

TITAN IMPLEMENT



3000 Series BOX BLADE SCRAPERS OPERATION AND PARTS MANUAL

Read and understand the manual. This manual provides information and procedures to safely operate and maintain the Box Blade Scrapers.



January 2016

Pre-Delivery Checklist

The Dealer should inform the Purchaser of this product of the Warranty terms, provisions, and procedures that are applicable. The Dealer and Purchaser should review the contents of the Operation and Parts Manual including safety equipment, safe operation and maintenance, review the Safety Signs on the implement (and tractor, if necessary), and the Purchaser's responsibility to train their operators in correct operating procedures.

- MOUNTED IMPLEMENTS: I have explained that Deflectors, Guards, or Shields must be installed and maintained in good repair, and that the operator is responsible for watching out for persons in the work area.

PRE-DELIVERY SERVICE CHECK AND ADJUST AS REQUIRED

See Operation and Parts Manual for Details

Inspection Performed - Warranty and Safety Procedures Explained - Installation Complete

IMPLEMENT

- Review Procedure to Adjust Blade
- Make Sure All Hardware is Properly Tightened

ATTACHMENTS & INSTALLATION

- Make Sure All Bolts, Pins, and Nuts are Properly Installed and Tightened

IMPLEMENT TO TRACTOR CONNECTIONS

- Make Sure A-Frame Pivot and Links are Properly Installed
- Make Sure Lift Arms are Adjusted Equally
- Complete All Pre-Operation Checks

SAFETY ITEMS

- Make Sure Protective Shields are Properly Installed
- Review Operation and Parts Manual (Supplied)
- Make Sure Tractor PTO Shield is Installed
- Make Sure S.M.V. Sign is Installed, if Needed (Customer Supplied)

I have thoroughly instructed the purchaser on the above-described equipment. This review included the Operation and Parts Manual contents, equipment care, adjustments, safe operation, and applicable warranty policy.

Date _____

Dealer Rep. Signature _____

The above equipment and Operation and Parts Manual have been received by me, and I have been thoroughly instructed as to care, adjustments, safe operation, and applicable warranty policy.

Date _____

Purchaser's Signature _____

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1. INTRODUCTION

1.1 Welcome



3100 Series Box Blade Scraper

Congratulations on your choice of a Titan Implement box blade scraper. This equipment has been designed and manufactured to meet the needs of discerning users.

The Titan Implement box blade scraper is designed for ripping, leveling, finish grading, and backfilling applications.

Many features incorporated into this box blade scraper are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the box blade scraper safely and how to adjust it to provide maximum operating efficiency.

By following the operating instructions in conjunction with a good maintenance program, your Titan Implement box blade scraper will provide many years of trouble-free service.

This manual covers Titan Implement box blade scraper models:	
Model	Description
3104, 3105, 3106, 3107, 3108	Standard-Duty Series
3206, 3207, 3208	Heavy-Duty Series

1.2 Safe Operation

Safe, efficient, and trouble-free operation of your box blade scraper requires that you, and anyone else who will be using or maintaining the unit, read and understand the information contained within the Operation and Parts Manual.

Use this manual for reference or for new operators or owners.

WARNING



Read And Understand Manual

To prevent personal injury or even death, be sure you read and understand all of the instructions in this manual and other related OEM equipment manuals! The box blade scraper, if not used and maintained properly, can be dangerous to users unfamiliar with its operation. Do not allow operating, maintaining, adjusting, or cleaning of this box blade scraper until the user has read this manual and has developed a thorough understanding of the safety precautions and functions of the unit.

This box blade scraper is designed for the specific purpose of ripping, leveling, finish grading, and backfilling. DO NOT modify or use this box blade scraper scraper for any application other than that for which it was designed.

Box blade scrapers maintained or operated improperly, or by untrained personnel, can be dangerous; exposing the user and/or bystanders to possible serious injury or death.

1.3 Specifications

Standard-Duty Box Blade Scrapers

Model	3104	3105	3106	3107	3108
Horsepower Required	15-45				
Working Width	48"	60"	72"	84"	96"
Moldboard Height	17"				
Weight (Lbs.)	290	323	357	390	421
Number of Shanks	3	4	5	6	6
A-Frame Material	3/8"				
Cutting Edges	6"				
Quick Hitch	YES				
Hitch	CAT I				

Heavy-Duty Box Blade Scrapers

Model	3206	3207	3208
Horsepower Required	30-70		
Working Width	72"	84"	96"
Moldboard Height	17"		
Overall Depth	22"		
Weight (Lbs.)	530	586	640
Number of Shanks	5	6	6
A-Frame Material	1/2"		
Cutting Edges	6"		
Quick Hitch	YES		
Hitch	CAT I		

Specifications subject to change without notice.

1.4 Intended Usage

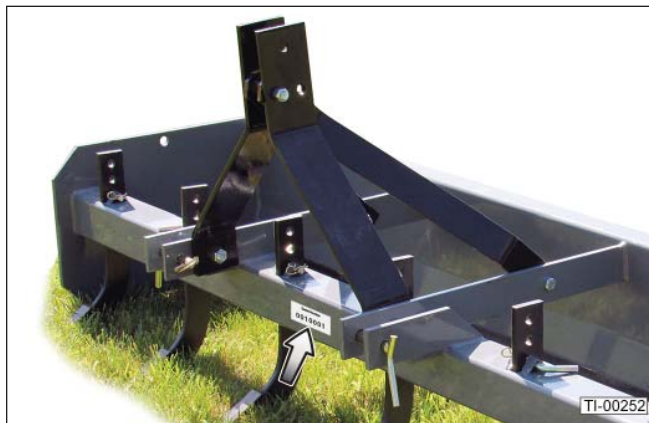
Do not use this box blade scraper for any other purpose than its intended use of ripping, leveling, finish grading, and backfilling.

1.5 Operator Orientation

The directions left, right, front, and rear, as mentioned throughout this manual, are as seen from the tractor operator's seat and facing in the direction of travel.

1.6 Serial Number Location

The serial number decal is located on the front of the frame.



Model Number _____

Serial Number _____

1.7 Product Improvements

Because Titan Implement, LLC maintains an ongoing program of product improvement, we reserve the right to make improvements in design or changes in specifications without incurring any obligation to install them on units previously sold.

1.8 Disposal of Equipment at End of Useful Life

The Titan Implement, LLC box blade scraper has been designed for the specific purpose of ripping, leveling, finish grading, and backfilling. When this unit is no longer capable of doing its designed purpose, it should be dismantled and scrapped. Do not use any materials or components from this unit for any other purpose.

1.9 Unanswered Questions

If you have any questions not answered in this manual, require additional copies, or the manual is damaged, please contact your dealer or:

Titan Implement, LLC
P.O. Box 649
232 Industrial Lane
Decatur, TN 37322

Phone: (423) 334-0012
Fax: (423) 334-0023

The manual is also available for download at:
www.titanimplement.com

1. Select "Products".
2. Select "Box Blades".
3. Click the "Specs., Manuals, Warranty" tab.
4. Click "Download Manual".

2. Safety

2.1 General

Safety of the operator and bystanders is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling the equipment.

Most work-related accidents are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. As you assemble, operate, or maintain the box blade scraper (unit), you must be alert to potential hazards. You should also have the necessary training, skills, and tools to perform any assembly or maintenance procedures.

Improper operation and maintenance of this unit could result in a dangerous situation that could cause injury or death.

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or:

Titan Implement, LLC
P.O. Box 649
232 Industrial Lane
Decatur, TN 37322
Phone: (423) 334-0012
Fax: (423) 334-0023

WARNING



Do not assemble, operate, or maintain the unit until you read and understand the information contained in this manual.



Safety precautions and warnings are provided in this manual. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.

Titan Implement, LLC cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual are, therefore, not all-inclusive. If a method of assembly, operation, or maintenance not specifically recommended by us is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that the unit will not be damaged or be made unsafe by the methods that you choose.

