16" Allen wrench, loosen (do not remove) the set screw about 1/2 turn. Slide the wheel back to the proper position with about 1/32 – 1/16" of the end of the motor shaft sticking out past the outside of the wheel hub, and tighten the set screw. It threads into aluminum, so be careful not to over-tighten or strip the threads.

## 2Pitch3 SPEED CONTROL

On the 2-wheel head, the speed of the pitch will be approximately the average of the value of the two dials. Using the assumption that each number on the dial represents 10 miles per hour, the maximum speed, with both dials at 10, will be about 100 mph. (Do not set both dials at 10. This will produce a 100 mph knuckle-ball that could be very dangerous).

Realistically, the maximum fastball that you can expect (with proper backspin) is about 90 mph.

Formulas:

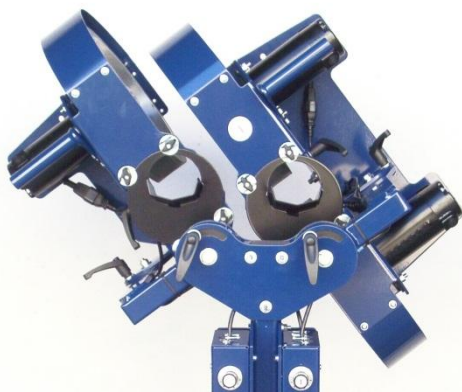
Fastballs:	Less sinking:	1:2	Example: Upper dial 50 / lower dial 100. (75 mph)
	More sinking:	2:3	Example: Upper dial 60 / lower dial 90. (75 mph)
Curveballs:	Less break:	3:1	Example: Upper dial 90 / lower dial 30. (60 mph)
	More break:	5:1	Example: Upper dial 100 / lower dial 20. (60 mph)
Sliders:	Less break:	4:3	Example: Upper dial 80 / lower dial 60. (70 mph)
	More break:	3:2	Example: Upper dial 84 / lower dial 56. (70 mph)
Knuckleballs:		1:1	Example: Upper dial 55 / lower dial 55. (55 mph)

There is a chart on the side of the speed control box that gives you starting values for different types of pitches. You may vary those values as you see fit in order to create the pitches that you want.

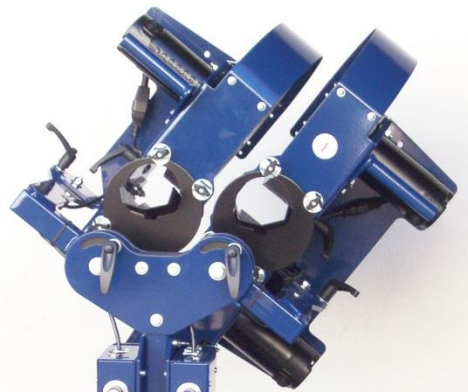
On the curveball head, the speed formula is very simple. Just multiply the number on the dial by 7.5 to calculate the speed of the pitch.

## DELIVERY ANGLES

The 2Pitch3 may be tilted to throw pitches with different angles of break.

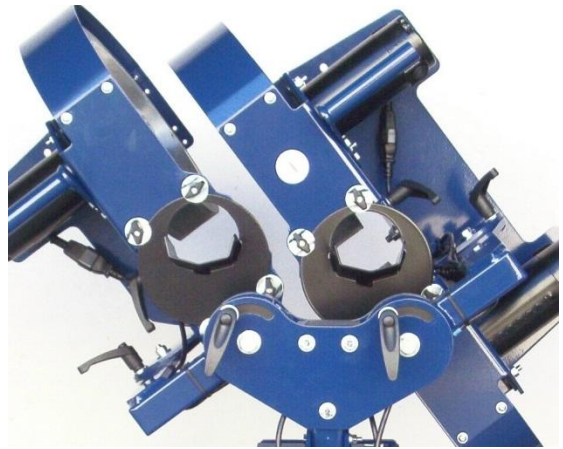


Lefthanded



Righthanded

**NOTE:** The Feed Chutes must be rotated to match the delivery angle. The “V” in the bottom of each Feed Chute must be directly underneath the ball so that the ball rolls in the center of the chute.



