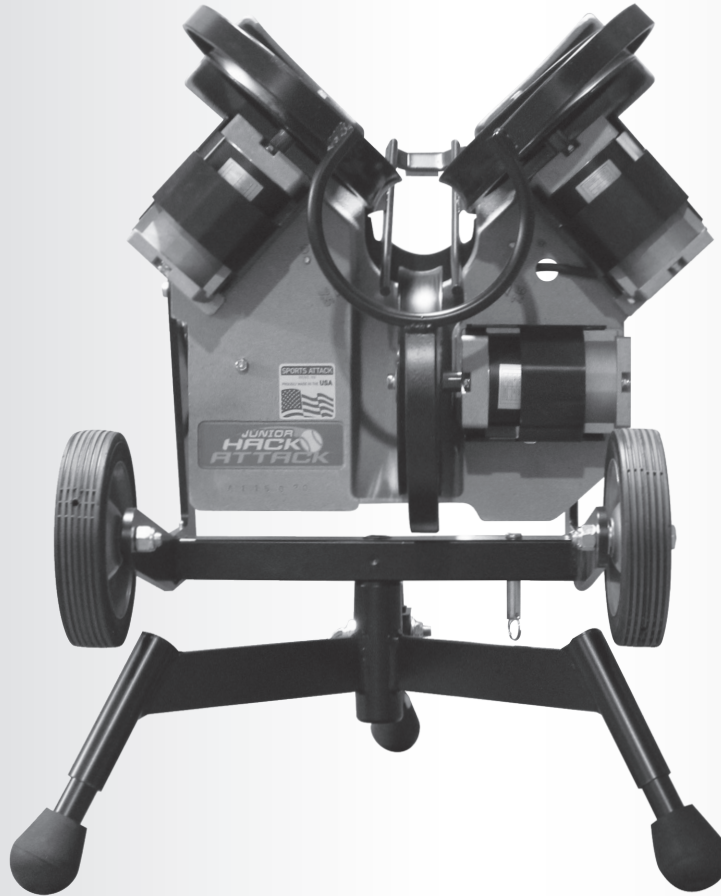


JUNIOR HACK ATTACK™

SOFTBALL PITCHING MACHINES



JUNIOR HACK ATTACK™ SOFTBALL MACHINE
PATENTS APPLIED FOR

INSTRUCTION MANUAL

OPERATION · SETUP · USE & CARE · SERVICE



SPORTS ATTACK LLC. | 800.717.4251 | www.sportsattack.com

WARRANTY STATEMENT

What is most important to Sports Attack is that your machine meets your expectations of quality and performance. We stand behind the material and workmanship of our machines for five (5) years from the date of original purchase for institutional and residential use and one (1) year for commercial environments, with the following exceptions:

- Throwing Wheels are warranted for two (2) years;**
- Electronic Controller is warranted for two (2) years; and,**
- Throwing Wheel Motors are warranted for two (2) years.**

This warranty excludes any cosmetic issues or normal wear and tear of the unit, and is not in effect if the machine has been misused, misapplied, improperly assembled, or modified without the express written permission of Sports Attack. In addition, this warranty does not apply to damage in transit, in any accident unrelated to the direct operation of the equipment, or by fire, flood or act of God.

If you encounter any issues during the warranty period, Sports Attack will quickly get your machine back in working order. If the warranty repair involves a replacement part, we will make sure you get both the part and easy instructions for replacement at no cost to you. If a service person is needed, Sports Attack will pay the pre-approved labor charge to get your machine back in working order.

EFFECTIVE IMMEDIATELY: Warranty components such as motors, etc. now require a picture of the component when submitting replacement request.

Please know that any problem can quickly be resolved with a phone call to our experienced, responsive customer service department at 800.717.4251. We are here to answer your questions and to make sure your machine provides you years of service.

RETURNS

Sports Attack manufactures the highest quality sports training equipment in the world. If for any reason you are not satisfied, a machine can be returned within 30 days of receipt for any reason for a full refund less a 15% restocking fee. Cost of shipping the unit back to Sports Attack will also be the responsibility of the purchaser. Please note that the refund amount may be reduced by any non-cosmetic damage to the machine.

If you have any questions or concerns, please give our experienced, responsive customer service department a call at 800.717.4251.

SHIPPING DAMAGE CLAIMS PROCEDURE

NOTE: For your protection, please note that equipment in this shipment was carefully inspected and packaged by skilled personnel before leaving the factory.

Upon acceptance of this shipment, the transportation company assumes full responsibility for its safe delivery.

IF SHIPMENT ARRIVES DAMAGED:

1. **VISIBLE LOSS OR DAMAGE:** Be certain that any visible loss or damage is noted on the freight bill or express receipt, and that the note of loss or damage is signed by the delivery person.
2. **FILE CLAIM FOR DAMAGE IMMEDIATELY:** Regardless of the extent of the damage.
3. **CONCEALED LOSS OR DAMAGE:** If damage is unnoticed until the merchandise is unpacked, notify the transportation company or carrier immediately, and file "CONCEALED DAMAGE" claim with them. This must be done within fifteen (15) days from the date the delivery was made to you. Be sure to retain the container for inspection.

Sports Attack LLC. cannot assume liability for damage or loss incurred in transit. We will, however, at your request, supply you with the necessary documents to support your claim.

To register the Warranty, please go to our website:

sportsattack.com/warranty

You will need to provide the **serial number** when registering your machine, (see pg. 4) for location of the serial number.

For repairs and service after the Warranty period, please call:

Sports Attack
Customer Service Dept.
Ph 800.717.4251
Fx 775.345.2883

RETURNS

To return an item, please contact our Customer Service Department at 800.717.4251.

A 15% restocking fee will be charged for any items accepted for return. It is the customer's responsibility to handle the repacking and shipment (as well as all associated fees) back to Sports Attack.

No returns will be accepted after 30 days of receiving product.

TABLE OF CONTENTS

Warranty Statement	i
Safety Instructions	2
JUNIOR HACK ATTACK SOFTBALL MACHINE OPERATION	
Features & Operating Controls	4
Set-up & Preparation	5
Batting Practice	6
Fungo (Fielding Practice)	8
Shutting Down	9
MAINTENANCE & SERVICE	
Care, Cleaning & Maintenance	10
Component Replacement	11
Component View	13
Exploded View	14
Parts List	15
Conversion, Softball to Baseball	16

INTRODUCTION

Thank you for purchasing this Sports Attack LLC. equipment.

Proper assembly, careful operation and consistent maintenance of this equipment will ensure that it gives you the very best performance and a long, economical service life.

This manual contains the information needed to properly set up the Junior Hack Attack, and to use, care for and maintain the Junior Hack Attack in a manner which will ensure its optimum performance.

WARNING PERSONAL INJURY HAZARD

Carefully read all instructions in this manual, and all labels and warnings on Junior Hack Attack before using this machine.

Use machine only under adult supervision. Failure to operate Junior Hack Attack as described in this manual can result in severe personal injury or death.

- Never loosen the horizontal swivel lock while pitching to a batter. If the lock is not secure, the throwing head could pivot.

A loose swivel lock can allow a pitch to be inside which could hit the batter.

ELECTRICAL SHOCK HAZARD

Junior Hack Attack must be connected to a properly grounded electrical receptacle.

- Do not operate on wet ground.

CAUTION PERSONAL INJURY HAZARD

Keep hands away from throwing wheels anytime the machine is connected to a power source.

