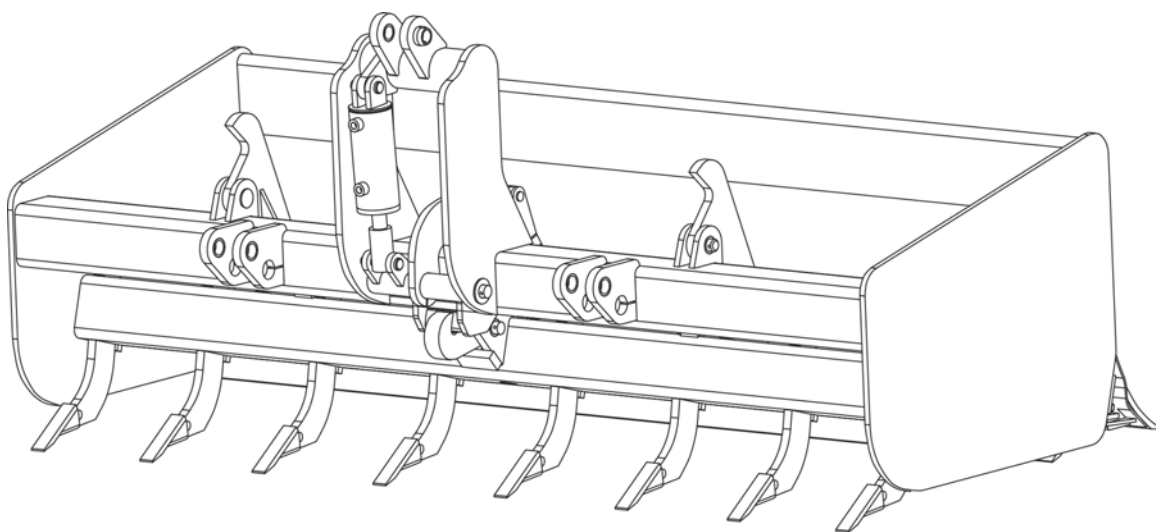


GANNON BOX BLADES

HD24480HXD - HD24496HXD (4 x 4)
HD24472HSD - HD24496HSD (4 x 4)
HD24265 - HD24284 (LB & HB) (4 x 2)



MAN0856

WainRoY

OPERATOR'S MANUAL

TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the WainRoy 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.

TO THE OWNER:

Read this manual before operating your WainRoy 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 locate your nearest dealer, check the Dealer Locator at www.WainRoy.com, or in the United States and Canada call 1-800-848-3447.

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

Use only genuine WainRoy 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.

WainRoy

ALITEC™
CENTRAL FABRICATORS®
GANNON®
WAIN-ROY®

2 Introduction

MAN0856 (6/1/2023)

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SPECIFICATIONS

4x4 HXD Box Blades	HD24480HXD	HD24484HXD	HD24488HXD	HD24492HXD	HD24496HXD
Working Width	80"	84"	88"	92"	96"
Height	24-1/4"	24-1/4"	24-1/4"	24-1/4"	24-1/4"
Depth	40-3/16"	40-3/16"	40-3/16"	40-3/16"	40-3/16"
Heaped Capacity	28.6 ft ³	30.0 ft ³	31.6 ft ³	32.9 ft ³	34.3 ft ³
End Plate Thickness	1/2"	1/2"	1/2"	1/2"	1/2"
Replaceable End Plate Wear Bits	no	no	no	no	no
Number of Cutting Edges	2	2	2	2	2
Cutting Edge Style	1/2" x 6"	1/2" x 6"	1/2" x 6"	1/2" x 6"	1/2" x 6"
Operating Weight (lbs)	1,263	1,280	1,297	1,310	1,327
Number of Shanks	8	8	8	8	8
Tailgate	n/a	n/a	n/a	n/a	n/a
Tractor Engine HP Requirement	40-100 hp	40-100 hp	40-100 hp	40-100 hp	40-100 hp
Tractor Hitch Class*	Cat II	Cat II	Cat II	Cat II	Cat II

* - Category I hitch available upon request

4x4 HSD Box Blades	HD24472HSD	HD24476HSD	HD24480HSD	HD24484HSD	HD24488HSD	HD24492HSD	HD24496HSD
Working Width	72"	76"	80"	84"	88"	92"	96"
Height	24-1/2"	24-1/2"	24-1/2"	24-1/2"	24-1/2"	24-1/2"	24-1/2"
Depth	40-3/16"	40-3/16"	40-3/16"	40-3/16"	40-3/16"	40-3/16"	40-3/16"
Heaped Capacity	25.7 ft ³	27.0 ft ³	28.6 ft ³	30.0 ft ³	31.6 ft ³	32.9 ft ³	34.3 ft ³
End Plate Thickness	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Replaceable End Plate Wear Bits	yes	yes	yes	yes	yes	yes	yes
Number of Cutting Edges	2	2	2	2	2	2	2
Cutting Edge Style	1/2" x 6"	1/2" x 6"	1/2" x 6"	1/2" x 6"	1/2" x 6"	1/2" x 6"	1/2" x 6"
Operating Weight (lbs)	1,230	1,247	1,263	1,280	1,297	1,310	1,497
Number of Shanks	8	8	8	8	8	8	8
Tailgate	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tractor Engine HP Requirement	40-90 hp	40-90 hp	40-90 hp	40-90 hp	40-90 hp	40-90 hp	40-90 hp
Tractor Hitch Class*	Cat II	Cat II	Cat II	Cat II	Cat II	Cat II	Cat II

SPECIFICATIONS

4x2 LB and HB Box Blades	HD24265LB	HD24265HB	HD24272LB	HD24272HB
Working Width	65"	65"	72"	72"
Height	19-5/16"	24-1/2"	19-5/16"	24-1/2"
Depth	39-1/2"	39-1/2"	39-1/2"	39-1/2"
Heaped Capacity	20.8 ft ³	23.2 ft ³	23.0 ft ³	25.7 ft ³
End Plate Thickness	1/2"	1/2"	1/2"	1/2"
Replaceable End Plate Wear Bits	no	no	no	no
Number of Cutting Edges	2	2	2	2
Cutting Edge Style	1/2" x 6"	1/2" x 6"	1/2" x 6"	1/2" x 6"
Operating Weight (lbs)	925	1020	1002	1100
Number of Shanks	6	6	8	8
Tailgate	yes	yes	yes	yes
Tractor Engine HP Requirement	40 - 80 hp	40 - 80 hp	40 - 80 hp	40 - 80 hp
Tractor Hitch Class*	Cat I & II	Cat I & II	Cat I & II	Cat I & II

4x2 LB and HB Box Blades	HD24276LB	HD24276HB	HD24280LB	HD24280HB	HD24284HB
Working Width	76"	76"	80"	80"	84"
Height	19-5/16"	24-1/2"	19-5/16"	24-1/2"	24-1/2"
Depth	39-1/2"	39-1/2"	39-1/2"	39-1/2"	39-1/2"
Heaped Capacity	24.3 ft ³	27.3 ft ³	25.7 ft ³	28.6 ft ³	30.0 ft ³
End Plate Thickness	1/2"	1/2"	1/2"	1/2"	1/2"
Replaceable End Plate Wear Bits	no	no	no	no	no
Number of Cutting Edges	2	2	2	2	2
Cutting Edge Style	1/2" x 6"	1/2" x 6"	1/2" x 6"	1/2" x 6"	1/2" x 6"
Operating Weight (lbs)	1040	1140	1078	1170	1200
Number of Shanks	8	8	8	8	8
Tailgate	yes	yes	yes	yes	yes
Tractor Engine HP Requirement	40 - 80 hp	40 - 80 hp	40 - 80 hp	40 - 80 hp	40 - 80 hp
Tractor Hitch Class*	Cat I & II	Cat I & II	Cat I & II	Cat I & II	Cat I & II

* - Category 1 hitch available upon request.



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.

4 Introduction

MAN0856 (6/1/2023)

GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your Box 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.

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.

INSTALLATION

■ Hydraulics must be connected as instructed in this manual. Do not substitute parts, modify, or connect in any other way.