## **2-WHEEL HEAD:**

**Overhand:** The standard Fastball angle. With the head in this position, the spin will be straight.

**Fastball:** Set the top motor speed slower than the bottom motor speed. (2:3 – 1:2)

**Curveball:** Set the top motor speed a lot faster than the bottom motor speed. (10:1 – 2:1)

**Slider:** Set the top motor speed a little faster than the bottom motor speed. (3:2 – 2:1)

**Knuckleball:** Set both motor speeds at the same setting. 6 on each dial should be the maximum speed on knuckleballs.

**Split-finger:** Set the top motor speed just slightly faster or slightly slower than the bottom motor speed, depending on how much “sink” you want. (6:5 – 5:6)

**3/4 Lefthand:** Use this angle to throw tailing fastballs, sliders, and 3/4 curves from a lefthanded pitcher.

**Sidearm:** Use this angle to throw pitches that have a lot of side break. Set the motor speeds so that the ball breaks to the slower wheel. For example, if you have the right motor speed at 9, and the left motor speed at 5, the ball will break to the left (the side with the slower motor speed).

**3/4 Righthand:** Use this angle to throw tailing fastballs, sliders, and 3/4 curves from a righthanded pitcher.

**CURVEBALL HEAD:** On the curveball head, simply set the delivery angle and the speed.

## **OPERATING INSTRUCTIONS**

Before using your machine, perform the following routine checks:

1. Is the machine set to the right GAP?
2. Is the proper Feed Chute installed?
3. Is the wheel in the proper position on the motor shaft?
4. Has the machine been stored / unused for an extended period of time?
5. Are the motor cords connected properly at the plug connection?
6. Are there any loose nuts and bolts?
7. Are the balls dry and in good condition?
8. Do you have the proper power source? (Extension cord)?
9. Are you using a Surge Protector?



## HOW TO USE THE 2Pitch3

1. Place the machine on the pitcher's mount or pitching area and visually aim it in the direction of home plate.
2. Select the type of pitches that you are going to throw.
3. Select the delivery angles. **Set the Feed Chutes to match the delivery angle.**
4. Select the power source.
  - a. Before plugging the machine into the power source, make sure that both speed control dials are in the OFF position. The dials will click ON and OFF at the "0" mark.
5. Plug a surge protector into the power source.
6. Start the machine by turning one of the speed control dials clockwise and set it at the chosen speed. See Speed Control. Allow the first wheel to get up to speed before starting the second motor. Then start the second motor and set it at the chosen speed setting. Wait for both motors to reach their chosen speeds before pitching the first ball.
7. Visually aim the machine toward the strike zone. Do not allow anyone to stand near the home plate area yet.
8. Feed one ball into either Feed Chute.
9. Adjust the location up or down, inside or outside as needed for each pitch.
  - a. To adjust the height, loosen the Height Adjustment Lock Handle about  $\frac{1}{4}$  turn, and rotate the head of the machine up or down to change the location, then lock the handle.
  - b. To adjust the inside / outside location, loosen the Lateral Adjustment Lock Handle and rotate the head side to side to change the location, then lock the handle.
10. After setting the speed and location, pitch at least 10 balls from each head to check the location before allowing batters to step in.

Note: There will be some variation from pitch to pitch due to the balls themselves. Do not adjust the location after every pitch unless it is off by a lot.

**NOTE: There is a break-in period for the wheels. You may need to pitch 100 balls or more before the rubber is adequately scuffed up. Do not pitch to batters or expect the machine to pitch accurately until the wheels are broken in.**

## MAINTENANCE

1. Do NOT operate this machine in temperatures of less than 40 degrees F, or more than 100. Extreme temperatures will affect the rubber tread on the pitching wheels, and the motors.
2. Before using the machine for the first time, and periodically thereafter, make sure that the pitching wheels are in the proper position on the motor shafts. The end of the motor shaft is visible in the center of the wheel's hub. The motor shaft should be positioned with the motor shaft sticking out past the hub of the wheel by about  $1/32 - 1/16$  of an inch. (See Wheel Position)

Sometimes in transit, and sometimes from normal use, the wheel may move out of position. If this occurs, using a  $3/16$ " Allen wrench, loosen (do not remove) the set screw about  $1/2$  turn, reposition the wheel, and tighten the set screw.

