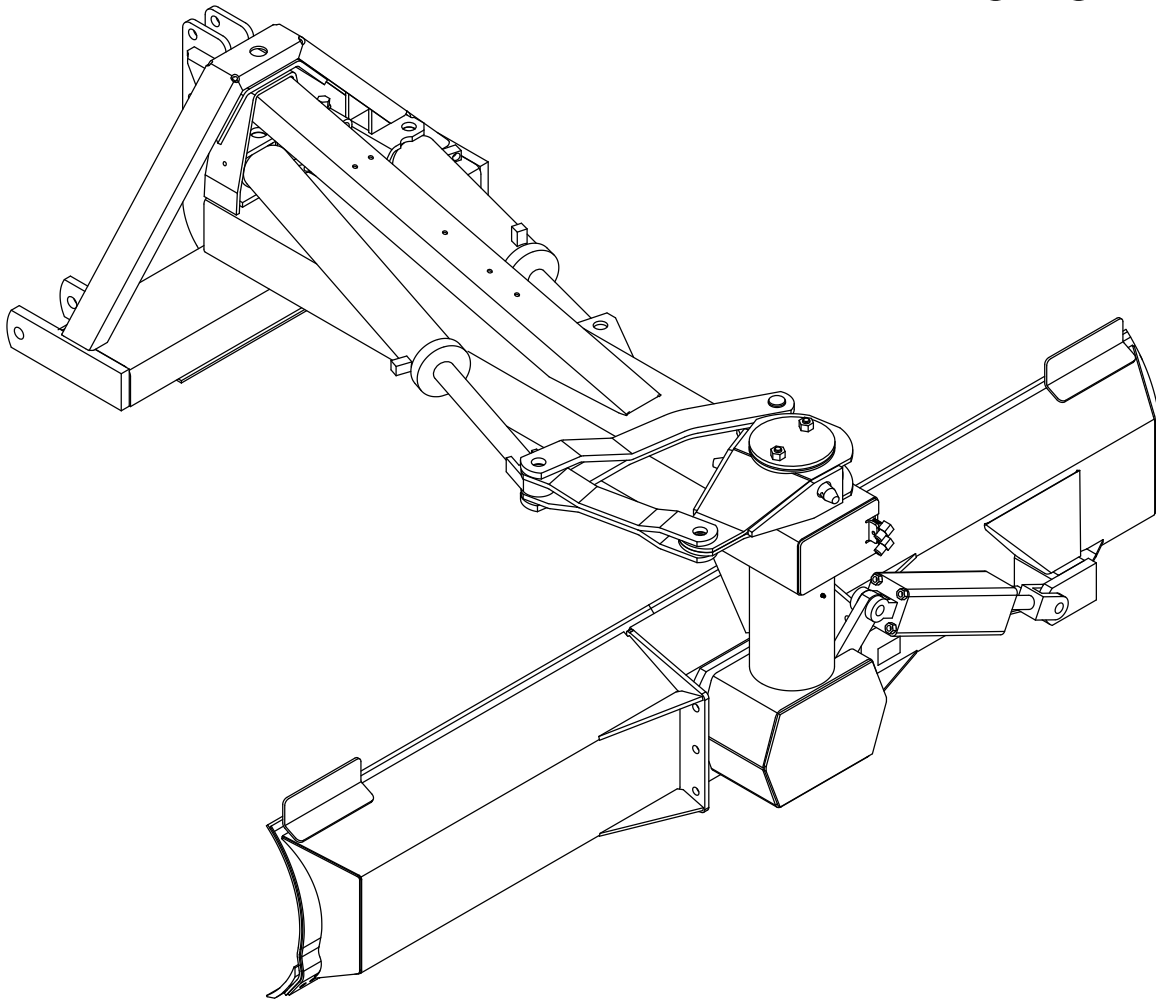




REAR BLADES

RB990-2

RB1010-2



MAN0161
(Rev 05/23/2023)

OPERATOR'S MANUAL

TO THE DEALER:

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

The dealer must complete the online Product Registration form at the Woods Dealer Website which certifies that all Dealer Checklist items have been completed. Dealers can register all Woods product at dealer.WoodsEquipment.com under Product Registration.

Failure to register the product does not diminish customer's warranty rights.

TO THE OWNER:

Read this manual before operating your Woods 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 adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your dealer. To obtain complete warranty details, visit WoodsEquipment.com/warranty. You may also request a hard copy by calling 1-800-319-6637 or mail your request to: Woods Equipment Company, Attn: Warranty Dept. 2606 South Illinois Route 2, Oregon, IL 61061. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.com, or in the United States and Canada call 1-800-319-6637.

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

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

Model: _____ **Date of Purchase:** _____

Serial Number: (see Safety Decal section for location) _____

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

Throughout this manual, the term **NOTICE** 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 is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



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



Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



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

**IMPORTANT
or NOTICE**

Is used to address practices not related to physical injury.

NOTE

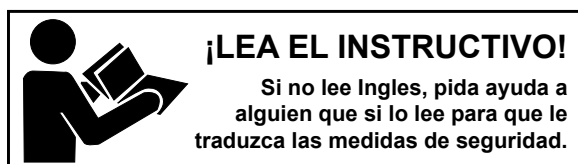
Indicates helpful information.

2 Introduction

MAN0161
(05/23/2023)

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This Operator's Manual should be regarded as part of the machine.
Suppliers of both new and second-hand machines must make sure
that this manual is provided with the machine.

SPECIFICATIONS

<u>MODEL</u>	<u>RB990-2</u>	<u>RB1010-2</u>
Blade Width	9 ft. (2743 mm)	10 ft. (3048 mm)
Tractor HP Requirement	150 hp Maximum (112 kw)	150 hp Maximum (112 kw)
Tractor Hydraulic System Pressure	3000 psi Maximum (20.68 MPa)	3000 psi Maximum (20.68 MPa)
Weight (Hydraulic)	1519 lbs. (688 kg)	1569 lbs. (711kg)
Weight (Manual)	1487 lbs. (673 kg)	1535 lbs. (697 kg)
Blade Position - MechanicalStraight, forward or reverse; Angle 60 degrees, right or left in forward and reverse; Tilt 28 degrees, up or down; Offset 7 positions up to 33" (838 mm) left or right of tractor center line; Pitch adjustment in top link of tractor 3-point hitch	
Blade Positions - HydraulicStraight, forward or reverse; Angle 60 degrees right or left forward and reverse; Tilt 28 degrees up or down; Offset 33" (838 mm) right or left of tractor center line; Pitch adjustment in top link of tractor 3-point hitch	
Cutting Edge1/2 x 6" (12.7 mm x 152 mm) High carbon steel, reversible	
3-Point Hitch CategoryCategory 2 & Category 3 Category 2 Quick attaching coupler Category 3 Quick attaching coupler	
Structural Strength:		
A-Frame9-1/4" x 4-1/4" (235 mm x 108 mm) Formed Tubing	
Boom10" x 6" (254 mm x 152 mm) Tubing	
King Pin6-5/8" (168 mm) Tubing	
MoldboardFormed moldboard and all welded box section	
Pivot AssemblyAll-welded steel box section	

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 directions. These are determined by standing behind the tractor facing the direction of forward travel.

4 Introduction

MAN0161
(05/23/2023)

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 and safety decals are available from your dealer. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.com, or in the United States and Canada call 1-800-319-6637.) 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 responsible, trained, familiar with the instructions and be physically 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; and respirator or filter mask where appropriate.
- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in "locked up" position at all times.
- A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.
- Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)
- 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



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



- 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 or transport 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 blade.
- Before transporting, pivot the unit so red reflectors face the rear.

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; and respirator or filter mask where appropriate.
- 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 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, bystanders, and animals away from the equipment and the storage area.

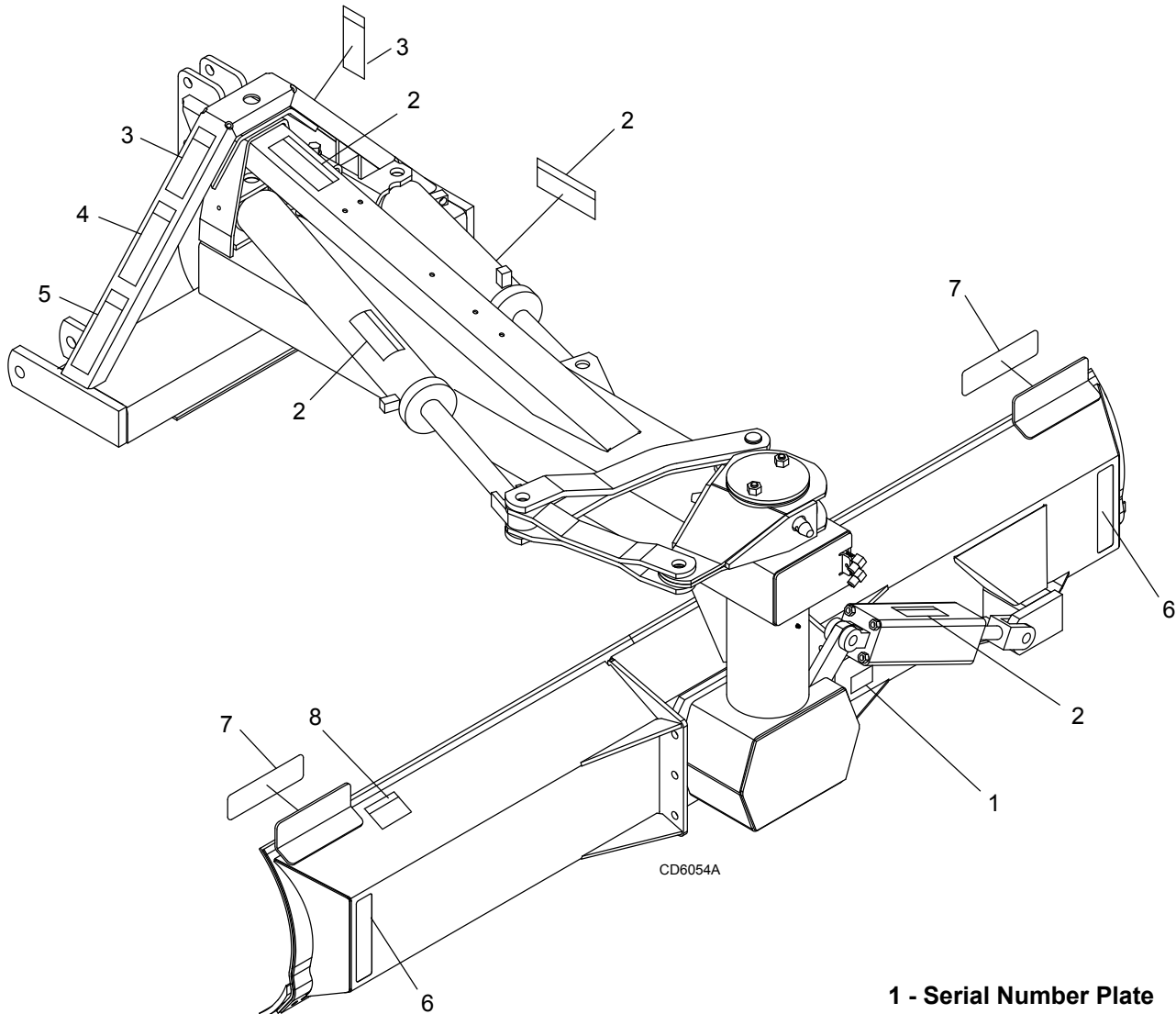
SAFETY & INSTRUCTIONAL DECALS



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



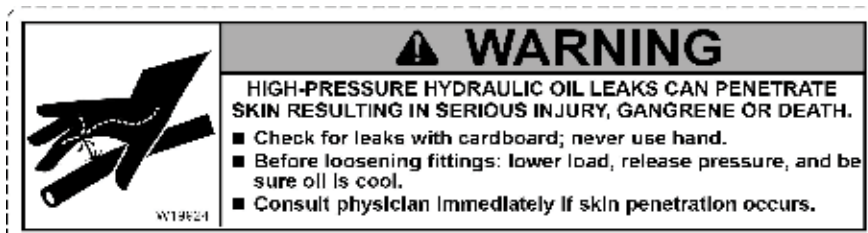
Replace Immediately If Damaged!



1 - Serial Number Plate



2 - PN W19924



6 - PN 57123

Red Rear Reflector 2" x 9"

7 - PN 1002940

Amber Reflector 2" x 9"

SAFETY & INSTRUCTIONAL DECALS







ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Replace Immediately If Damaged!

3 - PN 1002941

⚠ WARNING

CRUSHING AND PINCHING HAZARD

- Be extremely careful handling various parts of the machine. 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-A

4 - PN 1004250

⚠ 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 dealer or call 1-800-319-6637.)
- Operate from tractor seat only.
- Lower equipment to ground, stop engine, remove key, and set brake before dismounting tractor.
- Never allow children or untrained persons to operate equipment.
- Never allow riders.
- Keep bystanders away from equipment during operation.
- Keep all shields in place and in good condition.

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

1004250

5 - PN 1004299

⚠ 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.

1004299

BE CAREFUL!

Keep safety decals clean and visible.

Use a clean, damp cloth to clean safety decals.

Avoid spraying too close to decals when using a pressure washer; high-pressure water can enter through very small scratches or under edges of decals causing them to peel or come off.

Replace safety decals if they are missing or illegible.

Replacement safety decals can be ordered free from your Woods dealer. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.com, or in the United States and Canada call 1-800-319-6637.

8 - PN 1003193

⚠ WARNING

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

1003193-A

OPERATION

⚠ 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.
- Never allow riders on power unit or attachment.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- 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.

- 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

- 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 BLADE TO TRACTOR

IMPORTANT

- The Rear Blade should be mounted on tractors with a maximum power rating of 150 hp (112 kw).

The Rear Blade is a 3-point Category 3 implement. It will attach to ASAE standard Category 3 quick-attaching coupler or on 3-point Category 2 tractor

1. Set the tractor drawbar in short-high position.

NOTE: Use sleeve (70) and sleeve (73) with category 3 quick hitch coupler and category 3, 3-point hitch tractor.

2. Attach tractor draft links to A-Frame with 1-1/8" pin (72), sleeves (73), washers (74). Secure with klik pins (53).
3. Connect the tractor top link to desired top link hole in A-Frame, using 1 x 4-29/32" heat-treated pin (69) and klik pin (32). Level the boom by adjusting lift and top links.
4. 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 blade is at least 6" (152 mm) from tractor tires throughout operating range of 3-point hitch.

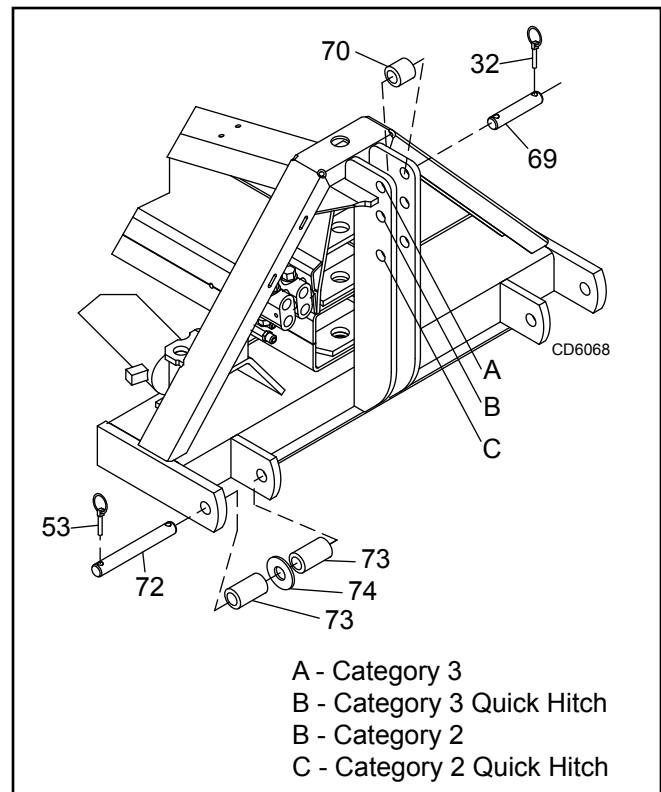


Figure 1. Three Point Hitch Connection

⚠ 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.

- 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 blade.

BLADE ANGLE ADJUSTMENT

The blade may be angled from 0 to 60 degrees to the right or left by hydraulic remote control from the tractor seat.

1. Raise the blade a few inches off the ground by operating the lift control lever of the tractor.
2. Actuate the control valve to which the angling cylinder is connected.
3. On tractors with two circuit selector valves, select angling circuit and actuate the tractor control valve connected to selector valve.

NOTE: Do not operate the selector valve under load.

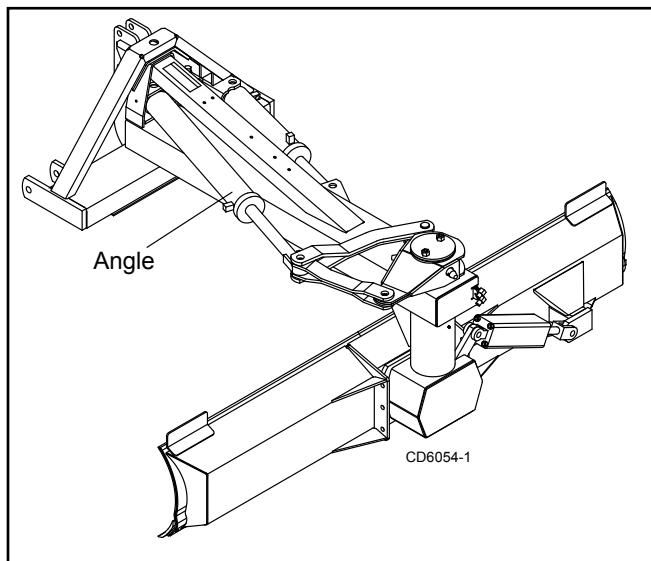


Figure 2. Angle Cylinder

REVERSE BLADE

The blade is reversible without removing it from the tractor.

1. Remove clinch pins (79) and index pins (45).
2. Raise blade off the ground.
3. Rotate moldboard counter-clockwise 180 degrees (viewed from the top) and replace clinch pins and index pins.

NOTE: The blade can be set to any angle from 0 to 60 degrees, right or left.

In some cases it may be necessary to offset to the right and tip up the right end of the blade to rotate it.

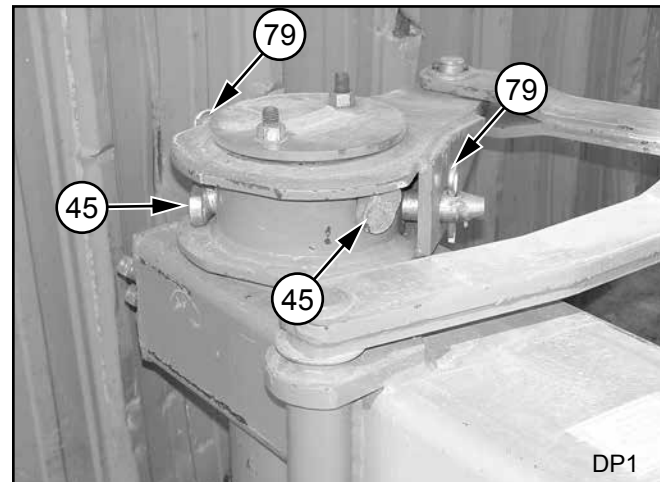


Figure 3. Index Pin Locations

TILT ADJUSTMENT

Tilt moldboard 28 degrees up or down by using the mechanical ratchet (23) or the hydraulic tilt cylinder (22). Additional tilt adjustment can be obtained by adjusting the lift link of the 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.

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

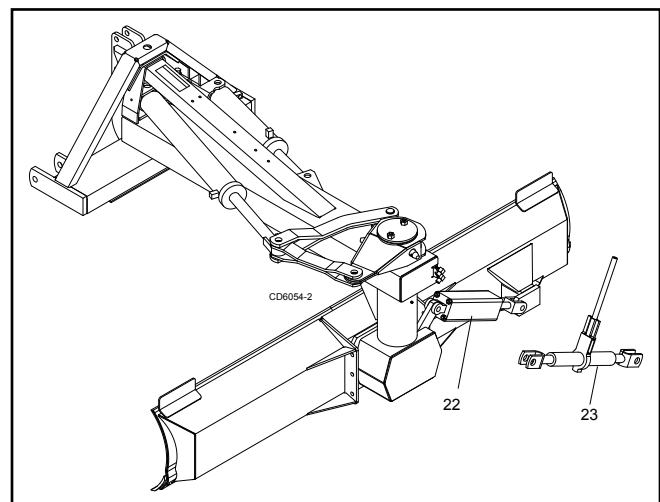


Figure 4. Tilt Cylinder and Ratchet

OFFSET

Mechanical Adjustment

Mechanical adjustment model has seven blade offset positions. Hole positions in offset links (11 & 12) allows boom to rotate 30 degrees to the right or left with a maximum blade offset of 33 inches (838 mm).