The information, specifications, and illustrations in this manual are based on the information that was available at the time this material was written and can change at any time without notice.

2.2 Safety Alert Symbols



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

This manual contains DANGERS, SAFETY INSTRUCTIONS, CAUTIONS, IMPORTANT NOTICES, and NOTES which must be followed to prevent the possibility of improper service, damage to the equipment, personal injury, or death. The following key words call the readers' attention to potential hazards.

Hazards are identified by the "Safety Alert Symbol" and followed by a signal word such as "DANGER", "WARNING", or "CAUTION".

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

WARNING

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

CAUTION

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

NOTICE

Indicates that equipment or property damage can result if instructions are not followed.

SAFETY INSTRUCTIONS



















Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.

Note: Contains additional information important to a procedure.

2.3 Safety Icon Nomenclature

Pictorial icons signal a type of hazard and warn of personal protection issues, prohibited actions, and hazard avoidance.

2.3.1 Personal Protection/ Important Information







-  Read the manual
-  Maintenance procedure
-  Eye protection
-  Fire extinguisher
-  First aid kit
-  Hand protection
-  Head protection
-  Hearing protection
-  Inspect equipment
-  OEM parts only
-  Protective shoes
-  Remove key
-  Set parking brake
-  Stop engine
-  Think safety
-  Transmission in park
-  Use proper support
-  Use proper tools








-  Use two people when lifting heavy objects
-  Visibility
-  Rollover protection
-  Wear seat belt
-  Weight rating

2.3.2 Prohibited Actions

-  Do not alter or modify
-  Use proper tools
-  Do not weld
-  No alcohol
-  No drugs
-  No smoking
-  No young children
-  No riders

2.3.3 Hazard Avoidance

-    Crush hazard
-  Crush hazard (chuck wheels)
-  Crush hazard (foot)
-  Defective or broken part

-  Fall hazard
-  Fire hazard
-  Cutting edge contact hazard (hand)
-  Cutting edge contact hazard (foot)
-  Lifting hazard
-  Pinch point hazard
-  Rollover protection
-  Safety alert symbol
-  Slipping injury
-  Tripping injury

2.4 General Safety Instructions

The owner/operator is responsible for the SAFE use and maintenance of the box blade scraper. Make sure anyone who is operating, maintaining, or working around the box blade scraper is familiar with the operating and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be used while using the box blade scraper.

In addition to the design features of the box blade scraper, including safety signs, accident prevention is dependent upon the awareness, concern, prudence, and proper training of the people involved in the operation, maintenance, and storage of the box blade scraper.

In addition to this safety section, refer also to safety messages and instructions in each of the appropriate sections of this manual.

These general safety instructions apply to the overall use and maintenance of the box blade scraper.

More specific instructions on safety are found in the operation, maintenance, and storage sections of this manual. Refer to these sections before performing any of these tasks.

WARNING

Failure to understand and follow these safety instructions could result in serious injury and possibly even death.



Provide User with Literature
Titan Implement, LLC box blade scraper owners must provide operator instructions to anyone using the box blade scraper before use, and at least annually thereafter. Refer to “2.6 OSHA Training Requirements” on page 12.



Stay Clear
Clear the area of people, especially small children, before using the box blade scraper. Under no circumstances should young children be allowed to work with or around the box blade scraper.



Impaired User Hazard
Do not attempt to assemble, operate, or maintain this box blade scraper under the influence of drugs or alcohol. Consult your doctor before using this box blade scraper while taking prescription medications.

WARNING



Crush Hazard

Do not allow anyone to ride on the tractor or the box blade scraper.

Falling or crushing hazards can result in severe injuries or death.



Damaged Parts Hazard

Do not use the box blade scraper if any parts are damaged. If the box blade scraper has a defect, immediately stop using it and remedy the problem before continuing.

CAUTION

The following safety instructions are provided to help prevent potential injury. Not following these instructions may result in minor to moderate injury.

Personal Protection Equipment

When using this box blade scraper, wear appropriate personal protective equipment. This list may include, but is not limited to:



- Protective shoes with slip resistant soles
- Protective goggles, glasses, or face shield
- Protective clothing and gloves
- Safety vest (when operating near roads)
- Hearing protection



Hearing Loss

Prolonged Exposure To Loud Noise May Cause Permanent Hearing Loss!

Working environments with noise-producing equipment can cause partial to permanent hearing loss. We recommend using hearing protection any time noise levels exceed 80 decibels (dB). Noise levels over 85 dB, on a long-term basis, can cause severe hearing loss. Noise levels over 90 dB over a period of time can cause permanent and even total hearing loss.

Hearing loss from loud noise is cumulative over a lifetime without hope of natural recovery.



Crush Hazard

The tractor should be equipped with a Roll Over Protective Structure (ROPS) and a seat belt. A crushing hazard can occur if the driver is ejected from the seat while the tractor is in motion. Fasten the seat belt whenever the tractor is moving.

SAFETY INSTRUCTIONS

The following safety instructions are provided to help prevent injury or limit equipment damage.



First Aid Kit

Have a first aid kit available for use should the need arise and know how to use it.



Fire Extinguisher

Have a fire extinguisher available for use should the need arise and know how to use it.



Think SAFETY!

Work SAFELY!

2.5 Training

Anyone who will be using and/or maintaining the box blade scraper must read, clearly understand, and follow ALL safety, operation, and maintenance information presented in this manual and other related OEM manuals.

If you do not understand any information in this manual, see your dealer or contact Titan Implement before proceeding.

Do not use or allow anyone else to use this box blade scraper until all information has been reviewed. Annually review this manual before the season start-up.

Make periodic reviews of SAFETY and OPERATION of the box blade scraper a standard practice. An untrained operator is not qualified to use this box blade scraper.

2.6 OSHA Training Requirements

The following training requirements have been taken from Title 29, Code of Federal Regulations Part 1928.57 (a) (6). www.osha.gov.

Operator instructions. At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee who operates an agricultural tractor and implements in the safe operating practices and servicing of equipment with which they are or will be involved, and of any other practices dictated by the work environment.

2.7 Federal Laws and Regulations

IMPORTANT FEDERAL LAWS AND REGULATIONS CONCERNING EMPLOYERS, EMPLOYEES AND OPERATORS

This section is intended to explain in broad terms the concept and effect of the following federal laws and regulations. It is not intended as a legal interpretation of the laws and should not be considered as such.

U.S. PUBLIC LAW 91-596 (The Williams-Steiger Occupational Safety and Health Act of 1970) OSHA

This Act Seeks:

" ... to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources ... "

DUTIES

Sec. 5(a) Each Employer -

- (1) shall furnish to each of its employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to its employees.
- (2) shall comply with occupational safety and health standards promulgated under this Act.
 - (b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his or her own actions and conduct.

OSHA Regulations

Current OSHA regulations state in part: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved." These will include (but are not limited to) instructions to:

Keep all guards in place when the machine is in operation;

Permit no riders on equipment;

Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning, or unclogging the equipment, except where the machine must be running to be properly serviced or maintained, in which case the employer shall instruct employees as to all steps and procedures which are necessary to safely service or maintain equipment.

Make sure no one is within 300 feet of machinery before starting the engine, engaging power, or operating the machine.

EMPLOYEE TRACTOR OPERATING INSTRUCTIONS:

1. Securely fasten your seat belt if the tractor has a ROPS.
2. Where possible, avoid operating the tractor near ditches, embankments, and holes.
3. Reduce speed when turning, crossing slopes, and on rough, slick, or muddy surfaces.
4. Stay off slopes too steep for safe operation.
5. Watch where you are going, especially at row ends, on roads, and around trees.
6. Do not permit others to ride.
7. Operate the tractor smoothly - no jerky turns, starts, or stops.
8. Hitch only to the drawbar and hitch points recommended by tractor manufacturers.
9. When tractor is stopped, set brakes securely and use park lock if available.

