

# Grapple Buckets All Models

## Operation and Maintenance Manual



888-376-7027 | [BlueDiamondAttachments.com](http://BlueDiamondAttachments.com)

Register your  
**WARRANTY**  
within 30 days  
of purchase



## Introduction: Owner Information

Thank you for your decision to purchase a Blue Diamond® Grapple Bucket. To ensure maximum performance of your equipment, it is mandatory that you thoroughly study the Operator's Manual and follow the recommendations. Proper operation and maintenance are essential to maximize equipment life and prevent personal injury.

Operate and maintain this equipment in a safe manner and in accordance with all applicable local, state, and federal codes, regulations, and /or laws. Follow all on-product labeling and instructions.

Make sure that all personnel have read this Operator's Manual and thoroughly understand safe and correct operating, installation and maintenance procedures.

Blue Diamond® is continually working to improve its products. Blue Diamond® reserves the right to make any improvements or changes as deemed practical and possible without incurring any responsibility or obligation to make any changes or additions to equipment sold previously.

Although great care has been taken to ensure the accuracy of this publication, Blue Diamond® makes no warranty or guarantee of any kind, written or expressed, implied or otherwise with regard to the information contained within this manual. Blue Diamond® assumes no responsibility for any errors that may appear in this manual and shall not be liable under any circumstances for incidental, consequential or punitive damages in connection with, or arising from the use of this manual.

Keep this manual available for frequent reference. All new operators or owners must review the manual before using the equipment and annually thereafter. Contact your Blue Diamond® Attachments Dealer for assistance, information, or additional copies of the manual. Contact [www.bluediamondattachments.com](http://www.bluediamondattachments.com) or call 888-376-7027 for a complete list of dealers in your area.

## Serial Number Location:

Please record attachment information in the space provided for future reference.



Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Dealer Name: \_\_\_\_\_

Dealer Number: \_\_\_\_\_

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

The serial number plate is located on the back of the frame to the right of the mounting plate as shown above.

Always use your serial number when requesting information or when ordering parts.

**NOTE:** The directions left, right, front, and rear, as mentioned throughout this manual, are as viewed from the operator's position.

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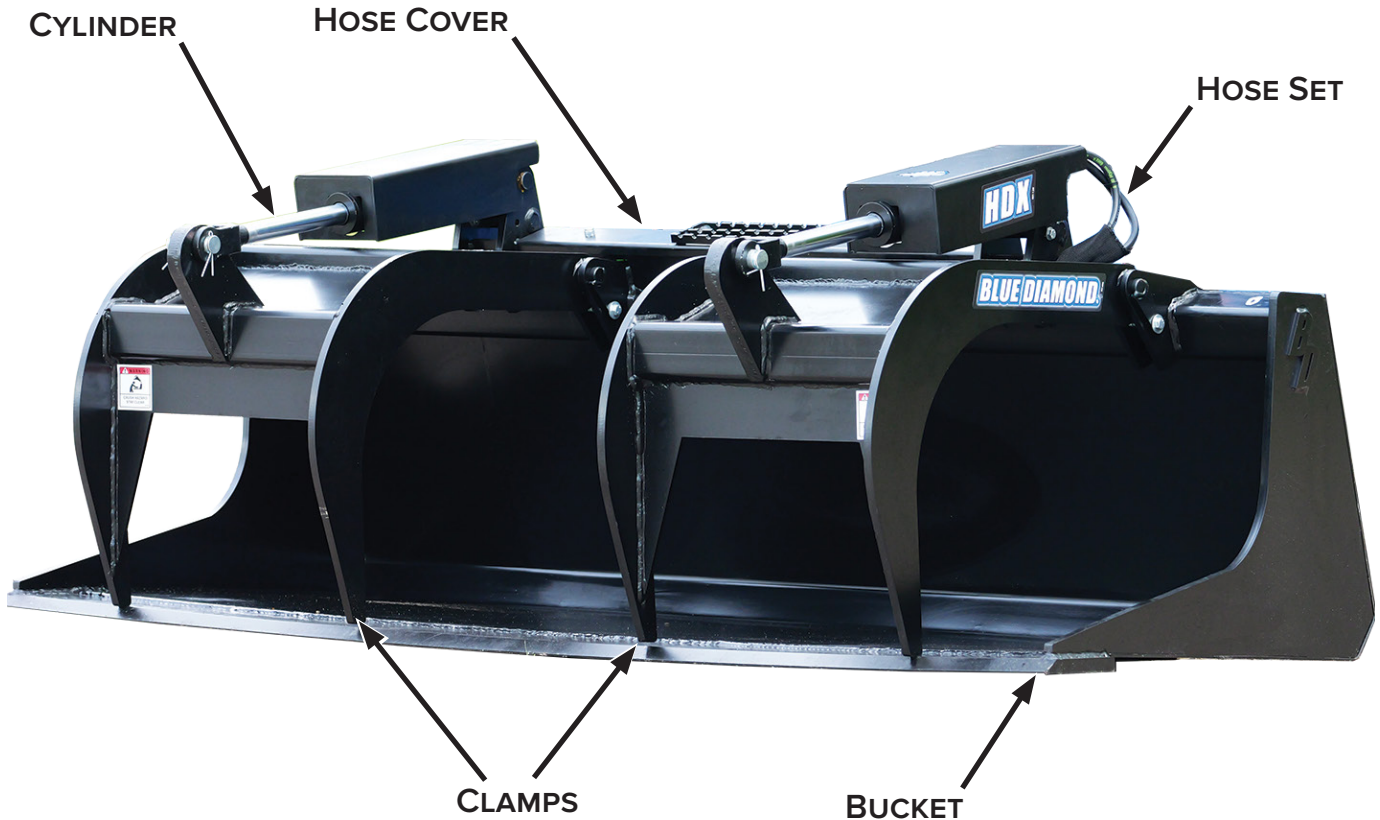
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# 1. Introduction

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## 1.1 Attachment Identification



## 1.2 About this Attachment

### About the Grapple Bucket Attachment

The Grapple Bucket attachment is intended for use in industrial and landscaping applications. The primary use of the grapple attachment includes demolition, construction, recycling, scrap, and grounds maintenance. Use of this equipment in any other manner is considered to be contrary to the intended use of the attachment.

### Grapple Bucket

The Grapple Bucket attachment is vital to multiple industries, such as construction and forestry, and is quickly becoming a necessity among all contractors today. This unique Grapple Bucket is offered in a variety of sizes for a variety of applications.

The Grapple Bucket combines the loading and leveling actions of a skid steer bucket with the “grabbing ability” of one or two hydraulic clamps. The basic design of the Grapple Bucket attachment allows it to load and grapple large and/or uneven objects. The bucket is also designed to pick up the smallest debris. Our Grapple Buckets feature enclosed cylinders and hoses on most models to protect against debris and stray limbs. The depth of the bucket has been increased, giving it a large loading capacity and the reinforced ribbed bottom reduces bowing and wear of the Grapple Bucket.

The Mini and Severe Duty Grapple Buckets also have removable sides for optional increased volume of smaller debris.

# 1. Introduction

## 1.3 Attachment Model Numbers

The following tables do not reflect the different mount, clamp, and / or bolt-on edge options. Please contact your local Blue Diamond® dealer for more information.

MODEL NUMBERS	MODEL TYPE	WIDTH
106020	Mini	36"
106027	Mini	37.5"
106021	Mini	38"
106030	Mini	38"
106029	Mini	40"
106032	Mini	42"
106035	Mini	44"
106036	Mini	44"
106042	Mini	50"
106045	Mini	50"
106065	Light	66"
106077*	Heavy	60"
106085*	Heavy	66"
106095*	Heavy	72"
106078	Heavy Series 2	60"
106086	Heavy Series 2	66"
106096	Heavy Series 2	72"
106097	HDX	72"

MODEL NUMBERS	MODEL TYPE	WIDTH
106115*	Extreme	60"
106135*	Extreme	66"
106155*	Extreme	72"
106175*	Extreme	78"
106195*	Extreme	84"
106225	Extreme High Capacity	72"
106235	Extreme High Capacity	78"
106245	Extreme High Capacity	84"
106255	Extreme High Capacity	96"
106420	Severe	48"
106429	Severe	60"
106430	Severe	60"
106444	Severe	66"
106445	Severe	66"
106454	Severe	72"
106455	Severe	72"
106457	Severe	72"
106464	Severe	78"
106465	Severe	78"
106466	Severe	78"
106474	Severe	84"
106475	Severe	84"
106476	Severe	84"

\*Discontinued Models.

## 2. Safety

### 2.1 General Safety Information



This **SAFETY ALERT SYMBOL** identifies important safety messages on the equipment and in the owner's manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.



The signal word **IMPORTANT** identifies procedures which must be followed to avoid damage to the machine.



The signal word **DANGER** on the machine and in the manuals indicates a hazardous situation which, if not avoided, will result in death or serious injury.



The signal word **WARNING** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



The signal word **CAUTION** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**NOTE:** Notes are used to indicate important information. This information may be repeated in other areas of the manual.

### Terminology

Host Machine, Machine, Prime Mover:

- The Grapple Bucket can be attached to many different pieces of equipment; therefore, the terms “host machine”, “machine”, and “prime mover” will be used. Host machine and machine mean any equipment, tractor, or skid steer providing power to the attachment.

Attachment, Implement:

- The Grapple Bucket is the tool that is being attached to the host machine; therefore, the terms “attachment” and “implement” will be used. The attachment and implement mean any tool that is being used on any equipment, tractor, or skid steer being used for different applications.

### Operating Safety

- Read and follow instructions in this manual and the machine's Operator's Manual before operating.
- The manual must always remain with the machine. In case of loss or damage, request a new copy from your dealer or from Blue Diamond®.
- Only qualified and trained operators should operate, maintain, and service this attachment. See “Qualified Operators” on page 7 to determine a qualified operator.
- Strictly follow all rules prescribed by the safety pictograms/decals applied to the machine. Ensure that all safety pictograms/decals are legible. If pictograms/decals are worn, they must be replaced with new ones obtained from Blue Diamond® and placed in the position indicated by this manual.
- Before using the machine, make sure that all safety devices are installed and in good working condition. In case of damaged or missing shields, replace them immediately.
- It is absolutely forbidden to remove or alter safety devices and / or safety precautions
- Pay maximum attention to avoid any accidental contact with rotating parts of the machine.

## 2. Safety

### 2.1 General Safety Information Cont'd

#### Operating Safety Cont'd

- If the use of the machine is required at night or in conditions of reduced visibility, use the lighting system of the host machine and an auxiliary lighting system if required.

### 2.2 Operators

#### Qualified Operators

The operator is a person suited to the work and who is physically and psychologically able to withstand the demands connected with operating the equipment for its intended use. The operator must not allow anyone to approach the machine while it is working and must not allow external personnel to operate the machine or attachment.

The operator is to follow the given instructions in this manual and the machine operator's manual in order to obtain maximum performance, minimal fuel consumption, and maximum safety for himself and for others.

The operator is responsible for scrupulously observing all the instructions given in this manual.



**DANGER**



Operators must receive instructions before operating the machine. Untrained operators can cause serious injury or death.

For an operator to be qualified, he or she must not use drugs or alcoholic drinks which impair alertness or coordination while working. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate a machine and the equipment. For an operator to be qualified, he or she must have read and understood the instructions of this manual, he or she must make adequate preparation for the proper use of the machine, and he or she must hold a driving license.

In case of doubt regarding the use of the machine and/or the interpretation of this manual, the operator must contact either their dealer or Blue Diamond®.

#### Operator Training

- Check the rules and regulations at your location. The rules may include an employer's work safety requirements. Regulations may apply to local driving requirements or use of a Slow Moving Vehicle (SMV) emblem. Regulations may identify a hazard such as a utility line.
- The new operator must start in an area without bystanders and use all the controls until he or she can operate the machine safely under all conditions of the work area.

#### Operator Safety

- It is the responsibility of the operator to follow all local, state, and federal safety regulations. Improper use of this equipment may result in personal injury, property damage, and/or damage to the equipment.
  - Before starting and during operation of the attachment, make sure there are no people or animals in the operation area.
  - During operation, adjustment, maintenance, repairing, or transportation of the machine, the operator must always use appropriate Personal Protective Equipment (PPE) including but not limited to safety glasses, working gloves, dust-mask, safety helmet, and hearing protection.
- NOTE:** Additional safety equipment may be required depending on the operating environment and worksite conditions.
- Do not operate the attachment or machine while wearing loose fitting clothing that can be entangled or caught in parts of the machine.
  - Do not operate the implement when tired, not in good condition, or under the influence of alcohol or drugs.

## 2. Safety

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### 2.3 Safety Guidelines

#### Operating Safety

- Read and follow instructions in this manual and the machine's Operator's Manual before operating.
- Under no circumstances should young children be allowed to work with this equipment.
- This equipment is dangerous to persons unfamiliar with its operation.
- Check for overhead and / or underground lines before operating equipment (if applicable).
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of equipment.
- Check that the attachment is securely fastened to the machine.
- Make sure all the machine controls are in the NEUTRAL before starting the machine.
- Operate the equipment only from the operator's position.
- Operate the equipment according to the Operator's Manual.
- When learning to operate the equipment, do it at a slow rate in an area clear of bystanders.
- Do not permit personnel to be in the work area when operating the equipment.
- The equipment must be used ONLY on approved machines.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and / or safety and could affect the life of the equipment.
- Do not make any adjustments or repairs on the equipment while the machine is running.
- Keep shields and guards in place. Replace if damaged.

- DO NOT operate equipment in poor visibility conditions such as fog, darkness, or any conditions that limit clear visibility less than 300 feet (100 m) in front of and to the sides of the equipment.
- DO NOT operate in a work area that has not been inspected for foreign debris and obstacles.
- Remove any foreign objects and clearly mark any objects that cannot be removed.
- Wear safety glasses, gloves, hearing protection, and other protective clothing when required.

#### Machine Requirements and Capabilities

- The Grapple Bucket must be connected to a machine with adequate horsepower and lift capacity to provide satisfactory results.
- The machine must be equipped with an auxiliary circuit that is available on the loader arms and is controlled by a switch, pedal, or handle while in the operator's position.
- Keep bystanders clear of moving parts and the work area. Keep children away.
- Do not exceed maximum HP or maximum PSI operating pressure as stated for each model in "6.1 Attachment Specifications" on page 45.
- Use caution on slopes and near banks and ditches to prevent overturn.