- Carefully check Junior Hack Attack for completeness and condition before connecting to electrical power.

EQUIPMENT ELECTRICAL DAMAGE

Keep hands away from throwing wheels anytime the machine is connected to a power source.

- Carefully check Junior Hack Attack for completeness and condition before connecting to electrical power.

SAFETY INSTRUCTIONS

ELECTRICAL SAFETY

Use a 115 volt single phase 3-wire grounded power source.

Up to 200 ft. from power source, use a minimum #14/3 grounded 3-wire extension cord.

Over 200 ft. from power source, consult a licensed electrician for required power cord size.

OPERATING SAFETY

CAUTION: Never reach down near moving throwing wheels for any reason! If it is necessary to reach into the throwing wheels, **ALWAYS:**

1. Turn all three speed dials to "0."
2. Turn on/off switch "OFF."
3. Unplug Junior Hack Attack from power source
4. Wait until the throwing wheels have come to a complete stop before reaching hands or fingers anywhere near the throwing wheels.

CAUTION: Carefully check Junior Hack Attack for completeness and condition before connecting to electrical power:

1. Throwing wheels must be tight on the motor shafts
2. Wheel guard and ball chute must be tightly fastened to the throwing head.

Carefully check the throwing wheels frequently for cleanliness, chips and cracks. Do not use the machine if the throwing wheels are damaged, or if chips or cracks appear in the wheels. (For damage within warranty period, see warranty statement, page xi.)

ALWAYS set the speed controls to "0" before connecting the machine to power. Check that the speed controls are at zero before turning the on/off switch "ON."

Do not allow anyone to walk in front of the machine if it is connected to electrical power.

CAUTION: DO NOT plug in or energize this equipment until all Assembly Instructions and Operation Instructions are read and followed.

WARNING PERSONAL INJURY HAZARD

Carefully read all instructions in this manual, and all labels and warnings on Junior Hack Attack before using this machine.

Use machine only under adult supervision. Failure to operate Junior Hack Attack as described in this manual can result in severe personal injury or death.

Never loosen the horizontal swivel lock while pitching to a batter. If the lock is not secure, the throwing head could pivot.

A loose swivel lock can allow a pitch to be inside which could hit the batter.

ELECTRICAL SHOCK HAZARD

Junior Hack Attack must be connected to a properly grounded electrical receptacle.

Do not operate on wet ground.

CAUTION PERSONAL INJURY HAZARD

Keep hands away from throwing wheels anytime the machine is connected to a power source.

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EQUIPMENT ELECTRICAL DAMAGE

Keep hands away from throwing wheels anytime the machine is connected to a power source.

Carefully check Junior Hack Attack for completeness and condition before connecting to electrical power.

SAFETY INSTRUCTIONS (cont'd)

BALL SELECTION

Never mix leather balls with synthetic pitching machine balls.

Be careful not to mix new with old balls or balls from different manufacturers.

Balls must be consistent in type and amount of wear to produce repeatability.

Never use wet balls!

BATTING PRACTICE

The horizontal swivel lock must be securely tightened before the batter approaches the plate.

ALWAYS test and adjust the Junior Hack Attack before a batter steps up to the plate:

1. Adjust so that Junior Hack Attack throws a ball across the plate.
2. Throw test pitches until required velocity and break are reached.
3. Throw several pitches to verify pitch location repeatability.

DO NOT make any speed or pitch location changes while the batter is at the plate.

Batter and pitching machine operator must wear batting helmets.

Only one person at a time should operate the machine.

Always present the ball to the batter before feeding the ball into the machine.

Operator must stand behind a protective screen to prevent injury from balls off the bat. Screen is not included with Junior Hack Attack.

FIELDING PRACTICE

Both the elevation control and swivel lock must be released so that the throwing head moves freely through the intended range of motion.

Never reach up chute to push ball into the throwing wheels.

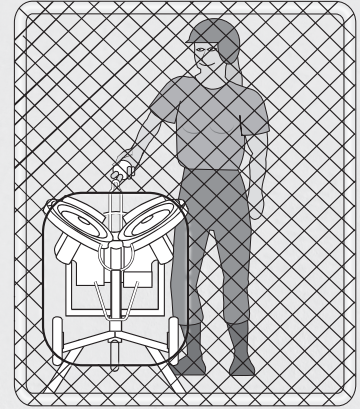
Keep hands and fingers well away from the throwing wheels.

Be careful to keep all persons away from in front of Junior Hack Attack.

NOTE: Vertical (elevation control) must be adjusted whenever you change pitches (spins).

PERSONAL INJURY HAZARD

Always use a protective screen to protect the operator from the ball off the bat. (Screen not included with Junior Hack Attack.)



Always wait for all three throwing wheels to come to a complete stop before transporting Junior Hack Attack, lifting the throwing head or performing any repairs.

ADDITIONAL INFORMATION

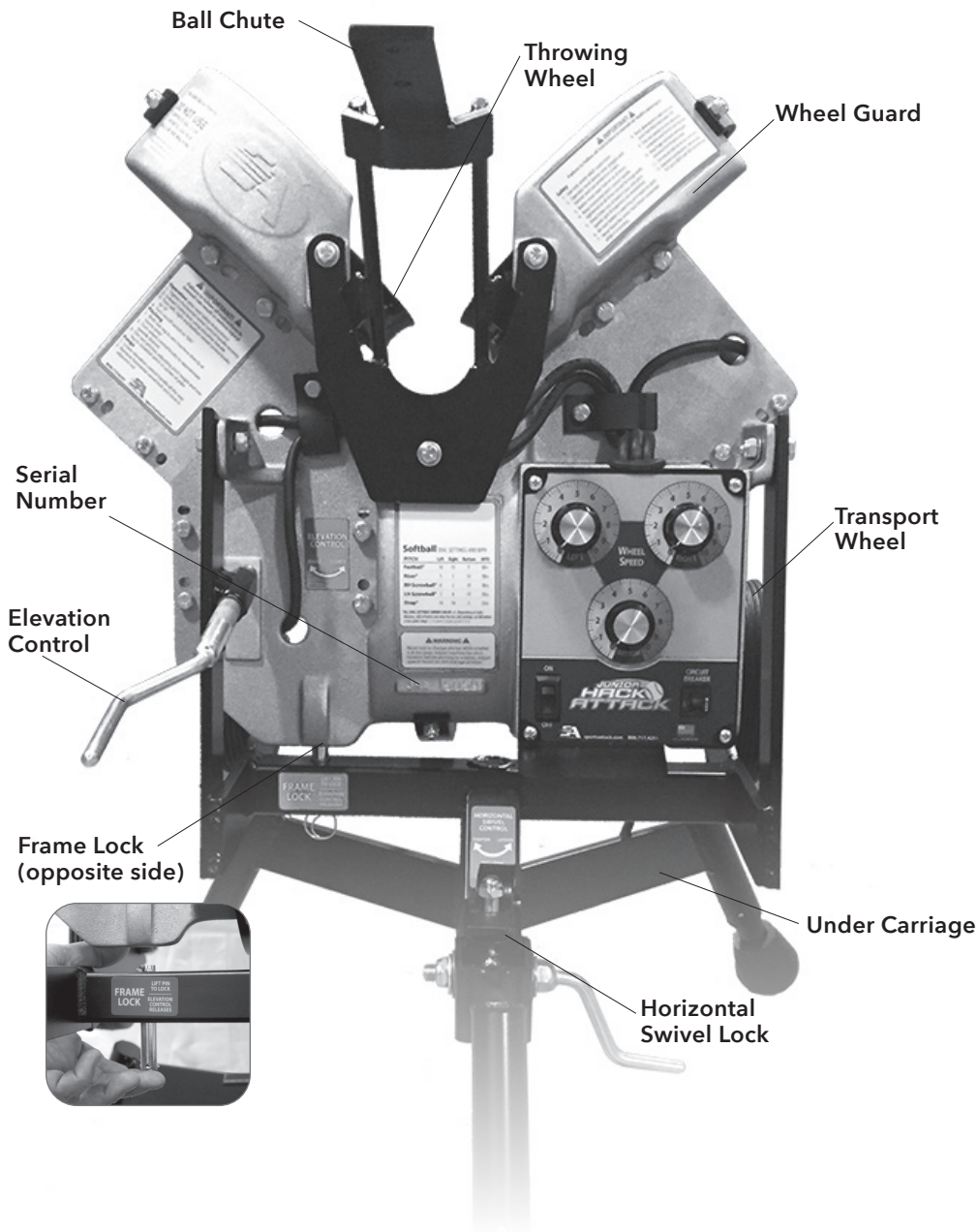
If you have any questions regarding the safe operation of this equipment, please call:

Sports Attack Customer Service:
800.717.4251 or 775.345.2882



FEATURES & OPERATING CONTROLS

JUNIOR HACK ATTACK SOFTBALL PITCHING MACHINE



ADDITIONAL PARTS & CONVERSION KITS

Component View and Parts List . . .13

Softball/Baseball Conversion16

SAFETY HINT

Keep your back straight and lift with your legs. Be ready to grab the wheel guard and guide Junior Hack Attack into the upright position (See Figure 3).

Travel lock must be secure prior to movement.



Figure 1 Position Junior Softball Hack Attack.



Figure 2 Tip up onto wheel guard; Insert two front legs.



Figure 3 Begin to lift Junior Softball Hack Attack upright (See Safety Hint at lower left).



Figure 4 Carefully tilt Junior Softball Hack Attack up onto its rear legs.

SET-UP & PREPARATION

1. Be sure the horizontal swivel lock is tightened securely (See Photo A).
2. Turn the elevation adjustment clockwise until the throwing head is held tightly against the frame lock pin (See Photo B). Tighten just enough to secure the throwing head. It is not necessary to over tighten.
3. Install the long, rear leg (**NOTE:** the leg has a push button, which locks the leg into the socket) Roll Junior Hack Attack onto the mound approximately four feet in front of the rubber. The long leg is used for transporting only.
4. Tilt Junior Hack Attack forward until it rests on the throwing wheel guard. See Figure 2, Page 4.
5. Insert the two front legs into the front sockets in the undercarriage (**NOTE:** the front legs also have locking push buttons). Then remove the long, transport leg and insert the short leg into the rear leg socket.
6. See Figure 3 on page 4.
Walk around to the front of Junior Hack Attack, and, with your back to home plate, reach down and grasp the wheel guards. Then, lift machine up and over the front legs and set it gently onto the rear leg.
7. Position Junior Hack Attack:
 - a. For optimal performance, position the Junior Hack Attack so the release point is approximately 46 feet from home plate.
 - b. Then, sight down ball chute. Move the rear leg right or left to adjust machine so that it is pointing directly at home plate.
 - c. Check the horizontal swivel lock to make sure it remains tight.
8. Unlock the frame lock (See Photo C). Turn the handle of the elevation control counter-clockwise until the travel lock pin drops out of the way.
9. Adjust the throwing head:
 - a. Turn the handle of the elevation control clockwise. Raise the throwing head until it will throw somewhere near the required height.
 - b. This initial adjustment will come through experience. To start, turn the elevation adjustment 10 turns clockwise.
10. Examine Junior Hack Attack for condition and completeness:
 - a. Be sure the horizontal swivel lock is secured (See Photo A).
 - b. Throwing wheels must be tight on the motor shafts. Check that the keyway retaining bolts are tight.
 - c. Wheel guard and ball chute must be securely fastened to the throwing head.
11. Be certain the on/off switch is turned "OFF", then plug Junior Hack Attack into an extension cord or other power source. (See generator information at right if applicable.)

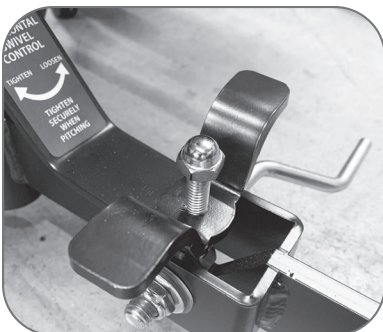


Photo A Horizontal swivel lock

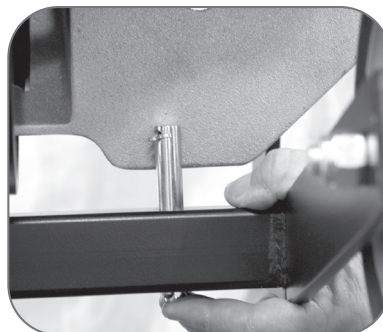


Photo B Frame lock engaged

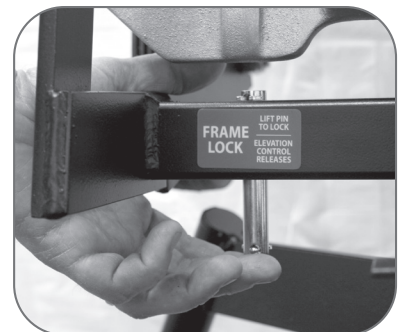


Photo C Frame lock disengaged

WARNING HAZARD FROM HIGH-SPEED PROJECTILES

Being struck by a pitched ball can cause serious injury or death. Make sure that no one steps in front of Junior Hack Attack while it is connected to electric power.

Clear all hitters away from home plate, the batter's box and the backstop area before connecting Junior Hack Attack to electric power.

GENERATOR INFORMATION

1. Junior Hack Attack requires a generator capable of providing clean electricity 1000 watts at 120 volts 60hz.
2. Be sure the on/off switch is "OFF" before plugging Junior Hack Attack into the generator.
3. Start the generator, allow it to reach full speed and be sure all three speed control dials are at "0" before turning the on/off switch "ON".

IMPORTANT: Generator speed fluctuations can damage the electronic speed control. Maintain adequate fuel in the generator at all times.

4. Turn the on/off switch "OFF" before shutting off the generator and before unplugging Junior Hack Attack.

BATTING PRACTICE

THE WINDUP (getting ready to pitch)

1. Before turning the on/off switch "ON", make sure all three speed control dials are set at "0". Now turn the on/off switch to "ON".
2. Set the speed control dials*:
Top Left to "10"
Top Right to "10"
Bottom to "9"
*This is the average setting for a **Little League** fastball.
3. Check again to make sure no one is in front of Junior Hack Attack or anywhere near the batter's box. Then, feed a ball down the ball chute to pitch the first ball.
4. Note where the pitch goes in relation to home plate. Adjust the pitch to the left or right by shifting the rear leg:
 - a. To move the pitch left, move the rear leg to the right.
 - b. To move the pitch right, move the rear leg to the left.
5. Adjust the elevation:
 - a. Turn the elevation control clockwise to raise the pitch.
 - b. Turn the elevation control counter-clockwise to lower the pitch.
6. Adjust the speed control dials to produce the required speed. Larger numbers equal higher speed.
7. Pitch a second ball.
8. Repeat steps 4, 5 and 6 until the proper path, elevation and speed are achieved.
9. Refer to "Selecting the Pitch", page 7, for different pitches.
10. Pitch several more test balls to ensure the selected pitch repeats.
11. After you are sure desired pitch is repeating, allow the hitter to step into the batter's box.
12. See Figures 3 and 4 at left.
 - a. Before each pitch present the ball to the hitter.
 - b. Place ball at the top of the ball chute, seating it firmly against the ball chute.

