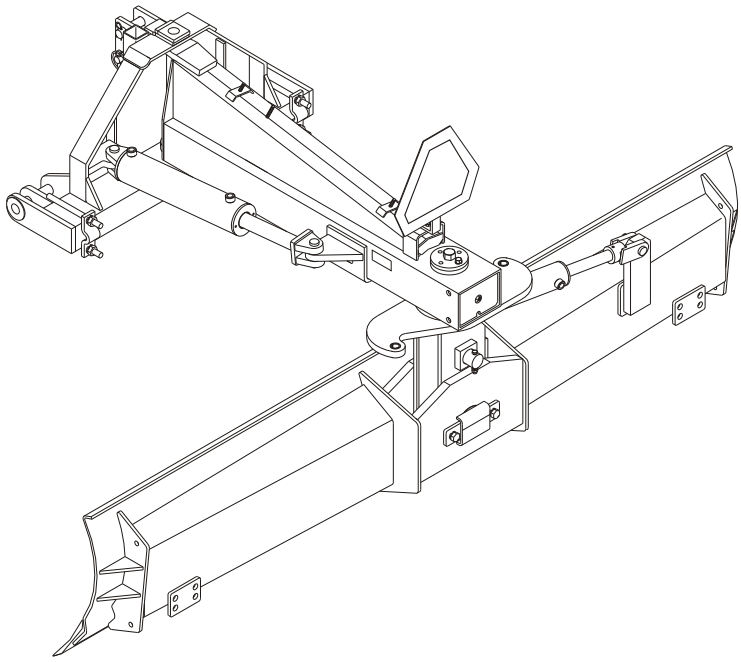
# REAR BLADES

# OPERATOR'S MANUAL



## NVHL-210-XHD

## NVHL-240-XHD

## NVHL-270-XHD

## NVHL-300-XHD

BISON®

*...harvesting better implements!*

4350-2110-00 (Rev. 02/27/06)

**TO THE DEALER:**

Assembly and proper installation of this product is the responsibility of the BISON[VH] dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.
The dealer must complete the Warranty Registration, located on the BISON[VH] website. **Warranty claims will be denied if the Warranty Registration has not been completed.**

**TO THE OWNER:**

Read this manual before operating your BISON[VH] 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 selling 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 BISON[VH] dealer has trained mechanics, genuine BISON[VH] service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine BISON[VH] 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 & Instructional Decals section for location)**_____

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



# GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your rear blade. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive 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.

# NVHL-210-XHD / NVHL-240-XHD / NVHL-270-XHD / NVHL-300-XHD SPECIFICATIONS

| Models | NVHL-210-XHD | NVHL-210-XHD | NVHL-240-XHD | NVHL-240-XHD | NVHL-270-XHD | NVHL-270-XHD | NVHL-300-XHD | NVHL-300-XHD |
|---|---|---|---|---|---|---|---|---|
| **Features & Specifications** | | | | | | | | |
| Angle, tilt & offset | Manually adjusted angle, tilt and offset | Hydraulic tilt, angle & offset | Manually adjusted angle, tilt and offset | Hydraulic tilt, angle & offset | Manually adjusted angle, tilt and offset | Hydraulic tilt, angle & offset | Manually adjusted angle, tilt and offset | Hydraulic tilt, angle & offset |
| Hitch compatibility | Cat. 2 & 3; Quick Coupler | Cat. 2 & 3; Quick Coupler | Cat. 2 & 3; Quick Coupler | Cat. 2 & 3; Quick Coupler | Cat. 2 & 3; Quick Coupler | Cat. 2 & 3; Quick Coupler | Cat. 2 & 3; Quick Coupler | Cat. 2 & 3; Quick Coupler |
| Frame | Formed steel channel frame | Formed steel channel frame | Formed steel channel frame | Formed steel channel frame | Formed steel channel frame | Formed steel channel frame | Formed steel channel frame | Formed steel channel frame |
| Cutting edge | ½" x 6" reversible | ½" x 6" reversible | ½" x 6" reversible | ½" x 6" reversible | ½" x 6" reversible | ½" x 6" reversible | ½" x 6" reversible | ½" x 6" reversible |
| Angle/Pivot | 360 Degrees | 360 Degrees | 360 Degrees | 360 Degrees | 360 Degrees | 360 Degrees | 360 Degrees | 360 Degrees |
| Angle-Forward | 4, up to 26 degrees (RH) & 5, up to 38 degrees (LH) | 0-43 degrees each side | 4, up to 26 degrees (RH) & 5, up to 38 degrees (LH) | 0-43 degrees each side | 4, up to 26 degrees (RH) & 5, up to 38 degrees (LH) | 0-43 degrees each side | 4, up to 26 degrees (RH) & 5, up to 38 degrees (LH) | 0-43 degrees each side |
| Angle-Reverse | 4, up to 26 degrees (RH) & 5, up to 38 degrees (LH) | 0-43 degrees each side | 4, up to 26 degrees (RH) & 5, up to 38 degrees (LH) | 0-43 degrees each side | 4, up to 26 degrees (RH) & 5, up to 38 degrees (LH) | 0-43 degrees each side | 4, up to 26 degrees (RH) & 5, up to 38 degrees (LH) | 0-43 degrees each side |
| Moldboard thickness | 5/16" | 5/16" | 5/16" | 5/16" | 5/16" | 5/16" | 5/16" | 5/16" |
| Moldboard length | 84" | 84" | 96" | 96" | 108" | 108" | 120" | 120" |
| Moldboard height | 19" | 19" | 19" | 19" | 19" | 19" | 19" | 19" |
| Moldboard type | Progressive-formed | Progressive-formed | Progressive-formed | Progressive-formed | Progressive-formed | Progressive-formed | Progressive-formed | Progressive-formed |
| Moldboard upper edge | Full bend | Full bend | Full bend | Full bend | Full bend | Full bend | Full bend | Full bend |
| Offset (or swing) | 0" to 28" (RH) 0" to 26" (LH) | 0" to 36" left or right | 0" to 28" (RH) 0" to 26" (LH) | 0" to 36" left or right | 0" to 28" (RH) 0" to 26" (LH) | 0" to 36" left or right | 0" to 28" (RH) 0" to 26" (LH) | 0" to 36" left or right |
| Tractor max. HP | 160 HP (2WD) 145 HP (4WD) | 160 HP (2WD) 145 HP (4WD) | 160 HP (2WD) 145 HP (4WD) | 160 HP (2WD) 145 HP (4WD) | 160 HP (2WD) 145 HP (4WD) | 160 HP (2WD) 145 HP (4WD) | 160 HP (2WD) 145 HP (4WD) | 160 HP (2WD) 145 HP (4WD) |
| Tractor hydraulic system pressure | 3000 psi Maximum (20.68 MPa) | 3000 psi Maximum (20.68 MPa) | 3000 psi Maximum (20.68 MPa) | 3000 psi Maximum (20.68 MPa) | 3000 psi Maximum (20.68 MPa) | 3000 psi Maximum (20.68 MPa) | 3000 psi Maximum (20.68 MPa) | 3000 psi Maximum (20.68 MPa) |
| Tilt | 2, up to 15 degrees up and down | 0-12 degrees, up or down | 2, up to 15 degrees up and down | 0-12 degrees, up or down | 2, up to 15 degrees up and down | 0-12 degrees, up or down | 2, up to 15 degrees up and down | 0-12 degrees, up or down |
| Operating weight | 1401 lbs. | 1449 lbs. | 1451 lbs. | 1499 lbs. | 1501 lbs. | 1549 lbs. | 1550 lbs. | 1598 lbs. |

***Tecnomec Agricola, S.A. de C.V. reserves the right to make any changes deemed necessary to the specifications without prior notice.**

# 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, 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.

### 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 your 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.**

■ **Know your controls and how to stop engine and attachment quickly in an emergency.**

■ **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.**

■ **Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.**

■ **Make sure that all operating and service personnel know that if hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury or gangrene, serious injury, or death will result. CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.**

■ **Never allow children or untrained persons to operate equipment.**

### PREPARATION

■ **Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.**

■ **Do not connect a low-pressure hydraulic hose into a high-pressure system - it will burst the hose. Do not use a high-pressure hose in place of a low-pressure hose - it is possible to rupture the valve.**

■ **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.**

■ **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 systems in "locked up" position at all times.**

■ **Make sure all safety decals are installed. Replace if damaged. (See Safety & Instructional Decals section for location).**

■ **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, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.**

■ **Make sure circuit selector lever does not hit tractor cab, etc. throughout operating range of 3-point hitch of tractor. Bend lever, if necessary, to clear cab, but it should still be convenient to operate from the tractor seat.**

### OPERATION

■ **Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.**

■ **Do not operate equipment while under the influence of alcohol or drugs.**

■ **Operate only in daylight or good artificial light.**

■ **Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.**

*(Safety Rules continued on next page)*

# SAFETY RULES

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

*(Safety Rules continued from previous page)*

■ **Always comply with all state and local lighting and marking requirements.**

■ **Never allow riders on power unit or attachment.**

■ **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.**

■ **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.**

■ **Do not operate on steep slopes.**

■ **Do not stop, start, or change directions suddenly on slopes.**

■ **Use extreme care and reduce ground speed on slopes and rough terrain.**

■ **Watch for hidden hazards on the terrain during operation.**

■ **Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.**

■ **Before changing positions of manual swing, tilt, or angle positions:**

- **Park tractor on level ground, apply parking brake, level implement boom, shut off tractor, and remove key.**
- **Make manual changes slowly and carefully to prevent hazardous movement of mechanisms.**
- **Never stand in positions where you could become entrapped during adjustment changes or if the 3-point hitch suddenly lowers.**

■ **Always secure lock pins with safety pins to prevent lock pins from bumping out of the positioning holes. Failure to do so may result in accidents and/or damage to rear blade.**

■ **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.**

■ **Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.**

**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.**

■ **Before performing any service or maintenance, lower attachment to ground, turn off engine, set parking brake, and remove key.**

■ **Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.**

■ **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.**

■ **Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.**

■ **Make sure attachment is properly secured, adjusted, and in good operating condition.**

■ **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. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.**

■ **Make sure all safety decals are installed. Replace if damaged. (See Safety & Instructional Decals section for location).**

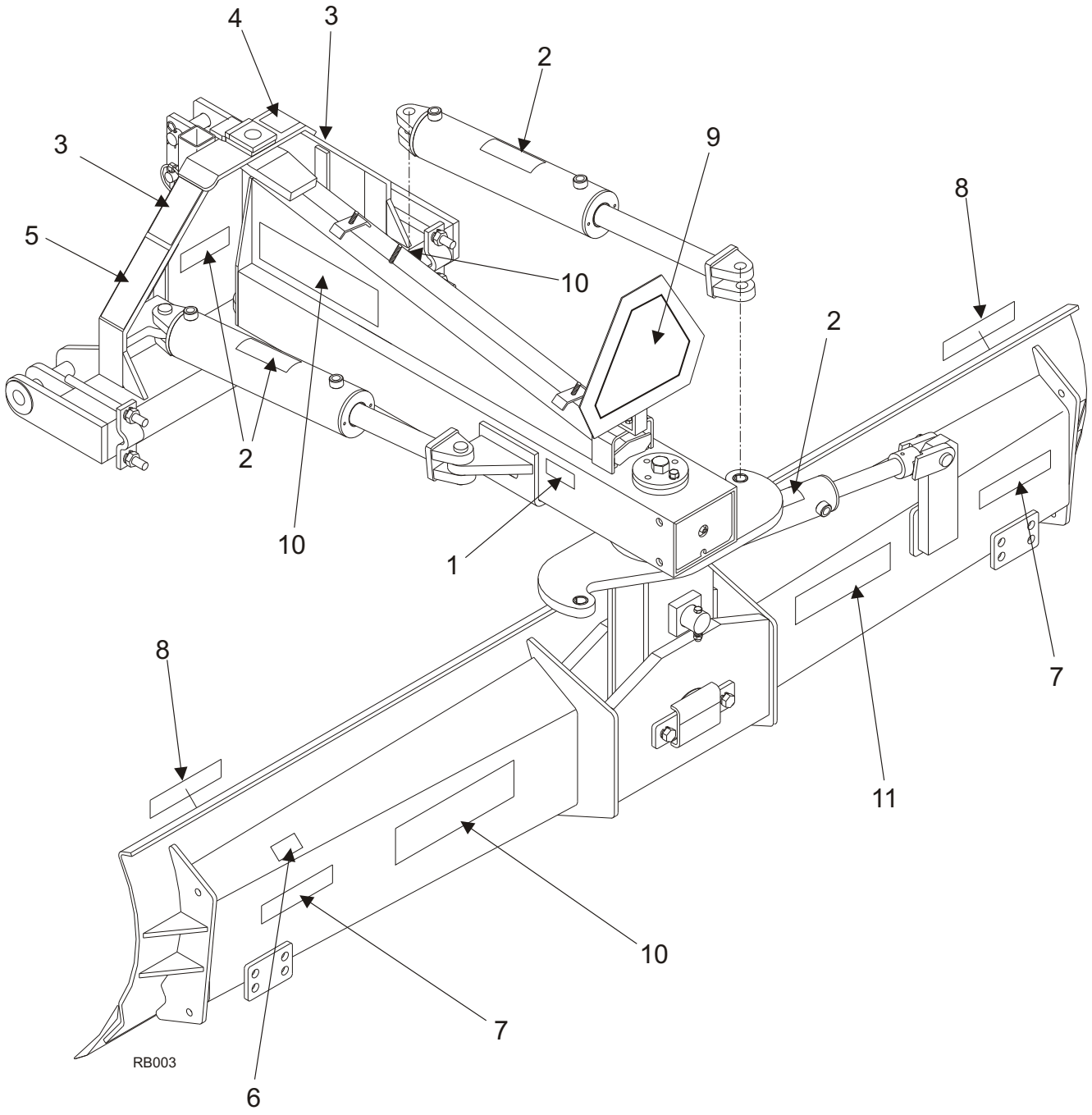
■ **Do not disconnect hydraulic lines until machine is securely blocked or placed in lowest position and system pressure is released by operating valve levers.**

**STORAGE**

■ **Secure equipment parking stand(s) in park position before detaching.**

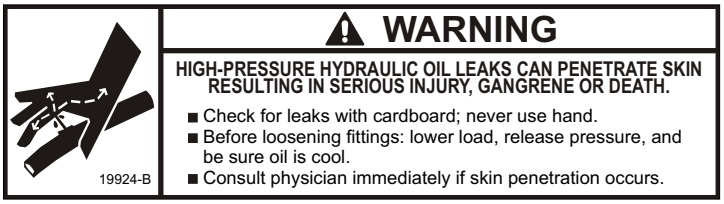
■ **Keep children and bystanders away from storage area.**

# SAFETY & INSTRUCTIONAL DECALS
## ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!




1.- Serial Number Plate (1)


2.- TA4310-7070-00 (4)



# SAFETY & INSTRUCTIONAL DECALS

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

**Replace Immediately If Damaged!**

3.- TA4310-7071-00 (2)

**WARNING**

**CRUSHING AND PINCHING HAZARD**

- Be extremely careful handling various parts of the hitching mechanism. They are heavy and hands, fingers, feet, and other body parts could be crushed or pinched between tractor and implement.
- Operate tractor controls from tractor seat only.
- Do not stand between tractor and implement when tractor is in gear.
- Make sure parking brake is engaged before going between tractor and implement.
- Stand clear of machine while in operation or when it is being raised or lowered.

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

1002941

4.- TA4310-7072-00 (1)

**WARNING**

**TO AVOID SERIOUS INJURY OR DEATH:**

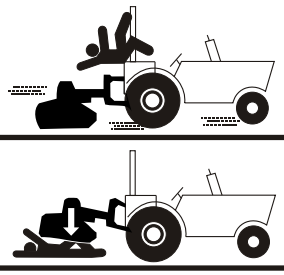
- Read Operator's Manual before operating, servicing, or repairing equipment. Follow all safety rules and instructions. (Manuals are available from your selling dealer.)
- Never allow riders.
- Keep bystanders away from equipment during operation.
- Operate from tractor seat only.
- Keep all shields in place and in good condition.
- Lower equipment to ground, stop engine, remove key, and set brake before dismounting tractor.
- Never allow children or untrained persons to operate equipment.

**FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.**

1003199

5.- TA4310-7073-00 (1)

**WARNING**



**FALLING OFF CAN RESULT IN BEING RUN OVER**

- Tractor must be equipped with ROPS (or ROPS CAB) and seat belt. Keep foldable ROPS systems in "locked up" position at all times.
- Buckle Up! Keep seat belt securely fastened.
- Allow no riders.

**RAISED IMPLEMENT CAN DROP AND CRUSH.**

- Never go underneath raised implement which can drop from equipment or tractor 3-point hitch hydraulic leak down, hydraulic system failures, movement of control levers, or mechanical linkage failures.
- Service work does not require going underneath implement. Read manual instructions.

**FALLING OFF OR GOING UNDERNEATH IMPLEMENT CAN RESULT IN SERIOUS INJURY OR DEATH.**

55121-C

6.- TA4310-7074-00 (1)

**WARNING**

**Unit must not extend more than 4 feet left of center of the tractor when driving on public roads.**

7.- TA4310-6020-01 Red Reflector 2'' x 9'' (2)
8.- TA4310-6020-02 Yellow Reflector 2'' x 9'' (2)
9.- TA4310-7066-01 SMV Reflector (1)
10.- TA4310-1100-03 BISON$^{VH}$ decal (3)
11.- Model decal (1)

# 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.

## ⚠ WARNING

- **Never allow children or untrained persons to operate equipment.**

- **Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.**

- **Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.**

- **Never allow riders on power unit or attachment.**

- **Keep all persons away from operator control area while performing adjustments, service, or maintenance.**

## ⚠ WARNING

- **Make sure that all operating and service personnel know that if hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury or gangrene, serious injury, or death will result. CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.**

- **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, front wheel weights, ballast in tires, or front tractor weights. Weigh the tractor and equipment. Do not estimate.**

## ⚠ CAUTION

- **Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.**

- **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.**

## MOUNT REAR BLADE TO TRACTOR

### IMPORTANT

■ **The rear blade should be mounted on tractors with a maximum power rating of 160 hp (120 kW). For 4WD tractors, the maximum power rating is 145 hp (108 kW).**

The rear blade is a 3-point Category 2 & 3 implement. It will attach to ASAE standard Category 3 quick-attaching coupler, or on a Category 2 quick-attaching coupler.

Place the tractor rockshift control in “position control” (non-floating) for attaching and detaching the rear mounted blade. “Draft control” or “position control” can be used while operating.

Back the tractor until the ends of the lift arms can be attached to the lift points on the implement. Secure the lift arms to the mast.

Attach the center link to the top of the mast and adjust so that the rear blade will be level in the operating position.

### CATEGORY 2

**1.** Place the lift arms between the inside lower hitch support and the adjustable lugs (5). Secure with lower hitch pins (6) without using the lower hitch pin bushings (12) and insert the 3/8 klik pins (23).

**2.** Connect the tractor top link to upper hitch support hole (A) in the 3-point frame (1) using the upper hitch pin category 3 (14). Secure with the two 1/4 x 4 safety pins (24).

**3.** Level the main frame by adjusting lift and top links.

**4.** Position sway blocks to eliminate side sway or install sway braces if required.

### CATEGORY 2 QUICK-HITCH

**1.** Secure lower hitch pins (6) without using the lower hitch pin bushings (12), and insert the 3/8 klik pins (23).

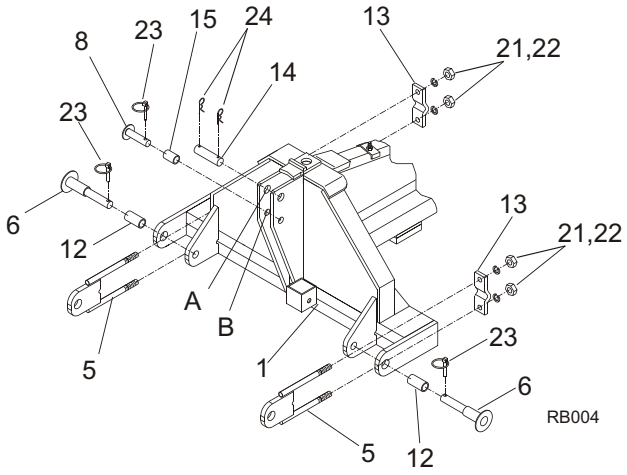
**2.** Place upper hitch pin category 2 (8) and upper hitch pin bushing category 2 (15) in the upper hitch support hole (B) and secure with the 3/8 klik pin (23).

**3.** Back up tractor with 3 quick-hitch attachment into 3-point frame (1) making sure pins are aligned to the center and the outside lower hitch supports.

**4.** Lift tractor lift arms.

**5.** Level the main frame by adjusting lift and top links.

**6.** Position sway blocks to eliminate side sway or install sway braces if required.




A - Category 2, 3 and 3 Quick-attaching Coupler
B - Category 2 Quick-attaching Coupler

**Figure 1.** 3-point Hitch Connection

### CATEGORY 3

**1.** Place the lift arms between the outside lower hitch support and the adjustable lugs (5). Secure with lower hitch pins (6) using the lower hitch pin bushings (12) and insert the 3/8 klik pins (23).

**2.** Connect the tractor top link to upper hitch support hole (A) in the 3-point frame (1) using the upper hitch pin category 3 (14). Secure with the two 1/4 x 4 safety pins (24).

**3.** Level the main frame by adjusting lift and top links.

**4.** Position sway blocks to eliminate side sway or install sway braces if required.

### CATEGORY 3 QUICK-HITCH

**1.** Secure lower hitch pins (6) using the lower hitch pin bushings (12) and insert the 3/8 klik pins (23).

**2.** Place upper hitch pin category 3 (14) in the upper hitch support hole (A) and secure with the two 1/4 x 4 safety pins (24).

**3.** Back up tractor with 3 quick-hitch attachment into 3-point frame (1) making sure pins are aligned to the center and the outside lower hitch supports.

**4.** Lift tractor lift arms.

**5.** Level the main frame by adjusting lift and top links.

**6.** Position sway blocks to eliminate side sway or install sway braces if required.

**NOTE:** The drawbar may have to be removed on some tractors. Make sure rear blade is at least six inches from tractor tires throughout operating range of 3-point hitch.

**⚠ CAUTION**

■ **Before changing positions of manual swing, tilt, or angle positions:**

- **Park tractor on level ground, apply parking brake, level implement boom, shut off tractor, and remove key.**
- **Make manual changes slowly and carefully to prevent hazardous movement of mechanisms.**
- **Never stand in positions where you could become entrapped during adjustment changes or if the 3-point hitch suddenly lowers.**

**⚠ CAUTION**

■ **Always secure lock pins with safety pins to prevent lock pins from bumping out of the positioning holes. Failure to do so may result in accidents and/or damage to rear blade.**

## Angle Adjustment

Angle moldboard 43 degrees each side by using the hydraulic angle cylinder (41) or up to 26 degrees to the right or 38 degrees to the left by using the mechanical angle linkage (25,54,65,66).

**NOTE:** It is possible for the blade to contact other components if the blade is tilted when angled. Operate blade slowly when angling it.

