PALADIN®

OPERATOR'S HANDBOOK

DOZERS AND BACKFILL BLADES

FOR UNIVERSAL SKID STEER LOADER AND CTC APPLICATIONS

SERIAL NUMBER: _____

MODEL NUMBER: _____

Original
Part Number: 75670-X
Rev. 3

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PREFACE

GENERAL INFORMATION

This product was carefully designed and manufactured to give you many years of dependable service. Only minor maintenance (such as cleaning and lubricating) is required to keep it in top working condition. Be sure to observe all maintenance procedures and safety precautions in this manual and on any safety decals located on the product and on any equipment on which the attachment is mounted.

WARNING!  **Never let anyone operate this unit without reading the "Safety Precautions" and "Operating Instructions" sections of this manual.**
Always choose hard, level ground to park the vehicle on and set the brake so the unit cannot roll.

Unless noted otherwise, right and left sides are determined from the operator's control position when facing the attachment.

NOTE: The illustrations and data used in this manual were current (according to the information available to us) at the time of printing, however, we reserve the right to redesign and change the attachment as may be necessary without notification.

BEFORE OPERATION

The primary responsibility for safety with this equipment falls to the operator. Make sure the equipment is operated only by trained individuals that have read and understand this manual. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or the manufacturer to obtain further assistance. Keep this manual available for reference. Provide the manual to any new owners and/or operator's

SAFETY ALERT SYMBOL

This is the "Safety Alert Symbol" used by this industry. This symbol is used to warn of possible injury. Be sure to read all warnings carefully. They are included for your safety and for the safety of others working with you.

SERVICE

Use only manufacturer replacement parts. Substitute parts may not meet the required standards.

Record the model and serial number of your unit on the cover of this manual. The parts department needs this information to insure that you receive the correct parts.

SOUND AND VIBRATION

Sound pressure levels and vibration data for this attachment are influenced by many different parameters: some items are listed below (not inclusive):

- prime mover type, age, condition, with or without cab enclosure and configuration
- operator training, behavior, stress level
- job site organization, working material condition, environment

Based on the uncertainty of the prime move, operator, and job site, it is not possible to get precise machine and operator sound pressure levels or vibration levels for this attachment.

NOTE: A list of all Paladin Patents can be found at http://www.paladinattachments.com/patents.asp.

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SAFETY STATEMENTS

THIS SYMBOL BY ITSELF OR WITH A WARNING WORD THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

DANGER — **THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH WILL RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.**

WARNING — **THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.**

CAUTION — **THIS SIGNAL WORD IS USED WHERE MINOR INJURY COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.**

NOTICE — **NOTICE INDICATES A PROPERTY DAMAGE MESSAGE.**

GENERAL SAFETY PRECAUTIONS

WARNING!

READ MANUAL PRIOR TO INSTALLATION

Improper installation, operation, or maintenance of this equipment could result in serious injury or death. Operators and maintenance personnel should read this manual, as well as all manuals related to this equipment and the prime mover thoroughly before beginning installation, operation, or maintenance. **FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND THE PRIME MOVER'S MANUAL(S).**

READ AND UNDERSTAND ALL SAFETY STATEMENTS

Read all safety decals and safety statements in all manuals prior to operating or working on this equipment. Know and obey all OSHA regulations, local laws, and other professional guidelines for your operation. Know and follow good work practices when assembling, maintaining, repairing, mounting, removing, or operating this equipment.

KNOW YOUR EQUIPMENT

Know your equipment's capabilities, dimensions, and operations before operating. Visually inspect your equipment before you start, and never operate equipment that is not in proper working order with all safety devices intact. Check all hardware to ensure it is tight. Make certain that all locking pins, latches, and connection devices are properly installed and secured. Remove and replace any damaged, fatigued, or excessively worn parts. Make certain all safety decals are in place and are legible. Keep decals clean, and replace them if they become worn or hard to read.