TRAINING

■ Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals are available from selling dealer.) Failure to follow instructions or safety rules can result in serious injury or death.

■ If you do not understand any part of this manual and need assistance, see your dealer.

■ 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.

■ Air in hydraulic systems can cause erratic operation and allows loads or equipment components to drop unexpectedly. When connecting equipment or hoses or performing any hydraulic maintenance, purge any air in hydraulic system by operating all hydraulic functions several times. Do this before putting into service or allowing anyone to approach the equipment.

■ Route hydraulic hoses carefully to prevent damage. Hoses must not be twisted, bent sharply, kinked, frayed, pinched, or come into contact with any moving parts. Operate moveable components through full operational range to check clearances. Replace any damaged hose immediately.

■ Your dealer can supply original equipment hydraulic accessories and repair parts. Substitute parts may not meet original equipment specifications and may be dangerous.

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

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

■ It is recommended that power unit 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, front tractor wheels could raise up resulting in loss of steering. The weight may be attained with front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



- Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)

TRANSPORTATION

- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Do not operate or transport on steep slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Do not operate or transport equipment while under the influence of alcohol or drugs.

OPERATION

- **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

- Service work does not require going underneath.
- Read Operator's Manual for service instructions or have service performed by a qualified dealer.

- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Always comply with all state and local lighting and marking requirements.
- Operate only in daylight or good artificial light.
- Keep bystanders away from equipment.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- It is recommended that power unit be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in "locked up" position at all times.
- Never allow riders on power unit or attachment.

- Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.

- Look down and to the rear and make sure area is clear before operating in reverse.

- Use extreme care when working close to fences, ditches, other obstructions, or on hillsides.

- Do not operate or transport on steep slopes.

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

- 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 dismounting tractor or performing any service or maintenance, lower attachment to ground, turn off engine, set parking brake, operate valve levers to release any hydraulic pressure, and remove key.

MAINTENANCE

- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

- **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

- Service work does not require going underneath.
- Read Operator's Manual for service instructions or have service performed by a qualified dealer.

(Safety Rules continued on next page)



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

- Before dismounting tractor or performing any service or maintenance, lower attachment to ground, turn off engine, set parking brake, operate valve levers to release any hydraulic pressure, and remove key.
- Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.
- Never perform service or maintenance with engine running.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Eye protection must be used when removing or installing scarifier shank clips.

■ 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.)

STORAGE

- Block equipment securely for storage.
- Keep children and bystanders away from storage area.
- Lock scarifier bar in lowered position for storage.
- Plug the cylinder ports for storage to prevent water from contaminating the hydraulic system.





SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!
Replace Immediately If Damaged!



**WARNING**



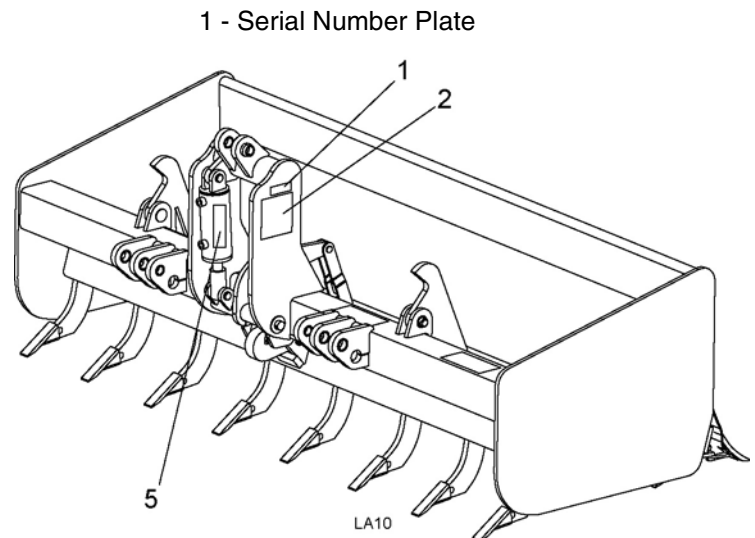
CRUSHING AND PINCHING HAZARD

- 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.

1003751-A

2 - 1003751



**WARNING**

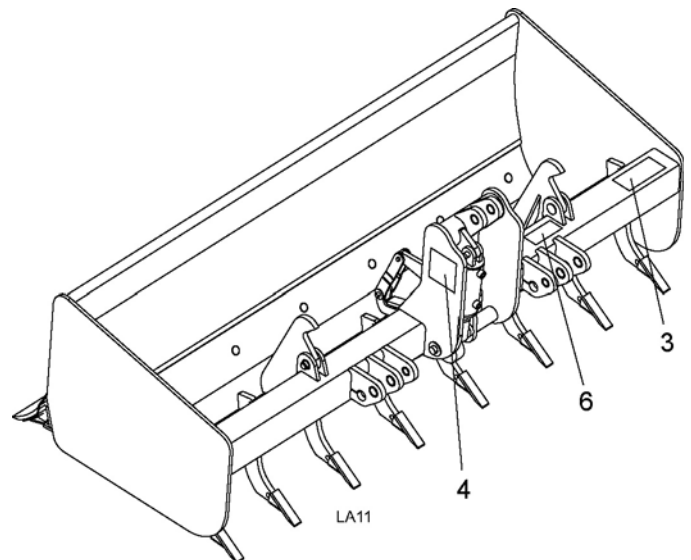
TO AVOID SERIOUS INJURY OR DEATH:

- 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.

1002423-A

4 - 1002423



BE CAREFUL!

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.

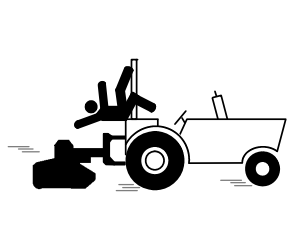
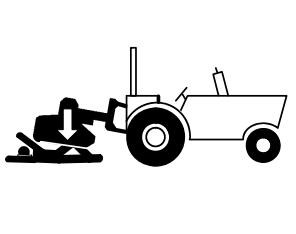
Replacement safety decals can be ordered free from your WainRoy dealer. To locate your nearest dealer, check the Dealer Locator at www.WainRoy.com, or in the United States and Canada call 800-848-3447.



SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!
Replace Immediately If Damaged!



 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
	

3 - 55121

 WARNING	
 19924-B	HIGH-PRESSURE HYDRAULIC OIL LEAKS CAN PENETRATE SKIN RESULTING IN SERIOUS INJURY, GANGRENE OR DEATH. ■ Check for leaks with cardboard; never use hand. ■ Before loosening fittings: lower load, release pressure, and be sure oil is cool. ■ Consult physician immediately if skin penetration occurs.

5 - 19924

 WARNING	
TO AVOID PERSONAL INJURY: ■ Keep clear of box scraper and operating area. ■ Operate from tractor seat only. ■ Do not allow riders on box scraper or tractor at any time. ■ Before leaving operator's seat, lower box scraper to the ground, stop engine, set parking brake, operate valve levers to release any hydraulic pressure, and remove the key. ■ When traveling on public roads or highways make sure the view of rear lights and SMV sign are not obstructed by box scraper. 1036-A 70090-20648	

6 - 1036

OPERATION

The operator is responsible for the safe operation of this equipment. The operator must be properly trained. Operators should be familiar with the equipment, the tractor, and all safety practices before starting operation. Read the safety rules and safety decals on page 6 through page 10.

The box blades are designed for a wide range of applications: scarifying, scraping, leveling, grading, and backfilling.

WARNING

■ It is recommended that power unit be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in “locked up” position at all times.

■ Never allow children or untrained persons to operate equipment.

■ Keep bystanders away from equipment.

■ **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

- Service work does not require going underneath implement.
- Read Operator's Manual for service instructions or have service performed by a qualified dealer.

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

CAUTION

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

■ **Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.**

CONNECTING BOX BLADE TO TRACTOR

The box blade is compatible with Category II, 3-point hitch tractors equipped with side swing-type lower lift arms.