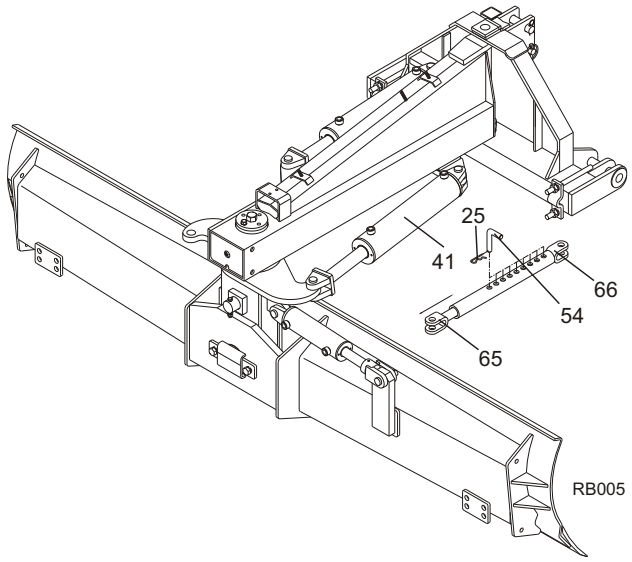



**Figure 2.** Angle Cylinder and Mechanical Tilt Linkage

**Reverse Blade**

The blade is reversible without removing it from the tractor.

1. Remove the two safety pins (25) and two cylinder end pins (42) from the angle cylinder (41) [or the two linkage end pins (55) and the four safety pins (25) from the mechanical angle linkage (25,54,65,66)] and then remove the angle cylinder (41) [or the mechanical angle linkage (25,54,65,66)].

2. Raise blade off the ground using tractor's 3-point hitch.

3. Rotate moldboard counter-clockwise 180 degrees (viewed from the top).

4. Replace the angle cylinder (41) or the mechanical angle linkage (25,54,65,66) along with their cylinder end pins (42) [or linkage end pins (55)] and safety pins (25).

**NOTE**: The blade can be set hydraulically to any angle from 0 to 43 degrees, right or left.

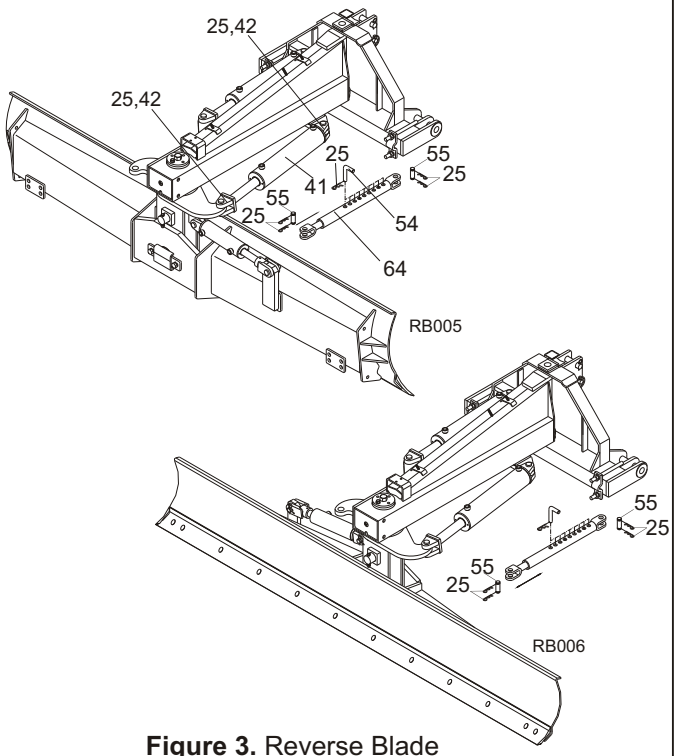



**Figure 3.** Reverse Blade

## Tilt Adjustment

Tilt moldboard 12 degrees up or down by using the hydraulic tilt cylinder (49) or up to 15 degrees by using the mechanical tilt linkage (25,52,53,54). Additional tilt adjustment can be obtained by adjusting the lift link of the tractor 3-point hitch.

**NOTE:** In some cases it may not be possible to fully tilt and angle and still be able to raise the blade high enough to clear the ground. In this case, use less tilt.

**NOTE:** It is possible for the blade to contact other components if the blade is tilted when angled. Operate blade slowly when angling it.

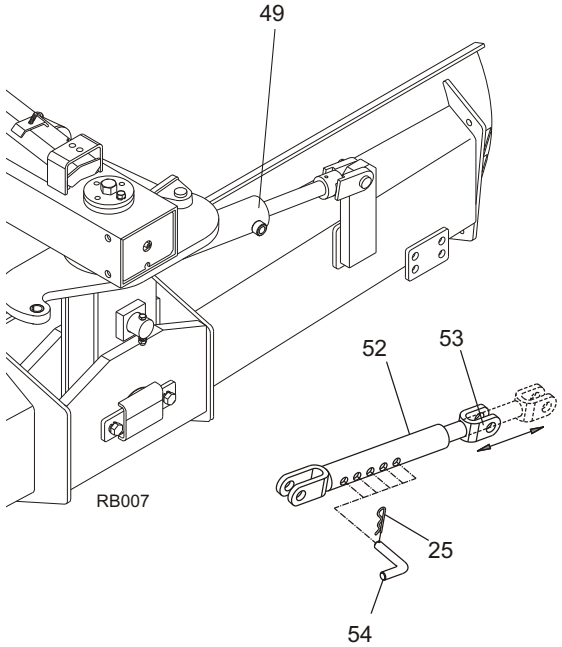



**Figure 4.** Tilt Cylinder and Mechanical Tilt Linkage.

## Offset Adjustment

### Mechanical Adjustment

Mechanical adjustment model has nine blade offset positions. Hole positions in offset link allows main frame to rotate to the right or left with a maximum blade offset of 28 inches to the right and 26 inches to the left.

To offset the blade:

1. Park the tractor on level ground.

2. Apply parking brake and raise blade 2 inches above the ground.

3. Shut off the engine and level the boom.

4. Remove safety pin (25) and center linkage pin (54). Swing the boom to the desired position and replace the pins.

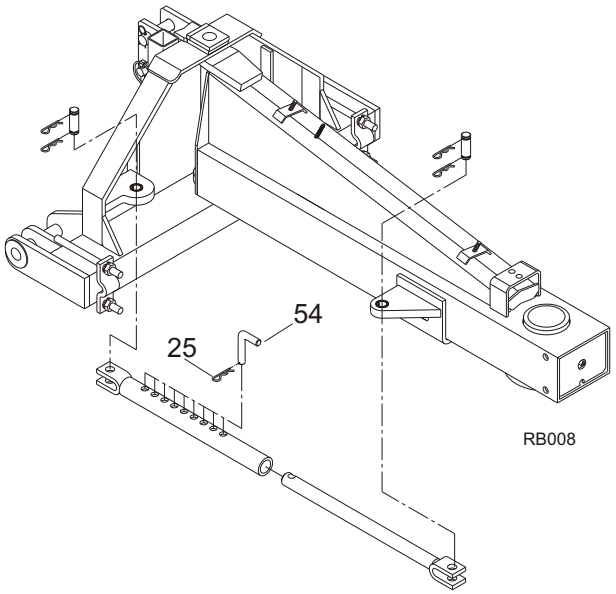



**Figure 5.** Mechanical Offset

### Adjustment with Hydraulic Offset Cylinder (Optional)

The offset cylinder (41) rotates the main frame right or left or to any position in between, resulting in a maximum of 36 inches offset to the right or left.

To offset the blade:

1. Raise blade a few inches above the ground by operating the lift control lever of the tractor.

2. Actuate the control valve connected to the offset cylinder (41).

3. On tractors having two circuit selector valves, select offset circuit and actuate tractor control valve connected to selector valve.

**NOTE:** Do not operate the selector valve under load.

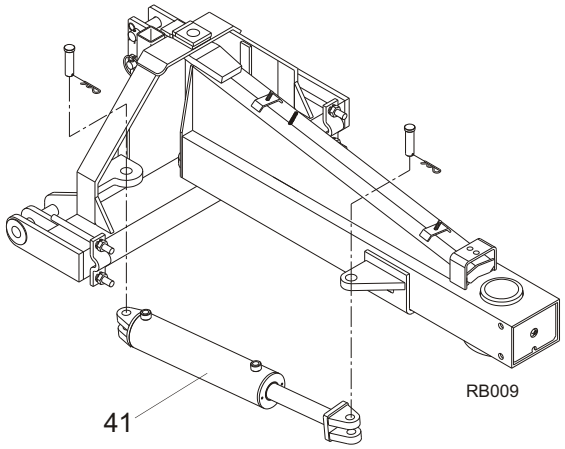



**Figure 6.** Hydraulic Offset

## OPERATING TIPS

### ⚠ WARNING

- **Look down and to the rear and make sure area is clear before operating in reverse.**
- **Do not operate on steep slopes.**
- **Do not operate while the parking stand is in the down position.**
- **Do not stop, start, or change directions suddenly on slopes.**
- **Use extreme care and reduce ground speed on slopes and rough terrain.**
- **Watch for hidden hazards on the terrain during operation.**
- **Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.**

### ⚠ CAUTION

- **Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.**

## BACKFILLING

For backfilling ditches or trenches, reverse the blade by rotating counter-clockwise and back push.

## LEVELING AND GRADING

Set the blade to the desired position of offset, angle, and tilt for leveling and grading.

**PRE-OPERATION CHECK LIST**
(OPERATOR'S RESPONSIBILITY)

- ___ Review and follow all safety rules and safety decal instructions on pages 3 through 6.
- ___ 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 and cotter pins are properly installed and secured.

**PRE-OPERATION CHECK LIST**
(OPERATOR'S RESPONSIBILITY)

- ___ Check all lubrication points are greased.
- ___ Check that blade cutting edge is in good condition.
- ___ Check that all hydraulic hoses and fittings are in good condition and not leaking before starting tractor. Check that hoses are not twisted, bent sharply, kinked, frayed, or pulled tight. Replace any damaged hoses immediately.

# OWNER SERVICE

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.

## ⚠ WARNING

- **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.**

- **Keep all persons away from operator control area while performing adjustments, service, or maintenance.**

## ⚠ WARNING

- **Make sure that all operating and service personnel know that if hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury or gangrene, serious injury, or death will result. CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.**

- **Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.**

- **Never perform service or maintenance with engine running.**

## ⚠ CAUTION

- **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.**

- **Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.**

## Blade Cutting Edge

To reverse the cutting edge

**1.** Remove the 5/8 plow bolts.

**2.** Remove the cutting edge from the moldboard and reinstall with the sharp edge down.

**3.** Replace cutting edge when both edges are worn.

## Lubrication

**Weekly**

**1.** Grease the king pin through grease fitting.

**2.** Lubricate between main frame (2) and turn table (3).

**3.** Lubricate the moldboard pivot pin (11) through the grease zerk fitting on the bottom of the turn table.

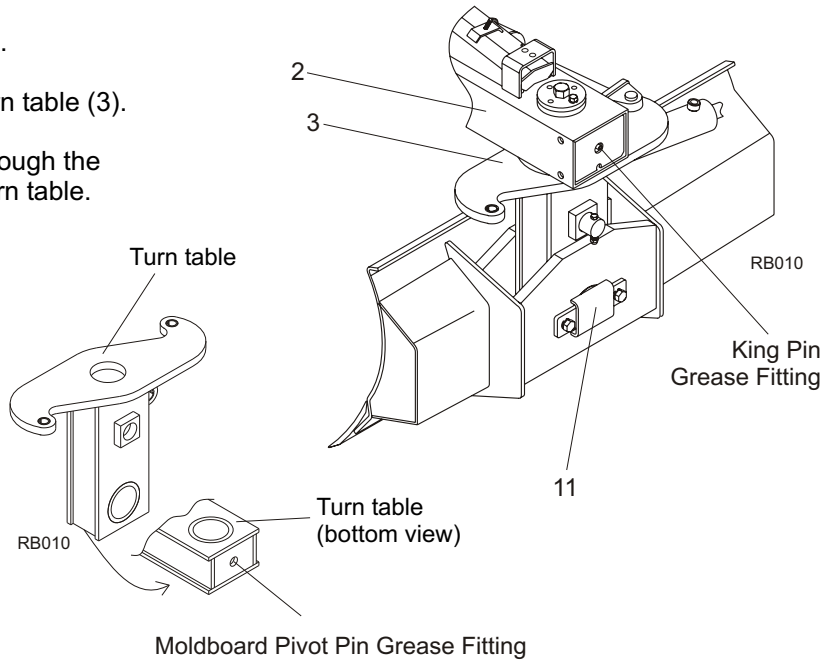



**Figure 7.** Lubrication Points

## Bolts

**1.** Check bolts periodically to be sure they are tight.

**2.** Replace bolts as needed.

**NOTE:** Replacement bolts must have the same strength markings on the heads. Refer to Bolt Torque Chart on page 53.

# ASSEMBLY

## ⚠ WARNING

■ **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.**

■ **Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.**

■ **Keep all persons away from operator control area while performing adjustments, service, or maintenance.**

■ **Make sure that all operating and service personnel know that if hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury or gangrene, serious injury, or death will result. CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.**

## ⚠ CAUTION

■ **Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.**

■ **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.**

■ **Tighten all bolts, nuts and screws to torque chart specifications. Check that all safety and cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.**

### Dealer Set-Up Instructions

Assembly of this equipment is the responsibility of the BISON$^{VH}$ dealer. It should be delivered to the owner completely assembled, lubricated, and adjusted for normal operating conditions. Assembly will be easier if components are aligned and loosely assembled before tightening hardware. Recommended torque values for hardware are located on page 53.

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### ASSEMBLY TABLE OF CONTENTS

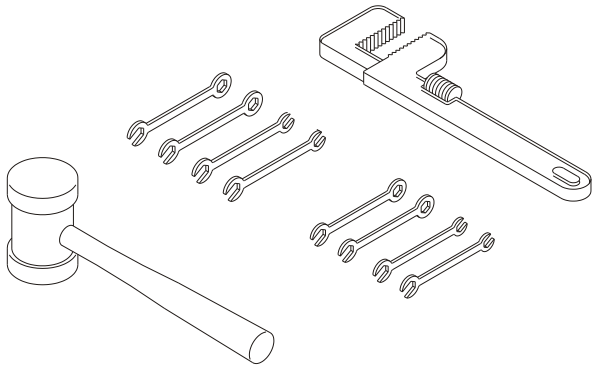
## MAIN ASSEMBLY

These instructions illustrates the sequence of assembling the parts of the rear blade. We suggest that you follow this sequence carefully. Assembly of the rear blade should be done with no less than two people and the appropriate equipment for making assembling easier.

The following tools are necessary for assembling your rear blade:

- Two adjustable wrenches or:
  - One adjustable wrench and:
    - One 1 1/2 wrench or 1 1/2 rachet
    - One 3/4 wrench or 3/4 rachet
    - One 15/16 wrench or 15/16 rachet
    - One 9/16 wrench or 9/16 rachet
- One rubber mallet

In some cases, it is necessary to make use of a steel mallet at the time you install the pins. In these cases, we suggest that a piece of wood be used to soften the impact between the pin and mallet to avoid damaging the pin.



**⚠ WARNING**

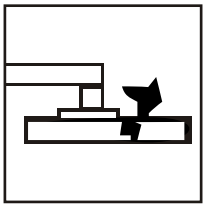
**DANGER OF CUTTING EDGE FALLING**

**It could cause serious injuries or even death. Keep hands and feet out of cutting edge while it is up.**

**⚠ WARNING**

**DANGER OF BRUISING**

**Be careful with the pieces joined by pins since they tend to rotate.**



## Remove Parts from Crate

**NOTE:** The shipping crate base can be used to aid in the assembly of the rear blade.

**1.** Remove top and sides from crate.

**2.** Remove box of parts, hydraulic cylinder(s) and/or mechanical linkages from base.

## Attach Moldboard to Turn Table and King Pin

**A.** (Refer to Figure 8). Attach the turn table (3) to the moldboard (4) by inserting the moldboard pivot pin (11). Move the pivot pin retainer (20) through the moldboard pivot pin (11) end. Secure with two bolts (32) and lock washers (34).

**NOTE:** Prop the moldboard (4) upright as shown before assembling turn table (3). Use a fork-lift or a crane for easier way assembly.

**NOTE:** Remove paint from the moldboard pivot pin (11) and the inside of the moldboard (4) holes where the moldboard pivot pin (11) goes through. Apply grease to all contact surfaces to facilitate assembly.

**B.** (Refer to Figure 9). Secure king pin (18) to the turn table (3) by using the king pin retainer (19). Secure using two bolts (26), hex nuts (27), and lock washers (28).

**NOTE:** Remove paint from the king pin retainer (19) and from the inside of the turn table (3) holes where the king pin (18) and king pin retainer (19) go through. Apply grease to all contact surfaces to facilitate assembly.

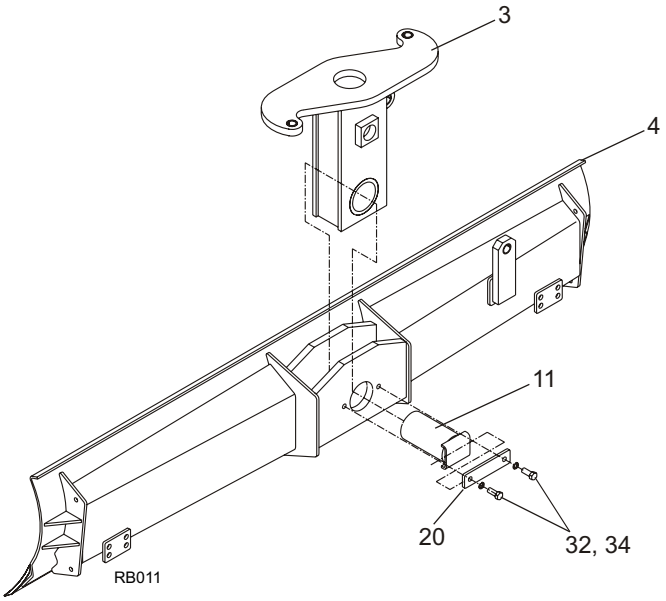



**Figure 8.** Turn Table Installed to Moldboard

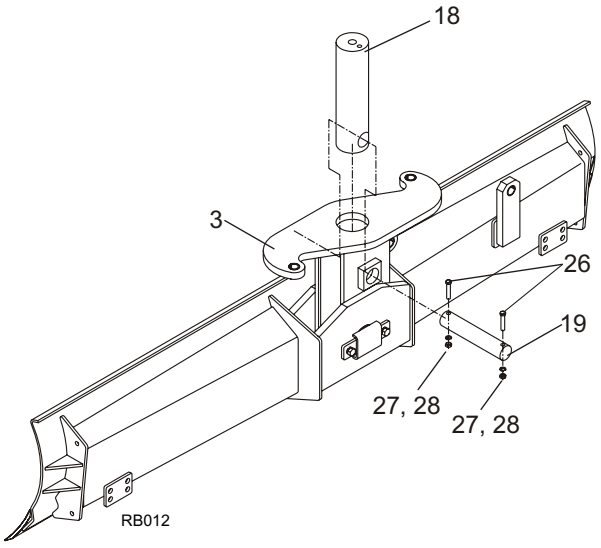



**Figure 9.** King Pin Installation

3. Turn Table
4. Moldboard
11. Moldboard Pivot Pin
18. King Pin
19. King Pin Retainer
20. Pivot Pin Retainer
26. Bolt, 3/8 x 2 1/2 HHCS
27. Hex Nut, 3/8
28. Lock Washer, 3/8
32. Bolt, 5/8 x 1 1/2 HHCS GR5
34. Lock Washer, 5/8

## Attach Turn Table to Main Frame

**C.** Let the end of the main frame (2) slide through the king pin (18). Secure by completely tightening the king pin cap (17) then loosen 1/4 turn until one of the holes of the king pin cap (17) lines up to the hole of the king pin (18). Secure by tightening the bolt (30) and the lock washer (29).

**NOTE:** Apply grease to king pin (18) to facilitate assembly.

2. Main Frame
17. King Pin Cap
18. King Pin
29. Lock Washer, 1/2
30. Bolt, 1/2 x 1 1/2 HHCS GR5

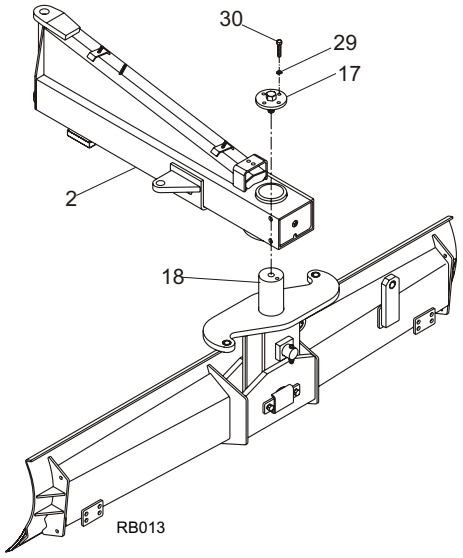



**Figure 10.** Main Frame Installation

## Attach 3-Point Frame to Main Frame

**D.** Some blades may require placing the flat washers (38) in the upper and lower ears of the main frame (2). Assemble 3-point frame (1) to main frame (2). Use 3-point pivot pin (9) and secure with one bolt (45), hex nut (27), and lock washer (28).

**NOTE:** Apply grease to 3-point pivot pin to facilitate assembly.

1. 3-Point Frame
2. Main Frame
9. 3-Point Pivot Pin
27. Hex Nut, 3/8
28. Lock Washer, 3/8
38. Flat Washer, 1 1/2
45. Bolt, 3/8 x 2 HHCS

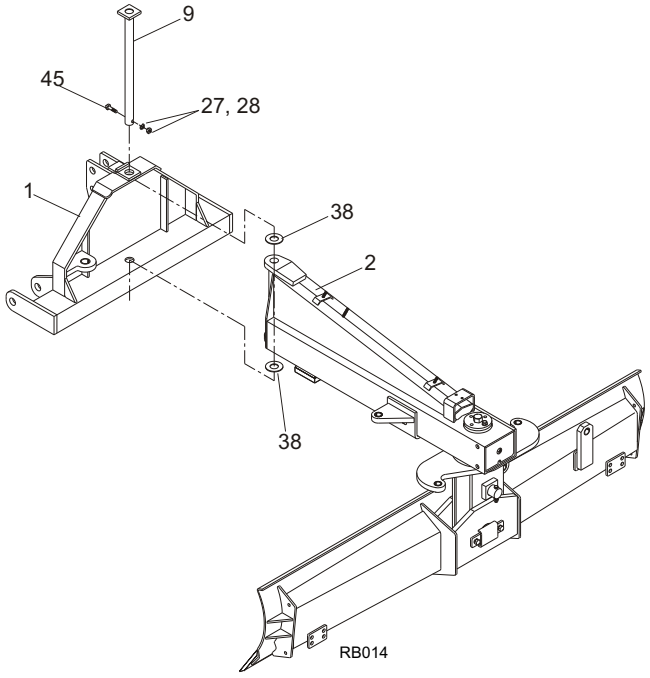



**Figure 11.** 3-Point Frame Assembly

## Attach Parking Stand

**E.** Attach parking stand (7) to the 3-point frame (1) and insert the parking stand pin (10) through the upper hole of the parking stand (7). Use safety pin (25) to secure parking stand (7) in position.