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GENERAL SAFETY PRECAUTIONS

WARNING! PROTECT AGAINST FLYING DEBRIS

Always wear proper safety glasses, goggles, or a face shield when driving pins in or out, or when any operation causes dust, flying debris, or any other hazardous material.

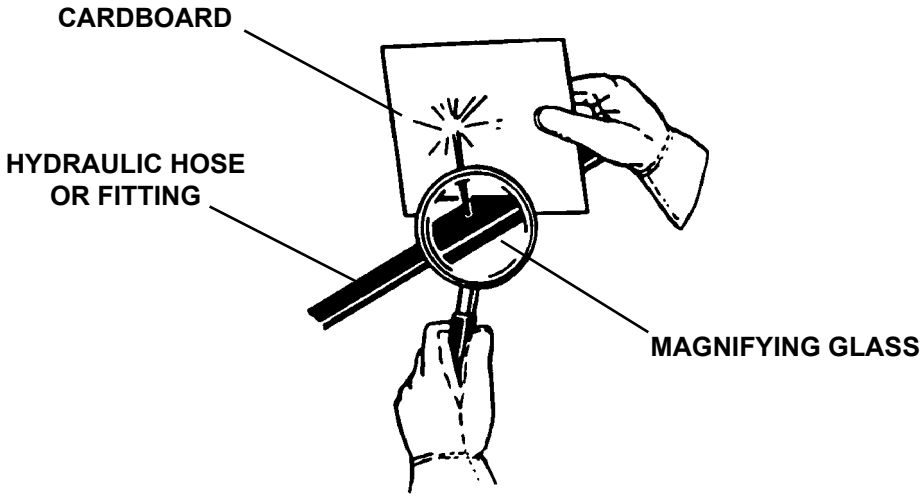
WARNING! LOWER OR SUPPORT RAISED EQUIPMENT

Do not work under raised booms without supporting them. Do not use support material made of concrete blocks, logs, buckets, barrels, or any other material that could suddenly collapse or shift positions. Make sure support material is solid, not decayed, warped, twisted, or tapered. Lower booms to ground level or on blocks. Lower booms and attachments to the ground before leaving the cab or operator's station.

WARNING! USE CARE WITH HYDRAULIC FLUID PRESSURE

Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible. Before connecting or disconnecting hydraulic hoses, read your prime mover's operator's manual for detailed instructions on connecting and disconnecting hydraulic hoses or fittings.

- Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
- If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research it immediately to determine proper treatment.
- Wear safety glasses, protective clothing, and use a piece of cardboard or wood when searching for hydraulic leaks. **DO NOT USE YOUR HANDS! SEE ILLUSTRATION.**



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GENERAL SAFETY PRECAUTIONS

WARNING!

DO NOT MODIFY MACHINE OR ATTACHMENTS

Modifications may weaken the integrity of the attachment and may impair the function, safety, life, and performance of the attachment. When making repairs, use only the manufacturer's genuine parts, following authorized instructions. Other parts may be substandard in fit and quality. Never modify any ROPS (Roll Over Protection Structure) or FOPS (Falling Object Protective Structure) equipment or device. Any modifications must be authorized in writing by the manufacturer.

WARNING!

SAFELY MAINTAIN AND REPAIR EQUIPMENT

- Do not wear loose clothing or any accessories that can catch in moving parts. If you have long hair, cover or secure it so that it does not become entangled in the equipment.
- Work on a level surface in a well-lit area.
- Use properly grounded electrical outlets and tools.
- Use the correct tools for the job at hand. Make sure they are in good condition for the task required.
- Wear the protective equipment specified by the tool manufacturer.

SAFELY OPERATE EQUIPMENT

Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your machine's manual for these instructions.

- Keep all step plates, grab bars, pedals, and controls free of dirt, grease, debris, and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the prime mover.
- Do not operate the equipment from anywhere other than the correct operator's position.
- Never leave equipment unattended with the engine running, or with this attachment in a raised position.
- Do not alter or remove any safety feature from the prime mover or this attachment.
- Know your work site safety rules as well as traffic rules and flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation.