1. To avoid interference with the box blade, adjust tractor drawbar to the shortest and highest position.
2. For Category II Applications:
 - Position the lower lift arm between the outer mounting lugs and secure to box blade with Cat-II mounting pin (33) and Klik pin (24).
 - Attach the tractor top link to the top of the box blade mast with the heavy-duty Category II mounting pin (22) and Klik pin (24).
3. Connect hydraulic cylinder hoses to tractor auxiliary valve.

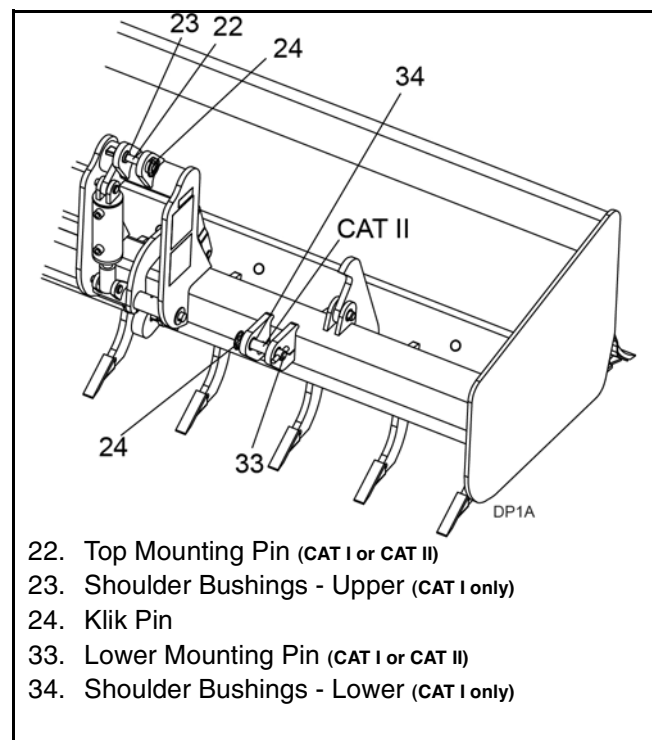


Figure 1. Connecting Box Blade to Tractor

ADJUSTING TOP LINK

The box blade is leveled by adjusting the length of the tractor's top link.

- Shortening the top link will deepen the scarifier tooth penetration.
- Lengthening the top link will provide better scraping and leveling action.

Experience will allow the operator to determine the best setting for the application being done.

SCARIFYING

1. Place the scarifier shanks in position with the points facing toward the tractor.
2. Lock shanks into position with the lock keys provided. The lower shank position provides the greatest ground penetration.
3. Lock the scarifier bar into the lowered position.
4. Lower the box blade and drive the tractor ahead to begin the scarifying operation.
5. Adjust the depth of the scarifier by tilting the unit with the tractor top link. Shortening the top link will provide deeper and more aggressive operation.

SCRAPING

1. Raise the scarifier bar. Lower the box blade and drive forward to move material.
2. Adjust the depth of the blade by tilting the unit with the tractor top link.

Shortening the top link when scraping will transfer more weight on the front of the box blade and will raise the cutting edge to provide a more shallow cut.

NOTE: When the top link is adjusted properly, the bowl of the box blade should fill easily and material can be pulled to a desired location.

3. To change the level of the box blade, shorten or lengthen the tractor lift arm tilt link to provide the correct slope.
4. Spread material by gradually raising the box blade as the tractor moves forward.

NOTE: Top link adjustment for loose or previously scarified material will differ from adjustment for hard or compacted material.

BACKFILLING

1. Raise the scarifier bar.
2. Lower the box blade to the ground and back up into the fill material.
3. Shorten the top link to raise the cutting edge and control how much the blade digs in.

LEVELING

1. Raise the scarifier bar.
2. Shorten the top link so the cutting edge clears the ground.
3. Drive forward with the box blade in this position and loose material will be leveled.

TAILGATE USE (4 X 2 MODELS)

The tailgate on 4 x 2 models can be used in two configurations. For finish grading, remove bolts (37) securing tailgate to box blade, Figure 2.

Set pitch of box blade to allow front cutting edge to clear undisturbed grade level. This will allow tailgate to float over and evenly distribute material coming out of back of box blade.

For backfilling, tailgate will seat against back of box blade to provide a solid surface for pushing material against.

For initial site preparation, re-install lockout hardware (36) and (37) to maintain two rigid cutting edges while operating box blade.

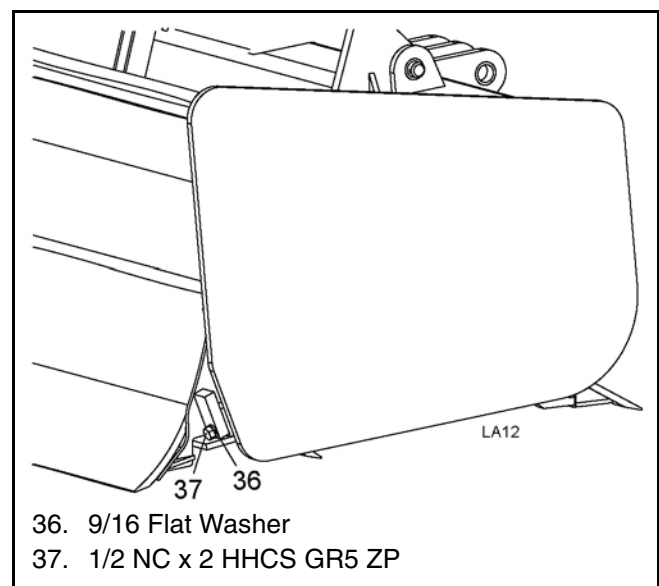


Figure 2. Tailgate Use (4 x 2 models)

PRE-OPERATION CHECK LIST

(OWNER'S RESPONSIBILITY)

- ___ Review and follow all safety rules and safety decal instructions on page 6 through page 8.
- ___ Check that equipment is properly and securely attached to tractor.
- ___ Check that all safety decals are installed and in good condition. Replace if damaged.
- ___ Check that all hardware is properly installed and secured.
- ___ Do not allow riders.
- ___ Make sure tractor ROPS or ROPS cab and seat belt are in good condition. Keep seat belt securely fastened during operation.

STORAGE

Refer to Figure 3, page 14 and block up box blade securely.

WARNING

- Block equipment securely for storage.
- Keep children and bystanders away from storage area.
- Lock scarifier bar in lowered position for storage.

CAUTION

age.

- Plug the cylinder ports for storage to prevent water from contaminating the hydraulic system.

OWNER SERVICE

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

WARNING

■ **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

- Service work does not require going underneath.
- Read Operator's Manual for service instructions or have service performed by a qualified dealer.

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

■ **Before dismounting tractor or performing any service or maintenance, lower attachment to ground, turn off engine, set parking brake, operate valve levers to release any hydraulic pressure, and remove key.**

CAUTION

■ **Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.**

BLOCKING BOX BLADE

NOTE: To service the box blade when attached to the tractor, it must be blocked up off the ground.

1. Place two 4" x 4" (10 cm x 10 cm) blocks under each side frame of the box blade as shown in Figure 3.
2. Lock the scarifier bar in the lowered position.
3. Lower the box blade to rest securely on the blocks.

NOTE: Do not block the machine any higher than necessary to remove the shanks or cutting edge.

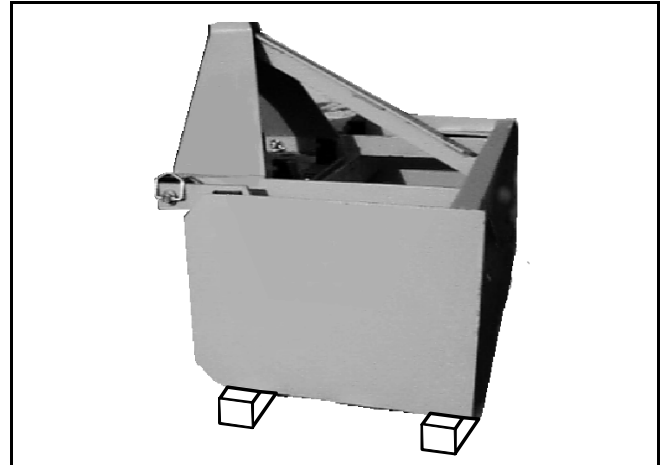


Figure 3. Box Blade Blocked Up

REMOVING SCARIFIER SHANKS (FIGURE 4)

Scarifier shanks have two operating positions in the blade. They may be removed if scarifying action is not needed.

