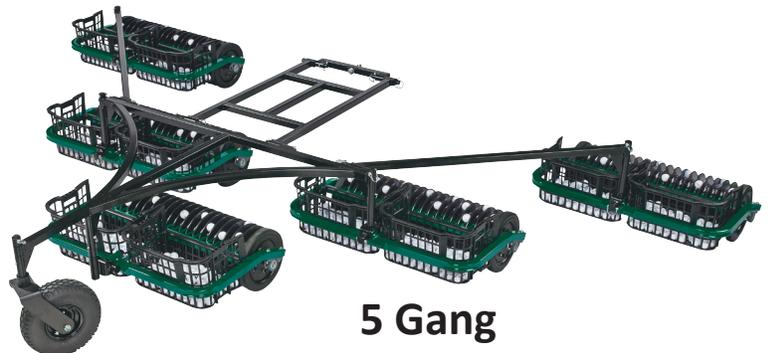


# Ball Hawk

## 3 Gang & 5 Gang *Manual*



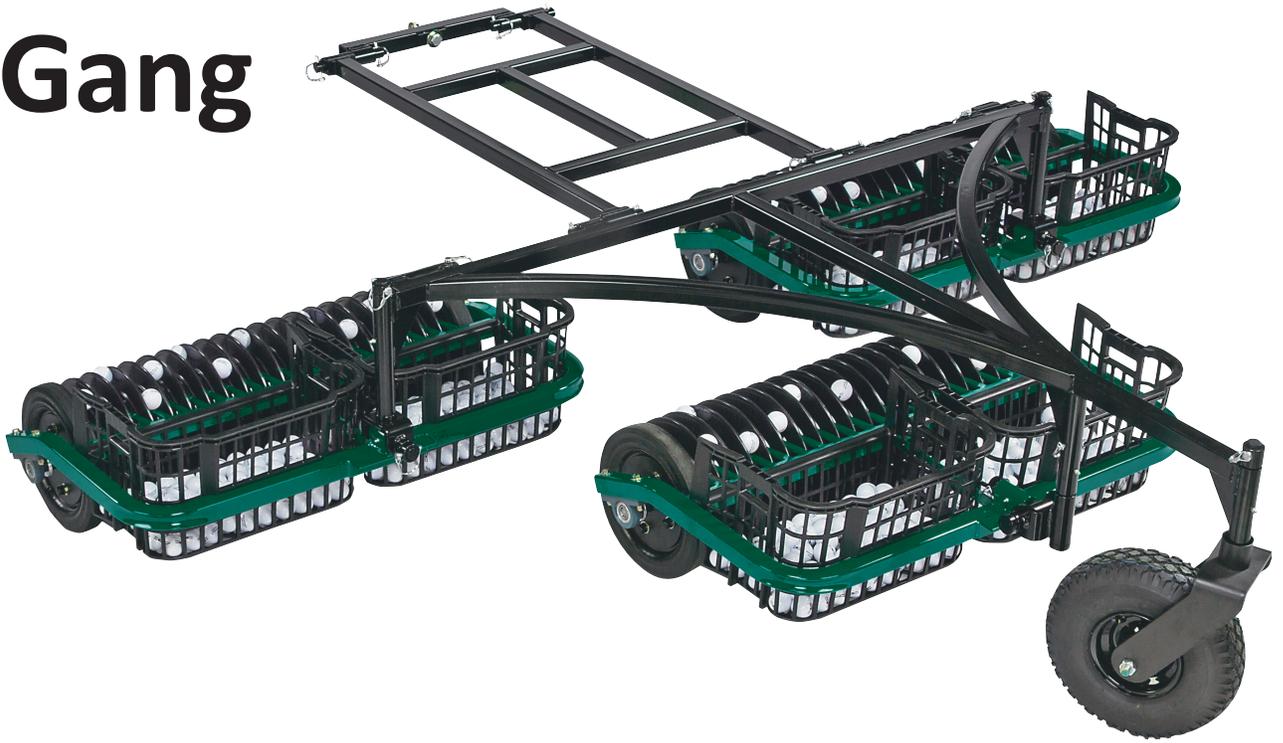
**3 Gang**



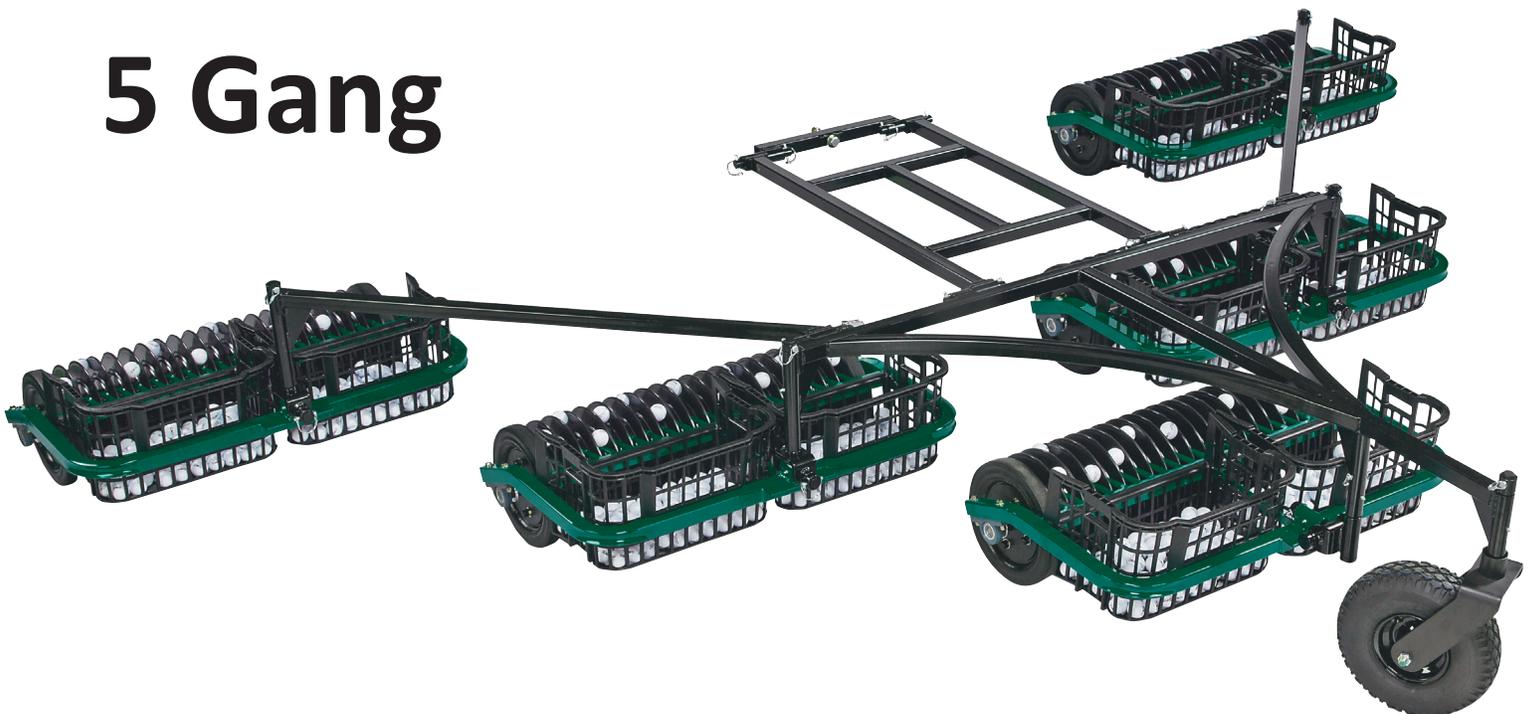
**5 Gang**

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# 3 Gang



# 5 Gang



# Unpacking and Inspection

## 3 Gang Ball Hawk Ball Picker (Three Section)

One crate contains:

1 – Draw bar

One crate contains:

3 – Picker sections

6 – Picker baskets

1 – Front wheel and fork assembly complete with hardware

1 – Push bar (H-bar) complete with

4 (7") connecting rods *and* 8 retaining pins

1 – Vehicle attachment bar complete with bolt, washer & nut (attached to push bar)

2 – Post assembly brackets complete with hardware

1 – Articulating elbow

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## 5 Gang Ball Hawk Ball Picker (Five Section)

One crate contains:

1 – Draw bar

One crate contains:

5 – Picker sections

10 – Picker baskets

1 – Front wheel and fork assembly complete with hardware

1 – Push bar (H-bar) complete with

4 (7") connecting rods *and* 8 retaining pins

1 – Vehicle attachment bar complete with bolt, washer & nut (attached to push bar)

1 – Left wing complete with 5 1/2" connecting rod and retaining pin

1 – Right wing complete with 5 1/2" connecting rod and retaining pin

4 – Post assembly brackets complete with hardware

1 – Articulating elbow

**IMPORTANT**

### INSPECTION

Check that all components are accounted for. Contact Wittek **immediately** if any components are missing.