Child Labor Under 16 Years Old

Some regulations specify that no one under the age of 16 may operate power machinery. It is your responsibility to know what these regulations are in your own area or situation. (Refer to U.S. Dept. of Labor, Employment Standard Administration, Wage & Home Division, Child Labor Bulletin #102).

2.9 Operation Safety

Refer to "4.1 Safety" on page 17 for safety recommendations related to operating the box blade scraper. All applicable safety recommendations in other sections should also be followed.

2.10 Transporting Safety

Refer to "5.1 Transporting Safety (Road)" on page 23 for safety recommendations related to transporting the box blade scraper. All applicable safety recommendations in other sections should also be followed.

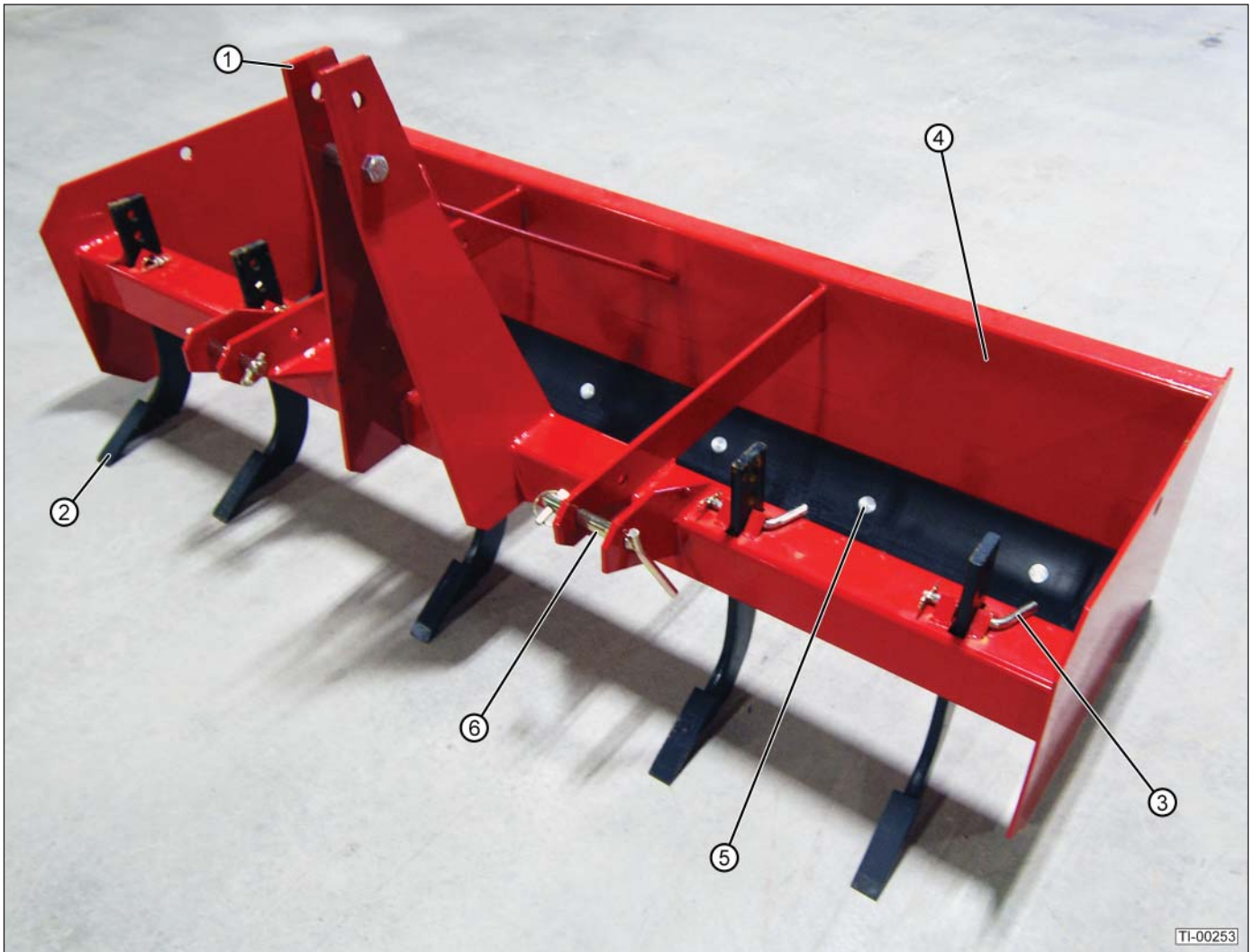
2.11 Storage Safety

Refer to "6.1 Storage Safety" on page 24 for safety recommendations related to storing the box blade scraper. All applicable safety recommendations in other sections should also be followed.

2.12 Maintenance Safety

Refer to "7.1 Maintenance Safety" on page 25 for safety recommendations related to maintaining the box blade scraper. All applicable safety recommendations in other sections should also be followed.

3. Nomenclature



Item	Description
1	A-Frame
2	Box Shank
3	Shank Pin and Retaining Pin
4	Moldboard
5	Cutting Edge
6	CAT I 3-Point Lift Pin and Lynch Pin

4. Operation

4.1 Safety

Refer to “2.4 General Safety Instructions” on page 11 for general user safety training requirements.

WARNING



Roll Away Hazard

Before leaving the tractor seat, make sure the engine is stopped, the transmission is placed in park, the key is removed, and the parking brake is set.



The weight of the tractor, plus the implement if it rolls onto a person, can cause serious crushing injury or death.



Crush Hazard

The tractor should be equipped with a Roll Over Protective Structure (ROPS) and a seat belt. A crushing hazard can occur if the driver is ejected from the seat while the tractor is in motion. Fasten the seat belt whenever the tractor is moving.



Call 811

To avoid serious injury or death from contacting underground utilities, call local utilities to mark the location of all underground cables, pipelines, and other hazards in the area.



Stay Clear

Clear the work area of all unnecessary people and obstructions to prevent personal injury.



Blade Contact Hazard (hand)

To avoid serious injury or death, keep away from ground engaging components. Do not put hands under box blade scraper.



Blade Contact Hazard (foot)

To avoid serious injury or death, keep away from ground engaging components. Do not put feet under box blade scraper.



Operating the Tractor

Before attaching the box blade scraper to the tractor, be familiar with its controls and how to stop quickly in the event of an emergency. Read and understand this manual and the one provided with your tractor before operating the box blade scraper.

SAFETY INSTRUCTIONS

The following safety instructions are provided to help prevent injury or limit equipment damage.



Train Unfamiliar Users

It is the box blade scraper owner's responsibility to make sure any person using the box blade scraper, especially if it is loaned or rented, has been thoroughly trained on its proper and safe use.

Be certain only physically-able persons will use the box blade scraper.

Untrained users expose themselves and bystanders to possible serious injury or death.

If the elderly are assisting with the work, their physical limitations need to be recognized and accommodated.

Never allow children to operate equipment.

Do not operate the box blade scraper, or drive the tractor into material that is burning, or areas that recently burnt and may contain hot spots. Tire damage can occur when driving over hot material. Oil and grease on the tractor and box blade scraper could ignite, resulting in equipment destruction.

4.2 Tractor Requirements



WARNING



Tractor Owner/Operator Manual
Always refer to the tractor Operator's Manual to ensure compatibility and maximum safety.

The tractor used to operate the box blade scraper must have the power capacity to lift and pull the box blade scraper at a ground speed between 2 and 5 MPH. Use the chart to select the tractor horsepower appropriate for your box blade scraper. Do not use a tractor of more than the recommended HP to prevent damaging box blade scraper components.

Model	Recommended HP
3104, 3105, 3106, 3107, 3108	15-45
3206, 3207, 3208	30-70

The tractor must be matched to the weight of the box blade scraper. A minimum of 20% of the combined tractor and equipment weight should be on the front wheels. This will ensure adequate stability during transport and operation.