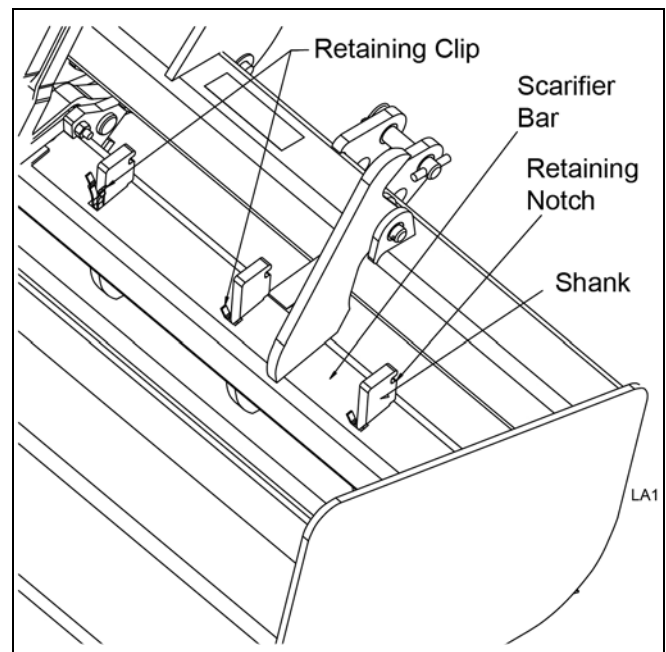


Figure 4. Scarifier Shanks

1. Block up machine (see Figure 3).
2. Lock scarifier bar into the lowered position.
3. Remove retainer clip by using channel locks or vice grips to unlock shank.
4. Engage shank retaining notch on scarifier tube.
5. Re-insert retainer clip to lock shank into position.

REPLACING SCARIFIER TOOTH **(FIGURE 5)**

⚠ WARNING

■ **Eye protection must be used when removing or installing scarifier shank clips.**

1. Remove scarifier shank from the scarifier bar.
2. Remove the worn tooth by driving a chisel between the shank (1) and tooth (2).
3. Install replacement tooth and use a punch (3) to peen the locking tab (4) into the retaining hole on both sides of the shank.
4. Re-install the shank in the scarifier bar.

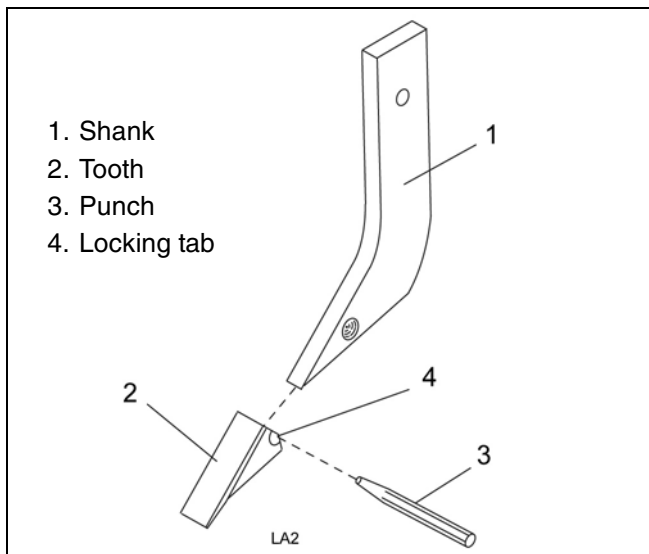


Figure 5. Scarifier Point Replacement

REPLACING CUTTING EDGE

All box blade models use two 1/2" x 6" (12.7 x 152 mm) cutting edges. They are interchangeable and reversible.

To service the box blade when attached to the tractor, it must be blocked up off the ground (see Figure 3).

1. Lock scarifier bar into the lowered position.
2. Refer to parts drawing, page 18. Remove the lock nuts (17) and plow bolts (16) from blade. Turn cutting edge over and use new edge, or replace it if both edges have been used.
3. Attach cutting edge to box blade and secure with plow bolts and hex nuts previously removed.
4. Torque plow bolts to specifications given in Bolt Torque Chart, page 26.

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 spray paint of matching color (purchase from your dealer).
- Replace any safety decals that are missing or not readable (supplied free by your dealer). See Safety Decals section for location drawing.



DEALER CHECK LISTS

PRE-DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

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 tight.
- ___ Check that all cotter pins and safety pins are properly installed. Replace if damaged.
- ___ Check that all hydraulic fittings and hoses are properly connected.

DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

- ___ Instruct customer how to lubricate and explain the importance of lubrication.
- ___ Show customer the safe, proper procedures for mounting, dismounting, and storing equipment.
- ___ For mounted units, add wheel weights, ballast in front tires, and/or front tractor weight to enhance

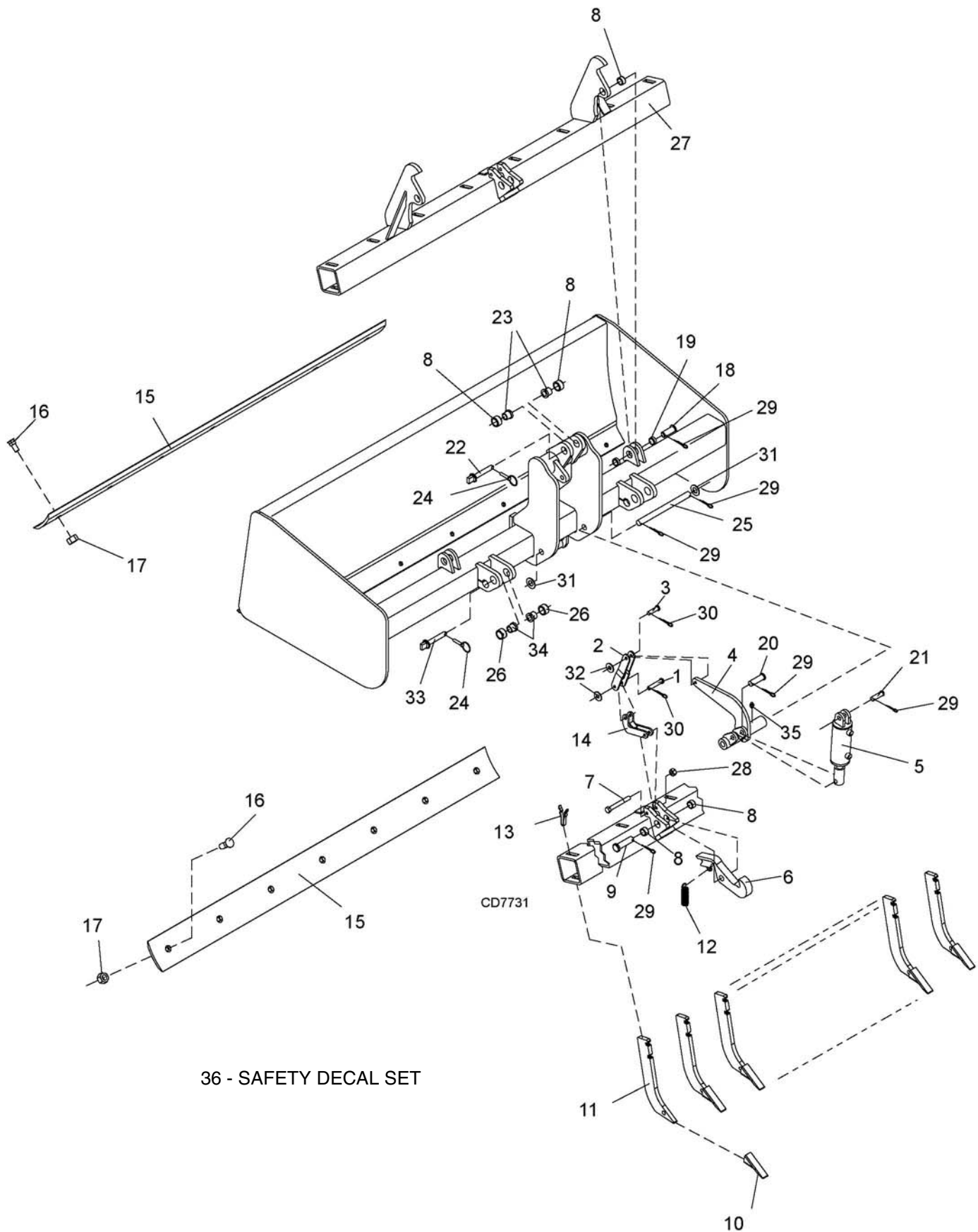
front end stability. A minimum 20% of tractor and equipment gross weight must be on front tractor wheels. When adding weight to attain 20% of tractor and equipment weight on front tractor wheels, you must not exceed the ROPS weight certification. Weigh the tractor and equipment. Do not estimate!