1. 3-Point Frame
7. Parking Stand
10. Parking Stand Pin
25. Safety Pin, 1/8

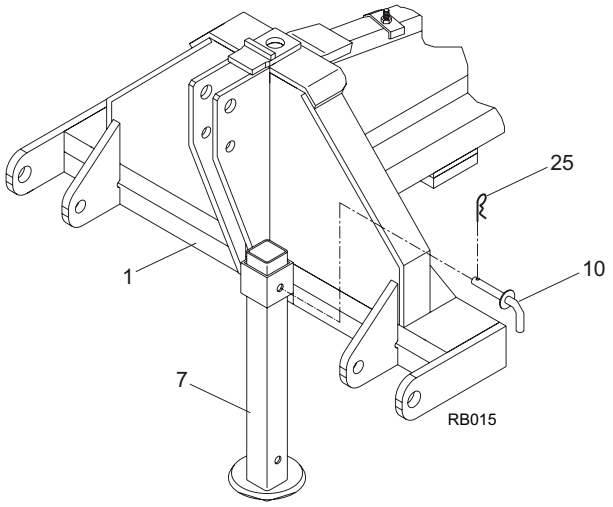



**Figure 12.** Parking Stand Installation

## 3-Point Frame Pin Installation

**F.** Install the two adjustable lugs (5), and secure by loosely tightening the adjustable support plates (13) with hex nuts (22) and lock washers (21).

1. 3-Point Frame
5. Adjustable Lug
6. Lower Hitch Pin
8. Upper Hitch Pin Category 2
12. Lower Hitch Pin Bushing
13. Adjustable Support Plate
14. Upper Hitch Pin Category 3
15. Upper Hitch Pin Bushing Category 2
21. Lock Washer, 3/4
22. Hex Nut, 3/4
23. Klik Pin, 3/8
24. Safety Pin, 1/4 x 4

**G.** Insert lower hitch pin bushings (12) into lower hitch pin (6). Introduce the assembly through the 3-point frame (1) ear holes and the adjustable lug (5) hole. Make sure lower hitch pins (6) are able to rotate, then fully tighten adjustable support plates (13). Secure lower hitch pins (6) with klik pins (23).

**H.** Insert pins (8,14) and bushing (15) through main frame assembly and secure with corresponding klik and safety pins (23,24).

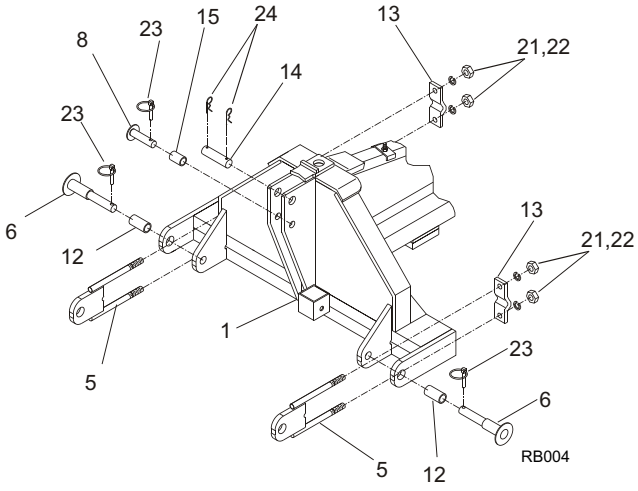



**Figure 13.** Main Frame Pin Installation

## Attach Slow Moving Vehicle (SMV) Sign (Optional)

**I.** Assemble SMV sign (39) on top of main frame (2) using the two bolts (44). Secure with hex nuts (27) and lock washers (28).

2. Main Frame
27. Hex Nut, 3/8
28. Lock Washer, 3/8
39. SMV Sign
44. Bolt, 3/8 x 1 1/4 HHCS GR5

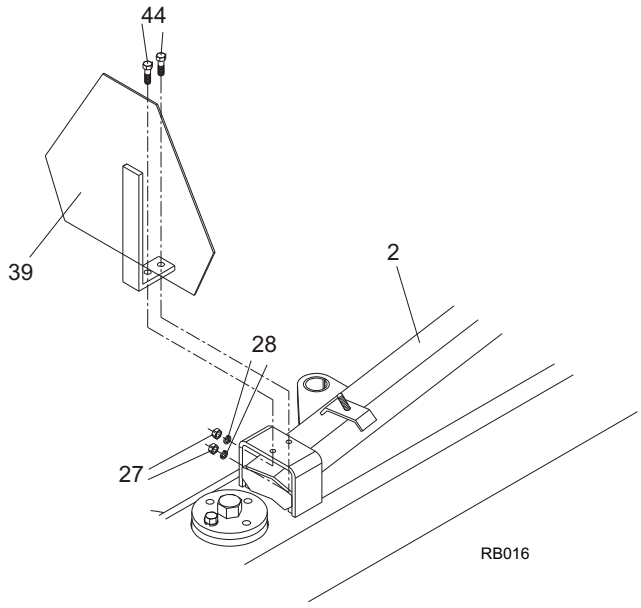



**Figure 14.** SMV Sign Installation

## Attach Manual Holder (Optional)

**J.** Attach the manual holder (40) to the back of the SMV sign (39) using hex nuts (63), flat washers (43), and lock washers (62).

39. SMV Sign
40. Manual Holder
43. Flat Washer, 5/16
62. Lock Washer, 5/16
63. Hex Nut, 5/16

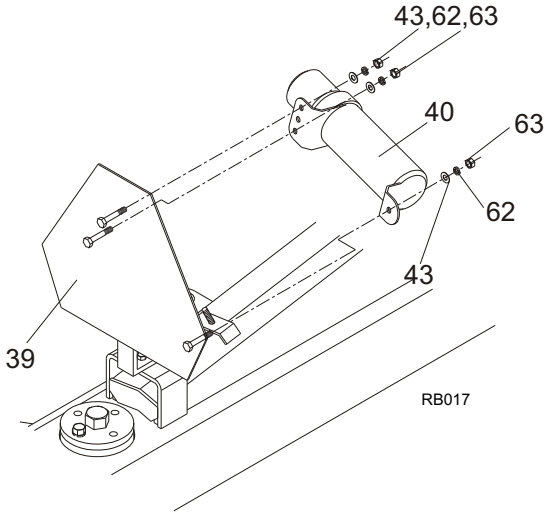



**Figure 15.** Manual Holder Installation


* For Hydraulic Configuration, skip to page 23 for assembly instructions.

## MANUAL CONFIGURATION

### Offset Mechanical Linkage Installation

**K.** Assemble offset mechanical linkage by attaching outer offset link (50) with inner offset link (51) using the center linkage pin (54) and safety pin (25). Attach the offset mechanical linkage assembly to both the 3-point frame (1) and main frame (2) using linkage end pins (55) and safety pins (25) making sure the bushings (37) are in place.

1. 3-Point Frame
2. Main Frame
25. Safety Pin, 1/8
37. Bushing, 1 3/8 x 1 x 1
50. Outer Offset Link
51. Inner Offset Link
54. Center Linkage Pin
55. Linkage End Pin

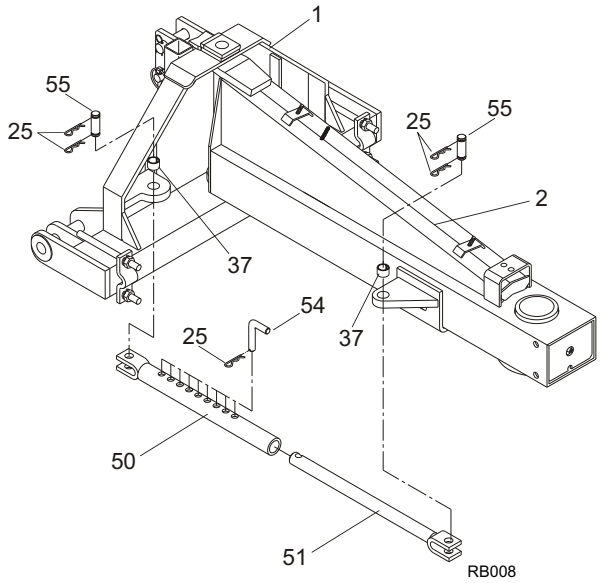



**Figure 16.** Offset Mechanical Linkage.

### Tilt Mechanical Linkage Installation

**L.** Assemble tilt mechanical linkage by attaching outer tilt link (52) with inner tilt link (53) using the center linkage pin (54) and safety pin (25). Attach one end of the mechanical linkage to the turn table (3) tilt cylinder lug and the other end to the moldboard (4) tilt cylinder lug using linkage end pins (55) and safety pins (25) making sure the bushings (37) are in place.

3. Turn Table
4. Moldboard
25. Safety Pin, 1/8
37. Bushing, 1 3/8 x 1 x 1
52. Outer Tilt Link
53. Inner Tilt Link
54. Center Linkage Pin
55. Linkage End Pin

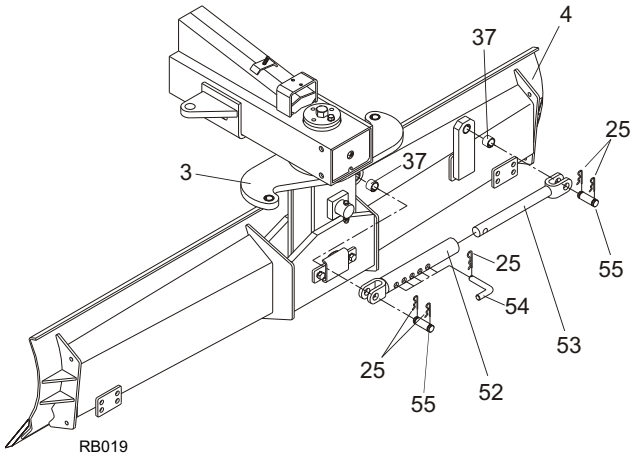



**Figure 17.** Tilt Mechanical Linkage.

## Angle Mechanical Linkage Installation

**M.** Assemble angle mechanical linkage by attaching outer angle link (66) with inner angle link (65) using the center linkage pin (54) and safety pin (25). Attach the angle mechanical linkage assembly to both the main frame (2) and turn table (3) using linkage end pins (55) and safety pins (25) making sure the bushings (37) are in place.

2. Main Frame
3. Turn Table
25. Safety Pin, 1/8
37. Bushing, 1 3/8 x 1 x 1
54. Center Linkage Pin
55. Linkage End Pin
65. Inner Angle Link
66. Outer Angle Link

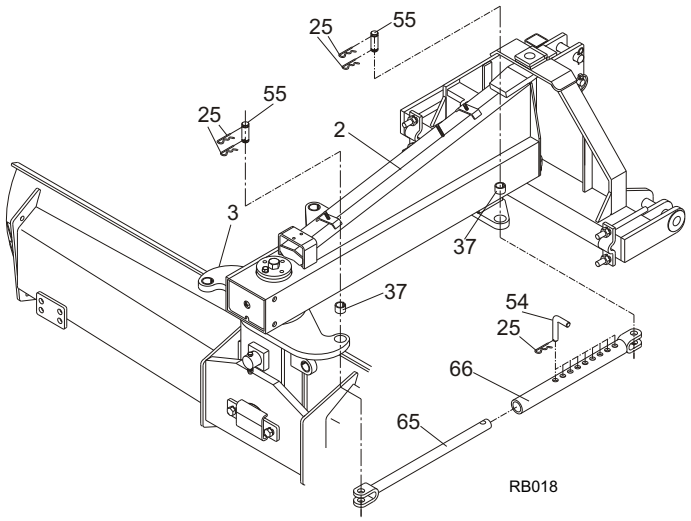



**Figure 18.** Angle Mechanical Linkage

## HYDRAULIC CONFIGURATION

### Attach Angle Cylinder Kit (*TAC6300053*) to Rear Blade Assembly

**K.** Assemble angle cylinder (41) to turn table (3) using cylinder end pin (42) and safety pin (25) making sure the bushing (37) is in place. Assemble the other cylinder end to the main frame (2) using cylinder end pin (42) and safety pin (25) making sure the bushing (37) is in place.

2. Main Frame
3. Turn Table
25. Safety Pin, 1/8
37. Bushing, 1 3/8 x 1 x 1
41. Angle Cylinder
42. Cylinder End Pin

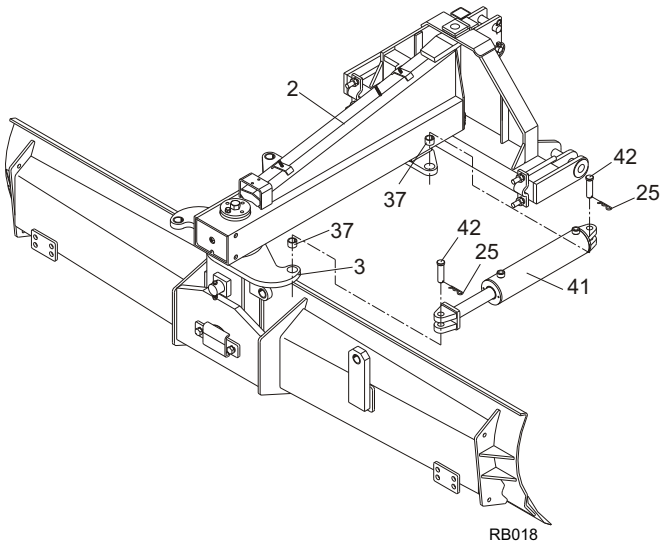



**Figure 19.** Angle Cylinder Installation

**NOTE:** TAC6300053 includes: hydraulic cylinder, hoses and fittings.

### Angle Cylinder Hose Assembly

**L.** Install the two hoses (46) into the angle cylinder (41).

**M.** Secure hoses (46) to the top of main frame (2) by using hose clamp (16) and hex nut (27).

**N.** Install the male quick couplers (47) into the other hose (46) ends.

2. Main Frame
16. Hose Clamp
27. Hex Nut, 3/8
41. Angle Cylinder
46. Hose, 8M3K-8NPTM-8NPTM-2.45
47. Male Quick Coupler

**NOTE:** All blade configurations include one angle hydraulic cylinder assembly.

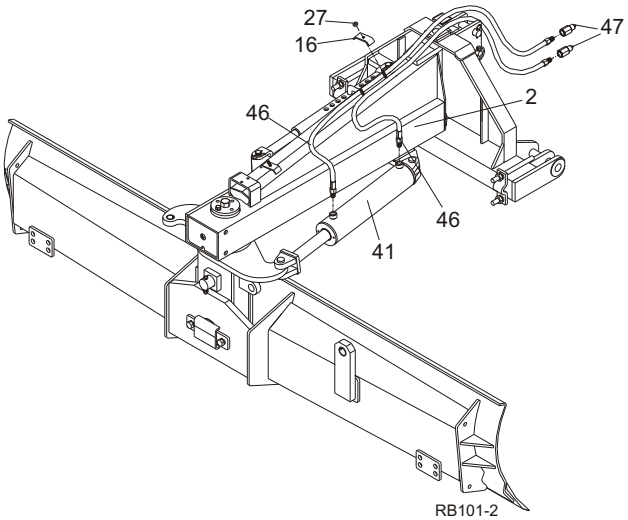



**Figure 20.** Hose Assembly for Angle Cylinder.

## Attach Offset Cylinder Kit (*TAC6300053*) to Rear Blade Assembly (Optional)

**O.** Attach offset cylinder (41) to main frame (2) offset cylinder lug and 3-point frame (1) offset cylinder lug. Secure with cylinder end pin (42) and safety pins (25) making sure the bushings (37) are in place.

1. 3-Point Frame
2. Main Frame
25. Safety Pin, 1/8
37. Bushing, 1 3/8 x 1 x 1
41. Offset Cylinder
42. Cylinder End Pin

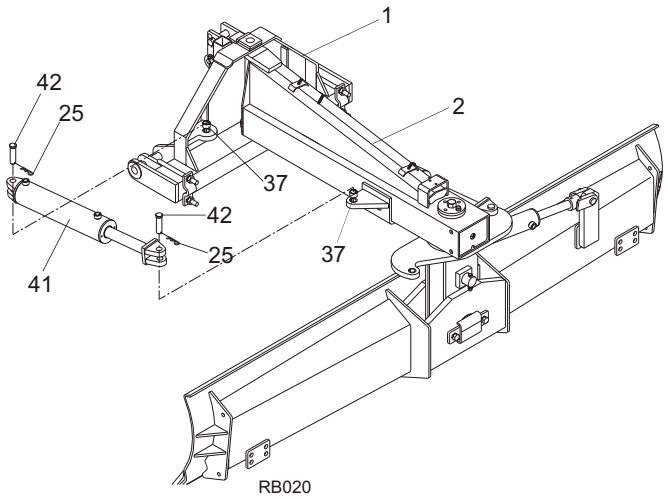



**Figure 21.** Offset Cylinder Installation

**NOTE:** TAC6300053 includes: hydraulic cylinder, hoses and fittings.

## Attach Tilt Cylinder Kit (*TAC6300063*) to Rear Blade Assembly (Optional)

**P.** Attach tilt cylinder (49) to moldboard (4) tilt cylinder lug and turn table (3) tilt cylinder lug. Secure with cylinder end pins (42) and safety pins (25) making sure the bushings (37) are in place.

3. Turn Table
4. Moldboard
25. Safety Pin, 1/8
37. Bushing, 1 3/8 x 1 x 1
49. Tilt Cylinder
42. Cylinder End Pin

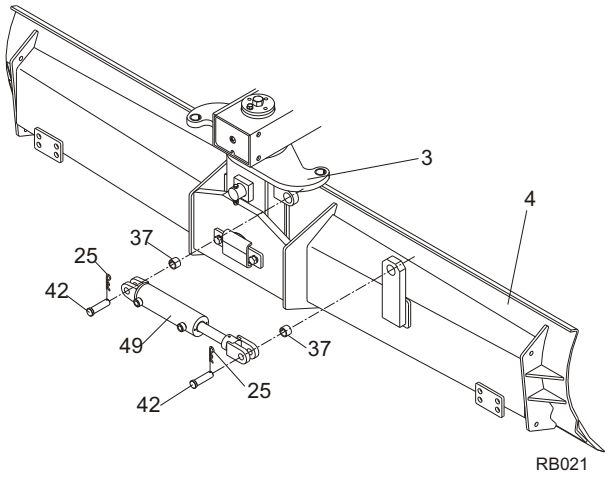



**Figure 22.** Tilt Cylinder Installation

**NOTE:** TAC6300063 includes: hydraulic cylinder, hoses and fittings.

## HOSE ASSEMBLY

### Hose Assembly

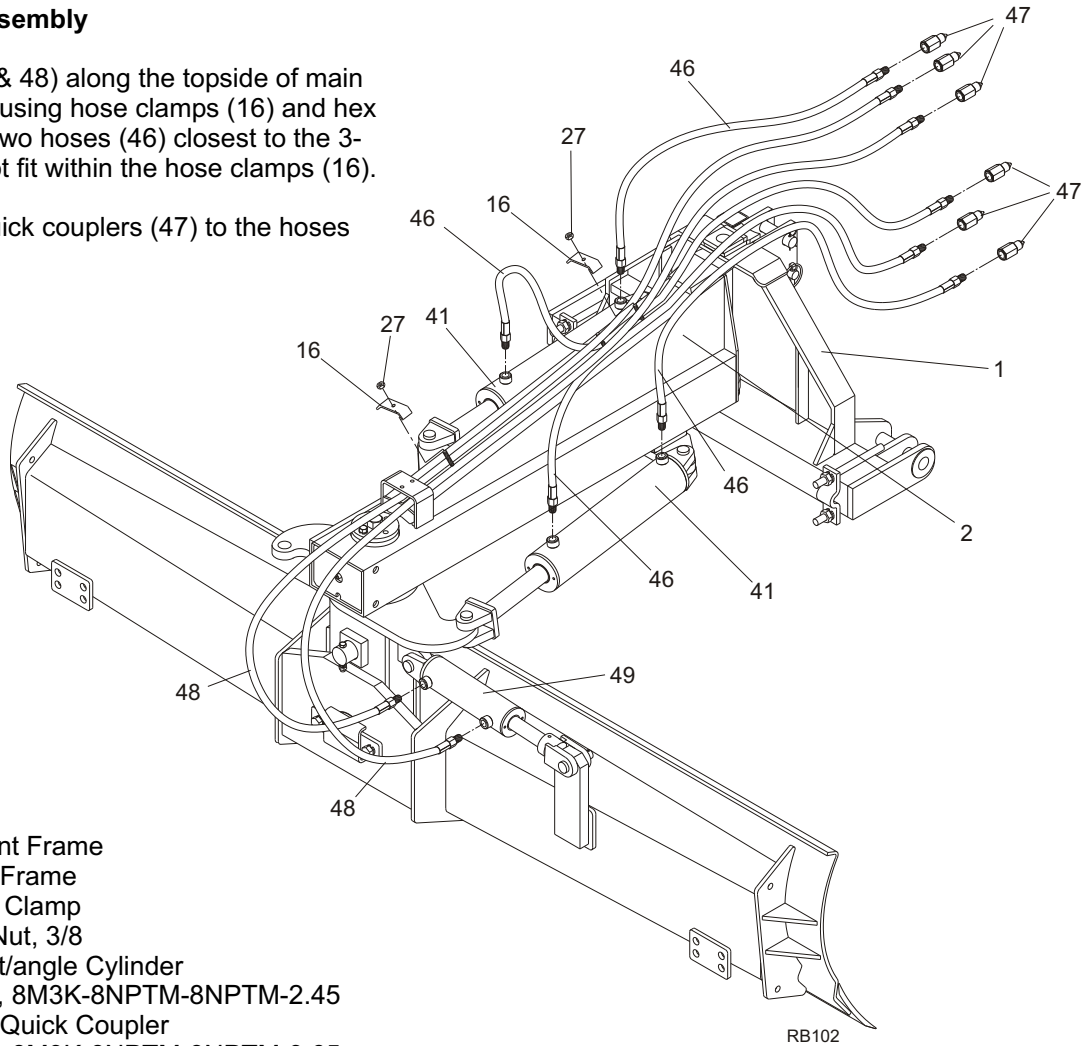
**Q. Offset/Angle Hose Assembly (2.45m hoses) (8-foot hoses)**
Direct hoses (46) as shown to the angle cylinder (41) and offset cylinder (41) connecting male ends to the cylinder ports.

**R. Tilt Hose Assembly (3.65m hoses) (12-foot hoses)**
Direct hoses (48) as shown to the tilt cylinder (49) connecting male ends to the cylinder ports.

**S. General Hose Assembly**

**1.** Gather hoses (46 & 48) along the topside of main frame (2) and secure using hose clamps (16) and hex nuts (27). Notice the two hoses (46) closest to the 3-Point frame (1) will not fit within the hose clamps (16).