#### Fire Prevention Safety

- Flammable debris (leaves, grass, etc.) must be removed regularly. If flammable debris is allowed to accumulate, it can cause a fire hazard. Clean often to avoid this accumulation.
- All fuels, most lubricants, and some coolant mixtures are flammable. Flammable fluids that are leaking or spilled onto hot surfaces or onto electrical components can cause a fire.

## 2. Safety

### 2.3 Safety Guidelines Cont'd

#### Transporting Safety

- Comply with state and local laws governing highway safety and movement of machinery on public roads.
- Check local laws for all highway lighting and marking requirements.
- Always yield to oncoming traffic and move to the side of the road so any following traffic may pass.
- Never allow riders on either machine or equipment.
- If transporting the equipment on a truck or trailer, make sure the equipment is properly secured to the transport vehicle.

#### Hydraulic System

- Check hydraulic tubes, hoses, and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. Hydraulic tubes and hoses must be properly routed and have adequate support and secure clamps. Tighten or replace any parts that show leakage.
- Always clean fluid spills. Do not use gasoline or diesel fuel for cleaning parts. Use commercial nonflammable solvents.

#### Personal Protective Equipment



**Proper Work Clothes:** To help ensure your safety as a designated operator wear proper work clothes including tight fitting clothes, protective gloves, and shoes.



**Hand Protection:** To help ensure your safety as a designated operator wear protective gloves.



**Protective Shoes:** To help ensure your safety as a designated operator wear protective shoes.



**Safety Helmet:** To help ensure your safety as a designated operator wear a safety helmet.



**Safety Helmet and Eye/Ear Protection:** To help ensure your safety as a designated operator wear a safety helmet and eye/ear protection.

## 3. Operation

### 3.1 Pre–Operation Inspection

Before operating the Grapple Bucket for the first time and each time thereafter, use the following list as a guideline during equipment inspection.



#### WARNING



##### AVOID SERIOUS INJURY OR DEATH

- Disengage machine's auxiliary hydraulics, engage the machine's parking brake, stop the engine, and make sure all moving parts are completely stopped before connecting, disconnecting, adjusting, or cleaning equipment.
- Always keep shields and guards in place when using the equipment.
- Disengage machine's auxiliary hydraulics for road travel.
- Keep hands, feet, and clothing away from rotating parts.

- Lubricate the attachment per the schedule outlined in the Maintenance section. See "4.3 After Every Season" on page 17.
- Check the attachment's mounting frame for damage or cracks.
- Check that all shields and guards are in place.
- Check for loose bolts and tighten them if necessary.
- Check all welds on the attachment for wear and damage each time the attachment is removed from the machine.
- Make sure tines on the clamp(s) and the bucket itself are not bent or worn.
- Check for damaged or missing safety decals. Replace if necessary.
- Inspect the machine's mounting frame. (See the machine's Operator's Manual for inspecting the mounting frame.) Replace any parts that are damaged, bent, or missing. Keep all fasteners tight. Look for cracked welds.
- Verify that the attachment is properly connected to the machine.



#### WARNING



Leaking fluids under pressure can enter the skin and cause serious injury or death. Immediate medical attention is required.

**Wear goggles. Use cardboard to check for leaks.**

- Check the condition of all hydraulic components for leaks. Repair as required.  
**NOTE:** Do not operate with hydraulic leaks.
- Inspect the work area, confirm that it is free of any utilities, rocks, fence posts, and mark any objects that cannot be moved.
- Determine a safe and efficient duty cycle pattern before starting the job.

## 3. Operation

### 3.2 Entering & Exiting the Prime Mover



See the machine's Operator's Manual for detailed information on operating the loader.

#### Entering The Operator's Position

Use the attachment safety treads, handles, and / or steps (on the machine) to enter the operator's position.

When in the operator's position, secure the seatbelt, lower safety seat bar, start the engine, and release the parking brake.

#### Leaving The Operator's Position



##### AVOID SERIOUS INJURY OR DEATH

- Always park on a flat, level surface.
- Lower lift arms and place attachment flat on the ground.
- Place all controls in NEUTRAL.
- Engage the parking brake.
- Stop the engine, and remove the key.
- Wait for all moving parts to stop.

**SEE MACHINE'S OPERATOR'S MANUAL FOR ADDITIONAL INFORMATION.**

Park the machine / attachment on a flat, level surface.

Place all controls in neutral, engage the parking brake, stop the engine, and wait for all moving parts to stop. Leave the operator's position.

### 3.3 Attachment Installation

#### Connecting Attachment to the Machine



##### CRUSH HAZARD

- Before moving the machine, look in all directions and make sure no bystanders, especially small children are in the work area. Do not allow anyone between the machine and attachment when approaching the attachment for connecting.
- Keep fingers and hands out of pinch points when connecting and disconnecting the attachment.

Before connecting to the attachment, inspect the machine's mounting plate. (See the machine's Operator's Manual for inspecting the mounting frame.)

Enter the operator's position. See "Entering The Operator's Position" on page 11.

Drive the machine slowly forward until the top edge of the machine's mounting plate is under the top flange of the attachment mounting frame.

Slowly tilt the machine's mounting plate back until the attachment's mounting frame fully contacts the front of the machine's mounting plate.

Leave the operator's position. See "Leaving The Operator's Position" on page 11.

## 3. Operation

### 3.3 Attachment Installation Cont'd

#### Connecting Attachment to the Machine Cont'd



#### **WARNING**



##### **AVOID SERIOUS INJURY OR DEATH**

The locking pins / wedges must extend through the holes in the attachment mounting frame. Failure to secure locking pins / wedges can allow attachment to come off.

**SEE MACHINE'S OPERATOR'S MANUAL FOR  
ADDITIONAL INFORMATION.**

Engage attachment locking levers / wedges (See the machine's Operator's Manual for detailed information).

#### Connecting Hydraulic Hoses



#### **IMPORTANT**



Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the hydraulic system.

Verify that all hydraulic couplings are compatible with the host machine.

Remove dirt or debris from the male and female couplers. Visually inspect the couplers for corroding, cracking, damage, or excessive wear. Replace as needed.

Connect the attachment hydraulic hoses to the host machine. Pull on each hose to verify full connection is made.

#### Disconnecting Hydraulic Hoses



#### **WARNING**



##### **AVOID SERIOUS INJURY OR DEATH**

Hydraulic fluid, tubes, fittings, and quick couplers can get hot during operation. Be careful when connecting and disconnecting hydraulic hoses.

Relieve auxiliary hydraulic pressure. (See the host machine's Operator's Manual for correct procedure.)

Disconnect attachment hydraulic hoses from the machine.

#### Disconnecting Attachment From the Machine

Relieve auxiliary hydraulic pressure. (See the machine's Operator's Manual for correct procedure.)

Park the machine and attachment on a flat, level surface. Lower the attachment flat on the ground.

Leave the operator's position. See "Leaving The Operator's Position" on page 11.

Disconnect attachment hydraulic hoses from the machine.

Disengage locking pins / wedges. (See the machine's Operator's Manual for correct procedure.)

Enter the operator's position. See "Entering The Operator's Position" on page 11.

Slowly tilt the machine's mounting plate forward until the attachment's mounting frame is free from the machine's mounting plate.

Drive the machine slowly backward, away from the attachment.

## 3. Operation

### 3.4 Operating the Attachment

#### Machine Requirements



#### WARNING



Never allow riders on the attachment.

Only use the attachment on compatible loaders.

Refer to the machine's Operator's Manual for flow and pressure specifications.

Refer to the machine's Operator's Manual for instructions on how to open and close the clamp(s) as well as height and tilt functions of the machine's arms.

#### Engaging the Attachment for the First Time



#### IMPORTANT



If this is the initial startup with this attachment on this machine, check the host machine's hydraulic oil level and add oil, if necessary, before and after doing steps 1–2 below.

After starting the machine, lift the attachment 10" (254 mm) off the ground surface:

1. With the machine's engine RPMs just above idle, slowly engage the auxiliary hydraulic to open the clamp(s). With the machine's RPMs just above idle, slowly engage the auxiliary hydraulics to open the clamp. Move the auxiliary control pedal, lever, or switch in the opposite direction to close the clamp. Repeat this three (3) times to purge any air from the system.
2. Lower the attachment to the ground and shut off the host machine's engine. Leave the operator's position. See "Leaving The Operator's Position" on page 11.
3. Check the machine's hydraulic oil level, and add oil if necessary.
4. Inspect the attachment's hydraulic system for any noticeable leaks. If leaks are present, correct before continuing operation.

#### Getting Familiar with the Attachment



#### DANGER



Never operate the grapple arms when bystanders are within 10 ft (3 m) of the work area.



#### CAUTION



##### AVOID INJURY

Be cautious when operating on uneven ground surfaces. A machine rollover could result in minor or serious injury. Always wear your seatbelt when operating this type of machinery.

Before starting the engine with the grapple attachment connected to the host machine, make sure you are familiar and comfortable with the operation of the auxiliary hydraulic control as outlined in the previous sections of this manual and in the machine's Operator's Manual.

When operating the grapple attachment, set the host machine throttle at a speed that will produce the required flow to the attachment and other machine functions. If the machine is equipped with a foot throttle, use it to control the engine speed and power being delivered to the attachment. Refer to the machine's Operator's Manual or call your local dealer for additional help if necessary.

To begin with, learn what the attachment looks like in a level position when in the operator's position.

The correct ground speed for this attachment depends on the application and conditions, which can be monitored by sound and feel depending on the material density. If the machine's engine is bogging down because of a heavy load, raise or decrease the load a little at a time until the machine's power can overcome the material load on the attachment.

## 3. Operation

### 3.4 Operating the Attachment Cont'd

#### Operating the Grapple Bucket



#### **WARNING**



##### **AVOID SERIOUS INJURY OR DEATH**

Use extreme caution when moving debris to keep them hitting yourself or bystanders.

1. Install the attachment onto the host machine. (See “Connecting Attachment to the Machine” on page 11.)
2. Enter the operator’s position. (See “Entering The Operator’s Position” on page 11.)
3. Raise the attachment slightly off the ground.
4. Cycle the Grapple Bucket’s cylinder(s) several times to purge the hydraulic system of air. (See the machine’s Operator’s Manual for precise instructions in regards to these functions.)
5. To pick up debris, fully open the clamp(s) and drive forward. The debris should be pushed to the back of the attachment and resting on the bottom of the bucket.
6. Cycle the cylinder(s) to close the clamp(s).
7. Use the machine to adjust the height of the attachment. The machine’s tilt cylinders can be used to level the attachment.
8. When done handling debris, close the Grapple Bucket to prevent serious injury or death.

### 3.5 Operating Tips



#### **CAUTION**



##### **AVOID INJURY**

Be cautious when operating on uneven ground surfaces. A machine rollover could result in minor or serious injury. Always wear your seatbelt when operating this type of machinery.

- Always inspect the work area before starting the job. Locate and mark any utilities, steel posts, rocks, or any objects that could be damaged or damaged the attachment during operation. Never assume the work area is safe. Never skip Pre–Operation Inspection (see page 10).
- Operate at a safe, slow–paced speed that will allow proper vigilance for the area ahead and behind the machine and attachment. Look behind the attachment / machine and use your mirror when in reverse. Verify that the machine’s backup alarm is in proper working condition to warn others when in reverse in addition to proper vigilance.
- Overloading the attachment will result in spinning the tracks or tires and will make unwanted ruts. If a load is lifted that is too heavy with the Grapple Bucket, it will raise the rear of the host machine and reduce the tractive power available to move the load.
- Overloading the attachment will also require raising the attachment to offload some of the material. When the attachment is raised, an uneven surface is created will increase as the front of host machine drives over the rise of the ground surface.
- Center the load on the attachment. Estimate the center, and lift it accordingly. If the load feels unbalanced when lifted, stop the host machine, lower the load, and reposition. Try lifting again afterwards. An unbalanced load can overturn the host machine.

## 3. Operation

### 3.5 Operating Tips Cont'd

- After loading the attachment and closing the clamp(s) onto the load, roll the attachment back and retighten the clamp pressure. When rolling back the attachment, the load will settle and require some additional clamp pressure to secure the load.



#### **WARNING**



##### **AVOID SERIOUS INJURY OR DEATH**

When lifting a load of brush or trees, make sure all ends are not tangled with standing trees that could cause the center of gravity to be compromised, resulting in a rollover that could cause serious injury or death.

- The attachment's clamp(s) should not be used for pushing or pulling down trees or any type of structure. The clamp's purpose is to clamp the load so it can be moved to a different spot on the jobsite.
- To avoid service work and downtime, always pay attention so that tree branches or roots do not extend through past the attachment arms and damage any hydraulic parts or enter the cab area.
- Be careful that a branch or root doesn't "whip" back at the host machine. Wear safety glasses to protect your eyes from dirt and debris.



#### **WARNING**



##### **AVOID SERIOUS INJURY OR DEATH**

Use extreme caution when working around low hanging electrical lines. Do not raise the attachment in an area where there are low electrical lines to prevent an accident that could result in Serious Injury or Death.

- Maintain distance from any type of utility, whether underground or overground.
- Always clean the quick couplers before connecting them to the host machine. Use plastic or metal caps to protect the ends when not in use. Tuck the hoses somewhere in the attachment where they will be kept clean and not driven over.

## 4. Maintenance

### 4.1 Service Schedule

DESCRIPTION	SERVICE PROCEDURES					
	Check	Clean	Lube	Change	Adjust	Drain
Daily Maintenance (or every 8 hours)						
Hydraulic Fittings	•					
Hydraulic Hoses	•					
Frame (cracks, bends, or excessive damage)	•	•				
Hydraulic Cylinder	•					
Shields and Guards	•					
Attachment Welds	•					
Safety Decals	•					
Clamp Tines or Bucket Bent or Worn	•					
Grease Fittings			•			

## 4. Maintenance

### 4.2 Before Each Use

Before each use, perform the following:

- Perform the “3.1 Pre–Operation Inspection” on page 10 by walking around the equipment.
- Perform a daily inspection as indicated in “4.1 Service Schedule” on page 16.
- Verify that the proper attachment is being used for the task at hand. Use the Grapple Bucket for material handling only.

**NOTE:** If the attachment has been in storage or has not been used for an extended period of time, wipe down the chrome portion of the cylinder with hydraulic fluid so to not snag the seals.