- ___ Show customer how to make adjustments.
- ___ Present operator's manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings, and emphasize the increased safety hazards that exist when safety rules are not followed.
- ___ Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.
- ___ Explain to customer the potential crushing hazards of going underneath raised equipment. Instruct customer that service work does not require going underneath unit and never to do so.



NOTES

4 X 4 HXD BOX BLADE ASSEMBLY



18 Parts

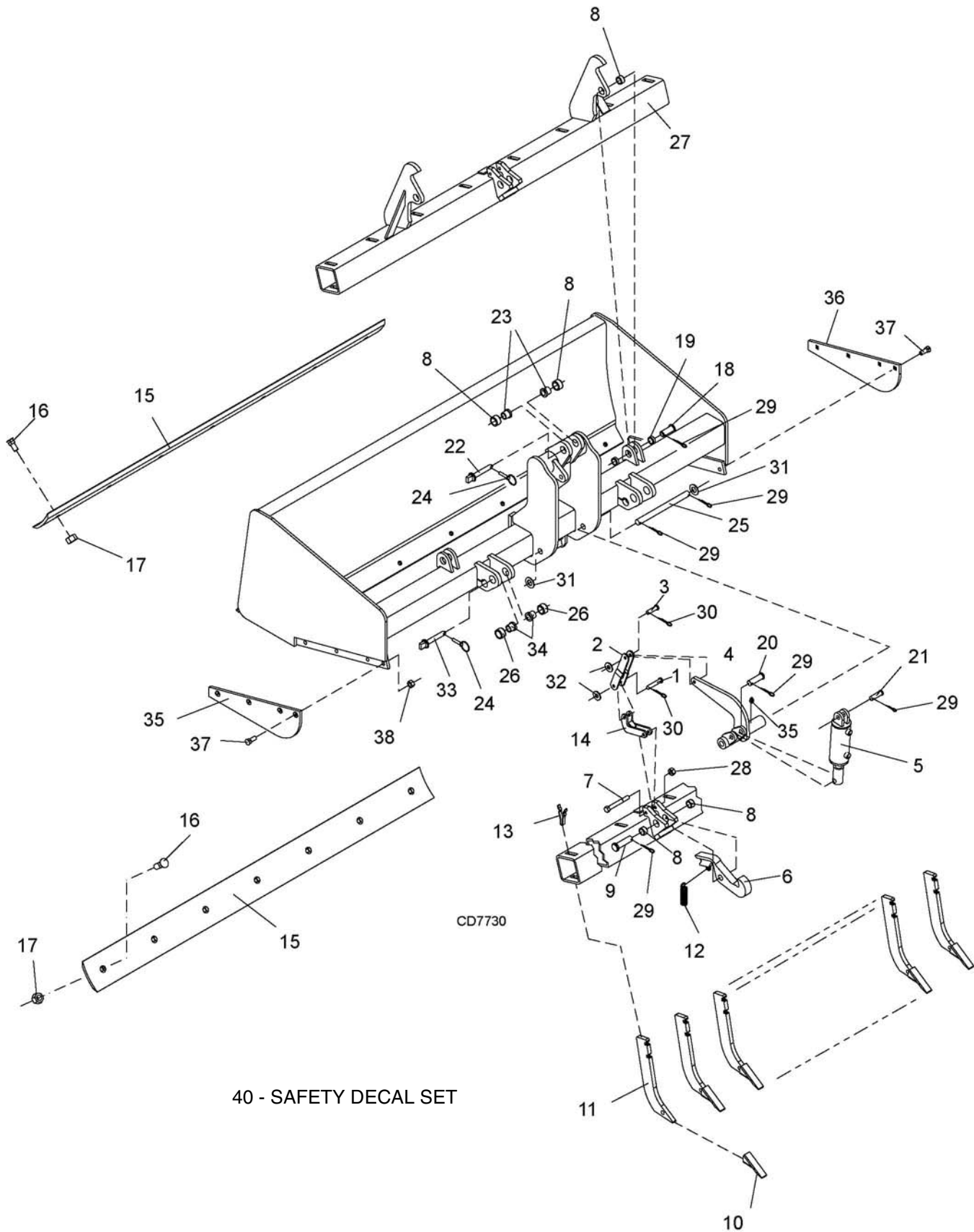
MAN0856 (6/1/2023)

4 X 4 HXD BOX SCRAPER PARTS LIST

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	H04810	1	Pin, Clevis 1/2 x 2-1/2	18	H793	2	Pin, 1 x 2-11/16
2	H628	1	Link Assembly	19	H806	4	Bushing
3	H04807	1	Pin, Clevis 1/2 x 1-3/4	20	H376	1	Pin, 3/4 x 3-3/8
4	H896	1	Bell Crank	21	H397	1	Pin, 3/4 x 2-3/8
5	13534-1	1	Cylinder, Hydraulic	22	E152	1	Pin, CAT1 - Top -or-
--	13453-1	1	Seal Kit, Hydraulic Cylinder (not shown)	22	E153	1	Pin, CAT2 - Top
6	H585	1	Hook	23	H872	2	Sleeve (CAT 1)
7	21167*	1	1/2 NC x 4 HHCS GR2	24	E056	3	Klik Pin
8	H805	6	Bushing	25	H351	1	Pin, 1 x 12-1/2
9	H174	1	Pin, 1 x 3-5/8	26	H899	4	Bushing
10	28765	8	Point	27	H88402	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24480HXD
11	E155	8	Shank	27	H88403	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24484HXD
12	E013	1	Spring	27	H88404	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24488HXD
13	E039	8	Lock Key	27	H88405	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24492HXD
14	H623	1	Link Assembly	27	H88408	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24496HXD
15	E04021	2	Cutting Edge, HD24480HXD	28	21323	1	1/2 NC Hex Lock Nut
15	E10021	2	Cutting Edge, HD24484HXD	29	1266*	7	3/16 x 1-1/2 Cotter Pin
15	H894	2	Cutting Edge, HD24488HXD	30	21138	2	1/8 x 1-1/2 Cotter Pin
15	H895	2	Cutting Edge, HD24492HXD	31	1863*	2	1 Flat Washer
15	H934	2	Cutting Edge, HD24496HXD	32	854*	2	1/2 Flat Washer
16	21116	14	Bolt & Nut Kit (Includes 5/8 NC x 1-3/4 Plow bolt, GR8 & 5/8 NC Lock Nut) HD24480HXD & HD24488HXD	33	E009	2	Pin - CAT1 Lower -or-
16	21116	16	Bolt & Nut Kit (Includes 5/8 NC x 1-3/4 Plow bolt, GR8 & 5/8 NC Lock Nut) HD24488HSD, HD24492HXD & HD24496HXD	33	E04009	2	Pin - CAT2 Lower
				34	H915	4	Sleeve (CAT 1)
				35	1972	1	1/4-28 Tapered Grease Zerk
				36	3021091	1	Safety Decal Set