Inspect all components for visible damage. If any damage is discovered, report it to the shipping carrier and take the appropriate action. Check that all moving parts – front wheel, caster fork, and drum sections move and turn freely.

**Customer is responsible for filing any damage claims with the carrier.**

# Assembly of the 3-Gang and 5-Gang Picker

Place the picker baskets into the picker assembly before beginning.

Assemble the picker on level ground.

## Assembly of the 3-Gang Picker

### Installing the front wheel and fork:

1. Remove shaft collar and pin.
2. Leave spring and tubing on fork.
3. Insert front of draw bar downward onto rod of caster fork assembly.
4. Replace shaft collar and pin.

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### Installing the rear picker sections:

1. Remove retaining pin and 5 ½" assembly pin from post assembly bracket (the pin that is mounted horizontally on post assembly bracket).
2. Insert mounting sleeve (on frame) in between post assembly bracket.
3. Insert assembly pin through post assembly bracket and mounting sleeve.
4. Replace retaining pin.
5. Remove shaft collar and retaining pin on the vertical rod of the post assembly bracket.
6. Insert post assembly arm upward through sleeve of draw bar.
7. Replace shaft collar and retaining pin.

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### Installing the front picker sections:

1. Remove retaining pin on the vertical rod of the articulating elbow.
2. Insert articulating elbow upward through sleeve of draw bar.
3. Replace retaining pin.
4. Remove shaft collar and pin on the other end of the articulating elbow.
5. Insert mounting sleeve (on frame) onto T-Bar of articulating elbow.
6. Replace shaft collar and retaining pin.

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### Mounting the push bar (H-Bar):

1. Remove the two connecting rods from the push bar.
2. Align the mounting sleeves on the end of the push bar with the corresponding mounting sleeves on the back of the draw bar.
3. Insert the connecting rods through the sleeves and replace retaining pins.

## Continue if assembling a *5-Gang Picker*

### Installing the 5-gang additional parts:

1. Remove the connecting rods from the left and right wings and align the mounting sleeves to the appropriate side on the drawbar.
2. Insert the connecting rods through the sleeves and replace retaining pins.
3. Remove retaining pin and assembly pin from post assembly bracket (the pin that is mounted horizontally).
4. Insert mounting sleeve (on frame) in between post assembly bracket.
5. Insert assembly pin through post assembly bracket and mounting sleeve.
6. Replace retaining pin.
7. Remove shaft collar and retaining pin from the vertical rod of the post assembly bracket.
8. Insert post assembly bracket upward through the sleeve of the wing.
9. Replace shaft collar and retaining pin.
10. Repeat process (3 – 9) for other frame section.

**The Ball Hawk picker is now completely assembled and ready to be mounted to the drive vehicle.**

## Mounting the vehicle attachment bar

### **IMPORTANT**

Because of styling and manufacturing differences in golf carts, the Wittek vehicle attachment bar may not clear front wheels and tires, and a special extension/adaptor bracket will be required.

If optional adapter bracket wasn't purchased, be sure to mount the attachment bracket onto the frame or on a sturdy portion of the frame on the golf cart.

1. Position the vehicle attachment bar in the desired area on the golf cart.
2. Mark the location of the mounting bolt.
3. Drill a hole to accommodate the mounting bolt.
4. Install the vehicle attachment bar.
5. Remove the connecting rods from vehicle attachment bar and align the mounting sleeves.
6. Replace the connecting rods and retaining pins.

**At this time, place the picker baskets in the appropriate spaces and make sure to grease zerk fittings on the post assemblies and articulating elbow.**

**The Ball Hawk Picker is now ready for operation.**

# Operation and Use

Specifics, such as travel patterns and picking frequency, are unique to each individual range. Through repeated use, range operators will learn to adapt to the use of the Ball Hawk to their best advantage.

## Picking Operation

The following are some general guidelines for the best use of the Ball Hawk.

- Maintain vehicle speed of 5-8 mph.
- Avoid sharp turns, which can turn the front picker section to an extreme angle and create a gap that misses balls.
- Gauge the use of the Ball Hawk on weather and ground conditions that would affect the use of golf carts.
- Avoid abrasive surfaces, such as paved parking lots, asphalt or concrete, stone or gravel road, or cart paths.
- Clean the picker at the end of each day or more often in extremely wet or muddy conditions. Use a mild soap with a moderate flow of water.