**DANGER**



#### **AVOID SERIOUS INJURY OR DEATH**

Keep all body parts from the grapple tines when in use. The upper clamp(s) may open or close unexpectedly, causing serious injury or death.

Inspect the attachment daily before each use. It is also recommended to inspect the Grapple Bucket after extreme use or damage. Use the service schedule on page 16 as a guideline.

### 4.3 After Every Season

Inspect the attachment for any loose or worn parts that may need replaced prior to the next season.

Clean and repaint any area that looks worn or scratched to prevent further rusting. Use an equipment paint found at your local hardware store or building center.

Replace any safety decals that have been lost or damaged.

Store the attachment in a shed or cover with a waterproof tarp to protect it from the weather. Store in an area not frequented by children.

### 4.4 Lubrication Points

#### **Mini, Extreme Duty, Extreme Duty High Capacity, and Severe Duty Models**

Grease all pivot points every eight (8) hours of use to prevent excess wear on the clamp pins and cylinder pins. The Mini Single Clamp has four to five (4 –5) grease points. The Mini Double Clamp, Extreme Duty, Extreme Duty High Capacity, and Severe Duty Grapple Buckets have eight (8) grease points. These points are circled in Figure 1.

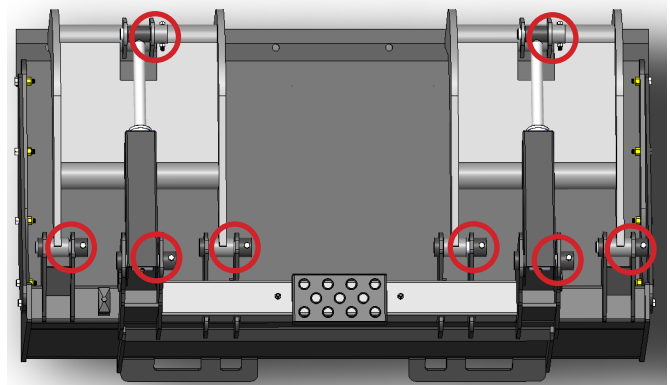


Figure 1

#### **Light Duty, Heavy Duty, Heavy Duty Series 2, and HDX Models**

Grease all pivot points every eight (8) hours of use to prevent excess wear on the clamp pins. The Light Duty, Heavy Duty, Heavy Duty Series 2, and HDX Grapple Buckets have four (4) grease points. These points are circled in Figure 2.

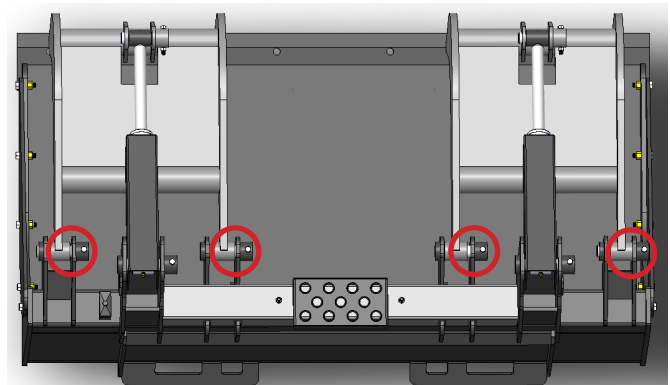


Figure 2

## 4. Maintenance

### 4.5 Storage

#### Storage

Sometimes it may be necessary to store your Grapple Bucket for an extended period of time. Below is a list of items to perform before storage.

- Make sure the hydraulic hose couplers are capped, plugged, or connected to each other.
- Thoroughly wash the attachment before storing it for long periods.
- Lubricate the attachment.
- Coat the exposed portion of the cylinder with oil.
- Check for loose hardware, missing guards, or damaged parts.
- Check for damaged or missing decals. Replace if necessary.
- Replace worn or damaged parts.
- Place the attachment flat on the ground in a dry, protected shelter.

**NOTE:** In muddy conditions or to prevent the attachment from freezing to the ground, put the attachment on planks or blocks before removing the attachment from the machine.

#### Return to Service

After the Grapple Bucket has been in storage, it is necessary to follow a list of items to return the attachment to service.

- Lubricate the attachment.
- Clean the exposed portion of the cylinder rod and apply a light coating of oil.
- Connect and operate the attachment and check for correct function.
- Check for leaks. Repair as needed.

### 4.6 Bolt-On Cutting Edge Removal & Replacement

Make sure to park on a flat, level surface and that the attachment is securely supported by blocks and not by the hydraulic system itself. Engage the parking brake, and turn off the engine.



#### WARNING



##### AVOID SERIOUS INJURY OR DEATH

To avoid serious injury or death, do not go underneath any part of an unsupported blade or frame when servicing this attachment.



#### CAUTION



##### AVOID INJURY

Cutting edges can be extremely heavy and could cause minor or serious injury if mishandled. Always wear protective gloves and footwear.

1. Remove any debris from around the bolt area.
2. Identify the bolt size. Using the appropriate wrench or socket, loosen and remove the bolts.
3. Remove the worn cutting edge.
4. Clean the bolt holes, removing any dirt, rust, and / or debris.
5. Place the new cutting edge onto the bucket. Align the holes of the edge with the holes of the bucket.
6. Insert a new bolt and nut into each of the holes, and hand-tighten each bolt. When all bolts and nuts are in place, tighten each bolt according to “6.2 Torque Specifications – Imperial” on page 50.

## 4. Maintenance

### 4.7 Troubleshooting

PROBLEM	CAUSE	SOLUTION
Hydraulic oil level goes down during operation.	Leak at hoses on the attachment	Investigate and repair.
	Leak in the host machine's hydraulic system	Investigate and repair.
Clamps do not open or close.	Quick disconnects not connected	Check and recouple quick disconnects.
	Hoses damaged	Check for a smashed or kinked hose. Replace if found.
	Auxiliary hydraulics not engaged	Engage hydraulics.
	Skid steer auxiliary circuit inoperative	Investigate and repair.
Clamps move abnormally slow.	Restricted hose	Check for damaged hose between skid steer and cylinder. If damaged, replace the hose.
	Bad circuit relief on skid steer	Investigate and repair.
	Auxiliary valve spool on skid steer not shifting properly	Investigate and repair.
	Cylinder seals bypassing	Have cylinder repacked or replaced.

## 5. Parts

### 5.1 Differences Between Mini Series Revisions

Images may show Root Grapples – not Grapple Buckets. The revision still applies.

#### Revision 002



2" Bore x 4 1/2" Stroke Cylinder with 1" OD Pins

#### Revision 001



2" Bore x 10" Stroke Studded Cylinder with 1" Pins

#### Revision 999



2" Bore x 10" Stroke Cylinder without Studs with 1" OD Pins

#### Revision 000



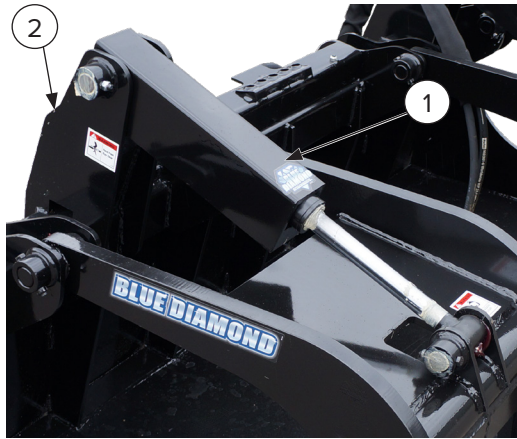
2" Bore x 10" Stroke Non-Studded Cylinder with 1 1/4" OD Pins

## 5. Parts

### 5.2 Differences Between Extreme Duty Revisions

Images may show Root Grapples – not Grapple Buckets. The revisions still apply.

#### Revision 000



1. 3 1/2" Wide Cylinder Covers that Wrap Inside of Cylinder Towers
2. Cylinder Towers Rolled Forward
3. Square Cutout Behind the Top Clamp Cylinder Pin Bracket

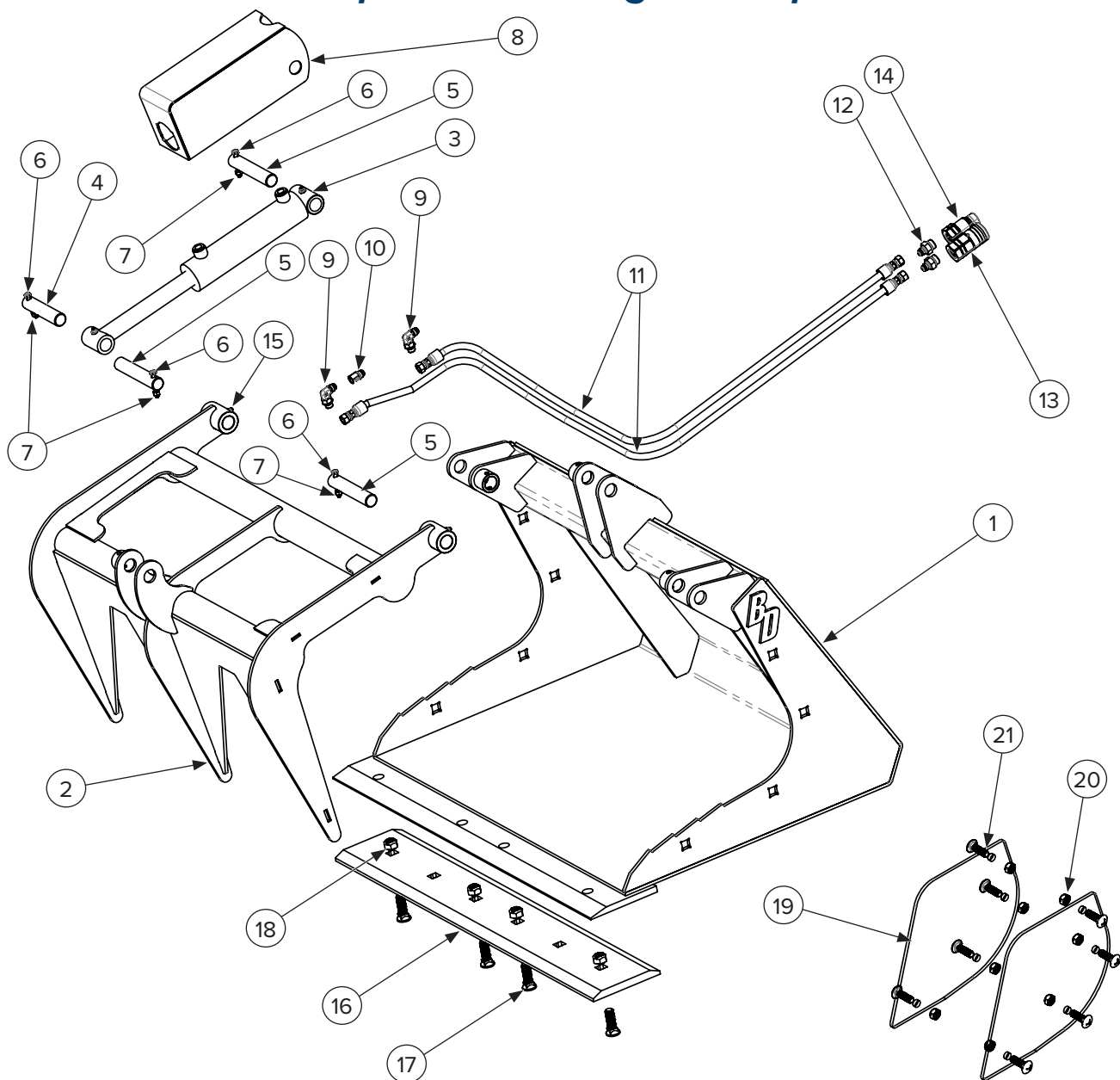
#### Revision 999



1. 4 1/2" Wide Cylinder Covers that Wrap Outside of Cylinder Towers
2. Cylinder Towers Vertical
3. Half-Circle Cutout Behind the Top Clamp Cylinder Pin Bracket

## 5. Parts

### 5.3 Mini Series Components — Single Clamp



## 5. Parts

### 5.3 Mini Series Components — Single Clamp Cont'd

Revision 002

ITEM	PART NUMBER	DESCRIPTION	QTY
1*	206032	36" Main Frame	1
	206033	42" Main Frame	
	206034	44" Main Frame	
	206035	50" Main Frame	
2**	206044	Single Top Clamp Weldment	1
3	207002	Cylinder 2" Bore x 4.5" Stroke	1
4	206051	1" x 4.75" Front Cylinder Pin	1
5	206046	1" x 5 1/2" Rear Cylinder Pin & Clamp Pivot Pin	3
6	299415	1/4"–20 x 2" Bolt Hex Head Zinc Yellow Chromate Finish	4
7	299653	1/4"–20 Stover Locknut Grade C Zinc Plated	4
8	206036	Cylinder Cover for 2" Bore x 4.5" Stroke Cylinder	1
9	295030-M06ORB-M06JIC	Hydraulic 90 Degree Fitting Male #6 O–Ring Boss Male #6 JIC	2
10	206052	Cylinder Restrictor Fitting Female #6 JIC to Male #6 JIC with 1/16" Hole	1
11	206096	Machine Side Hose Set 6' & 6'3" No Couplers	1
12	295010-M06JIC-M08ORB	Hydraulic Straight Fitting Male #6 JIC to Male #8 O–Ring Boss	2
13	224009	Coupler, Female Flat Face Straight 1/2" Body Female #8 O–Ring Boss	1
14	224010	Coupler, Male Flat Face Straight 1/2" Body Female #8 O–Ring Boss	1
15	—	Clamp Pivot Pin Grease Zerk	2
NS	—	Cylinder Grease Zerk	2
16***	109104	36" Bolt–On Cutting Edge	1
	109106	42" Bolt–On Cutting Edge	
	109107	44" Bolt–On Cutting Edge	
	109110	50" Bolt–On Cutting Edge	
17	109176	5/8"–11 x 2" Plow Bolt Grade 8 for Cutting Edge	Varies
18	109177	5/8"–11 Stover Locknut for Cutting Edge	Varies
19	206057	Optional Side Plate	2
20	109177	5/8"–11 Stover Locknut for Optional Side Plate	8
21	299465	5/8"–11 x 2" Bolt Hex Head for Optional Side Plate	8
NS	299845	5/8" Lock Washer Grade 8	8

\*Specify mount type.

\*\*NOTE: Early units had three clamp pivot points. The later two–pin design is reverse compatible.