* Standard Hardware, Obtain Locally

4 X 4 HSD BOX SCRAPER ASSEMBLY



20 Parts

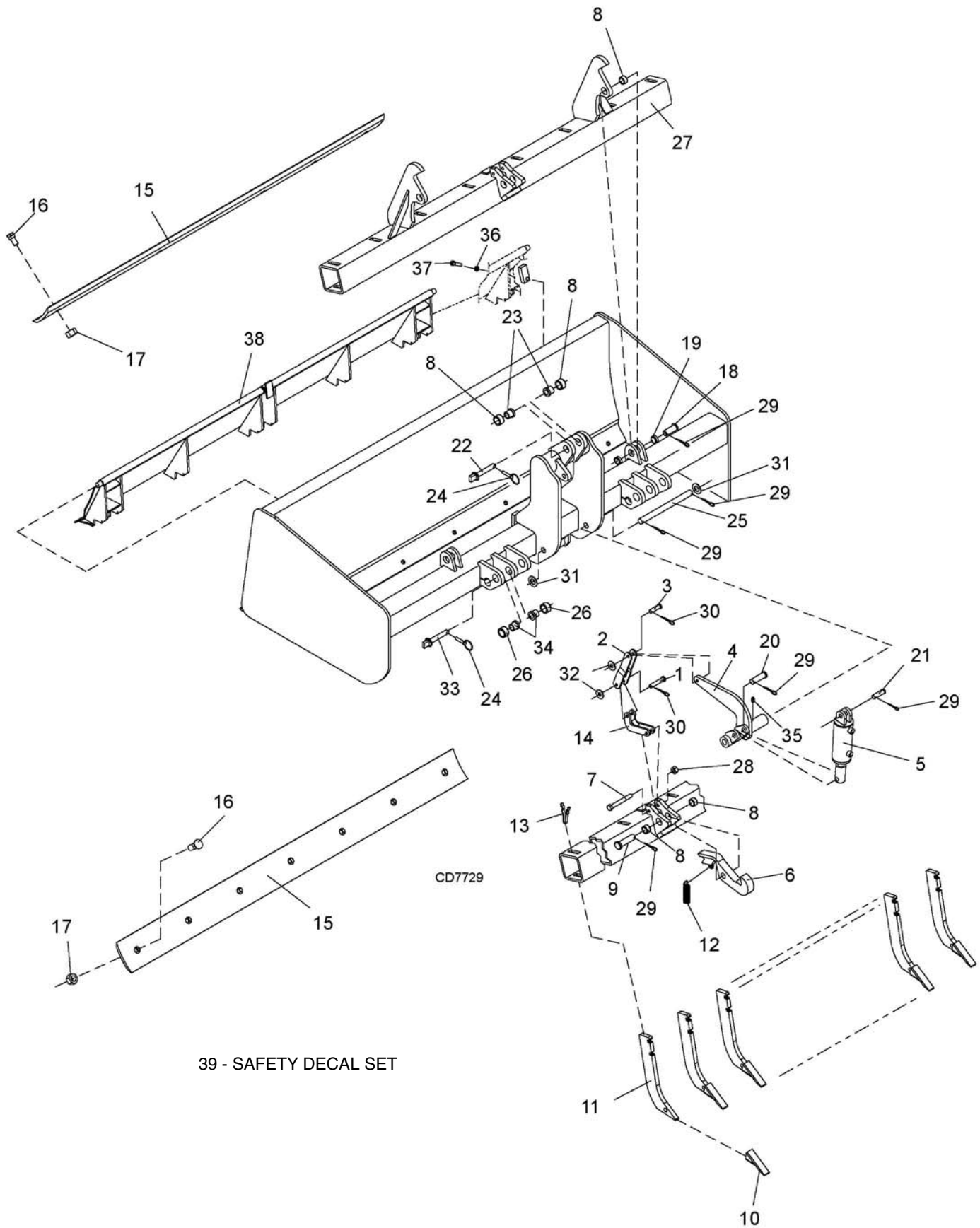
MAN0856 (6/1/2023)

4 X 4 HSD BOX SCRAPER PARTS LIST

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	H04810	1	Pin, Clevis 1/2 x 2-1/2	18	H793	2	Pin, 1 x 2-11/16
2	H628	1	Link Assembly	19	H806	4	Bushing
3	H04807	1	Pin, Clevis 1/2 x 1-3/4	20	H376	1	Pin, 3/4 x 3-3/8
4	H896	1	Bell Crank	21	H397	1	Pin, 3/4 x 2-3/8
5	13534-1	1	Cylinder, Hydraulic	22	E152	1	Pin, CAT1 - Top -or-
--	13453-1	1	Seal Kit, Hydraulic Cylinder (not shown)	22	E153	1	Pin, CAT2 - Top
6	H585	1	Hook	23	H872	2	Sleeve (CAT 1)
7	21167*	1	1/2 NC x 4 HHCS GR2	24	E056	3	Klik Pin
8	H805	6	Bushing	25	H351	1	Pin, 1 x 12-1/2
9	H174	1	Pin, 1 x 3-5/8	26	H899	4	Bushing
10	28765	8	Point	27	H88406	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24472HSD
11	E155	8	Shank	27	H88401	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24476HSD
12	E013	1	Spring	27	H88402	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24480HSD
13	E039	8	Lock Key	27	H88403	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24484HSD
14	H623	1	Link Assembly	27	H88404	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24488HSD
15	E2021	2	Cutting Edge, HD24472HSD	27	H88405	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24492HSD
15	H491	2	Cutting Edge, HD24476HSD	28	21323	1	1/2 NC Hex Lock Nut
15	E04021	2	Cutting Edge, HD24480HSD	29	1266*	7	3/16 x 1-1/2 Cotter Pin
15	E10021	2	Cutting Edge, HD24484HSD	30	21138	2	1/8 x 1-1/2 Cotter Pin
15	H894	2	Cutting Edge, HD24488HSD	31	1863*	2	1 Flat Washer
15	H895	2	Cutting Edge, HD24492HSD	32	854*	2	1/2 Flat Washer
15	H934	2	Cutting Edge, HD24496HSD	33	E009	2	Pin - CAT1 Lower -or-
16	21157	12	5/8 NC X 1-3/4 Plow Bolt GR8, HD24472HSD	33	E04009	2	Pin - CAT2 Lower
16	21116	14	Bolt & Nut Kit (Includes 5/8 NC x 1-3/4 Plow bolt, GR8 & 5/8 NC Lock Nut) HD24476HSD, HD24480HSD & HD24484HSD	34	H915	4	Sleeve (CAT 1)
16	21116	16	Bolt & Nut Kit (Includes 5/8 NC x 1-3/4 Plow bolt, GR8 & 5/8 NC Lock Nut) HSD24488HSD & HSD24492HSD	35	H981	1	Right Wear Bar
17	21288	12	5/8 NC Lock Nut, HD24472HSD	36	H98101	1	Left Wear Bar
				37	21261	8	5/8 NC x 2 Plow Bolt
				38	6239	8	5/8 NC Lock Nut
				39	1972	1	1/4-28 Tapered Grease Zerk
				40	3021091	1	Safety Decal Set