**2.** Connect the six quick couplers (47) to the hoses (46,48).




1. 3-Point Frame
2. Main Frame
16. Hose Clamp
27. Hex Nut, 3/8
41. Offset/angle Cylinder
46. Hose, 8M3K-8NPTM-8NPTM-2.45
47. Male Quick Coupler
48. Hose, 8M3K-8NPTM-8NPTM-3.65
49. Tilt Cylinder

## END PLATES *C6200004* ASSEMBLY (OPTIONAL)

**A.** Attach rear blade to tractor.

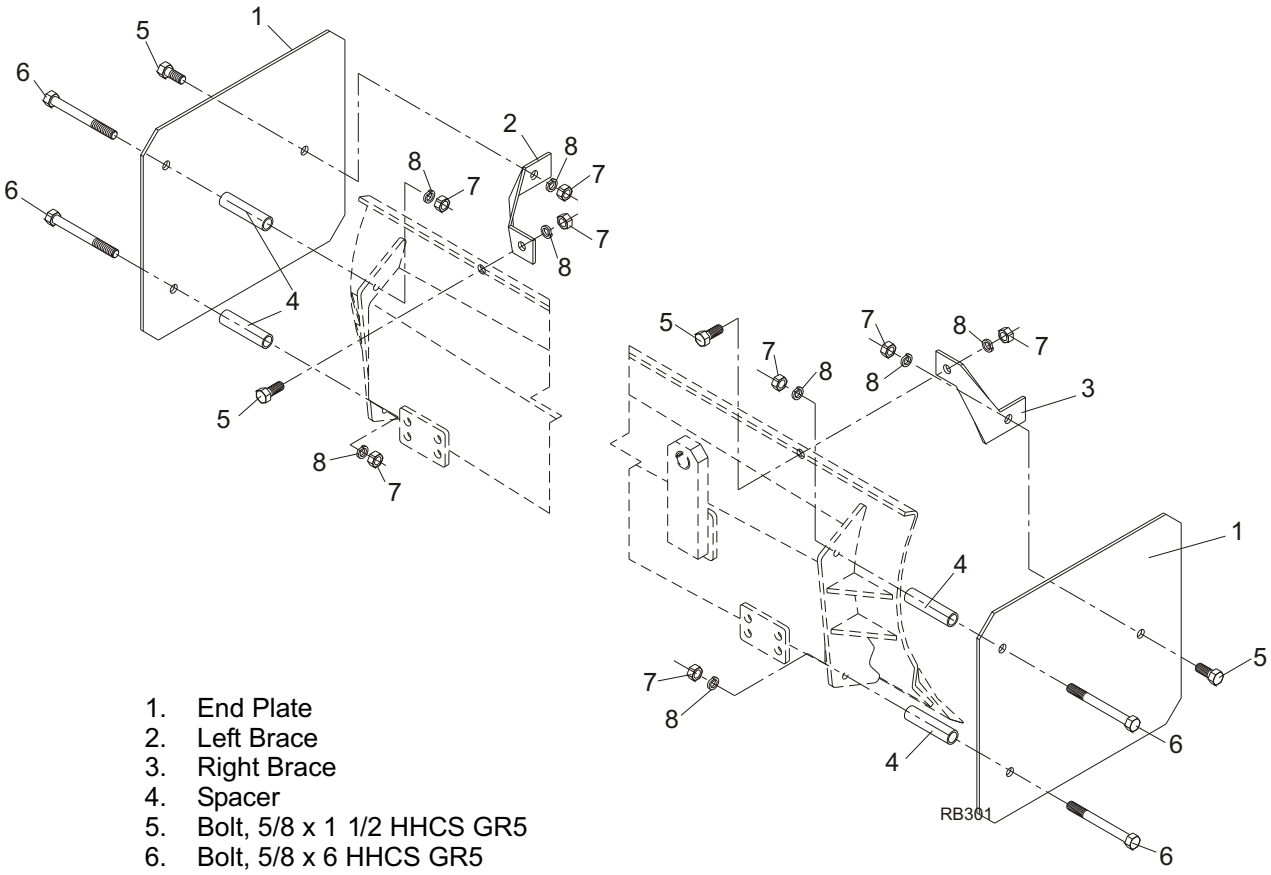
**B.** Raise the blade a few inches off the ground by operating the lift control lever of the tractor.

**C.** Properly support blade on blocking while installing end plates to prevent possible safety situation if rear blade were to fall due to lost hydraulic pressure.

**D.** Assemble the end plates (1) to the moldboard using bolts (6), spacers (4), hex nuts (7), and lock washers (8) making sure the holes of the end plate line up with the holes at the edge of the moldboard while the top and bottom edge of the end plates (1) are flush to the top and bottom of the moldboard.

**E.** Place the left and right braces (2 & 3) and secure to the moldboard and end plates (1) using four bolts (5), lock washers (8), and hex nuts (7).

**F.** Lower the blade to the ground.




1. End Plate
2. Left Brace
3. Right Brace
4. Spacer
5. Bolt, 5/8 x 1 1/2 HHCS GR5
6. Bolt, 5/8 x 6 HHCS GR5
7. Hex Nut, 5/8
8. Lock Washer, 5/8

## SKID SHOES *C6100003* ASSEMBLY (OPTIONAL)

**A.** Attach rear blade to tractor and level the main frame.

**B.** Secure one of the skid shoes (1) into the moldboard skid shoe lug by using bolts (2), lock washers (3), and hex nuts (4) without fully tightening. Let the skid shoe bottom drop to the floor.

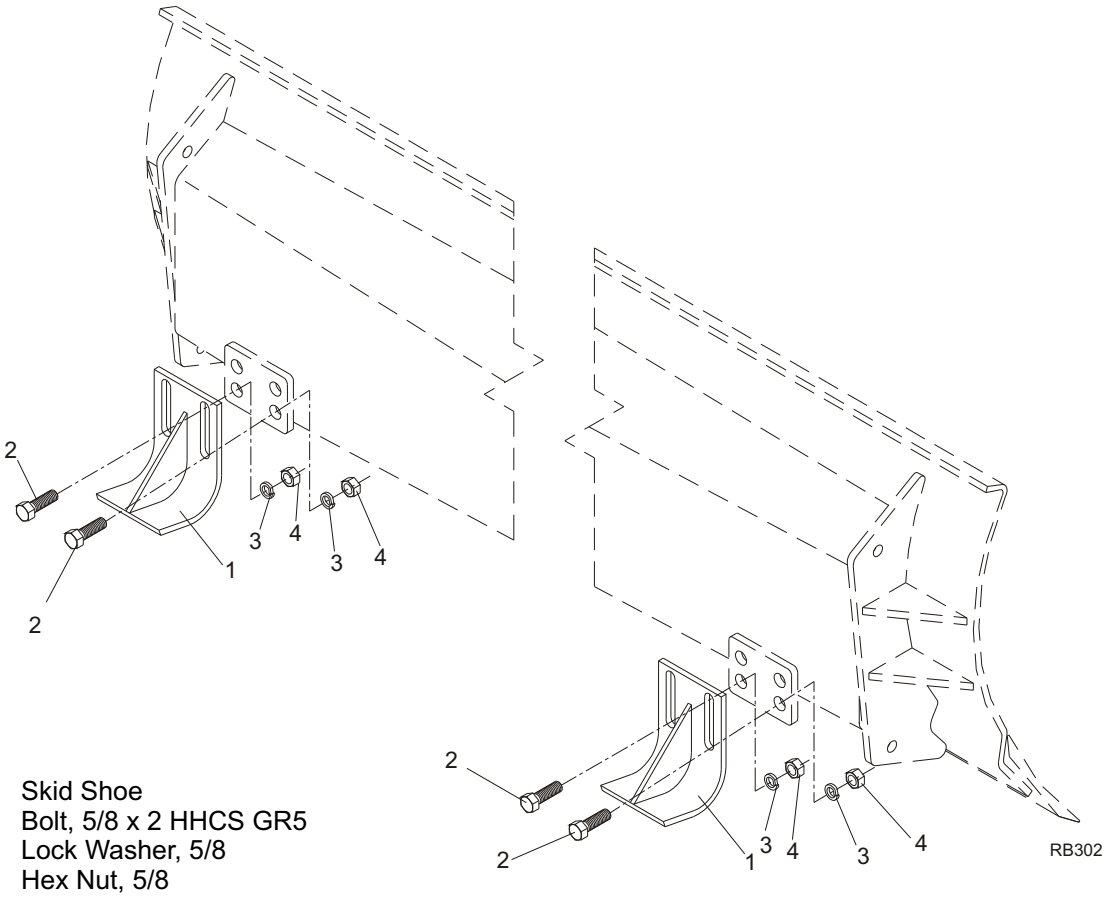
**C.** Raise the blade a few inches off the ground by operating the lift control lever of the tractor.

**D.** Properly support blade on blocking while installing skid shoes to prevent possible safety situation if rear blade were to fall due to lost hydraulic pressure.

**E.** Move the skid shoe approximately 1/8” down (or the desired clearance) and then fully tight the bolts.

**F.** Measure from the bottom of the moldboard skid shoe lug to the bottom of the skid shoe and use this as a reference to position the other skid shoe.

**G.** Lower the blade to the ground.




1. Skid Shoe
2. Bolt, 5/8 x 2 HHCS GR5
3. Lock Washer, 5/8
4. Hex Nut, 5/8

## SINGLE *C6600001* AND DUAL *C6600002* HYDRAULIC TAIL WHEEL ASSEMBLY (OPTIONAL)

**A.** Assemble the wheel (9) to the single wheel clevis (3) or dual wheel clevis (3) using hub nuts (10). Attach the clevis to the boom (2) placing the lower washer (5) in between. Secure with the castle nut (17), upper washer (6), and cotter pin (18).

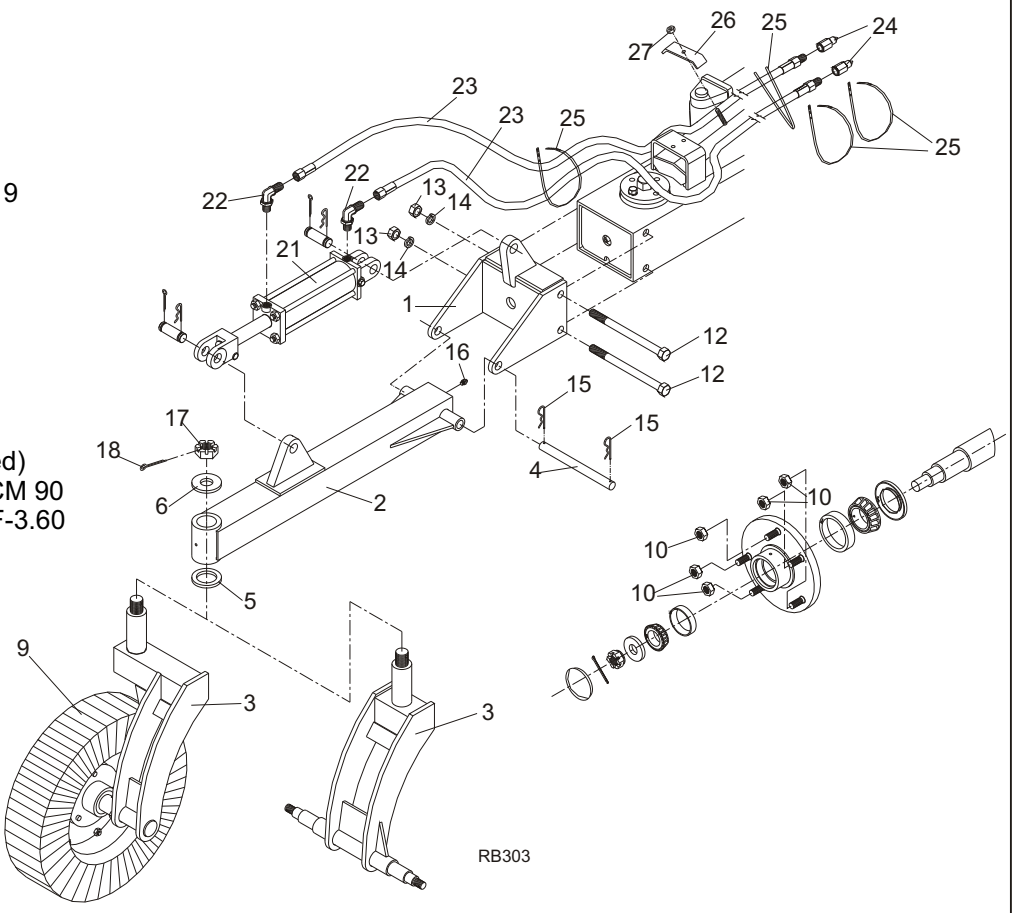
**B.** Install the union bracket (1) to the main frame of the rear blade and secure with two bolts (12), hex nuts (13), and lock washers (14). Assemble the boom assembly with the union bracket (1) and secure with pivot pin (4) and safety pins (15).

**C.** Attach the 3 x 8 cylinder (21) in the upper hole of the boom (2) and the union bracket (1). Secure with pins and safety pins. Screw the elbow connectors (22) to the cylinder (21) and tight them.

**D.** Assemble the hoses (23) to the elbow fittings (22). Fasten the hoses to get tight with plastic straps (25).

**E.** Install the male quick couplers (24) to the hoses (23) and connect them to tractor. Secure the hoses on the rear blade main frame using the hose clamp (26) and hex nut (27).

1. Union Bracket
2. Boom
3. Single Wheel Clevis
3. Dual Wheel Clevis
4. Pivot Pin
5. Lower Washer
6. Upper Washer
9. Laminated Solid Wheel 6 x 9 (Hub Not Included)
10. Hub Nut, 1/2
12. Bolt, 3/4 x 10 HHCS GR5
13. Hex Nut, 3/4
14. Lock Washer, 3/4
15. Safety Pin, 1/8
17. Castle Nut, 1 1/4
18. Cotter Pin, 3/16 x 2 1/2
21. Cylinder 3 x 8 (Pins included)
22. Elbow Fitting, 8ORBM-8JICM 90
23. Hose, 8M3K-8NPTM-8JICF-3.60
24. Male Quick Coupler
25. Plastic Strap
26. Hose Clamp, Large
27. Hex Nut, 3/8



## PRESSURE RELIEF *C6600061* AND DIVERTER VALVE *C6600051* ASSEMBLY (OPTIONAL)

### Relief Valve Assembly (*C6600061*)

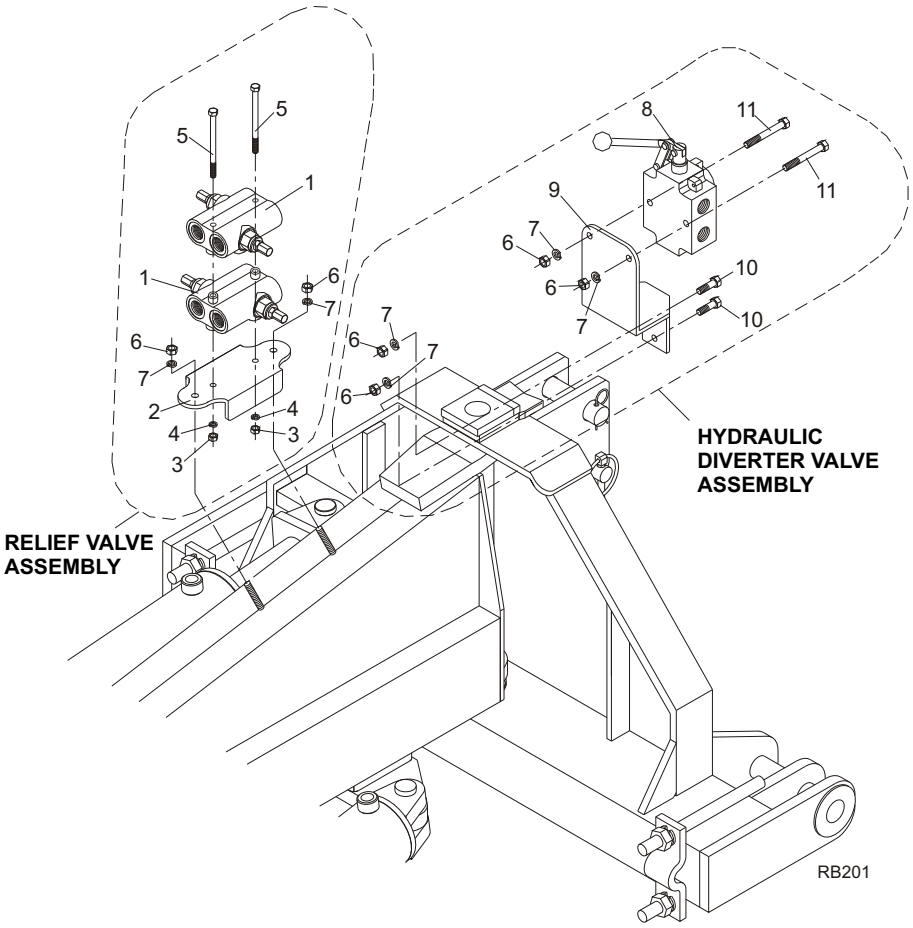
**A.** Position the two bolts (5) upwards and insert both relief valves (1) and relief valve stand (2). Insert the lock washers (4) and hex nuts (3) and tighten securely.

**B.** Place the relief valve assembly through the mounting bolts located on the topside of the main frame and secure tightly using the lock washers (7) and hex nuts (6).

### Diverter Valve Assembly (*C6600051*)

**A.** Insert the bolts (11) through the diverter valve (8) and diverter valve stand (9) as shown in the drawing and secure tightly using the hex nuts (6) and lock washers (7).

**B.** Mount the assembly to the 3-point frame as shown using the two bolts (10), hex nuts (6), and lock washers (7).




**RELIEF VALVE**

1. Hydraulic Double Relief Valve 1600 PSI
2. Relief Valve Stand
3. Hex Nut, 5/16
4. Lock Washer, 5/16
5. Bolt, 5/16 x 4 1/2 HHCS
6. Hex Nut, 3/8
7. Lock Washer, 3/8

**HYDRAULIC DIVERTER VALVE**

6. Hex Nut, 3/8
7. Lock Washer, 3/8
8. Hydraulic Diverter Valve
9. Diverter Valve Stand
10. Bolt, 3/8 x 1 1/4 HHCS GR5
11. Bolt, 3/8 x 3 HHCS GR5

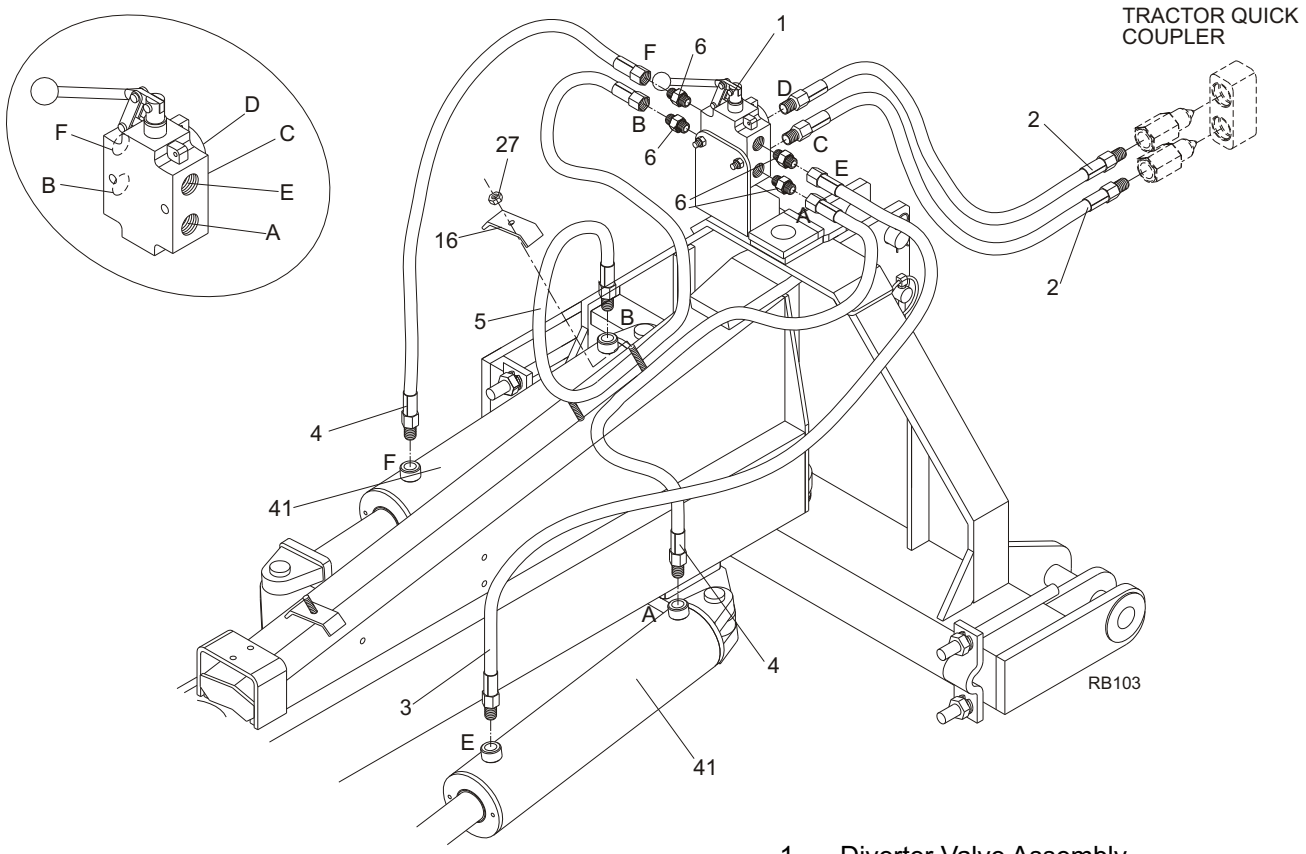
## HOSE ASSEMBLY WITH DIVERTER VALVE ONLY (OPTIONAL)

**C.** Connect hose (4) to the angle cylinder (41) port (A) and to the diverter valve (1) port (A) using a fitting (6). Connect hose (3) to the angle cylinder (41) port (E) and to the diverter valve (1) port (E) using a fitting (6).

**D.** Connect hose (5) to the offset cylinder (41) port (B) and to the diverter valve (1) port (B) using a fitting (6). Connect hose (4) to the offset cylinder port (F) and to the diverter valve (1) port (F) using a fitting (6).

**E.** Connect hose (2) to the diverter valve (1) port (D) and to the tractor quick coupler. Connect the other hose (2) to the diverter valve (1) port (C) and to the tractor quick coupler.

**F.** Gather hoses coming from cylinder ports A and B (4, 5) and secure with hose clamp (16) using hex nut (27) on topside of main frame.