To offset the blade:

1. Park the tractor on level ground.
2. Apply parking brake and raise blade 2" (51 mm) above the ground.
3. Shut off the engine and level the boom.
4. Remove rivet pin (59), swing the boom to the desired position, and replace the pins.

IMPORTANT

Rivet pin (59) is designed to shear at a predetermined load to prevent damage to the blade. Using any pin other than Woods standard rivet pin will damage the blade and void warranty.

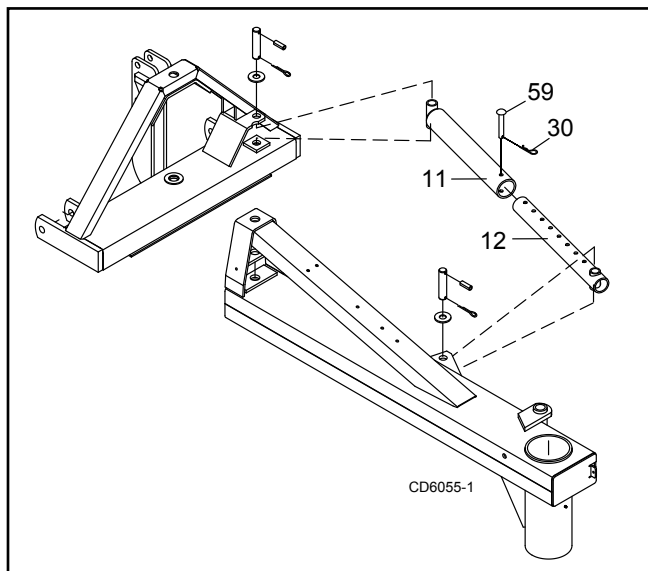


Figure 5. Mechanical Offset

Adjustment with Hydraulic Swing Cylinder

The offset cylinder (10) rotates the boom 30 degrees right or left or to any position in between, resulting in a maximum of 33" (838 mm) offset to 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 to which the offset cylinder is connected.
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.

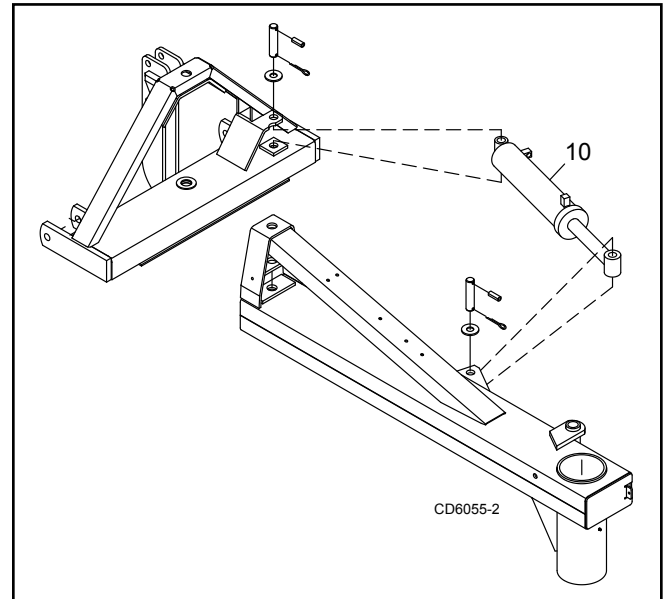


Figure 6. Hydraulic Offset

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 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.
- 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 CHECKLIST

(OWNER'S RESPONSIBILITY)

- _____ Review and follow all safety rules and safety decal instructions on pages 5 through 8.
- _____ Check that equipment is properly and securely attached to tractor.
- _____ Check that all safety decals are installed and in good condition. Replace if damaged
- _____ Check that all hardware and cotter pins are properly installed and secured.
- _____ Check that 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

⚠ WARNING

- 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.

- 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.
- 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.

⚠ 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.

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. Oil the pivot pins with SAE 30 oil.
2. Grease pivot post.
3. Lubricate between moldboard and retaining brackets with grease or oil. Fully tilt blade in one direction. Apply lubricant. Tilt blade in opposite direction and apply lubricant.

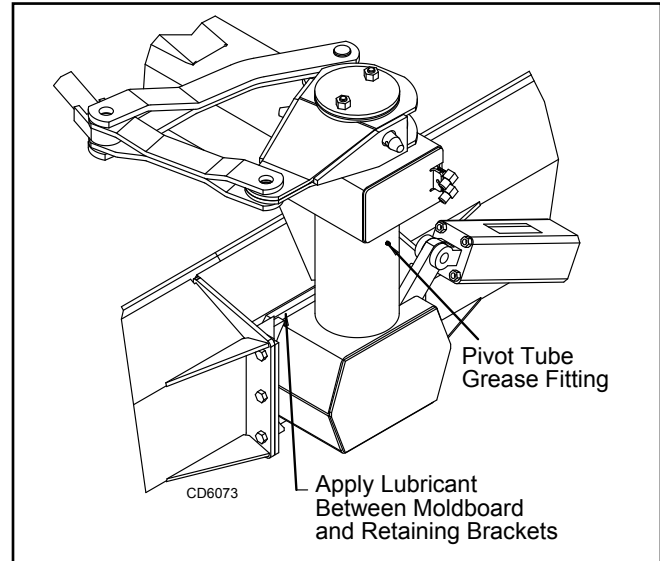


Figure 7. Lubrication Points

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 on page 51.

CLEANING

After Each Use

- Remove large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Inspect machine and replace worn or damaged parts.
- Replace any safety decals that are missing or not readable.

Periodically or Before Extended Storage

- **Clean large debris such as clumps of dirt, grass, crop residue, etc. from machine.**
- **Remove the remainder using a low-pressure water spray.**
- 1. Be careful when spraying near scratched or torn safety decals or near edges of decals as water spray can peel decal off surface.
- 2. Be careful when spraying near chipped or scratched paint as water spray can lift paint.
- 3. If a pressure washer is used, follow the advice of the pressure washer manufacturer.
- **Inspect machine and replace worn or damaged parts.**
- **Sand down scratches and the edges of areas of missing paint and coat with Woods spray paint of matching color (purchase from your Woods dealer).**
- **Replace any safety decals that are missing or not readable (supplied free by your Woods dealer). See Safety Decals section for location drawing.**

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.
- 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.

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.
- 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.

DEALER SET-UP INSTRUCTIONS

Assembly of this equipment is the responsibility of the Woods 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 51.

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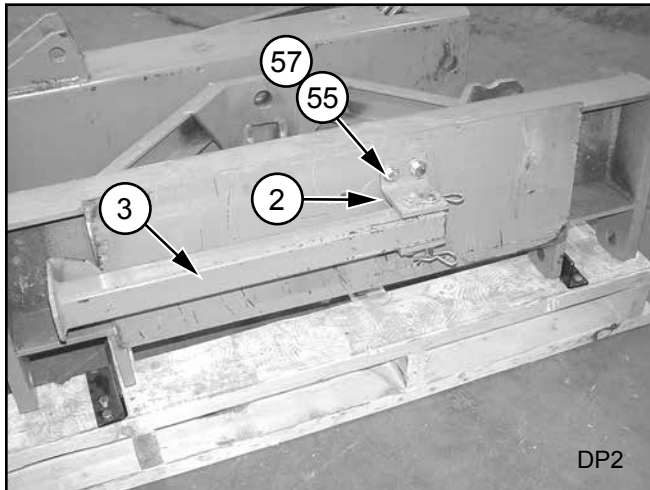
MAIN ASSEMBLY

Attach Parking Stand

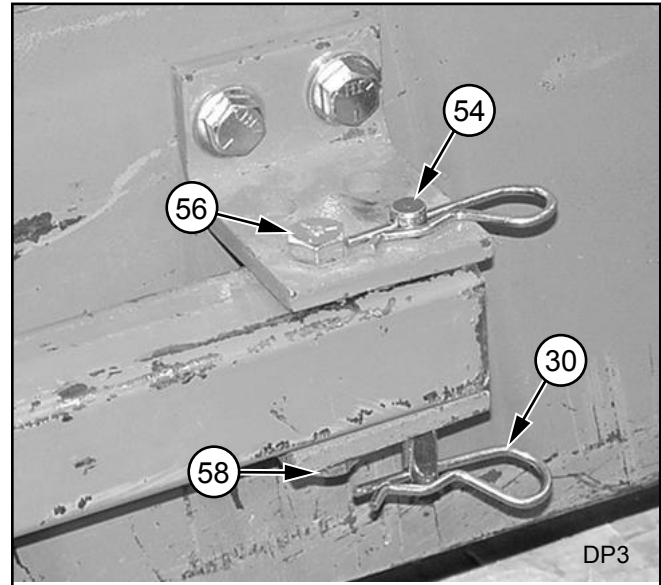
1. Attach the parking stand brackets (2) to bottom of A-Frame. Secure using four cap screws (55) and washers (57).
2. Install parking stand (3) between brackets. Secure with cap screw (56), lock nut (58), clevis pin (54), and two safety pins (30).

NOTE: Do not over tighten cap screw (56). Parking stand needs to pivot freely.

3. Remove A-Frame from crate.



- 2. Bracket, Parking Stand
- 3. Stand, Assembly
- 55. Screw, HHCS 1/2 NC x 1-1/4 GR5
- 57. Washer, Flat 1/2 SAE



- 30. Pin, Safety 3/16
- 54. Pin, Headless .50 x 3.78
- 56. Screw, HHCS 1/2 NC x 3-1/2 GR5
- 58. Nut, Lock 1/2 NC

Figure 8. A-Frame and Parking Stand Assembly

Attach Pivot Assembly to Moldboard

Refer to Figure 9.

1. Position moldboard approximately 8" (203 mm) from the edge of the crate base as shown.
2. Place a 1" (25 mm) thick board under both front corners of moldboard as shown.
3. Using a lifting device, lift boom and pivot assembly

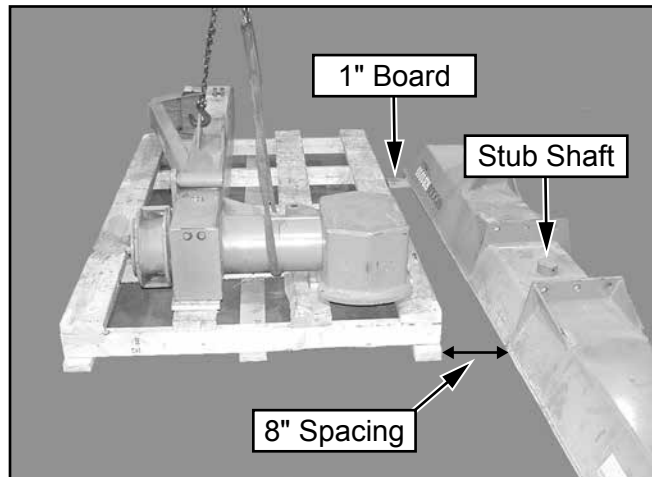
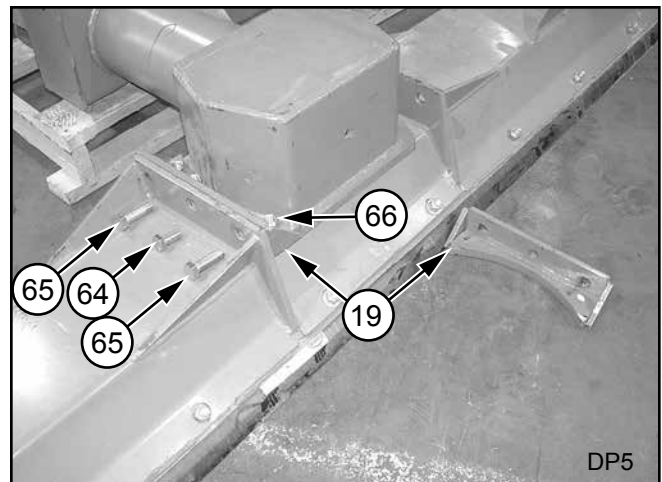


Figure 9. Pivot Assembly Positioned to Moldboard

Refer to Figure 10.

4. Attach pivot assembly to moldboard using two retaining brackets (19).
5. Secure retaining brackets using four cap screws (65) in outer holes, two cap screws (64) in center hole, and six lock nuts (66).

NOTE: Cap screws (64) must be used in the center holes.



- 19. Bracket, Retaining
- 64. Screw, HHCS 3/4 NC x 1-3/4 GR5
- 65. Screw, HHCS 3/4 NC x 2-1/4
- 66. Nut, Lock 3/4 NC

Figure 10. Pivot Assembly Installed to Moldboard

Attach A-Frame to Boom Assembly

Refer to Figure 11.

1. Attach lifting device to boom assembly, just ahead of pivot tube.
2. Carefully lift boom off crate base and rotate 90 degrees to moldboard.

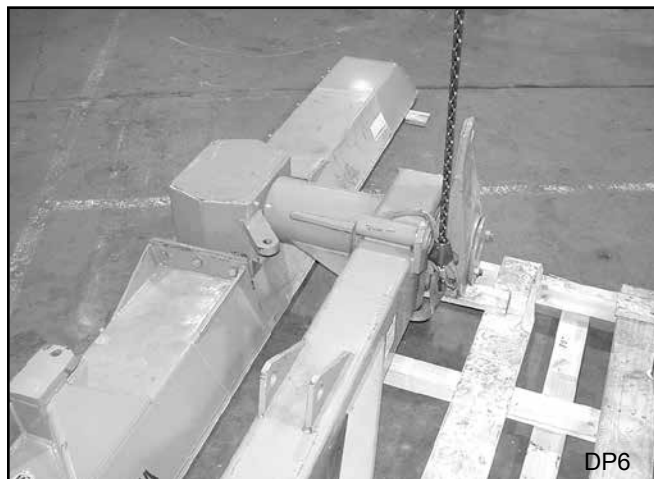


Figure 11. Lift Boom Assembly off Crate

Refer to Figure 12 and Figure 13.

3. Place a 5" (127 mm) block under pivot assembly to prevent blade assembly from rolling over backwards.
4. Place a stand 27" to 28" (685 to 711 mm) tall or heavy duty saw horse under the boom as shown.

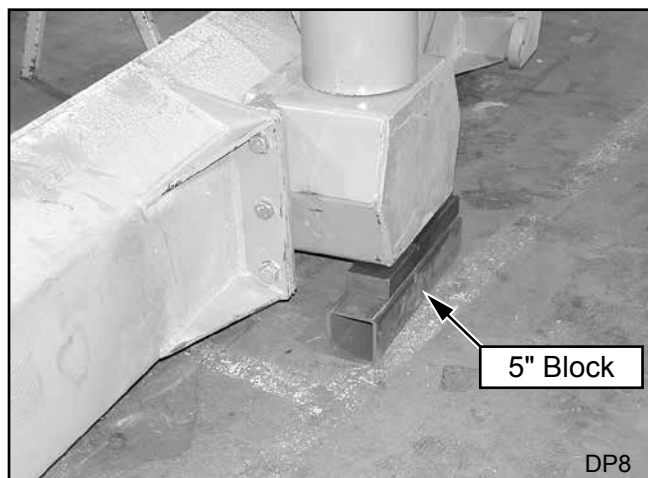


Figure 12. 5" Block Under Pivot Assembly

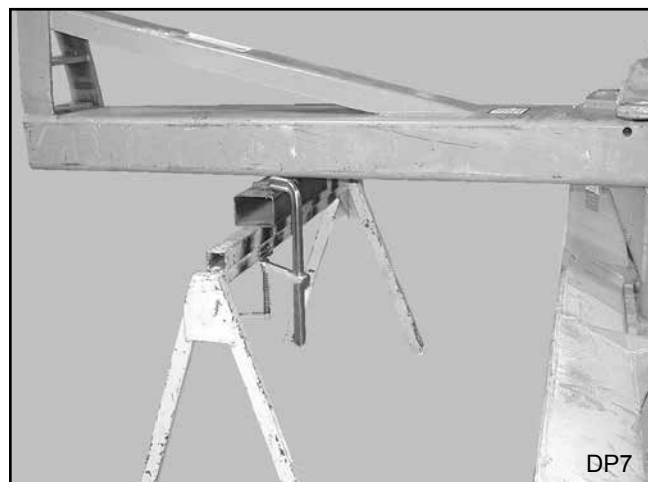


Figure 13. Stand Under Boom Assembly

Attach A-Frame to Boom Assembly (continued)

5. Place A-Frame (1) over end of boom assembly (4).
6. Insert washer(s) (83) between top of boom assembly and A-Frame. One or more washers may be needed to eliminate excessive movement between A-Frame and boom assembly.
7. Position angling hydraulic cylinder (13) in boom assembly.
8. Align holes in A-Frame, washers, boom assembly, and angling cylinder.
9. Insert pin (82) through assembly and secure with washer (83) and cotter pin (46).
10. Rotate parking stand (3) down into parking position. Secure with pin (54) and two safety pins (30) as shown in Figure 15.
11. Attach hitch pins (72), bushings (73), washers (74), and klik pins (53) to A-Frame.
12. Attach top link pin (69), bushing (70), and klik pin (32) to A-Frame.

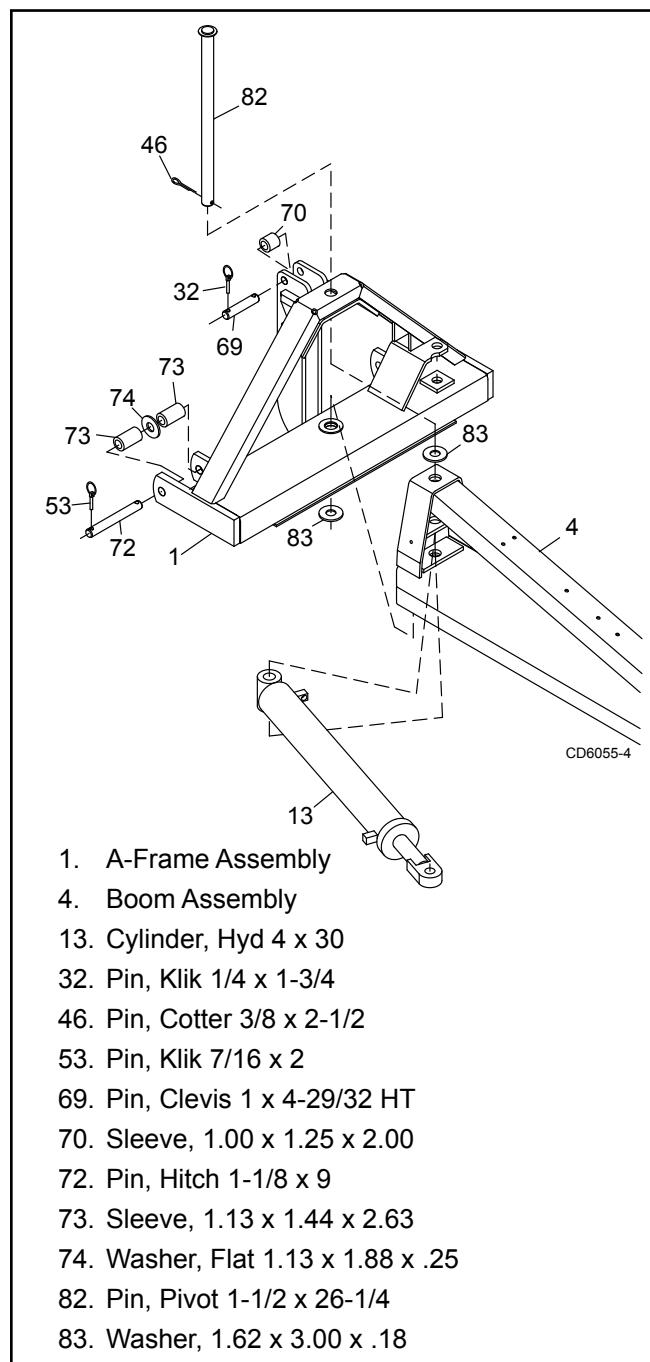


Figure 14. A-Frame to Boom Assembly Installation

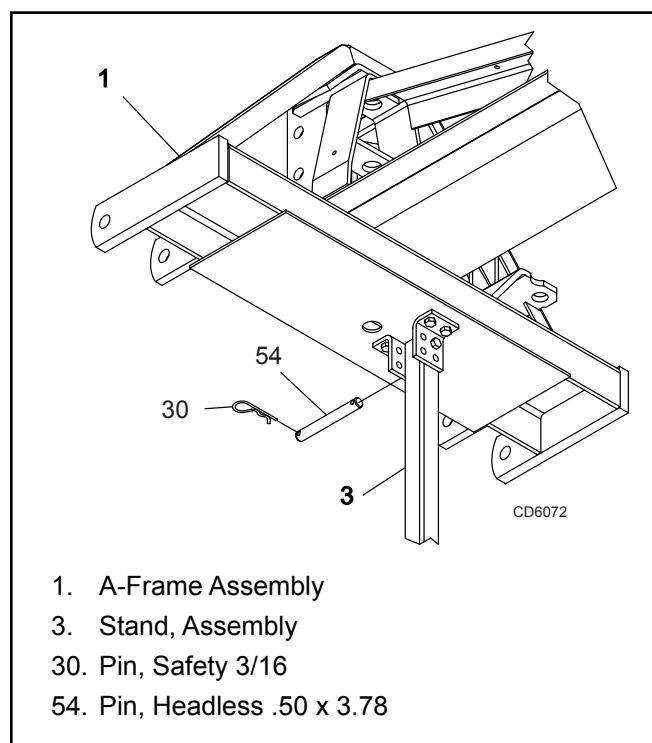


Figure 15. Parking Stand in Parking Position

Install Angling Linkage

1. Insert two index pin assemblies (79) into angling crank (16). Secure with clinch pins (45).
2. Insert Spirol pin (38) into clevis pin (76).
3. Attach one end of connecting link (15) to angling crank (16) using clevis pin (76) and flat washer (80). Secure into position with cotter pin (31).
4. Install guide link (14) (previously removed) and washer(s) (83) to boom assembly (4). Secure with cotter pin (31).