Always review the "controls" section of the tractor Operator's Manual to be familiar with the location, settings, and function of the tractor controls. Be familiar with all controls before using this equipment.

4.2.1 Tractor Safety Devices

If transporting or operating the tractor and implement near a public roadway, the tractor must be equipped with proper warning lighting and a Slow Moving Vehicle (SMV) emblem, which are clearly visible from the rear of the unit. Lights and a SMV emblem must be attached directly to the implement if the visibility of the tractor warning signals is obscured.

Never operate the tractor PTO with the PTO master shield missing or in the raised position.

4.2.2 ROPS and Seat Belt

WARNING



Rollover Hazard

To avoid serious injury or death from falling off tractor, equipment rollover, rollover, or crushing:

- 1) Use ROPS equipped tractor.
- 2) Keep ROPS locked in the UP position.
- 3) Only operate the equipment when seated in the tractor seat.
- 4) Always fasten seat belt when operating the tractor and box blade scraper.

The tractor must be equipped with a Roll Over Protective Structure (ROPS) (tractor cab or roll-bar) and seat belt to protect the operator from falling off the tractor, especially during a roll-over where the driver could be crushed and killed. Only operate the tractor with the ROPS in the raised position and seat belt fastened.

4.2.3 3-Point Hitch

The box blade scraper is designed to be mounted on a tractor CAT I 3-Point or Quick Hitch.

Refer to the tractor operator's manual for the category of the tractor being used. If the hitch does not conform to ASABE CAT I dimensions, the blade may not fit or raise properly. Consult an authorized dealer for possible modification procedures to mount non-conforming hitches. Depending on the hitch category, certain size pins are used to attach the implement to the tractor. CAT I hitches require 7/8" lower and 3/4" upper diameter hitch pins.

Install the lift arm stabilizer or shorten the stop chains to place the arms into the non-sway configuration. Refer to the tractor manual for details.

4.3 Attaching to Tractor

Use caution when connecting the box blade scraper to the tractor. The box blade scraper should be securely resting on the ground or setting on blocks. Keep hands and feet from under the cutting edge and clear of pinch points between the tractor hitch arms and box blade scraper hitch pins.

WARNING



Crush Hazard

Do not allow anyone to stand between the hitch and implement during hook-up operations. Never operate the hydraulic 3-point lift controls while someone is directly behind the tractor.

1. Shorten or remove the tractor drawbar to avoid interference when raising and lowering the box blade scraper.
2. Remove the lynch pins and lift pins.
3. Board the tractor and start the engine. Position the tractor with the 3-point lift arms positioned at the same height and aligned with the box blade scraper hitch pin holes.

Note: Set the 3-point lift control to “Position Control” so that the lift arms maintain a constant height when attaching the box blade scraper. See the tractor Operator’s Manual for correct settings when attaching 3-point equipment.

4. Turn off the tractor engine and dismount.
5. Insert the hitch pin through the lift arm and lug holes and install the lynch pin.
6. Walk around to the opposite side and repeat the procedure for the remaining lift arm and hitch pin.
7. Extend or retract the 3-point top link to align its end hole with the hole of the box blade scraper’s top link. Insert the top link hitch pin and insert the retaining pin into the hitch pin.
8. Return to the tractor and slowly raise the 3-point lift arms fully up and down to make sure the box blade scraper does not make contact with the tractor tire, drawbar, or any other equipment on the tractor.
 - a. Move or remove the drawbar if it interferes with the implement.
9. Adjust any lower link check chains, guide blocks, or sway blocks to prevent the box blade scraper from swaying side-to-side.

4.4 Setting the Box Blade Scraper

Properly setting the box blade scraper is essential for efficient and safe operation. A properly adjusted box blade scraper will consistently achieve the desired results.

Note: The box blade scraper must be attached to the tractor and raised off the ground to make the following adjustments.

4.4.1 Leveling the Blade

1. Use the adjustment on the tractor 3-point hitch lift arm to level the box blade scraper from side-to-side.
2. Adjust the top link to level the box blade scraper from front-to-back.

4.4.2 Setting Blade Tilt

The box blade scraper may be tilted so one end is lower than the other by adjusting the tractor’s lower 3-point arms.

4.4.3 Shank Adjustments

⚠ WARNING



Crush Hazard

Make adjustments to the box blade scraper after it has been properly attached to the tractor and secured with solid supports.

Never work around equipment supported by hydraulics.

Hydraulics can drop equipment instantly if controls are actuated, or if hydraulic lines burst even when power to the hydraulics is shut off.

⚠ CAUTION

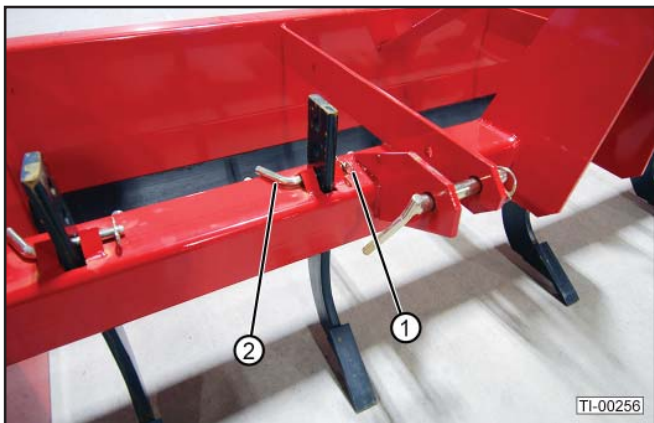


Crush Hazard

Always keep your feet and legs out from under the shanks while adjusting them. It is possible for the shanks to fall, causing injury to your feet and/or legs.

The ripper shanks can be positioned to any of three settings based on the soil condition.

1. Remove hairpin (1) and L-shaped shank pin (2).







2. Adjust each shank up or down to the desired hole setting and then replace shank pin and secure with hairpin. Make sure that all the shanks are adjusted equally.

4.5 Initial Setup Checklist

Efficient and safe operation of the box blade scraper requires that every user read and understand the operational instructions and all related safety instructions outlined in this manual.

This checklist is provided for the user/owner. It is important for both personal safety and to maintain the mechanical condition of the box blade scraper that this checklist is followed.

Initial Setup Checklist (prior to using for the first time)		
✓	Location	Task
✓		Make sure the box blade scraper is properly mounted to the 3-point hitch. Refer to "4.3 Attaching to Tractor" on page 19.
✓		Make sure all hardware is properly installed and tightened. Refer to "7.3 Bolt Torque Requirements" on page 27.
✓		Check the condition of the cutting edges and shanks. Refer to "7.2 Ground Engaging Components" on page 26.
✓		Check the box blade scraper setup. Adjust if needed. Refer to "4.4 Setting the Box Blade Scraper" on page 19.

4.6 Implement Break-In

Although there are no operational restrictions on the box blade scraper when used for the first time, it is recommended that the following mechanical items be checked:

1. After 1/2 hour of operation:
 - a. Check all fasteners and tighten if necessary.
 - b. Make sure that the cutting edge is in good condition.
2. After 10 hours of operation:
 - a. Go to the normal servicing and maintenance schedule, as defined in the Maintenance Section.

4.7 General Operating Instructions

Familiarize yourself with the Operation and Parts Manual, and make sure the box blade scraper is properly attached to the tractor before beginning work. Inspect the condition of the cutting edge and the overall box blade scraper for potential problems or damage. Do not use the box blade scraper if it needs repairs of any type.

Use only an appropriately-sized tractor to pull the box blade scraper. Operate the box blade scraper only in conditions where you have clear visibility in daylight, or with adequate artificial lighting. Never operate the box blade scraper in darkness or foggy conditions where you cannot clearly see at least 300 feet. Never operate in an area that you have not inspected and removed debris or foreign material.