1. Diverter Valve Assembly
2. Hose, 8M3K-8NPTM-8NPTM-1.50
3. Hose, 8M3K-8NPTM-8JICF-1.40
4. Hose, 8M3K-8NPTM-8JICF-1.20
5. Hose, 8M3K-8NPTM-8JICF-.90
6. Fitting, 8NPTM-8JICM
16. Hose Clamp
27. Hex Nut, 3/8
41. Offset/angle Cylinder

## HOSE ASSEMBLY WITH PRESSURE RELIEF VALVE ONLY (OPTIONAL)

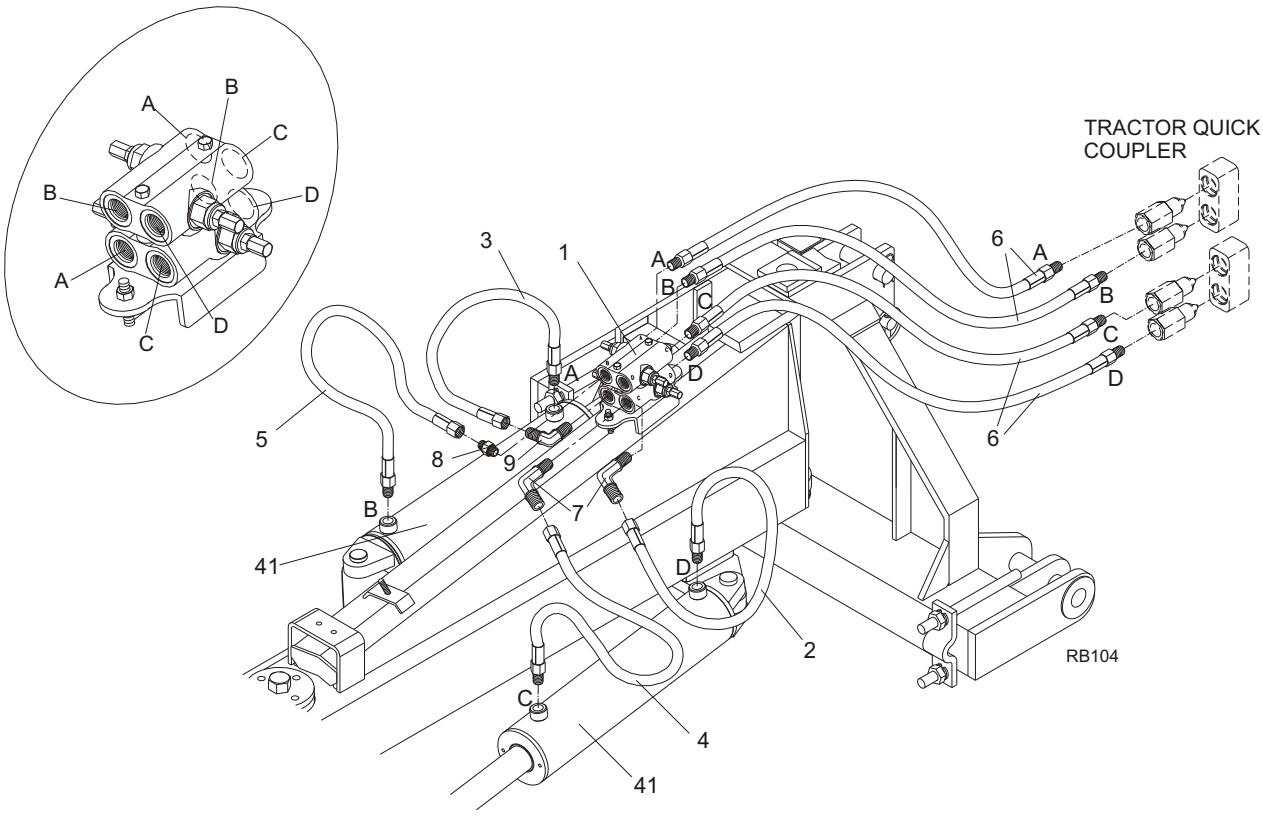
**C.** Connect hose (2) to the angle cylinder (41) port (D) and to the elbow fitting (7) that connects to the relief valve (1) port (D). Connect hose (4) to the angle cylinder (41) port (C) and to the elbow fitting (7) that connects to the relief valve (1) port (C).

**D.** Connect hose (3) to the offset cylinder port (A) and to the elbow fitting (9) that connects to the relief valve port (A). Connect hose (5) to the offset cylinder port (B) and to the fitting (8) that connects to the relief valve port (B).

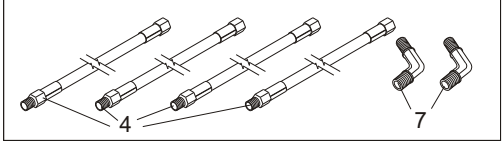
**E.** Connect hoses (6) to the relief valve (1) ports (A, B, C, & D) and to the tractor quick coupler.

**NOTE:** Make sure hoses A & B are connected to one valve and hoses C & D are connected to the other valve of the tractor. Switching valves between these two sets of hoses could damage the relief valve.

**NOTE:** The four hoses (4) and two elbows (7) shown here are required when installing both the relief and diverter valves together.




NOTE: EXTRA HOSES AND FITTINGS SUPPLIED TO INSTALL DIVERTER VALVE KIT (OPTIONAL)




1. Relief Valve Assembly
2. Hose, 8M3K-8NPTM-8JICF-.65
3. Hose, 8M3K-8NPTM-8JICF-.50
4. Hose, 8M3K-8NPTM-8JICF-.80
5. Hose, 8M3K-8NPTM-8JICF-.70
6. Hose, 8M3K-8NPTM-8NPTM-2.00
7. Elbow Fitting, 8NPTM-8JICM 45
8. Fitting, 8NPTM-8JICM
9. Elbow Fitting, 8JICM-8NPTM 90
41. Offset/angle Cylinder

## HOSE ASSEMBLY WITH DIVERTER & PRESSURE RELIEF VALVE (OPTIONAL)

### Connecting cylinders to relief valve

**C.** Connect hose (5) to the angle cylinder (41) port (D) and to the elbow fitting (3) that connects to the relief valve (1) port (D). Connect hose (9) to the angle cylinder (41) port (C) and to the elbow fitting (3) that connects to the relief valve (1) port (C).

**D.** Connect hose (6) to the offset cylinder (41) port (A) and to the fitting (10) that connects to the relief valve (1) port (A). Connect hose (7) to the offset cylinder (41) port (B) and to the elbow fitting (4) that connects to the relief valve (1) port (B).

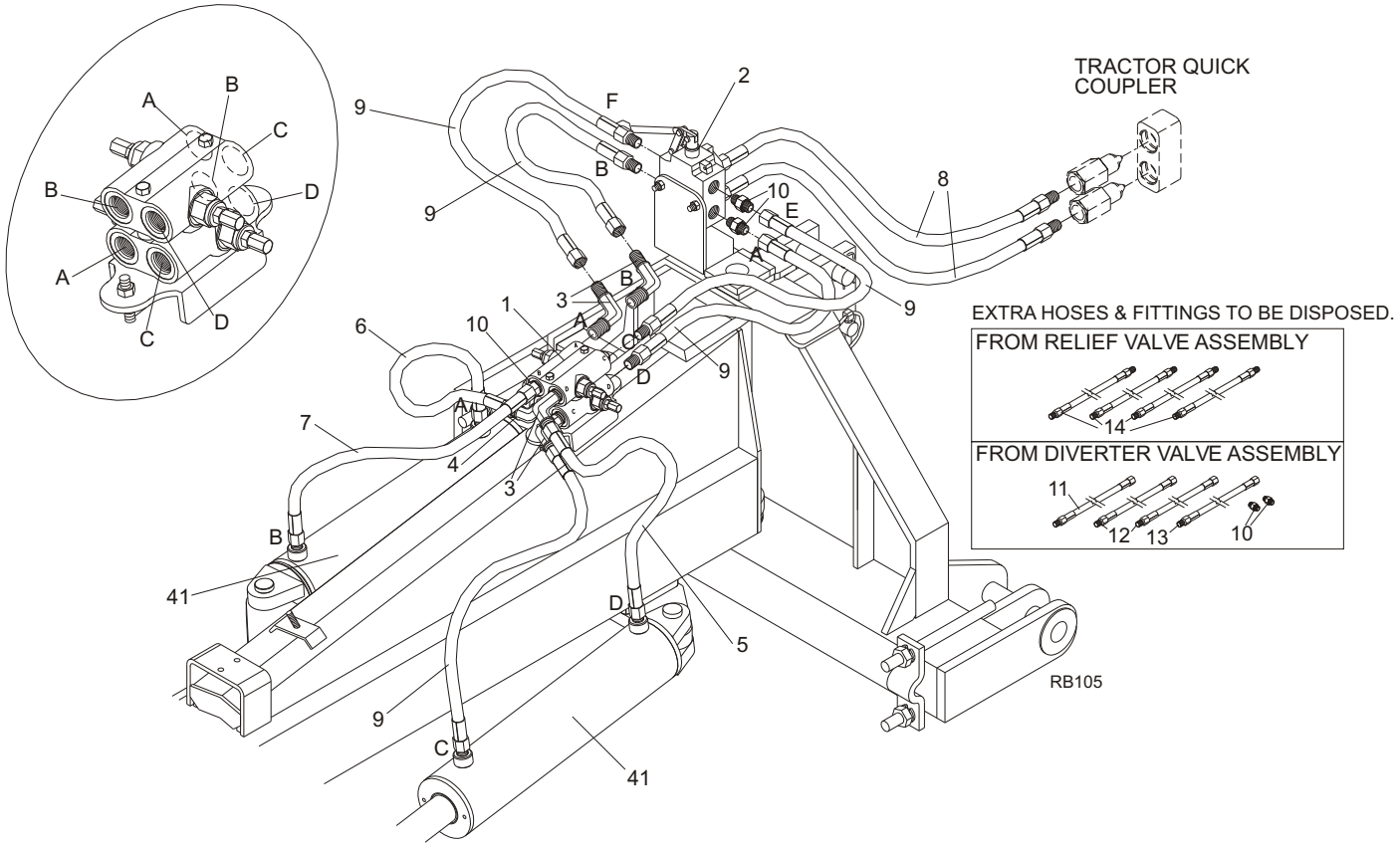
### Connecting relief valve to the diverter valve

**E.** Connect hoses (9) from the diverter valve (2) ports (E & A), using fittings (10), directly to the relief valve (1) ports (C & D).

**F.** Connect hoses (9) from the diverter valve (2) ports (F & B) to the relief valve (1) ports (A & B) using elbow fittings (3).

### Connecting diverter valve to the tractor

**G.** Connect hoses (8) from the diverter valve (2) ports (C & D) to the tractor hydraulics using quick couplers.




1. Relief Valve Assembly
2. Diverter Valve Assembly
3. Elbow Fitting, 8NPTM-8JICM 45
4. Elbow Fitting, 8JICM-8NPTM 90
5. Hose, 8M3K-8NPTM-8JICF-.65
6. Hose, 8M3K-8NPTM-8JICF-.50
7. Hose, 8M3K-8NPTM-8JICF-.70
8. Hose, 8M3K-8NPTM-8NPTM-1.50
9. Hose, 8M3K-8NPTM-8JICF-.80
10. Fitting, 8NPTM-8JICM
11. Hose, 8M3K-8NPTM-8JICF-1.40
12. Hose, 8M3K-8NPTM-8JICF-1.20
13. Hose, 8M3K-8NPTM-8JICF-.90
14. Hose, 8M3K-8NPTM-8NPTM-2.00
41. Offset/angle Cylinder

**PRE-DELIVERY CHECK LIST**
(DEALER'S RESPONSIBILITY)

Inspect the equipment thoroughly after assembly to ensure it is set up properly before delivering it to the customer.

The following check lists are a reminder of points to inspect. Check off each item as 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 properly torqued.

___ Check that all cotter pins and safety pins are properly installed. Replace if damaged.

___ Check and grease all lubrication points.

**DELIVERY CHECK LIST**
(DEALER'S RESPONSIBILITY)

___ Show customer how to make adjustments.

___ 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.

___ Instruct customer how to lubricate and explain importance of lubrication.

___ Present 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.

___ Explain to customer that when equipment is transported on a road or highway, a Slow Moving Vehicle (SMV) sign should be used to provide adequate warning to operators of other vehicles.

# NOTES

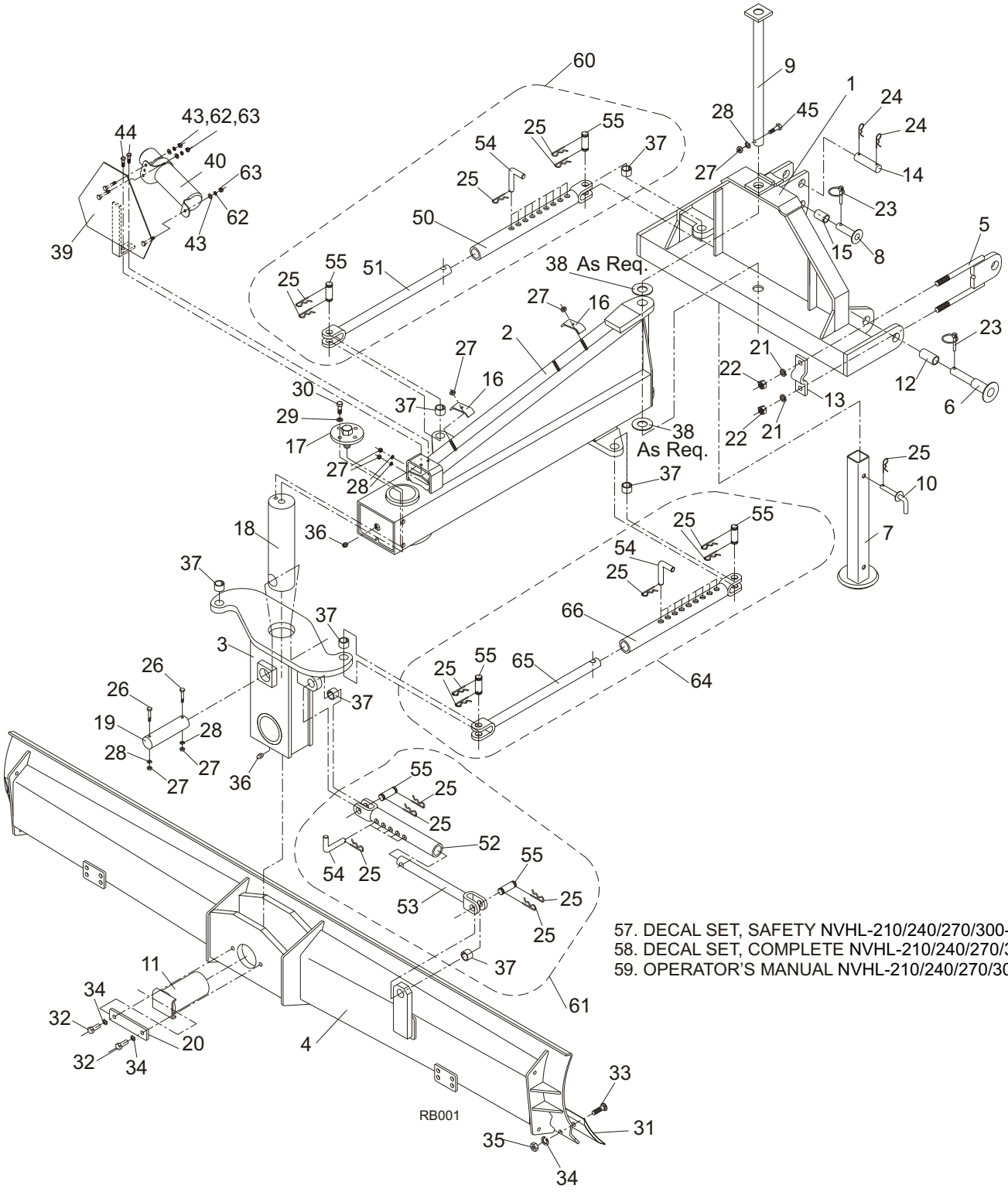
# NOTES

...harvesting better implements!

# PARTS INDEX

## REAR BLADES
## NVHL-210-XHD NVHL-270-XHD
## NVHL-240-XHD NVHL-300-XHD

# NVHL-210/240/270/300-XHD MAIN ASSEMBLY (MANUAL)




57. DECAL SET, SAFETY NVHL-210/240/270/300-XHD
58. DECAL SET, COMPLETE NVHL-210/240/270/300-XHD
59. OPERATOR'S MANUAL NVHL-210/240/270/300-XHD

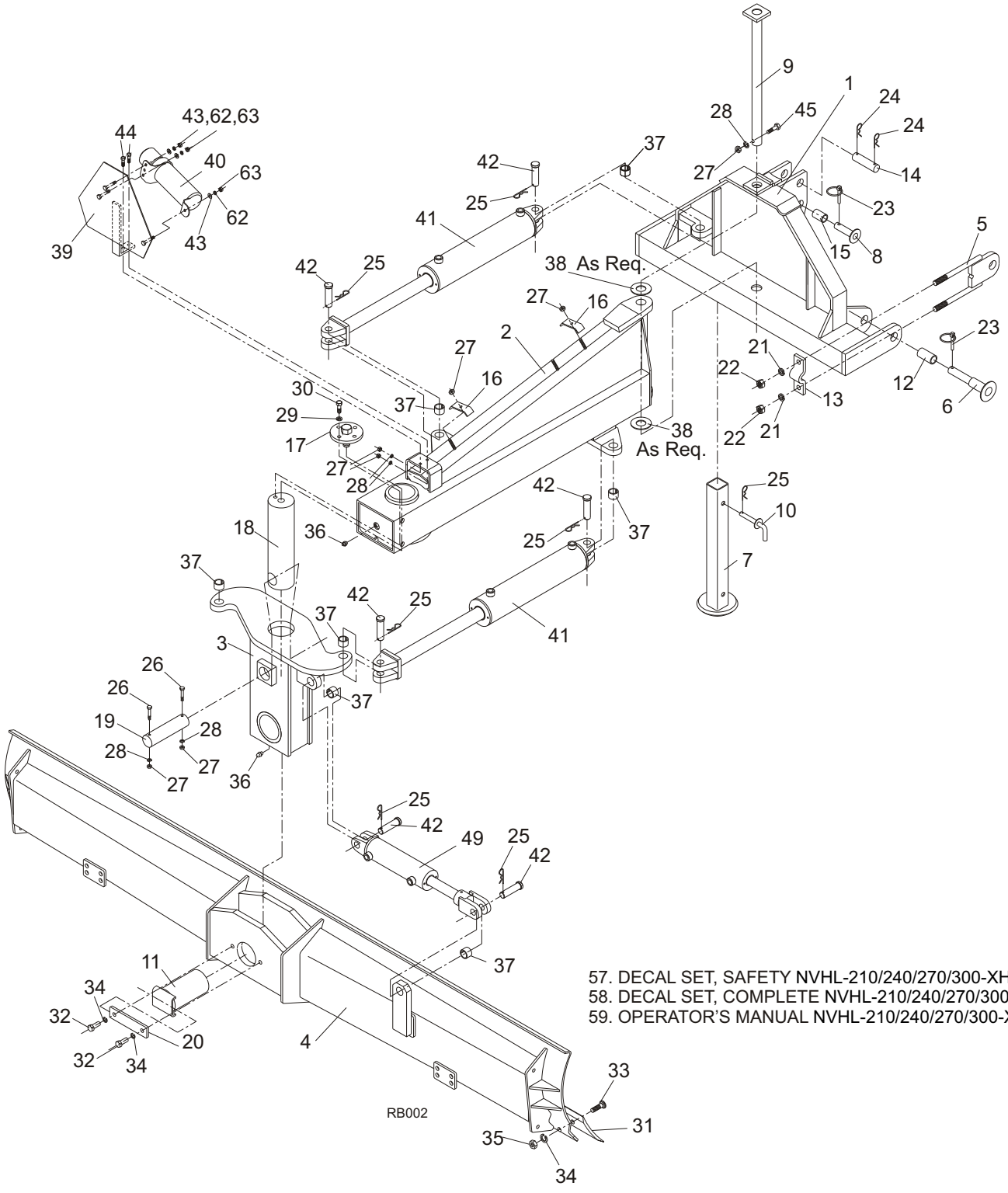
# MAIN ASSEMBLY PARTS LIST

| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | TACN10040100W | 1 | 3-POINT FRAME |
| 2 | TACN10040200W | 1 | MAIN FRAME |
| 3 | TACN10041200W | 1 | TURN TABLE |
| 4 | TACN07070100W | 1 | NVHL-210-XHD MOLDBOARD ASSEMBLY (7 FT.) |
| | **or** | | |
| 4 | TACN08040400W | 1 | NVHL-240-XHD MOLDBOARD ASSEMBLY (8 FT.) |
| | **or** | | |
| 4 | TACN09040400W | 1 | NVHL-270-XHD MOLDBOARD ASSEMBLY (9 FT.) |
| | **or** | | |
| 4 | TACN10040400W | 1 | NVHL-300-XHD MOLDBOARD ASSEMBLY (10 FT.) |
| 5 | TACN10040500W | 2 | ADJUSTABLE LUG |
| 6 | TACN10040700W | 2 | LOWER HITCH PIN |
| 7 | TACN10040600W | 1 | PARKING STAND |
| 8 | TACN10040800W | 1 | UPPER HITCH PIN CATEGORY 2 |
| 9 | TACN10041000W | 1 | 3-POINT PIVOT PIN |
| 10 | TACN10040900W | 1 | PARKING STAND PIN |
| 11 | TACN10041100W | 1 | MOLDBOARD PIVOT PIN |
| 12 | TACN10040001C | 2 | LOWER HITCH PIN BUSHING |
| 13 | TACN10040002C | 2 | ADJUSTABLE SUPPORT PLATE |
| 14 | TACN10040003C | 1 | UPPER HITCH PIN CATEGORY 3 |
| 15 | TACN10040004C | 1 | UPPER HITCH PIN BUSHING CATEGORY 2 |
| 16 | TACN10040005C | 2 | HOSE CLAMP |
| 17 | TACN10041300W | 1 | KING PIN CAP |
| 18 | TACN10040010C | 1 | KING PIN |
| 19 | TACN10040011C | 1 | KING PIN RETAINER |
| 20 | TACN10040009C | 1 | PIVOT PIN RETAINER |
| 21 | * | 4 | LOCK WASHER, 3/4 |
| 22 | * | 4 | HEX NUT, 3/4 - 10 |
| 23 | * | 3 | KLIK PIN, 3/8 |
| 24 | * | 2 | SAFETY PIN, 1/4 x 4 |
| 25 | * | 18 | SAFETY PIN, 1/8 |
| 26 | * | 2 | BOLT, 3/8 x 2 1/2 HHCS |
| 27 | * | 7 | HEX NUT, 3/8 - 16 |
| 28 | * | 5 | LOCK WASHER, 3/8 |
| 29 | * | 1 | LOCK WASHER, 1/2 |
| 30 | * | 1 | BOLT, 1/2 x 1 1/2 HHCS GR5 |
| 31 | TA4370-1050-00 | 1 | 7 FT. CUTTING EDGE |
| | **or** | | |
| 31 | TA4370-1070-00 | 1 | 8 FT. CUTTING EDGE |
| | **or** | | |
| 31 | TA4370-1080-00 | 1 | 9 FT. CUTTING EDGE |
| | **or** | | |
| 31 | TA4370-1100-00 | 1 | 10 FT. CUTTING EDGE |
| 32 | * | 2 | BOLT, 5/8 x 1 1/2 HHCS GR5 |
| 33 | * | † | PLOW BOLT, 5/8 x 2 GR5 |
| 34 | * | †† | LOCK WASHER, 5/8 |
| 35 | * | † | HEX NUT, 5/8 - 11 |
| 36 | * | 2 | GREASE ZERK FITTING, 1/8 |
| 37 | TA4390-1062-00 | 7 | BUSHING, 1 3/8 x 1 x 1 |
| 38 | * | 2 | FLAT WASHER, 1 1/2 |
| 39 | TACN10041400W | 1 | SMV SIGN |
| 40 | TA4350-6001-02 | 1 | MANUAL HOLDER |
| 43 | * | 3 | FLAT WASHER, 5/16 |
| 44 | * | 2 | BOLT, 3/8 x 1 1/4 HHCS GR5 |
| 45 | * | 1 | BOLT, 3/8 x 2 HHCS |
| 50 | N/S | 1 | OUTER OFFSET LINK |
| 51 | N/S | 1 | INNER OFFSET LINK |
| 52 | N/S | 1 | OUTER TILT LINK |
| 53 | N/S | 1 | INNER TILT LINK |
| 54 | TACN99170001C | 3 | CENTER LINKAGE PIN |
| 55 | TACN99170002C | 6 | LINKAGE END PIN |
| 57 | TACN10040015K | | DECAL SET, SAFETY NVHL-210/240/270/300-XHD |
| 58 | TACN10040016K | | DECAL SET, COMPLETE NVHL-210/240/270/300-XHD |
| 59 | TACN10040017K | | OPERATOR'S MANUAL NVHL-210/240/270/300-XHD |
| 60 | TACN99150000A | | OFFSET MECHANICAL LINKAGE KIT |
| 61 | TACN99170000A | | TILT MECHANICAL LINKAGE KIT |
| 62 | * | 3 | LOCK WASHER, 5/16 |
| 63 | * | 3 | HEX NUT, 5/16 - 18 |
| 64 | TACN99160000A | | ANGLE MECHANICAL LINKAGE KIT |
| 65 | N/S | 1 | INNER ANGLE LINK |
| 66 | N/S | 1 | OUTER ANGLE LINK |