NOTE: One or more washers (83) may be needed under guide link to align rod end of cylinder (13) with connecting link (15) and guide link (14).

5. Insert Spirol pin (38) into clevis pin (77).
6. Align holes in angling cylinder (13), connecting link (15), and guide link (14).
7. Place washer (80) over top hole in guide link (14) and insert clevis pin (77) through assembly. Secure into position with cotter pin (31).

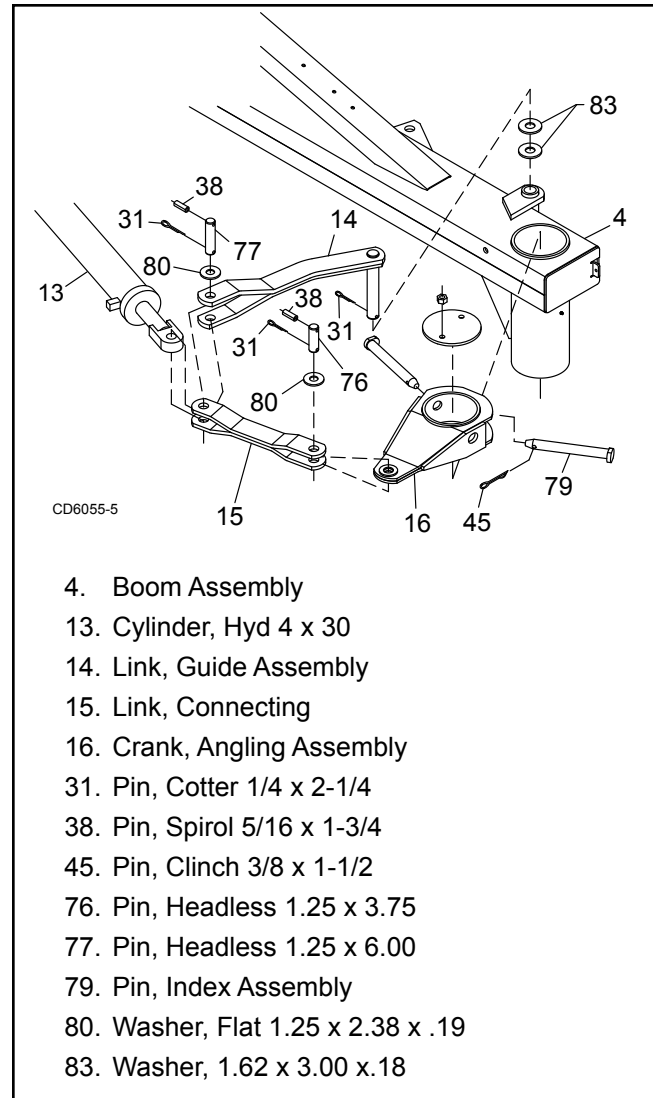


Figure 16. Angling Linkage Installation

Install Manual Tube

1. Place manual tube (7) over holes on top of boom assembly as shown in Figure 17.
2. Secure into position using three cap screws (47), six flat washers (48), (one on each side), and lock nuts (49).

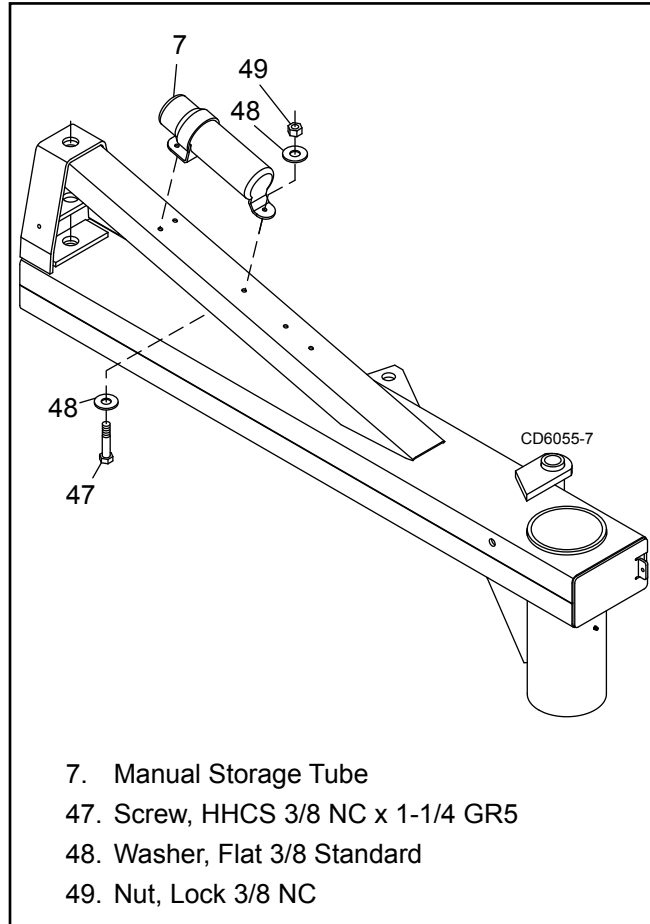


Figure 17. Manual Tube Installation

Install Slow Moving Vehicle (SMV) Sign

Refer to Figure 18.

1. Place bracket (5) on top of boom assembly and secure with two cap screws (47), four flat washers (48) (one on each side), and hex nuts (49).
2. Attach SMV socket (6) to bracket (5) using two carriage bolts (39), flat washers (40), and lock nuts (41).
3. Attach SMV sign (9) to SMV sign bracket (8) using two screws (33) and nuts (34).
4. Insert sign and bracket assembly into socket (6) to display SMV sign.

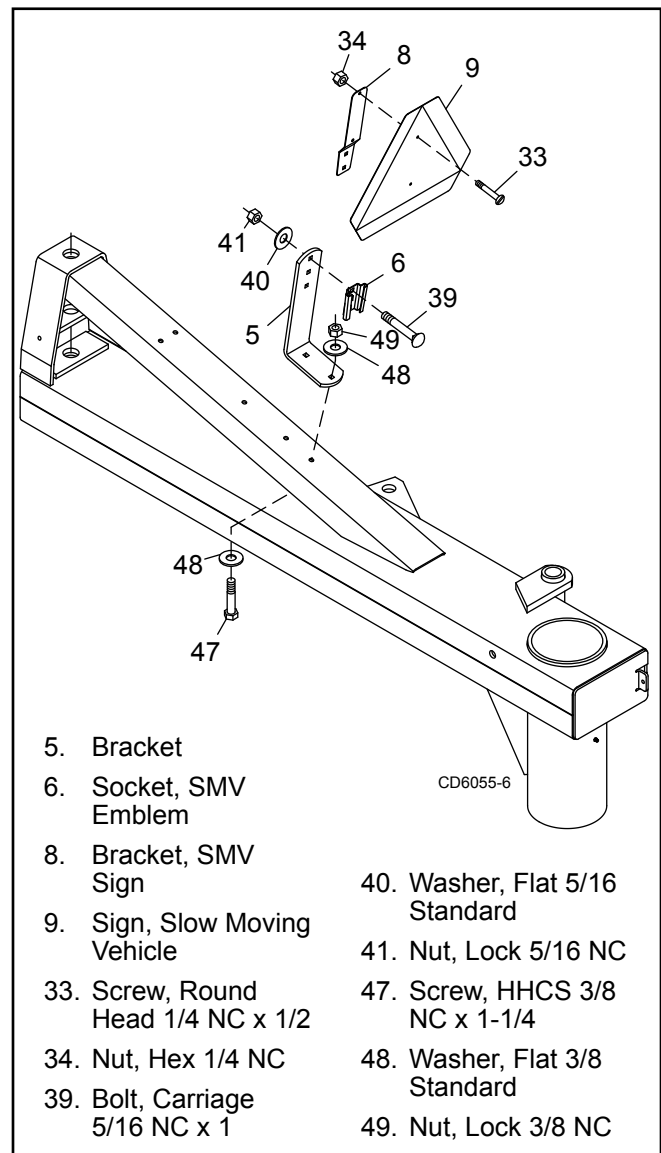


Figure 18. Slow Moving Vehicle Sign Installation

NOTE: For complete RB990H-2 / RB1010H-2 Hydraulic Configuration assembly, proceed to page 29.

MANUAL CONFIGURATION RB990MA-2 / RB1010MA-2

1. Attach ratchet (23) to moldboard (20) and pivot assembly (18) using pins supplied with ratchet.
2. Insert inner offset link (12) into outer offset link (11).
3. Attach outer offset link to bracket on A-Frame and insert clevis pin (78). Secure with Spirol pin (38), washer (80), and cotter pin (31).
4. Attach inner offset link to the boom assembly and insert clevis pin (77). Secure with Spirol pin (38), washer (80), and cotter pin (31).

5. Rotate A-Frame to desired position. Align holes in inner and outer offset links. Insert rivet pin (59) and secure with safety pin (30).

NOTE: Two additional rivet pins (59) are supplied. Rivet pins are used as a shear pin during operation.

IMPORTANT

- Rivet pin (59) is designed to shear at a predetermined load to prevent damage to the blade. Using any pin other than Woods standard rivet pin will damage the blade and void warranty.

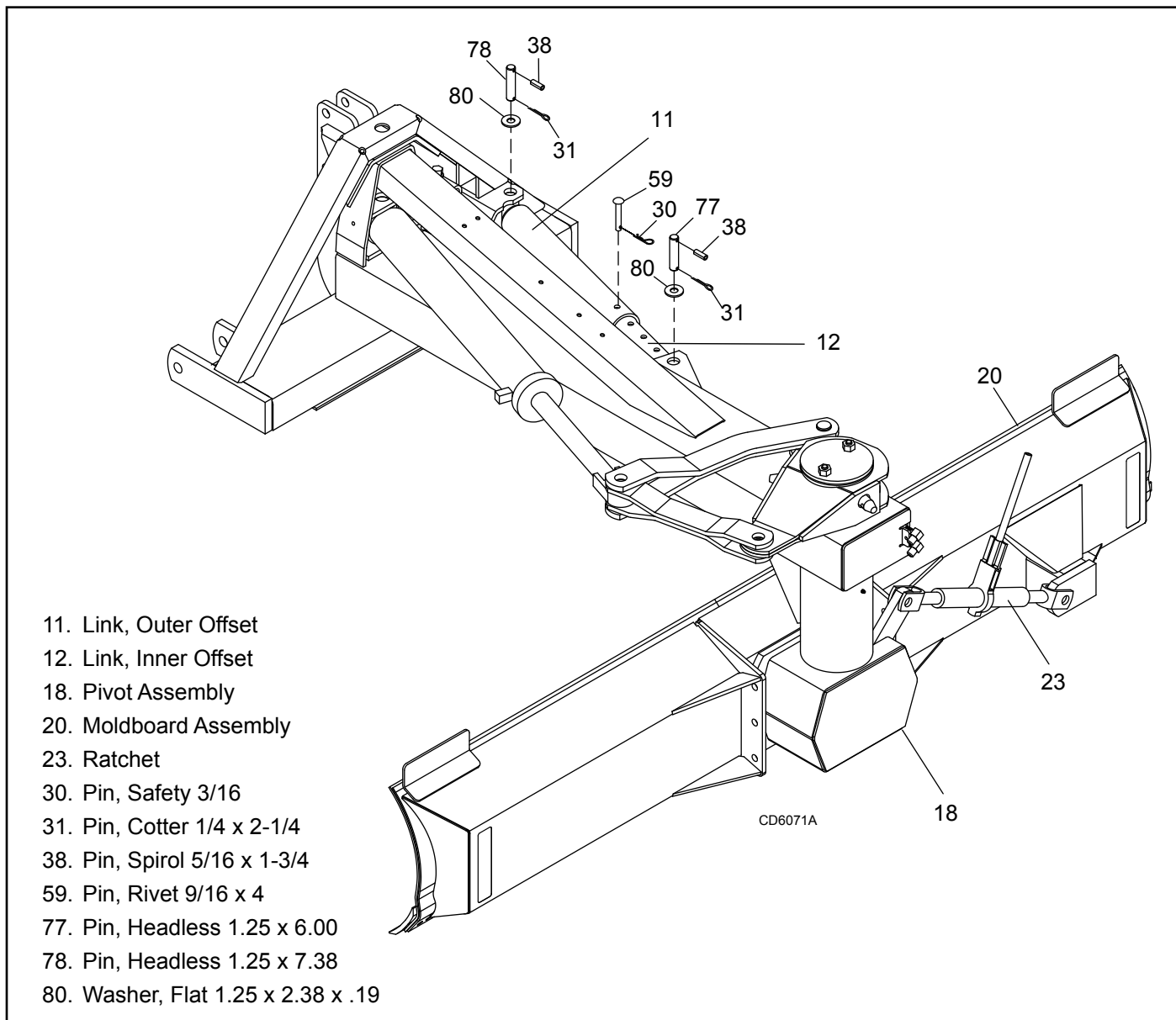


Figure 19. Manual Configuration

Install Angle Cylinder Hoses

1. Install adapter (2) into base end of angle cylinder (1).
2. Install adapter (3) into the rod end of angle cylinder (1).
3. Attach 96" hose (4) to adapter (2) and 108" hose (5) to adapter (3).
4. Wrap binding strap (7) around barrel of cylinder to secure 108" hose (5).
5. Install hose clamp (6) to A-Frame using cap screw (10) and lock nut (11). Do not tighten at this time.
6. Place hoses in clamp. Allow enough slack for hoses to move freely when cylinder moves. Tighten lock nut.

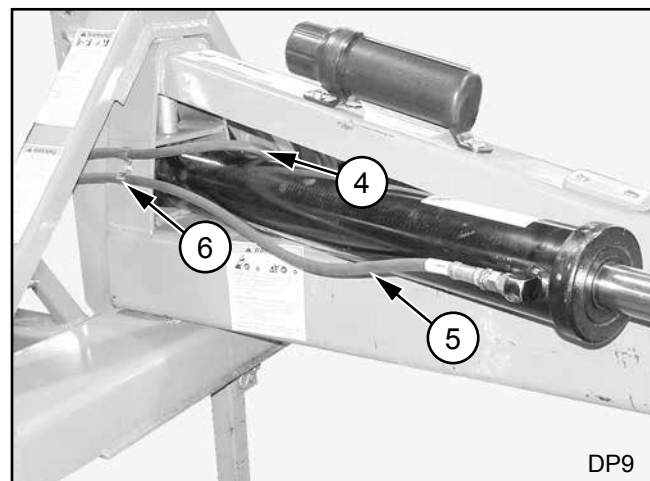


Figure 20. Angle Cylinder Hoses Installed

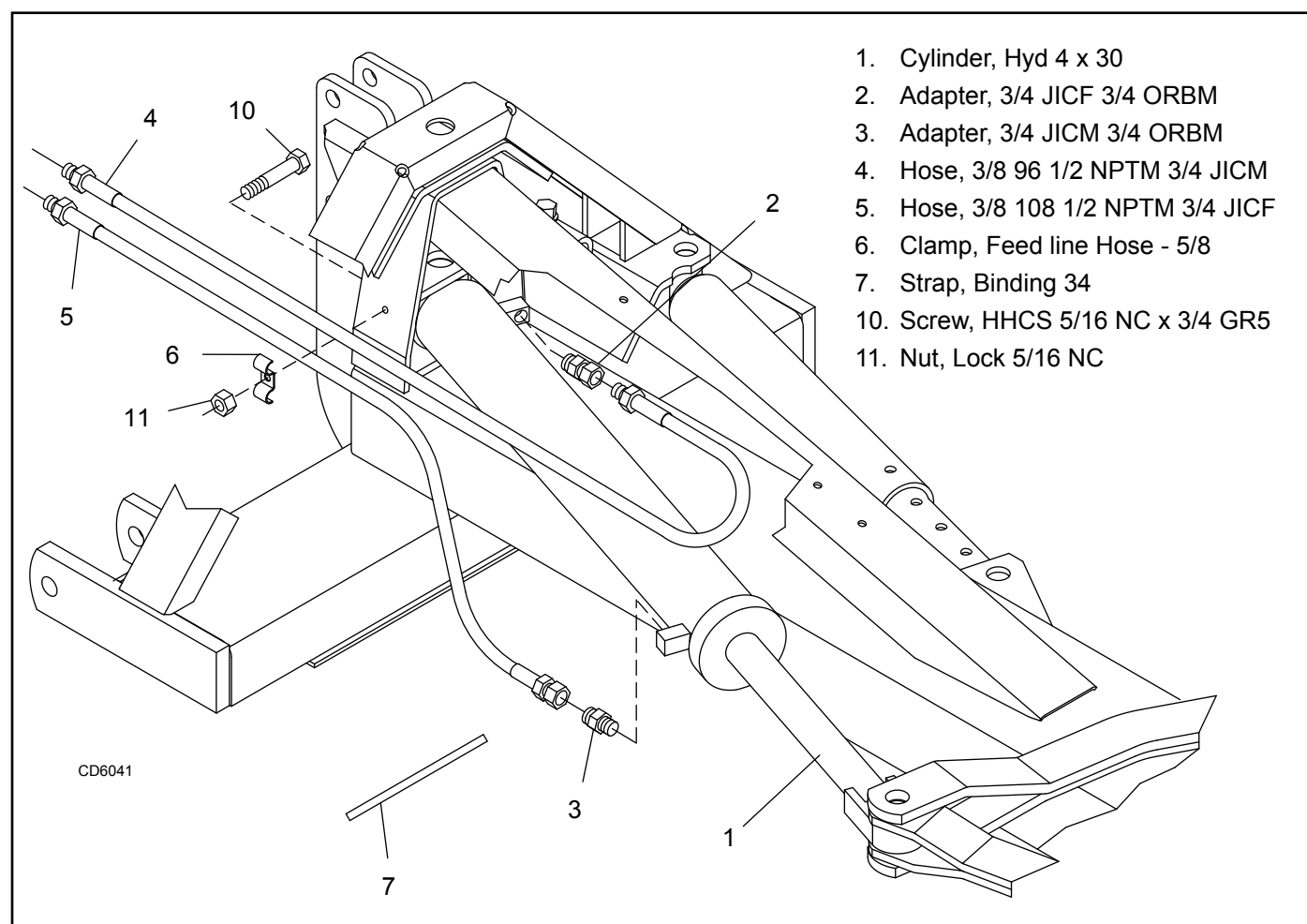


Figure 21. Angle Cylinder Hose Installation

Install Hydraulic Offset Kit 1004907 (Optional)

Refer to Figure 22 & Figure 23.

1. Remove inner and outer offset links if previously installed.
2. Attach the hydraulic offset cylinder (1) between the A-Frame and boom. Secure with pins and hardware removed with offset links.