Clear the area of bystanders, especially small children. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, power lines, debris, and foreign objects. If you are unable to clearly see these type of items, discontinue operating the box blade scraper. Thoroughly inspect the work area for stones, branches, debris, buried utility cables, pipelines, sprinkler heads, and any other hard objects that may be struck. Mark the location of objects that cannot be removed. Place grade stakes if you intend to develop a specific grade, soil level, or crown. Watch for trees, low hanging limbs, power lines, and other overhead obstacles while you are operating. Use care to avoid hitting these items.

Contact local utilities before digging. Know the location of all underground cables, pipelines, and other hazards in the area. Visually survey the work site to make sure it is safe and free of foreign obstacles. Also make certain that all irrigation heads, utility outlets, and other obstacles are properly marked. Do not operate the box blade scraper, or drive the tractor into material that is burning, or areas that recently burnt and may contain hot spots. Tire damage can occur when driving over hot material. Oil and grease on the tractor and box blade scraper could ignite, resulting in equipment destruction.

A box blade scraper's primary purpose is grading and leveling. This function is best done at an approximate 2 to 4 MPH ground speed. With the ripper shanks raised all the way up, simply lower the box blade scraper to the ground and proceed forward. The blade should immediately begin shaving the soil surface and material should begin accumulating in the box. This material can be transferred to a nearby location by dragging it and then raising the box blade scraper to deposit the load.

Uniform distribution and leveling of material can also be achieved by setting the box blade scraper to shave off high spots, allowing accumulated material to flow out under the blade in the low spots.

Always operate safely and remember to follow all the instructions in this manual.

4.7.1 Ripping

Occasionally, the ground or surface material will be very hard and will require ripping to loosen the soil profile in order for the box blade scraper to be effective. If more aggressive ripping action is desired, lower the shanks by one increment at a time. If less aggressive ripping action is desired, raise the shanks. Achieving the desired effect for the given conditions may require some experimentation. Box blade scrapers generally perform better in dry to slightly damp soil conditions.

4.7.2 Grading

Position the box blade scraper to the desired angle and tilt, lower the blade to the ground, and set the tractor's draft-link height control to the desired position. Proceed forward at a speed of no more than 2 to 4 MPH. The blade should immediately begin cutting the surface. A blade full of material can be raised slightly so that the material can flow out evenly under the blade to effectively remove high spots and fill in depressions. If the material is too hard for the blade to cut, lower the ripper shanks to loosen the material. Three shank positions are available for any conditions that may be encountered.

4.7.3 Ditch Work

Tilt the blade to create or clean a ditch. Multiple passes will successively deepen the ditch.

4.7.4 Backfilling

The box blade scraper can also be used for backfilling applications. Backfilling is pushing material while backing up. Simply lower the box blade scraper and back the rear facing blade into the backfill material. Keep the load in the center of the blade, not on the end. Don't ram a load with the blade and always operate at a low speed when backfilling. Continue backfilling and pushing operations, as needed, to complete the task. Some experimentation may be needed to achieve the desired results.

Be cautious when removing snow while backing up, as snow can hide obstructions and there is a temptation to drive too fast in order to get the snow removal job done. High speeds multiply the forces exerted on the blade.

4.8 Detaching From Tractor

1. Move the box blade scraper to a level storage location. Park the tractor, place the transmission in park or neutral, and apply the parking brake. Lower the box blade scraper, shut down the engine, and remove the key before exiting the tractor.
2. Make sure the box blade scraper is resting securely on the ground or blocks before attempting to disconnect it from the tractor.

WARNING



Crush Hazard

Keep feet and hands from under the box blade scraper and clear of any pinch points caused by the tractor hitch arms and box blade scraper hitch pins. Never operate the hydraulic 3-point lift controls while someone is directly behind the tractor.

3. Extend or retract the tractor 3-point hitch top link to remove tension on the top link hitch pin. When the pin is loose and easy to rotate, remove the pin from the box blade scraper. Disconnect the lift arms.



5. Transporting

5.1 Transporting Safety (Road)

Refer to “2.4 General Safety Instructions” on page 11 for general transporting safety requirements.

WARNING

The following safety instructions are provided to help prevent serious injury and possibly even death.



Operating the Tractor

Before attaching the box blade scraper to the tractor, be familiar with its controls and how to stop quickly in the event of an emergency. Read and understand this manual and the one provided with your tractor before transporting the box blade scraper.

SAFETY INSTRUCTIONS

The following safety instructions are provided to help prevent injury or limit equipment damage.



Drive Safely

Be a safe and courteous driver. Anticipate what other drivers will do and drive accordingly.



Allow Extra Distance

Apply brakes early. Leave extra distance between your vehicle and the one(s) ahead to provide adequate stopping space. Extra distance will be required to stop the vehicle.



Clear Vision

Remove all objects from the area that would prevent clear vision of the complete work area or would present an obstacle when moving the box blade scraper.



Hitch Attachment

Be sure the box blade scraper is securely attached to the tractor and in good operating condition before using.



Working Taillights

Make sure lights on the tractor are working properly.



Additional Lighting

For box blade scrapers without lights, install additional lights on the rear of the tractor to safeguard against rear-end collisions. Daybreak and dusk are particularly dangerous and rear pilot vehicles are recommended. Box blade scrapers should be transported on public roads only during daylight hours.

SAFETY INSTRUCTIONS



Hazard Flashers

Use hazard flashers on the tractor when transporting unless prohibited by law.



Right-of-Way

When travelling below the posted speed limit, keep to the right and yield the right-of-way to allow faster traffic to pass.



Tractor Owner/Operator Manual

Always refer to the tractor Operator's Manual to determine its compatibility and maximum safety.



Maximum Transporting Speed

Do not exceed 20 MPH when transporting the box blade scraper. Slow down for corners and rough terrain.



Visibility

Clean reflectors, SMV or SIS sign, and lights before transporting. Make sure all the lights and reflectors required by highway and transport authorities are in place and can be seen clearly by all overtaking and oncoming traffic.



Regulations

Make sure all local, state, and federal regulations, regarding the transport of equipment on public roads and highways, are met. Check with the local authorities regarding transporting the box blade scraper on public roads. Obey all applicable laws and regulations.

6. Storage

6.1 Storage Safety

At the end of the season, the box blade scraper should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary downtime at the beginning of the next season.

CAUTION



Personal Injury Hazard

Store the box blade scraper in an area away from human activity. To prevent the possibility of serious injury, do not permit children to play on or around the stored box blade scraper.



Crush Hazard

Always set the box blade scraper on the ground or on blocks for storage.

NOTICE

To prevent damage to the box blade scraper, store it in a dry, level area.

6.2 Placing In Storage

1. Thoroughly wash the box blade scraper with a pressure washer or water hose to remove all dirt, mud, or debris.
2. Select an area that is dry, level, and free of debris (inside a building is ideal). Move the box blade scraper to its storage area.
3. Lower the box blade scraper to the ground or onto blocks.
4. Disconnect the box blade scraper from the 3-point hitch following the instructions in “4.8 Detaching From Tractor” on page 22. Drive the tractor away from the box blade scraper. Do not leave the tractor attached to the box blade scraper.
5. Spray all ground-engaging components with a rust inhibiting grease or paint to prevent rusting.
6. Touch up all paint nicks and scratches to prevent rusting.

6.3 Removing From Storage

When removing the box blade scraper from storage, follow this procedure:

1. Before placing the box blade scraper back into service, replace any worn or defective parts and perform the Pre-Operation Checklist.
2. Attach the box blade scraper to the tractor 3-point hitch following the instructions in “4.3 Attaching to Tractor” on page 19.
3. Raise the box blade scraper up off the blocks.

7. Service and Maintenance

7.1 Maintenance Safety

Refer to “2.4 General Safety Instructions” on page 11 for general service and maintenance safety requirements.