† 9 FOR NVHL-210-XHD, 10 FOR NVHL-240-XHD, 11 FOR NVHL-270-XHD, 12 FOR NVHL-300-XHD
†† 11 FOR NVHL-210-XHD, 12 FOR NVHL-240-XHD, 13 FOR NVHL-270-XHD, 14 FOR NVHL-300-XHD

* Standard Hardware; Obtain Locally
N/S Not Serviced Separately

# NVHL-210/240/270/300-XHD MAIN ASSEMBLY (HYDRAULIC)




57. DECAL SET, SAFETY NVHL-210/240/270/300-XHD
58. DECAL SET, COMPLETE NVHL-210/240/270/300-XHD
59. OPERATOR'S MANUAL NVHL-210/240/270/300-XHD

# MAIN ASSEMBLY PARTS LIST

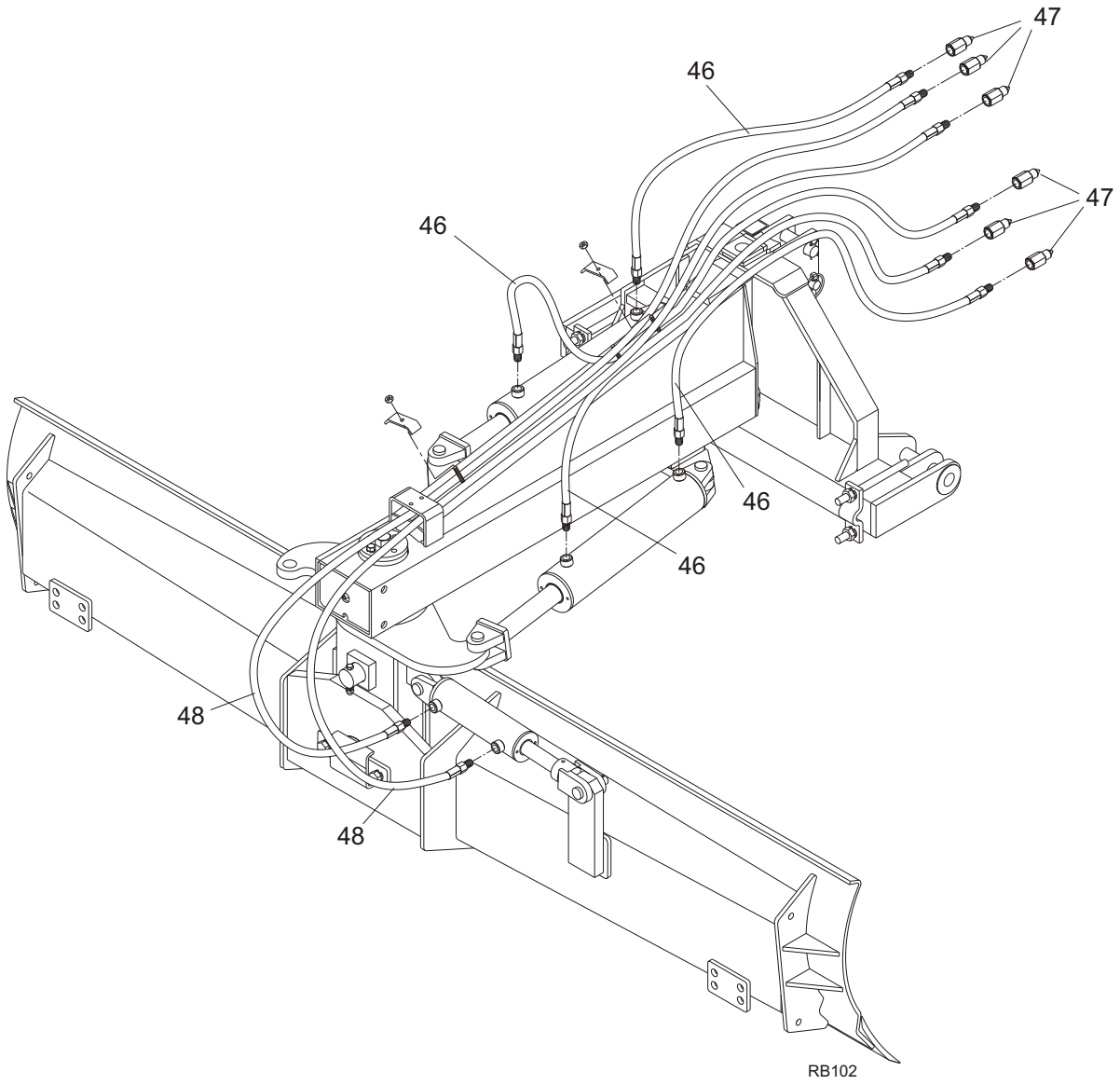
| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | TACN10040100W | 1 | 3-POINT FRAME |
| 2 | TACN10040200W | 1 | MAIN FRAME |
| 3 | TACN10041200W | 1 | TURN TABLE |
| 4 | TACN07070100W | | NVHL-210-XHD MOLDBOARD ASSEMBLY (7 FT.) |
| | **or** | | |
| 4 | TACN08040400W | 1 | NVHL-240-XHD MOLDBOARD ASSEMBLY (8 FT.) |
| | **or** | | |
| 4 | TACN09040400W | 1 | NVHL-270-XHD MOLDBOARD ASSEMBLY (9 FT.) |
| | **or** | | |
| 4 | TACN10040400W | 1 | NVHL-300-XHD MOLDBOARD ASSEMBLY (10 FT.) |
| 5 | TACN10040500W | 2 | ADJUSTABLE LUG |
| 6 | TACN10040700W | 2 | LOWER HITCH PIN |
| 7 | TACN10040600W | 1 | PARKING STAND |
| 8 | TACN10040800W | 1 | UPPER HITCH PIN CATEGORY 2 |
| 9 | TACN10041000W | 1 | 3-POINT PIVOT PIN |
| 10 | TACN10040900W | 1 | PARKING STAND PIN |
| 11 | TACN10041100W | 1 | MOLDBOARD PIVOT PIN |
| 12 | TACN10040001C | 2 | LOWER HITCH PIN BUSHING |
| 13 | TACN10040002C | 2 | ADJUSTABLE SUPPORT PLATE |
| 14 | TACN10040003C | 1 | UPPER HITCH PIN CATEGORY 3 |
| 15 | TACN10040004C | 1 | UPPER HITCH PIN BUSHING CATEGORY 2 |
| 16 | TACN10040005C | 2 | HOSE CLAMP |
| 17 | TACN10041300W | 1 | KING PIN CAP |
| 18 | TACN10040010C | 1 | KING PIN |
| 19 | TACN10040011C | 1 | KING PIN RETAINER |
| 20 | TACN10040009C | 1 | PIVOT PIN RETAINER |
| 21 | * | 4 | LOCK WASHER, 3/4 |
| 22 | * | 4 | HEX NUT, 3/4 - 10 |
| 23 | * | 3 | KLIK PIN, 3/8 |
| 24 | * | 2 | SAFETY PIN, 1/4 x 4 |
| 25 | * | 7 | SAFETY PIN, 1/8 |
| 26 | * | 2 | BOLT, 3/8 x 2 1/2 HHCS |
| 27 | * | 7 | HEX NUT, 3/8 - 16 |
| 28 | * | 5 | LOCK WASHER, 3/8 |
| 29 | * | 1 | LOCK WASHER, 1/2 |
| 30 | * | 1 | BOLT, 1/2 x 1 1/2 HHCS GR5 |
| 31 | TA4370-1050-00 | 1 | 7 FT. CUTTING EDGE |
| | **or** | | |
| 31 | TA4370-1070-00 | 1 | 8 FT. CUTTING EDGE |
| | **or** | | |
| 31 | TA4370-1080-00 | 1 | 9 FT. CUTTING EDGE |
| | **or** | | |
| 31 | TA4370-1100-00 | 1 | 10 FT. CUTTING EDGE |
| 32 | * | 2 | BOLT, 5/8 x 1 1/2 HHCS GR5 |
| 33 | * | † | PLOW BOLT, 5/8 x 2 GR5 |
| 34 | * | †† | LOCK WASHER, 5/8 |
| 35 | * | † | HEX NUT, 5/8 - 11 |
| 36 | * | 2 | GREASE ZERK FITTING, 1/8 |
| 37 | TA4390-1062-00 | 7 | BUSHING, 1 3/8 x 1 x 1 |
| 38 | * | 2 | FLAT WASHER, 1 1/2 |
| 39 | TACN10041400W | 1 | SMV SIGN |
| 40 | TA4350-6001-02 | 1 | MANUAL HOLDER |
| 41 | TACN99230000A | 2 | OFFSET/ANGLE CYLINDER |
| 42 | TABB07010009C | 6 | CYLINDER END PIN |
| 43 | * | 3 | FLAT WASHER, 5/16 |
| 44 | * | 2 | BOLT, 3/8 x 1 1/4 HHCS GR5 |
| 45 | * | 1 | BOLT, 3/8 x 2 HHCS |
| 49 | TACN99240000A | 1 | TILT CYLINDER |
| 57 | TACN10040015K | | DECAL SET, SAFETY NVHL-210/240/270/300-XHD |
| 58 | TACN10040016K | | DECAL SET, COMPLETE NVHL-210/240/270/300-XHD |
| 59 | TACN10040017K | | OPERATOR'S MANUAL NVHL-210/240/270/300-XHD |
| 62 | * | 3 | LOCK WASHER, 5/16 |
| 63 | * | 3 | HEX NUT, 5/16 - 18 |

† 9 FOR NVHL-210-XHD, 10 FOR NVHL-240-XHD, 11 FOR NVHL-270-XHD, 12 FOR NVHL-300-XHD

†† 11 FOR NVHL-210-XHD, 12 FOR NVHL-240-XHD, 13 FOR NVHL-270-XHD, 14 FOR NVHL-300-XHD

* Standard Hardware; Obtain Locally

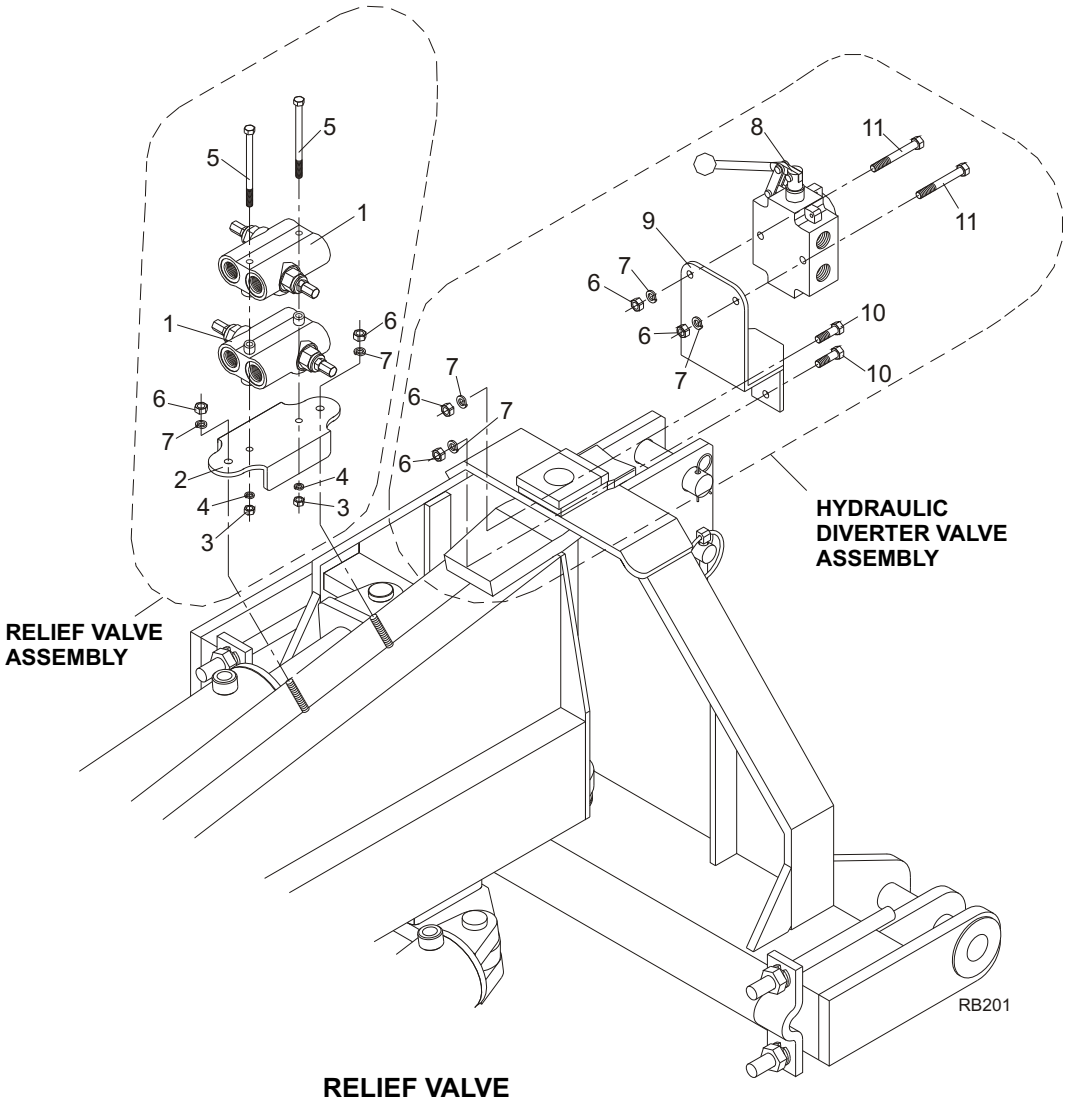
# HOSE ASSEMBLY




| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 46 | TA4430-0122-45 | 4 | HOSE, 8M3K-8NPTM-8NPTM-2.45 |
| 47 | * | 6 | MALE QUICK COUPLER |
| 48 | TA4430-0123-65 | 2 | HOSE, 8M3K-8NPTM-8NPTM-3.65 |

* Standard Hardware; Obtain Locally

## PRESSURE RELIEF *C6600061* AND DIVERTER VALVE *C6600051* ASSEMBLY (OPTIONAL)




### RELIEF VALVE

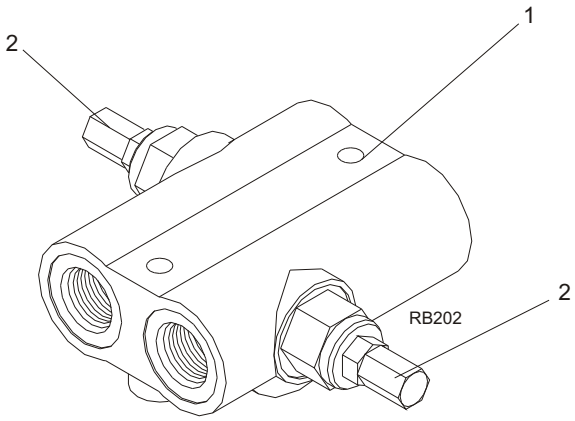
| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | TA4110-3030-00 | 2 | HYDRAULIC DOUBLE RELIEF VALVE 1600 PSI |
| 2 | TACN10040013C | 1 | RELIEF VALVE STAND |
| 3 | * | 2 | HEX NUT, 5/16 - 18 |
| 4 | * | 2 | LOCK WASHER, 5/16 |
| 5 | * | 2 | BOLT, 5/16 x 4 1/2 HHCS |
| 6 | * | 2 | HEX NUT, 3/8 - 16 |
| 7 | * | 2 | LOCK WASHER, 3/8 |

### HYDRAULIC DIVERTER VALVE

| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 6 | * | 4 | HEX NUT, 3/8 - 16 |
| 7 | * | 4 | LOCK WASHER, 3/8 |
| 8 | TA4110-2050-07 | 1 | HYDRAULIC DIVERTER VALVE |
| 9 | TACN10040014C | 1 | DIVERTER VALVE STAND |
| 10 | * | 2 | BOLT, 3/8 x 1 1/4 HHCS GR5 |
| 11 | * | 2 | BOLT, 3/8 x 3 HHCS GR5 |

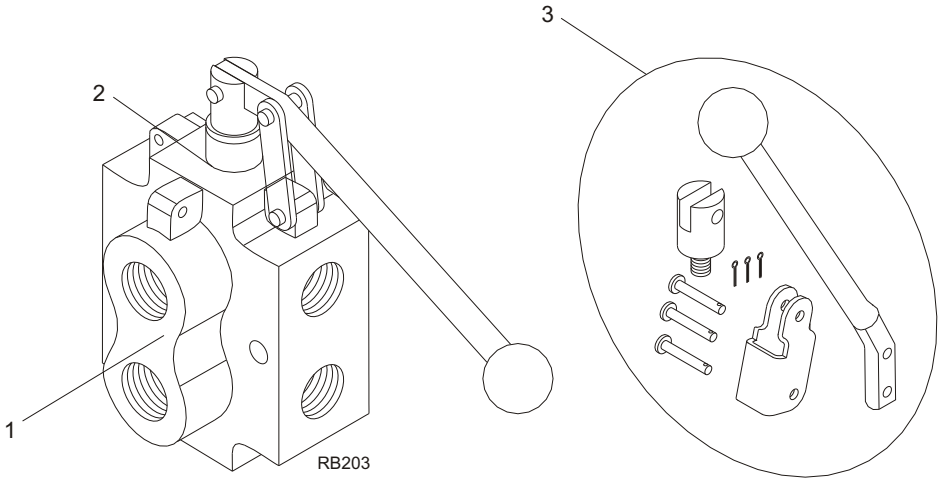
* Standard Hardware; Obtain Locally

# PRESSURE RELIEF *C6600061* AND DIVERTER VALVE *C6600051* (OPTIONAL)




**RELIEF VALVE**

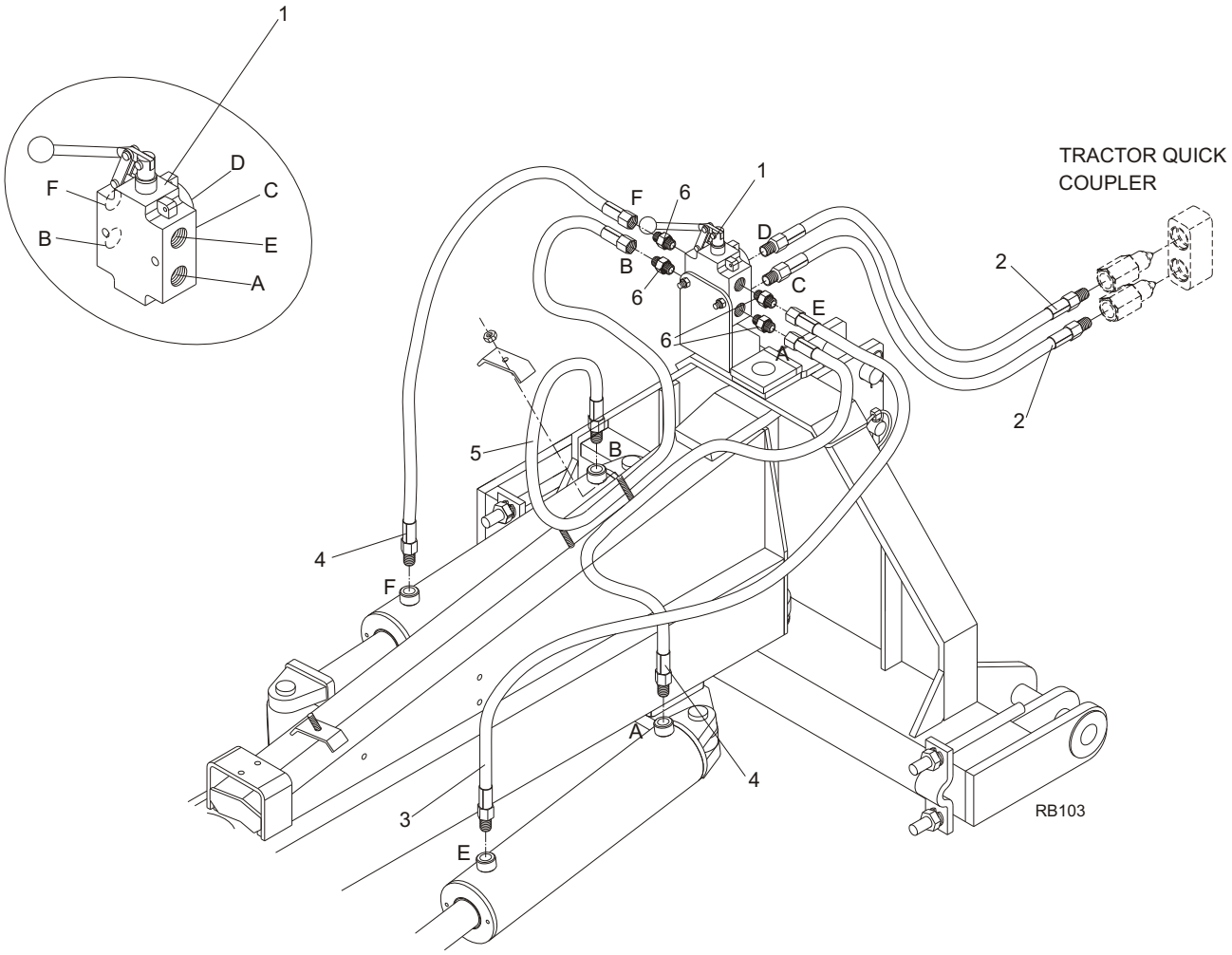
| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | TA4110-3030-00 | 1 | HYDRAULIC DOUBLE RELIEF VALVE 1600 PSI |
| 2 | TA4110-0010-51 | 2 | RELIEF VALVE CARTIDGE 1600 PSI |