Install Relief Valves

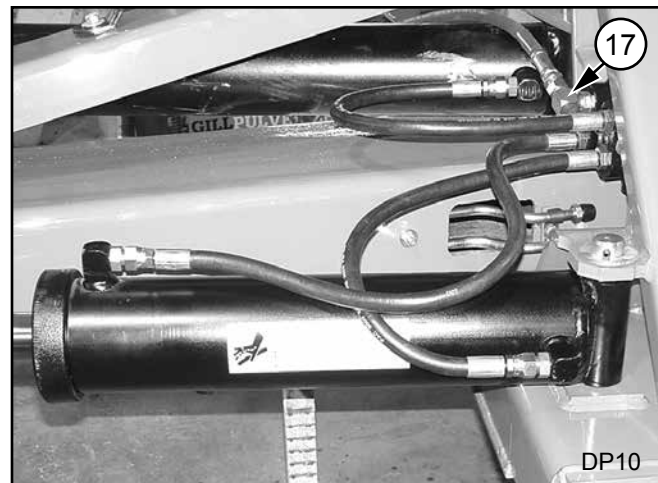
1. Attach two double relief valves (3) to boom assembly. Secure with two cap screws (32), four flat washers (33), and lock nuts (34).
2. Install elbow (17) in top port (A) of inner relief valve.

Install Adapters & Hoses

1. Remove fittings from both ports of angling cylinder (2).
2. Install adapter (16) in base end of angling cylinder and both ports of offset cylinder (1).
3. **40" Hose** - Attach male end of hose (20) to port (A) on rod end of angling cylinder (2).
4. Attach female end of hose to elbow (17) in inner top relief valve port (A).
5. Secure hose to barrel of angling cylinder with binding strap (5).
6. **30" Hose** - Attach male end of hose (19) to bottom port (C) of inner relief valve.
7. Attach female end of hose to adapter (16) in port (C) on rod end of offset cylinder (1).
8. **24" Hose** - Attach male end of one hose (18) to bottom outer relief valve port (D).
9. Attach female end of hose to adapter (16) in port (D) in base end of offset cylinder (1).
10. Attach male end of second hose (18) to top outer relief valve port (B).
11. Attach female end of second hose to adapter (16) in port (B) in base end of angling cylinder (2).

NOTE: If installing Selector Valve Kit, proceed to page 26.

12. Install four adapters (16) and four 66" hoses (21) to the four ports on the front of the relief valve.
13. Connect top two hoses to the tractor hydraulic couplers that control the angling cylinder (2). Secure hoses together using binding straps (4).
14. Connect the bottom two hoses to the tractor hydraulic couplers that control the offset cylinder (1). Secure hoses together using binding straps (4).



1. Cylinder, Hydraulic 4 x 16
2. Cylinder, Hydraulic, 4 x 30
3. Valve, Hyd Double Relief 1600 psi
4. Strap, Binding 14-1/2
5. Strap, Binding 34
16. Adapter, 3/4 JICM 3/4 ORBM
17. Elbow, 3/4 ORBM 3/4 JICM 90
18. Hose, 3/8 24 3/4 ORBM 3/4 JICF
19. Hose, 3/8 30 3/4 ORBM 3/4 JICF
20. Hose, 3/8 40 3/4 ORBM 3/4 JICF
21. Hose, 3/8 66 1/2 NPTM 3/4 JICF
32. Screw, HHCS 5/16 NC x 5 GR5
33. Washer, Flat 5/16 Standard
34. Nut, Lock 5/16 NC

Figure 22. Offset Kit Installed

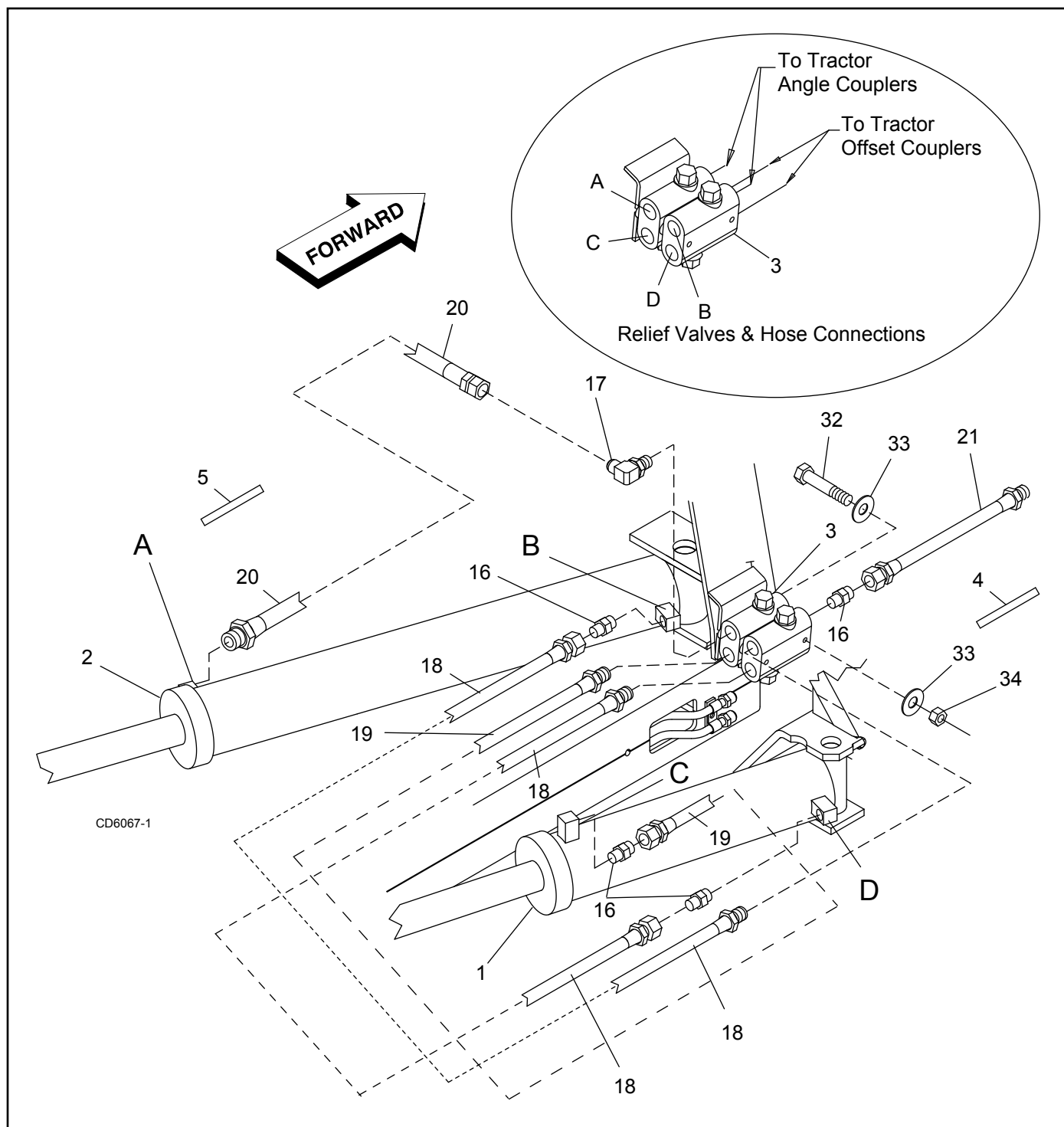


Figure 23. 1004907 Hydraulic Offset Kit Hose Installation

Install Selector Valve Kit 1004909 (Optional)

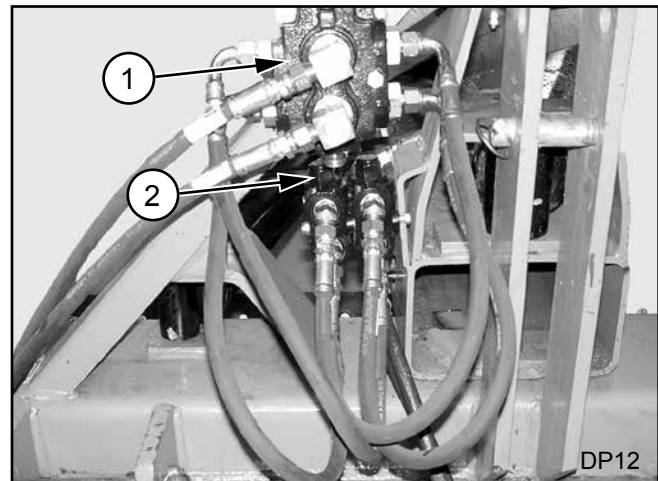
Refer to Figure 24, Figure 26, & Figure 27.

NOTE: Rear blade must be equipped with hydraulic angling and offset relief valves to use this kit.

1. Remove hoses and straight connectors on the front side of relief valves if previously installed.
2. Install four 45-degree elbows (5) into relief valve ports.
3. Insert two cap screws (12) through mounting plate (3).
4. Attach selector valve (1) to valve mounting plate (3). Secure with two cap screws (14), flat washers (15), and lock nuts (16).
5. Attach valve mounting bracket to A-Frame using previously installed cap screws (12) and lock nuts (13).
6. Install four adapters (4) into the side ports of the selector valve.
7. Install two elbows (6) into the front ports of the selector valve.
8. Attach 90-degree end of 28" hoses (7) to the four adapters (4) in the side ports of the selector valve.
9. Attach straight end of 28" hoses (7) to the four 45-degree elbows (5) in the front of the relief valve ports. See Figure 27 for correct hose connections.
10. Attach two 66" hoses (8) previously removed to the two elbows (6) on the front of the selector valve. Secure hoses together using binding strap (9).
11. Attach handle kit (1004296) to selector valve.

IMPORTANT

- **Make sure the selector valve does not interfere with relief valves when boom is rotated. Adjust as necessary.**
- **Do not shift the selector valve with rear blade under load.**



1. Valve, Hyd Double Selector
2. Valve, Hyd Double Relief 1600 psi
3. Bracket, Valve Mounting
4. Adapter, 3/4 JICM 1-1/16 ORBM
5. Elbow, Hyd 3/4 JICM 3/4 ORBM 45
6. Elbow, 3/4 JICM 1-1/16 ORBM 90
7. Hose, 3/8 28 3/4 JICF 3/4 JICF
8. Hose, 3/8 66 1/2 NPTM 3/4 JICF
9. Strap, Binding 14-1/2
12. Screw, HHCS 5/16 NC x 1 GR5
13. Nut, Flanged Lock 5/16 NC
14. Screw, HHCS 3/8 NC x 3 GR5
15. Washer, 3/8 Flat Standard
16. Nut, Lock 3/8 NC

Figure 24. Selector Valve Installed

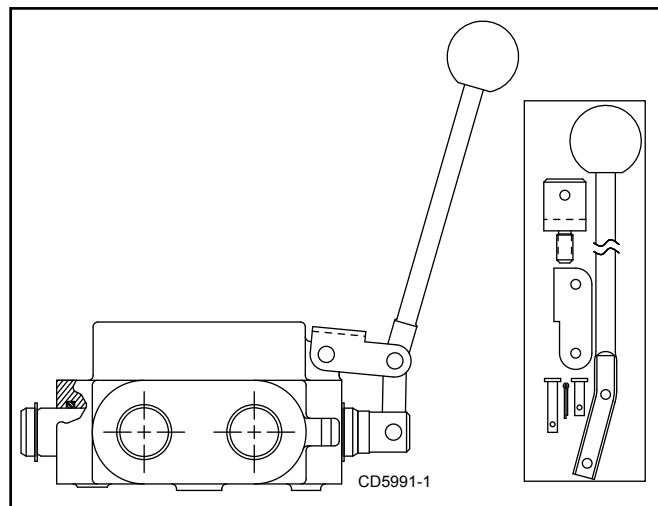


Figure 25. 1004296 Handle Kit

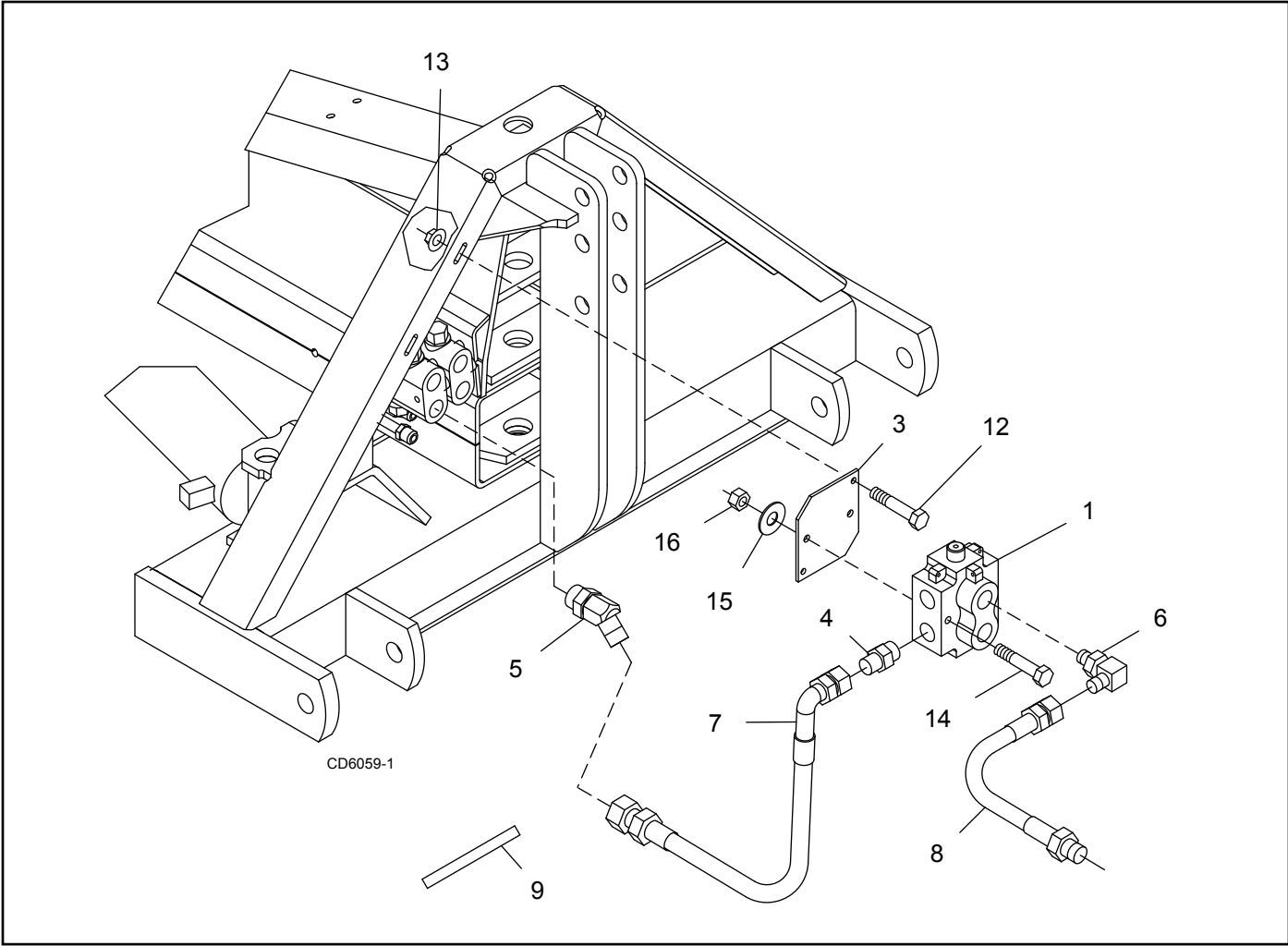


Figure 26. Selector Valve Installation

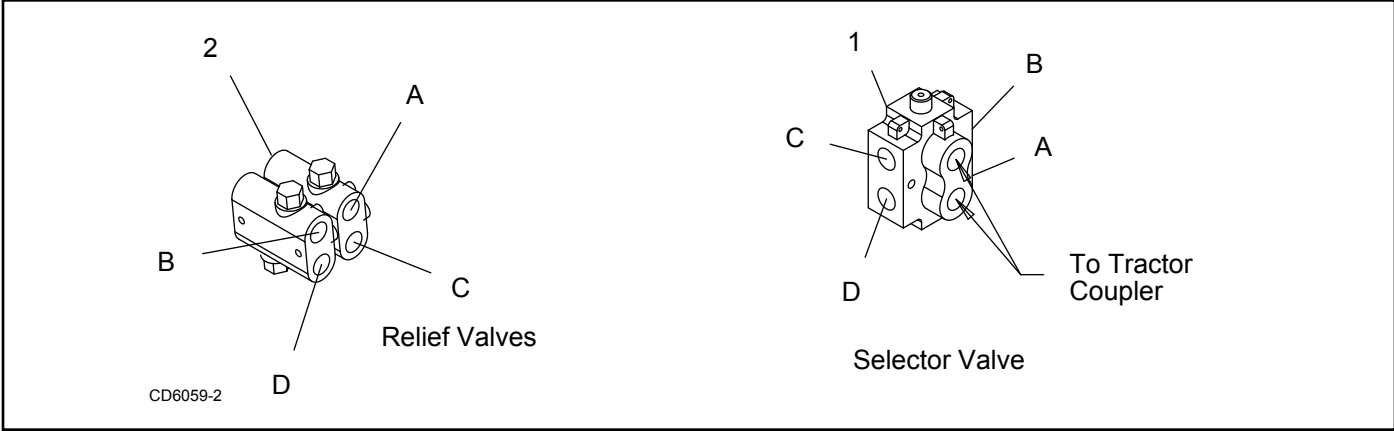


Figure 27. Selector Valve Hose Connection

Install Hydraulic Tilt Kit 1004908 (Optional)

1. Remove ratchet if previously installed.
2. Attach hydraulic cylinder (1) to pivot assembly and moldboard as shown. Secure with pins supplied with the cylinder.
3. Install two elbows (4) into ports of tilt cylinder as shown.
4. Remove caps (3) from end of hydraulic tube assemblies (2) at the end of boom.
5. Attach 45" hoses (5) to hydraulic tube assembly and elbows (4) in hydraulic cylinder.
6. Secure hoses together with binding strap (7).
7. Remove caps (3) from tube assemblies at the front of boom.
8. Attach 66" hoses (6) to tube assemblies.