EQUIPMENT SAFETY PRECAUTIONS

WARNING!

KNOW WHERE UTILITIES ARE

Observe overhead electrical and other utility lines. Be sure equipment will clear them. When digging, call your local utilities for location of buried utility lines, gas, water, and sewer, as well as any other hazard you may encounter.

WARNING!

EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA DUST ALONG WITH OTHER HAZARDOUS DUSTS MAY CAUSE SERIOUS OR FATAL RESPIRATORY DISEASE.

It is recommended to use dust suppression, dust collection and if necessary personal protective equipment during the operation of any attachment that may cause high levels of dust.

WARNING!

REMOVE PAINT BEFORE WELDING OR HEATING

Hazardous fumes/dust can be generated when paint is heated by welding, soldering or using a torch. Do all work outside or in a well ventilated area and dispose of paint and solvent properly. Remove paint before welding or heating.

When sanding or grinding paint, avoid breathing the dust. Wear an approved respirator. If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

WARNING!

END OF LIFE DISPOSAL

At the completion of the useful life of the unit, drain all fluids and dismantle by separating the different materials (rubber, steel, plastic, etc.). Follow all federal, state and local regulations for recycling and disposal of the fluid and components.

OPERATING THE BLADE

- Do not exceed the capacity of your prime mover when pushing loads or objects.
- Operate only from the operator's station. Do not operate the blade when standing beside the machine.
- Prime mover may feel heavy in the front with the added weight of the blade. Stability and handling may be affected.
- Reduce speed when driving over rough terrain, on a slope, or turning, to avoid overturning the vehicle.
- An operator must not use drugs or alcohol, which can change his or her alertness or coordination. An operator taking prescription or over-the-counter drugs should seek medical advice on whether or not he or she can safely operate equipment.
- Before exiting the prime mover, lower the attachment to the ground, apply the brakes, turn off the prime mover's engine, and remove the key.
- Use the blade only for its designed purpose. Do not use it to pull objects, as a battering ram, or attach ropes or chains to the unit.

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EQUIPMENT SAFETY PRECAUTIONS

TRANSPORTING THE BLADE

- Allow for the added width and length when transporting so as not to catch unit on obstacles.
- Carry blade low when transporting to lower its center of gravity. Drive slowly over rough ground and on slopes.
- When driving on public roads use safety lights, reflectors, Slow Moving Vehicle signs etc., to prevent accidents. Check local government regulations that may affect you.
- Do not drive close to ditches, excavations, etc., cave in could result.
- Do not smoke when refueling the prime mover. Allow room in the fuel tank for expansion. Wipe up any spilled fuel. Secure cap tightly when done.
- When transporting on a trailer: Secure attachment at recommended tie down locations using tie down accessories that are capable of maintaining attachment stability.

MAINTAINING THE BLADE

- Before performing maintenance, lower the attachment to the ground, apply brakes, turn off the engine, and remove the key.
- Never perform any work on the attachment unless you are authorized and qualified to do so. Always read the operator service manuals before any repair is made. After completing maintenance or repair, check for correct functioning of the attachment. If not functioning properly, always tag “DO NOT OPERATE” until all problems are corrected.
- Worn, damaged, or illegible safety decals must be replaced. New safety decals can be ordered from Paladin.
- Never make hydraulic repairs while the system is under pressure. Serious personal injury or death could result.
- Never work under a raised attachment.