\*\*\*Use 3091xx to include hardware.

## 5. Parts

### 5.3 Mini Series Components — Single Clamp Cont'd

Revision 999 & 001

ITEM	PART NUMBER	DESCRIPTION	QTY
1*	—	Main Frame	1
2	206037-1	Single Top Clamp Weldment	1
3	207000	Cylinder 2" x 10" Stroke without Studs — Rev 999	1
	207003	Cylinder 2" x 10" Stroke with Studs — Rev 001	
4	206046	1" x 5 1/2" Front Cylinder Pin	1
5	206046	1" x 5 1/2" Rear Cylinder Pin & Clamp Pivot Pin	4
6	299415	1/4"—20 x 2" Bolt Hex Head Zinc Yellow Chromate Finish	5
7	299653	1/4"—20 Stover Nut Grade C Zinc Plated	5
8	207003-C	Cover for Cylinder 2" Bore x 10" Stroke without Studs — Rev 999	1
	—	Cover for Cylinder 2" Bore x 10" Stroke with Studs — Rev 001	
9	295010-M06JIC-M06ORB	Hydraulic Straight Fitting Male #6 JIC to Male #6 O-Ring Boss	2
10	206052	Cylinder Restrictor Fitting Female #6 JIC to Male #6 JIC with 1/16" Hole	1
11	206096	Machine Side Hose Set 6' & 6'3" No Couplers	1
12	295010-M06JIC-M08ORB	Hydraulic Straight Fitting Male #6 JIC to Male #8 O-Ring Boss	2
13	224015	Coupler, Female Flat Face 90 Degree 1/2" Body Female #8 O-Ring Boss	1
14	224016	Coupler, Male Flat Face 90 Degree 1/2" Body Female #8 O-Ring Boss	1
15	—	Clamp Pivot Pin Grease Zerk	4
NS	—	Cylinder Grease Zerk	4
16**	109104	36" Bolt-On Cutting Edge	1
	109106	42" Bolt-On Cutting Edge	
	109107	44" Bolt-On Cutting Edge	
	109110	50" Bolt-On Cutting Edge	
17	109176	5/8"—11 x 2" Plow Bolt Grade 8	Varies
18	109177	5/8"—11 Stover Locknut for Cutting Edge	Varies
19	206057	Optional Side Plate	2
20	109177	5/8"—11 Stover Locknut for Optional Side Plate	8
21	299465	5/8"—11 x 2" Bolt Hex Head for Optional Side Plate	8
NS	299845	5/8" Lock Washer Grade 8	8

\*Specify mount type.

\*\*Use 3091xx to include hardware.

## 5. Parts

### 5.3 Mini Series Components — Single Clamp Cont'd

Revision 000

ITEM	PART NUMBER	DESCRIPTION	QTY
1*	—	Main Frame	1
2	206037	Single Top Clamp Weldment	1
3	206305-KIT	Cylinder 2" x 10" Stroke with 1/4" Ports with Adapters	1
4	206343	1 1/4" x 5 1/4" Front Cylinder Pin	3
5	206342	1 1/4" x 6" Rear Cylinder Pin	2
6	299329	3/8"—16 x 2 1/2" Bolt Hex Head Grade 8	5
7	208550	3/8" Stover Lock Nut	5
8	206315	Cylinder Cover	1
11	206012	Machine Side Hose Set	1
12	295030-M06JIC-M08NPT	Hydraulic 90 Degree Fitting Male #6 JIC to Male #8 Pipe Thread	2
13	224005	Coupler, Female Flat Face Straight 1/2" Body Female #8 Pipe Thread	1
14	224006	Coupler, Male Flat Face Straight 1/2" Body Female #8 Pipe Thread	1
15	—	Clamp Pivot Pin Grease Zerk	2
NS	—	Cylinder Grease Zerk	2
16**	109104	36" Bolt-On Cutting Edge	1
	109106	42" Bolt-On Cutting Edge	
	109107	44" Bolt-On Cutting Edge	
	109110	50" Bolt-On Cutting Edge	
17	109176	5/8"—11 x 2" Plow Bolt Grade 8	Varies
18	109177	5/8"—11 Stover Locknut for Cutting Edge	Varies

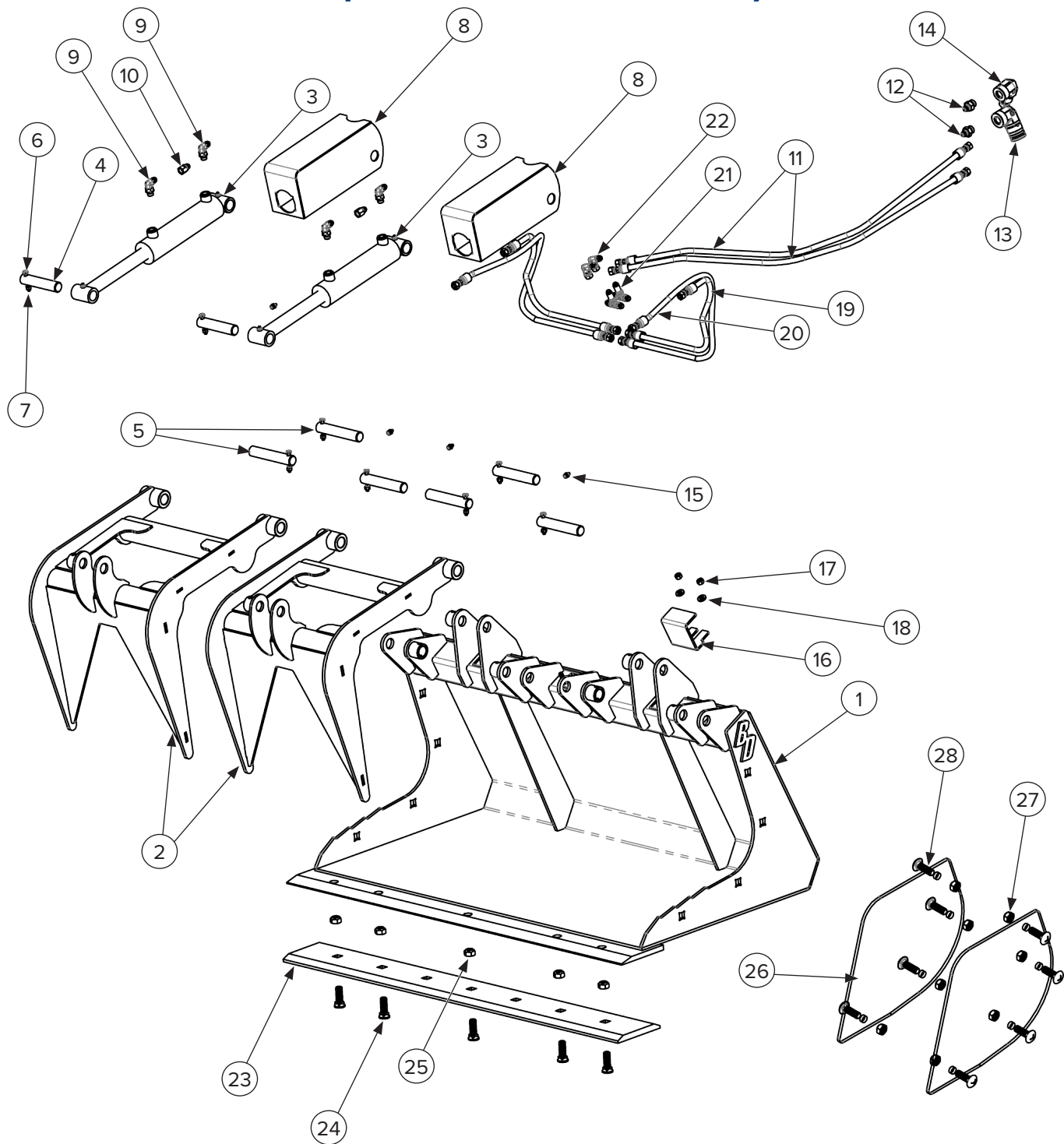
\*Specify mount type.

\*\*Use 3091xx to include hardware.

**NOTE:** Optional side plates are not available for Revision 000 Single Clamp Mini Grapple Buckets.

## 5. Parts

### 5.4 Mini Series Components — Double Clamp



## 5. Parts

### 5.4 Mini Series Components — Double Clamp Cont'd

Revision 002

ITEM	PART NUMBER	DESCRIPTION	QTY
1*	206053	44" Main Frame Double Clamp	1
	206058	50" Main Frame Double Clamp	
2	206139-2	Double Top Clamp Weldment	2
3	207002	Cylinder 2" Bore x 4.5" Stroke	2
4	206051	1" x 4 3/4" Front Cylinder Pin	2
5	206046	1" x 5 1/2" Rear Cylinder Pin & Clamp Pivot Pin	6
6	299415	1/4"—20 x 2" Bolt Hex Head Zinc Yellow Chromate Finish	8
7	299653	1/4"—20 Stover Nut Grade C Zinc Plated	8
8	206036	Cylinder Cover for 2" Bore x 4.5" Stroke Cylinder	2
9	295030-M06ORB-M06JIC	Hydraulic 90 Degree Fitting Male #6 O-Ring Boss to Male #6 JIC	4
11	206096	Machine Side Hose Set 6' & 6'3" No Couplers	1
12	295010-M06JIC-M08ORB	Hydraulic Straight Fitting Male #6 JIC to Male #8 O-Ring Boss	2
13	224015	Coupler, Female Flat Face 90 Degree 1/2" Body Female #8 O-Ring Boss	1
14	224016	Coupler, Male Flat Face 90 Degree 1/2" Body Female #8 O-Ring Boss	1
15	—	Clamp Pivot Pin Grease Zerk	2
NS	—	Cylinder Grease Zerk	2
16	206054	Hose Bulkhead	1
17	208550	3/8" Stover Lock Nut	2
18	299725	3/8" Flat Washer Grade 8	2
19	206056	Short Cylinder Hose	2
20	206055	Long Cylinder Hose	2
21	206355	Bulkhead Branch Tee Fitting	2
23**	109107	44" Bolt-On Cutting Edge	1
	109110	50" Bolt-On Cutting Edge	
24	109176	5/8"—11 x 2" Plow Bolt Grade 8 for Cutting Edge	Varies
25	109177	5/8"—11 Stover Locknut for Cutting Edge	Varies
26	206057	Optional Side Plate	2
27	109177	5/8"—11 Stover Locknut for Optional Side Plate	8
28	299465	5/8"—11 x 2" Bolt Hex Head for Optional Side Plate	8
NS	299845	5/8" Lock Washer Grade 8 for Optional Side Plate	8

\*Specify mount type.

\*\*Use 3091xx to include hardware.

## 5. Parts

### 5.4 Mini Series Components — Double Clamp Cont'd

Revision 001 & 999

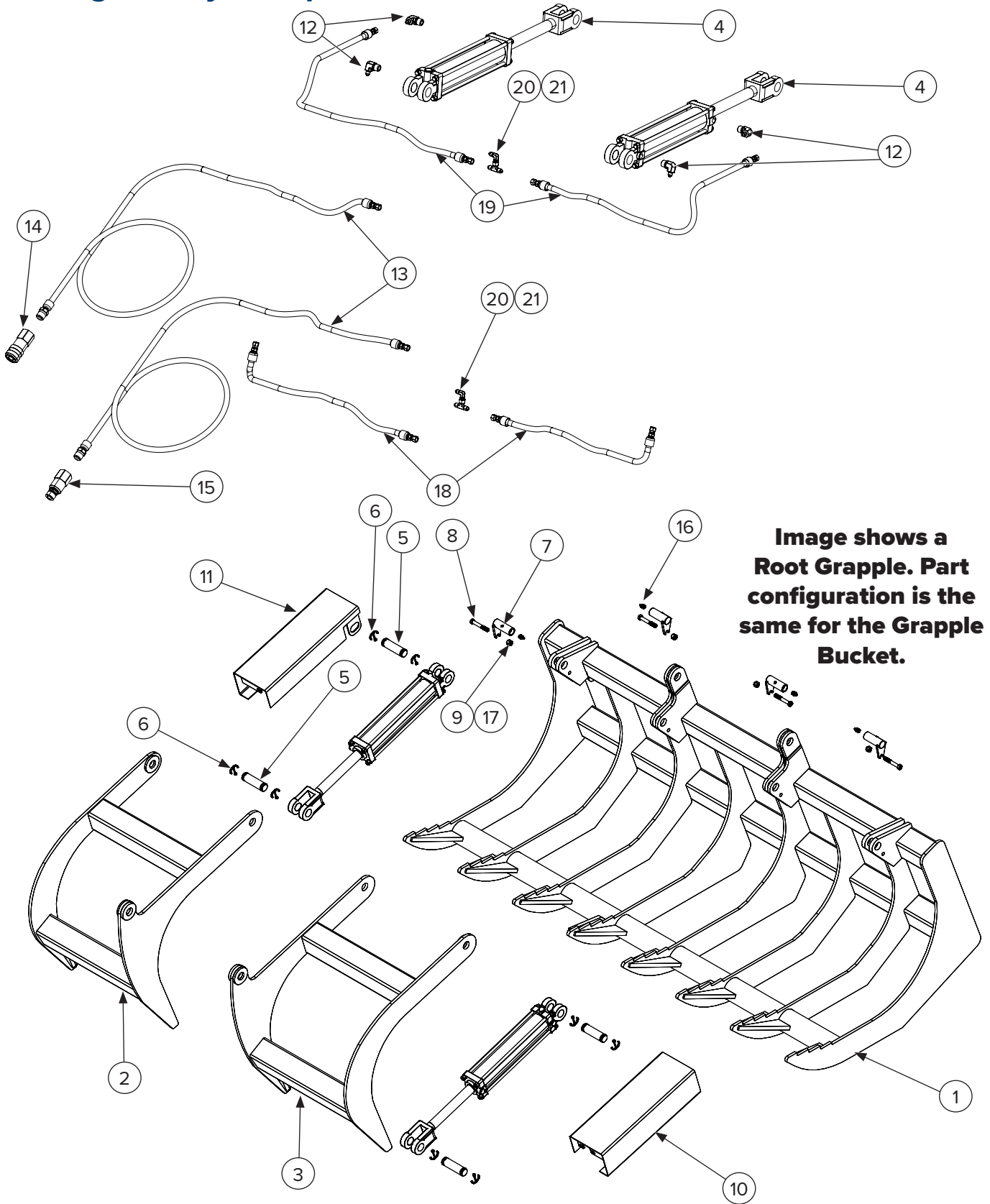
ITEM	PART NUMBER	DESCRIPTION	QTY
1*	—	Main Frame	1
2	206139-1	Double Top Clamp Weldment	2
3	207000	Cylinder 2" x 10" Stroke without Studs — Rev 999	2
	207003	Cylinder 2" x 10" Stroke with Studs — Rev 001	
4	206046	1" x 5 1/2" Front Cylinder Pin	2
5	206046	1" x 5 1/2" Rear Cylinder Pin & Clamp Pivot Pin	6
6	299415	1/4"—20 x 2" Bolt Hex Head Zinc Yellow Chromate Finish	8
7	299653	1/4"—20 Stover Nut Grade C Zinc Plated	8
8	207003-C	Cover for Cylinder 2" Bore x 10" Stroke without Studs — Rev 999	2
	—	Cover for Cylinder 2" Bore x 10" Stroke with Studs — Rev 001	
9	295010-M06JIC-M06ORB	Hydraulic Straight Fitting Male #6 JIC to Male #6 O-Ring Boss	4
11	206096	Machine Side Hose Set 6' & 6'3" No Couplers	1
12	295010-M06JIC-M08ORB	Hydraulic Straight Fitting Male #6 JIC to Male #8 O-Ring Boss	2
13	224015	Coupler, Female Flat Face 90 Degree 1/2" Body Female #8 O-Ring Boss	1
14	224016	Coupler, Male Flat Face 90 Degree 1/2" Body Female #8 O-Ring Boss	1
15	—	Clamp Pivot Pin Grease Zerk	4
NS	—	Cylinder Grease Zerk	4
16	206054	Hose Bulkhead	1
17	208550	3/8" Stover Locknut	2
18	299725	3/8" Flat Washer Grade 8	2
19	—	Short Cylinder Hose	2
20	—	Long Cylinder Hose	2
21	206355	Bulkhead Branch Tee Fitting	2
23**	109107	44" Bolt-On Cutting Edge	1
	109110	50" Bolt-On Cutting Edge	
24	109176	5/8"—11 x 2" Plow Bolt Grade 8	Varies
25	109177	5/8"—11 Stover Locknut for Cutting Edge	Varies
26	206057	Optional Side Plate	2
27	109177	5/8"—11 Stover Locknut for Optional Side Plate	8
28	299465	5/8"—11 x 2" Bolt Hex Head for Optional Side Plate	8
NS	299845	5/8" Lock Washer Grade 8 for Optional Side Plate	8