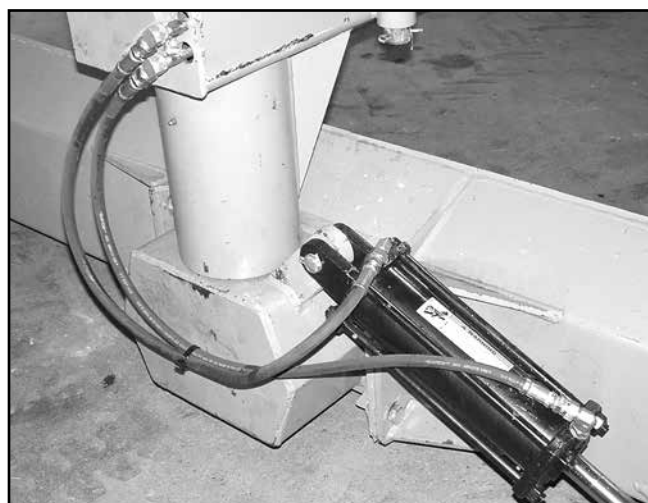


Figure 28. Optional Hydraulic Tilt Kit Installed

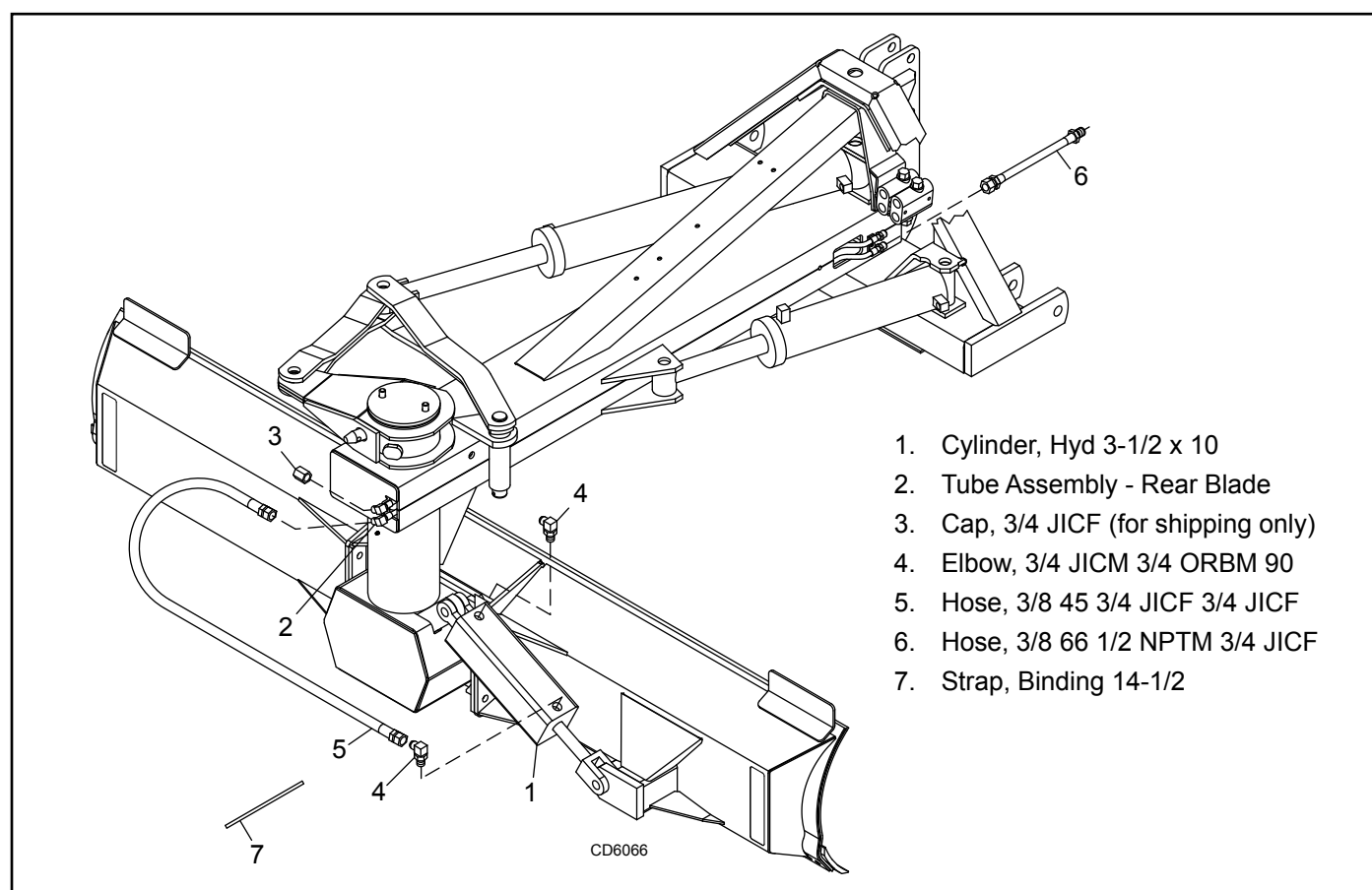
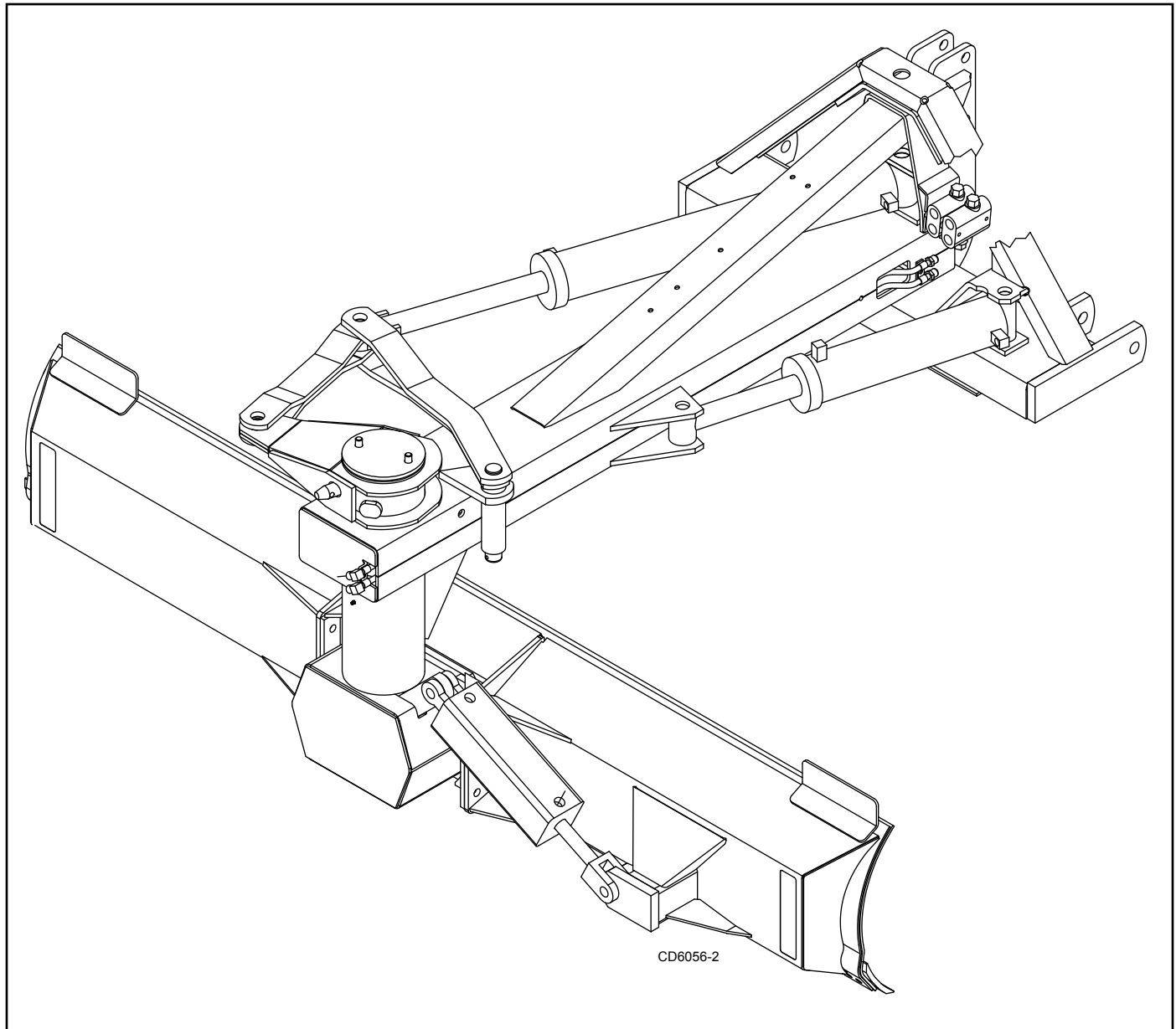


Figure 29. Optional Hydraulic Tilt Kit Installation

HYDRAULIC CONFIGURATION RB990H-2 / RB1010H-2



Install Hydraulic Offset Cylinder & Relief Valves

Refer to Figure 30 & Figure 31.

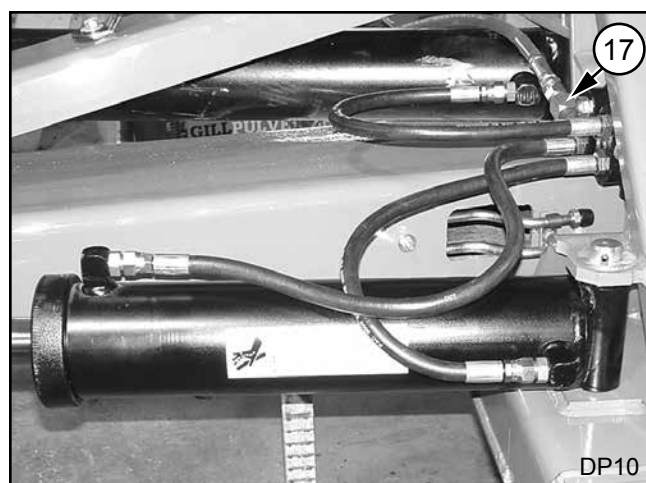
1. Attach the hydraulic offset cylinder (1) between the A-Frame and boom. Secure with pins (77 & 78), two Spirol pins (38), washers (80), and cotter pins (31). See Figure 31 for locations.

Install Relief Valves

1. Attach two double relief valves (3) to boom assembly. Secure with two cap screws (32) four flat washers (33), and lock nuts (34).
2. Install elbow (17) in top port (A) of inner relief valve.

Install Adapters & Hoses

1. Install adapter (16) in base end port (B) of angling cylinder (2) and both ports (C & D) of offset cylinder (1).
2. **40" Hoses** - Attach male end of hose (20) to port (A) on rod end of angling cylinder (2).
3. Attach female end of hose to elbow (17) in inner top relief valve port (A).
4. Secure hose to barrel of angling cylinder with binding strap (5).
5. **30" Hose** - Attach male end of hose (19) to bottom port (C) of inner relief valve.
6. Attach female end of hose to adapter (16) in port (C) on rod end of offset cylinder (1).
7. **24" Hose** - Attach male end of one hose (18) to bottom outer relief valve ports (D).
8. Attach female end of hose to adapter (16) in port (D) in base end of offset cylinder (1).
9. Attach male end of second hose (18) to top outer relief valve ports (B).
10. Attach female end of second hose (18) to adapter (16) in port (B) in base end of angling cylinder (2).
11. **66" Hoses** - Install four adapter (16) and four hoses (22) to the four ports on the front of the relief valve.
12. Connect top two hoses to the tractor hydraulic couplers that control the angling cylinder (2). Secure hoses together using binding straps (9).
13. Connect the bottom two hoses to the tractor hydraulic couplers that control the offset cylinder (1). Secure hoses together using binding straps (9).



1. Cylinder, Hydraulic 4 x 16
2. Cylinder, Hydraulic, 4 x 30
3. Valve, Hyd Double Relief 1600 psi
5. Strap, Binding 34
9. Strap, Binding 14-1/2
16. Adapter, 3/4 JICM 3/4 ORBM
17. Elbow, 3/4 ORBM 3/4 JICM 90
18. Hose, 3/8 24 3/4 ORBM 3/4 JICF
19. Hose, 3/8 30 3/4 ORBM 3/4 JICF
20. Hose, 3/8 40 3/4 ORBM 3/4 JICF
22. Hose, 3/8 66 1/2 NPTM 3/4 JICF
- *31. Pin, Cotter 1/4 x 2-1/4
32. Screw, HHCS 5/16 NC x 5 GR5
33. Washer, Flat 5/16 Standard
34. Nut, Lock 5/16 NC
- *38. Pin, Spirol 5/16 x 1-3/4
- *77. Pin, Headless 1.25 x 6.00
- *78. Pin, Headless 1.25 x 7.38
- *80. Washer, 1.25 x 2.38 x .19

Figure 30. Offset Kit Installed

Install Tilt Cylinder

1. Attach hydraulic cylinder (3) to pivot assembly and moldboard as shown. Secure with pins supplied with the cylinder.
2. Install two elbows (17) into ports of tilt cylinder as shown.
3. Remove caps (15) from end of hydraulic tube assemblies (5) at the end of boom.
4. Attach 45" hoses (21) to hydraulic tube assembly and elbows (17) in hydraulic cylinder.
5. Secure hoses together with binding strap (9).
6. Remove caps (15) from tube assemblies at the front of boom.
7. Attach two 66" hoses (22) to tube assemblies at the front of the boom.

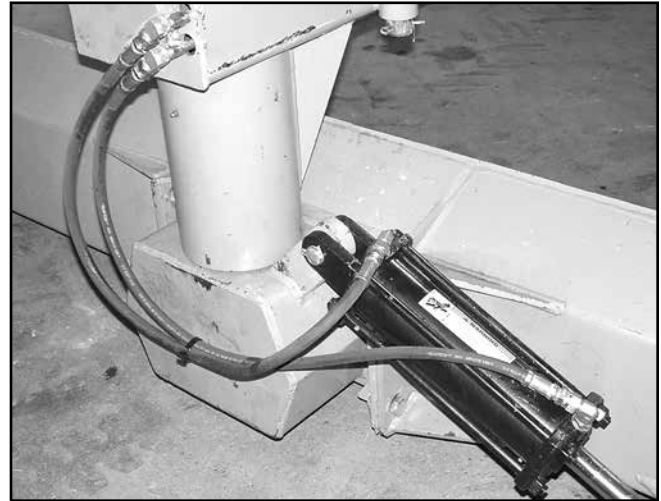


Figure 32. Tilt Cylinder Installed

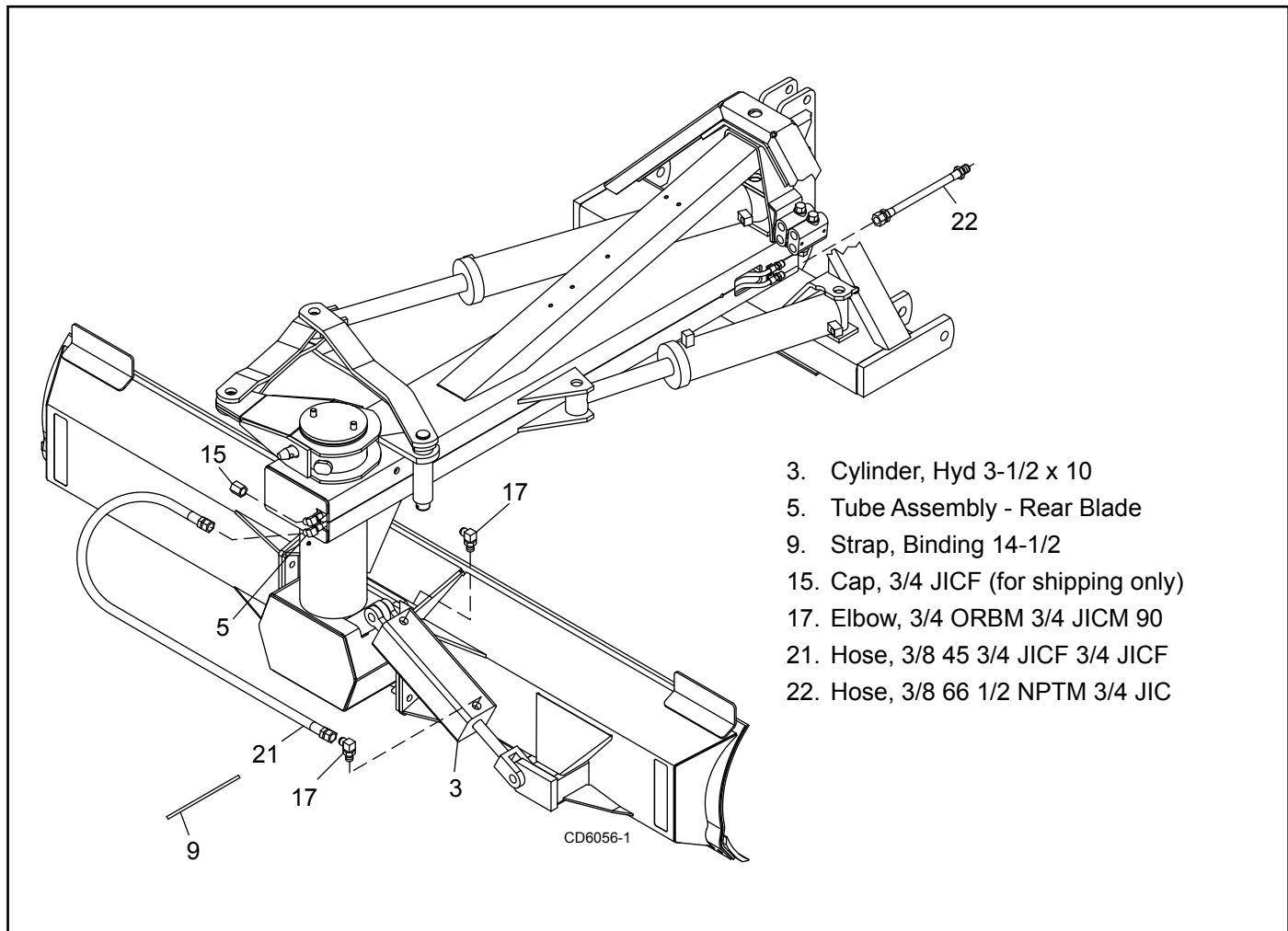


Figure 33. Tilt Cylinder Installation

PNEUMATIC TAIL WHEEL (OPTIONAL)

Install Pneumatic Tail Wheel Kit 29399 (Optional)

IMPORTANT

- When grading with tail wheel attached, do not attach upper link of tractor 3-point hitch to blade without using floating links (17 & 18). Without floating links, equipment damage may result and void warranty.
- Do not use this pneumatic tail wheel kit with 3-point quick hitch.

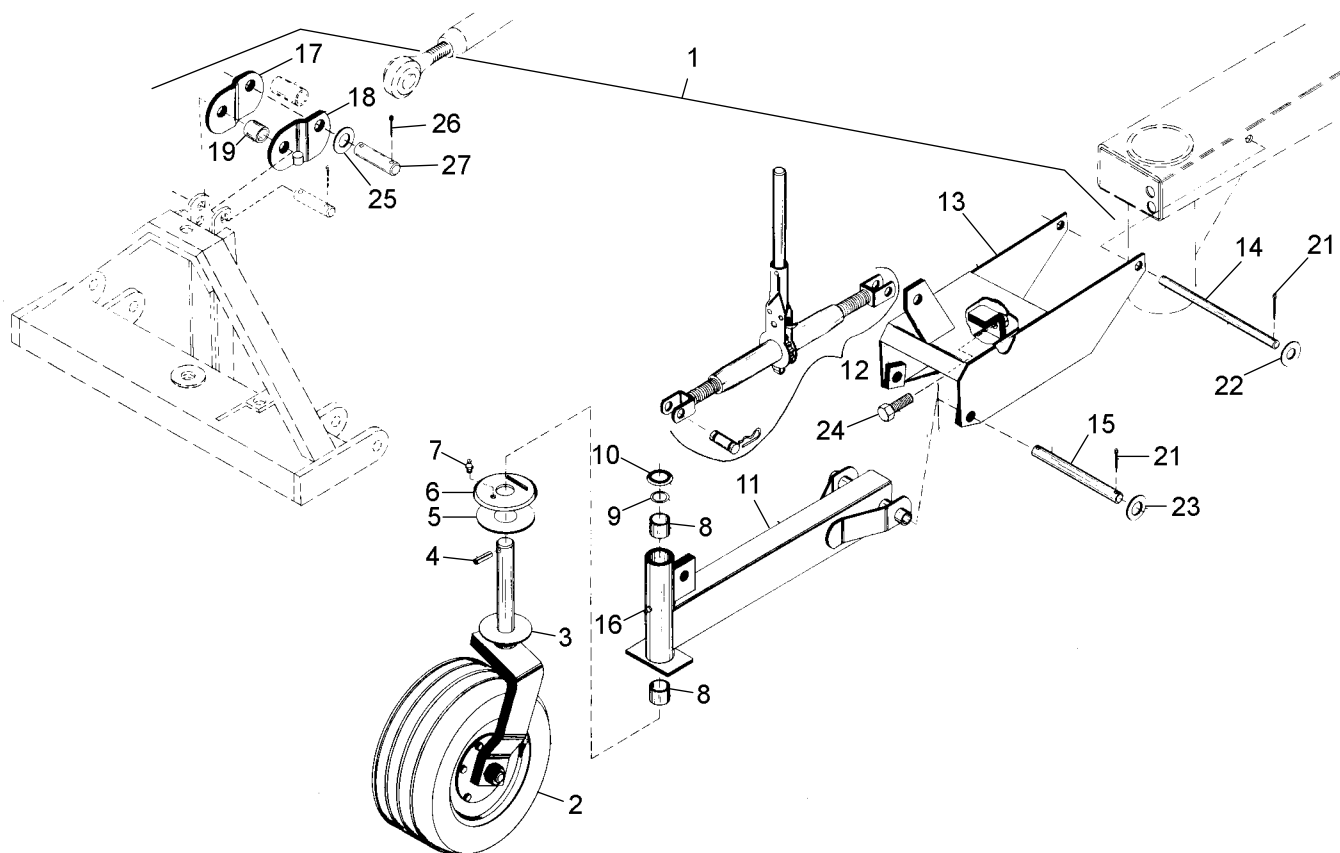
Refer to Figure 34.

The tail wheel is very helpful for finish grading and leveling work. Set approximate grading height with ratchet (12). Make fine adjustments in blade height by raising and lowering 3-point hitch.

1. Attach float links (17 & 18) and sleeve (19) to inside of the top holes of A-Frame.

NOTE: 3/4 dia. welded pin on side of float links must face outward and be located on the bottom end.