If the motor shaft is sticking out past the end of the wheel's hub about  $1/8 - 3/16$ ", the wheel may rub against the face of the motor. If this occurs, it will make a grinding sound, and the machine may stop running. If this occurs, turn the speed controller OFF, reposition the wheel, then turn the controller back on.

3. Check the nuts and bolts regularly to make sure none of them have loosened up. At the points where the machine pivots, the bolts should be tight enough to keep some friction between the moving parts, but not so tight as to limit their movement. The pivot points should move with moderate resistance.
4. Store the machine in a clean, dry place. If you choose to leave your machine outside in your batting cage, just make sure that it is covered well enough to keep it dry. A BATA machine cover will do the job. To help prevent condensation from occurring, you may put a towel or other fabric sheet underneath the cover to absorb moisture.
5. Keep the pitching wheels clean, dry, and free of debris. Residue from balls does not need to be removed unless it is affecting the pitching. If you do need to clean the rubber surface of the wheels, do not use any chemicals. Instead, use 60 grit sandpaper. DO NOT sand the wheels with the machine running.
6. After a prolonged period of non-use, the rubber on the pitching wheels will become oxidized, making the rubber slick. This will affect the wheels' ability to grip the ball and pitch it properly. You may need to scuff up the rubber to get it back to a fresh rubber surface. Once the rubber is scuffed, regular use will prevent oxidation.
7. Check the GAP between the pitching wheels. It is extremely important that the GAP is adjusted properly for each type of ball. See GAP SELECTION.

## SPECIFICATIONS

### PITCHING WHEELS

Core material:	Aluminum
Tread material:	Natural non-marking gray rubber
Rubber hardness:	46-54A Rockwell.
Outside diameter:	11.75"
Width:	2.40"
Center hole:	5/8" diameter with a 3/16" keyway.

### MOTORS

Type:	Permanent Magnet DC
Horsepower:	1/4"
RPM rating:	Approximately 3200 rpm @ 90 volts DC.
Frame:	Welded steel plate, powder coated.
Legs:	1-1/4" diameter x .095" wall steel, clear zinc plated.
Current draw:	Approximately 3 amps per motor (full load)

### POWER SOURCES

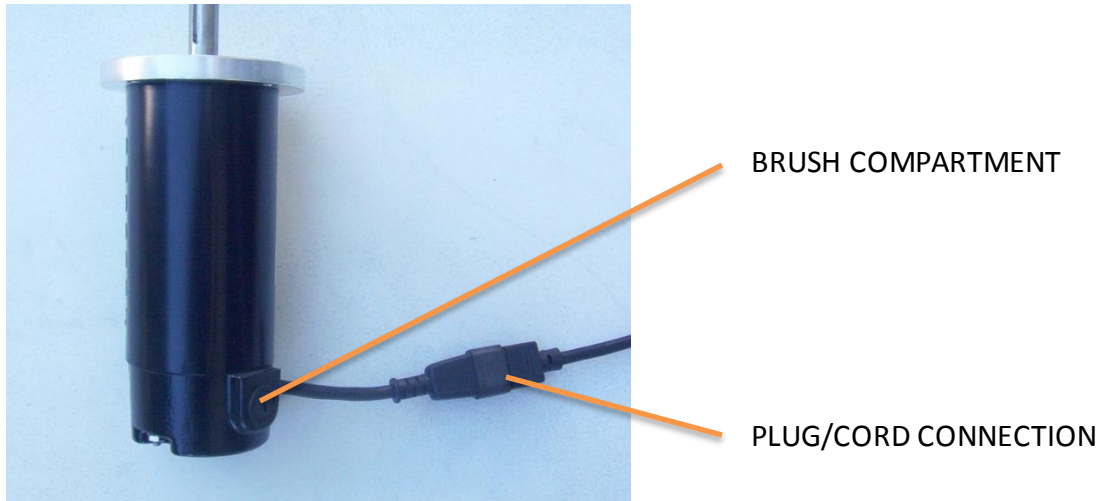
Standard outlet:	110 – 120 volt AC
Generator:	110 – 120 volt AC output, 400 watts per motor minimum
Extension cords:	Up to 25' cord: 16 gage minimum
	50' cord: 14 gage minimum
	100' cord: 12 gage minimum
	150' cord: 10 gage minimum
	200' cord (+): 8 gage minimum

