

OPERATOR'S MANUAL

# CULTIPACKER

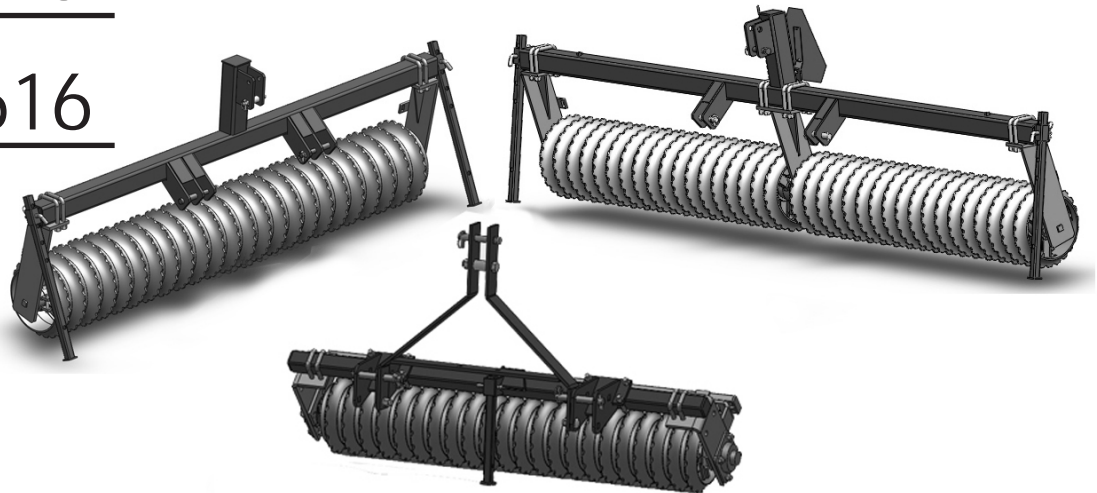
CP-48L

CP-72L

BCP1816

BCP2416

BCP3616



**Tufline**®

## TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Tufline dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Owner's/Operator's Manual are completed before releasing equipment to the owner.

The dealer must complete the Warranty Registration located on the Tufline website.

## TO THE OWNER:

Read this manual before operating your Tufline equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your Tufline dealer.

The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the equipment.

For service, your authorized Tufline dealer has trained mechanics, genuine Tufline service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine Tufline service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

Model: \_\_\_\_\_ Date of Purchase: \_\_\_\_\_

Serial Number: (see Safety Decal section for location) \_\_\_\_\_

Dealer Name: \_\_\_\_\_ Dealer Contact Information: \_\_\_\_\_

Provide this information to your dealer to obtain correct repair parts.

Throughout this manual, the term **IMPORTANT** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety-Alert Symbol, (a triangle with an exclamation mark), to indicate the degree of hazard for items of personal safety.



This Safety-Alert Symbol indicates a hazard and means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

### **DANGER**

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.



### **WARNING**

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed.



### **CAUTION**

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

### **IMPORTANT**

Indicates that failure to observe can cause damage to equipment.

### **NOTE**

Indicates helpful information.

# TABLE OF CONTENTS

|  |    |
|--|----|
| INTRODUCTION . . . . .                         | ii |
| SPECIFICATIONS / GENERAL INFORMATION . . . . . | 1  |
| SAFETY DECALS . . . . .                        | 3  |
| SAFETY RULES . . . . .                         | 6  |
| DEALER INSTRUCTIONS . . . . .                  | 9  |
| OPERATION . . . . .                            | 12 |
| OWNER SERVICE . . . . .                        | 16 |
| PARTS CATALOG . . . . .                        | 17 |
| OPTIONAL EQUIPMENT . . . . .                   | 25 |
| BOLT SIZE AND BOLT TORQUE CHART . . . . .      | 33 |
| NOTES . . . . .                                | 34 |



# SPECIFICATIONS

|                              | <b>CP-48L</b>              | <b>CP-72L</b>              |
|------------------------------|----------------------------|----------------------------|
| 3-Point Hitch                | Limited Category 1         | Limited Category 1         |
| Working Width                | 48"                        | 72"                        |
| Overall Width                | 56"                        | 80"                        |
| Overall Height               | 32"                        | 32"                        |
| Overall Length               | 19"                        | 19"                        |
| Required Tractor HP Range    | 20-40 HP                   | 20-40 HP                   |
| Approximate Operating Weight | 310 lbs                    | 412 lbs                    |
| Weight With Scraper Kit      | 348 lbs                    | 469 lbs                    |
| Beam Type                    | 2" X 2" X 1/4" Square Tube | 2" X 2" X 1/4" Square Tube |
| Number of Cultipacker Wheels | 22                         | 32                         |
| Cultipacker Wheel Dia.       | 9 1/2"                     | 9 1/2"                     |
| Implement Code               | 15                         | 20                         |
| Implement Code With Scraper  | 17                         | 23                         |

|                              | <b>CP-48L</b>               | <b>CP-72L</b>               |
|------------------------------|-----------------------------|-----------------------------|
| Pull-Type (Optional)         |                             |                             |
| Hitch Type                   | Clevis or 1 7/8" Ball Hitch | Clevis or 1 7/8" Ball Hitch |
| Working Width                | 48"                         | 72"                         |
| Overall Width                | 68"                         | 92"                         |
| Overall Height               | 20"                         | 10"                         |
| Overall Length               | 75"                         | 75"                         |
| Required Tractor HP Range    | 20-40 HP                    | 20-40 HP                    |
| Approximate Operating Weight | 375 lbs                     | 477 lbs                     |
| Weight With Scraper Kit      | 413 lbs                     | 534 lbs                     |
| Beam Type                    | 2" X 2" X 1/4" Square Tube  | 2" X 2" X 1/4" Square Tube  |
| Number of Cultipacker Wheels | 22                          | 32                          |
| Cultipacker Wheel Dia.       | 9 1/2"                      | 9 1/2"                      |
| Transport Wheels             | 12"                         | 12"                         |

# SPECIFICATIONS

|                              | <b>BCP1816</b>                         | <b>BCP2416</b>                              | <b>BCP3616</b>                         |
|------------------------------|--|---|--|
| 3-Point Hitch                | Category 1<br>(Quick Hitch Compatible) | Category 1 & 2<br>( Quick Hitch Compatible) | Category 2<br>(Quick Hitch Compatible) |
| Working Width                | 72"                                    | 96"   | 144"                                   |
| Overall Width                | 83"                                    | 107"  | 161"                                   |
| Overall Height               | 45"                                    | 45"   | 45"                                    |
| Overall Length               | 22"                                    | 22"   | 22"                                    |
| Required Tractor HP Range    | 30-70 HP                               | 30-125 HP                                   | 50-125 HP                              |
| Approximate Operating Weight | 860 lbs                                | 1,068 lbs                                   | 1,640 lbs                              |
| Weight with Scraper Kit      | 902 lbs                                | 1,124 lbs                                   | 1,724 lbs                              |
| Beam Type                    | 4" X 4" X 3/8" Square Tube             | 4" X 4" X 3/8" Square Tube                  | 4" X 4" X 3/8" Square Tube             |
| Number of Cultipacker Wheels | 18                                     | 24  | 36                                     |
| Cultipacker Wheel Dia.       | 16"                                    | 16"   | 16"                                    |
| Implement Code               | 40                                     | 50  | 77                                     |
| Implement Code With Scraper  | 43                                     | 53  | 81                                     |

## GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your Cultipacker. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance.

These instructions have been compiled from field experience and engineering data. Some information may be general in nature, due to unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop procedures suitable to

your particular situation.

The illustrations and data used in this manual were current at the time of printing. However, due to possible inline production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.

Throughout this manual, references are made to right and left direction. These are determined by standing behind the tractor facing the direction of forward travel.

# SAFETY & INSTRUCTIONAL DECALS

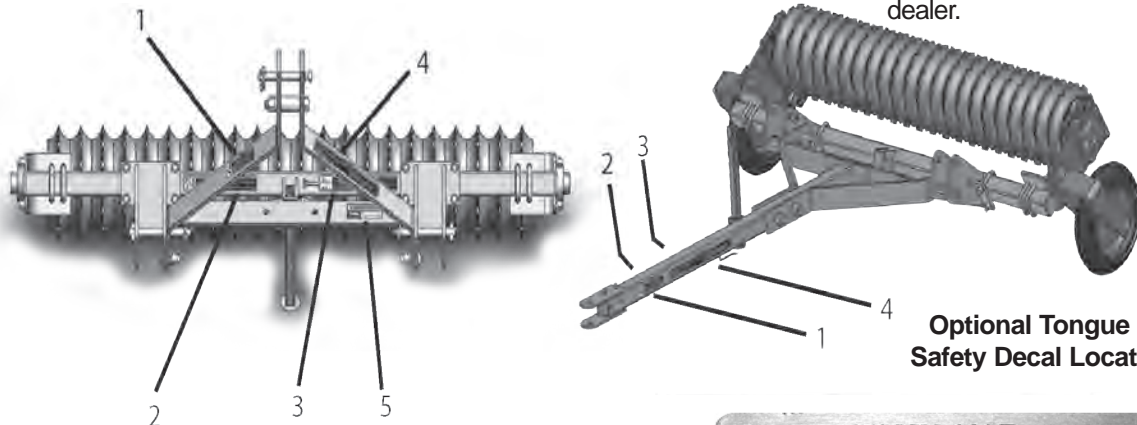
**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

**FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH**

**Replace Decals Immediately If Damaged!**

**CP-48L, CP-72L**

Check that all safety decals are installed and in good condition. Replacement Part numbers are listed below. Use this diagram to affix new safety decals. Decals can be obtained from your local dealer.

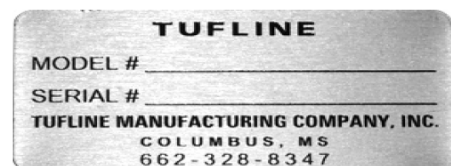


**Figure 1. CP-48L, CP-72L  
Safety Decal Locations**

**Optional Tongue Kit  
Safety Decal Locations**



REF. #1  
16318B



REF. #5  
SERIAL NUMBER



REF. #2  
16318A



REF. #3  
16318D



**3 Safety Decals**



# SAFETY & INSTRUCTIONAL DECALS

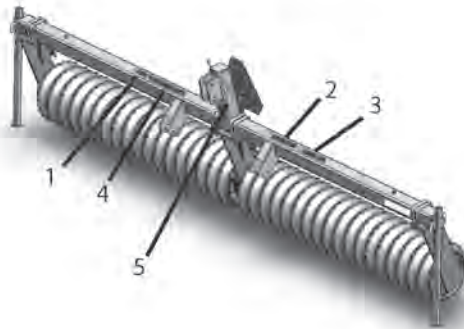
**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

**FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH**

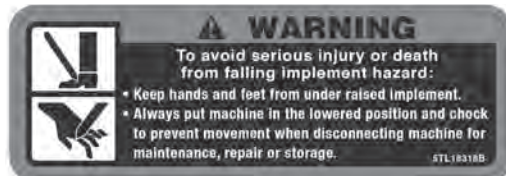
**Replace Decals Immediately If Damaged!**

**BCP1816, BCP2416, BCP3616**

Check that all safety decals are installed and in good condition. Replacement Part numbers are listed below. Use this diagram to affix new safety decals. Decals can be obtained from your local dealer.