2. Secure into position with top link pin.
3. Attach bracket assembly (13) to boom assembly with clevis pin (14), two flat washers (22) and two cotter pins (21). Secure with cap screw (24).
4. Attach tail wheel arm (11) and yoke (3) to bracket (13) with clevis pin (15), washers (23), and cotter pin (21).
5. Attach ratchet (12) between bracket (13) and tail wheel arm (11). Secure with pins supplied with ratchet.
6. Attach top link to float links (17 & 18) using clevis pin (27), two SAE flat washers (25), and cotter pins (26).



- | | |
|--------------------------------------|---|
| 1. Tail Wheel, Pneumatic complete | 14. Pin, Clevis 3/4 x 12-1/4 |
| 2. Tire, Wheel & Hub | 15. Pin, Clevis 1 x 12-1/4 |
| 3. Wheel Yoke Assembly | 16. Grease Fitting, 1/4-28 Tapered Thread |
| 4. Pin, Spirol 7/16 x 2-1/2 | 17. Link, Floating Left |
| 5. Disc, Friction 4 x 6.15 | 18. Link, Floating Right |
| 6. Plate, Top Dampener | 19. Sleeve, 1.00 x 1.25 x 1.44 |
| 7. Grease Fitting, 1/8 Pipe Thread | 21. Pin, Cotter 1/4 x 1-1/2 |
| 8. Bushing, Bronze 1.5 x 1.63 x 1.50 | 22. Washer, Flat 3/4 Standard |
| 9. O-Ring .09 x 1.56 OD | 23. Washer, Flat 1" Standard |
| 10. Cap, Dust | 24. Screw, HHCS 1/2 NC x 1-3/4 GR5 |
| 11. Tail Wheel Arm Assembly | 25. Washer, Flat 1" SAE |
| 12. Ratchet | 26. Pin, Cotter 1/4 x 2-1/4 |
| 13. Tail Wheel Bracket Assembly | |

Figure 34. Pneumatic Tail Wheel Installation

DEALER CHECKLISTS

DEALER PRE-DELIVERY CHECKLIST (DEALER'S RESPONSIBILITY)

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

The following checklists 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.

DEALER DELIVERY CHECKLIST (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



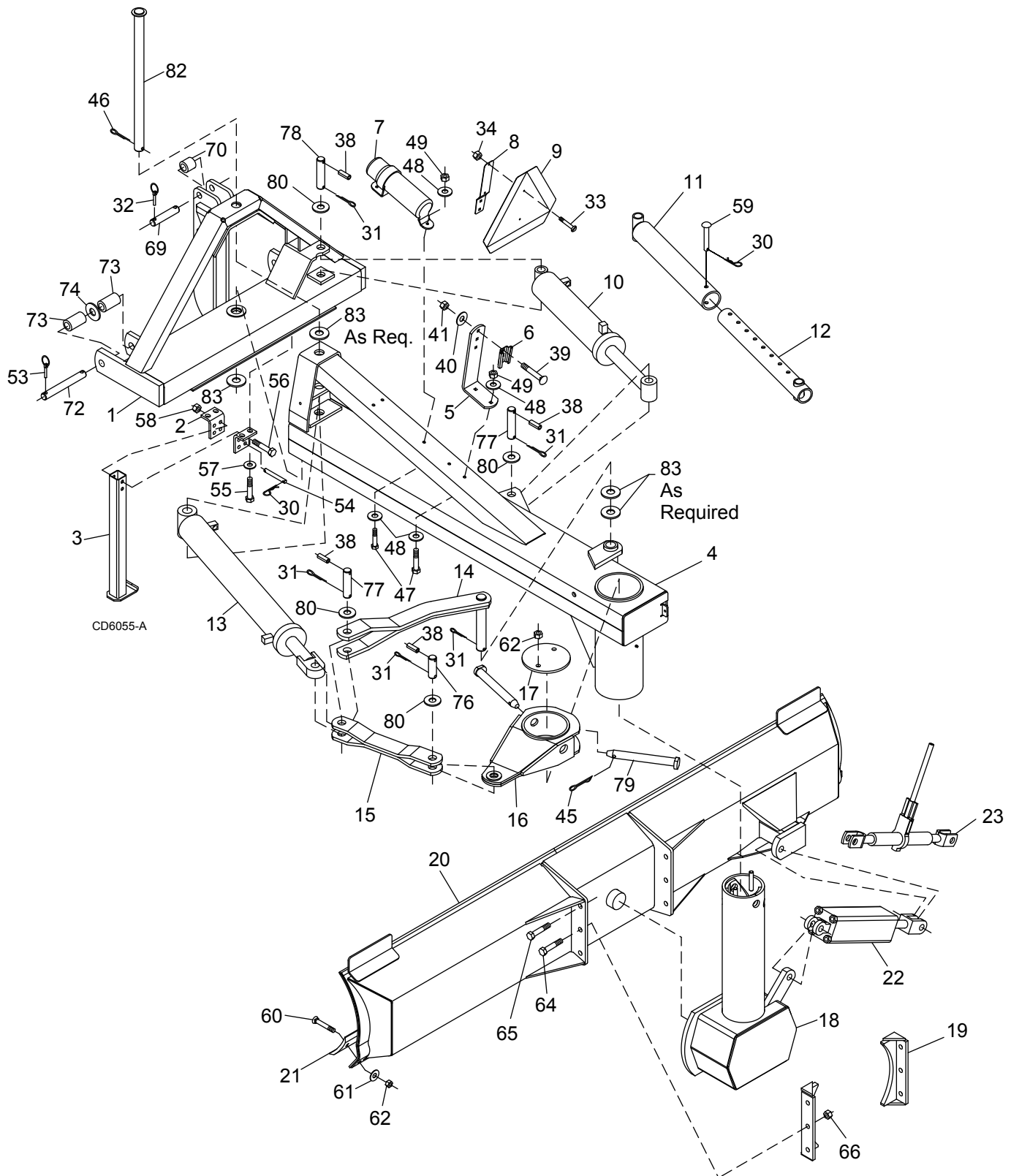
REAR BLADES

RB990MA-2 RB1010MA-2

RB990H-2 RB1010H-2

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RB990-2 / RB1010-2 MAIN ASSEMBLY



38 Parts

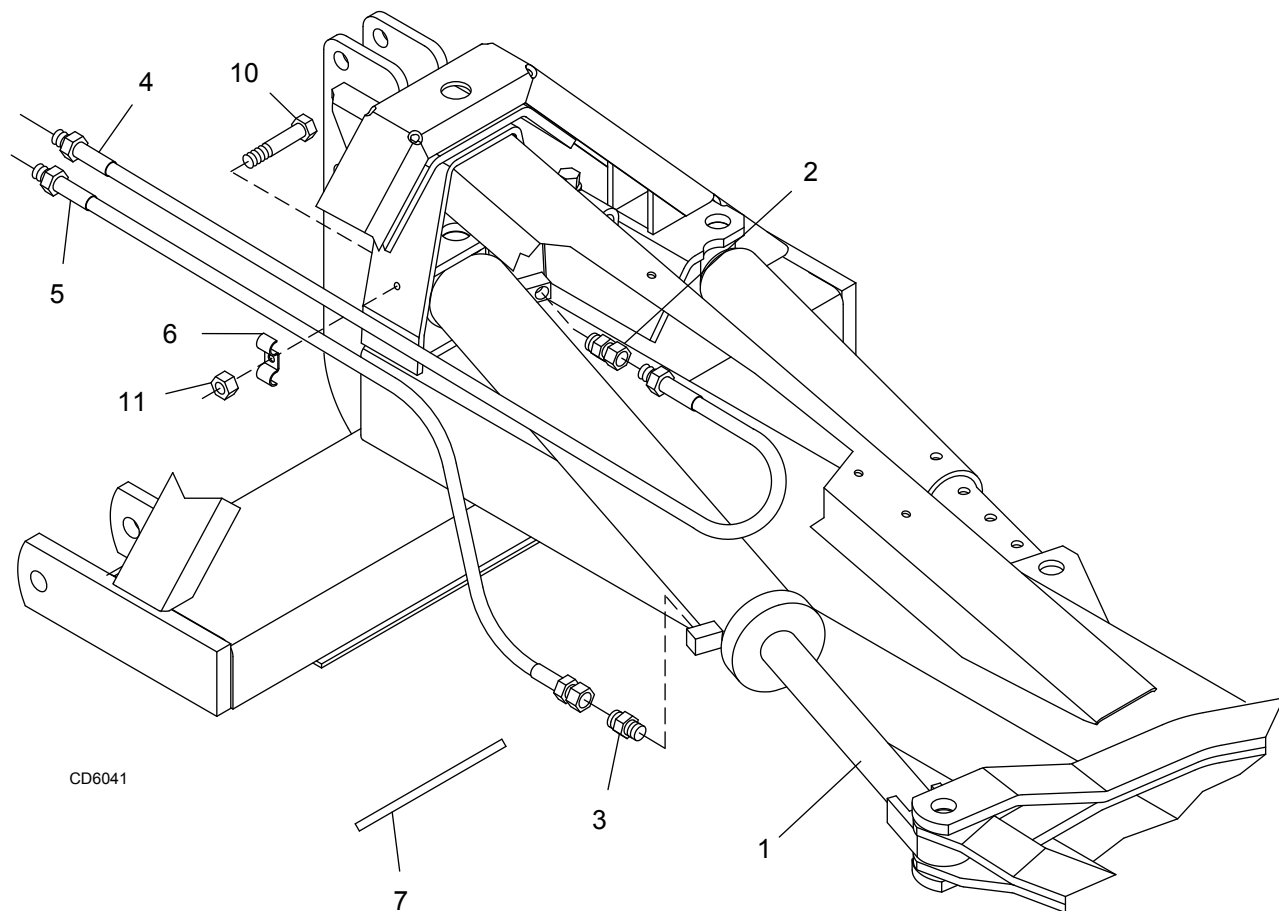
MAN0161
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RB990-2 / RB1010-2 MAIN ASSEMBLY PARTS LIST

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1005013	1	A-Frame with decals	48	565	10*	3/8 Flat washer, standard
2	26099RP	2	Parking stand bracket	49	6698	3*	3/8 NC Nut lock
3	26095RP	1	Parking stand	53	27542	4	7/16 x 2 Klik Pin
4	1005014	1	Boom assembly with decals	54	W13817	1	1/2 x 4-1/2 Clevis Pin
5	1004262RP	1	Bracket - SMV Sign	55	6100	4*	1/2 NC x 1-1/4 Hex head cap screw GR5
6	62484	1	Socket SMV Emblem	56	1637	1*	1/2 NC x 3-1/2 Hex head cap screw GR5
7	1003828	1	Manual Tube	57	3598	4*	1/2 SAE Flat washer
8	1004251	1	SMV Bracket	58	765	1*	Nut Lock 1/2 NC Zp
9	24611	1	SMV Sign	59	26431	3	9/16 x 4 Rivet pin
10	1005016	1	Hyd Cylinder 4.00 x 2.00 x 16.00	60	26920	10	5/8 NC x 1-3/4 Bolt plow GR5
11	31971RP	1	Outer offset link				or
12	31973RP	1	Inner offset link	60	26169	†	5/8 NC x 2-1/2 Bolt Plow GR5
13	1005015	1	Hyd Cylinder 4.00 x 2.00 x 30.00	61	1517	†	.625 x 1.38 x 7 Ga Flat washer
14	1004267RP	1	Guide Link - Rear Blade	62	6239	14*	5/8 NC Nut lock
15	26082RP	1	Connecting link assembly	64	W300517	2*	3/4 NC x 1-3/4 Hex head cap screw GR5
16	26075RP	1	Angling crank assembly	65	13759	4*	3/4 NC x 2-1/4 Hex head cap screw GR5
17	26103RP	1	Retaining Cap	66	2371	6*	3/4 NC Nut Lock
18	26034	1	Pivot Assembly	69	26148	1	1 x 4-29/32 Clevis pin HT
19	26090RP	2	Retaining Bracket	70	14695	1	1 x 1-1/4 x 2 Sleeve
20	1004889	1	RB990-2 Moldboard Assembly (Includes Cutting Edge)	72	26102	2	1-1/8 x 9 Mounting pin
	or			73	26100	4	1-1/8 x 1-7/16x 2-5/8 Sleeve
20	1004890	1	RB1010-2 Moldboard Assembly (Includes Cutting Edge)	74	W23278	2	1-1/8 x 1-7/8 x 1/4 Flat washer
21	26068	1	RB990-2 Cutting edge 1/2 X 6	76	26043	1	1-1/4 x 3-3/4 Clevis pin
	or			77	26088	2	1-1/4 x 6 Clevis pin
21	26074	1	RB1010-2 Cutting edge 1/2 X 6	78	26089	1	1-1/4 x 7-3/8 Clevis pin
22	597275	1	Hyd Cylinder 3.5 x 1.25 x 10.0	79	26079	2	Index pin Assembly
23	S010541OE	1	Ratchet	80	23609	4	1-1/4 x 2-3/8 x 3/16 Flat washer
30	18270	3*	3/16 Safety Pin	82	26093	1	1-1/2 x 26-1/4 Pin Assembly
31	6185	5*	1/4 X 2-1/4 Cotter Pin	83	2370	7	1.62 x 3 x .18 Washer
32	62043	2*	1/4 X 1-3/4 Klik Pin				Decal, Model RB990 (discontinued Order Woods Decal, 4225)
33	1282	2*	1/4 NC X 1/2 Round head screw	NS	-----		
34	5288	2*	1/4 NC Hex nut				
38	11880	4*	5/16x 1-3/4 Spirol pin	NS	1004258		Decal, Model RB1010
39	24409	2*	5/16 NC X 1 Carriage bolt				
40	4378	2*	5/16 Flat washer, standard				* Standard Hardware, obtain locally
41	6778	8*	5/16 NC Nut Lock				† For center holes (1 for RB990-2 & 2 for RB1010-2)
45	3282	2	3/8 X 1-1/2 Clinch Pin				
46	744	1*	3/8 X 2-1/2 Cotter Pin				
47	12169	5*	3/8 NC X 1-1/4 Hex head cap screw GR5				

NOTE: For safety decals, see pages 8 and 9. Order decals separately.

RB990MA-2 / RB1010MA-2 ANGLE CYLINDER (MAIN ASSEMBLY)



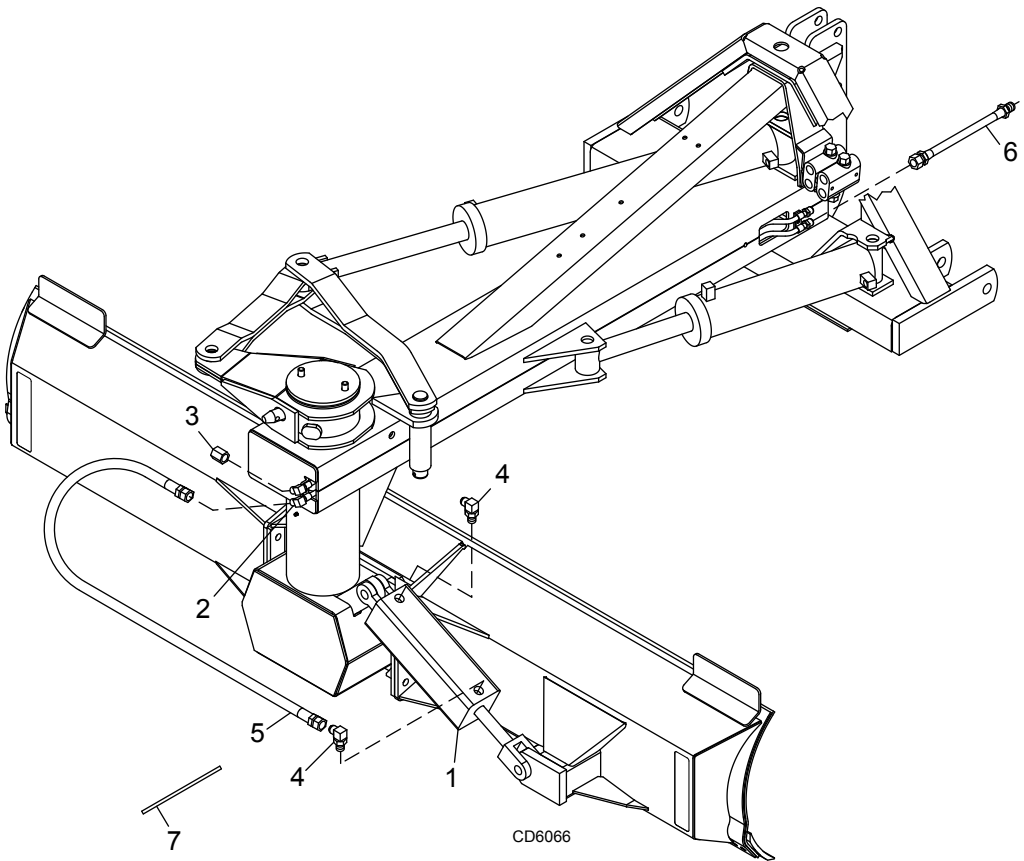
REF	PART	QTY	DESCRIPTION
1	1005015	1	Hyd Cylinder 4 x 30
2	315049	1	3/4 JICF 3/4 ORBM adapter
3	61	1	3/4 JICM 3/4 ORBM adapter
4	360166	1	Hose, 3/8 96 1/2 NPTM 3/4 JICM
5	1004856	1	Hose, 3/8 108 1/2 NPTM 3/4 JICF
6	56	1	Feedline Hose Clamp- 5/8
7	65766	4*	34" Binding Strap
10	6096	1*	5/16 NC x 3/4 Hex head cap screw GR5
11	6778	1*	5/16 NC Lock nut

* Standard Hardware, obtain locally

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HYDRAULIC TILT KIT 1004908 (OPTIONAL)

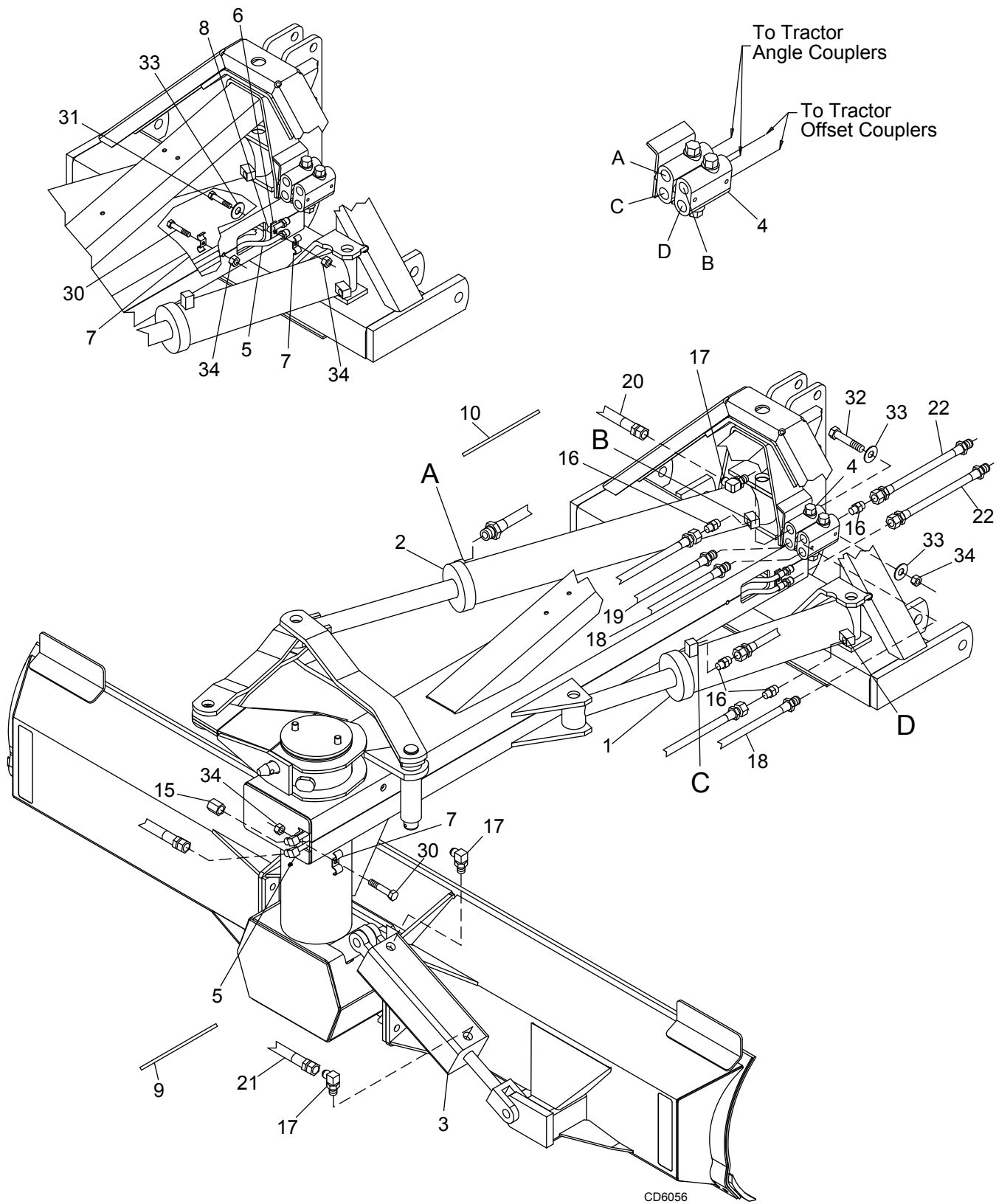


REF	PART	QTY	DESCRIPTION
1	1003197	1	Hyd Cylinder 3.5 x 1.25 x 10.0
2†	1003192	2	Tube Assembly - Rear Blade
3†	1004844	4	Cap, 3/4 JICF (for shipping only)
4	316004	2	Elbow, 3/4 ORBM 3/4 JICM 90
5	1004854	2	Hose, 3/8 45 3/4 JICF 3/4 JICF
6	1004283	2	Hose, 3/8 66 1/2 NPTM 3/4 JICF
7	W8641	3*	14-1/2 Binding strap

* Standard Hardware, obtain locally

† From main assembly, not included in this kit.