\*Specify mount type.

\*\*Use 3091xx to include hardware.

## 5. Parts

### 5.5 Light Duty Components



## 5. Parts

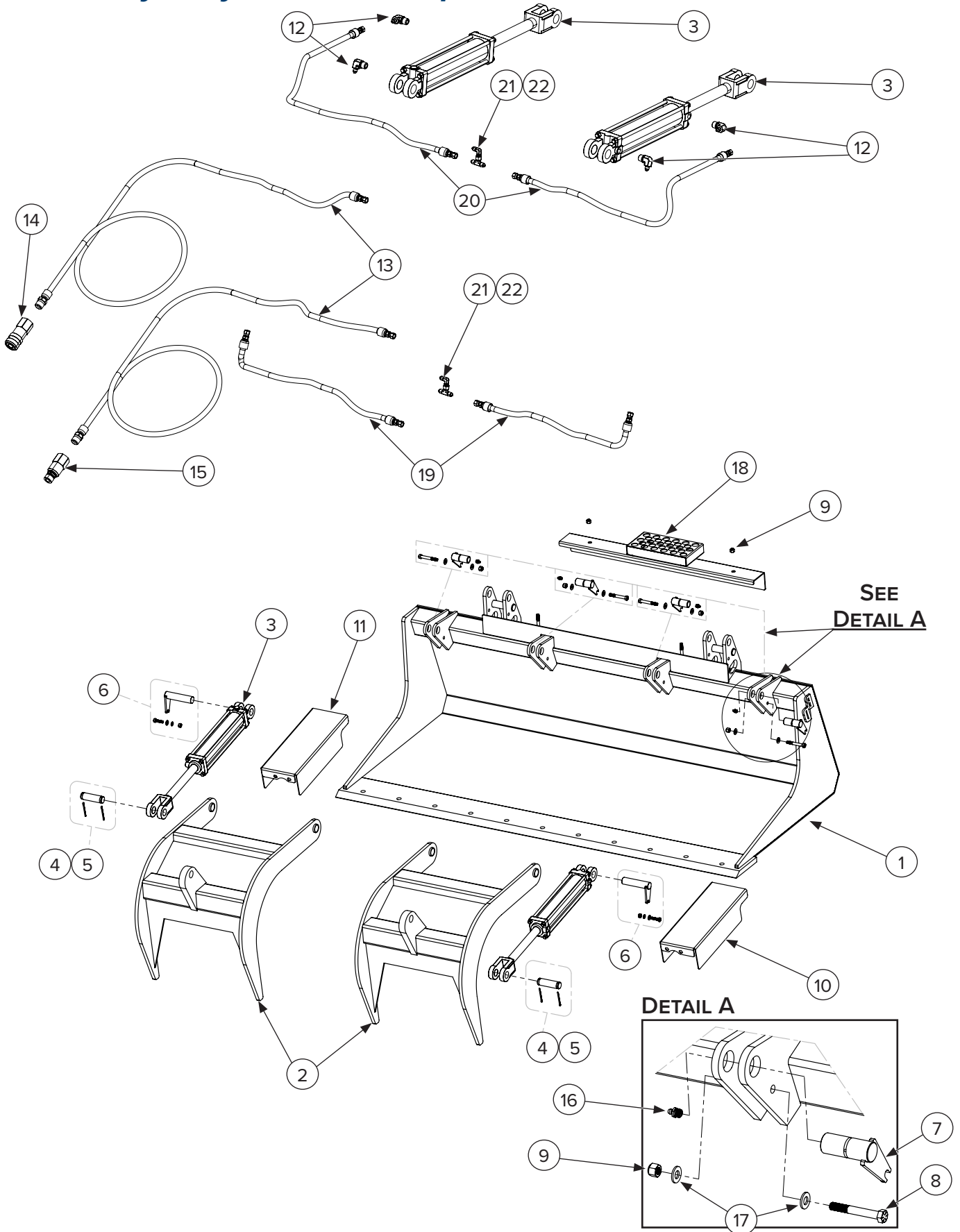
### 5.5 Light Duty Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1*	—	Main Frame	1
2	206140	Left Top Clamp Weldment	1
3	206145	Right Top Clamp Weldment	1
4	206110	Cylinder Ag Style 2" Bore x 8" Stroke Maxim Cylinder	2
5	206115	Cylinder Pin	4
6	Included in Item 5 — 299517	Ø5/32" x 2" Cotter Pin	8
7	206105	Clamp Pivot Pin, Greaseable	4
8	299446	3/8"—16 x 3 1/4" Bolt Hex Head Grade 8	4
9	299625	3/8"—16 Nylock Nut Hex Grade 8	4
10	206206	Left Cylinder Cover	1
11	206205	Right Cylinder Cover	1
12	295030-M04JIC-M06NPT	Hydraulic 90 Degree Fitting Male #4 JIC to Male #6 Pipe Thread	4
13	206160	Machine Side Hose Set with Sleeve, No Couplers	1
14	224005	Coupler, Female Flat Face Straight 1/2" Body Female #8 NPT	1
15	224006	Coupler, Male Flat Face Straight 1/2" Body Female #8 NPT	1
16	299016	1/8" NPT Steel Grease Zerk Fitting (Included with Item #7 206105)	4
17	299725	3/8" Flat Washer Grade 8	8
18	208251	Short Cylinder Hose 20" OAL, 1/4" ID, Straight Female #4 JIC Swivel Both Ends	2
19	208252	Long Cylinder Hose 30" OAL, 1/4" ID, Straight Female #4 JIC Swivel Both Ends	2
20	295051	Hydraulic Bulkhead Run Tee Fitting with Nut M04JICBH to M04JIC to M04JIC	2
21	295030-M04JIC-F04JIC	Hydraulic 90 Degree Fitting Male #4 JIC to Female #4 JIC Swivel	2
NS	206150	Complete Hose Set	1

\*Specify mount type.

## 5. Parts

### 5.6 Heavy Duty Series 1 Components



## 5. Parts

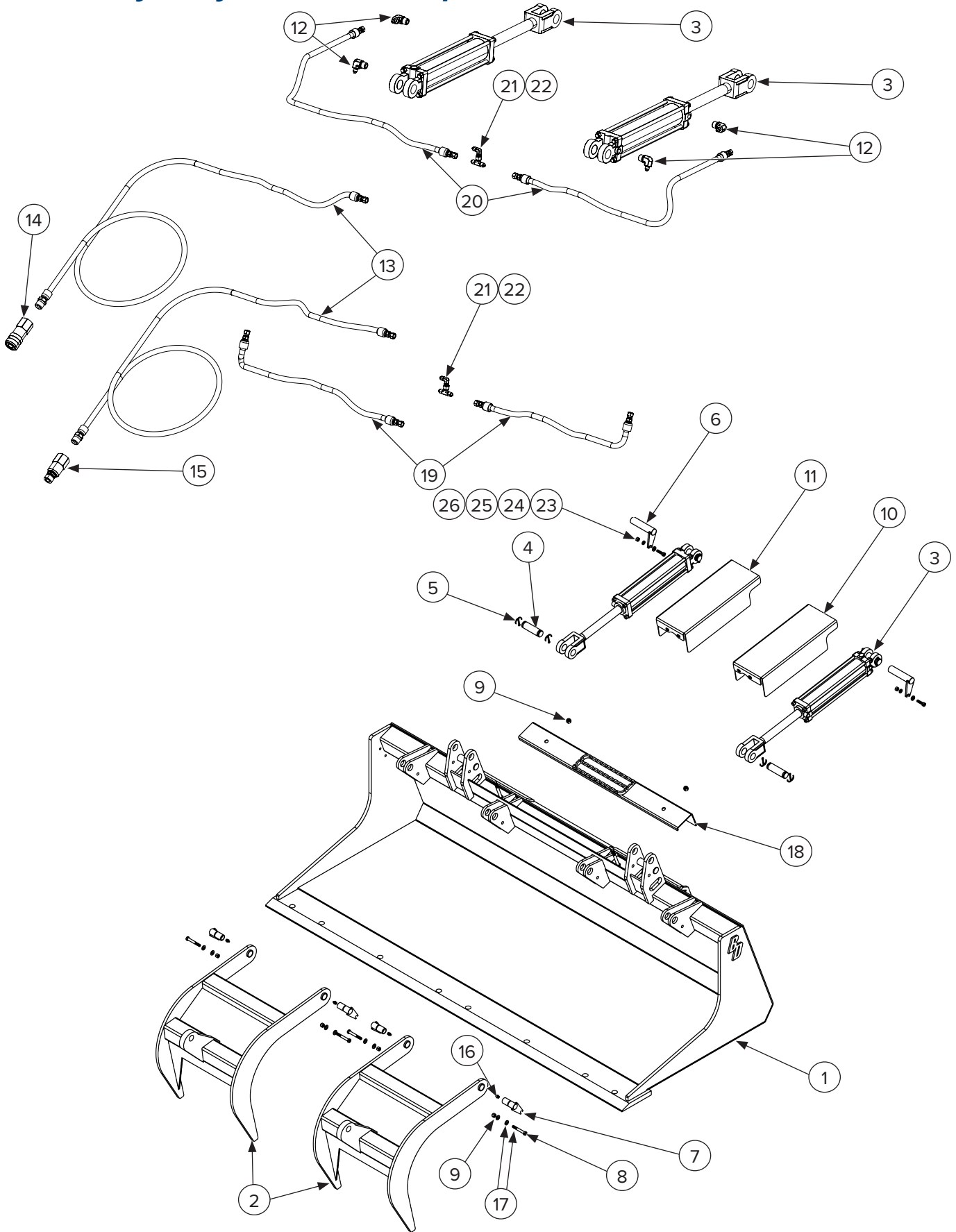
### 5.6 Heavy Duty Series 1 Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1*	206080	60" Main Frame	1
	206082	66" Main Frame	
	206085	72" Main Frame	
2	208500	Top Clamp Weldment	2
3	206110	Cylinder Ag Style 2" Bore x 8" Stroke Maxim Cylinder	2
4	206115	Front Cylinder Pin	2
5	Included in Item 4 — 299517	Ø5/32" x 2" Cotter Pin	4
6	208525	1" x 4 1/4" Rear Cylinder Pivot Pin	2
7	206105	Clamp Pivot Pin, Greaseable	4
8	299446	3/8"–16 x 3 1/4" Bolt Hex Head Grade 8	4
9	299625	3/8"–16 Nylock Nut Hex Grade 8	6
10	208535	Left Cylinder Cover	1
11	208536	Right Cylinder Cover	1
12	295030-M04JIC-M06NPT	Hydraulic 90 Degree Fitting Male #4 JIC to Male #6 Pipe Thread	4
13	224315	Machine Side Hose Set with Sleeve, No Couplers	1
14	224005	Coupler, Female Flat Face Straight 1/2" Body Female #8 NPT	1
15	224006	Coupler, Male Flat Face Straight 1/2" Body Female #8 NPT	1
16	299016	1/8" NPT Steel Grease Zerk Fitting (Included with Item #7 206105)	4
17	299725	3/8" Flat Washer Grade 8	8
18	208540	Hose Cover	1
19	224300	Short Cylinder Hose	2
20	224301	Long Cylinder Hose	2
21	295051	Hydraulic Bulkhead Run Tee Fitting with Nut M04JICBH to M04JIC to M04JIC	2
22	295030-M04JIC-F04JIC	Hydraulic 90 Degree Fitting Male #4 JIC to Female #4 JIC Swivel	2

\*Specify mount type.