**Figure 2. BCP1816, BCP2416, BCP3616  
Safety Decal Locations**



REF. #1  
16318B

REF. #5  
SERIAL NUMBER



REF. #2  
16318A



REF. #3  
16318D



REF. #4  
16318C

## REFLECTORS

**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**  
**FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH**

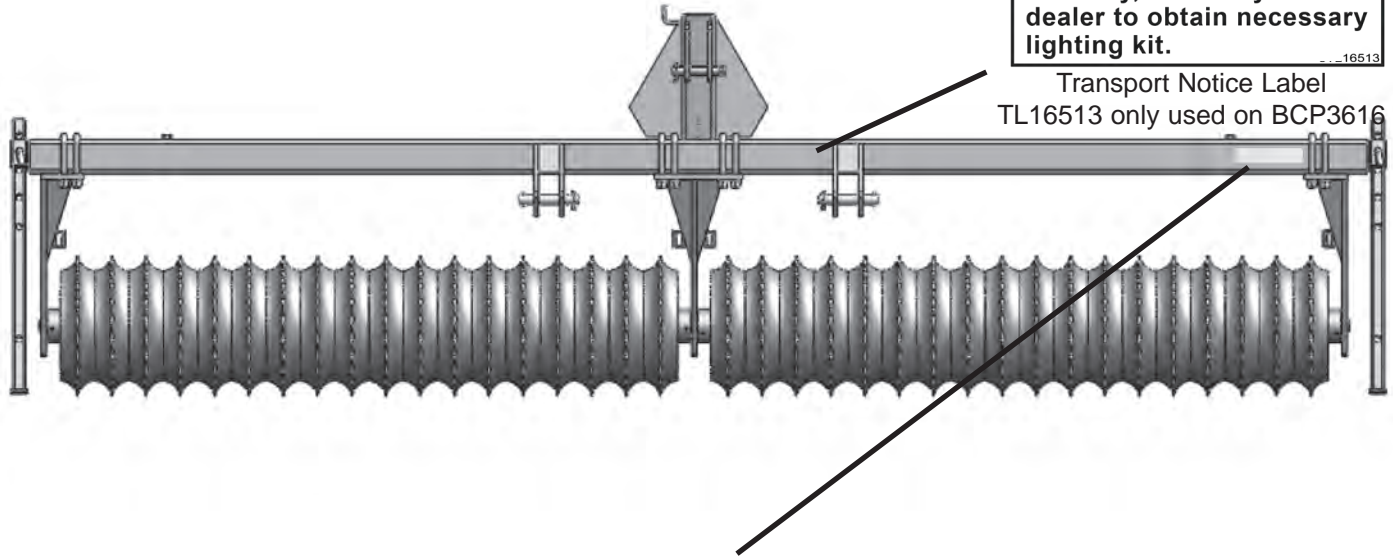
**Replace Labels Immediately If Damaged!**

Check that all reflectors are installed and in good condition.

### BCP2416, BCP3616 Reflector Decals

**NOTICE**  
If used or transported on  
roadway, contact your  
dealer to obtain necessary  
lighting kit.

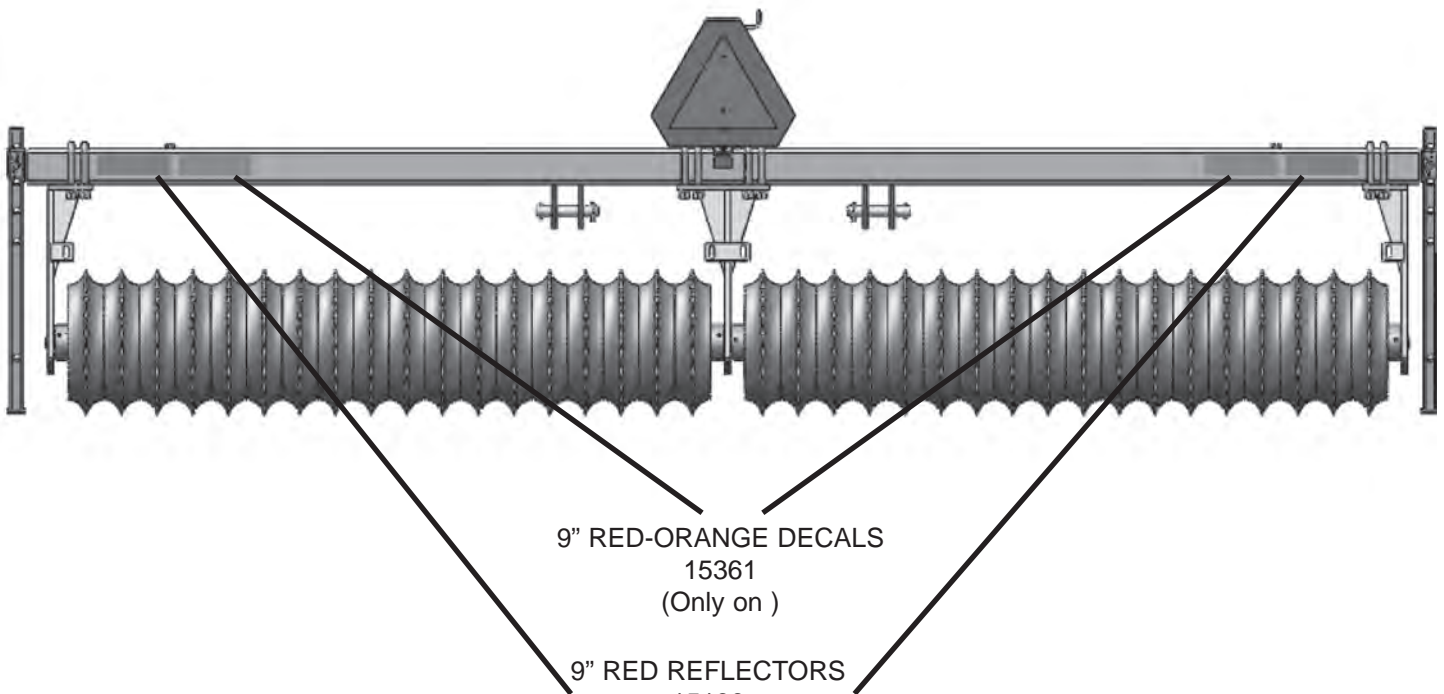
Transport Notice Label  
TL16513 only used on BCP3616



9" YELLOW REFLECTOR

15200

Figure 3.



9" RED-ORANGE DECALS

15361

(Only on )

9" RED REFLECTORS

15199

Figure 4.

**5 Safety Decals**





# SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgment, and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said "The best safety device is an informed, careful operator." We ask you to be that kind of operator.

## TRAINING

- Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals are available from selling dealer.) Failure to follow instructions or safety rules can result in serious injury or death.
- If you do not understand any part of this manual and need assistance, see your dealer.
- Operators must be instructed in and be capable of the safe operation of the equipment, its attachments, and all controls. Do not allow anyone to operate this equipment without proper instructions.
- Never allow children or untrained persons to operate equipment.
- Train all new personnel and review instruction's frequently with existing workers. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.

## PREPARATION

- Always wear relatively tight and belted clothing to avoid getting caught in moving parts.

Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.
- A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate. Implement Code given in Specifications Section, page #1, is used to determine appropriate ballast. See your tractor operator's manual for required number of weights to use for your specified Implement Code.

## TRANSPORTATION

- Always comply with all state and local laws governing highway safety and lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Do not operate or transport on steep slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Do not operate or transport equipment while under the influence of alcohol or drugs. Consult your doctor about operating this machine while taking prescription medications.



# SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

## OPERATION

- Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.
- Always comply with all state and local laws governing highway safety and lighting and marking requirements.
- Operate only in daylight or good artificial light.
- Keep bystanders away from equipment.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times.
- Never allow riders on power unit or attachment.
- Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.
- Look down and to the rear and make sure area is clear before operating in reverse.
- Use extreme care when working close to fences, ditches, other obstructions, or on hillsides.
- Do not operate or transport on steep slopes.

- Do not stop, start, or change directions suddenly on slopes.
- Always operate down slopes; never across the face.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Keep alert and watch the front as well as the rear when operating.
- When making pitch and roll angle adjustments, be careful to keep hands and feet clear of sliding parts and possible pinch points.
- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.
- Before leaving operator's seat, lower lift arms and put attachment on the ground. Engage brake, stop engine, remove key, and remove seat belt.

## MAINTENANCE

- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.
- Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.



# SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

## **MAINTENANCE**(cont'd)

- When performing maintenance or repairs make sure the equipment is in the lowered position and properly blocked and secured to prevent rolling. Failure to do so can cause serious injury or death.
- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Before leaving operator's seat, lower lift arms and put attachment on the ground. Engage brake, stop engine, remove key, and remove seat belt.
- Never perform service or maintenance with engine running.
- Keep all persons away from operator control

area while performing adjustments, service, or maintenance.

- Tighten all bolts, nuts, and screws to torque chart specifications, page 33. Check that the land plane is properly attached to the power unit and that the equipment is in a safe condition before putting unit into service.

## **STORAGE**

- Block equipment securely for storage.
- Always park on even level surface
- Keep children and bystanders away from storage area.

## DEALER INSTRUCTIONS

### CP-48L, CP-72L Assembly

1. Remove the A-Frame Figure 5 (Ref. 1), frame with roller assembly attached (Ref. 2, roller assembly not shown) and parking stands (Ref. 7) from packaging.
2. Support frame off the ground using a suitable hoist or lifting apparatus.
3. Place parking stand (Ref. 7) into the frame and secure with pin (Ref. 8).
4. Insert A-Frame weldment between the inside hitch lugs on the frame using hitch pins (Ref. 3) reinsert lynch pins.
5. Use two carriage bolts 5/8" x 1 3/4" GR. 2 (Ref. 4) to attach the lower portion of the A-Frame to the lowest square hole in the hitch lugs.
6. Make sure to keep the hitch pins moving freely when tightening the carriage bolts. This will help to remove and reinsert hitch pins when attaching the cultipacker to the tractor.
7. Tighten each nut to the torque chart on page 33.

### BCP1816, BCP2416 Assembly

The BCP1816 and BCP2416 both come completely assembled from the factory.

1. Remove the Cultipacker from packaging.
2. Place Cultipacker on a level surface.
3. Tighten each nut to the torque chart on page 33.

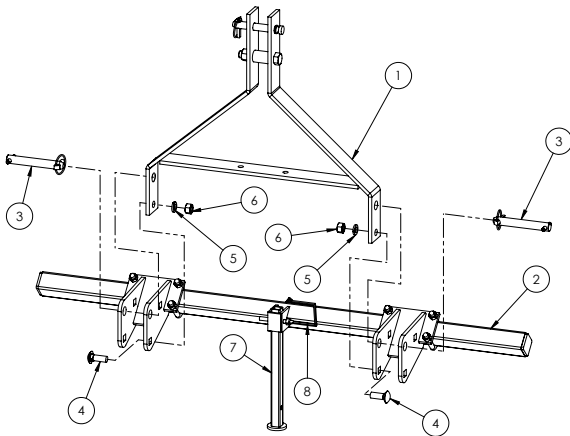


Figure 5. CP-48L, CP-72L

## Assembly

### BCP3616 Assembly

1. Remove the frame with roller assembly attached Figure 6 (Ref. 1), roller assembly (Ref. 4), hanger (Ref. 5) and parking stands (Ref. 2) from packaging.
2. Support frame off the ground using a suitable hoist or lifting apparatus.
3. Place both parking stands (Ref. 2) into the frame and secure with pins (Ref. 3).
4. Slide roller assembly (Ref. 4) onto the center hanger (Ref. 9).
5. Mount the hanger (Ref. 5) into the roller assembly (Ref. 4) and onto the frame assembly (Ref. 1) using front 3/4" U- bolts supplied (Ref. 6), 3/4" lock washers (Ref. 7) and 3/4" hex nuts (Ref. 8).
6. Tighten each nut to the torque chart on page 33.