AND... THE PITCH

Proper feeding technique is important to take advantage of Junior Hack Attack's life-like vision and timing.

When feeding:

1. Be sure hitter is ready.
2. Present the ball to hitter by raising it approximately to eye level (See Figure 3), then place ball at the top of the ball chute, seating it firmly against the ball chute. The ball should be held back against the chute to ensure a smooth consistent feed (See Figure 4).
3. Release the ball to roll down the ball chute and into the throwing wheels.

WARNING HAZARD FROM HIGH-SPEED PROJECTILES

Being struck by a pitched ball can cause serious injury or death. Make sure that no one steps in front of Junior Hack Attack while it is connected to electric power.

Clear all hitters away from home plate, the batter's box and the backstop area before connecting machine to electric power.

NOTE: As wheel speeds are changed for different velocities and spins, the ball will be pitched to differing locations. Compensate for these changes by turning the elevation control, and by moving the rear leg.

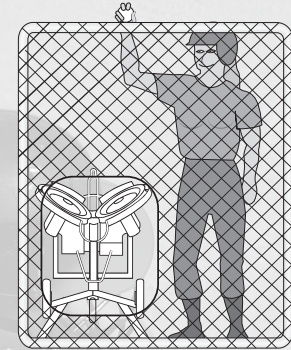


Figure 3 Present the ball to the hitter



Figure 4 Feeding the ball

IMPORTANT: Hitter should stride the instant he sees the ball release from the feeder's hand at the upper end of the ball chute.

BATTING PRACTICE (cont'd)

SELECTING THE PITCH

NOTE: Vertical (Elevation) and horizontal (swivel) must both be adjusted whenever you change speed or spin.

Always have the batter step away from the batter box before adjusting speed or spin.

BALL SELECTION

1. Never mix leather balls with synthetic pitching machine balls.
2. Be careful not to mix new with old balls, or balls from different manufacturers.
3. Balls must be consistent in type and amount of wear to produce repeatability.

4. NEVER USE WET BALLS!

Leather balls work well but will wear faster than synthetic pitching machine balls. Watch to see that leather balls do not begin to soften from the great amount of hitting they will receive.

Discard old or soft leather balls from your Junior Hack Attack batting sessions. Similarly, discard older worn synthetic pitching balls.

Softball DIAL SETTINGS AND MPH

PITCH	Left	Right	Bottom	MPH
Fastball*	10	10	9	60+
Riser*	5	5	10	50±
RH Screwball*	8	2	10	50±
LH Screwball*	2	8	10	50±
Drop*	10	10	3	53±

*ALL DIAL SETTINGS SHOWN CAN BE ± 1 . Depending on balls, distance, skill of batter and other factors, dial settings can fall within a two-point range. i.e. A slower Fastball can be 9-9.8.

! WARNING !

Never test or change pitches while a batter is at the plate. Adjust machine for pitch location before pitching to a batter. Adjust speeds based on skill and age of hitter.

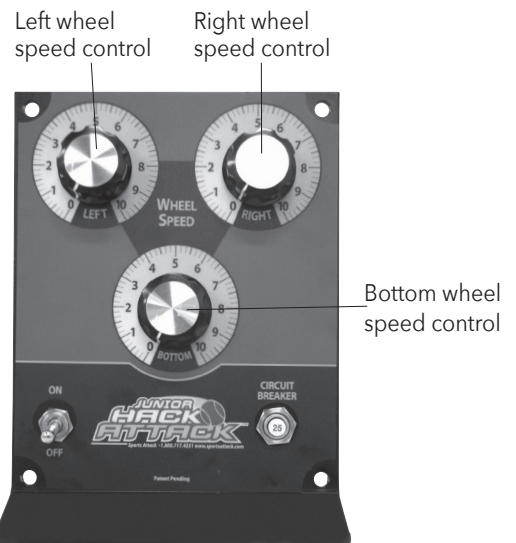
Figure 5 Pitch Selection Chart - These settings are provided as general guidelines. Adjustments for players of varying skill can be made from these settings.

WARNING PERSONAL INJURY HAZARD

Never reach down near throwing wheels for any reason! Always turn all three speed control dials to "0"; turn the on/off switch "OFF", unplug Junior Hack Attack from the power source and wait until the throwing wheels have come to a complete stop before reaching hands or fingers anywhere near throwing wheels.

Never loosen the horizontal swivel lock while pitching to a batter.

If the lock is not secure, the throwing head is free to pivot. A loose swivel lock can allow a pitch to be inside which could hit the batter.



SOFTBALL FUNGO (FIELDING PRACTICE)

THROWING GROUNDERS, FLY BALLS, LINE DRIVES AND POP-UPS

1. Roll Junior Hack Attack to home plate and face toward center field. Install legs, tilt it into position and connect to electric power (See Baseball Set-up & Preparation on Page 5).

2. Turn the elevation control counter-clockwise to release the frame lock. See page 5, Photo C.

3. Loosen the horizontal swivel lock until the throwing head pivots freely. See Photo C.

By using the handle on the end of the ball chute, you can easily pivot Junior Hack Attack to aim at any point on the field.

You can simulate various line drives (slicing, fading, sinking, rising, etc.) by adjusting the spin. Refer to Figure 5 on page 7.

See Figure 6 below:

For pop-ups, push the handle down. Using the opposite hand, situate ball on ball chute so that the ball rolls down the chute and through the throwing wheels.

4. When defensive work is completed, position the "through hole" directly over the undercarriage nut. Screw in the horizontal swivel lock through the "through hole" and into the undercarriage nut and tighten securely.

5. Secure the throwing head with the frame lock. Allow all three throwing wheels to come to a complete stop before transporting Junior Hack Attack.



Figure 6 Feeding the ball for pop-ups.

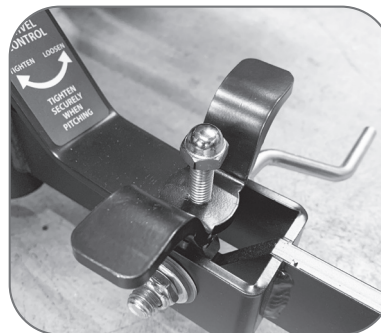


Photo C Horizontal swivel lock.

WARNING HAZARD FROM HIGH-SPEED PROJECTILES

Being struck by a pitched ball can cause serious injury or death. Make sure that no one steps in front of Junior Hack Attack while it is connected to electric power.

Clear all hitters away from home plate, the batter's box and the backstop area before connecting machine to electric power.

CAUTION PERSONAL INJURY HAZARD

Never reach up chute to push ball into the throwing wheels. Be sure to keep hands and fingers well away from the throwing wheels.

Be careful to keep all persons away from front of Junior Hack Attack any time it is connected to electrical power.

SHUTTING DOWN

TURNING JUNIOR HACK ATTACK "OFF"

1. Set each speed control dial to "0".
2. Turn the on/off switch "OFF".
3. Unplug Junior Hack Attack from the power source.