RB990H-2 / RB1010H-2 HYDRAULIC CONFIGURATION



42 Parts

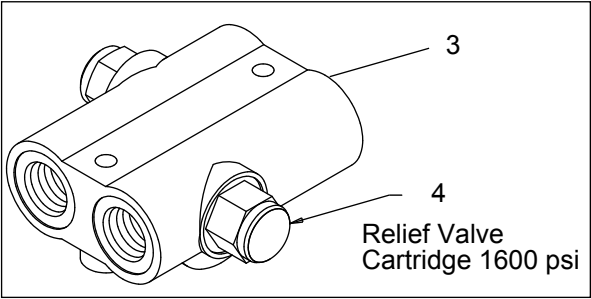
MAN0161
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RB990H-2 / RB1010H-2 HYDRAULIC CONFIGURATION PARTS LIST

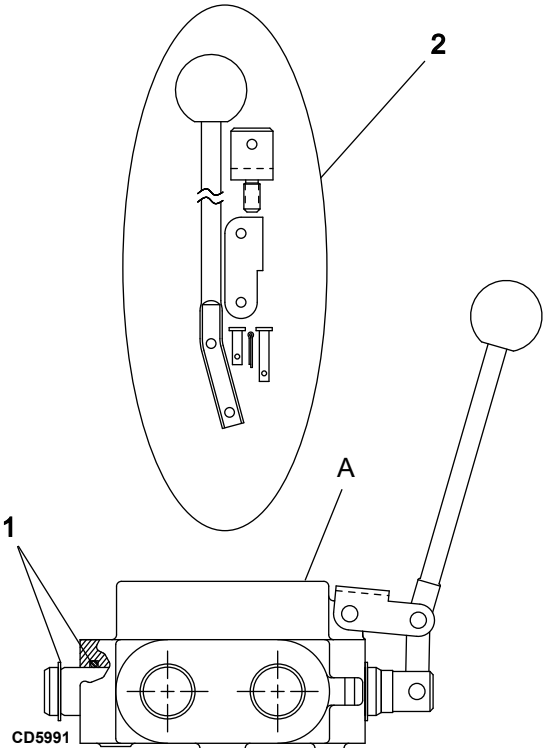
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1005016	1	Hyd Cylinder 4.00 x 2.00 x 16.00	18	360203	2	Hose, 3/8 24 3/4 ORBM 3/4 JICF
2	1005015	1	Hyd Cylinder 4.00 x 2.00 x 30.00	19	360160	1	Hose, 3/8 30 3/4 ORBM 3/4 JICF
3	597275	1	Hyd Cylinder 3.5 x 1.25 x 10.0	20	1004855	1	Hose, 3/8 40 3/4 ORBM 3/4 JICF
4	1004260	2	Valve, Hyd Double Relief 1600 psi	21	1004854	2	Hose, 3/8 45 3/4 JICF 3/4 JICF
5	1003192	2	Tube Assembly - Rear Blade	22	1004283	6	Hose, 3/8 66 1/2 NPTM 3/4 JICF
6	1004843	1	Lug, Hyd Line	30	14562	2*	5/16 NC x 1 Hex head cap screw GR5
7	258	3	Feed Line Clamp 1/2	31	4528	1*	5/16 NC x 1-3/4 Hex head cap screw GR5
8	65516	1	Sleeve, .36 x .54 x .62	32	58423	2*	5/16 NC x 5Hex head cap screw GR5
9	W8641	*4	14-1/2 Binding strap	33	4378	8*	5/16 Flat washer, Standard
10	65766	*1	34 Binding strap	34	6778	5*	5/16 NC Lock nut
15	1004844	4	Cap, 3/4 JICF (for shipping only)				
16	61	7	Adapter, 3/4 JICM 3/4 ORBM				
17	316004	3	Elbow, 3/4 ORBM 3/4 JICM 90				

* Standard Hardware, obtain locally

SELECTOR VALVE 1004261 RELIEF VALVE 1004260



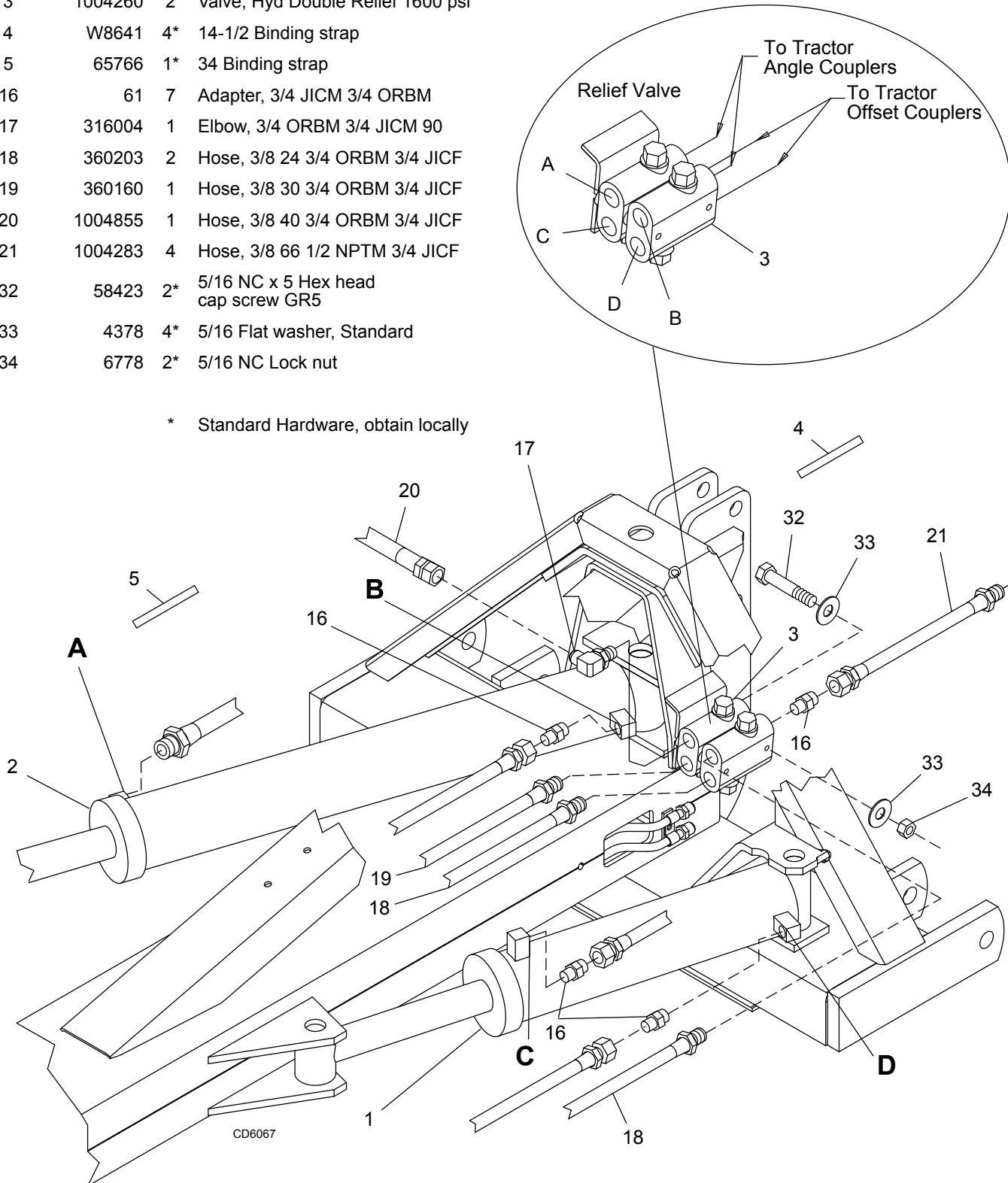
REF	PART	QTY	DESCRIPTION
A	1004261		Valve, Hyd Double Selector
1	1004295	1	Seal Kit, Double Selector Valve
2	1004296	1	Kit, Selector Valve Handle
3	1004260	1	Valve, Hyd Double Relief 1600 psi
4	1004297	1	Valve, Relief 1600 psi



HYDRAULIC OFFSET KIT 1004907 (OPTIONAL)

REF	PART	QTY	DESCRIPTION
1	1005016	1	Hyd Cylinder 4.00 x 2.00 x 16.00
2	1005015	1	Hyd Cylinder 4.00 x 2.00 x 30.00
3	1004260	2	Valve, Hyd Double Relief 1600 psi
4	W8641	4*	14-1/2 Binding strap
5	65766	1*	34 Binding strap
16	61	7	Adapter, 3/4 JICM 3/4 ORBM
17	316004	1	Elbow, 3/4 ORBM 3/4 JICM 90
18	360203	2	Hose, 3/8 24 3/4 ORBM 3/4 JICF
19	360160	1	Hose, 3/8 30 3/4 ORBM 3/4 JICF
20	1004855	1	Hose, 3/8 40 3/4 ORBM 3/4 JICF
21	1004283	4	Hose, 3/8 66 1/2 NPTM 3/4 JICF
32	58423	2*	5/16 NC x 5 Hex head cap screw GR5
33	4378	4*	5/16 Flat washer, Standard
34	6778	2*	5/16 NC Lock nut

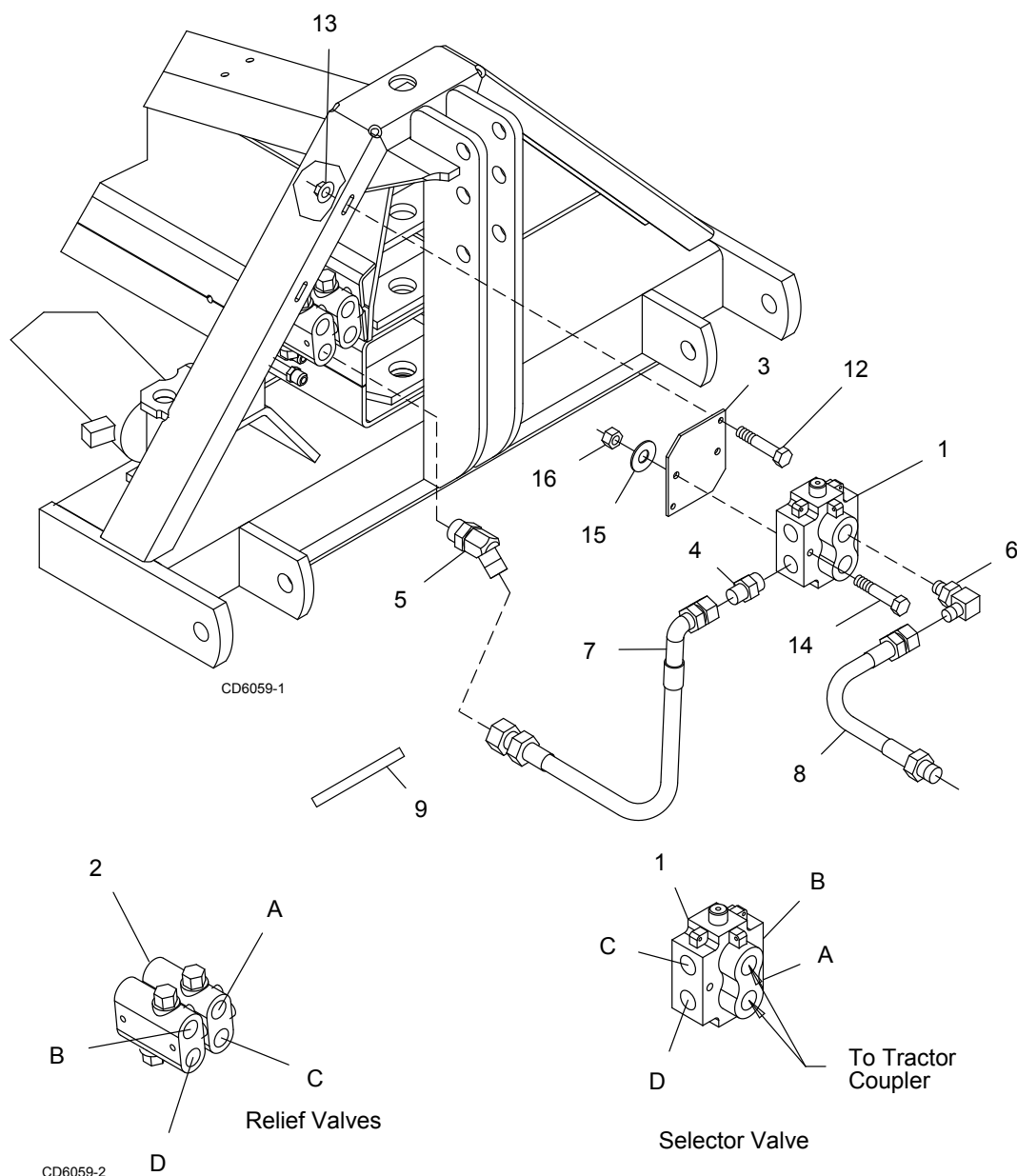
* Standard Hardware, obtain locally



44 Parts

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SELECTOR VALVE KIT 1004909 (OPTIONAL)



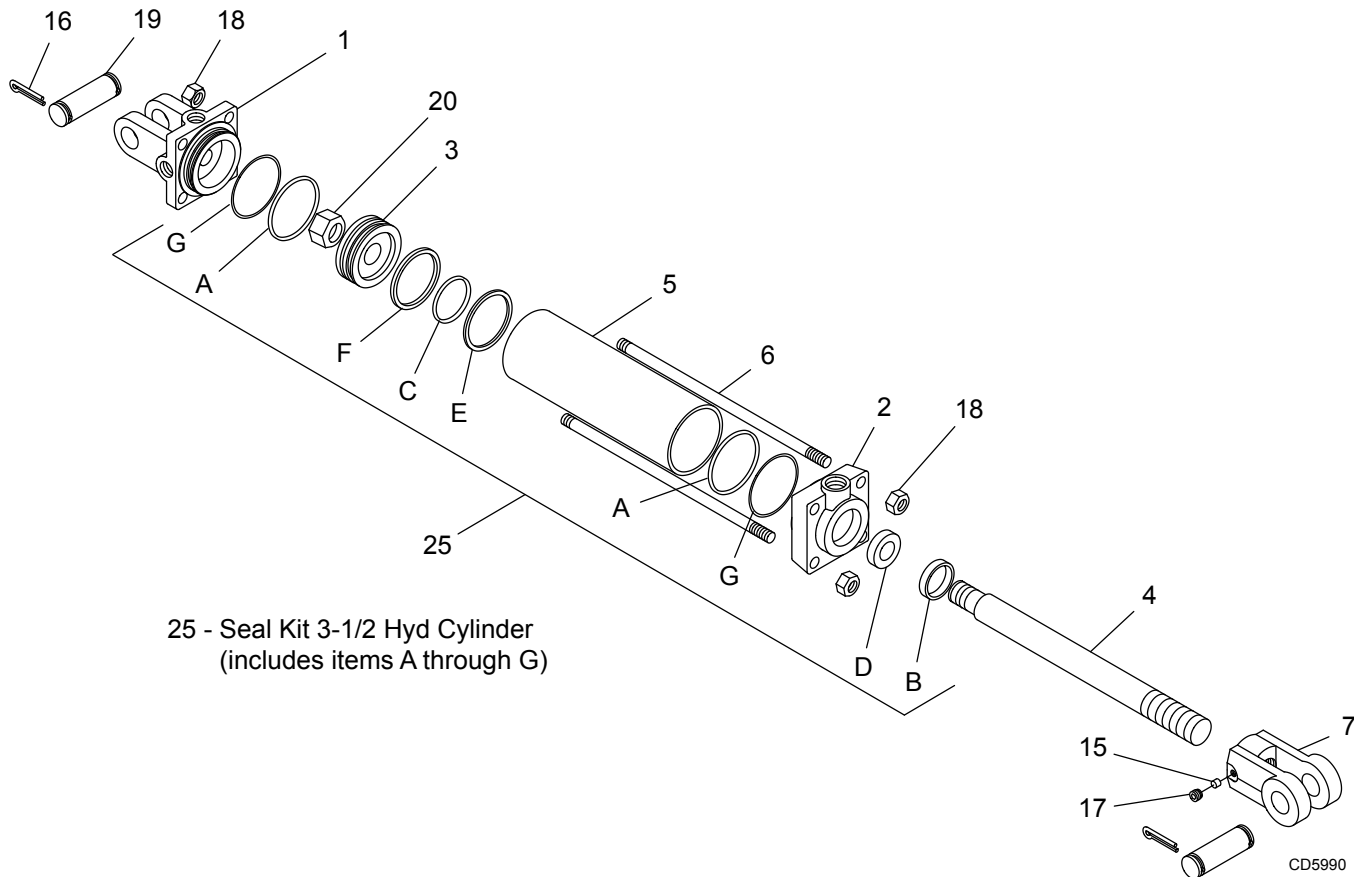
REF	PART	QTY	DESCRIPTION
1	1004261	1	Valve, Hyd Double Selector
2†	1004260	2	Valve, Hyd Double Relief 1600 psi
3	26105	1	Valve mounting bracket
4	316017	4	Adapter, 3/4 JICM 1-1/16 ORBM
5	1004288	4	Elbow, Hyd 3/4 JICM 3/4 ORBM 45
6	W37501	2	Elbow, 3/4 JICM 1-1/16 ORBM 90
7	1004898	4	Hose, 3/8 28 3/4 JICF 3/4 JICF
8	1004283	2	Hose, 3/8 66 1/2 NPTM 3/4 JICF

REF	PART	QTY	DESCRIPTION
9	W8641	3*	14-1/2 Binding strap
12	14562	2*	5/16 NC x 1 Cap screw GR5
13	14139	5	5/16 NC Flanged Lock Nut
14	7747	1*	3/8 NC x 3 Cap screw GR5
15	565	2*	3/8 Flat washer, Standard
16	6698	2*	3/8 NC Lock nut