**HYDRAULIC DIVERTER VALVE**

| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | TA4110-2050-07 | 1 | HYDRAULIC DIVERTER VALVE |
| 2 | TA4110-0010-50 | 1 | DIVERTER VALVE SEAL KIT |
| 3 | TA4110-0020-50 | 1 | DIVERTER VALVE HANDLE KIT |

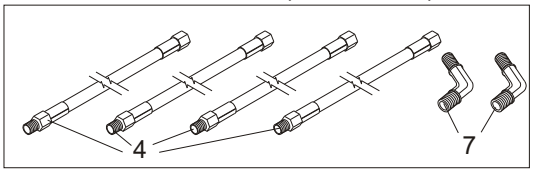
# DIVERTER VALVE HOSE ASSEMBLY (OPTIONAL)

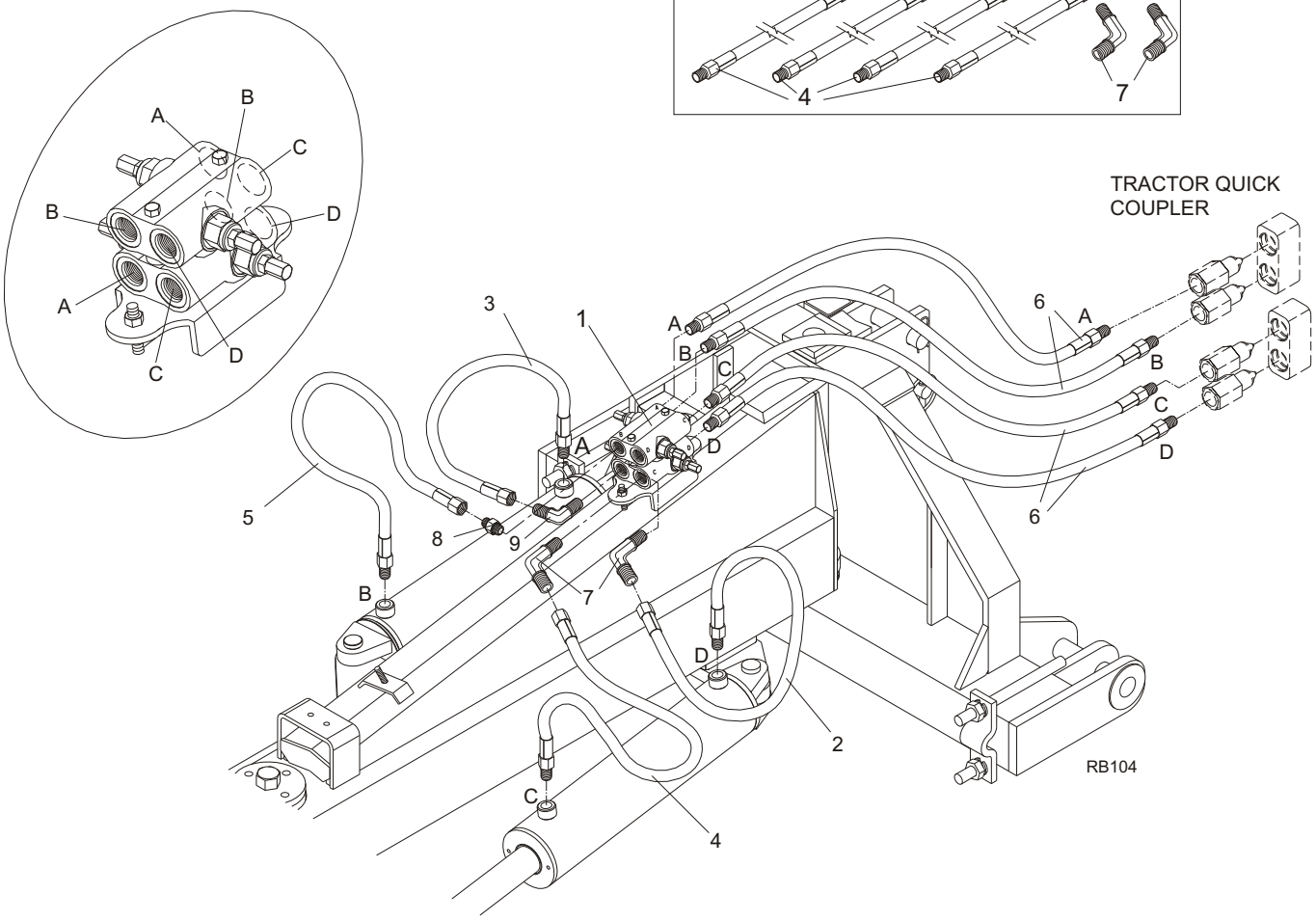



| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | | 1 | DIVERTER VALVE ASSEMBLY |
| 2 | TA4430-0121-50 | 2 | HOSE, 8M3K-8NPTM-8NPTM-1.50 |
| 3 | TA4430-1566-40 | 1 | HOSE, 8M3K-8NPTM-8JICF-1.40 |
| 4 | TA4430-1566-20 | 2 | HOSE, 8M3K-8NPTM-8JICF-1.20 |
| 5 | TA4430-1565-90 | 1 | HOSE, 8M3K-8NPTM-8JICF-.90 |
| 6 | TA4120-1026-35 | 4 | FITTING, 8NPTM-8JICM |

# PRESSURE RELIEF VALVE HOSE ASSEMBLY (OPTIONAL)

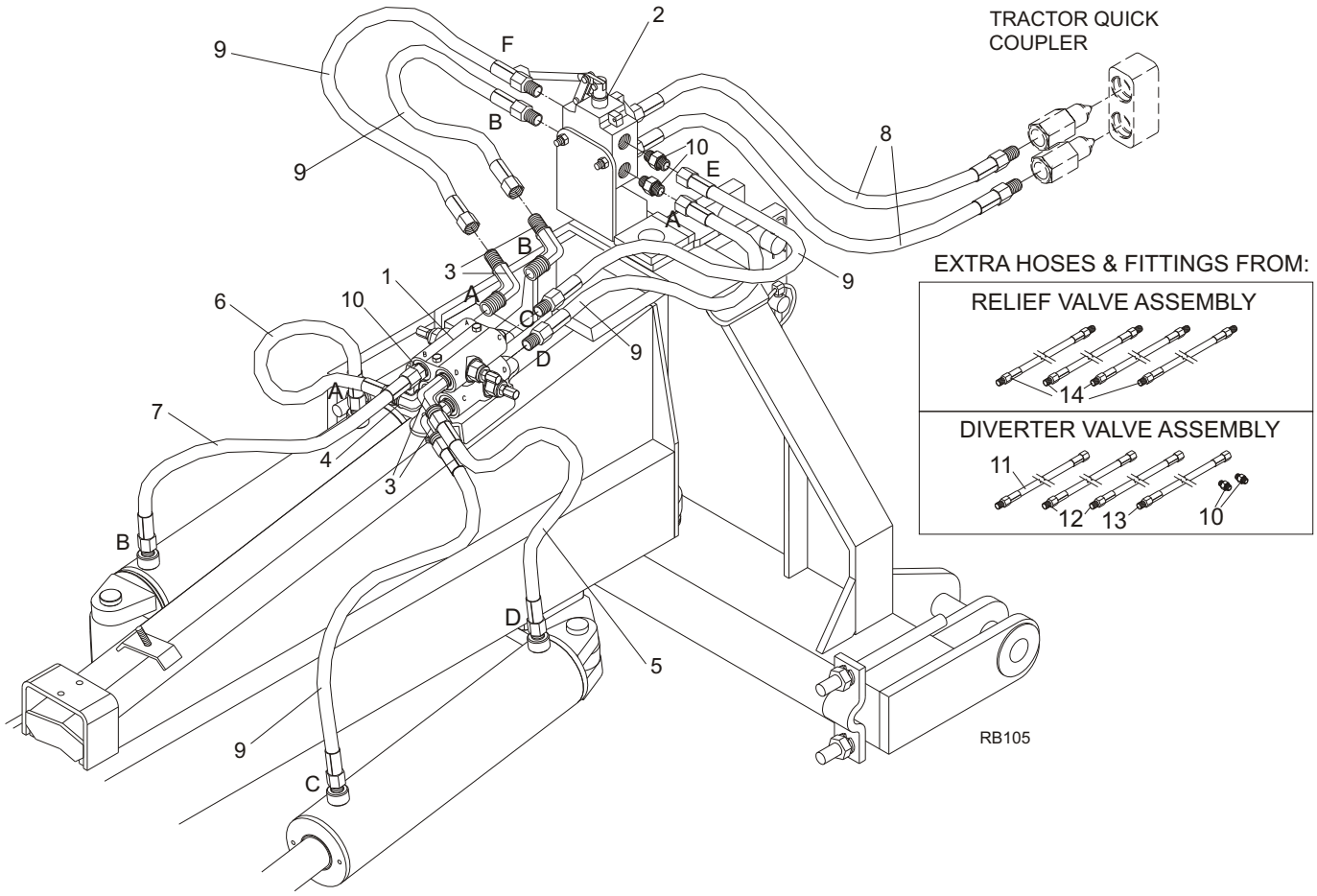
EXTRA HOSES AND FITTINGS REQUIRED TO INSTALL DIVERTER VALVE KIT (OPTIONAL)



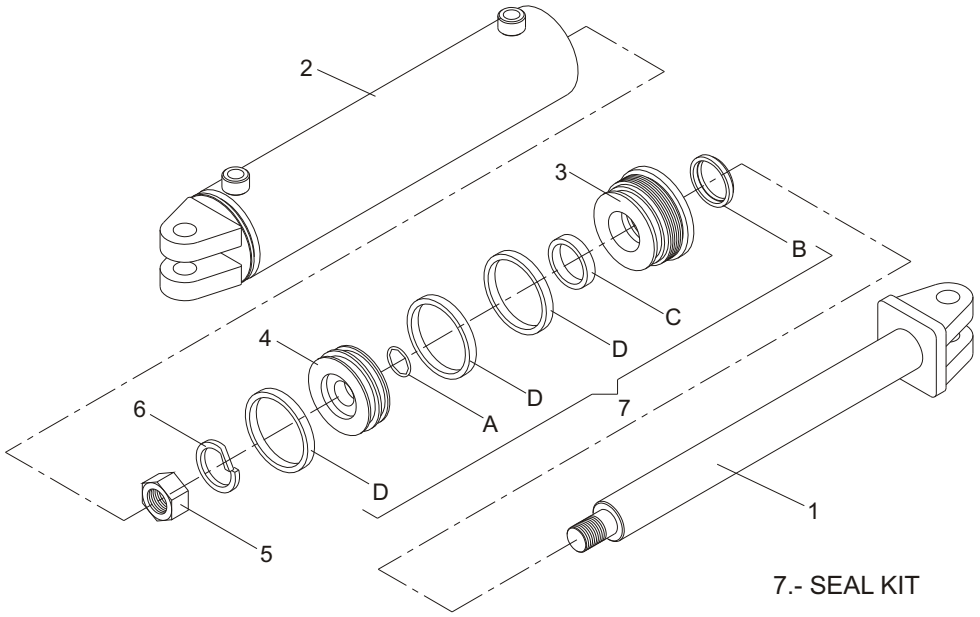

| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | | 1 | RELIEF VALVE ASSEMBLY |
| 2 | TA4430-1565-65 | 1 | HOSE, 8M3K-8NPTM-8JICF-.65 |
| 3 | TA4430-1565-50 | 1 | HOSE, 8M3K-8NPTM-8JICF-.50 |
| 4 | TA4430-1565-80 | 5 | HOSE, 8M3K-8NPTM-8JICF-.80 |
| 5 | TA4430-1565-70 | 1 | HOSE, 8M3K-8NPTM-8JICF-.70 |
| 6 | TA4430-0122-00 | 4 | HOSE, 8M3K-8NPTM-8NPTM-2.00 |
| 7 | TA4120-1118-35 | 4 | ELBOW FITTING, 8NPTM-8JICM 45 |
| 8 | TA4120-1026-35 | 1 | FITTING, 8NPTM-8JICM |
| 9 | TA4120-1212-35 | 1 | ELBOW FITTING, 8JICM-8NPTM 90 |

# DIVERTER & PRESSURE RELIEF VALVE HOSE ASSEMBLY (OPTIONAL)

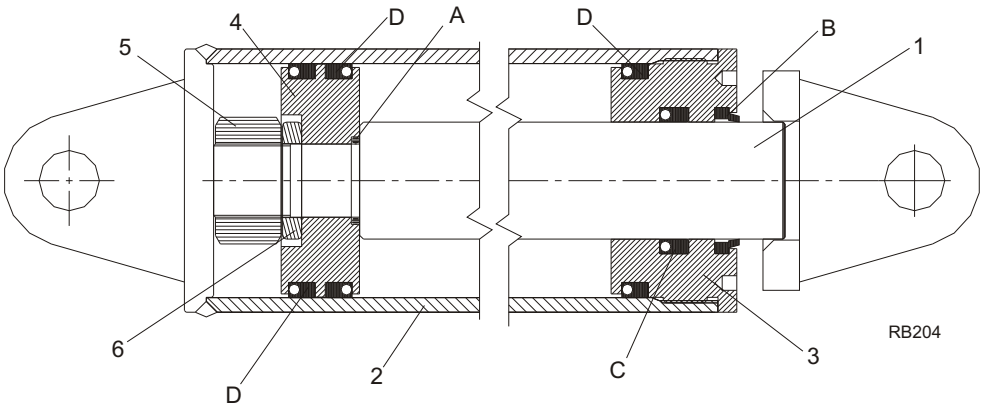



| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | | | RELIEF VALVE ASSEMBLY |
| 2 | | | DIVERTER VALVE ASSEMBLY |
| 3 | TA4120-1118-35 | 4 | ELBOW FITTING, 8NPTM-8JICM 45 |
| 4 | TA4120-1212-35 | 1 | ELBOW FITTING, 8JICM-8NPTM 90 |
| 5 | TA4430-1565-65 | 1 | HOSE, 8M3K-8NPTM-8JICF-.65 |
| 6 | TA4430-1565-50 | 1 | HOSE, 8M3K-8NPTM-8JICF-.50 |
| 7 | TA4430-1565-70 | 1 | HOSE, 8M3K-8NPTM-8JICF-.70 |
| 8 | TA4430-0121-50 | 2 | HOSE, 8M3K-8NPTM-8NPTM-1.50 |
| 9 | TA4430-1565-80 | 5 | HOSE, 8M3K-8NPTM-8JICF-.80 |
| 10 | TA4120-1026-35 | 5 | FITTING, 8NPTM-8JICM |
| 11 | TA4430-1566-40 | 1 | HOSE, 8M3K-8NPTM-8JICF-1.40 |
| 12 | TA4430-1566-20 | 2 | HOSE, 8M3K-8NPTM-8JICF-1.20 |
| 13 | TA4430-1565-90 | 1 | HOSE, 8M3K-8NPTM-8JICF-.90 |
| 14 | TA4430-0122-00 | 4 | HOSE, 8M3K-8NPTM-8NPTM-2.00 |

# OFFSET/ANGLE HYDRAULIC CYLINDER ASSEMBLY & PARTS LIST



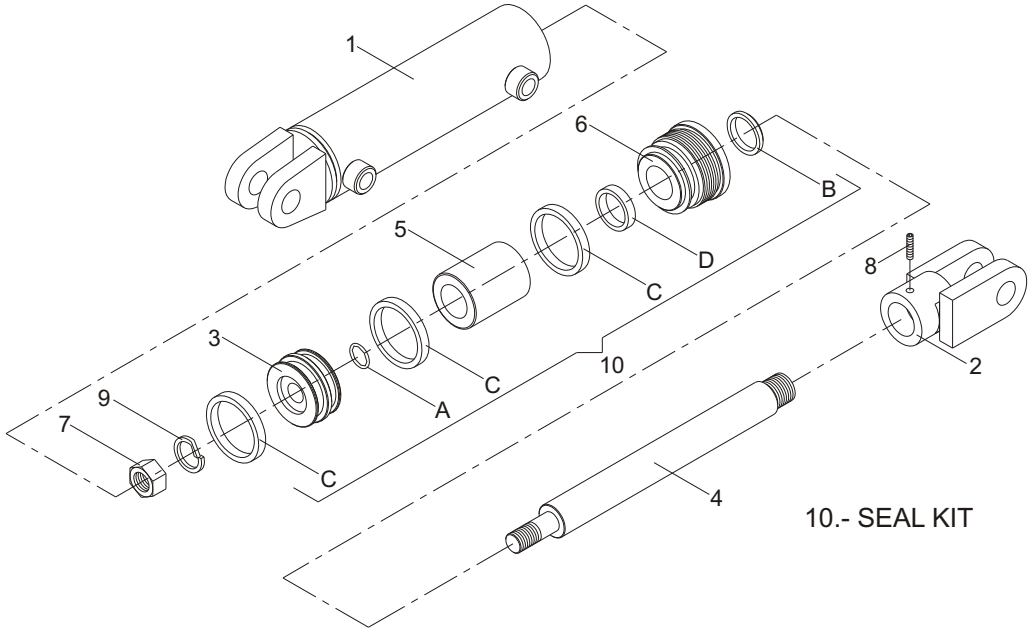

7.- SEAL KIT

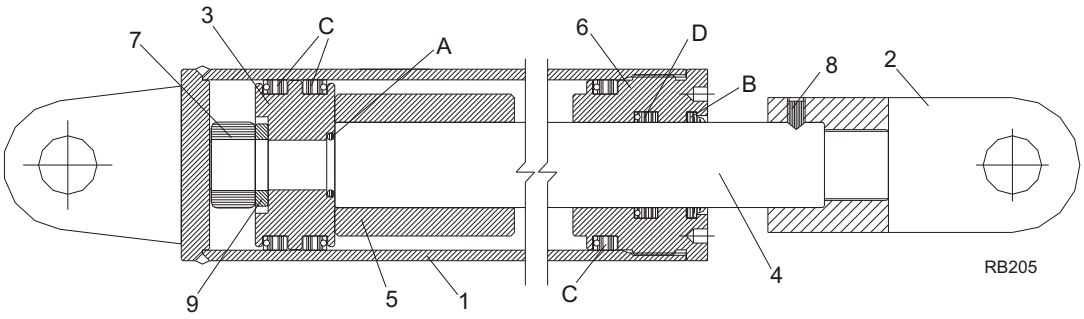



| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | TACN99230100W | 1 | HYDRAULIC CYLINDER ROD |
| 2 | N/S | 1 | HYDRAULIC CYLINDER TUBE |
| 3 | N/S | 1 | ROD CAP |
| 4 | TACN99230002C | 1 | PISTON |
| 5 | * | 1 | HEX NUT, 1 1/4 - 12 |
| 6 | * | 1 | LOCK WASHER, 1 1/4 |
| 7 | TACN99230000K | | SEAL KIT - RB2408/2409/2410 OFFSET/ANGLE CYL. (Includes Items A-D) |
| A | | 1 | O-RING |
| B | | 1 | ROD WIPER |
| C | | 1 | POLYPAK |
| D | | 3 | POLYPAK |

* Standard Hardware; Obtain Locally
N/S Not Serviced Separately

# TILT HYDRAULIC CYLINDER ASSEMBLY & PARTS LIST

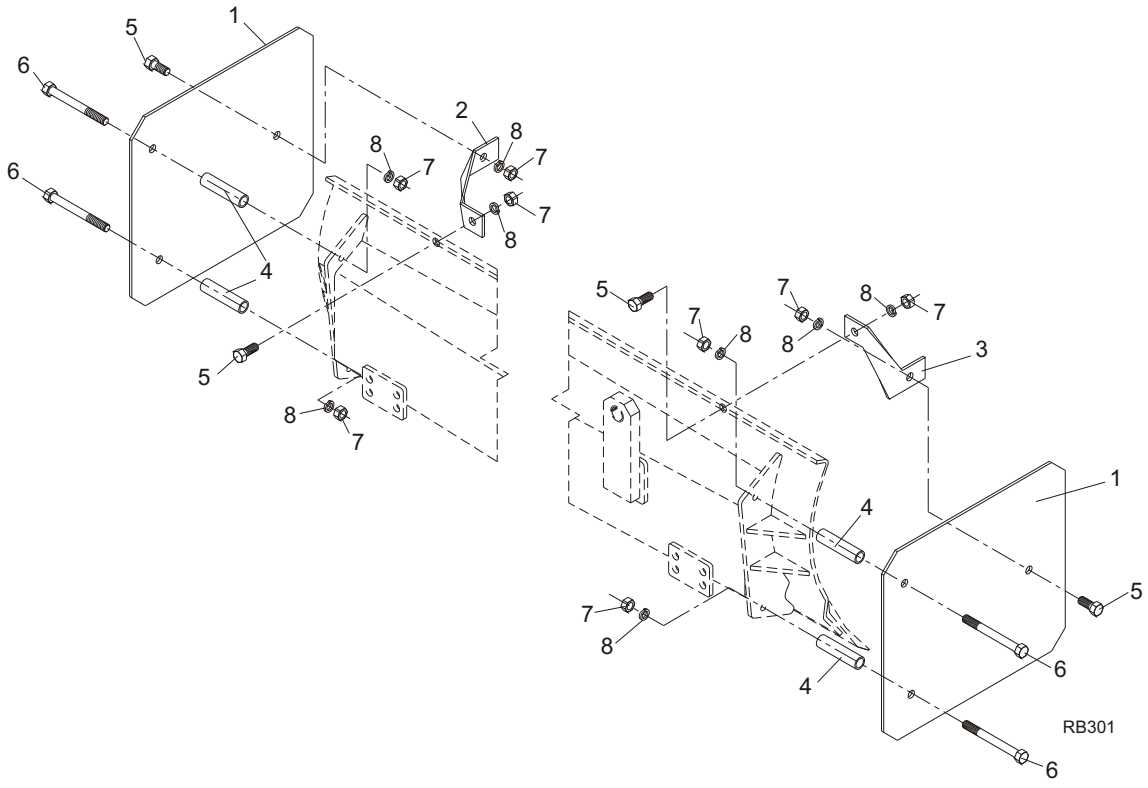



| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | N/S | 1 | HYDRAULIC CYLINDER TUBE |
| 2 | TACN99130200W | 1 | HYDRAULIC CYLINDER ROD CLEVIS |
| 3 | TACN99240001C | 1 | PISTON |
| 4 | TACN99240002C | 1 | HYDRAULIC CYLINDER ROD |
| 5 | N/S | 1 | HYDRAULIC CYLINDER STOP |
| 6 | N/S | 1 | ROD CAP |
| 7 | * | 1 | HEX NUT, 7/8 - 14 |
| 8 | * | 1 | SET SCREW, 1/4 - 20 x 1 1/2 |
| 9 | * | 1 | LOCK WASHER 7/8 |
| 10 | TACN99240000K | | SEAL KIT - RB2408/2409/2410 TILT CYL. (Includes Items A-D) |
| A | | 1 | O-RING |
| B | | 1 | ROD WIPER |
| C | | 3 | POLYPAK |
| D | | 1 | POLYPAK |