PUTTING JUNIOR HACK ATTACK AWAY

1. Be absolutely sure that the throwing wheels have completely stopped turning.
2. See Figure 8A at right:
 - a. Turn the elevation adjustment counter-clockwise until the throwing head is all the way down.
 - b. Push the frame lock pin all the way up (See Figure 8A at right).
 - c. Hold the frame lock pin in the up position (See Figure 8B at right).
 - d. Turn the elevation adjustment clockwise until the throwing head is held tightly against the frame lock pin. Tighten just enough to secure the throwing head. It is not necessary to over tighten.
3. Using the rear leg as a handle, tip Junior Hack Attack up and over onto the wheel guard.
4. Remove (unsocket) both front legs. Remove (unsocket) rear leg and insert the long transport leg.
5. See Figure 7 below:

Using the transport leg as a handle, tip Junior Hack Attack back until machine can be comfortably rolled on the travel wheels. Junior Hack Attack can now be rolled and maneuvered off of the field.
6. To transport the Junior Hack Attack in a car, remove the throwing head assembly from the undercarriage.:
 - a. Be sure the frame lock is engaged and the throwing head is tightly secured to the yoke.
 - b. Lift the throwing head straight up and clear of the undercarriage (See Figure 8D below).

SUGGESTION: The throwing head, while awkward, can be carried for short distances by gripping the top section of the wheel guard and balancing the piece against your thighs as you walk.

 - d. To prevent damage in transport, rest the throwing head on the wheel guard and yoke; motors should be down, and the control panel pointing up.

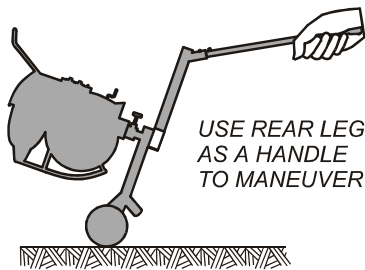


Figure 7 Maneuvering



Figure 8A Push up frame lock pin.

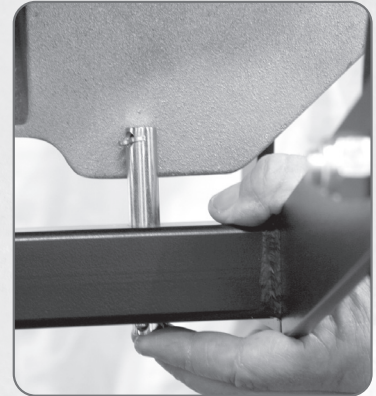


Figure 8B Hold frame lock all the way up until the throwing head is held tightly against the frame lock pin.

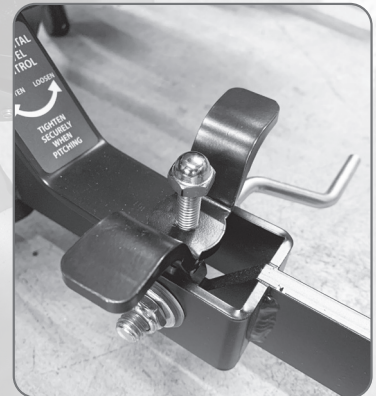


Figure 8C



Figure 8D Lift the throwing head completely out of the undercarriage.

CARE, CLEANING & MAINTENANCE

LUBRICATION (once per season, or as required):

1. Elevation Control
Apply fresh grease.
2. Horizontal Swivel Lock
 - a. Completely remove the horizontal swivel lock. Clean all old grease, dirt, etc. from the threads.
 - b. Wipe the threads with a very small amount of fresh grease.
 - c. Reinstall.

THROWING WHEEL MOTORS

Motors are sealed and require no lubrication.

Check bolts for tightness once a season. Tighten bolts securely, but do not over-tighten.

See Figures 9 and 10 on page 11.

CLEANING THE THROWING WHEELS

The throwing wheels must be kept clean to maintain accuracy. Clean the wheels periodically to control the build-up of grass and dirt.

1. Turn the on/off switch "OFF" and allow the wheels to come to a complete stop.
Unplug Junior Hack Attack from electric power.

Dampen a rag with soap and water. Turn the throwing wheel by hand and scrub the wheel until the build-up is removed. For very heavy build-up, a synthetic scouring pad, such as a Scotch-Brite® scouring pad, or medium sandpaper may be used sparingly. Methyl Ethyl Ketone (M.E.K.) may be required to help loosen the build-up of dirt or ball residue.

EXAMINE THE MACHINE

Examine Junior Hack Attack for condition and completeness before every use:

1. For batting practice, be sure the horizontal swivel lock is secured.
2. Throwing wheels must be tight on the motor shafts. Check that the keyway retaining bolts are tight.
3. Wheel guard and ball chute must be securely fastened to the throwing head.

CAUTION

PERSONAL INJURY HAZARD

Never attempt to clean the throwing wheels while they are turning. Rags or implements caught in spinning wheels can cause serious injury.

Unplug the machine before cleaning the wheels or performing any service.

CHEMICAL HAZARD

Methyl Ethyl Ketone (M.E.K.)

Read and follow the directions and safety instructions on the M.E.K. container.

FIRE HAZARD

Methyl Ethyl Ketone (M.E.K.)

M.E.K. is flammable. Do not use M.E.K. around a fire or flame. Do not use M.E.K. near a running generator or other source of ignition.



COMPONENT REPLACEMENT

THROWING WHEEL REPLACEMENT

1. Turn the on/off switch "OFF" and unplug the power cord. For the bottom throwing wheel, remove three (3) bolts holding the ball chute to the main casting.
2. Hold the wheel so that it cannot move. Turn the keyway retaining bolt counter-clockwise using a box-end wrench.
SUGGESTION: If the bolt is too tight, give the opposite end of the wrench a series of light taps with a hammer making sure the wrench remains on the bolt.
3. Remove the bolt and washers.
4. Work the wheel off of the motor shaft. Be sure to catch the key as it is freed from the keyway.
5. Ball throwing wheels are machine balanced. Small holes in the side of the wheel are applied at the factory and are normal. A slight wobble is normal.

Reassemble in reverse order.

- a. Install wheel to motor shaft with key slots aligned.
- b. Be sure the key is in place, and inserted so that it is flush with the boss at the wheel center.
- c. Be sure the washer and lock washer are installed in the right order, and that the keyway retaining bolt is tightened.
- d. Test the wheel by spinning it by hand and making sure that it spins freely without excessive wobble before turning the unit "ON".
- e. Be sure the wheel guard is properly and securely reinstalled.

1. Turn the on/off switch "OFF" and unplug the power cord.
2. Remove the throwing wheel (see above).
3. Remove four (4) screws holding controller into main casting. Note the position of the motor wires on the controller, then disconnect the wires. See Figure 12 on page 12.

When connecting the female plugs onto the male spades on the circuit board, check that all female connectors connect securely. If they are loose, use pliers to close the female connectors. So they will fit securely.

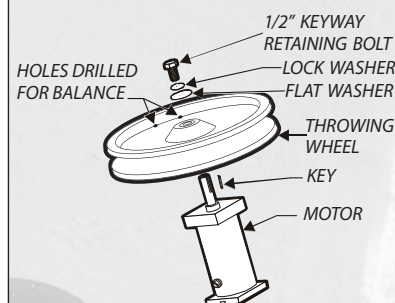
4. Note the routing of the motor wires. Loosen any wire clamps.
5. Remove four (4) bolts holding the motor to the main casting. See Figures 9 & 10 on page 11.