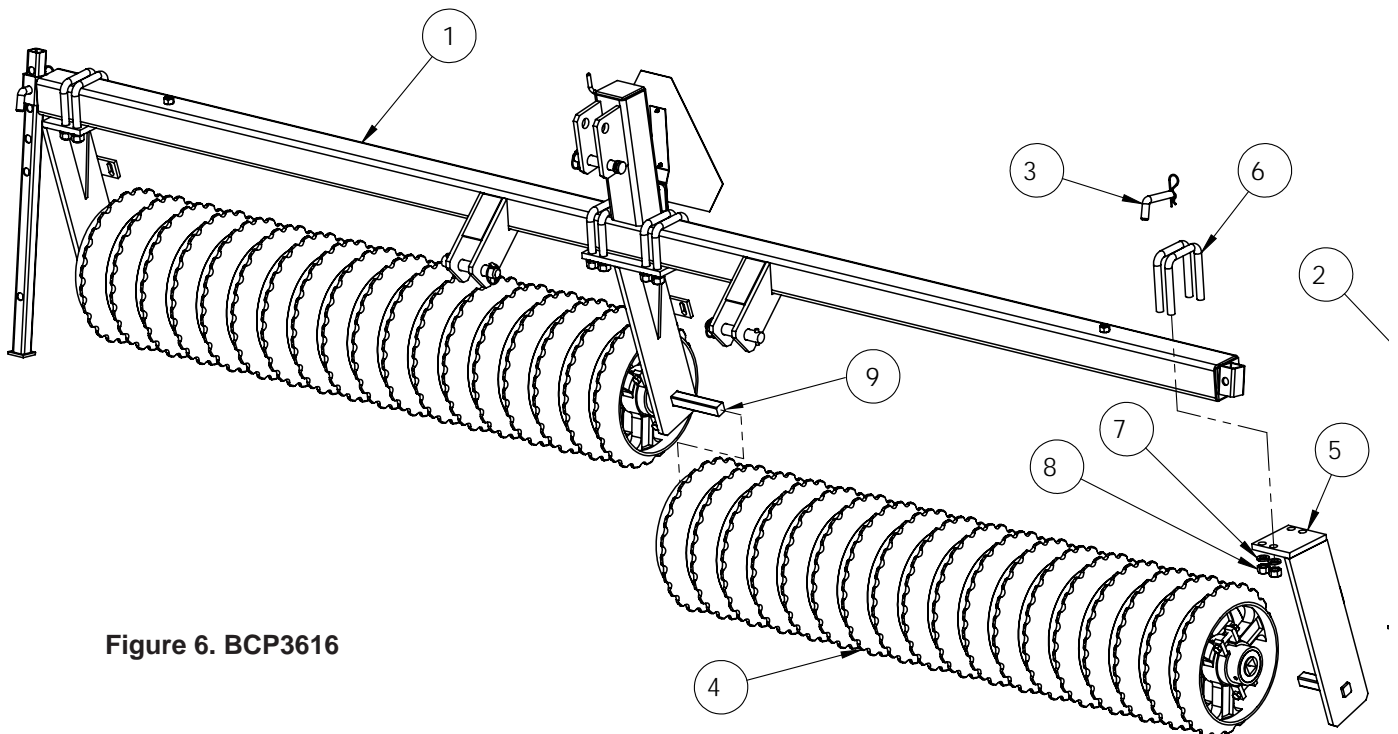


Figure 6. BCP3616



## Dealer Checklist

### (Dealer's Responsibility)

Inspect the equipment thoroughly after assembly to be certain it is set up properly before delivering it to the customer. The following check list is a reminder of points to inspect.

Check off each item if it is found satisfactory or after proper adjustment is made.

\_\_\_\_\_ Check that all safety decals are installed and in good condition. Replace if damaged.

\_\_\_\_\_ Check all bolts to be sure they are tight.

\_\_\_\_\_ Check that all cotter pins and safety pins are properly installed.

\_\_\_\_\_ It is important for the dealer to visually check and make sure all parts are intact prior to delivery to customer.

\_\_\_\_\_ Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.

\_\_\_\_\_ For mounted units, add ballast in front tires, and/or front tractor weight to enhance front end stability. A minimum 20% of tractor and equipment gross weight must be on front tractor wheels. When adding weight to attain 20% of tractor and equipment weight on front tractor wheels, you must not exceed the ROPS weight certification. Weigh the tractor and equipment. Do not estimate!

\_\_\_\_\_ Show customer how to make adjustments.

\_\_\_\_\_ Present Owner's/Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.

\_\_\_\_\_ Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.

\_\_\_\_\_ Explain to customer the potential crushing hazards of going underneath raised equipment. Instruct customer that service work does not require going underneath unit and never to do so.

\_\_\_\_\_ Complete the Warranty Registration located on the Tufline website.

## OPERATION

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgement and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said "The best safety device is an informed, careful operator." We ask you to be that kind of operator.

The operator is responsible for the safe operation of this equipment. The operator must be properly trained. Operators should be familiar with the equipment, the tractor and all safety practices before starting operation. Read the safety rules and safety decals on pages 5-7.

### **WARNING**

- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in "locked up" position at all times.
- Never allow children or untrained persons to operate equipment.
- Keep bystanders away from equipment.
- **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control

levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

- Service work does not require going underneath.
- Read Manual for service instructions or have service performed by a qualified dealer.
- Stop tractor and implement immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.
- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.

### **Owner/Operator Pre-Operation Checklist (Owner's/Operator's Responsibility)**

\_\_\_\_ Review and follow all safety rules and safety decal instructions on page 6 through page 8.

\_\_\_\_ Check that equipment is properly and securely attached to tractor.

\_\_\_\_ Check that all safety decals are installed and in good condition. Replace if damaged.

\_\_\_\_ Check that all hardware is properly installed and secured.

\_\_\_\_ Do not allow riders.

\_\_\_\_ Make sure tractor ROPS or ROPS CAB and seat belt are in good condition. Keep seat belt securely fastened during operation.

\_\_\_\_ After day of operation, check all hardware. Retighten if needed. Please see Bolt Torque Chart (page 33) for proper torque information.

## Connecting CP-48L, CP-72L, BCP1816 Cultipacker to Tractor

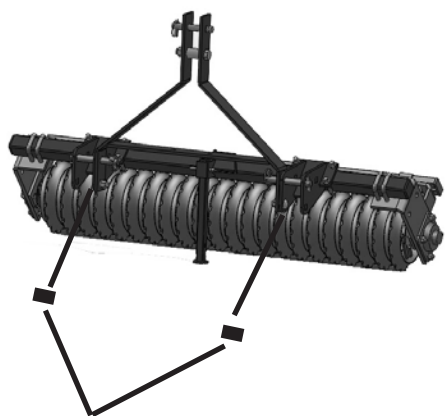
The Cultipacker is compatible with tractors equipped with Category 1, 3-point hitch systems that use side-swing type lower lift arms. The Cultipacker will also fit tractors equipped with an Category 1 Quick Hitch system.

### Category 1 Standard 3-Point Hook-up

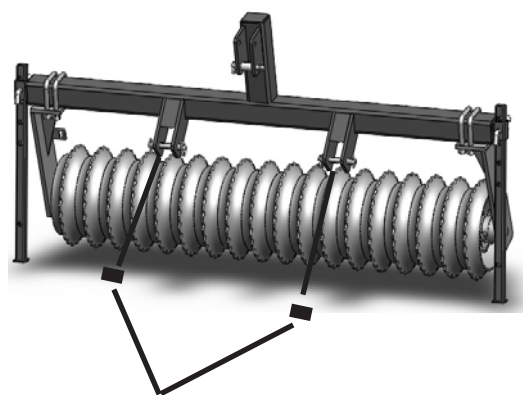
1. Attach the tractor's lower lift arms to the Cultipacker on the lower hitch pins. Re-install the lynch pins.
2. Attach the tractor's top link to the Cultipacker A-Frame, using the heavy-duty top link pin and lynch pin supplied, with the top link to the upper top link pin hole.

### Category 1 Quick Hitch (Figure 7 and 8)

1. Connect the tractor's Quick Hitch by guiding the top hook through the lower top link pin with bushings.
2. Install bushing set (sold separately part #15638) over the mounting pin supplied with Cultipacker. Re-install lynch pins.
3. Upper bushing should already be be installed to the top link.



Lower Quick Hitch bushings  
(Sold separately)  
**Figure 7. Category 1 Quick Hitch Set-up  
for CP-48L and CP-72L**



Lower Quick Hitch bushings  
(Sold separately)  
**Figure 8. Category 1 Quick Hitch Set-up  
for BCP1816**

## Connecting BCP2416 Cultipacker to Tractor

The Cultipacker is compatible with tractors equipped with Category 1 and Category 2, 3-point hitch systems that use side-swing type lower lift arms. The Cultipacker will also fit tractors equipped with an Category 1 or Category 2 Quick Hitch system.

### Category 1 Standard 3-Point Hook-up

1. Attach the tractor's lower lift arms to the Cultipacker on the inside lower hitch pins. Re-install the lynch pins.
2. Attach the tractor's top link to the Cultipacker A-Frame, using the heavy-duty top link pin and lynch pin supplied, with the top link to the upper top link pin hole.

### Category 1 Quick Hitch (Figure 9)

1. Connect the tractor's Quick Hitch by guiding the top hook through the lower top link pin with bushings.
2. Install bushing set (sold separately part #15638) over the inside mounting pin supplied with Cultipacker. Re-install lynch pins.
3. Upper bushing should already be installed to the top link.

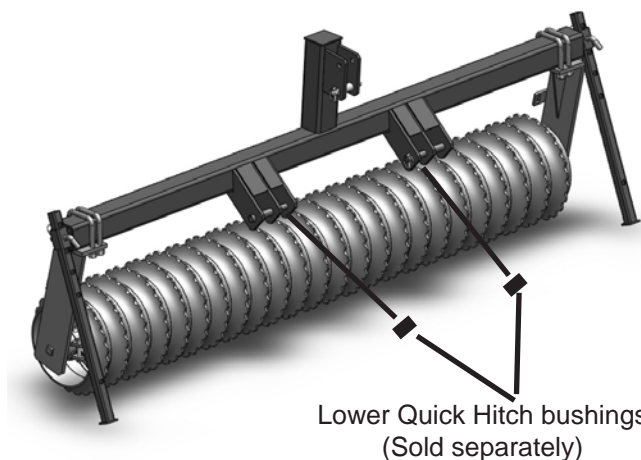


Figure 9. Category 1 Quick Hitch Set-up

### Category 2 Standard 3-Point Hook-up

1. Attach the tractor's lower lift arms to the Cultipacker on the lower outside hitch pins. Re-install the lynch pins.
2. Attach the tractor's top link to the Cultipacker's mast, using the heavy-duty top link pin and lynch pin supplied, with the top link to the upper top link pin hole.

### Category 2 Quick Hitch (Figure 10)

1. Slide lower sleeve (sold separately part #15638) over the outside mounting pin supplied with Cultipacker. Re-install lynch pins.
2. Slide upper sleeve over the heavy-duty top link pin supplied with top link. Reinstall lynch pin.
3. Connect the tractor's Quick Hitch to the Cultipacker through the upper set of holes.

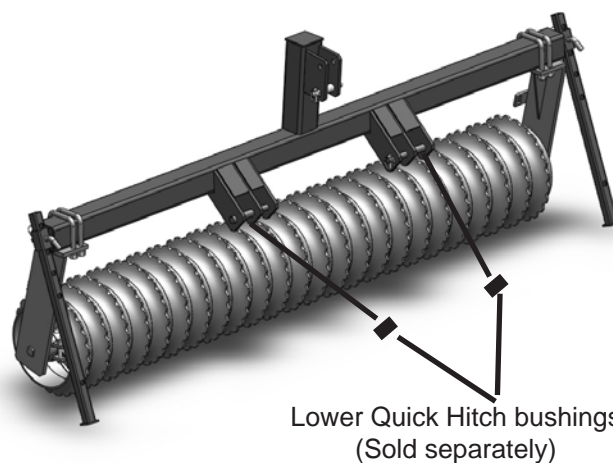


Figure 10. Category 2 Quick Hitch Set-up

## Connecting BCP3616 Cultipacker to Tractor

### Category 2 Standard 3-Point Hook-up

1. Attach the tractor's lower lift arms to the Cultipacker through the hitch pins. Re-install the lynch pins.
2. Attach the tractor's top link to the Cultipacker's mast, using the heavy-duty top link pin and lynch pin supplied, with the top link to the upper top link pin hole.