## Preventive Maintenance

Lubricate all post assemblies and the articulating elbow weekly or more often depending on use. They are fitted with Zerk fittings for this purpose. Use a lithium axle or bearing packing grease.

Spray all moving metal contact points with a petroleum-distillate based aerosol lubricant every week or more often depending on use.

Check all retaining pins and mounting bolts, tie rod ends, shaft collars, and draw bar connections at least once a week or more depending on usage.

## Off-Season Storage

Disassemble picker and store in a shelter protected from extreme weather conditions.

When disassembled, keep all post assembly brackets and connecting rods and pins in a safe place to avoid loss.

Be aware of specific weather or climatic conditions (extreme aridity or salt/sea humidity, etc.), and apply appropriate storage precautions to machinery.

## Start of Season - Preparing after Storage

Coat all moving metal contact points (post assemblies and the articulating elbow) with a liberal amount of non-gumming Teflon or petroleum-distillate based aerosol lubricant with a clean, lint-free cloth or towel.

# Replacing Worn or Damaged Discs

These instructions are for replacing worn or damaged discs of the drum section.

## Preparations:

1. Remove drum section from frame.
2. Determine the shortest point to worn/damaged disc.

3. Remove pillow block bearings from the axle on the end you are working with by loosening the set screw.

**NOTE:** It might be difficult to remove the bearings because of the beveled edge created by the set screws.

## Removing discs:

1. Remove nylon lock nuts and washers from tie rods.

**NOTE:** WITTEK uses nylon lock nuts on all nuts and bolts combinations. It is recommended that when replacing the lock nut, a **new** nylon lock nut is used. Nylon lock nuts can be purchased at any hardware store (standard size of 3/8" is used).

2. Remove end plate by loosening and removing the nut and bolt.
3. Remove the wheel only, tire and the spacer.
4. Begin to remove discs until you reach the worn/damaged disc.
5. Replace old disc with new disc.

## Reassembling discs:

1. Replace disc(s) that were removed.
2. Replace the spacer, wheel only and tire.  
**NOTE:** Before replacing the end plate and pillow block bearings, lightly sand the shaft to smooth out beveled edges or other nicks created by the set screw (this will make it easier to replace the end plate and pillow block bearings).
3. Replace end plate.
4. Replace washers and nuts on tie rods.
5. Finger tighten all nuts evenly.
6. Place drum section on a flat surface (i.e. worktable).
7. Using a golf ball as a guide tool, insert the golf ball in the space between each disc to determine that the golf ball fits "snugly" and that the golf ball does not slide down. If sliding occurs, retighten the nuts on the tie rods until you have reached the desired snugness in each disc section.



8. Replace nut and bolt on end plate.
9. Replace pillow block bearings.  
**DO NOT TIGHTEN SET SCREW** on the pillow block bearing.
10. Loosen the set screw on the pillow block bearing on the other end of drum section.
11. Replace drum onto frame of picker.
12. Align the drum section by centering the fingers on the frame in each disc section.
13. **TIGHTEN** set screws on the pillow block bearings on **both** ends of drum section.

# Replacement Parts and Repairs

Ball Hawk pickers are designed for continuous use and are virtually indestructible. However, certain component parts, such as discs, bearings, and wire hoppers, are subject to wear and deterioration and may eventually require replacement.

Many components of the Ball Hawk picker, (combination discs, end wheel, etc.) are maintained in stock at the factory for immediate delivery. In emergency cases, parts can be shipped via Next Day delivery.

When ordering parts, refer to the item and part numbers listed in the Replacement Parts Section of this manual. Always identify picker model and serial number as found on the identification sticker located on the top of the draw bar. If the model and serial numbers are unavailable, identification can be made through parts measurements. Consult Wittek for details.

**In cases of older pickers, some parts may have become obsolete because of design or engineering changes. Many outdated parts are maintained in inventory, or can be manufactured. Consult Wittek for details.**

Extremely worn or old pickers may require installation of a complete replacement drum section. Consult Wittek for details.

All assemblies and replacements of the Ball Hawk picker can be accomplished by maintenance personnel. Be sure to follow all fundamental operation and safety rules when working machinery.