* Standard Hardware, obtain locally

† From RB990H/1010H or Offset Kit

3.5" HYDRAULIC CYLINDER ASSEMBLY



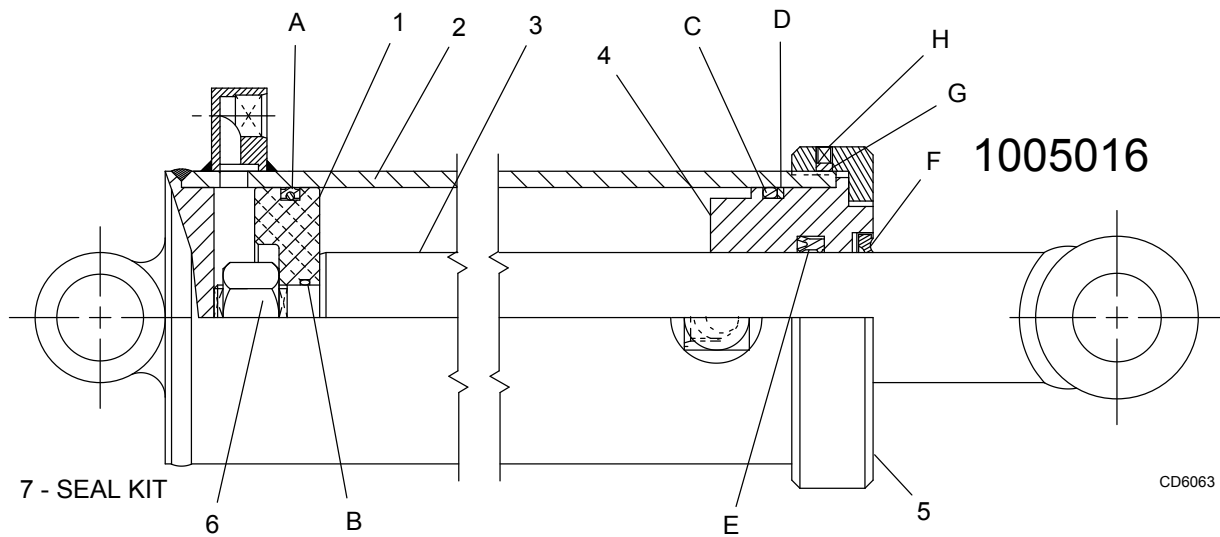
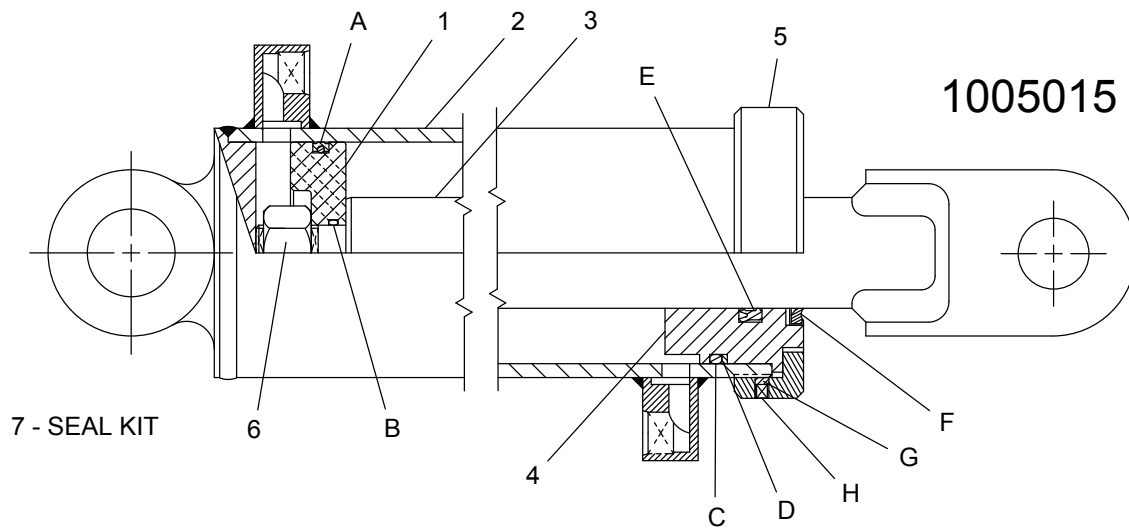
REF	PART	QTY	DESCRIPTION
-	1003197		Cylinder, Hyd 3-1/2 x 10 (Tilt) (1003197 Is discontinued, order 597275)
1	N/S	1	Clevis Cap
2	N/S	1	Rod Cap
3	N/S	1	Piston, 3-1/2 Hyd Cylinder
4	N/S	1	Rod, Hyd Cylinder 1.25
5	N/S	1	Tube
6	N/S	4	Tie Rod
7	N/S	1	Clevis, Hyd Cylinder Rod
15	N/S	1	Nylon Thread Patch
16	1266	4*	3/16 x 1-1/2 Cotter pin
17		1*	Screw, Set 3/8 NC x 1/2 (Torque to 20 lbs-ft)
18	302176	8*	Nut, Hex 5/8 UNF (Torque to 160 lbs-ft)
19	1631	2	Pin, Headless 1.00 x 3.63
20	34323	1	Nut, Hex Lock 1-14 UNS (Torque to 300 lbs-ft) (for 1003197 only)

REF	PART	QTY	DESCRIPTION
NOTE: Before ordering seal kit, check part number stamped on cylinder barrel			
25	1005000		Seal Kit 3-1/2 Hyd Cylinder (Includes Items A - G) (For cylinder 1003197)
	or		
25	600250		Seal Kit for 3-1/2 Hyd cylinder p/n 597275
A		2	O-Ring
B		1	Rod Wiper
C		1	O-Ring (Piston Seal Expander)
D		1	Rod Seal
E		1	Piston Seal
F		2	Piston Wear Ring
G		2	Backup Washer
	N/S		Not Serviced Separately
	*		Standard Hardware, obtain locally

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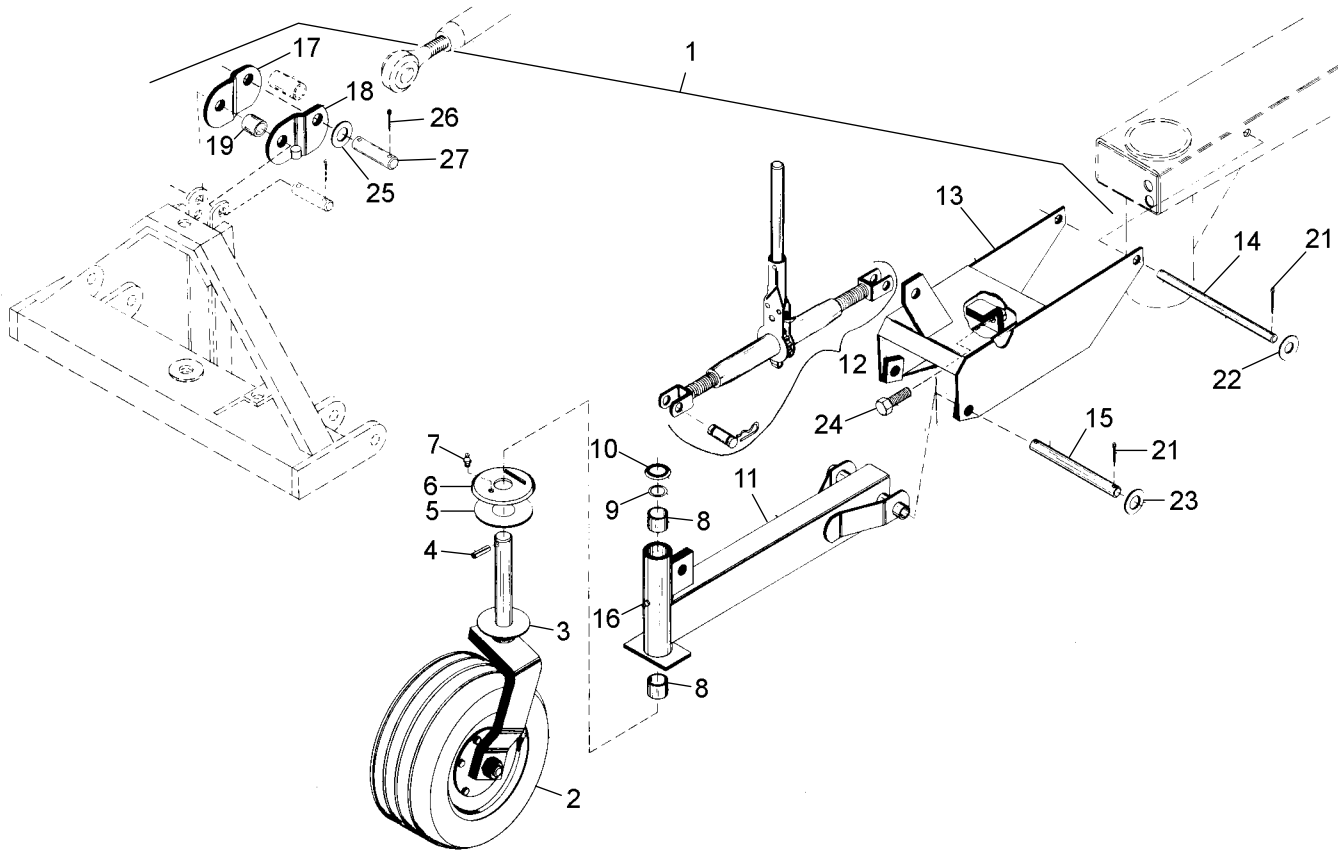
4.0" HYDRAULIC CYLINDER ASSEMBLY



REF	PART	QTY	DESCRIPTION
A	1005015	1	Hyd Cylinder 4.00 x 2.00 x 30.00
A	1005016	1	Hyd Cylinder 4.00 x 2.00 x 16.00
1	N/S	1	Piston, 4.00 OD x 1.00 ID
2	N/S	1	Tube Assembly
3	N/S	1	Rod, 2.0 x 38.6 (for 1005015) or
3	N/S	1	Rod, 2.0 x 23.9 (for 1005016)
4	N/S	1	Head gland 4.0 OD x 4.0 ID
5	N/S	1	Head cap 5.25 OD (Torque to 320 lbs-ft)
6	34323	1	Hex lock nut 1-14 UNS (Torque to 320 lbs-ft)

REF	PART	QTY	DESCRIPTION
7	1004289	1	Seal Kit - 4.0 Dia Hyd Cylinder (Includes Items A - H)
A		1	Crown Seal
B		1	O-Ring
C		1	O-Ring
D		1	Backup
E		1	U-Cup Seal
F		1	Rod Wiper
G		1	Nylon Ball
H		1	Set Screw 1/4 NC x 1/4 CP
	N/S		Not Serviced Separately

PNEUMATIC TAIL WHEEL KIT 29399



REF	PART	QTY	DESCRIPTION
1	29399	1	Tail Wheel, Pneumatic Complete
2	—	1	Tire, Wheel & Hub
3	14125	1	Wheel Yoke Assembly
4	W7276	1*	Spirol pin 7/16 x 2-1/2
5	19459	1	Friction disc 4 x 6.15
6	14135RP	1	Top Dampener plate
7	195	1*	Grease Fitting, 1/8 Pipe Thread
8	W11011	2	Bushing, Bronze 1.50 x 1.63 x 1.50
9	12889	1	O-Ring .09 x 1.56 OD
10	W12881	1	Dust cap
11	W28776RP	1	Tail Wheel Arm Assembly
12	S0105410E	1	Ratchet
13	28790RP	1	Tail Wheel Bracket Assembly
14	28788	1	3/4 x 12-1/4 Clevis pin

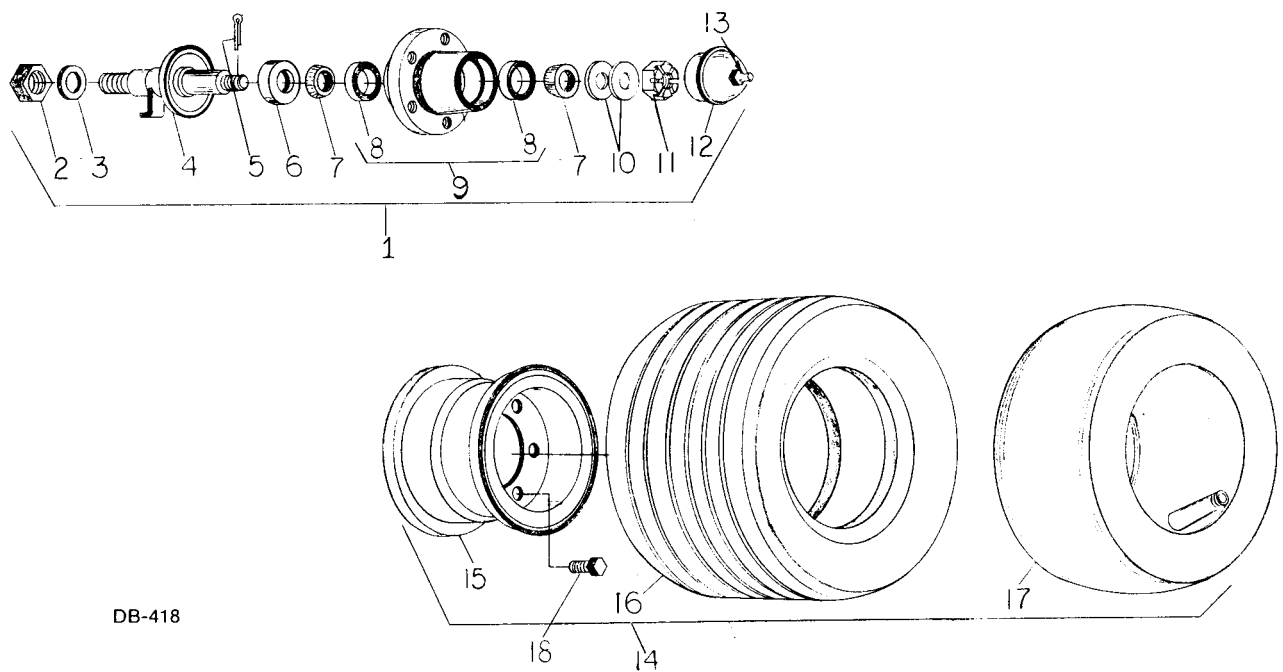
REF	PART	QTY	DESCRIPTION
15	28789	1	1 x 12-1/4 Clevis pin
16	1972	1*	Grease Fitting, 1/4-28 Tapered Thread
17	29031RP	1	Floating link, Left
18	29030RP	1	Floating link, Right
19	W29034	1	Sleeve, 1.00 x 1.25 x 1.44
21	1285	4*	1/4 x 1-1/2 Cotter pin
22	1257	2*	3/4 Flat washer, Standard
23	832	2*	1 Flat washer, Standard
24	24576	1*	1/2 NC x 1-3/4 Hex head cap screwGR5
25	1863	2*	1 Flat washer, Standard
26	6185	2*	1/4 x 2-1/4 Cotter pin
27	26148	1	1 x 4-29/32 Clevis pin HT

* Standard Hardware, obtain locally

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WHEEL HUB, TIRE & WHEEL ASSEMBLY



DB-418

TIRE INFLATION: 45 LBS.

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	14130RP	1	Wheel Hub & Axle Assembly	12	14133RP	1	Hub Cap Assembly w/fitting
2	3626	1	Nut, Hex 1-14 UNS	13	N/S	1*	Grease Fitting, 1/4 Tapered Thread
3	1863	1*	Washer, Flat 1" SAE	14	14255	1	Wheel & Tire 18 x 9.5 - 8
4	14131	1	Axle Assembly	15	N/S	1	Rim 18 x 9.5 x 8
5	1266	1*	Pin, Cotter 3/16 x 1-1/2	16	N/S	1	Tire, Rib 18 x 9.5 x 8 6-ply
6	314	1	Seal, 1.50 x 2.44 x .31 (Note: Point spring-loaded lip outward in assembly of seal to housing)	17	N/S	1	Inner Tube, 18 x 9.50 x 8
7	2303	2	Bearing Cone	18	1258	5	Bolt, Wheel 1/2 NF x 1-1/8
8	2305	2	Bearing Cup				
9	14132	1	Wheel Hub, Housing w/cups				* Standard Hardware, obtain locally
10	1257	2*	Washer, Flat 3/4 Standard				N/S Not Serviced Separately
11	5849	1	Nut, Slotted Hex 3/4 NF				

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BOLT TORQUE CHART

Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

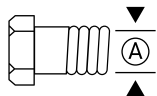
Fasteners must always be replaced with the same grade as specified in the manual parts list.

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 MAR 99 & J1701M JUL 96.

SAE SERIES TORQUE CHART

SAE Bolt Head Identification



SAE Grade 2
(No Dashes)



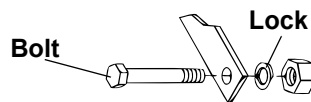
SAE Grade 5
(3 Radial Dashes)



SAE Grade 8
(6 Radial Dashes)

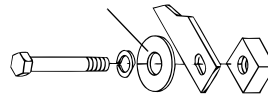
Ⓐ	Wrench Size	Marking on Head					
		SAE 2		SAE 5		SAE 8	
		lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m
1/4"	7/16"	6	8	10	13	14	18
5/16"	1/2"	12	17	19	26	27	37
3/8"	9/16"	23	31	35	47	49	67
7/16"	5/8"	36	48	55	75	78	106
1/2"	3/4"	55	75	85	115	120	163
9/16"	13/16"	78	106	121	164	171	232
5/8"	15/16"	110	149	170	230	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

TYPICAL WASHER INSTALLATIONS



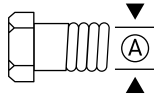
Lock Washer

Flat Washer



METRIC SERIES TORQUE CHART

Metric Bolt Head Identification



Metric
Grade 8.8



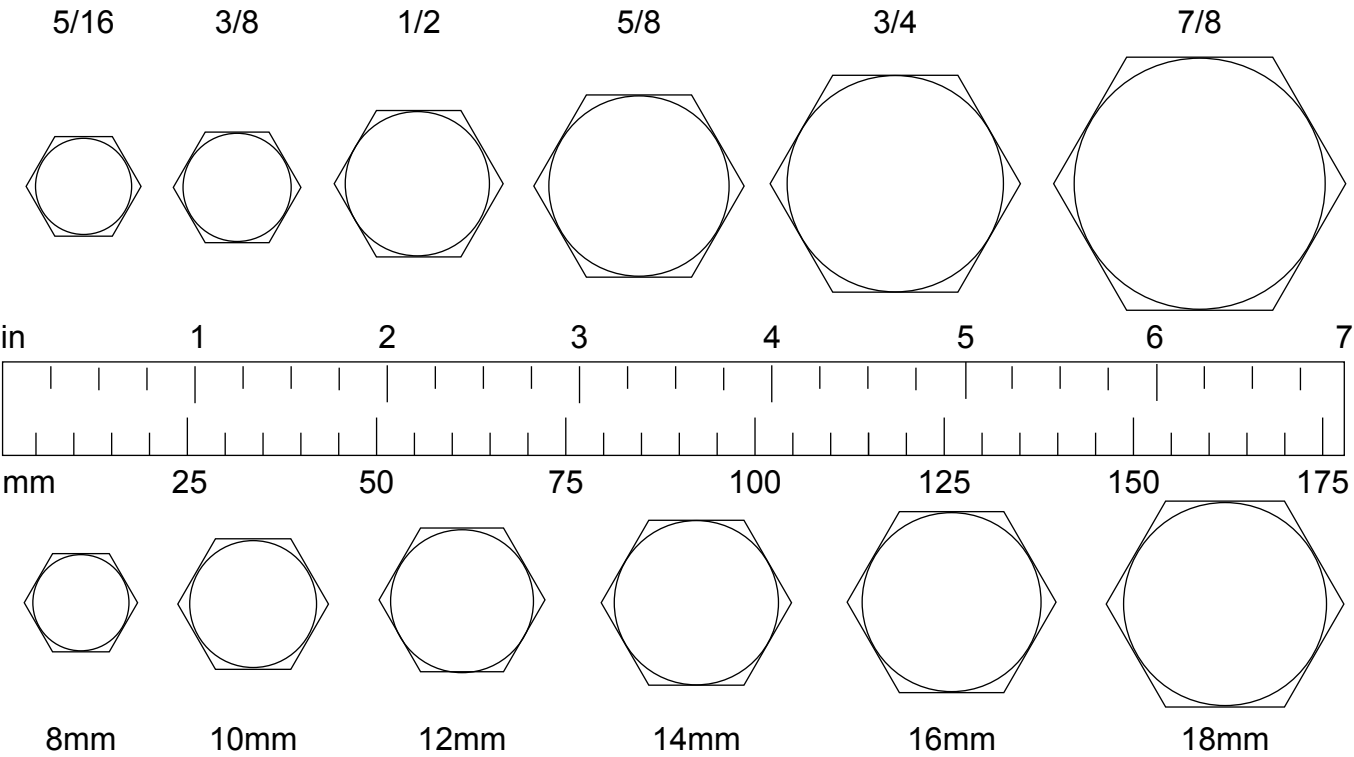
Metric
Grade 10.9

Ⓐ Diameter & Thread Pitch (Millimeters)	Wrench Size	Coarse Thread Marking on Head				Fine Thread Marking on Head				Ⓐ Diameter & Thread Pitch (Millimeters)
		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

BOLT SIZE CHART

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

SAE BOLT THREAD SIZES



METRIC BOLT THREAD SIZES

ABBREVIATIONS

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

PART NO.
MAN0161

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