SCROLL TO NEXT PAGE FOR TROUBLE SHOOTING

## TROUBLE SHOOTING

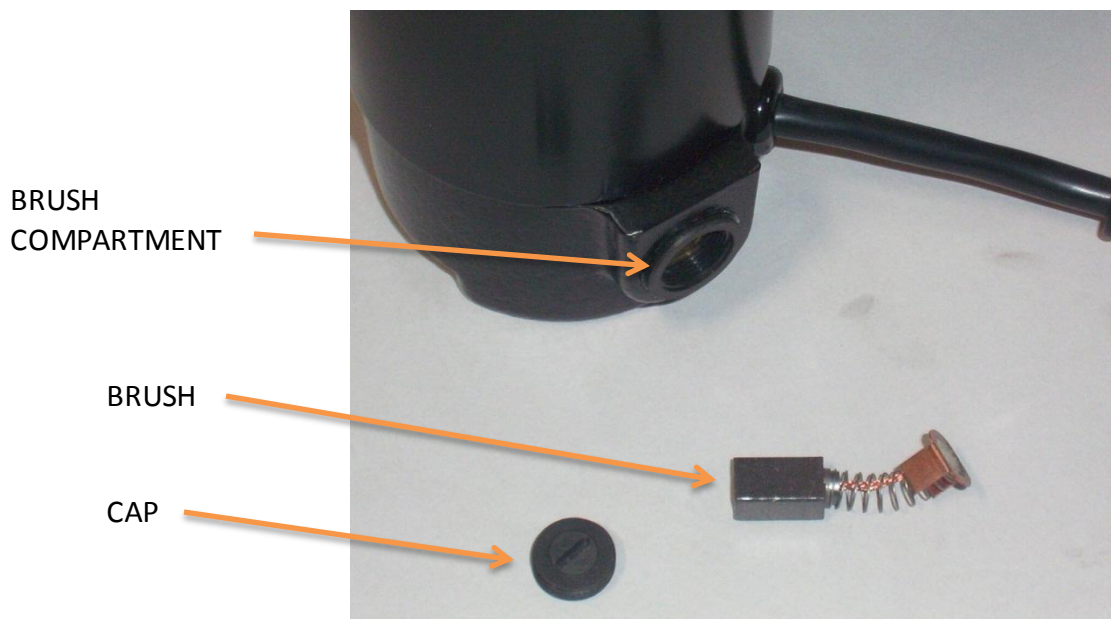
**Problem:** Motor will not turn on at all.

**Solution 1:** Check to make sure the plug connection (2010 machines and later) between the motor and speed control box is properly connected.



**Solution 2:** Check the motor brushes.

The brushes are not actually brushes at all, but rather an assembly consisting of a small metal tab, connected to a small rectangular piece of carbon via a spring and thin cable. The spring is supposed to feed the carbon “brush” into the part of the motor that is turning inside. This gives it its electrical connection. If the carbon block does not feed easily into the armature, the circuit is interrupted. This may be caused by the carbon block hanging up in the socket, which may be caused by friction.



To check the brushes, first unscrew the small cap that has the screwdriver slot. The first thing you will see is the metal tab. Using a very small screwdriver, lift the metal tab up until you can get it to pop up enough to get your fingers on it. Pull the brush assembly out of the socket by the metal tab. The assembly should slide in and out of the socket easily. If there is any friction, this would cause the carbon block to not feed in properly. In this case, the easiest solution is to very lightly sand the side of the carbon block with very fine sandpaper (400 grit). Just lay the sandpaper down on a flat surface and lightly drag the carbon block over it one time. Check the fit. Repeat if necessary.