WARNING

The following safety instructions are provided to help prevent serious injury and possibly even death.



Damaged Parts Hazard

Do not use the box blade scraper if any parts are damaged. If the box blade scraper is believed to have a defect which could cause it to work improperly, immediately stop using it and remedy the problem before continuing.



No Unauthorized Modifications

Do not modify the box blade scraper or safety devices. Do not weld on the unit. Unauthorized modifications may impair its function and safety and will void the warranty.

If the box blade scraper has been altered in any way from the original design, the manufacturer does not accept any liability for injury or warranty.



Crush Hazard

Box blade scraper components are very heavy and can injure a person should they suddenly fall from a lifting device or improvised supports. Always make certain components are properly secured before lifting and properly supported on the ground before removing lifting device. Always keep feet and other extremities clear of areas where components can fall.



Good Working Condition

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts.



Replacement Parts

If replacement parts are necessary, genuine factory replacement parts must be used to restore the unit to its original specifications. Titan Implement will not accept responsibility for damages as a result of the use of unapproved parts.

SAFETY INSTRUCTIONS

The following safety instructions are provided to help prevent injury or limit equipment damage.



Clean Work Area

Do not leave tools lying around the work area. Follow good shop practices. Keep service area clean and dry. Be sure electrical outlets and tools are properly grounded. Use adequate light.



Use the Right Tools

Use the correct tools, jacks, hoists, or other tools that have the capacity for the job.



Proper Support

Use certified safety stands rated to support the load when performing repairs, service, or maintenance.

If the box blade scraper is not attached to the tractor, place it on blocks or jack stands before performing repairs, service, or maintenance.

If the box blade scraper is attached to the tractor, set the brakes, remove the key, chock the tractor wheels, and block the box blade scraper before performing repairs, service, or maintenance.

Tighten the lower 3-point arm anti-sway mechanism to prevent side-to-side movement.

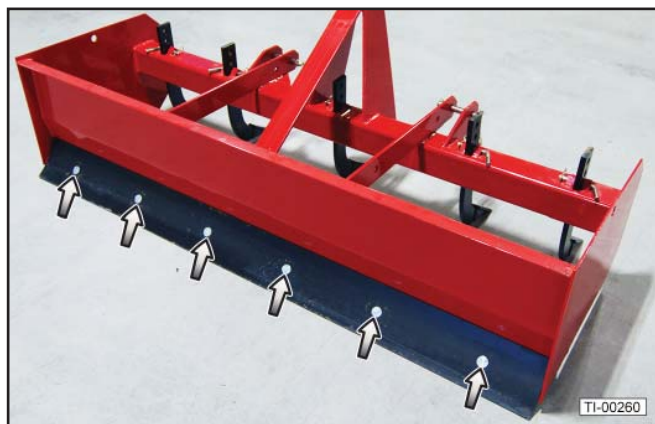
7.2 Ground Engaging Components

Ground engaging components are subject to abrasion and wear. Worn components will require replacement.

7.2.1 Cutting Edge Replacement

The front and rear cutting edges can be removed, turned over, and reattached to present a fresh edge. Replace the cutting edges when both sides are worn out.

1. Remove the 5/8 x 1-1/2" plow bolts.



2. Install the replacement cutting edge using new plow bolts. Tighten the nuts to the proper torque.

7.2.2 Ripper Shank Replacement

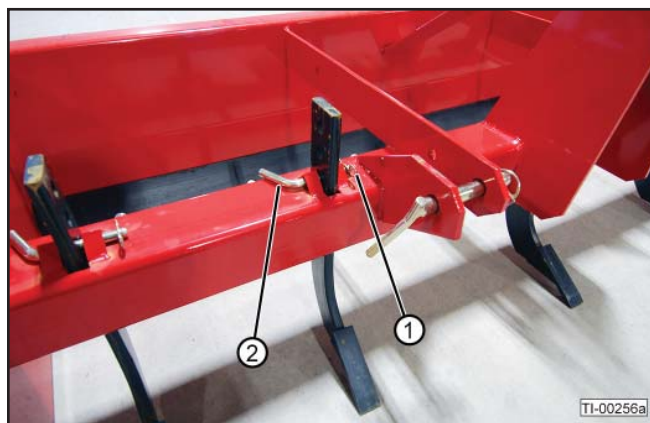
CAUTION



Crush Hazard

Always keep your feet and legs out from under the shanks while replacing them. It is possible for the shanks to fall, causing injury to your feet and/or legs.

1. Before replacing the shanks, attach the box blade scraper to a tractor's 3-point hitch following the instructions in "4.3 Attaching to Tractor" on page 19.
2. Raise it up with the tractor's 3-point lift arms.
3. Securely support the box blade scraper in the raised position with support jacks or blocks.
4. Place the tractor's transmission in park or neutral, and apply the parking brake. Shut down the engine, remove the key, and exit the tractor.
5. Remove hairpin (1) and L-shaped shank pin (2), and lower the shank out from the bottom of the shank tube.



6. Insert shanks into the slots in the bottom of the shank tube. Make sure the shank tips are pointing forward.
7. Push each shank up until the lowest hole in the shank is aligned with the top of the shank tube.
8. Insert the shank pins and the hairpin retainers.

7.3 Bolt Torque Requirements

It is extremely important to apply and maintain proper torque on all bolts. Use a torque wrench to assure the proper amount of torque is being applied to the fastener. Start all bolts or nuts by hand to prevent cross threading.

Torque figures indicated in the chart are used for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

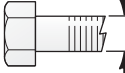



The table below gives correct torque values for various bolts and cap screws. Tighten all bolts to the torques specified in the chart unless otherwise noted. Check tightness of bolts periodically, using the bolt torque chart as a guide. Always replace hardware with the same Grade bolt.

⚠ WARNING



EQUIPMENT FAILURE

The torque value for bolts and cap screws are identified by their head markings. Replacing higher "Grade" bolts (Grade 5) with lower Grade bolts will lead to equipment failure and can result in injury or death. Always use replacement bolts with the same Grade markings as the removed bolt.

 Bolt Diameter	English Bolt Torque Specifications					
	Grade 2		Grade 5		Grade 8	
	 No Marking		 3 Radial Lines		 6 Radial Lines	
	N·m	ft.lbs.	N·m	ft.lbs.	N·m	ft.lbs.
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	158	305	220
3/4"	225	165	390	290	540	398
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970

7.4 Welding Repairs



Before performing any type of welding repair to the box blade scraper, contact Titan Implement for approval. Repair welding must be done with care and with procedures that may be beyond the capabilities of the ordinary welder.

WARNING



Personal Injury Hazard

Repairs or modifications to the box blade scraper can result in serious injury or death should these repairs fail.

NOTICE

Anyone performing a welding repair should be certified in accordance to the American Welding Society (AWS) standards.

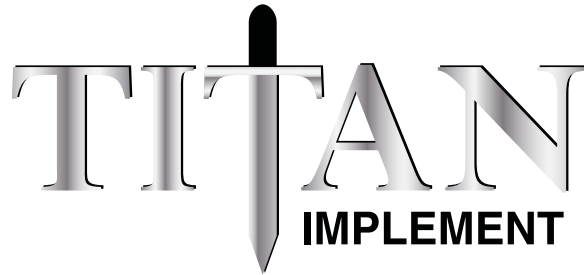
7.5 Service Record

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent service.

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Hours and Serviced By														
Maintenance														
Before Each Use														
Make sure all retainer clips and cotter pins are in place.														
Inspect the ground engaging components for wear and damage.														
Make sure all fasteners are properly tightened.														
Annually														
Make sure all fasteners are properly tightened.														
Inspect the cutting blades for wear and damage.														
Make sure the 3-point hitch pins and retainer clips are in good condition. Do not use homemade or shop-made pins.														
Inspect the hitch A-frame and braces for wear and damage.														
Wash the box blade scraper.														