* Standard Hardware, Obtain Locally

4 X 2 LB & HB BOX SCRAPER ASSEMBLY



22 Parts

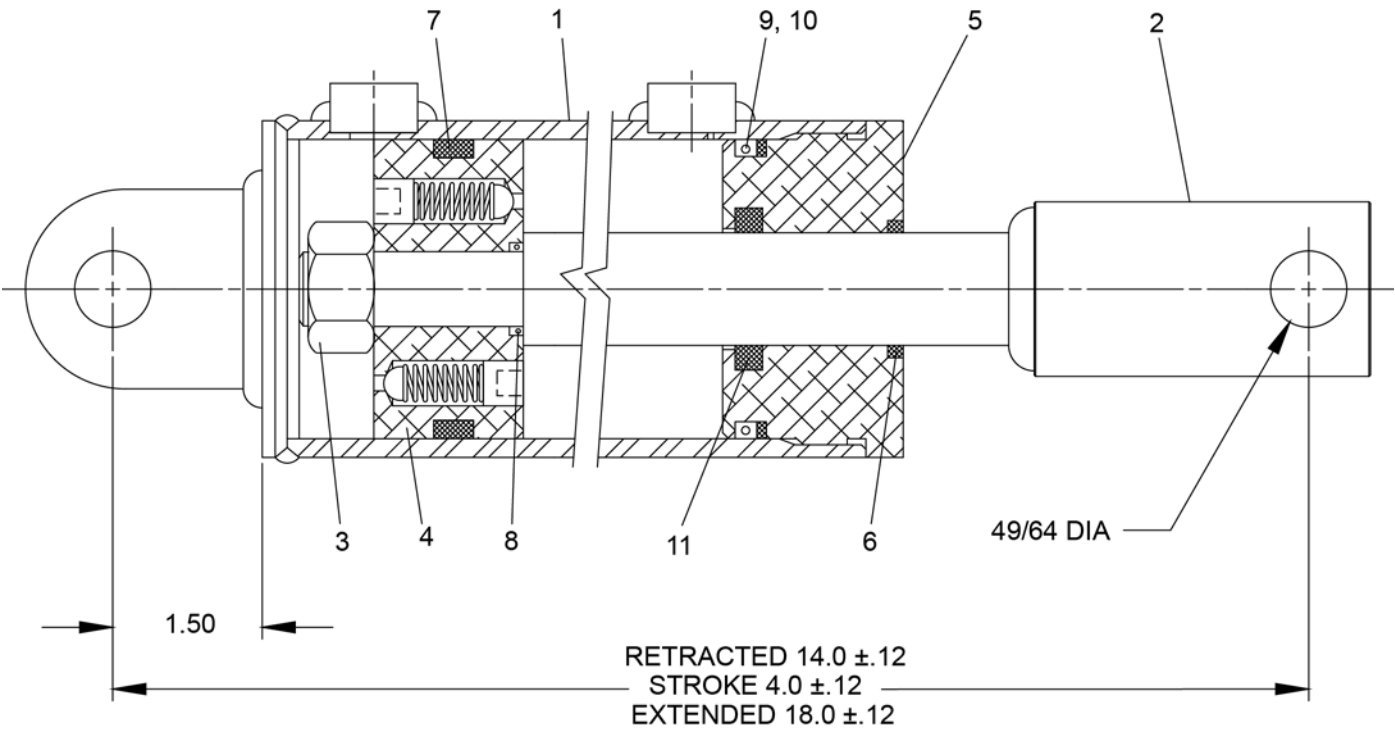
MAN0856 (6/1/2023)

4 X 2 LB & HB BOX SCRAPER PARTS LIST

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	H04810	1	Pin, Clevis 1/2 x 2-1/2	21	H397	1	Pin, 3/4 x 2-3/8
2	H628	1	Link Assembly	22	E152	1	Pin, CAT1 - Top -or-
3	H04807	1	Pin, Clevis 1/2 x 1-3/4	22	E153	1	Pin, CAT2 - Top
4	H896	1	Bell Crank	23	H872	2	Sleeve (CAT 1)
5	13534-1	1	Cylinder, Hydraulic	24	E056	3	Klik Pin
--	13453-1	1	Seal Kit, Hydraulic Cylinder (not shown)	25	H351	1	Pin, 1 x 12-1/2
6	H585	1	Hook	26	H899	4	Bushing
7	21167*	1	1/2 NC x 4 HHCS GR2	27	H88407	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24265LB & HB
8	H805	6	Bushing	27	H88406	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24272LB & HB
9	H174	1	Pin, 1 x 3-5/8	27	H88401	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24276LB & HB
10	28765	6	Point, HD24265LB & HB	27	H88402	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24280LB & HB
10	28765	8	Point	27	H88403	1	Scarifier Bar Assembly (Includes 6, 8, 9, 12 & 29), HD24284HB
11	E155	6	Shank, HD24265LB & HB	28	21323	1	1/2 NC Hex Lock Nut
11	E155	8	Shank	29	1266*	7	3/16 x 1-1/2 Cotter Pin
12	E013	1	Spring	30	21138	2	1/8 x 1-1/2 Cotter Pin
13	E039	6	Lock Key, HD24265LB & HB	31	1863*	2	1 Flat Washer
13	E039	8	Lock Key	32	854*	2	1/2 Flat Washer
14	H623	1	Link Assembly	33	E009	2	Pin - CAT1 Lower -or-
15	E021	2	Cutting Edge, HD24265LB & HB	33	E04009	2	Pin - CAT2 Lower
15	E02021	2	Cutting Edge, HD24272LB & HB	34	H915	4	Sleeve (CAT 1)
15	H491	2	Cutting Edge, HD24276LB & HB	35	1972	1	1/4-28 Tapered Grease Zerk
15	E04021	2	Cutting Edge, HD24280LB & HB	36	62580*	2	9/16 Lock Washer
15	E10021	2	Cutting Edge, HD24284HB	37	90001229	2	1/2 NC x 2 HHCS GR5 ZP
16	21116	12	Bolt & Nut Kit (Includes 5/8 NC x 1-3/4 Plow bolt, GR8 & 5/8 NC Lock Nut) HD24265LB & HB	38	H768	1	Tailgate Assembly, HD24265LB & HB
16	21157	14	5/8 NC X 1-3/4 Plow Bolt GR8	38	H714	1	Tailgate Assembly, HD24272LB & HB
17	21288	14	5/8 NC Lock Nut	38	H706	1	Tailgate Assembly, HD24276LB & HB
18	H793	2	Pin, 1 x 2-11/16	38	H683	1	Tailgate Assembly, HD24280LB & HB
19	H806	4	Bushing	38	H701	1	Tailgate Assembly, HD24284HB
20	H376	1	Pin, 3/4 x 3-3/8	39	3021091	1	Safety Decal Set

* Standard Hardware, Obtain Locally

HYDRAULIC CYLINDER



1. Apply permanent (Red) thread locking adhesive to threads of nut (3). Torque to 100 lbs-ft.
2. Tighten rod gland (5) with a spanner wrench. Torque to 400 - 450 lbs-ft.

REF	PART	QTY	DESCRIPTION
	13534-1	1	Hydraulic Cylinder, Complete
1	3030578	1	Body/Barrel Assembly
2	3030577	1	Rod Assembly
3	3030576	1	Self-Locking Nut, 3/4-16
4	3030575	1	Piston Assembly
7	13702	1	Crown Seal (Included in Item 12) (NSS)
8	90109037	1	O-Ring (Included in Item 12) (NSS)
5	3030574	1	Rod Bearing/Gland
6	13401-2	1	Wiper (Included in Item 12) (NSS)
9	13397-1	1	Back-Up Ring (Included in Item 12) (NSS)
10	13396-1	1	O-Ring (Included in Item 12) (NSS)
11	13398-1	1	Rod Seal (Included in Item 12) (NSS)
12	13453-1	1	Seal Kit (Kit Includes Items 6 thru 11)

Note: Seal Kit (13453-1) includes items 6 thru 11. These items are (NSS) Not Serviced Separately.