### Category 2 Quick Hitch (Figure 11)

1. Slide lower sleeve (sold separately part #15638) over the mounting pin supplied with

Cultipacker. Re-install lynch pins.

2. Slide upper sleeve over the heavy-duty top link pin supplied with top link. Reinstall lynch pin.

3. Connect the tractor's Quick Hitch to the Cultipacker through the upper set of holes.

### Adjusting Cultipacker

Adjust the 3-point top link so that Cultipacker is level front to rear. In most cases this will give the desired results.

Adjust right to left level by adjusting the lower lift arm on tractor.

### Operation

Once at the work site make sure parking stands are in the storage position. Start by lowering the unit until it is resting on the soil. Do not go over 7mph. Doing so can cause bouncing prohibiting the unit from making proper seed to soil contact. If the unit is bouncing, slow down until the unit is rolling smoothly.

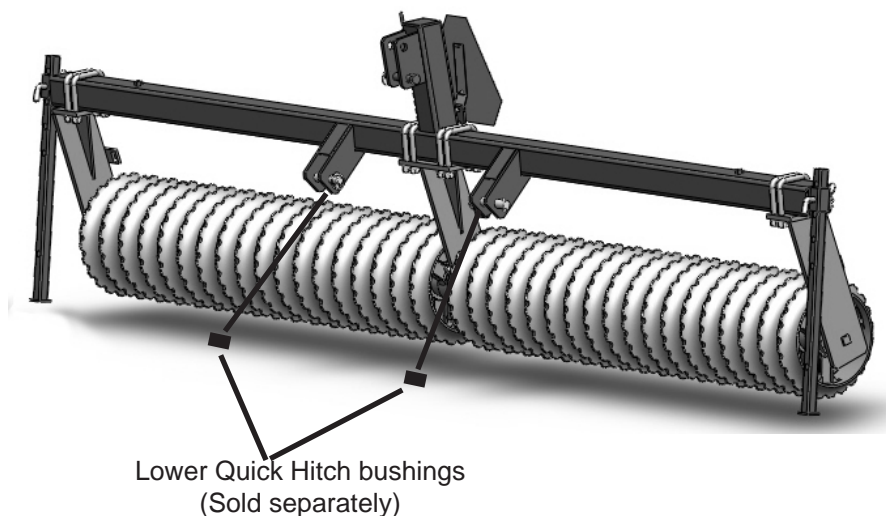


Figure 11. Category 2 Quick Hitch Set-up

## Troubleshooting

| PROBLEM                                    | POSSIBLE CAUSE                | POSSIBLE REMEDY                               |
|--|-------------------------------|---|
| Mud or dirt building up on roller assembly | Too much moisture in the soil | Add optional scraper kit                      |
|  |                               | Wait until soil has a better moisture content |
| Cultipacker wheel will not spin            | Bearing is seized             | Replace bearing                               |



## OWNER SERVICE

### **WARNING**

- **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.
- Service work does not require going underneath.

### **WARNING**

- Read Manual for service instructions or have service performed by a qualified dealer.

### **CAUTION**

The information in this section is written for operators who possess basic mechanical skills. If you need help, your dealer has trained service technicians available. For your protection read and follow the safety information in this manual.

Owner should check and tighten all hardware after the first hour of operation. The break in stage of your new cultipacker can cause minimal loosening of hardware. Please see Bolt Torque Chart (page 33) for proper torque information.

CP-48L and CP-72L come with greasable bearings. These bearings require lubrication every 8 working hours.

### **WARNING**

- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Before dismounting power unit or performing any service or maintenance, follow these steps:

disengage power to equipment, lower the 3 point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key and unfasten seat belt.

- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.

### **CAUTION**

#### **Storage**

When storing your Cultipacker make sure parking stands are in place, the unit is placed on level ground and clear of any obstructions. Use caution when disconnecting the Cultipacker from the tractor.

# PARTS CATALOG

## CP-48L, CP-72L

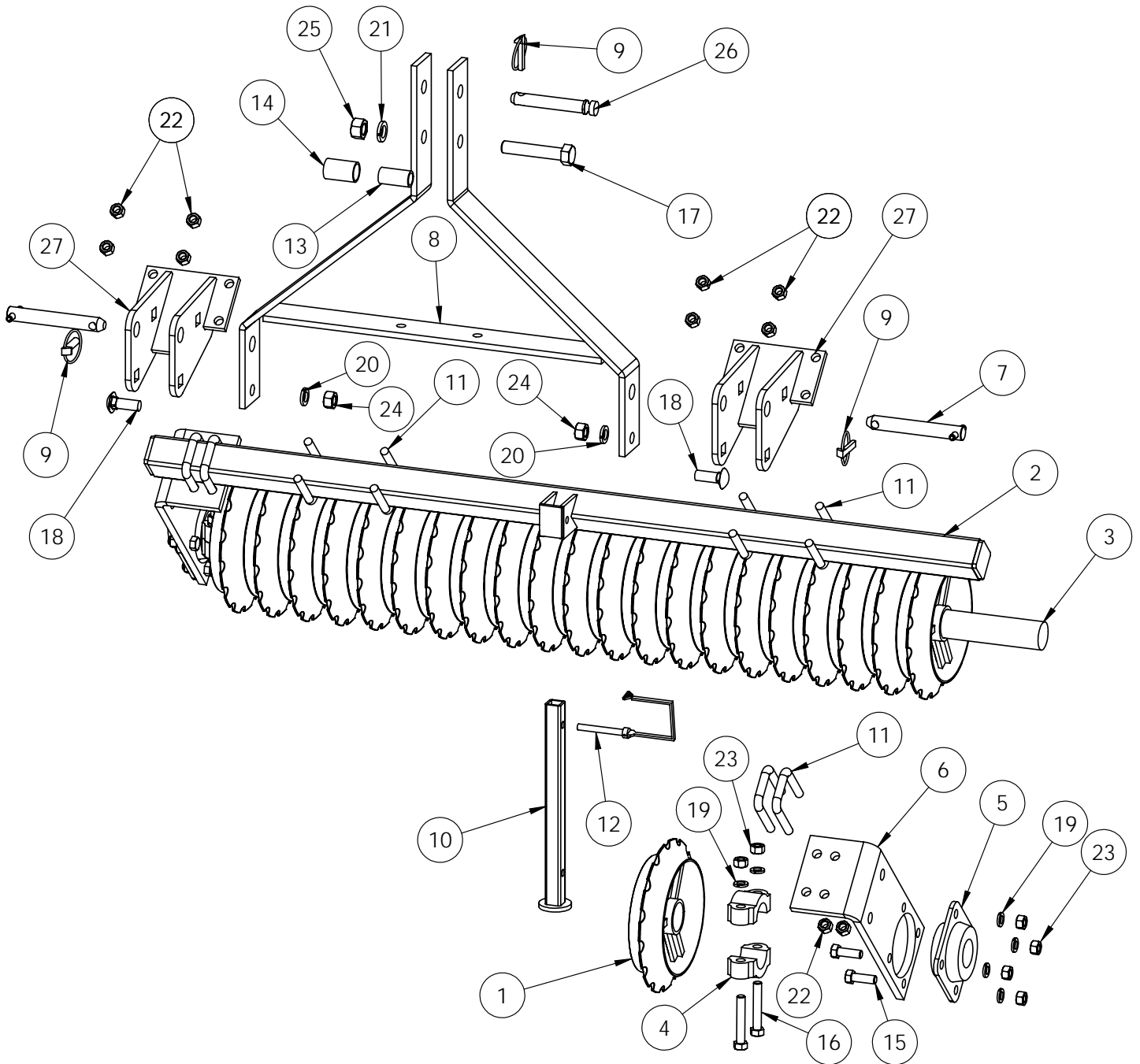


Figure 12.

# PARTS CATALOG

## CP-48L, CP-72L

| Ref.# | Part # | Description  | Qty. |
|-------|--------|--|------|
| 1     | 15860  | CULTIPACKER WHEEL, 9 1/2"                          | *MS  |
| 2     | 16339  | TOOLBAR, CP-48L                                    | 1    |
|       | 16340  | TOOLBAR, CP-72L                                    | 1    |
| 3     | 16342  | AXLE, CP-48L                                       | 1    |
|       | 16343  | AXLE, CP-72L                                       | 1    |
| 4     | 15861  | AXLE CLAMP, HALF                                   | 4    |
| 5     | 16345  | BEARING, 1 3/4" ROUND                              | 2    |
| 6     | 16344  | HANGER   | 2    |
| 7     | 10684  | CAT 1 HITCH PIN                                    | 2    |
| 8     | 16341  | A-FRAME  | 1    |
| 9     | VP252  | LYNCH PIN  | 3    |
| 10    | 16346  | PARKING STAND                                      | 1    |
| 11    | 11138  | 2" X 2" U-BOLT                                     | 8    |
| 12    | 16219  | PIN  | 1    |
| 13    | 15209  | CAT 1 BUSHING, 1 15/16"                            | 1    |
| 14    | 15210  | CAT 2 BUSHING, 1 15/16"                            | 1    |
| 15    | T-733  | HEX BOLT, 1/2" X 1 1/2"                            | 8    |
| 16    | T-738  | HEX BOLT, 1/2" X 3" GR. 5                          | 4    |
| 17    | 9859   | HEX BOLT, 3/4" X 4" GR. 5                          | 1    |
| 18    | 15589  | CARRIAGE BOLT, 5/8" X 1 3/4" GR.2                  | 2    |
| 19    | T-25   | LOCK WASHER, 1/2"                                  | 12   |
| 20    | T-24   | LOCK WASHER, 5/8                                   | 2    |
| 21    | T-31   | LOCK WASHER, 3/4"                                  | 1    |
| 22    | 9226   | FLANGE LOCK NUT, 1/2"                              | 16   |
| 23    | T-26   | HEX NUT, 1/2"                                      | 12   |
| 24    | T-22   | HEX NUT, 5/8                                       | 2    |
| 25    | T-27   | HEX NUT, 3/4"                                      | 1    |
| 26    | 15206  | CAT 1 TOP LINK PIN                                 | 1    |
| 27    | 16358  | HITCH LUG WELDMENT                                 | 2    |
|       | 16318  | SAFETY WARNING DECAL SHEET (not shown, see page 2) | 1    |