* Standard Hardware; Obtain Locally
N/S Not Serviced Separately

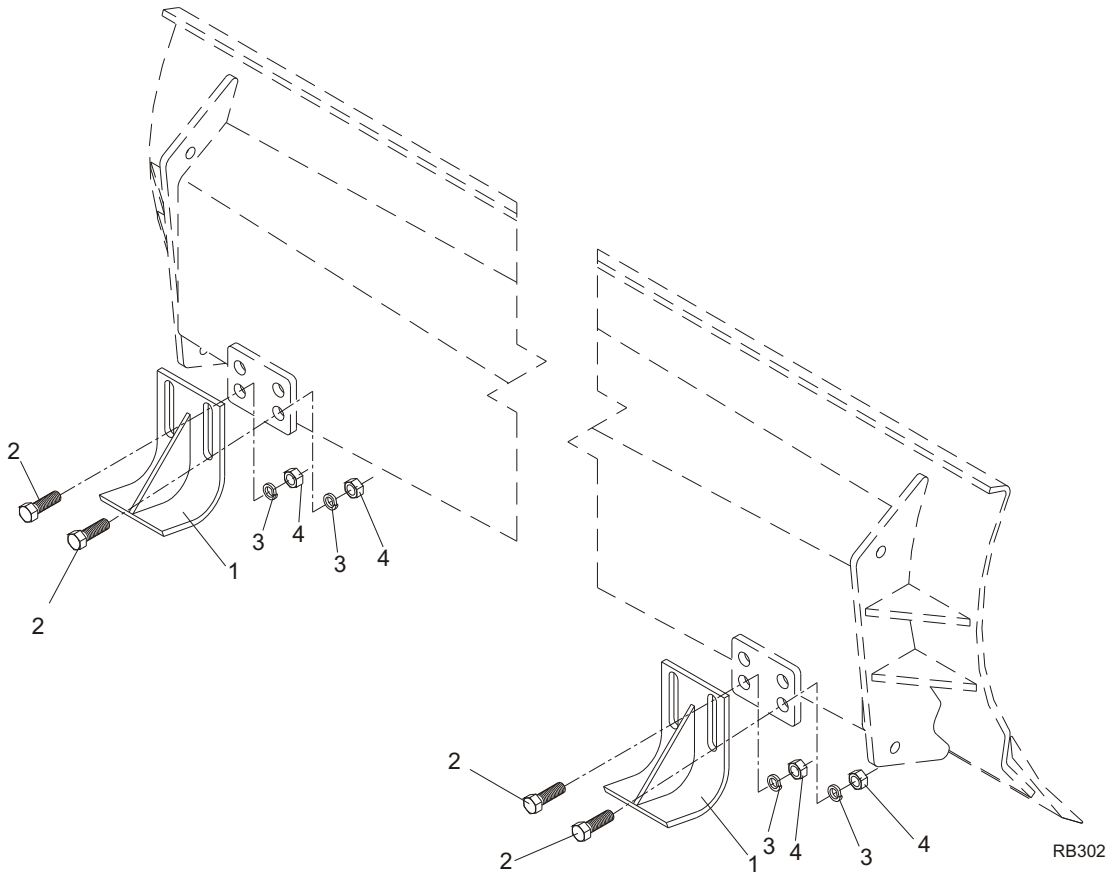
# END PLATES *C6200004* ASSEMBLY (OPTIONAL)




| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | N/S | 2 | END PLATE |
| 2 | N/S | 1 | LEFT BRACE |
| 3 | N/S | 1 | RIGHT BRACE |
| 4 | N/S | 4 | SPACER |
| 5 | * | 4 | BOLT, 5/8 x 1 1/2 HHCS GR5 |
| 6 | * | 4 | BOLT, 5/8 x 6 HHCS GR5 |
| 7 | * | 8 | HEX NUT, 5/8 - 11 |
| 8 | * | 8 | LOCK WASHER, 5/8 |

* Standard Hardware; Obtain Locally
N/S Not Serviced Separately

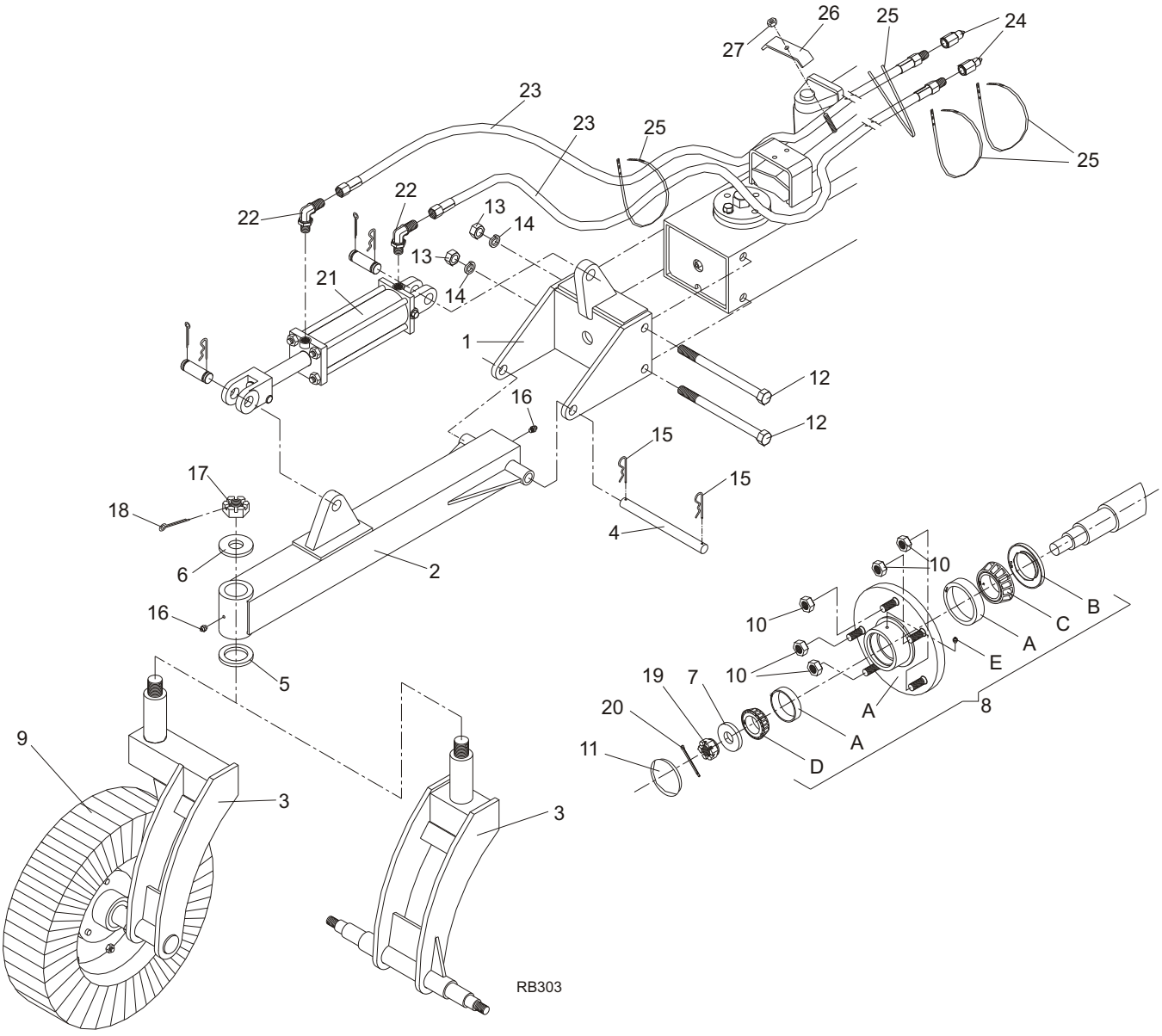
# SKID SHOES *C6100003* ASSEMBLY (OPTIONAL)




| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | N/S | 2 | SKID SHOE |
| 2 | * | 4 | BOLT, 5/8 x 2 HHCS GR5 |
| 3 | * | 4 | LOCK WASHER, 5/8 |
| 4 | * | 4 | HEX NUT, 5/8 - 11 |

* Standard Hardware; Obtain Locally
N/S Not Serviced Separately

## SINGLE *C6600001* AND DUAL *C6600002* TAIL WHEEL ASSEMBLY (OPTIONAL)



# SINGLE AND DUAL TAIL WHEEL PARTS LIST

| REF | PART | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | TACN99210100W | 1 | UNION BRACKET |
| 2 | TACN99210200W | 1 | BOOM |
| 3 | N/S | 1 | SINGLE WHEEL CLEVIS |
| | **or** | | |
| 3 | N/S | 1 | DUAL WHEEL CLEVIS |
| 4 | TACN99210001C | 1 | PIVOT PIN |
| 5 | TACN99210002C | 1 | LOWER WASHER |
| 6 | TACN99210003C | 1 | UPPER WASHER |
| 7 | TACN99210004C | * | HUB WASHER |
| 8 | TA4380-1022-05 | * | TAIL WHEEL HUB KIT (Includes Items A-E) |
| A | | 1 | HUB |
| B | | 1 | GREASE RETAINER |
| C | | 1 | CONICAL BEARING |
| D | | 1 | CONICAL BEARING |
| E | | 1 | GREASE ZERK FITTING, 1/16 |
| 9 | TA4330-1090-02 | * | LAMINATED SOLID WHEEL 6x9 (Hub not included) |
| 10 | * | ** | HUB NUT, 1/2 - 20 |
| 11 | TA4330-3030-01 | * | HUB CAP 21 - 3 |
| 12 | * | 2 | BOLT, 3/4 x 10 HHCS GR5 |
| 13 | * | 2 | HEX NUT, 3/4 - 10 |
| 14 | * | 2 | LOCK WASHER, 3/4 |
| 15 | * | 2 | SAFETY PIN, 1/8 |
| 16 | * | 2 | GREASE ZERK FITTING, 1/8 |
| 17 | TA4220-1022-26 | 1 | CASTLE NUT, 1 1/4 - 12 |
| 18 | * | 1 | COTTER PIN, 3/16 x 2 1/2 |
| 19 | TA4220-1014-26 | * | CASTLE NUT, 3/4 - 16 |
| 20 | * | * | COTTER PIN, 5/32 x 1 1/2 |
| 21 | TA4110-4047-01 | 1 | CYLINDER 3 x 8 (Pins included) |
| 22 | TA4120-1159-50 | 2 | ELBOW FITTING, 8ORBM-8JICM 90 |
| 23 | TA4430-1568-60 | 2 | HOSE, 8M3K-8NPTM-8JICF-3.60 |
| 24 | * | 2 | MALE QUICK COUPLER |
| 25 | * | 4 | PLASTIC STRAP |
| 26 | TACN99210005C | 1 | HOSE CLAMP, LARGE |
| 27 | * | 1 | HEX NUT, 3/8 - 16 |

* 1 FOR C6600001, 2 FOR C6600002

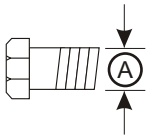
** 5 FOR C6600001, 10 FOR C6600002

* Standard Hardware; Obtain Locally

N/S Not Serviced Separately

# BOLT TORQUE CHART

Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.
Fasteners must always be replaced with the same grade as specified in the manual parts list.
Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware.
Make sure fastener threads are clean and you start thread engagement properly.
All torque values are given to specifications used on hardware defined by SAE J1701 & J1701M JUL96.




## SAE SERIES TORQUE CHART

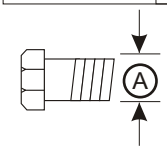
**SAE Grade 2 (No Dashes)**

SAE Bolt Head Identification

**SAE Grade 5 (3 Radial Dashes)**

**SAE Grade 8 (6 Radial Dashes)**

| A Diameter (Inches) | Wrench 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 |




## METRIC SERIES TORQUE CHART

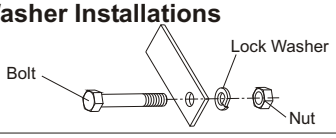

**Metric Grade 8.8**

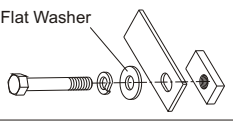
Metric Bolt Head Identification

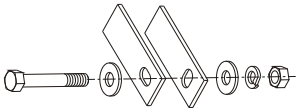

**Metric Grade 10.9**

| A Diameter & Thread Pitch (Millimeters) | Wrench Size | COARSE THREAD | | | | FINE THREAD | | | | A Diameter & Thread Pitch (Millimeters) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | MARKING ON HEAD | | | | MARKING ON HEAD | | | | |
| | | Metric 8.8 | | Metric 10.9 | | Metric 8.8 | | Metric 10.9 | | |
| | | N-m | Lbs.-Ft. | N-m | Lbs.-Ft. | N-m | Lbs.-Ft. | N-m | Lbs.-Ft. | |
| 6 x 1.0 | 10 mm | 8 | 6 | 11 | 8 | 8 | 6 | 11 | 8 | 6 x 1.0 |
| 8 x 1.25 | 13 mm | 20 | 15 | 27 | 20 | 21 | 16 | 29 | 22 | 8 x 1.0 |
| 10 x 1.5 | 16 mm | 39 | 29 | 54 | 40 | 41 | 30 | 57 | 42 | 10 x 1.25 |
| 12 x 1.75 | 18 mm | 68 | 50 | 94 | 70 | 75 | 55 | 103 | 76 | 12 x 1.25 |
| 14 x 2.0 | 21 mm | 109 | 80 | 151 | 111 | 118 | 87 | 163 | 120 | 14 x 1.5 |
| 16 x 2.0 | 24 mm | 169 | 125 | 234 | 173 | 181 | 133 | 250 | 184 | 16 x 1.5 |
| 18 x 2.5 | 27 mm | 234 | 172 | 323 | 239 | 263 | 194 | 363 | 268 | 18 x 1.5 |
| 20 x 2.5 | 30 mm | 330 | 244 | 457 | 337 | 367 | 270 | 507 | 374 | 20 x 1.5 |
| 22 x 2.5 | 34 mm | 451 | 332 | 623 | 460 | 495 | 365 | 684 | 505 | 22 x 1.5 |
| 24 x 3.0 | 36 mm | 571 | 421 | 790 | 583 | 623 | 459 | 861 | 635 | 24 x 2.0 |
| 30 x 3.0 | 46 mm | 1175 | 867 | 1626 | 1199 | 1258 | 928 | 1740 | 1283 | 30 x 2.0 |

**Typical Washer Installations**

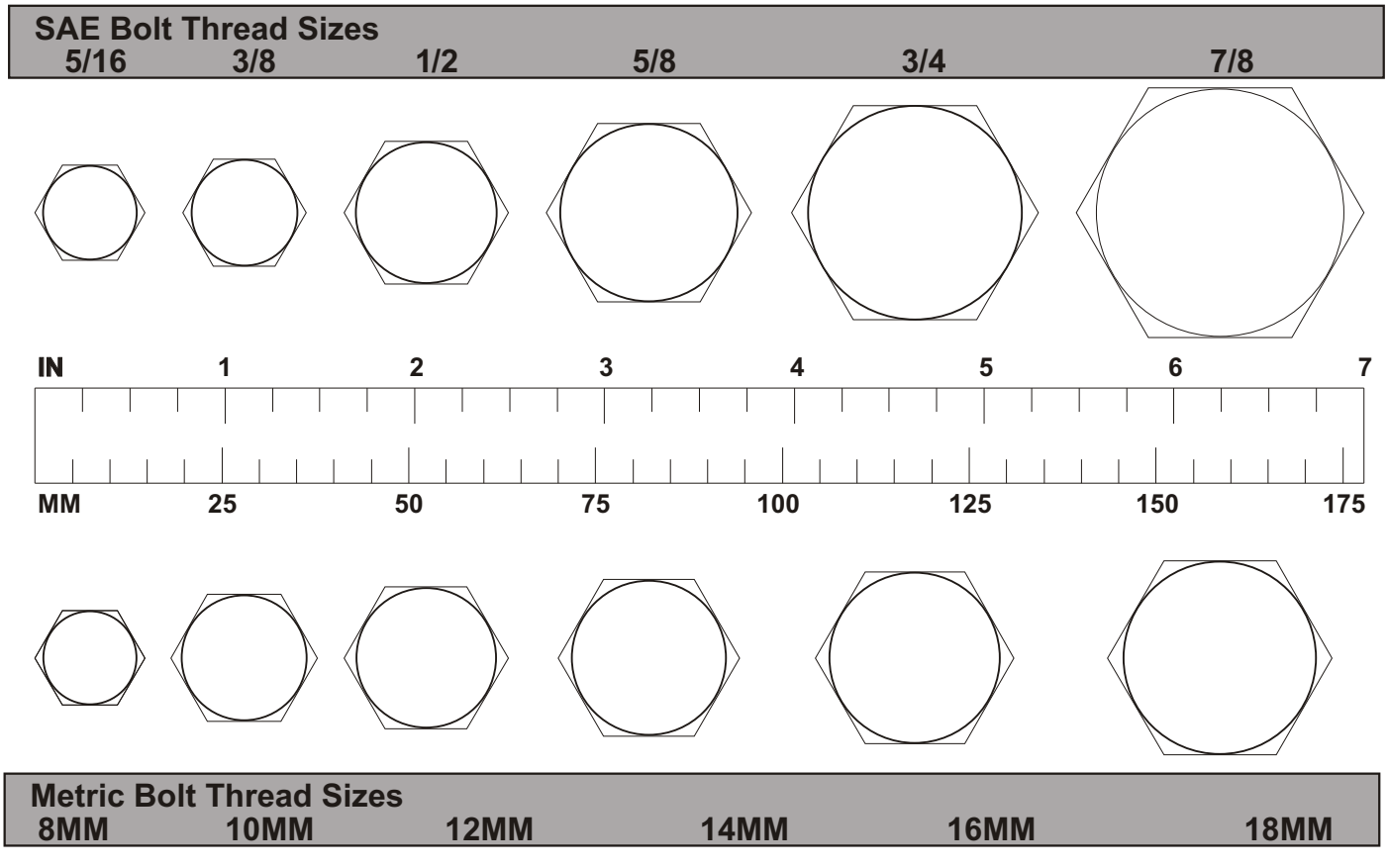


# BOLT SIZE CHART

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




# ABBREVIATIONS

| | |
|---|---|
| AG | Agriculture |
| ATF | Automatic Transmission Fluid |
| BSPP | British Standard Pipe Parallel |
| BSPTM | British Standard Pipe Tapered Male |
| CV | Constant Velocity |
| CCW | Counter-Clockwise |
| CW | Clockwise |
| F | Female |
| GA | Gauge |
| GR (5,etc.) | Grade (5,etc.) |
| HHCS | Hex Head Cap Screw |
| HT | Heat Treated |
| JIC | Joint Industry Council 37º Degree Flare |
| LH | Left Hand |
| LT | Left |
| m | Meter |
| mm | Millimeter |
| M | Male |
| MPa | Mega Pascal |
| N | Newton |
| NC | National Coarse |
| NF | National Fine |
| NPSM | National Pipe Straight Mechanical |
| NPT | National Pipe Tapered |
| NPT SWF | National Pipe Tapered Swivel Female |
| ORBM | O-Ring Boss - Male |
| P | Pitch |
| PBY | Power Beyond |
| psi | Pounds per Square Inch |
| PTO | Power Take Off |
| QD | Quick Disconnect |
| RH | Right Hand |
| ROPS | Roll Over Protective Structure |
| RPM | Revolutions Per Minute |
| RT | Right |
| SAE | Society of Automotive Engineers |
| UNC | United Coarse |
| UNF | Unified Fine |
| UNS | Unified Special |

# WARRANTY

Please enter information below and save for future reference.

Date Purchased: _____ From (Dealer): _____

Model Number: _____ Serial Number: _____

**A. GENERAL PROVISIONS -** The warranties described below are provided by Tecnomec Agrícola, S.A. de C.V. (TECNOMEC) to the original purchasers of new agricultural products from TECNOMEC or authorized dealers for a period of one (1) year **under agricultural use**. Replacement or repair parts installed in the equipment covered by this limited warranty are warranted for ninety (90) days from the date of purchase of such part or the expiration of the applicable new equipment warranty period, whichever occurs later. Under these warranties, TECNOMEC will repair or replace, at its discretion, any covered part which is found to be defective in material or workmanship during the applicable warranty term. Warranty service must be performed by an authorized BISON$^{VH}$ dealer, which will use only new or remanufactured parts or components furnished by TECNOMEC.

Warranty service will be performed without charge to the purchaser for parts or labor. The purchaser will be responsible, however, for any service call and/ or transportation of product to and from the dealer's or service center's place of business, for any premium charged for overtime labor requested by the purchaser, and for any service and/or maintenance not directly related to any defect covered under the warranties below. At TECNOMEC's request, dealer will be responsible for returning the parts to TECNOMEC for evaluation.

**B. WHAT IS WARRANTED -** All parts of any new TECNOMEC product. TECNOMEC makes no warranty, express or implied, with respect to engines, batteries, tires or other parts or accessories not manufactured by TECNOMEC. Warranties for these items, if any, are provided separately by their respective manufacturers.

Each warranty term begins on the date of product delivery to the purchaser.

**C. WHAT IS NOT WARRANTED TECNOMEC IS NOT RESPONSIBLE FOR THE FOLLOWING :** (1) Used Products; (2) Any product that has been altered, modified, or used in connection with attachments in ways not approved by TECNOMEC; (3) Depreciation or damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow the product's OPERATOR MANUAL instructions, misuse, lack of proper protection during storage, or accident; (4) Normal maintenance parts and service, including, but not limited to, oil filters, coolants and conditioners, cutting parts, belts, brake and clutch linings.

**Incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort or any other legal theory.** Without limiting the generality of the foregoing, TECNOMEC specifically disclaims responsibility for any damages relating to (i) lost profits, business, revenues or goodwill; (ii) loss of crops; (iii) loss because of delay in harvesting; (iv) any expense or loss incurred for labor, supplies, substitute machinery or rental; or (v) any other type of damage to property or economic loss.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

**D. SECURING WARRANTY SERVICE -** To secure warranty services, the purchaser must (1) report the product defect to an authorized dealer and request repair within the applicable warranty term, (2) present evidence of the warranty start date, and (3) make the product available to the dealer or service center within 45 days.

**E. NO IMPLIED WARRANTY OR OTHER REMEDY - AGRICULTURAL PRODUCTS -** Where permitted by law, neither TECNOMEC nor any company affiliated with it makes any warranties, representations, or promises, express or implied as to the quality or performance, or freedom from defect of its agricultural products other than those set forth above, and NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE. IN NO EVENT WILL THE DEALER, TECNOMEC OR ANY COMPANY AFFILIATED WITH TECNOMEC BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

The only remedies the purchaser has in connection with the breach of performance of any warranty on TECNOMEC agricultural products are those set forth above.

**F. NO WARRANTY MODIFICATION -** No agent, representative, authorized dealer, distributor, service center, serviceperson, salesperson, other than an officer from TECNOMEC is authorized to alter, modify, or enlarge this Warranty.

**G. If further information is desired, contact your selling dealer or the nearest branch office of TECNOMEC**

**H. This Warranty is effective only if the warranty registration is electronically submitted to TECNOMEC by dealer within ten (10) days of retail purchase date.**

For warranty services contact your selling dealer.

VH
TECNOMEC AGRICOLA

# NOTES

# NOTES

# PART NO.
# 4350-2110-00