When the brush assembly is out, check to make sure the spring and cable are not broken. If they are, the brush needs to be replaced.

Replace the brush assembly. Slide it into the socket, and push down on the metal tab, compressing the spring, until the metal tab seats down into the socket. Install the cap. Be careful when tightening the cap. It is thin and fragile.

**Solution 3:** Remove the cover of the speed control box and check the connections.

Gently tug on each wire connection to make sure that there are no loose wires. Gently wiggle each connection on the circuit board to see if any of the soldered connectors have broken loose from the circuit board. If so, the circuit board needs to be replaced.

**Solution 4:** Check the HP resistor.

The HP (horsepower) resistor is the largest component on the circuit board, white and beige colored, rectangular shaped, and located near the back side of the speed control switch (potentiometer). The HP resistor actually plugs into the circuit board into two tiny sockets. Sometimes the resistor can get knocked loose or out of the sockets completely. If it is out of the sockets, push it back in. Get it started with your fingers, then, using a straight blade screwdriver, push down on each end of the resistor where the wires are soldered. Do a little on each end at a time until it is all the way in.

Check very closely to see if the small wires that come out of each end of the beige and white block are intact or broken. If they are broken, or if the block is broken, the HP resistor needs to be replaced.

POTENTIOMETER

HP RESISTOR



**Solution 5:** Check for burned spots on the circuit board assembly. If there is any burned area, it is likely that your speed controller was damaged by a power surge. In this case, the circuit board assembly needs to be replaced. Note: You can avoid power surge damage by using a Surge Protector.

**Solution 6:** Check for water damage. If your machine got

wet, it may be that your speed controller has water damage. Sometimes you can blow the moisture out with an air hose and it will dry out enough to work again, sometimes not. If there is water damage, it probably means that you will need to replace the speed controller.

**Problem 2: Motor speed fluctuates or runs full speed all the time.**

Solution 1: This probably means that there is a malfunction in the speed control circuit board. In this case, the controller probably needs to be replaced.

**Problem 3: Wheel stopped rotating or is making a grinding noise.**

Solution 1: Check the position of the wheel on the motor shaft. It is possible that the wheel may have been pushed onto the motor shaft enough to make the hub rub on the motor face. (You would not be able to see in between the wheel hub and the motor face). If the wheel is positioned properly, there should be about 1/32" of the end of the motor shaft showing past the outside of the wheel hub. If it is more, perhaps closer to 3/16", then the hub is likely rubbing on the motor face, causing friction, which would cause the wheel to slow down and even stop.