\*MS = Model Specific

# PARTS CATALOG

## BCP1816

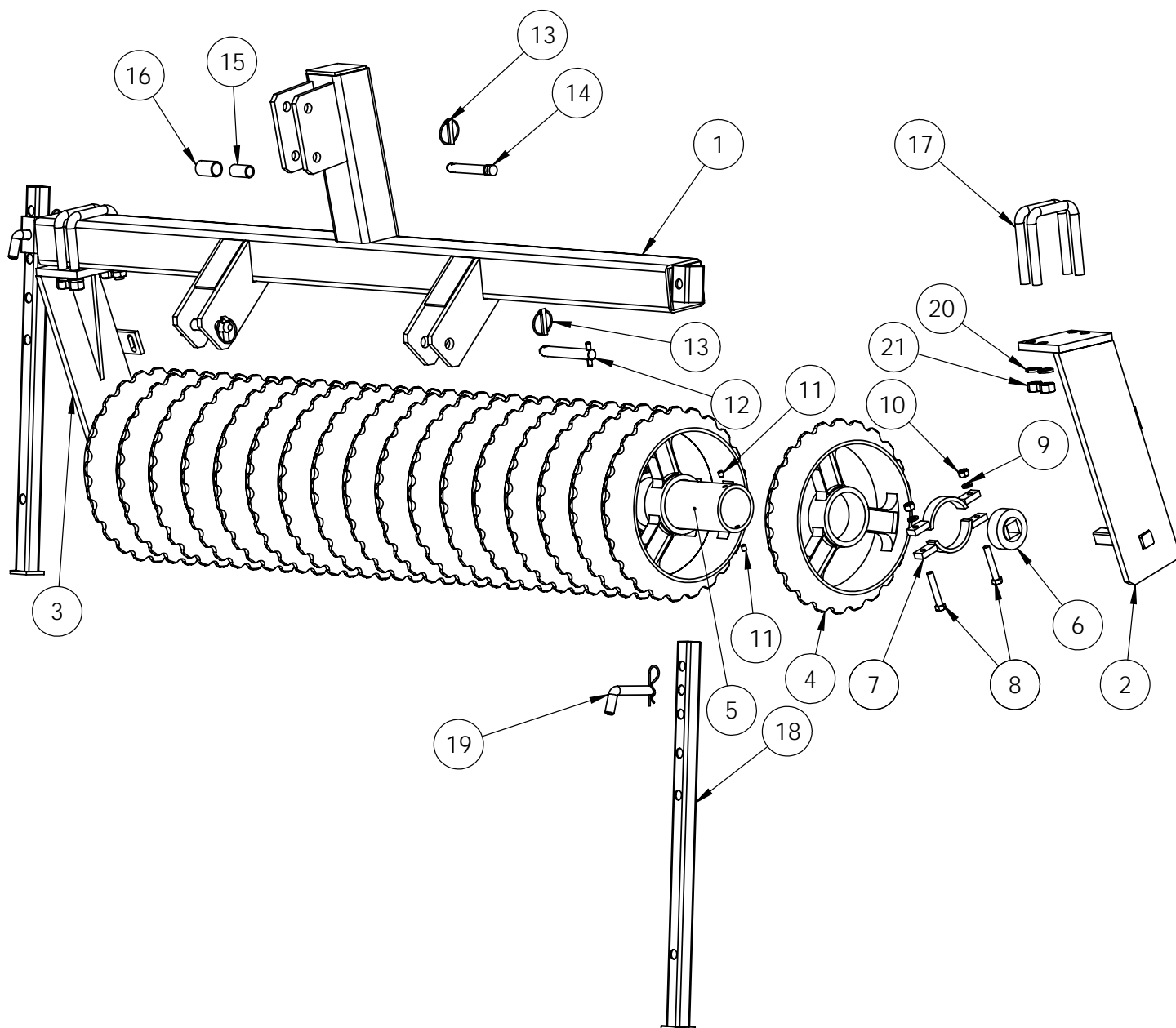


Figure 13.

# PARTS CATALOG

## BCP1816

| Ref.# | Part # | Description                   | Qty. |
|-------|--------|-------------------------------|------|
| 1     | 14770  | FRAME                         | 1    |
| 2     | 14907  | CULTIPACKER GANG HANGER (LH)  | 1    |
| 3     | 14908  | CULTIPACKER GANG HANGER (RH)  | 1    |
| 4     | 14971  | CULTIPACKER WHEEL             | 18   |
| 5     | 15894  | GANG AXLE PIPE 75"            | 1    |
| 6     | T-602  | BEARING, 1 1/8 "              | 2    |
| 7     | 15896  | AXLE CLAMP, HALF              | 4    |
| 8     | T-738  | HEX BOLT, 1/2" X 3" GR. 5     | 4    |
| 9     | T-25   | LOCK WASHER, 1/2"             | 4    |
| 10    | T-26   | HEX NUT, 1/2"                 | 4    |
| 11    | 12176  | SOCKET SET SCREW, 3/8" X 1/2" | 4    |
| 12    | 10684  | CAT 1 HITCH PIN               | 2    |
| 13    | VP252  | LYNCH PIN                     | 3    |
| 14    | 15206  | CAT 1 TOP LINK PIN            | 1    |
| 15    | 15209  | CAT 1 BUSHING, 1 15/16"       | 1    |
| 16    | 15210  | CAT 2 BUSHING, 1 15/16"       | 1    |
| 17    | 11971  | 4" x 4" U-BOLT                | 4    |
| 18    | 11037  | PARKING STAND                 | 2    |
| 19    | 9690   | PARKING STAND PIN             | 2    |
| 20    | T-31   | LOCK WASHER, 3/4"             | 8    |
| 21    | T-27   | HEX NUT, 3/4"                 | 8    |



# PARTS CATALOG

## BCP2416

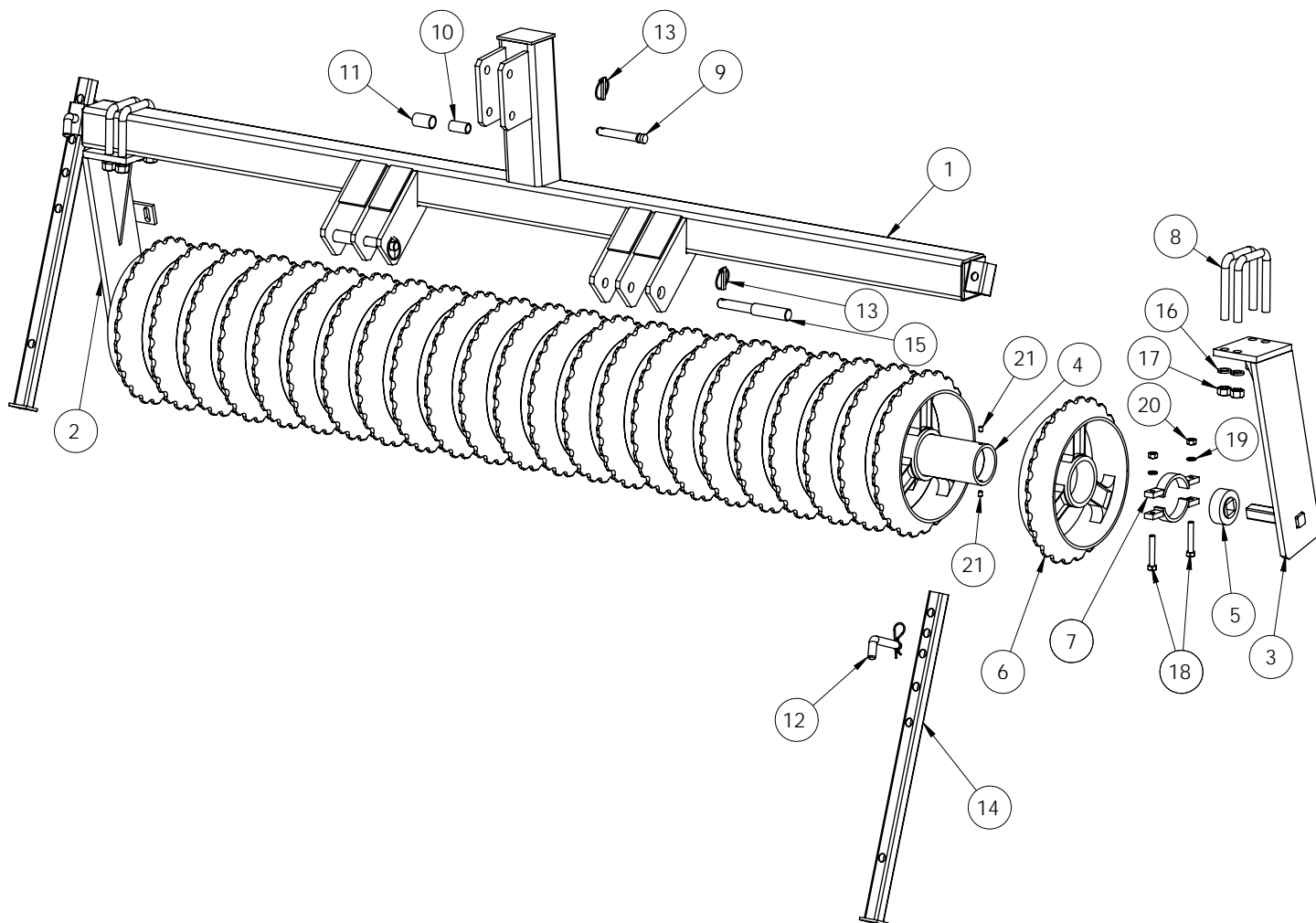


Figure 14.

## PARTS CATALOG

### BCP2416

| Ref.# | Part # | Description  | Qty. |
|-------|--------|--|------|
| 1     | 14771  | FRAME  | 1    |
| 2     | 14908  | CULTIPACKER GANG HANGER (RH)                       | 1    |
| 3     | 14907  | CULTIPACKER GANG HANGER (LH)                       | 1    |
| 4     | 15891  | GANG AXLE PIPE 99"                                 | 1    |
| 5     | T-602  | BEARING, 1 1/8"                                    | 2    |
| 6     | 14971  | CULTIPACKER WHEEL                                  | 24   |
| 7     | 15896  | AXLE CLAMP, HALF                                   | 4    |
| 8     | 11971  | 4" x 4" U-BOLT                                     | 4    |
| 9     | 15206  | CAT 1 TOP LINK PIN                                 | 1    |
| 10    | 15209  | CAT 1 BUSHING, 1 15/16"                            | 1    |
| 11    | 15210  | CAT 2 BUSHING, 1 15/16"                            | 1    |
| 12    | 9690   | PARKING STAND PIN                                  | 2    |
| 13    | VP252  | LYNCH PIN  | 3    |
| 14    | 11037  | PARKING STAND                                      | 2    |
| 15    | 13257  | CAT 1 & 2 LIFT PIN                                 | 2    |
| 16    | T-31   | LOCK WASHER, 3/4"                                  | 8    |
| 17    | T-27   | HEX NUT, 3/4"                                      | 8    |
| 18    | T-738  | HEX BOLT, 1/2" X 3" GR. 5                          | 4    |
| 19    | T-25   | LOCK WASHER, 1/2"                                  | 4    |
| 20    | T-26   | HEX NUT, 1/2"                                      | 4    |
| 21    | 12176  | SOCKET SET SCREW, 3/8" X 1/2"                      | 4    |
|       | 16318  | SAFETY WARNING DECAL SHEET (not shown, see page 2) | 1    |
|       | 15200  | YELLOW REFLECTOR, 9" (not shown, see page 5)       | 1    |
|       | 15361  | RED-ORANGE DECAL, 9" (not shown, see page 5)       | 2    |
|       | 15199  | RED REFLECTOR, 9" (not shown, see page 5)          | 2    |