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DECALS

DECAL PLACEMENT

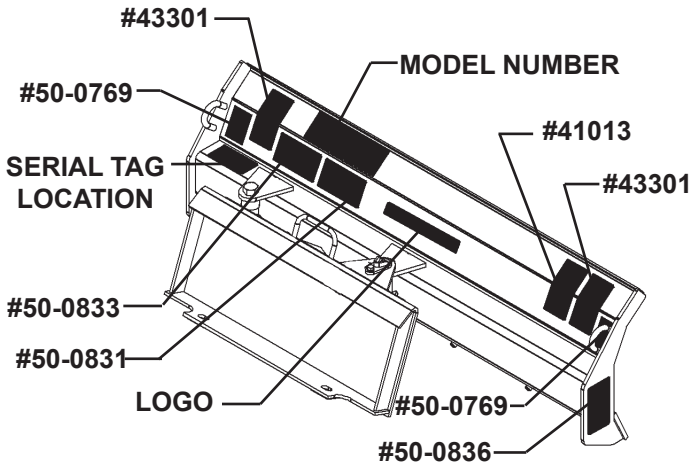
GENERAL INFORMATION

The following diagrams show the location of all the decals used on your attachment. The decals are identified by their part numbers, with the reductions of the actual decals shown on the following pages. Use this information to order replacements for lost or damaged decals. Be sure you understand all decals before operating the attachment. They contain information you need to know for attachment safety. (See decal explanations.)

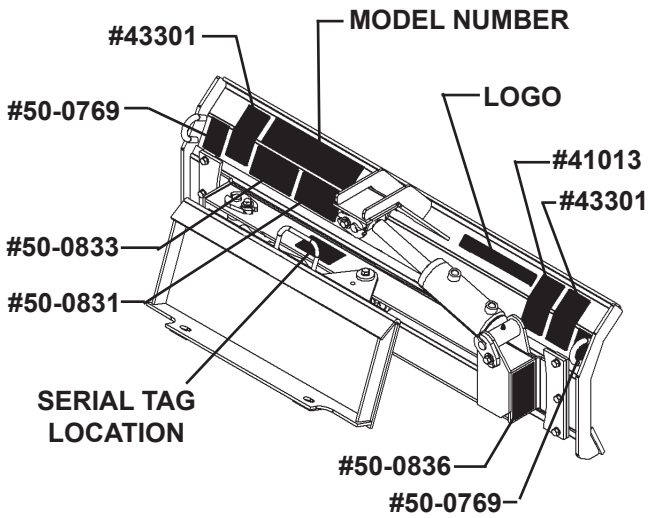
IMPORTANT: Keep all safety decals clean and legible. Replace all missing, or damaged safety decals. When replacing parts with safety decals attached, the safety decals must also be replaced.

REPLACING SAFETY DECALS: Clean the area of application with a nonflammable solvent, then wash the same area with soap and water. Allow the surface to dry. Remove the backing from the safety decal, exposing the adhesive surface. Apply the safety decal to the position shown in the diagram, and smooth out any bubbles.