8. Warranty



TITAN IMPLEMENT LIMITED WARRANTY

TITAN IMPLEMENT, LLC. (the “Manufacturer”) warrants, only to the original Purchaser, this equipment will be free from defects in material and workmanship, under normal use and service, for one (1) year from the date of purchase providing this equipment is purchased for individual use only. **Commercial use of this equipment is not covered under any warranty.** This warranty does not apply to any equipment which has been damaged or which has been subjected to change, misuse, negligence, abnormal wear and tear, alterations, tampering, or failure to follow operating instructions. This warranty does not cover any product or parts not manufactured by Titan Implement, LLC.

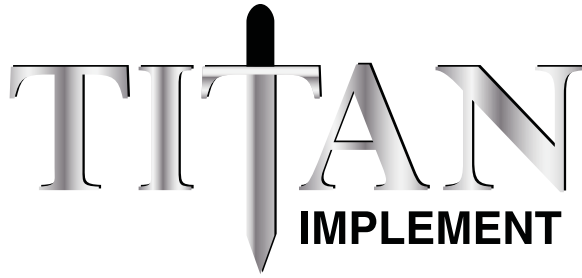
Under this warranty, the Manufacturer will repair or replace any part which the Manufacturer determines has failed during the period of the warranty due to defects in material or workmanship. After written approval by the manufacturer, the equipment or defective part must be returned to Titan Implement, LLC.

Warranty coverage and performance is expressly conditioned upon the return of the completed registration form to Titan Implement, LLC, PO Box 649, Decatur, Tennessee 37322.

Titan Implement, LLC reserves the right to make improvements and changes in specifications without notice or obligation to modify previously sold units. The Owner’s Manual describes the proper assembly procedures for your implement and furnishes operating and maintenance recommendations to help you obtain long and satisfactory service.

PURCHASER’S EXCLUSIVE REMEDY FOR BREACH OF WARRANTY, OTHER DEFECT, OR CONDUCT GIVING RISE TO LIABILITY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT SOLD, AND THE MANUFACTURER UNDER NO CIRCUMSTANCES SHALL BE LIABLE FOR ECONOMIC LOSS OR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THE MANUFACTURER DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR PURPOSE.

Purchaser and Titan Implement, LLC hereby (a) submit to the non-exclusive jurisdiction of the courts of competent jurisdiction in Meigs County, Tennessee, and the United State District Court for the Eastern District of Tennessee for resolution of any dispute concerning this Limited Warranty or the rights or obligations of Purchaser and/or Titan Implement, LLC; (b) agree that any litigation commenced in Tennessee in connection with this Limited Warranty shall be venued in either the Meigs County, Tennessee District Court, or the United States District Court, Eastern District of Tennessee, Southern Division, and (c) waive any objection it may have as to any such action or proceeding brought in such court that such court is an inconvenient forum. Nothing herein shall limit the right of Purchaser or Titan Implement, LLC (or the right of any permitted successor or assign of either) to bring proceedings against the other in the courts of any other jurisdiction wherein any assets of such other party may be located.



WARRANTY REGISTRATION FORM

Box Blade Scrapers

THIS REGISTRATION FORM MUST BE ON FILE WITH TITAN IMPLEMENT, LLC.
WITHIN **30 DAYS** OF DELIVERY TO PURCHASER, OR WARRANTY CLAIM WILL NOT BE HONORED.

PLEASE RETURN COMPLETED FORM BY E-MAIL, FAX, OR MAIL:

E-MAIL: info@titanimplement.com

FAX: (423) 334-0023

MAIL: PO BOX 649, DECATUR, TN 37322

MODEL: _____ SERIAL #: _____ DELIVERY DATE: _____

TRACTOR MAKE & MODEL BEING USED WITH ABOVE UNIT: _____

PURCHASER'S NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

SELLING DEALER'S NAME: _____

CITY: _____ STATE: _____ ZIP: _____

I have read all warranties and agree with these conditions. I agree to read and follow all safety instructions outlined in this manual before operating this box blade scraper.

Purchaser's signature: _____

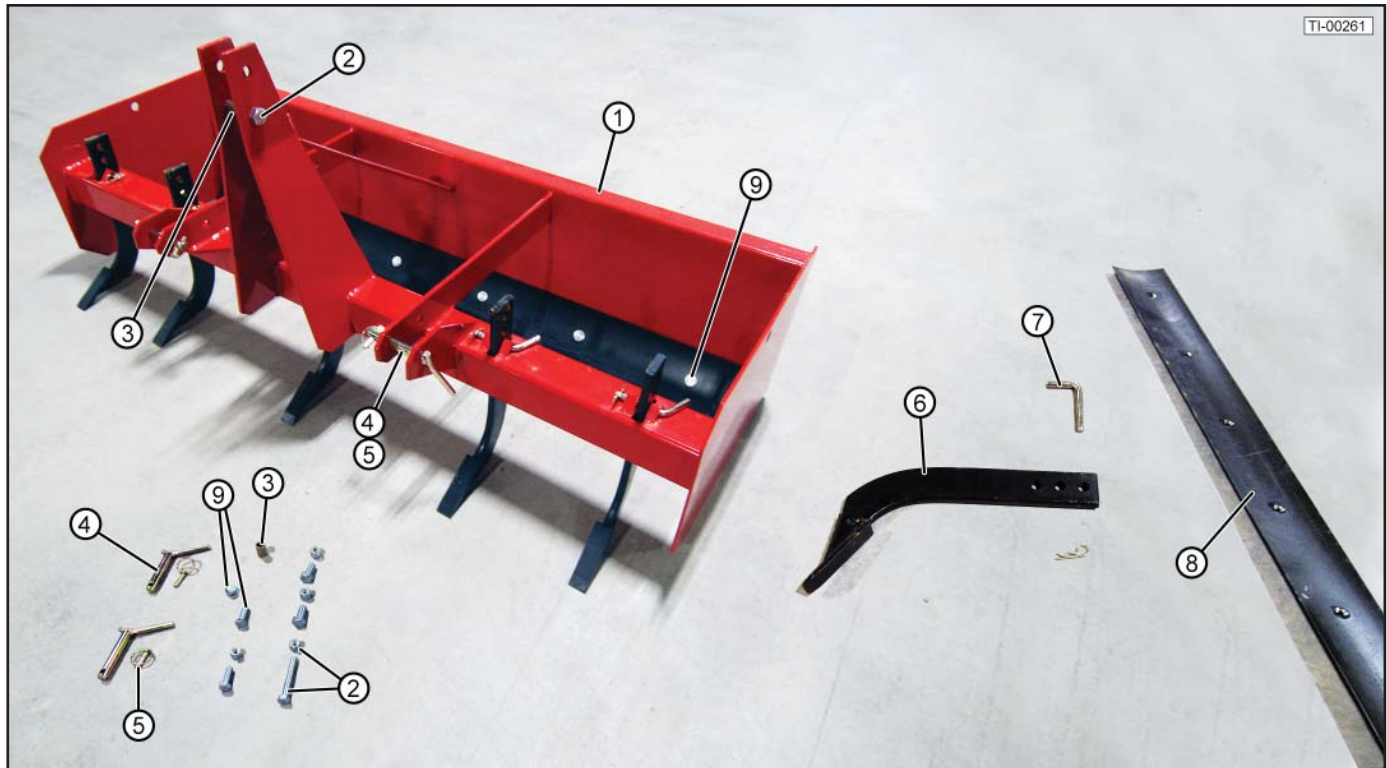
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9. Parts

Replacement parts are available from your authorized Dealer Parts Department or from Titan Implement.

The following pages contain a list of serviceable parts for the Titan Implement box blade scraper.