# PARTS CATALOG

## BCP3616

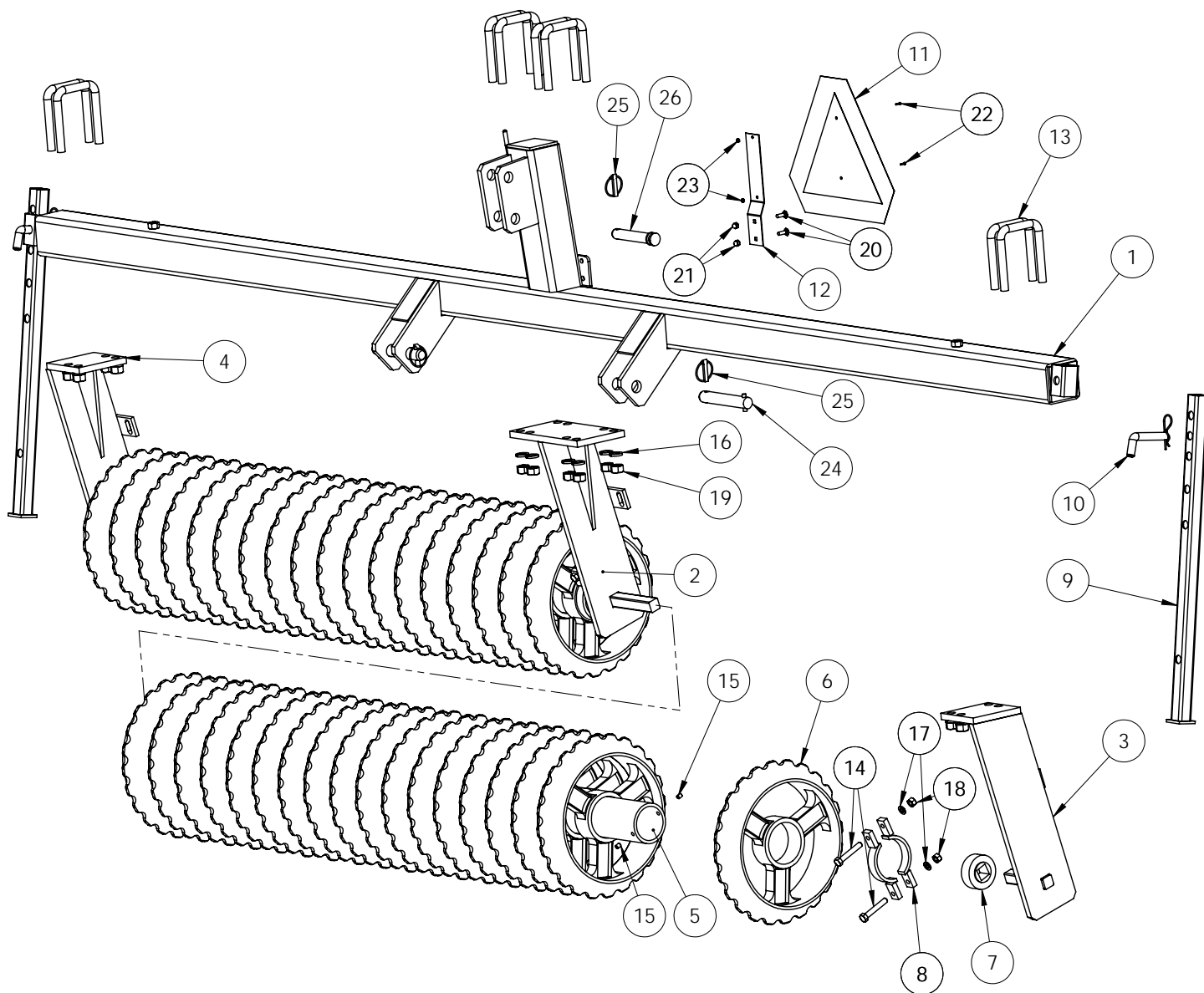


Figure 15.

# PARTS CATALOG

## BCP3616

| Ref.# | Part # | Description   | Qty. |
|-------|--------|---|------|
| 1     | 15598  | FRAME   | 1    |
| 2     | 15608  | CULTIPACKER GANG HANGER CENTER                        | 1    |
| 3     | 14907  | CULTIPACKER GANG HANGER (LH)                          | 1    |
| 4     | 14908  | CULTIPACKER GANG HANGER (RH)                          | 1    |
| 5     | 15894  | GANG AXLE PIPE 75"                                    | 2    |
| 6     | 14971  | CULTIPACKER WHEEL                                     | 36   |
| 7     | T-602  | BEARING, 1 1/18"                                      | 4    |
| 8     | 15896  | AXLE CLAMP, HALF                                      | 8    |
| 9     | 11037  | PARKING STAND   | 2    |
| 10    | 9690   | PARKING STAND PIN                                     | 2    |
| 11    | 14996  | SMV SIGN  | 1    |
| 12    | 14997  | SMV BRACKET   | 1    |
| 13    | 11971  | 4" x 4" U-BOLT  | 8    |
| 14    | T-738  | HEX BOLT, 1/2" X 3" GR. 5                             | 8    |
| 15    | 12176  | SOCKET SET SCREW, 3/8" X 1/2"                         | 8    |
| 16    | T-31   | LOCK WASHER, 3/4"                                     | 16   |
| 17    | T-25   | LOCK WASHER, 1/2"                                     | 8    |
| 18    | T-26   | HEX NUT, 1/2"   | 8    |
| 19    | T-27   | HEX NUT, 3/4"   | 16   |
| 20    | 14998  | CARRIAGE BOLT, 5/16" X 1" GR. 5                       | 2    |
| 21    | 15198  | NYLON LOCK NUT, 5/16"                                 | 2    |
| 22    | 15212  | ROUND HEAD MACHINE SCREW,<br>1/8" X 1/2" GR. 5"       | 2    |
| 23    | 15213  | HEX NUT, 1/8"   | 2    |
| 24    | 11167  | CAT 2 HITCH PIN                                       | 2    |
| 25    | VP252  | LYNCH PIN   | 3    |
| 26    | 15208  | CAT 2 TOP LINK PIN                                    | 1    |
|       | 16318  | SAFETY WARNING DECAL SHEET (not shown, see page 2)    | 1    |
|       | 15200  | YELLOW REFLECTOR, 9" (not shown, see page 5)          | 1    |
|       | 15361  | RED-ORANGE DECAL, 9" (not shown, see page 5)          | 2    |
|       | 15199  | RED REFLECTOR, 9" (not shown, see page 5)             | 2    |
|       | 16513  | NOTICE TRANSPORT SAFETY LABEL (not shown, see page 5) | 1    |

## **Installing Optional Scraper Kit**

### **CP-48L, CP-72L**

Follow these steps to install the Optional Scraper Kit.

1. Attach the Scraper Bar Mounts shown in Figure 16. (Ref. 1, Left Hand and Ref. 2, Right Hand) to the inside face of the roller hangers using 4 Hex Bolts, 5/8" x 2" (Ref. 7), Lock Washers, 5/8" (Ref. 8) and Hex Nuts, 5/8" (Ref. 9) provided with the scraper kit.
2. Mount the Scraper Bar (Ref. 3) to the Scraper Bar Mounts (Ref. 1, Left Hand and Ref. 2, Right Hand) using Carriage Bolt, 1/2" x 1 1/2" (Ref. 5) and Flange Lock Nut, 1/2" (Ref. 6) on each side.
3. Attach the Scraper Blades (Ref. 4) to the Scraper Bar (Ref. 3) using Carriage Bolt, 1/2" x 1 1/2" (Ref. 5) and Flange Lock Nut, 1/2" (Ref. 6).
4. Tighten each nut to the torque chart on page 33.



# PARTS CATALOG

## CP-48L, CP-72L

### OPTIONAL SCRAPER KIT

CP-48L Scraper Kit Part #: SKCP-48L

CP-72L Scraper Kit Part #: SKCP-72L

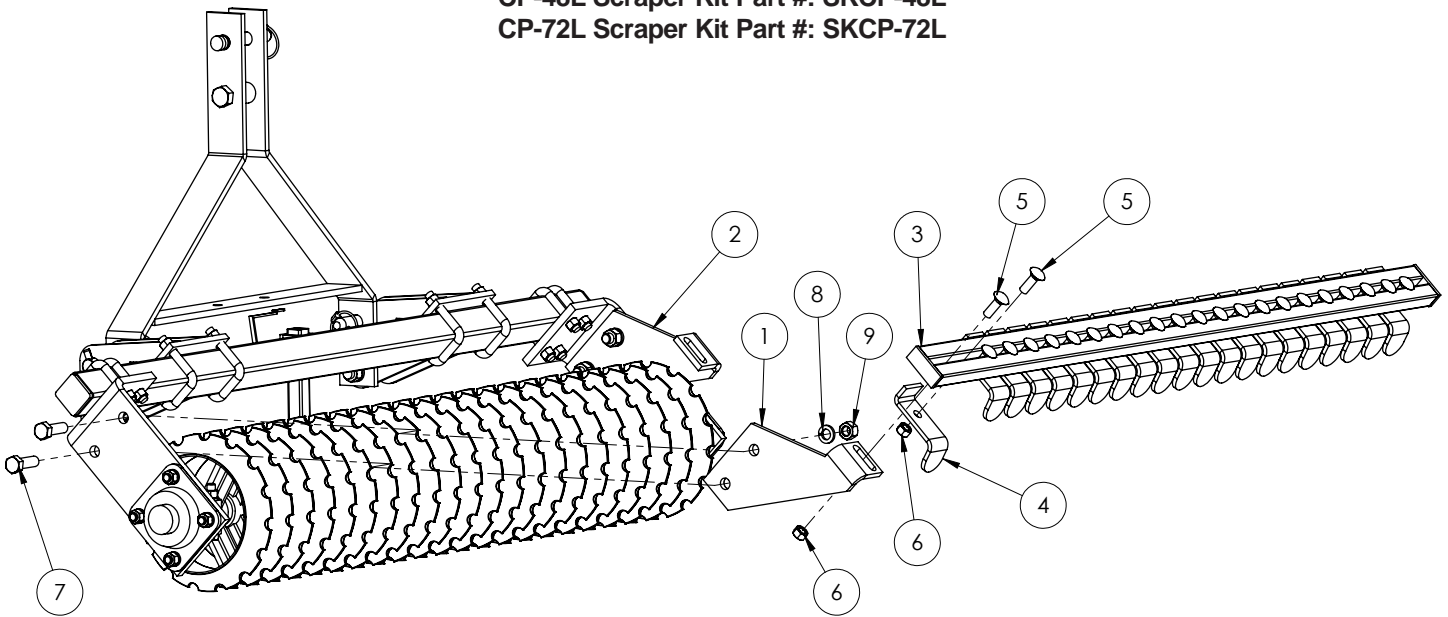


Figure 16.

| Ref.# | Part # | Description                  | Qty. |
|-------|--------|------------------------------|------|
| 1     | 16361  | SCRAPER BAR MOUNT, LEFT      | 1    |
| 2     | 16362  | SCRAPER BAR MOUNT RIGHT      | 1    |
| 3     | 16363  | SCRAPER BAR, CP1148L         | 1    |
|       | 11656  | SCRAPER BAR, CP1172L         | 1    |
| 4     | 16364  | SCRAPER                      | *MS  |
| 5     | T-805  | CARRIAGE BOLT, 1/2" X 1 1/2" | *MS  |
| 6     | 9226   | FLANGE LOCK NUT, 1/2"        | *MS  |
| 7     | T-740  | HEX BOLT, 5/8" X 2"          | 4    |
| 8     | T-24   | LOCK WASHER, 5/8"            | 4    |
| 9     | T-22   | HEX NUT, 5/8"                | 4    |

\*MS = Model Specific

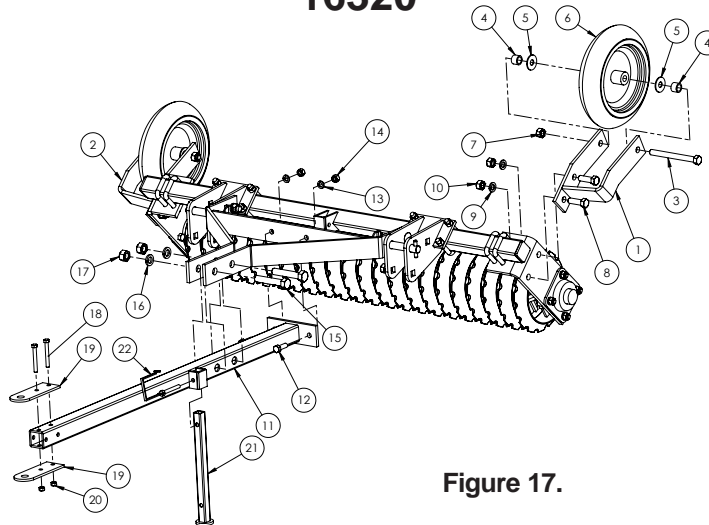
# PARTS CATALOG

## CP-48L, CP-72L

### OPTIONAL TONGUE AND WHEEL KIT 16320

**16493, Wheel Kit**  
Includes both Wheels,  
Brackets, and Hardware.

**16319, Tongue Kit**  
Includes Tongue, Clevis,  
Ball Coupler  
and Hardware.



**Figure 17.**

| Ref.# | Part # | Description  | Qty. |
|-------|--------|--|------|
| 1     | 16504  | WHEEL MOUNT, LH                                    | 1    |
| 2     | 16503  | WHEEL MOUNT, RH                                    | 1    |
| 3     | 9661   | HEX BOLT, 5/8" X 6 1/2"                            | 2    |
| 4     | 14903  | SPACER   | 4    |
| 5     | 9354   | FLAT WASHER, 5/8"                                  | 4    |
| 6     | 15156  | TIRE AND RIM                                       | 2    |
| 7     | 15132  | NYLON LOCK NUT, 5/8"                               | 2    |
| 8     | T-740  | HEX BOLT, 5/8" X 2"                                | 4    |
| 9     | T-24   | LOCK WASHER, 5/8"                                  | 4    |
| 10    | T-22   | HEX NUT, 5/8"                                      | 4    |
| 11    | 16494  | TONGUE WELDMENT                                    | 1    |
| 12    | T-733  | HEX BOLT, 1/2" X 1 1/2"                            | 2    |
| 13    | T-25   | LOCK WASHER, 1/2"                                  | 2    |
| 14    | T-26   | HEX NUT, 1/2"                                      | 2    |
| 15    | 9859   | HEX BOLT, 3/4" X 4"                                | 2    |
| 16    | T-31   | LOCK WASHER, 3/4"                                  | 2    |
| 17    | T-27   | HEX NUT, 3/4"                                      | 2    |
| 18    | T-892  | HEX BOLT, 3/8" X 3"                                | 2    |
| 19    | 16502  | CLEVIS PLATE                                       | 2    |
| 20    | 12889  | FLANGE LOCK NUT, 3/8"                              | 2    |
| 21    | 16346  | PARKING STAND                                      | 1    |
| 22    | 16219  | SQUARE LOCK PIN, 3/8"                              | 1    |
|       | 15008  | BALL COUPLER, 1 7/8" NOT SHOWN                     | 1    |
|       | 16318  | SAFETY WARNING DECAL SHEET (not shown, see page 2) | 1    |

## 27 Optional Equipment

## Installing Optional Tongue Kit CP-48L & CP-72L

Follow these steps to install the Optional Tongue Kit.