PROPER POSITION



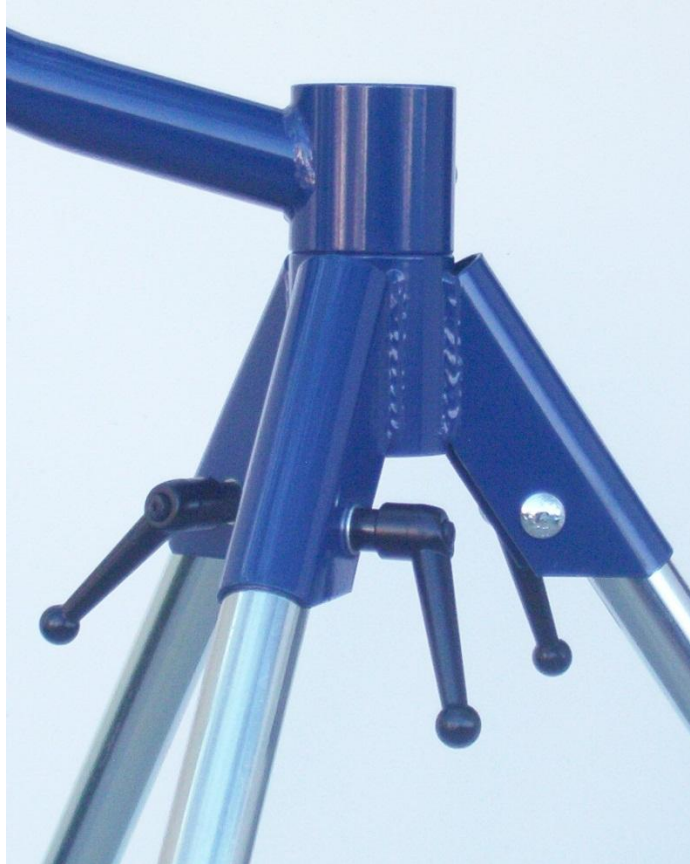
IMPROPER POSITION

To correct it, using a 3/16" Allen wrench, loosen (do not remove) the set screw about 1/2 turn. Slide the wheel back to the proper position with about 1/32 – 1/16" of the end of the motor shaft sticking out past the outside of the wheel hub, and tighten the set screw. It threads into aluminum, so be careful not to over-tighten or strip the threads.

For any other trouble-shooting problems, call Customer Service at 1-800-762-2282. Do not make any changes or adjustments that you are not sure of. Call us for help.

# Quick-Release Leg Lock Kit

The QRL allows you to install and remove the legs of your machine without a wrench.



If you ordered a QRL with your machine, it has been factory installed. If you ordered it later:

Remove the existing carriage nuts, bolts, and washers, and install the longer 2" carriage bolts that came with the QRL.

Place the flat washer on the end of the carriage bolt, and thread the lock handle onto the bolt. Make sure it threads on easily. Be careful not to cross-thread it.

Slide the legs into the sockets, and tighten the lock handles until the legs cannot rotate.

The Lever part of the lock handle may be repositioned by pulling out against the spring and rotating the Lever to the desired position. Let it spring back in. Check to make sure it is fully engaged before loosening or tightening the lock handle.

# BATA 20-Baseball / 15-Softball Auto Feeder

## Assembly Instructions

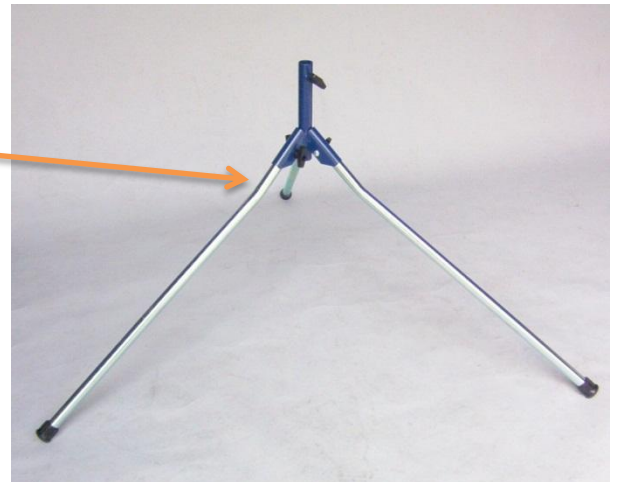
The legs may be oriented in a few different ways, depending on the height required. Each leg has a 10-degree angle bend 6 inches from one end (as shown).



For Baseball – Install the rubber legs tips on the long side of the bend as shown (right).

BEND

LEG TIP



BEND

For Softball – Install the leg tips on the short end of the bend as shown (right).



TRIPOD BASE

Slide each of the legs into the sleeves of the Tripod Base.

Orient the bends downward (as shown left) to make the stand taller.