## 5. Parts

### 5.7 Heavy Duty Series 2 Components



## 5. Parts

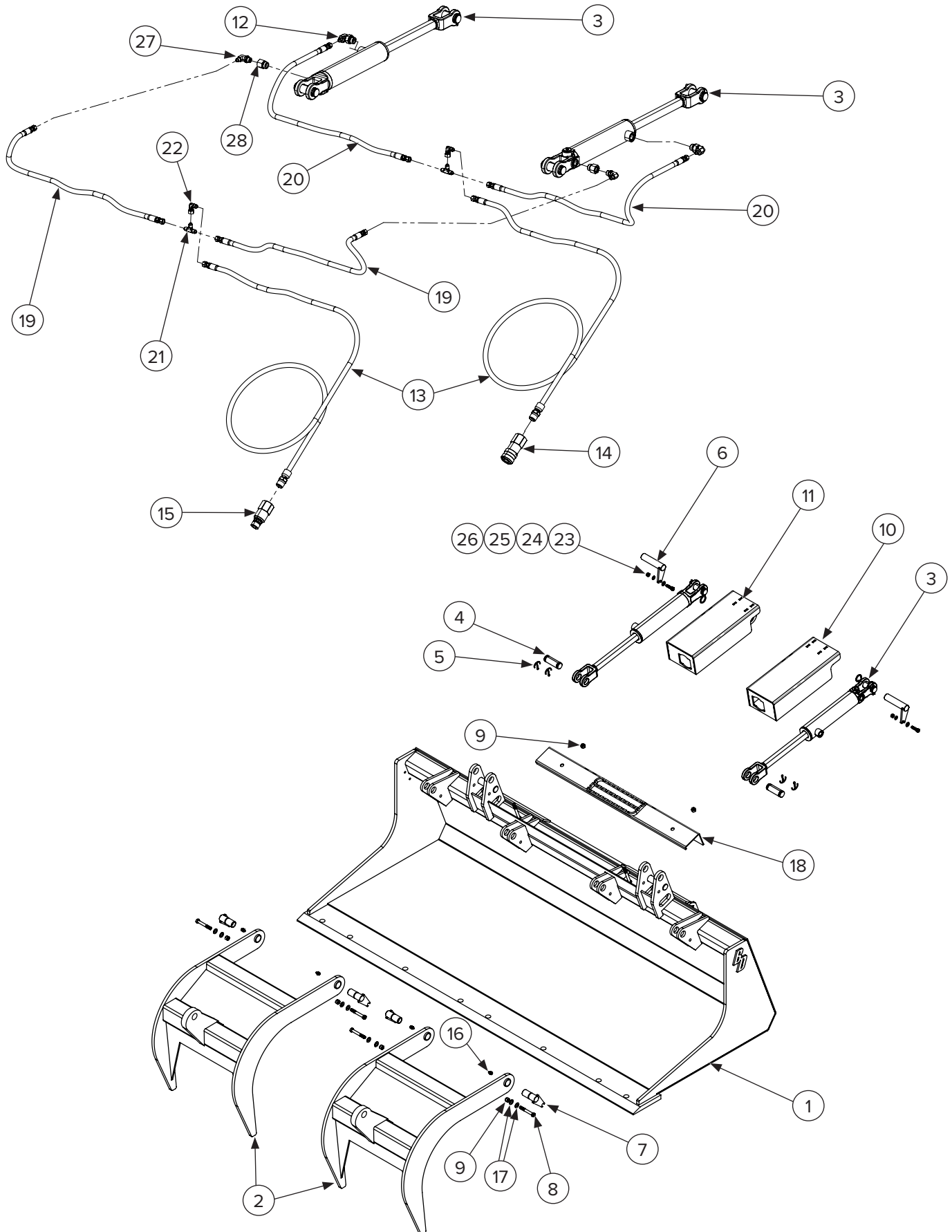
### 5.7 Heavy Duty Series 2 Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1*	206078	60" Main Frame	1
	206086	66" Main Frame	
	206099	72" Main Frame	
2	206210	Top Clamp Weldment	2
3	206110	Cylinder Ag Style 2" Bore x 8" Stroke Maxim Cylinder	2
4	206115	Front Cylinder Pin	2
5	Included in Item 4 — 299517	Ø5/32" x 2" Cotter Pin	4
6	208525	1" x 4 1/4" Rear Cylinder Pivot Pin	2
7	206105	Clamp Pivot Pin, Greaseable	4
8	299446	3/8"–16 x 3 1/4" Bolt Hex Head Grade 8	4
9	299625	3/8"–16 Nylock Nut Hex Grade 8	6
10	208535	Left Cylinder Cover	1
11	208536	Right Cylinder Cover	1
12	295030-M04JIC-M06NPT	Hydraulic 90 Degree Fitting Male #4 JIC to Male #6 Pipe Thread	4
13	224315	Machine Side Hose Set with Sleeve, No Couplers	1
14	224005	Coupler, Female Flat Face Straight 1/2" Body Female #8 NPT	1
15	224006	Coupler, Male Flat Face Straight 1/2" Body Female #8 NPT	1
16	299016	1/8" NPT Steel Grease Zerk Fitting (Included with Item #7 206105)	4
17	299725	3/8" Flat Washer Grade 8	8
18	208540	Hose Cover	1
19	224300	Short Cylinder Hose	2
20	224301	Long Cylinder Hose	2
21	295051	Hydraulic Bulkhead Run Tee Fitting with Nut M04JICBH to M04JIC to M04JIC	2
22	295030-M04JIC-F04JIC	Hydraulic 90 Degree Fitting Male #4 JIC to Female #4 JIC Swivel	2
23	299420	5/16"–18 x 1 1/4" Grade 8 Zinc Plated	2
24	299815	5/16" Lock Washer Grade 8	2
25	299571	5/16"–18 Nut Hex Grade 8 Zinc Yellow Chromate Plated	2
26	299721	0.065" x 0.688" Washer SAE Grade 8 Zinc Yellow Chromate Plated	2

\*Specify mount type.

## 5. Parts

### 5.8 HDX Components



## 5. Parts

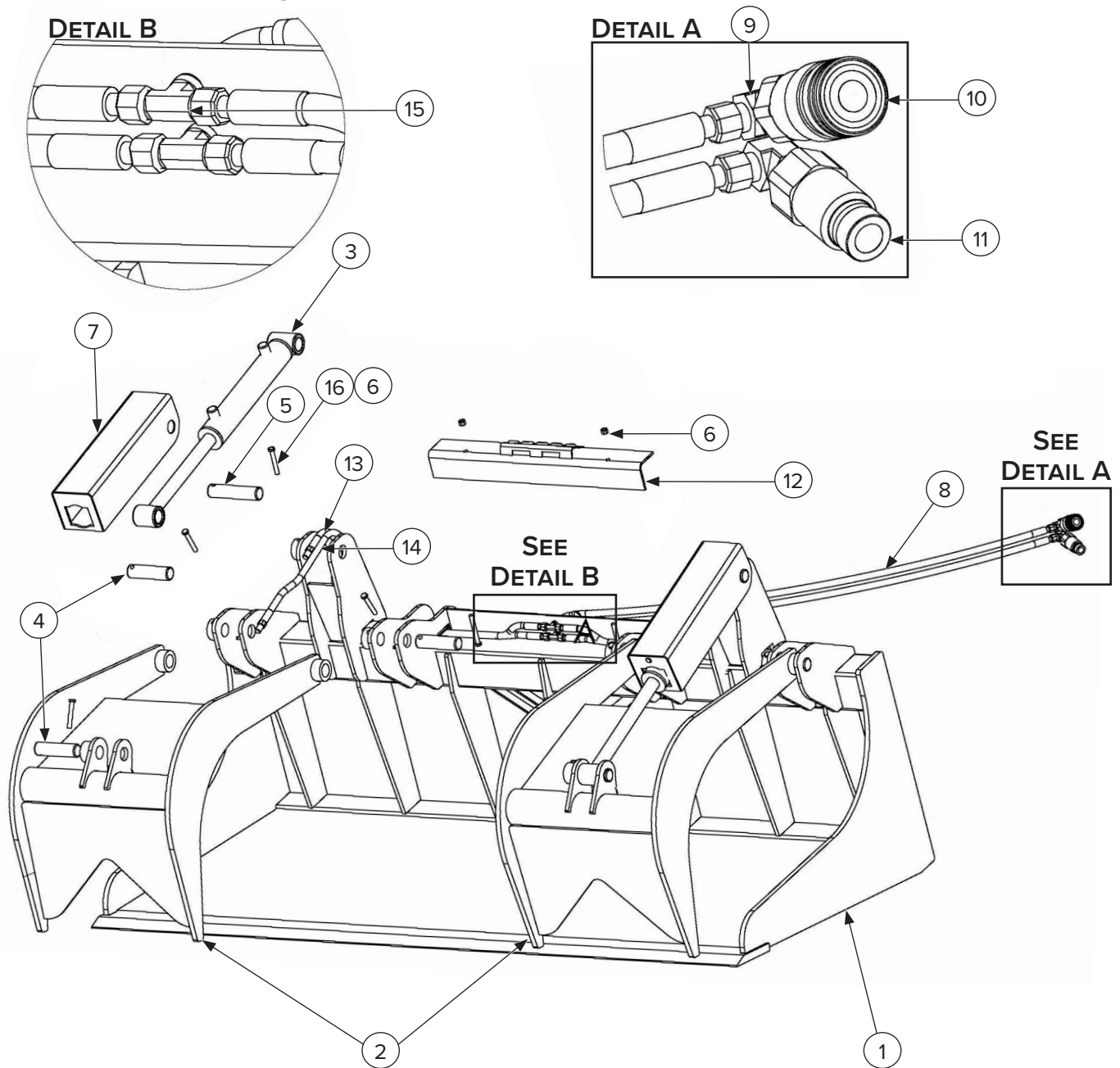
### 5.8 HDX Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1*	206088	72" Main Frame	1
2	206210	Top Clamp Weldment	2
3	206118	Cylinder 2" Bore x 8" Stroke Welded Cylinder 3/8" NPT Ports	2
4	206115	Front Cylinder Pin	2
5	Included in Item 4 — 299517	Ø5/32" x 2" Cotter Pin	4
6	208525	1" x 4 1/4" Rear Cylinder Pivot Pin	2
7	206105	Clamp Pivot Pin, Greaseable	4
8	299446	3/8"—16 x 3 1/4" Bolt Hex Head Grade 8	4
9	299625	3/8"—16 Nylock Nut Hex Grade 8	6
10	208535-2	Left Cylinder Cover	1
11	208536-2	Right Cylinder Cover	1
12	295030-M04JIC-M08ORB	Hydraulic 90 Degree Fitting Male #4 JIC to Male #8 O-Ring Boss	2
13	224315	Machine Side Hose Set with Sleeve, No Couplers	1
14	224005	Coupler, Female Flat Face Straight 1/2" Body Female #8 NPT	1
15	224006	Coupler, Male Flat Face Straight 1/2" Body Female #8 NPT	1
16	299016	1/8" NPT Steel Grease Zerk Fitting (Included with Item #7 206105)	4
17	299725	3/8" Flat Washer Grade 8	8
18	208540	Hose Cover	1
19	224300	Short Cylinder Hose	2
20	224301	Long Cylinder Hose	2
21	295051	Hydraulic Bulkhead Run Tee Fitting with Nut M04JICBH to M04JIC to M04JIC	2
22	295030-M04JIC-F04JIC	Hydraulic 90 Degree Fitting Male #4 JIC to Female #4 JIC Swivel	2
23	299420	5/16"—18 x 1 1/4" Grade 8 Zinc Plated	2
24	299815	5/16" Lock Washer Grade 8	2
25	299571	5/16"—18 Nut Hex Grade 8 Zinc Yellow Chromate Plated	2
26	299721	0.065" x 0.688" Washer SAE Grade 8 Zinc Yellow Chromate Plated	2
27	295030-M04JIC-M06ORB	Hydraulic 90 Degree Fitting Male #4 JIC to Male #6 O-Ring Boss	2
28	295010-M08ORB-F06ORB	Hydraulic Straight Fitting Male #8 O-Ring Boss to Female #6 O-Ring Boss	2

\*Specify mount type.