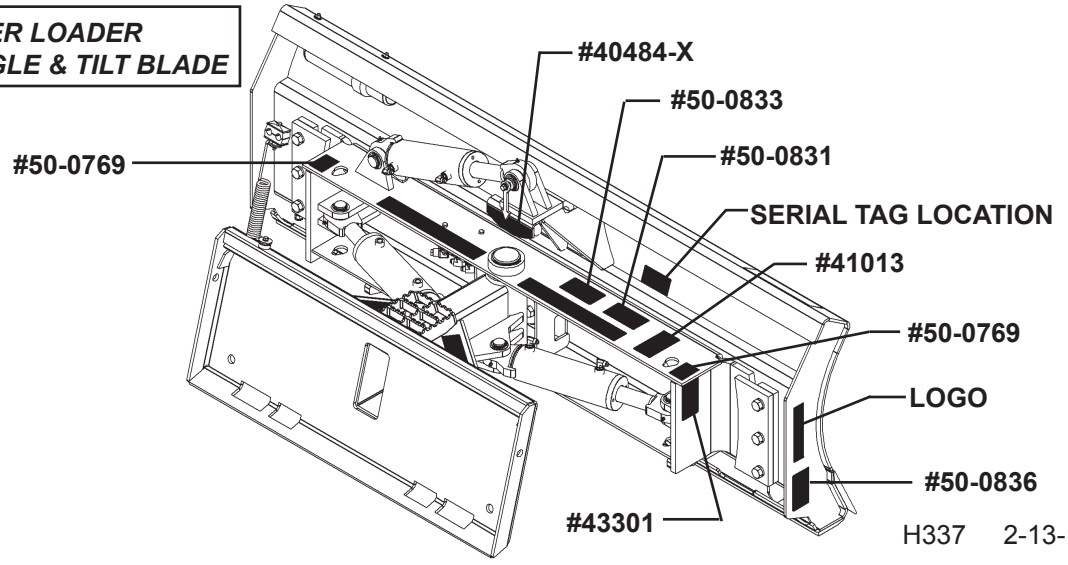
CTC HYDRAULIC ANGLE BLADE



CTC HYDRAULIC ANGLE AND TILT BLADE



SKID STEER LOADER HYDRAULIC ANGLE & TILT BLADE



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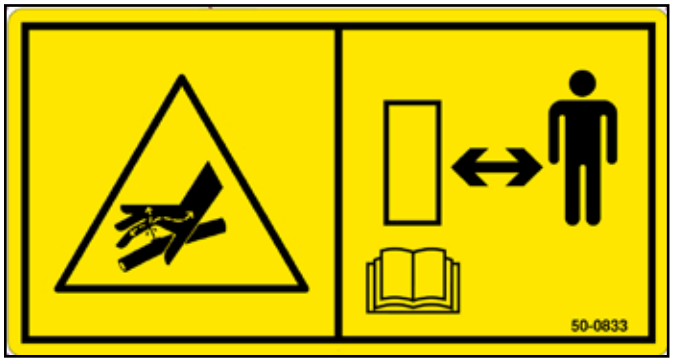
DECALS

⚠ WARNING

PINCH POINT HAZARD: (43301)
Keep a safe distance away when any portion of this machine is in motion. Failure to heed this warning could result in serious injury or death.



⚠ WARNING

HIGH PRESSURE FLUID HAZARD: (50-0833)
Escaping fluid under pressure can have sufficient force to penetrate skin causing serious personal injury. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands to search for suspected leaks.
Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research it immediately to determine proper treatment.

⚠ WARNING

READ MANUALS: (50-0831)
Do NOT operate or service unless you have read and understand the instruction and safety information in the operator's handbook and all prime mover manuals.

⚠ WARNING

CRUSH HAZARD: (50-0836)
Stay back a safe distance from hazard when any portion of this machine is in motion. Keep hands and feet away from under frame. Failure to heed this warning could result in serious injury or death.

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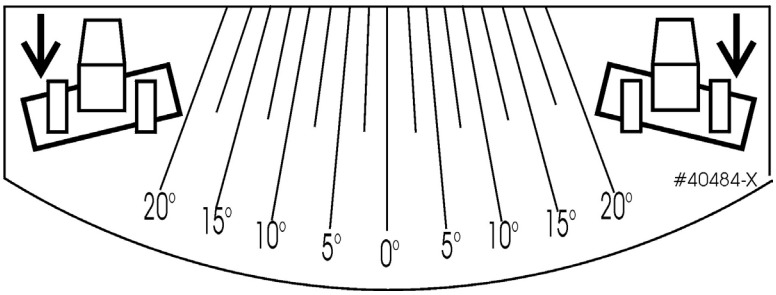
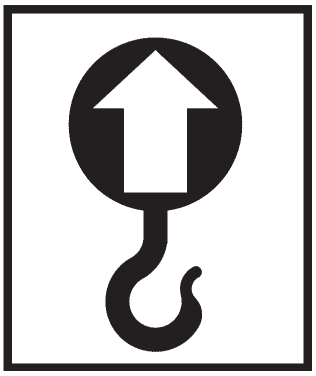
DECALS

⚠ WARNING

REMOVE KEY: (41013)
Lower attachment to the ground, set the parking brake, shut off the engine and remove the key before performing maintenance or leaving the operator's station.