1. Ensure the parking stand is in place and on level ground. Remove the Carriage Bolts, Lock Washers and Hex Nuts (Figure 18, Ref. 1). Rotate A-Frame to the horizontal position. Reinstall Carriage Bolts, Lock washers and Hex Nuts into upper hole (Ref. 2) on the hitch weldment. Tighten each nut to the torque chart on page 33.

2. Remove Category 1 top link pin and lynch pin (Ref. 3). Also remove 3/4" x 4" Hex Bolt, 3/4" Lock Washer, 3/4" Hex Nut and Category 1 and 2 Bushings (Ref. 4).

3. Insert the Tongue Weldment (Figure 17, Ref. 11) into the A-Frame. Ensure the safety decals are upside down on the tongue weldment. The safety decals will be right side up and legible while in transport position. Using two 3/4" x 4" Hex Bolts (Figure 17, Ref. 15), two 3/4" Lock washers (Figure 17, Ref. 16) and two 3/4" Hex Nuts (Figure 17, Ref. 17) into the large top link holes on the A-Frame. Also bolt the tongue base using two 1/2" x 1 1/2" Hex Bolts (Figure 17, Ref. 12), two 1/2" Lock washers (Figure 17, Ref. 13) and two 1/2" Hex Nuts (Figure 17, Ref. 14).

4. The Clevis will already be assembled.

5. To install the optional ball hitch reciever, remove clevis and position coupler over tongue and install the two clevis pins into ball coupler and tongue.

5. Tighten each nut to the torque chart on page 33.

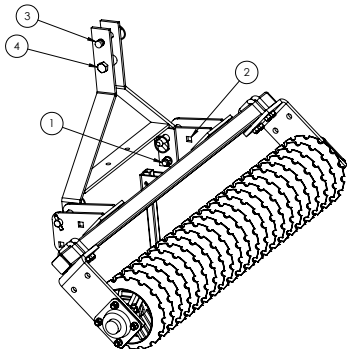


Figure 18.

## Installing Optional Wheel Kit CP-48L & CP-72L

Follow these steps to install the Optional Wheel Kit.

1. The right hand and left hand wheel and bracket assembly will come already assembled.

2. Using two 5/8" x 2" Hex Bolts (Figure 17, Ref. 8), two 5/8" Lock washers (Ref. 9) and two 5/8" Hex Nuts (Ref. 10) install the wheel and bracket assembly onto the roller hanger using the two upper holes. (Note the angle of each bracket in Figure 17)

3. Repeat step 2 on the other side.

5. Tighten each nut to the torque chart on page 33.



### Operating Instructions for Optional Tongue and Wheel Kit.

**Follow these operating instructions to prevent serious injury.**

**This Optional Tongue and Wheel Kit is not designed for use on public roads.**

1. Be aware of positive or negative tongue weight while hooking, unhooking or rotating from transport to field position or vice versa. Failure to do so can cause serious injury.

2. Make sure no bystanders are in the area.

3. Rotate the tongue up until the unit is in the vertical position. Adjust parking stand so it will not make contact with the ground. The parking stand will need to be flipped when changing from operation to transport and vice versa. Keep a firm grip on the tongue during this process until the unit is resting in the vertical position. Failure to do so can

## Operating Instructions for Optional Tongue and Wheel Kit. (Cont.)

cause serious injury.

4. Position yourself on the opposite side of the cultipacker and rotate the tongue into the operating or transport position as shown in Figure 19.

5. Do not transport faster than 10 mph.

6. Avoid sharp turns with prime mover in order to not contact tires with the tongue.

7. Do not operate the cultipacker in reverse to prevent damage to the unit.

8. To hitch cultipacker to tractor, remove the parking stand and store in the operating position. Place clevis onto drawbar and insert drawbar pin.

## Installing Optional Scraper Kit BCP1816, BCP2416, BCP3616

Follow these steps to install the Optional Scraper Kit.

1. Mount the Scraper Bar (Ref. 1) to the Scraper Bar Mount Lug welded to the Cultipacker Gang Hanger using Carriage Bolt, 1/2" x 1 1/2" (Ref. 3) and Flange Lock Nut, 1/2" (Ref. 4).

3. Attach the Scraper Blades (Ref. 2) to the Scraper Bar (Ref. 1) using Carriage Bolt, 1/2" x 1 1/2" (Ref. 3) and Flange Lock Nut, 1/2" (Ref. 4).

4. Tighten each nut to the torque chart on page 33.

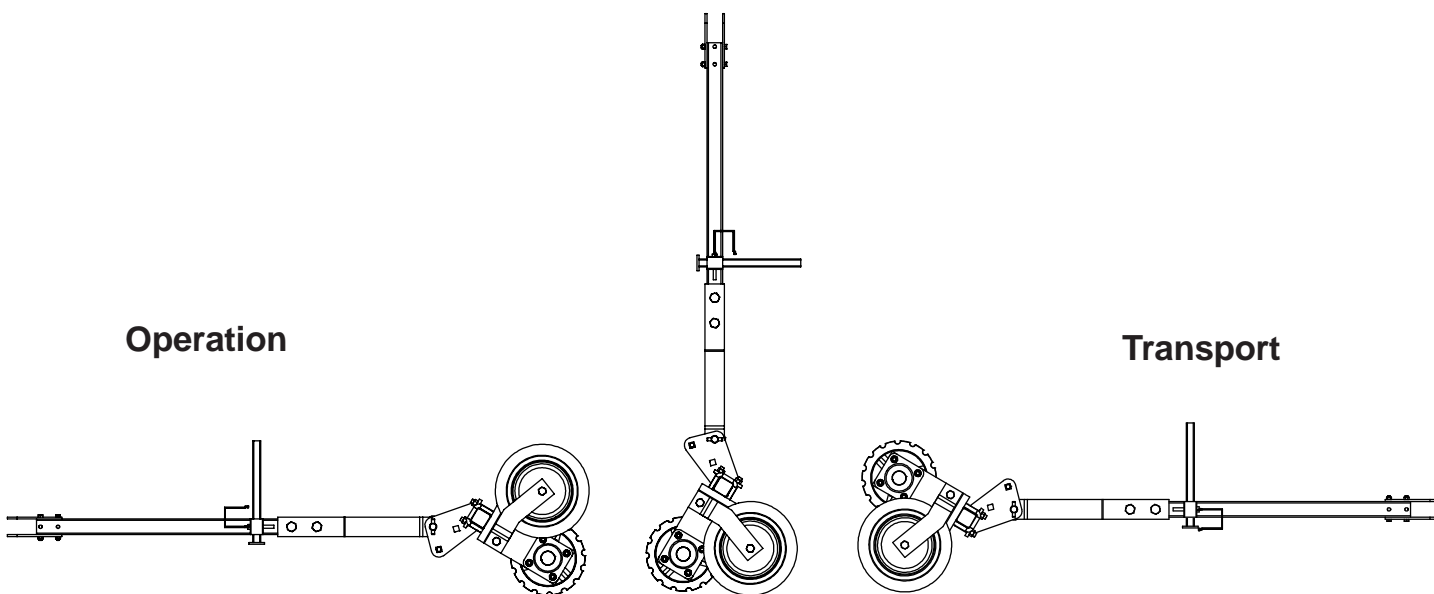


Figure 19.

# PARTS CATALOG

## BCP1816, BCP2416, BCP3616

### OPTIONAL SCRAPER KIT

BCP1816 Scraper Kit Part #: SKBCP1816  
 BCP2416 Scraper Kit Part #: SKBCP2416  
 BCP3616 Scraper Kit Part #: SKBCP3616

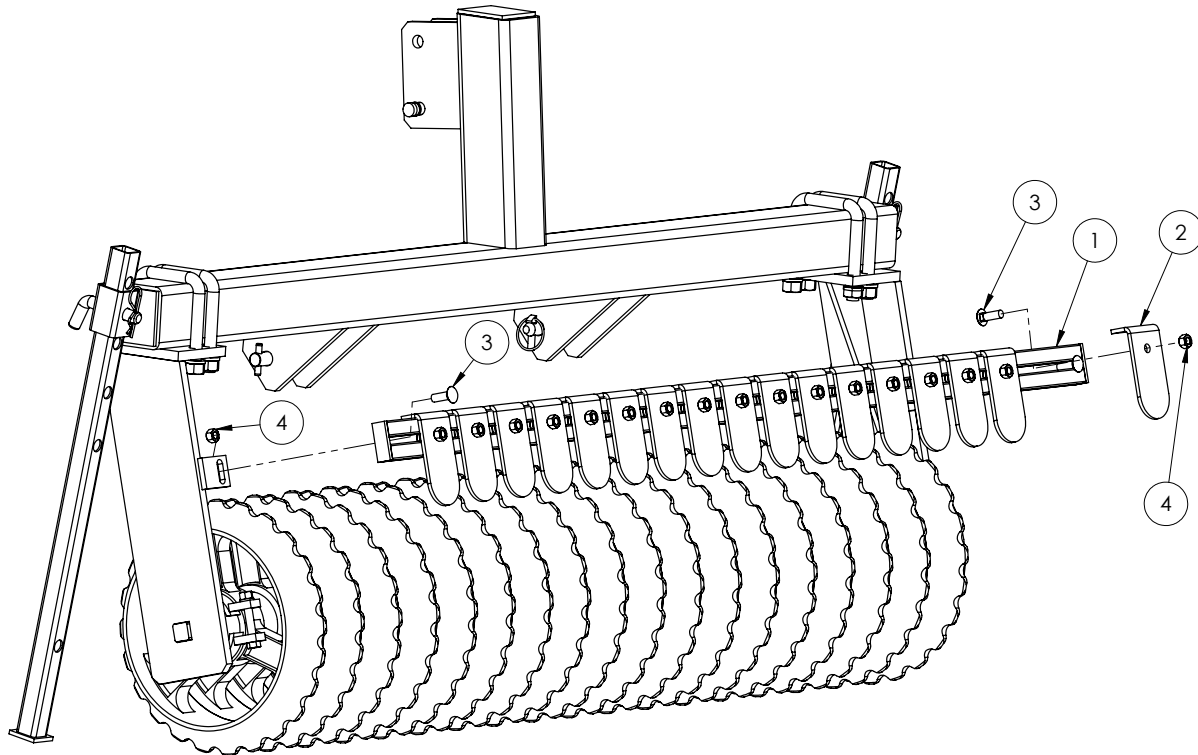


Figure 20.

| Ref.# | Part # | Description                   | Qty. |
|-------|--------|-------------------------------|------|
| 1     | 11656  | SCRAPER BAR, BCP1816, BCP3616 | *MS  |
|       | T-2649 | SCRAPER BAR, BCP2416          | 1    |
| 2     | 16373  | SCRAPER                       | *MS  |
| 3     | T-805  | CARRIAGE BOLT, 1/2" X 1 1/2"  | *MS  |
| 4     | 9226   | FLANGE LOCK NUT, 1/2"         | *MS  |

\*MS = Model Specific

## Optional Safety Light Assembly BCP3616

**Always comply with all state and local laws governing highway safety and lighting and marking requirements.**

16323 comes with Figure 21 (Ref. 1-5).