Reassemble in reverse order.

NOTE: Check bolts for tightness once a season. Tighten bolts securely, but do not over-tighten.



NOTE: On the bottom wheel, the ball chute assembly (part 14 on page 13) must be removed prior to the removal of the motor or ball throwing wheel.



When replacing the motor, you will see two sets of bolts:

2 - 1/4" x 1" coarse thread bolts

2 - 5/16" x 1" coarse thread bolts

The wrench or socket size needed for the 1/4" bolt is a 7/16".

The wrench or socket size needed for the 5/16" bolt is a 1/2".



Figure 9 Shown using a 6" extension with 1/2" socket.



Figure 10 Shown using a 6" extension with 7/16" socket.

COMPONENT REPLACEMENT (cont'd)

CONTROLLER REPLACEMENT

- 1. Turn the on/off switch "OFF" and unplug the power cord.
- 2. Remove four screws holding controller faceplate into main casting. Note the position of the main power and motor wires on the controller, then disconnect the wires. See Figure 12 on page 12 for the three motor wires. See Figure 13 on page 12 for the main power cord wires.

Reassemble in reverse order.

Be sure wires are correctly reinstalled. Motor wire connectors are different sizes. Be sure they are installed on the correct size terminal. See Figure 12 for the motor wires and Figure 13 for the power cord wire.

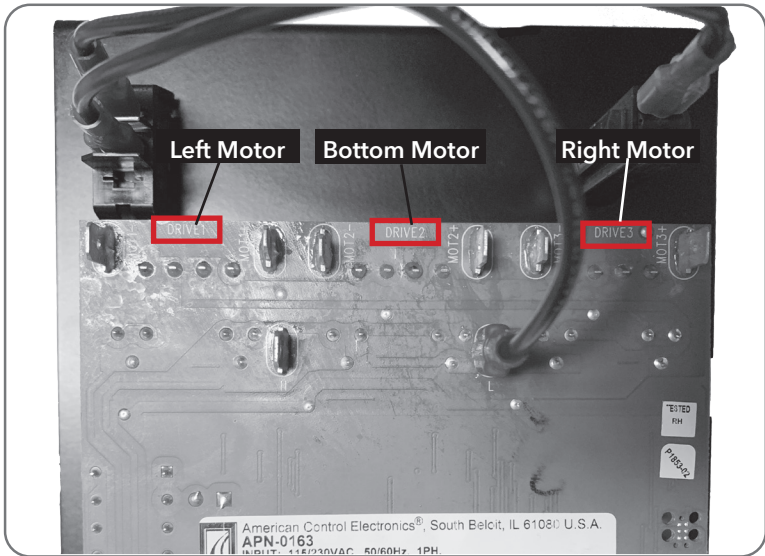


Figure 11 Wiring diagram from the control board side.

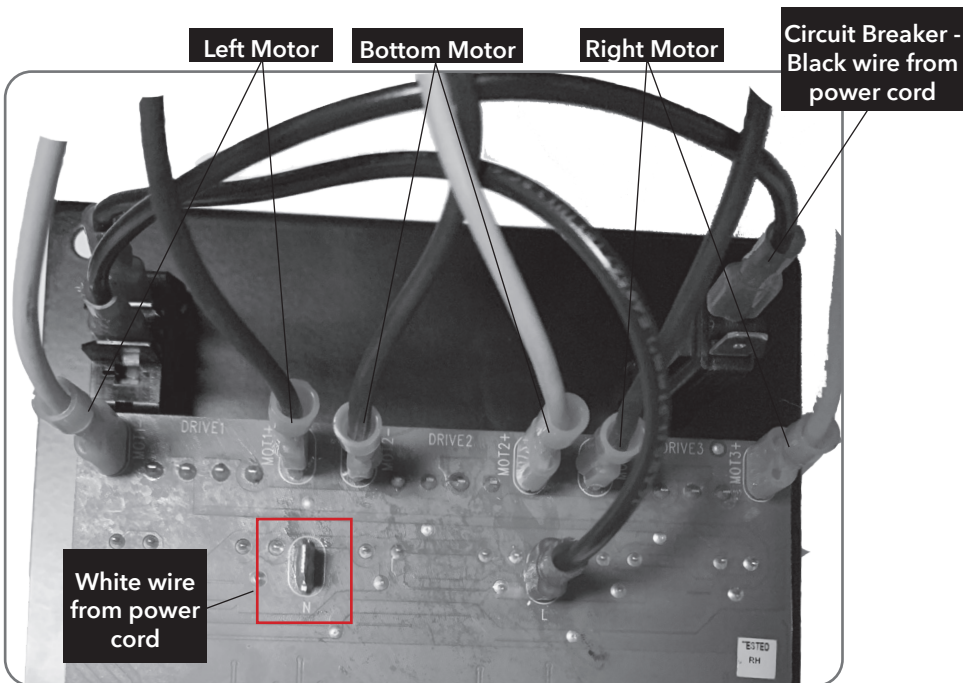


Figure 12 Wiring diagram for all three motors.

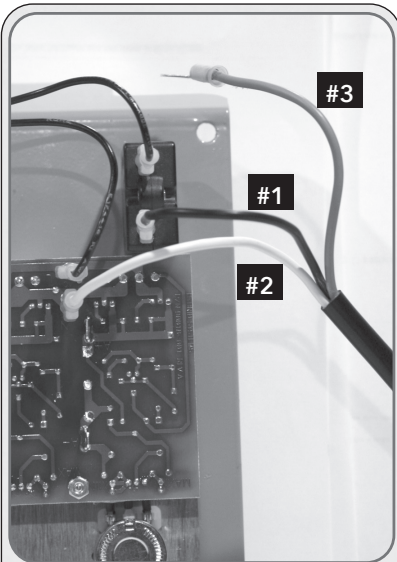


Figure 13

WIRING
POWER CORD

- White or Blue Wire (2)**
To middle male terminal marked "N."
- Black or Brown Wire (1)**
To circuit breaker.
- Green Wire (3)**
Grounds to machine/motor.

MOTOR WIRE LEADS

- Black 3/16"** wide connectors.
- White 1/4"** wide connectors.
- Black Wire (2)** connects to A- on circuit board.
- White Wire (2)** connects to A+ on circuit board.