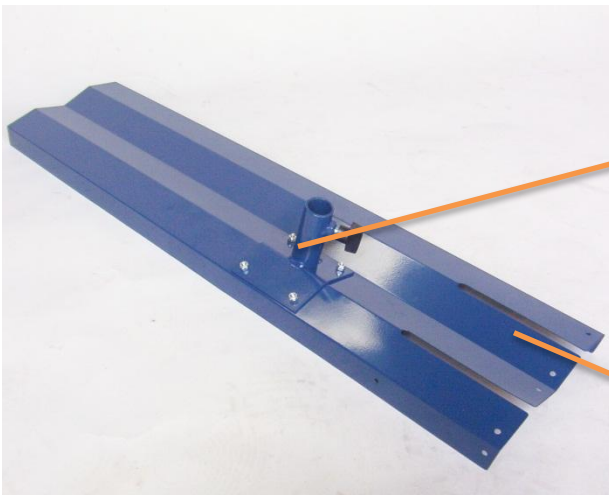
Orient the bends upward (as shown above left) to make the stand shorter.



Tighten each of the 3 hex nuts to secure the legs in place. Tighten the nuts enough to keep the leg tubes from rotating.

Install the vertical Post through the center of the Tripod Base (as shown right). Secure it in place with the lock knob.

POST



TRAY BRACKET

Attach the Tray Bracket to the Tray (as shown left) using the #10-24 x 5/8" Phillips screws, washers, and lock nuts.

TRAY

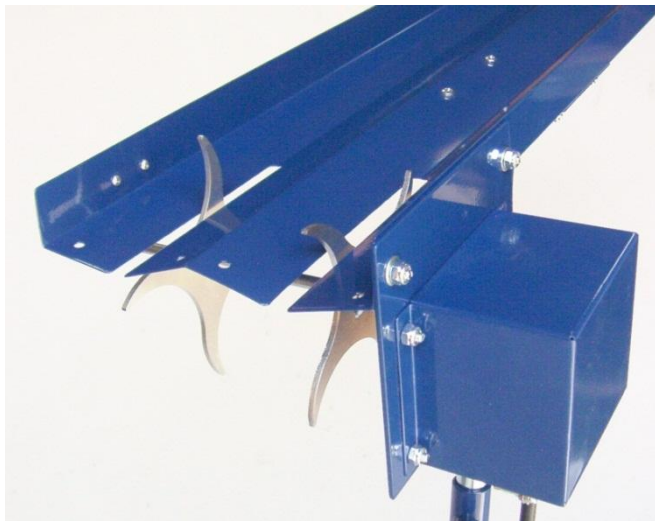
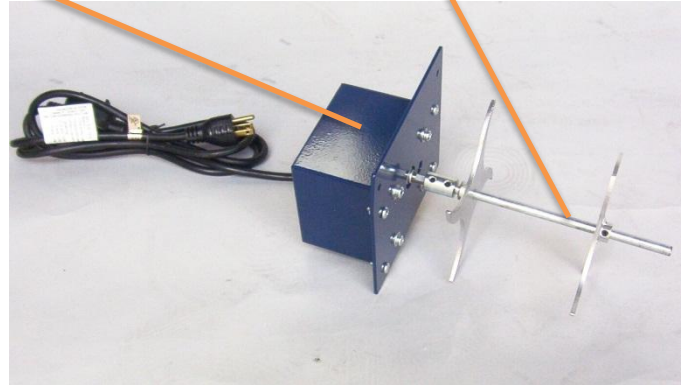
Slide the Tray assembly onto the Post, and secure it in place with the lock knob.



MOTOR ASSEMBLY

INDEX ASSEMBLY

Slide the Index assembly onto the Motor shaft. Align the set screw with the flat on the motor shaft, and (using the Allen wrench provided) secure it in place by tightening the set screw.



Attach the Motor assembly to the Feeder Tray (as shown left) using the 10-24 x 5/8" Phillips screws, washers, and lock nuts.

SPACERS

Attach the Pitch Separator to the Feeder Tray using the 10-24 x 5/8" Phillips screws, washers, and lock nuts.