TILT INDICATOR: (40484-X)
Located on the back of the skid steer loader hydraulic angle and tilt blade. Use as a guide to adjust the degree of tilt for blade operation.



LIFT POINT: (50-0769)
Identifies recommended lift point locations. Lifting unit at other points is unsafe and can damage attachment.

PREOPERATION

SKID STEER

The universal skid steer dozer blades angle and tilt mechanisms are powered by three hydraulic cylinders. Your skid steer must be equipped with auxiliary hydraulics to run the blade. There is an optional electrical control box assembly for the secondary controls if your skid steer is not equipped with an auxiliary electrical outlet. Hydraulic hoses and couplers will be needed to complete the hydraulic circuit and can be purchased from your local dealer.

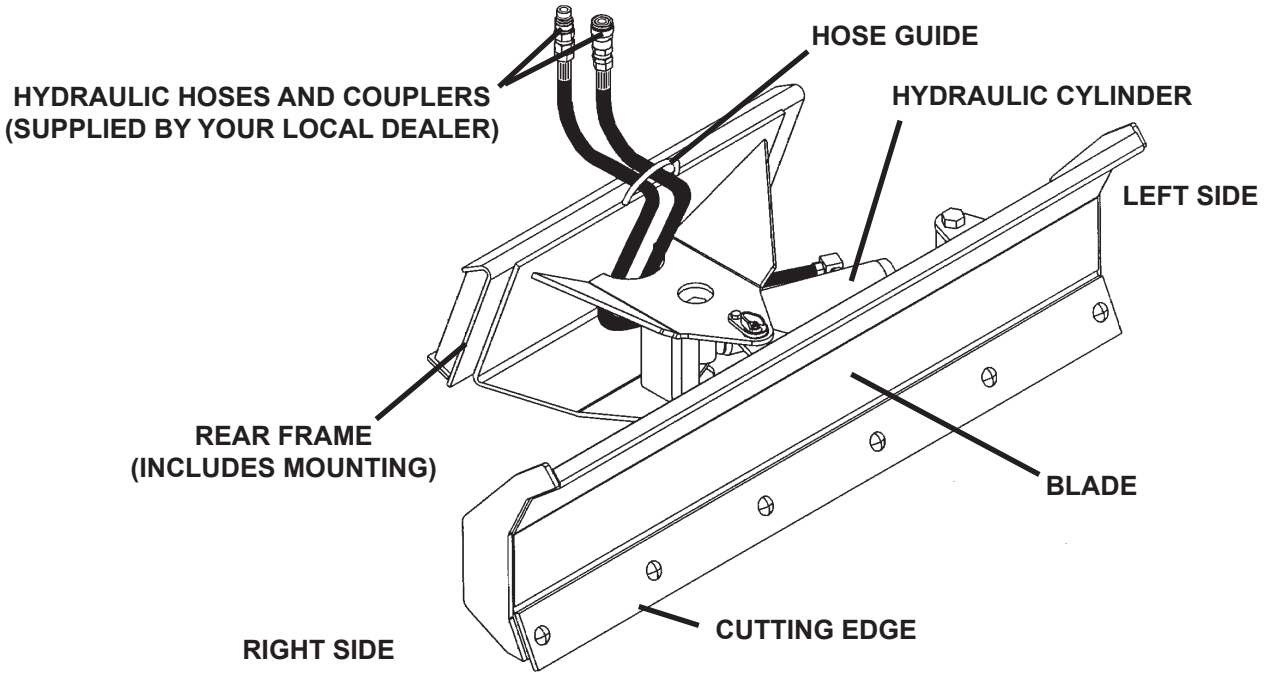
CTC

The Paladin AP series hydraulic angle blades along with the ATP series hydraulic angle and tilt blades are operated by your CTC's auxiliary hydraulics and mount to the quick attach mechanism for ease of mounting. Power and Return hoses and couplers will be needed to complete the hydraulic circuit and can be purchased from your local dealer.