## 5. Parts

### 5.9 Extreme Duty Components



## 5. Parts

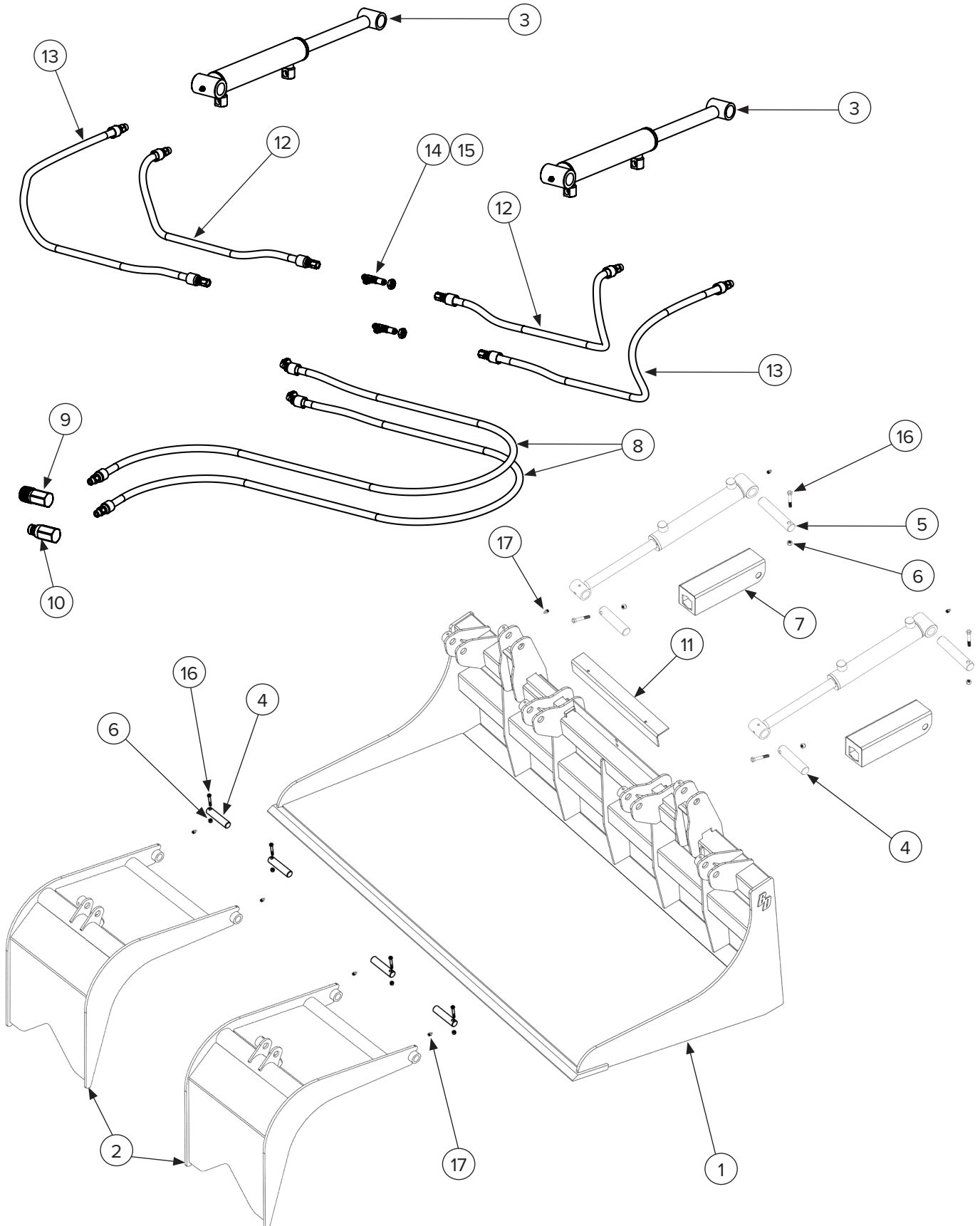
### 5.9 Extreme Duty Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1*	—	Main Frame	1
2	206335	Top Clamp Weldment – Rev 000	2
	206336	Top Clamp Weldment – Rev 999	
3	206305-KIT	Cylinder 2" Bore x 10" Stroke 1/4" Ports with Adapters	2
4	206343	1 1/4" x 5 1/4" Pin for Clamp Pivot Pin and Front Cylinder Pin	10
5	206342	1 1/4" x 6" Rear Cylinder Pivot Pin	2
6	208550	3/8" Stover Lock Nut	10
7	206314	Cylinder Cover — Rev 000	2
	206315	Cylinder Cover – Rev 999	
8	206360	Machine Side Hose Set with Sleeve 75" OAL, No Couplers	1
9	206362	Hydraulic 90 Degree Fitting Male #6 JIC to Female 1/2" NPT	2
10	224005	Coupler, Female Flat Face Straight 1/2" Body Female #8 NPT	1
11	224006	Coupler, Male Flat Face Straight 1/2" Body Female #8 NPT	1
12	206345	Hose Cover with Step for 60" & 66" Models	1
	206350	Hose Cover with Step for 72", 78", & 84" Models	
13	206321	Short Cylinder Hose for 60" & 66" Models 30 1/4" OAL Female #6 JIC to Male #4 O-Ring Boss	2
	206322	Short Cylinder Hose for 72", 78", & 84" Models 36 1/4" OAL Female #6 JIC to Male #4 O-Ring Boss	
14	206323	Long Cylinder Hose for 60" & 66" Models 39 3/4" OAL Female #6 JIC to Male #4 O-Ring Boss	2
	206324	Long Cylinder Hose for 72", 78", & 84" Models 45 5/8" OAL Female #6 JIC to Male #4 O-Ring Boss	
15	206355	Bulkhead Branch Tee Fitting #6 Male JIC (Includes Tee Nut)	2
16	299330	3/8"–16 x 2 3/4" Bolt Hex Head Grade 8 Partially Threaded	8

\*Specify mount type.

## 5. Parts

### 5.10 Extreme Duty High Capacity Components



## 5. Parts

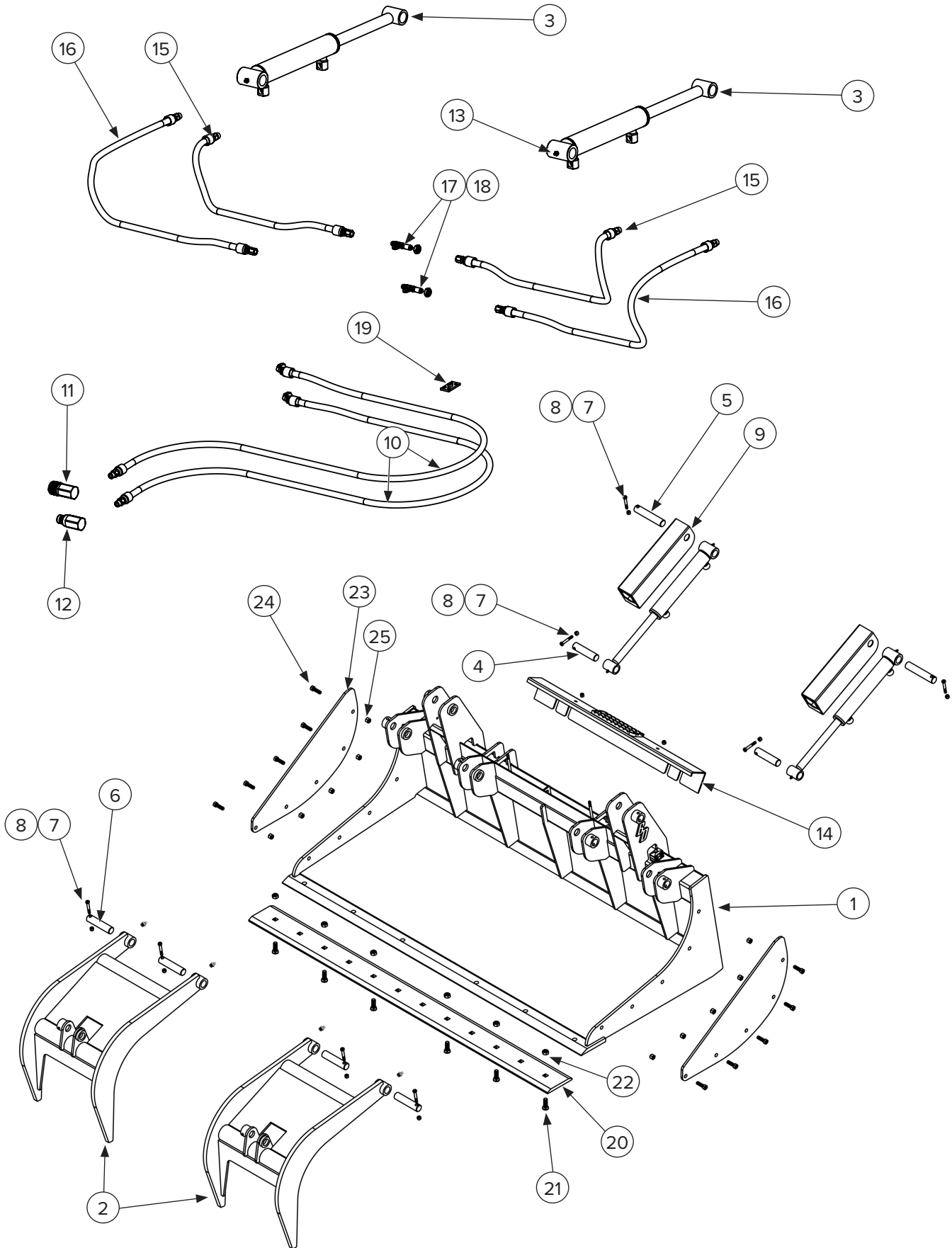
### 5.10 Extreme Duty High Capacity Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1*	—	Main Frame	1
2	—	Top Clamp Weldment	2
3	206305-KIT	Cylinder 2" Bore x 10" Stroke 1/4" Ports with Adapters	2
4	206343	1 1/4" x 5 1/4" Pin for Clamp Pivot Pin and Front Cylinder Pin	6
5	206342	1 1/4" x 6" Rear Cylinder Pivot Pin	2
6	208550	3/8" Stover Lock Nut	10
7	206315	Cylinder Cover	2
8	206252	Machine Hose Set, 2 Hoses 80" OAL 3/8" ID 90 Degree Female #6 JIC to Straight Male #6 NPT No Couplers	1
9	224007	Coupler, Female Flat Face 90 Degree 1/2" Body Female #6 NPT	1
10	224008	Coupler, Male Flat Face 90 Degree 1/2" Body Female #6 NPT	1
11	206350	Hose Cover with Step	1
12	206331	Short Cylinder Hose for 72" 30 3/4" OAL, 1/4" ID Male #4 O-Ring Boss to Female #6 JIC	2
	206333	Short Cylinder Hose for 78", 84", & 96" 35 1/2" OAL, 1/4" ID Male #4 O-Ring Boss to Female #6 JIC	
13	206332	Long Cylinder Hose for 72" 41 1/4" OAL, 1/4" ID Male #4 O-Ring Boss to Female #6 JIC	2
	206334	Long Cylinder Hose for 78", 84", & 96" 46" OAL, 1/4" ID Male #4 O-Ring Boss to Female #6 JIC	
14	206355	Bulkhead Branch Tee Fitting #6 Male JIC (Includes Tee Nut)	2
15	295052	Bulkhead Tee Nut (Included in 206355)	2
16	299330	3/8"—16 x 2 3/4" Bolt Hex Head Grade 8 Partially Threaded	8
17	203072	1/4"—28 Straight Grease Zerk	8

\*Specify mount type.

## 5. Parts

### 5.11 Severe Duty Components



## 5. Parts

### 5.11 Severe Duty Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1*	206429	60" Main Frame with Universal Skid Steer Mount	1
	206444	66" Main Frame with Universal Skid Steer Mount	
	206454	72" Main Frame with Universal Skid Steer Mount	
	206464	78" Main Frame with Universal Skid Steer Mount	
	206476	84" Main Frame with Universal Skid Steer Mount	
2	206400	Top Clamp Weldment	2
3	206306	Cylinder 2" Bore x 8" Stroke Welded Cylinder 3/8" NPT Ports	2
4	206343	1 1/4" x 5 1/4" Front Cylinder Pin	2
5	206406	1 1/4" x 6 1/4" Rear Cylinder Pin	2
6	206415	1 1/4" x 5 1/2" Long Clamp Pivot Pin	4
7	299329	3/8"–16 x 2 1/2" Bolt Hex Head Grade 8	8
8	299625	3/8"–16 Nylock Nut Hex Grade 8	10
9	206316	Cylinder Cover	2
10	206252	Machine Side Hose Set with Sleeve 85" OAL, No Couplers	1
11	224007	Coupler Female Flat Face 90 Degree 1/2" Body Female #6 NPT	1
12	224008	Coupler Male Flat Face 90 Degree 1/2" Body Female #6 NPT	1
13	299016	1/8" NPT Steel Grease Zerk Fitting	8
14	206262	Hose Cover with Step for 60" Models	1
	206259	Hose Cover with Step for 66" Models	
	206255	Hose Cover with Step for 72", 78", and 84" Models	
15	206256	Short Cylinder Hose 32 1/4" #6 FJIC to #6 MNPT OAL for 60" & 66" Models	2
	206263	Short Cylinder Hose 34 1/2" OAL #6 FJIC to #6 MNPT for 72", 78", and 84" Models	
16	206254	Long Cylinder Hose 43 1/2" OAL #6 FJIC to #6 MNPT for 60" & 66" Models	2
	206264	Long Cylinder Hose 45 3/4" OAL #6 FJIC to #6 MNPT for 72", 78", & 84" Models	
17	206354	Bulkhead Run Tee for Machine Hose to Cylinder Hose Connection	2
18	295052	Hydraulic Bulkhead Fitting Locknut #6	2
19	206246	Hose Retainer Clamp – Fits Grapples with 3/8" Hoses	1
20**	109115	60" Boron Steel Bolt–On Edge 3/4" Thick Predrilled on 6" Centers, Reversible	1
	109120	66" Boron Steel Bolt–On Edge 3/4" Thick Predrilled on 6" Centers, Reversible	
	109125	72" Boron Steel Bolt–On Edge 3/4" Thick Predrilled on 6" Centers, Reversible	
	109130	78" Boron Steel Bolt–On Edge 3/4" Thick Predrilled on 6" Centers, Reversible	
	109140	84" Boron Steel Bolt–On Edge 3/4" Thick Predrilled on 6" Centers, Reversible	
21	109176	5/8"–11 x 2" Plow Bolt Grade 8	Varies
22	109177	5/8"–11 Stover Locknut for Cutting Edge	Varies
23	206410	Optional Side Plate (Includes Hardware, Items 24 & 25)	2
24	299439	1/2"–13 x 1 3/4" Bolt Hex Head Grade 8 Yellow Chromate Plated	10
25	299618	1/2"–13 Nylock Nut Hex Head Grade 8	10
NS	206250	Hose Kit for 72", 78", & 84" Models	1

\*Contact Blue Diamond® for additional mount options.

\*\*Use 3091xx to include hardware.