PITCH SEPARATOR

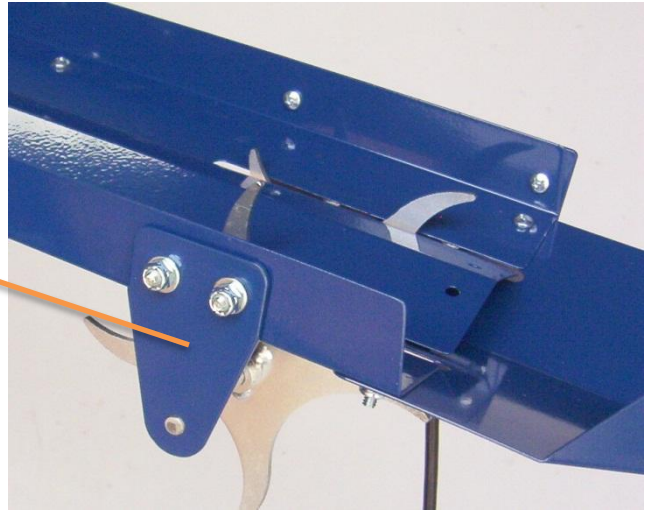
EXTENSIONS

Attach the Extensions as shown. Each Extension has slots for adjustment.



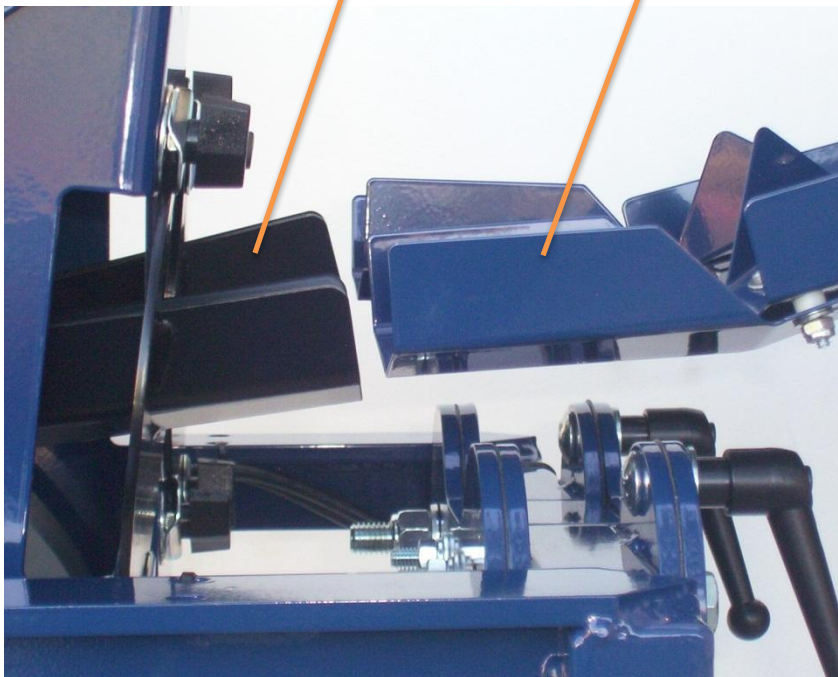
Attach the Shaft Guide (as shown) to the Feeder Tray using the #10-24 x 5/8" Phillips screws, washers, and lock nuts.

SHAFT GUIDE



FEED CHUTES

EXTENSIONS



Set up your pitching machine first.

Set up the machine and aim both pitches into the strike zone, then set up the Feeder behind the machine.

Adjust the height of the Feeder so that the Extensions are about 1/4" behind and slightly above the Feed Chutes of the pitching machine, as shown.

Adjust the positions of the Extensions so that the balls flow smoothly into the Feed Chutes.

Place up to 20 baseballs onto the Tray. Start the Feeder with the inline On/Off switch or a Remote Control On/Off device.

When pitching a fastball and a curveball, the head of the curveball side must be tilted back about 5 degrees to get the proper trajectory. This will make the curveball feed chute about 3/8" lower than the fastball feed chute.

When auto feeding in this set up, you may find it necessary to lower one of the Extensions to get it closer to the feed chute. This can be easily accomplished by turning one of the Auto Feeder's legs with the bend going the opposite as the other two. This will make the Auto Feeder lean slightly to one side, lowering one of the Extensions. You may find that you do not need to use the Extensions at all. The mounting tabs of the Extensions may also be bent slightly to make them line up properly.