CONTROLLER

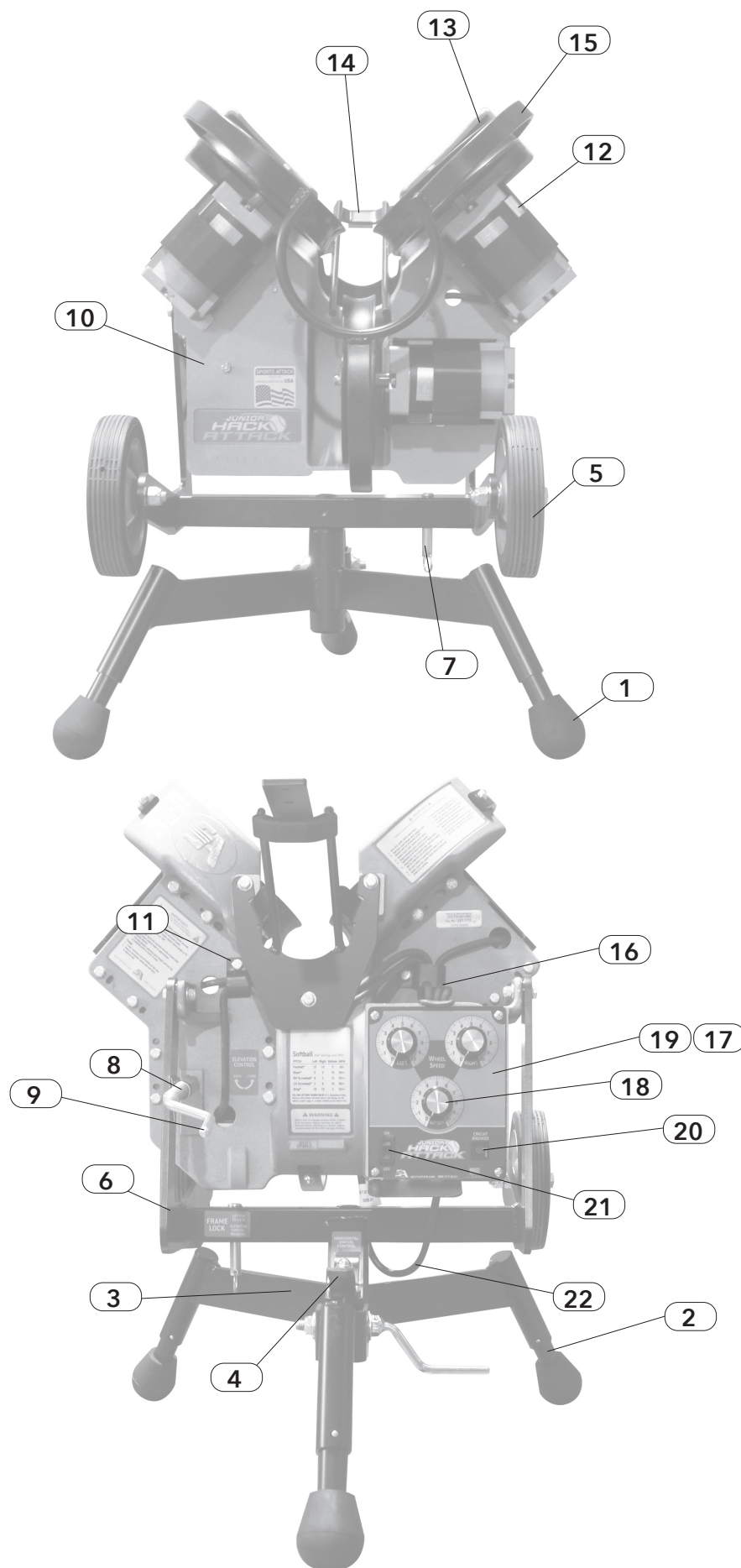
- Black Wire (2)** 2 PR jumper wire:
 - 1 from on/off switch to circuit breaker
 - 1 from on/off switch to circuit board terminal "L".

CONNECTING WIRES

Motor	Black Wire	White Wire
Right	A-	A+
Left	A+	A-
Bottom	A-	A+

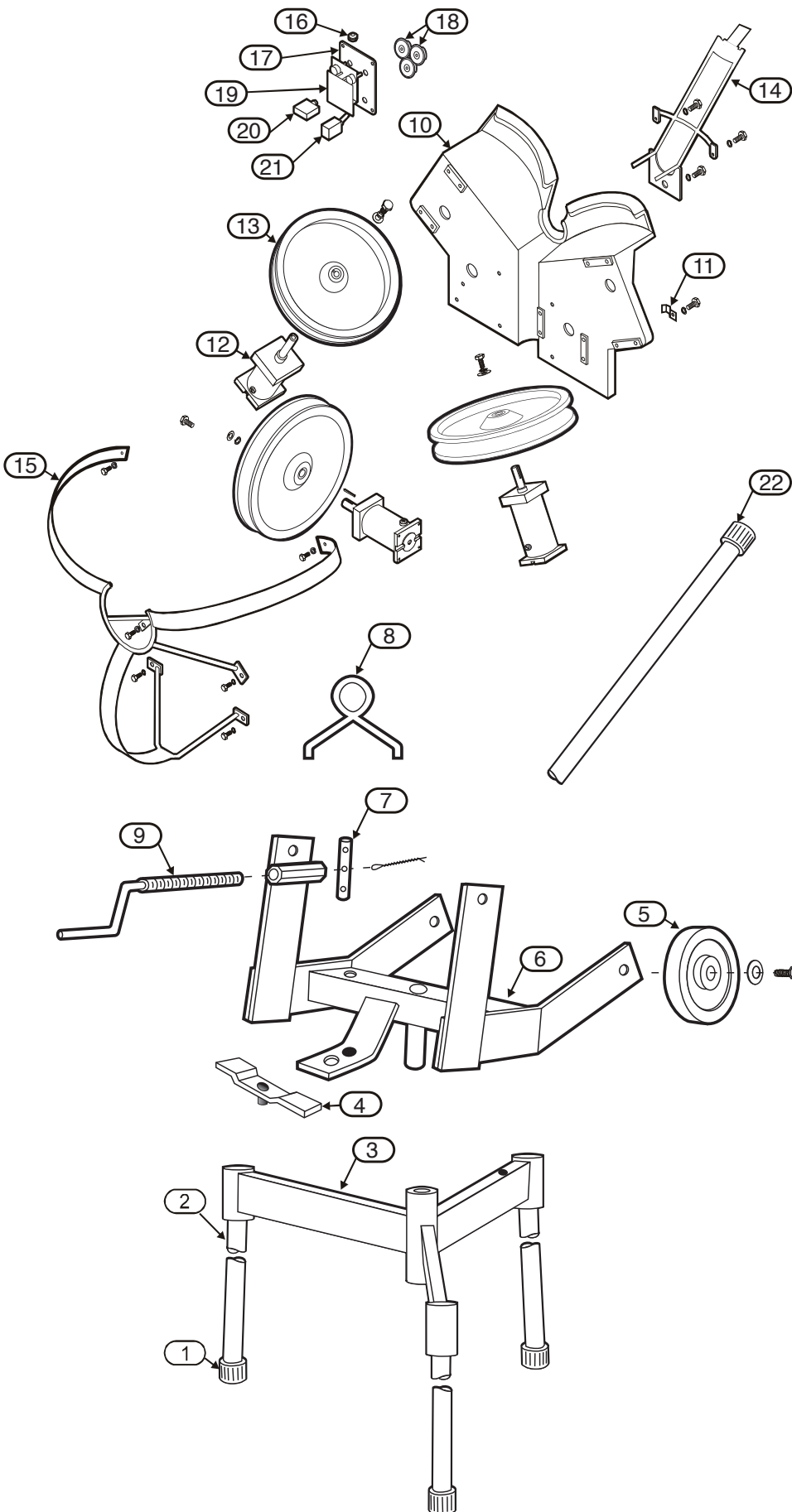
Black motor wires are 3/16" female disconnect and white wires are 1/4" female disconnect.