## 5. Parts

### 5.12 Safety Decals



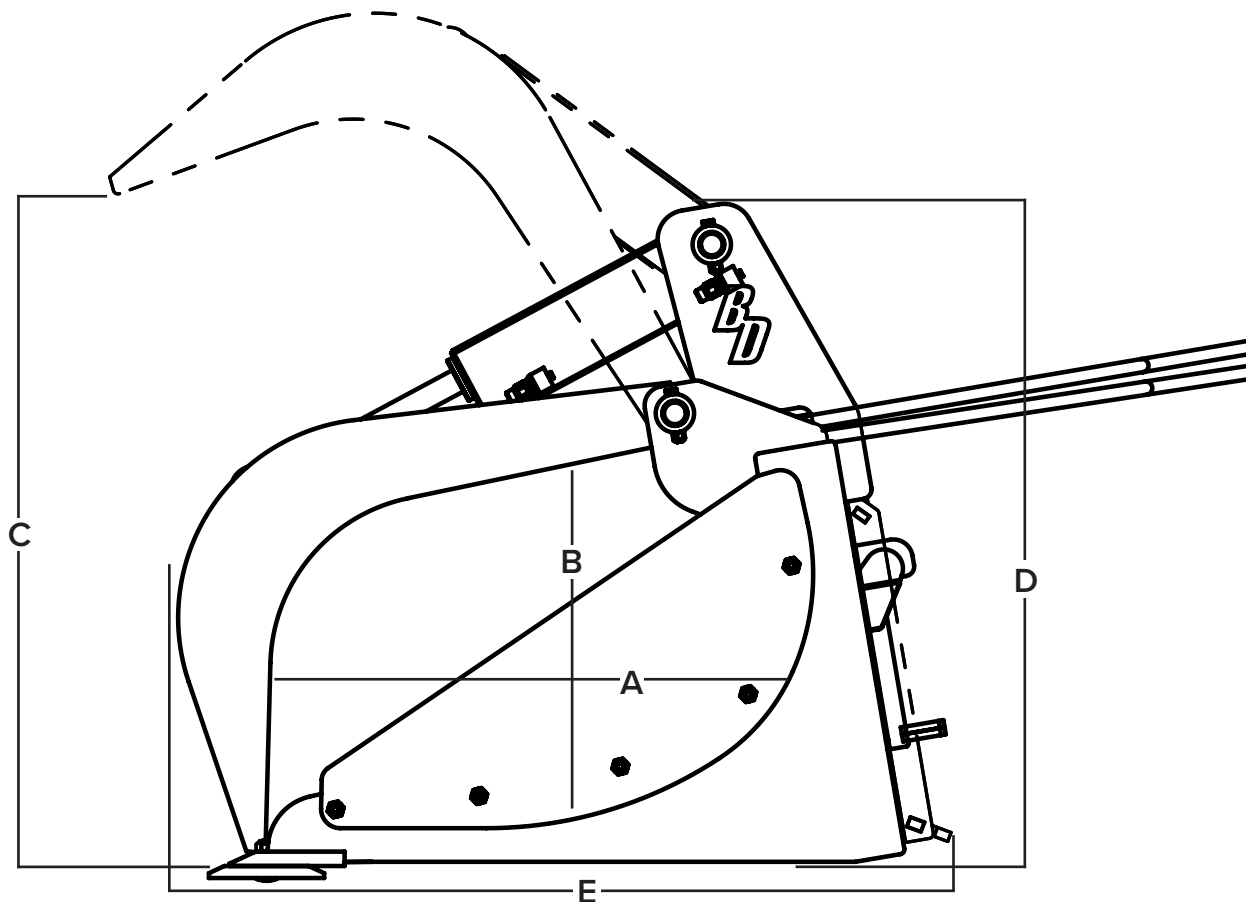
## 5. Parts

### 5.12 Safety Decals Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1	BD-060	2.5" x 3.5" Decal, Blue Diamond, Diamond Shape	4
2	BD-003	2.5" x 2.5" Decal, Crush Hazard Stay Clear	2
3	BD-092	1.5" x 2.0" Decal, Warranty Registration QR Code	1
4	BD-001	3.0" x 3.0" Decal, Read Owner's Manual	1
5	BD-004	2.0" x 4.0" Decal, Grease All Fittings Every 8 Hours	1
6	BD-123	3.0" x 3.0" Decal, High Pressure Fluid Hazard	1
7	BD-056	2.0" x 12.0" Decal, Blue Diamond	2
8	BD-065	Decal, Light Duty	2
	BD-117	1.5" x 7.74" Decal, Heavy Duty	
	BD-128	Decal, HDX	
	BD-116	1.5" x 8.74" Decal, Extreme Duty	
	BD-118	1.5" x 8.1" Decal, Severe Duty	

## 6. Specifications

### 6.1 Attachment Specifications



#### Mini – Single Clamp

DESCRIPTION	106020	106035	106045
Width	36"	44"	50"
Inside Depth with Closed Clamp (A)	19 1/2"		
Inside Height with Closed Clamp (B)	15 1/2"		
Opening Height (C)	35 1/2"		
Overall Height with Closed Clamp (D)	25"		
Overall Depth (E)	32 1/2"		
Top Clamp Thickness	5/16"		
Number of Clamps	1		
Maximum Pressure	3000 PSI		
Rated Horsepower	50 HP		
Weight	400 lbs	455 lbs	470 lbs

## 6. Specifications

### 6.1 Attachment Specifications Cont'd

#### Mini – Double Clamp

DESCRIPTION	106036	106042
Width	44"	50"
Inside Depth with Closed Clamp (A)	19 1/4"	
Inside Height with Closed Clamp (B)	14 1/2"	
Opening Height (C)	36"	
Overall Height with Closed Clamp (D)	28"	
Overall Depth (E)	32 1/2"	
Top Clamp Thickness	5/16"	
Number of Clamps	2	
Maximum Pressure	3000 PSI	
Rated Horsepower	50 HP	
Weight	450 lbs	515 lbs

#### Light

DESCRIPTION	106065
Width	66"
Inside Depth with Closed Clamp (A)	19 3/4"
Inside Height with Closed Clamp (B)	16 1/2"
Opening Height (C)	32"
Overall Height with Closed Clamp (D)	27 1/2"
Overall Depth (E)	39"
Top Clamp Thickness	3/8"
Number of Clamps	2
Maximum Pressure	2500 PSI
Rated Horsepower	50 HP
Weight	590 lbs

## 6. Specifications

### 6.1 Attachment Specifications Cont'd

#### Heavy Duty & Heavy Duty Series 2

DESCRIPTION	106070 106071	106078	106085 106086	106095 106096
Width	50"	60"	66"	72"
Inside Depth with Closed Clamp (A)	19 3/4"			
Inside Height with Closed Clamp (B)	16 1/2"			
Opening Height (C)	32"			
Overall Height with Closed Clamp (D)	27 1/2"			
Overall Depth (E)	39"			
Top Clamp Thickness	1/2"			
Number of Clamps	2			
Maximum Pressure	2500 PSI			
Rated Horsepower	65 HP			
Weight	490 lbs	675 lbs	700 lbs	725 lbs

#### HDX

DESCRIPTION	106097
Width	72"
Inside Depth with Closed Clamp (A)	19 3/4"
Inside Height with Closed Clamp (B)	16 1/2"
Opening Height (C)	32"
Overall Height with Closed Clamp (D)	27 1/2"
Overall Depth (E)	39"
Top Clamp Thickness	1/2"
Number of Clamps	2
Maximum Pressure	3000 PSI
Rated Horsepower	75 HP
Weight	675 lbs

## 6. Specifications

### 6.1 Attachment Specifications Cont'd

#### Extreme

DESCRIPTION	106115	106135	106155	106175	106195
Width	60"	66"	72"	78"	84"
Inside Depth with Closed Clamp (A)	28"				
Inside Height with Closed Clamp (B)	13 1/2"				
Opening Height (C)	33"				
Overall Height with Closed Clamp (D)	34"				
Overall Depth (E)	41"				
Top Clamp Thickness	1/2"				
Number of Clamps	2				
Maximum Pressure	3000 PSI				
Rated Horsepower	100 HP				
Weight	800 lbs	820 lbs	850 lbs	900 lbs	920 lbs

#### Extreme Duty High Capacity

DESCRIPTION	106225	106235	106245	106255
Width	72"	78"	84"	96"
Inside Depth with Closed Clamp (A)	36"			
Inside Height with Closed Clamp (B)	25 1/4"			
Opening Height (C)	34 1/4"			
Overall Height with Closed Clamp (D)	41"			
Overall Depth (E)	46 1/2"			
Top Clamp Thickness	3/4"			
Number of Clamps	2			
Maximum Pressure	3000 PSI			
Rated Horsepower	100 HP			
Weight	500 lbs	905 lbs	1150 lbs	1180 lbs

## 6. Specifications

### 6.1 Attachment Specifications Cont'd

#### Severe Duty

DESCRIPTION	106420	106429	106444	106454	106464	106474
Width	48"	60"	66"	72"	78"	84"
Inside Depth with Closed Clamp (A)	25 1/2"					
Inside Height with Closed Clamp (B)	21 1/2"					
Opening Height (C)	34 1/4"					
Overall Height with Closed Clamp (D)	34 1/4"					
Overall Depth (E)	40 1/4"					
Top Clamp Thickness	3/4"					
Number of Clamps	2					
Maximum Pressure	3000 PSI					
Rated Horsepower	100 HP					
Weight	500 lbs	905 lbs	1150 lbs	1180 lbs	1210 lbs	1240 lbs

## 6. Specifications

### 6.2 Torque Specifications – Imperial

#### Standard Hardware and Lock Nuts

BOLT TYPE	SAE GRADE 5		SAE GRADE 8		LOCK NUTS			
Nominal Size	Plated or Unplated Silver	Plated W/ ZnCr Gold	Plated or Unplated Silver	Plated W/ ZnCr Gold	Plated or Unplated Silver	Plated W/ ZnCr Gold	W/ Grade 5 Bolt	W/ Grade 8 Bolt
1/4	4.6 lbf•ft	6.0 lbf•ft	7.2 lbf•ft	9.3 lbf•ft	10.0 lbf•ft	13.1 lbf•ft	5.1 lbf•ft	7.2 lbf•ft
	6.2 N•m	8.1 N•m	9.7 N•m	12.6 N•m	13.6 N•m	17.7 N•m	6.9 N•m	9.8 N•m
5/16	9.6 lbf•ft	12.5 lbf•ft	14.8 lbf•ft	19.2 lbf•ft	20.7 lbf•ft	27.3 lbf•ft	10.3 lbf•ft	14.8 lbf•ft
	13 N•m	17 N•m	20 N•m	26 N•m	28 N•m	37 N•m	14 N•m	20 N•m
3/8	17 lbf•ft	22 lbf•ft	26 lbf•ft	34 lbf•ft	37 lbf•ft	48 lbf•ft	19 lbf•ft	26 lbf•ft
	23 N•m	30 N•m	35 N•m	46 N•m	50 N•m	65 N•m	26 N•m	35 N•m
7/16	27 lbf•ft	35 lbf•ft	42 lbf•ft	54 lbf•ft	59 lbf•ft	77 lbf•ft	30 lbf•ft	42 lbf•ft
	37 N•m	47 N•m	57 N•m	73 N•m	80 N•m	104 N•m	41 N•m	57 N•m
1/2	42 lbf•ft	54 lbf•ft	64 lbf•ft	83 lbf•ft	91 lbf•ft	117 lbf•ft	45 lbf•ft	65 lbf•ft
	57 N•m	73 N•m	87 N•m	113 N•m	123 N•m	159 N•m	61 N•m	88 N•m
9/16	60 lbf•ft	77 lbf•ft	92 lbf•ft	120 lbf•ft	130 lbf•ft	169 lbf•ft	65 lbf•ft	92 lbf•ft
	81 N•m	104 N•m	125 N•m	163 N•m	176 N•m	229 N•m	88 N•m	125 N•m
5/8	83 lbf•ft	107 lbf•ft	128 lbf•ft	165 lbf•ft	180 lbf•ft	233 lbf•ft	90 lbf•ft	127 lbf•ft
	112 N•m	145 N•m	174 N•m	224 N•m	244 N•m	316 N•m	122 N•m	172 N•m
3/4	146 lbf•ft	189 lbf•ft	226 lbf•ft	293 lbf•ft	319 lbf•ft	413 lbf•ft	160 lbf•ft	226 lbf•ft
	198 N•m	256 N•m	306 N•m	397 N•m	432 N•m	560 N•m	217 N•m	306 N•m
7/8	142 lbf•ft	183 lbf•ft	365 lbf•ft	473 lbf•ft	515 lbf•ft	667 lbf•ft	258 lbf•ft	364 lbf•ft
	193 N•m	248 N•m	495 N•m	641 N•m	698 N•m	904 N•m	350 N•m	494 N•m
1	213 lbf•ft	275 lbf•ft	547 lbf•ft	708 lbf•ft	773 lbf•ft	1000 lbf•ft	386 lbf•ft	545 lbf•ft
	289 N•m	373 N•m	742 N•m	960 N•m	1048 N•m	1356 N•m	523 N•m	739 N•m



## Warranty

### MANUFACTURER'S LIMITED WARRANTY

BLUE DIAMOND® ATTACHMENTS, a manufacturer of quality attachments, warrants new BLUE DIAMOND® ATTACHMENTS products and/or attachments at the time of delivery to the original purchaser, to be free from defects in material and workmanship when properly set up and operated in accordance with the recommendations set forth by BLUE DIAMOND® ATTACHMENTS, LLC.

BLUE DIAMOND® ATTACHMENTS liability for any defect with respect to accepted goods shall be limited to repairing the goods at a BLUE DIAMOND® ATTACHMENTS designated location or at an authorized dealer location, or replacing them, as BLUE DIAMOND® ATTACHMENTS shall elect. The above shall be in accordance with BLUE DIAMOND® ATTACHMENTS warranty adjustment policies. BLUE DIAMOND® ATTACHMENTS obligation shall terminate twelve (12) months for the Grapple Bucket after the delivery of the goods to original purchaser.

This warranty shall not apply to any machine or attachment which shall have been repaired or altered outside the BLUE DIAMOND® ATTACHMENTS factory or authorized BLUE DIAMOND® ATTACHMENTS dealership or in any way so as in BLUE DIAMOND® ATTACHMENTS judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident beyond the company recommended machine rated capacity.

### WARRANTY CLAIM

To submit a warranty claim, a claim must be filed with BLUE DIAMOND® ATTACHMENTS before work is performed. The BLUE DIAMOND® PRODUCT SUPPORT TEAM will advise repairs and applicable parts exchanges. Tampering with the failed part may void the warranty. This warranty does not include freight or delivery charges incurred when returning machinery for servicing. Dealer mileage, service calls, and pickup/delivery charges are the customers' responsibility.

### EXCLUSIONS OF WARRANTY

Except as otherwise expressly stated herein, BLUE DIAMOND® ATTACHMENTS makes no representation or warranty of any kind, expressed or implied, AND MAKES NO WARRANTY OF MERCHANTABILITY IN RESPECT TO ITS MACHINERY AND/OR ATTACHMENTS ARE FIT FOR ANY PARTICULAR PURPOSE. BLUE DIAMOND® ATTACHMENTS shall not be liable for incidental or consequential damages for any breach or warranty, including but not limited to inconvenience, rental of replacement equipment, loss of profits or other commercial loss. Upon purchase, the buyer assumes all liability for all personal injury and property resulting from the handling, possession, or use of the goods by the buyer.

No agent, employee, or representative of BLUE DIAMOND® ATTACHMENTS has any authority to bind BLUE DIAMOND® ATTACHMENTS to any affirmation, representation, or warranty concerning its machinery and/or attachments except as specifically set forth herein.

This warranty policy supersedes any previous documents. Please see [bluediamondattachments.com/warranty-policies](http://bluediamondattachments.com/warranty-policies) for the most up to date warranty information.

**NOTE:** Blue Diamond® Attachments is a trademark of BLUE DIAMOND® ATTACHMENTS



**QUALITY | DEPENDABILITY | INTEGRITY**

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