1. Attach the light mount brackets (Ref. 3) to the welded hex nut on each side of the Cultipacker Frame.

2. Attach the light fixture to the light mount bracket using the 1/4" X 1 1/2" Gr. 2 hex bolts (Ref.1) and 1/4" nylon hex nuts (Ref. 4) and tighten.

3. Turn the light unit so that the red and orange lights are to the rear and the orange is on the outside. Make sure they are clearly visible from the rear of the unit and tighten the 5/8" nut.

4. Drill for the module using 3/16" drill bit and attach with two #12 X 1" self tapping screws to the right side of the RH welded nut for mounting bracket (Ref. 3).

5. Run the wiring harness and attach to the

lamps, module and pig tail.

6. Mark the P-Clamp locations with a marker. Drill holes using 3/16" drill bit. Secure the wiring harness to the frame using one #12 X 1" size self tapping screw to hold each P-Clamps in place.

7. Use one size 1 1/8" P-Clamp (Ref. 6) to secure wiring bundle from RH lamp on the top face of the tube steel. Use four size 5/8" P-Clamps (Ref. 7) to secure the two cables on the RH side of the Cultipacker as shown below. Use four size 3/8" P-Clamps (Ref. 8) to secure the single cable on the LH side of the Cultipacker as shown below.

8. Make sure to not obscure the Safety reflectors.

9. Tighten each nut to the torque chart on page 33.

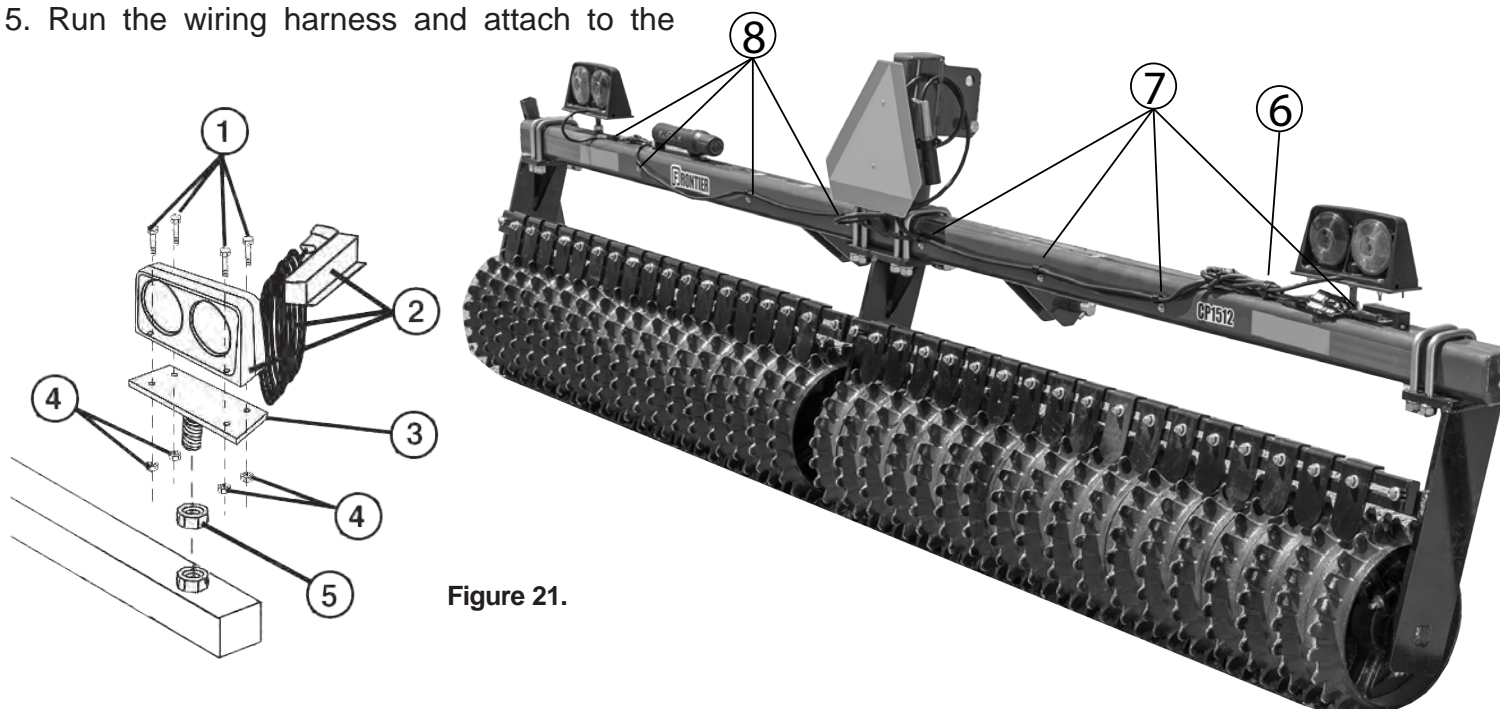


Figure 21.

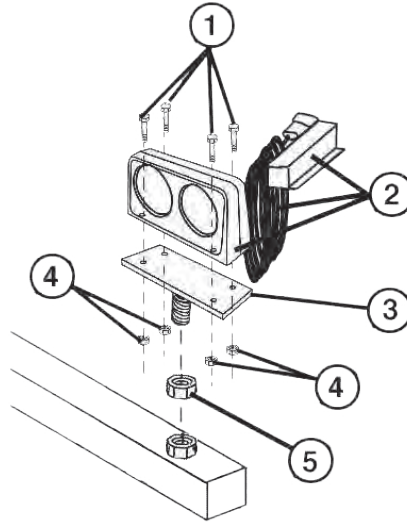


# PARTS CATALOG

## BCP3616

### OPTIONAL SAFETY LIGHT KIT

BCP3616 Safety Light Kit Part #: 16323

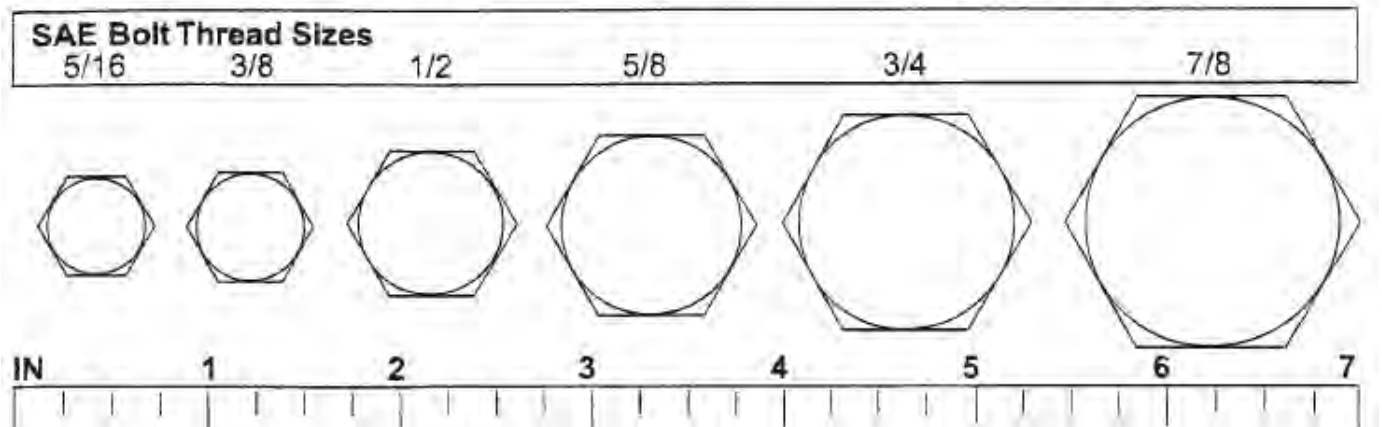


**Figure 22.**

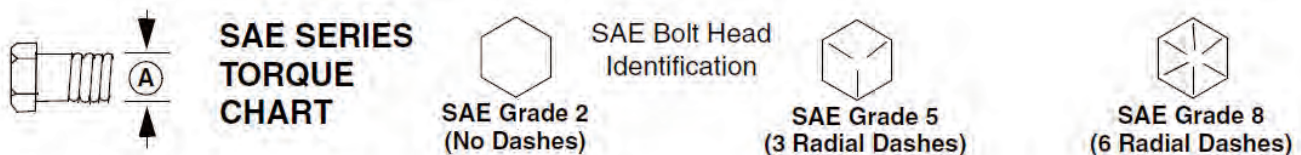
| Ref.# | Part # | Description  | Qty. |
|-------|--------|--|------|
| 1     | 15365  | HEX BOLT, 1/4" x 1 1/2", GR. 2                             | 8    |
| 2     | 16375  | LIGHT KIT, INCLUDES 2-LAMPS, 1-WIRING HARNESS AND 1 MODULE | 1    |
| 3     | 15347  | LIGHT MOUNT BRACKET  | 2    |
| 4     | 15366  | NYLON INSERT LOCK, NUT 1/4"                                | 8    |
| 5     | T-22   | HEX NUT, 5/8"  | 2    |
|       | 16490  | P-CLAMP, 3/8" (NOT SHOWN)                                  | 4    |
|       | 16491  | P-CLAMP, 5/8" (NOT SHOWN)                                  | 4    |
|       | 16492  | P-CLAMP, 1 1/8" (NOT SHOWN)                                | 1    |
|       | 15348  | SELF TAPPING SCREW, #12 X 1" (NOT SHOWN)                   | 11   |

## Options and Bolt Torque Chart

**NOTE:** Chart shows bolt thread sizes and corresponding head (wrench) sizes for standard SAE and metric bolts.



## SAE Torque Chart



| Ⓐ<br>Diameter<br>(Inches) | Wrench<br>Size | MARKING ON HEAD |     |        |     |        |      |
|---------------------------|----------------|-----------------|-----|--------|-----|--------|------|
|                           |                | SAE 2           |     | SAE 5  |     | SAE 8  |      |
|                           |                | lbs-ft          | N-m | lbs-ft | N-m | lbs-ft | N-m  |
| 1/4"                      | 7/16"          | 6               | 8   | 10     | 13  | 14     | 18   |
| 5/16"                     | 1/2"           | 12              | 17  | 19     | 26  | 27     | 37   |
| 3/8"                      | 9/16"          | 23              | 31  | 35     | 47  | 49     | 67   |
| 7/16"                     | 5/8"           | 36              | 48  | 55     | 75  | 78     | 106  |
| 1/2"                      | 3/4"           | 55              | 75  | 85     | 115 | 120    | 163  |
| 9/16"                     | 13/16"         | 78              | 106 | 121    | 164 | 171    | 232  |
| 5/8"                      | 15/16"         | 110             | 149 | 170    | 230 | 240    | 325  |
| 3/4"                      | 1-1/8"         | 192             | 261 | 297    | 403 | 420    | 569  |
| 7/8"                      | 1-5/16"        | 306             | 416 | 474    | 642 | 669    | 907  |
| 1"                        | 1-1/2"         | 467             | 634 | 722    | 979 | 1020   | 1383 |

**33 Bolt Size and Bolt Torque Chart**

## NOTES

PART NO.  
16331