COMPONENT VIEW



- 1 Cane Tip
- 2 Softball Leg
- 3 Undercarriage Assembly
- 4 Swivel Handle
- 5 Travel Wheel
- 6 Yoke Assembly
- 7 Frame Pin
- 8 Elevation Tension Spring
- 9 Elevation Screw
- 10 Throwing Head Casting
- 11 Wire Clamp
- 12 Motor, Variable Speed (with Key, Bolt & Washer)
- 13 Throwing Wheel
- 14 Softball Chute Assembly
- 15 Wheel Guard Assembly
- 16 Grommet, Wiring
- 17 Control Panel Plate
- 18 Speed Control Knob
- 19 Controller
- 20 Circuit Breaker
- 21 On/Off Switch

EXPLODED VIEW



- 1 Cane Tip
- 2 Softball Leg
- 3 Undercarriage Assembly
- 4 Swivel Handle
- 5 Travel Wheel
- 6 Yoke Assembly
- 7 Frame Pin
- 8 Elevation Tension Spring
- 9 Elevation Screw
- 10 Throwing Head Casting
- 11 Cable Clamp
- 12 Motor, Variable Speed (with Key, Bolt & Washer)
- 13 Throwing Wheel
- 14 Softball Chute Assembly
- 15 Wheel Guard Assembly
- 16 Grommet, Wiring
- 17 Control Panel Plate
- 18 Speed Control Knob
- 19 Controller Assembly
- 20 Circuit Breaker Round Square
- 21 On/Off Switch Toggle Rocker
- 22 Softball Transport Leg
- 23 Power Cord (not shown)

PARTS LIST

REF#s	PART NO.	DESCRIPTION
11	533-0002	Cable Clamp
1	280-1001	Cane Tip
20	232-0002	Circuit Breaker (New Style Square)
20	232-0007	Circuit Breaker (Old Style- Round)
17/19	530-0011	Controller Assembly
9	533-1403	Elevation Screw
8	310-0012	Elevation Tension Spring
7	533-1410	Frame Pin
16	280-3006	Grommet, Wiring
12	530-1010	Motor 90v Variable Speed
21	223-0002	On/Off Switch (Old Style- Toggle)
21	223-0004	On/Off Switch (Rocker)
23	232-0000	Power Cord (US)
14	533-1411	Softball Chute Assembly
2	532-0005	Softball Leg (ea)
22	532-0006	Softball Transport Leg
18	280-2003	Speed Control Knob
4	533-1406	Swivel Handle
13	531-0003	Throwing Wheel
5	281-0003	Travel Wheel
3	533-1405	Undercarriage Assembly
15	533-1408	Wheel Guard Assembly
6	533-1404	Yoke Assembly

**To order additional parts,
please contact:**

Sports Attack
Customer Service Dept.
Ph 800.717.4251
Fx 775.345.2883



CONVERSION

SOFTBALL TO BASEBALL

1. Turn the on/off switch "OFF" and unplug the power cord.
2. Remove three (3) bolts holding softball feed chute.
3. Remove four (4) bolts holding bottom motor to main casting (See Photo G).
4. Reposition motor from bolt holes marked 12" to bolt holes marked 9" (See Photos G and H).
5. Install four (4) bolts to secure motor to main casting (See Photo G and H).
6. Repeat steps 3 thru 5 for both the left and right motors.

Baseball conversion kit includes (See Photo E):

- (3) JHA-2BB Baseball Legs
- (1) JHA-38 Baseball Feed Chute
- (1) Dial Settings and MPH Softball Label

7. Install baseball feed chute (Reuse the three bolts that held the softball chute to secure baseball chute to casting).
8. Install new Dial Settings and MPH label over the existing label.
9. Remove three (3) softball legs.
10. Install three (3) baseball legs.

SOFTBALL TO 7.5 BALL

1. Turn the on/off switch "OFF" and unplug the power cord.
2. Remove three (3) bolts holding softball feed chute. Install 7.5 chute (See Photo F).
3. Loosen four (4) bolts (do not remove) on left and right motors. Do not touch bottom motor.
4. Slide the two top wheels closer together to 7.5 setting (See Photo I).
5. Tighten bolts to left and right motors.

Conversion Kit includes one chute (See Photo F).

Photo E Baseball Conversion Kit

1 Baseball Label

Baseball DIAL SETTINGS AND MPH				
PITCH	Left	Right	Bottom	MPH
Fastball*				
Youth League	3	3	7	40-70
H.S., College & Pro	6	6	10	80-90+
RH Curve*				
Youth League	3	7	1	35-64
H.S., College & Pro	6	10	3	65-75
LH Curve*				
Youth League	7	3	1	35-64
H.S., College & Pro	10	6	3	65-75
RH Slider*				
Youth League	3	7	3	40-69
H.S., College & Pro	7	10	4	70-80
LH Slider*				
Youth League	7	3	3	40-69
H.S., College & Pro	10	7	4	70-80
Split Finger*				
Youth League	7	7	3	40-70
H.S., College & Pro	8	8	5	80-90
Knuckle Ball*				
Youth League	4	4	3.5	50-59
H.S., College & Pro	5	5	4.5	60-70

3 Legs

1 Baseball Ball Chute

Photo F 7.5 Ball Chute

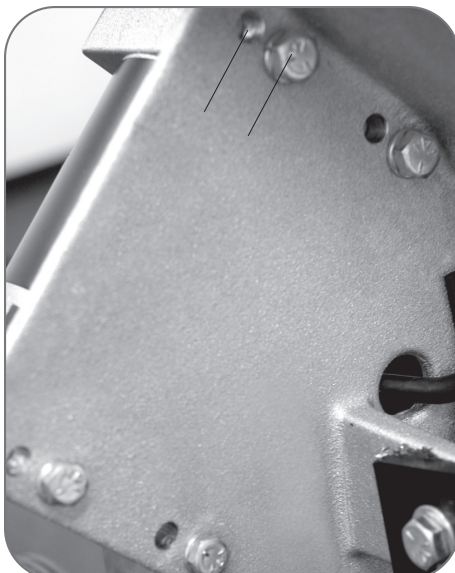


Photo G Bolts on main casting

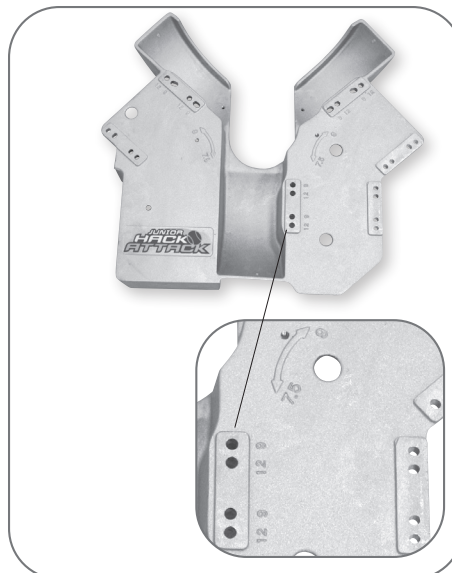


Photo H Main casting and bolt holes

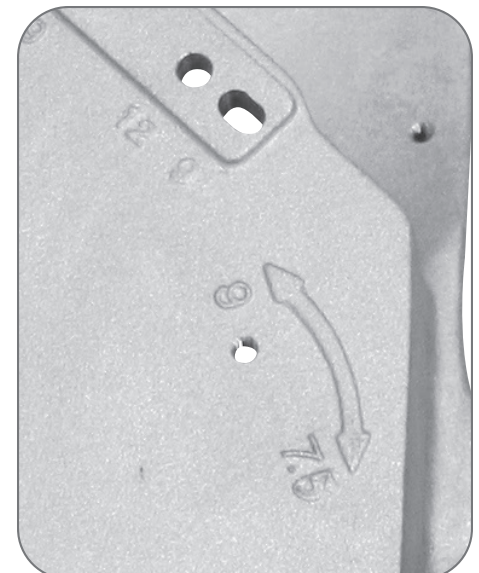


Photo I 7.5 setting