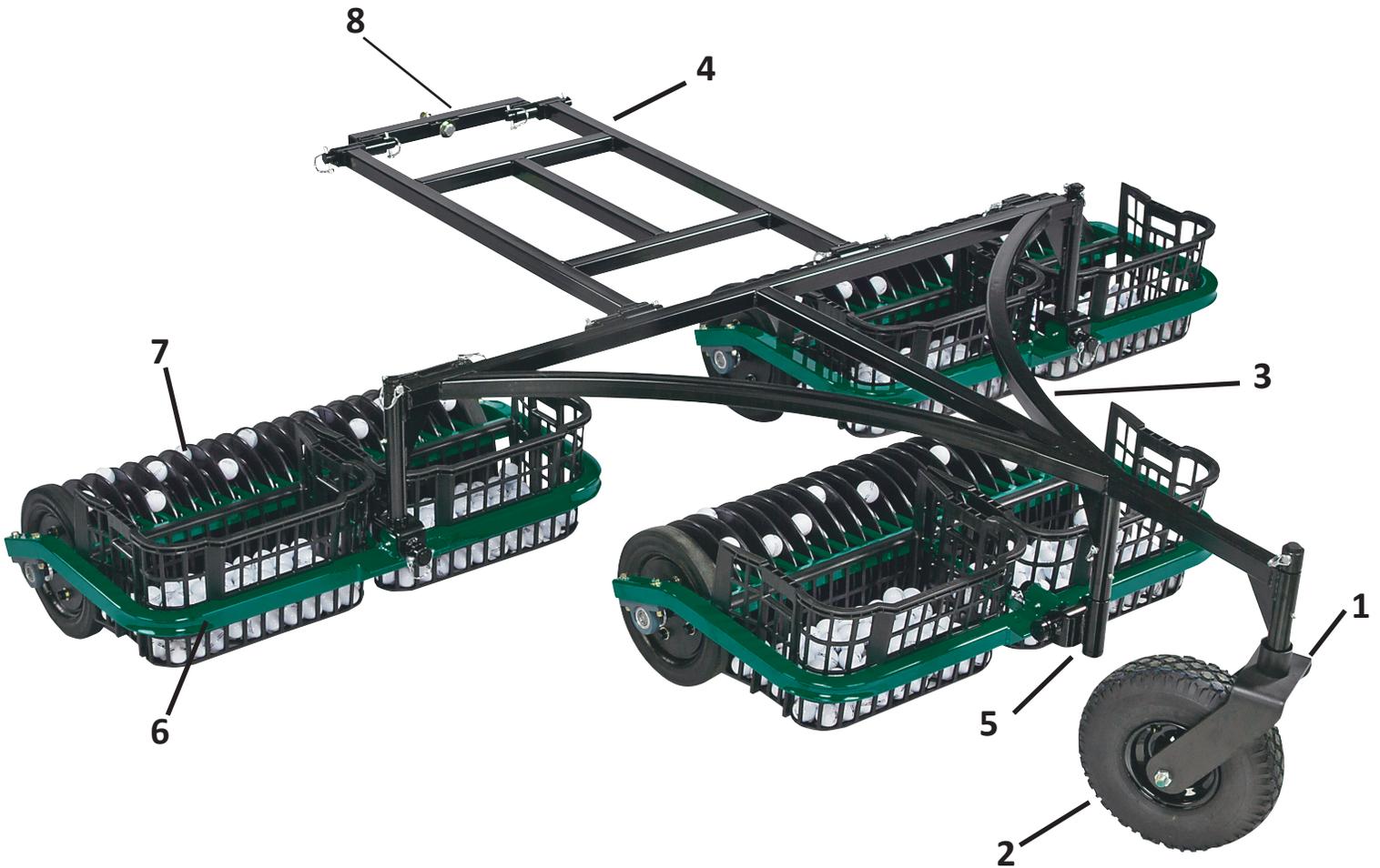


# Ball Hawk Ball Picker Replacement Parts

## Draw Bar Parts List

Key #	PART NO.	Item Description / Quantity
1	71979	Ball Hawk Caster Fork
2	71989	Front Wheel/Tire Assembly
3	71968A	Ball Hawk Draw Bar
4	71969	Ball Hawk Push Bar (H-Bar)
5	71940	Articulating Elbow
6	71939	Gang Frame Only (NO Drum Section)
7	71920	Replacement 3' Drum Section (Disc Section)
	71920W	3' White Drum Section (w/ end tires)
8	71976	Vehicle Attachment Bar