NOTES

BOLT TORQUE CHART

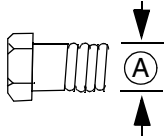
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

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 Grade 2
(No Dashes)**

SAE Bolt Head
Identification

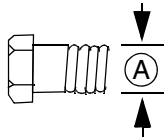


**SAE Grade 5
(3 Radial Dashes)**



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

Ⓐ 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



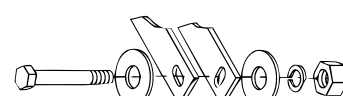
**Metric
Grade 10.9**

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



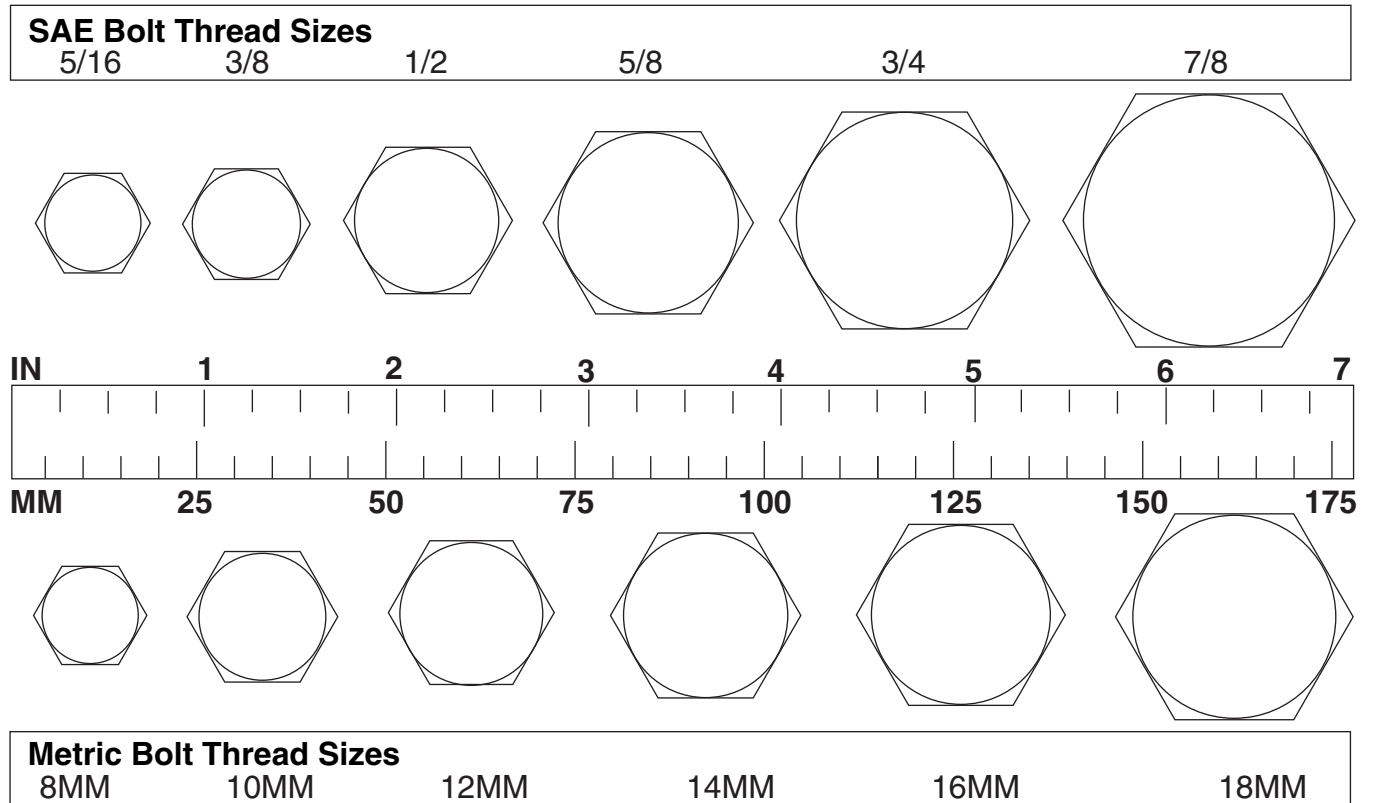
Flat Washer



8/9/00

BOLT SIZE CHART

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



ABBREVIATIONS

AG Agriculture
 ASABE..... American Society of Agricultural & Biological Engineers (formerly ASAE)
 ASAE American Society of Agricultural Engineers
 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
 FT Full Thread
 GA Gauge
 GR (5, etc.) Grade (5, etc.)
 HHCS Hex Head Cap Screw
 HT Heat-Treated
 JIC Joint Industry Council 37° 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 Unified Coarse
 UNF Unified Fine
 UNS..... Unified Special

WARRANTY

WainRoy Construction and Mining Attachments

Please Enter the Information Below and Save it For Future Reference.

Date of Purchase: _____

From (Dealer): _____

Model Number: _____

Serial Number: _____

EPIROC Drilling Tools, LLC; dba: WainRoy construction attachments, warrants this product to be free from defects in material and workmanship. Except as otherwise set forth below, the duration of this Warranty shall be for TWELVE (12) MONTHS COMMENCING ON THE INSTALLATION OF THE PRODUCTS TO THE ORIGINAL PURCHASER or FIFTEEN (15) MONTHS FROM THE ORIGINAL INVOICE DATE or 2000 HOURS OF SERICE, whichever occurs first. Proof of the in-service date must be provided for claims involving product that originally shipped more than twelve (12) months prior to the date of the claim.

Under no circumstances will this Warranty apply if the product, in the good faith opinion of WainRoy construction attachments, has been subjected to improper operations, improper maintenance, misuse, or an accident. This Warranty does not apply if the product has been materially modified or repaired by someone other than WainRoy, a WainRoy authorized dealer or distributor, and/or WainRoy authorized service center. This Warranty does not cover normal wear or tear, or normal maintenance items. This warranty also does not cover repairs made with parts other than those obtainable through WainRoy.

This Warranty is extended solely to the original purchaser of the product. Should such 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.

WainRoy makes no warranty, express or implied, with respect to engines, batteries, tires, or other parts or accessories not manufactured by WainRoy. Warranties for these items, if any, are provided separately by their respective manufacturers.

WainRoy's obligation under this Warranty is limited to, at WainRoy's option, the repair or replacement, free of charge, of the product if WainRoy, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. The product must be returned to WainRoy with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid. WainRoy shall complete such repair or replacement within a reasonable time after WainRoy receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. WainRoy MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND WainRoy SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

WainRoy shall not be liable for any 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, WainRoy specifically disclaims any damages relating to (i) lost profits, business, revenue, or goodwill; (ii) any expense or loss incurred for labor, supplies, substitute machinery, or rental; or (iii) any other type of damage to property or economic loss.

This Warranty is subject to any existing conditions of supply, which may directly affect WainRoy's ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, service person, or employee of any company, including without limitation, WainRoy, its authorized dealers, distributors, and service centers, is authorized to alter, modify or enlarge this Warranty.

Answers to any questions regarding Warranty service and locations may be obtained by contacting:

Epiroc Drilling Tools LLC: doing business as WainRoy
1962 Queenland Dr.
Mosinee, WI 54455
Tel: 800-848-3447



Examples of Common, Non-Covered Claims

1. The owner and operator are responsible for maintaining weld integrity on attachments subject to weld erosion from ongoing contact with soils, rocks, and other materials. Different materials have differing abrasive characteristics that will erode the structural welds of ground-engaging attachments at differing rates. Structural failures may occur as a result of excessive weld erosion. The owner and operator are responsible for maintaining necessary weld sizes and re-welding eroded welds with industry-approved procedures. WainRoy will not accept warranty claims for weld erosion or structural failures of the attachment as a result of weld erosion.
2. Attachments are used extensively in ground-engaging operations and, as a result, the teeth, tooth holders, cutting edges, bucket edges, ripper shanks, and other portions of the attachment are subject to abrasion and resulting wear. WainRoy will not accept warranty claims for wear of components or wear of areas of the attachment subject to ground-engaging wear.
3. The owner and operator are responsible for examining the attachment for any weld or structural cracking. Any such cracking caused by a defect in materials or workmanship by WainRoy will be covered under the WainRoy Warranty Policy. If the owner or operator continues to operate the attachment after weld cracking or structural cracking is visible or should have reasonably been visible, and as a result of continued operation, additional damage to the attachment results, WainRoy will not accept responsibility for the additional damage caused to other welds or to the attachment structure.
4. Materially modifying WainRoy attachments may result in premature failures of the attachment. WainRoy will not accept warranty claims on attachments that have been misapplied. For instance, using a general purpose excavator bucket in an application requiring a heavy or severe duty bucket or using the excavator bucket as a "jack hammer" to break concrete or as a "tamper" to drive rock or beams are considered misapplications.

PART NO.
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