9.1 3100 Series

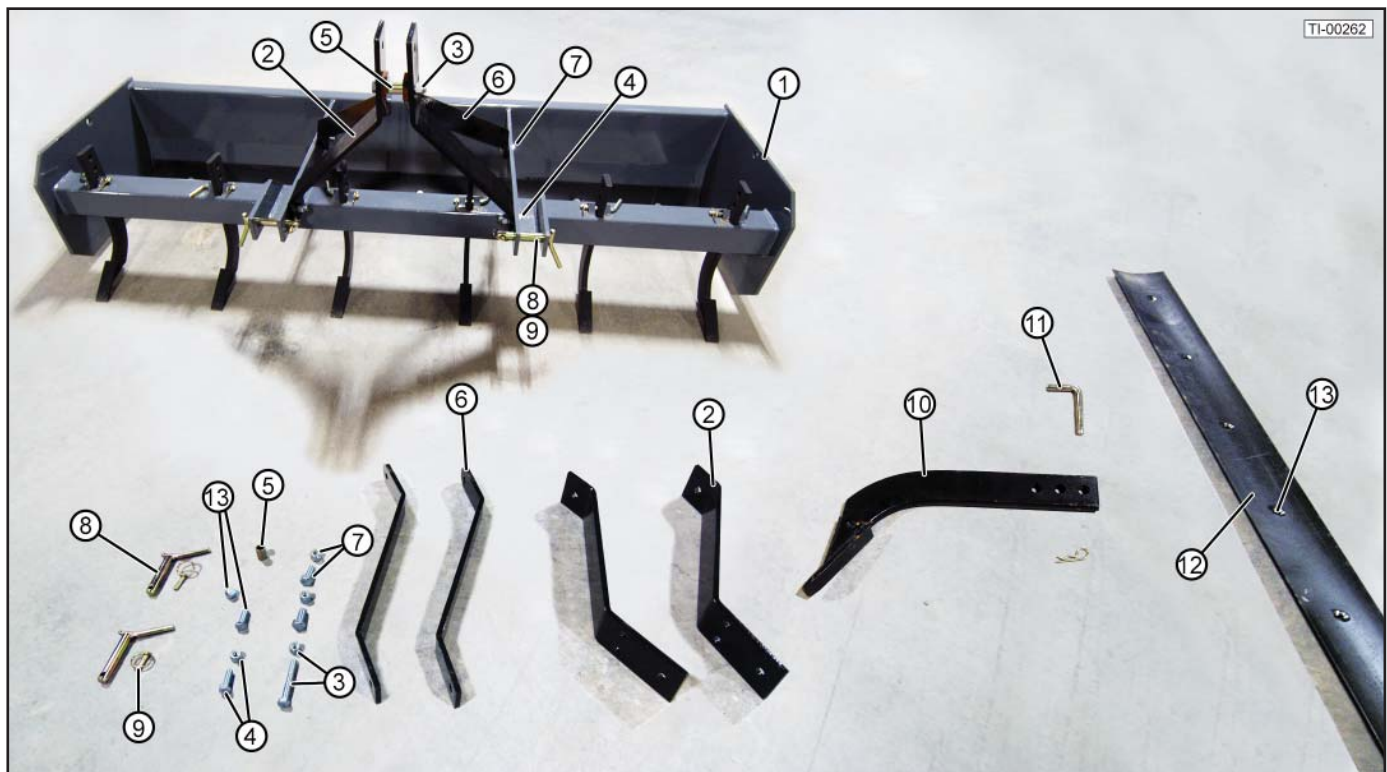


Item	Part Number	Description	Qty.
1	310000	Frame, Standard, 4' - Blue	1
	310001	Frame, Standard, 4' - Green	
	310002	Frame, Standard, 4' - Grey	
	310003	Frame, Standard, 4' - Orange	
	310004	Frame, Standard, 4' - Red	
	310005	Frame, Standard, 4' - Yellow	
	310006	Frame, Standard, 5' - Blue	1
	310007	Frame, Standard, 5' - Green	
	310008	Frame, Standard, 5' - Grey	
	310009	Frame, Standard, 5' - Orange	
	310010	Frame, Standard, 5' - Red	
	310011	Frame, Standard, 5' - Yellow	
	310012	Frame, Standard, 6' - Blue	1
	310013	Frame, Standard, 6' - Green	
	310014	Frame, Standard, 6' - Grey	
	310015	Frame, Standard, 6' - Orange	
	310016	Frame, Standard, 6' - Red	
	310017	Frame, Standard, 6' - Yellow	
	310018	Frame, Standard, 7' - Blue	1
	310019	Frame, Standard, 7' - Green	
	310020	Frame, Standard, 7' - Grey	
	310021	Frame, Standard, 7' - Orange	
	310022	Frame, Standard, 7' - Red	
	310023	Frame, Standard, 7' - Yellow	
	310024	Frame, Standard, 8' - Blue	1
	310025	Frame, Standard, 8' - Green	
	310026	Frame, Standard, 8' - Grey	
	310027	Frame, Standard, 8' - Orange	
	310028	Frame, Standard, 8' - Red	
310029	Frame, Standard, 8' - Yellow		

Item	Part Number	Description	Qty.
2	310030	A-frame Bolt & Lock Nut Kit, 3/4 x 4"	1
3	150051	A-Frame Spacer, 2-1/4"	1
4	310031	Lift Pin, CAT I, Handle Type	2
5	310032	Lynch Pin	2
6	310033	Box Shank	A/R*
7	310034	Shank Pin, L Type	A/R*
8	310035	Cutting Edge, 4'	2
	310036	Cutting Edge, 5'	
	310037	Cutting Edge, 6'	
	310038	Cutting Edge, 7'	
310039	Cutting Edge, 8'		
9	310040	Cutting Edge Heavy-Duty Plow Bolt & Nut Kit, 5/8 x 1-1/2"	A/R*

* As Required

9.2 3200 Series



Item	Part Number	Description	Qty.
1	320000	Frame, Standard, 6' - Blue	1
	320001	Frame, Standard, 6' - Green	
	320002	Frame, Standard, 6' - Grey	
	320003	Frame, Standard, 6' - Orange	
	320004	Frame, Standard, 6' - Red	
	320005	Frame, Standard, 6' - Yellow	
	320006	Frame, Standard, 7' - Blue	1
	320007	Frame, Standard, 7' - Green	
	320008	Frame, Standard, 7' - Grey	
	320009	Frame, Standard, 7' - Orange	
	320010	Frame, Standard, 7' - Red	
	320011	Frame, Standard, 7' - Yellow	
	320012	Frame, Standard, 8' - Blue	1
	320013	Frame, Standard, 8' - Green	
	320014	Frame, Standard, 8' - Grey	
	320015	Frame, Standard, 8' - Orange	
	320016	Frame, Standard, 8' - Red	
320017	Frame, Standard, 8' - Yellow		
2	320019	A-Frame, Heavy-Duty, 1/2" x 4" x 26"	2
3	110029	A-Frame Top Bolt & Lock Nut Kit, 5/8 x 4-1/2"	1
4	320020	A-Frame Bottom Bolt & Lock Nut Kit, 3/4 x 2"	1

Item	Part Number	Description	Qty.
5	320021	A-Frame Spacer, 1-1/2"	1
6	320022	Back Brace, 3/8 x 2-1/2 x 28-1/2"	2
7	110015	Back Brace Bolt & Lock Nut Kit, 5/8 x 2"	1
8	310031	Lift Pin Kit, CAT I, Handle Type	2
9	310032	Lynch Pin	2
10	310033	Box Shank	A/R*
11	310034	Shank Pin, L Type	A/R*
12	310037	Cutting Edge, 6'	1
	310038	Cutting Edge, 7'	
	310039	Cutting Edge, 8'	
13	310040	Cutting Edge Heavy-Duty Plow Bolt & Nut Kit, 5/8 x 1-1/2"	A/R*

* As Required

TITAN IMPLEMENT, LLC.
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WEB: www.titanimplement.com

Member of



Titan Implement Website