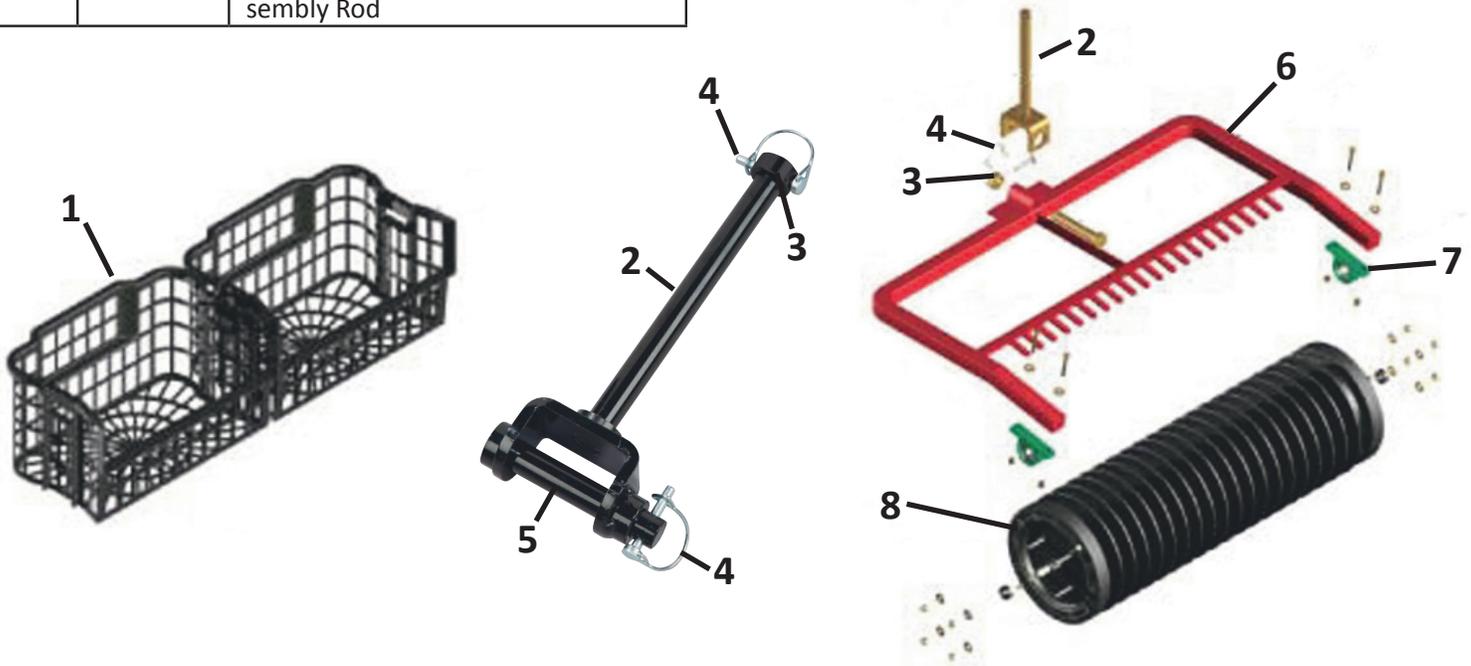
PART NO.	Item Description / Quantity
71941	2000 7½" Axle for Front Wheel, 3/5 Gang
71942	2000 11" Ball Hawk Post Assembly (2nd and 3rd Picker Sections)
71952	Ball Hawk Right Support Arm
71953	Ball Hawk Left Support Arm
71950	Bearings for 2000 Front Wheel for 3/5 Gang
71979	Caster Fork, 3/5 Gang
71981	Ball Hawk 7¼" Connecting Rod
71985	5 ½ " Extension Arm/Post Assembly, Rod Only



## Picker Section Parts List

Key #	PART NO.	Item Description / Quantity
1	71912	Plastic Picker Basket
2	71946	12" Long Post Assembly
3	M-719-58	1" Drilled Shaft Collar
4	71984	Retaining Pin
5	71985	5-15/16" Extension Arm/Post Assembly Rod

Key #	PART NO.	Item Description / Quantity
6	71939	Ball Hawk Gang Frame
7	71801	3/4" Pillow Block Bearing
8	71920	Replacement 3' Drum Section (Bearings not included)
	71920W	3' White Drum Section (w/ end tires)



## Drum Section Parts List

Key #	PART NO.	Item Description / Quantity
1	71801	3/4" Pillow Block Bearing (2 Per Drum)
2	71916	End Plate (2 Per Drum)
3	71805	3/4" Axle
4	71919	Tie Rod 3/8" (4 Per Drum)

Key #	PART NO.	Item Description / Quantity
5	71808	Drum Section Tire (2 Per Drum)
6	71978	Wheel Only (looks Like Pie Plate- 4 Per Drum)
7	71959	Spacer (2 Per Drum)
8	71932	Plastic Disc (19 Per Drum)