NOMENCLATURE

Throughout this manual, reference is made to various blade components. Study the following diagrams to aquaint yourself with the various names of these components. This knowledge will be helpful when reading through this manual or when ordering service parts.

CTC HYDRAULIC ANGLE BLADE



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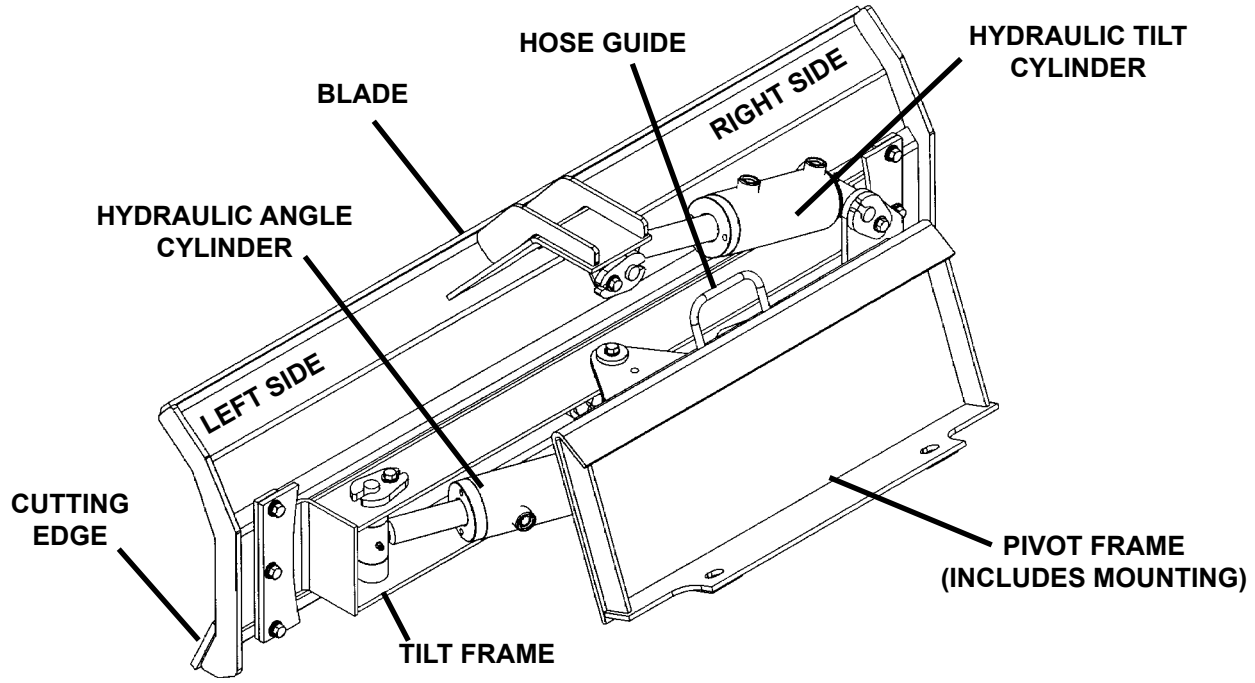
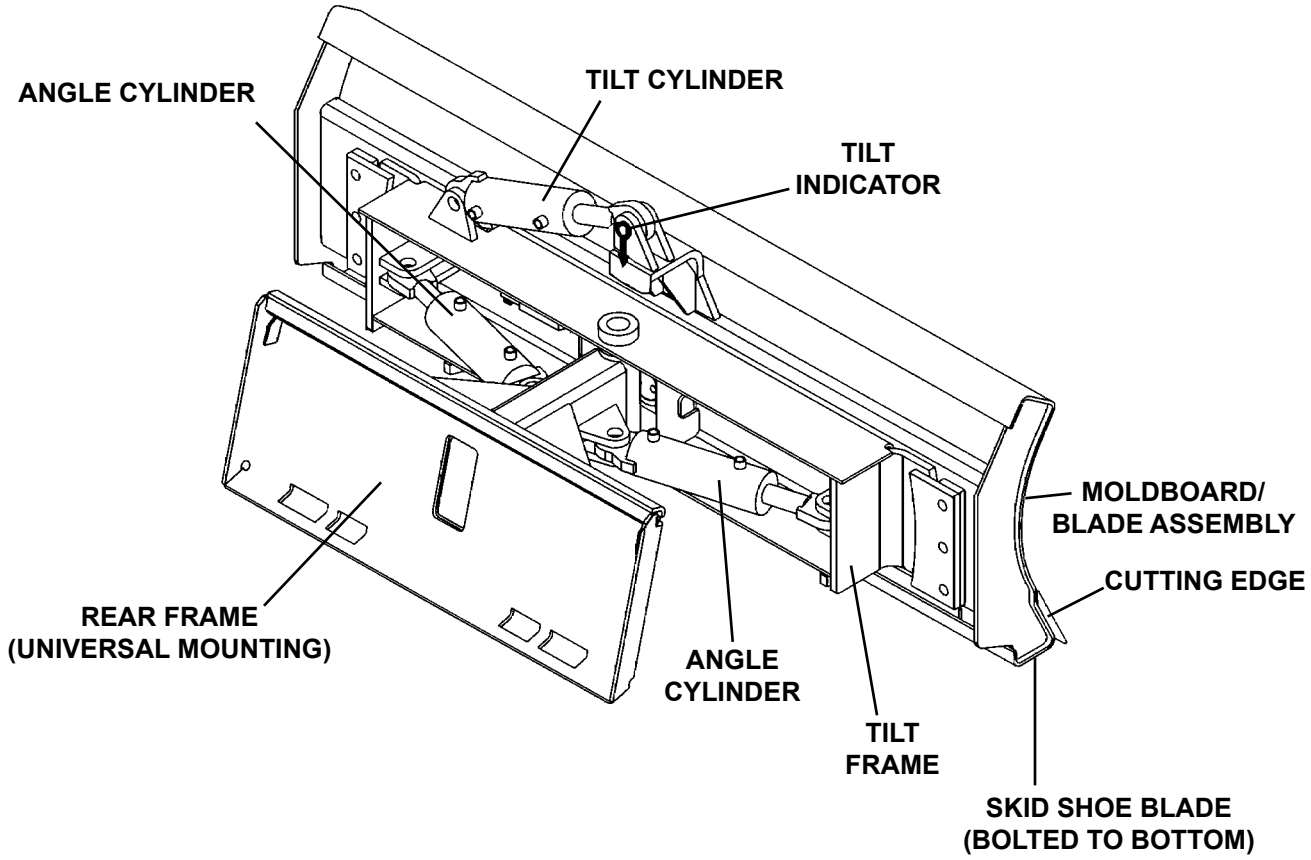
PREOPERATION

CTC HYDRAULIC ANGLE AND TILT BLADE



SKID STEER LOADER HYDRAULIC ANGLE AND TILT BLADE



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INSTALLATION AND OPERATION

INSTALLATION

Your blade was shipped complete with appropriate mounting for your unit. Install the blade by following your power unit operator's manual for installing an attachment.

CAUTION! To Avoid equipment damage and/or personal injury, only install your blade onto the power unit for which it was designed.

WARNING! To Avoid Serious Personal Injury, make sure the blade is securely latched to the attachment mechanism of your unit. Failure to do so could result in separation of the blade from the unit.

If your unit was not shipped with hydraulic hoses and couplers, these can be purchased from your local dealer. Install the hoses onto the blade and connect the hydraulic couplers to the auxiliary hydraulics on the prime mover and route the hoses in such a fashion as to prevent chafing and pinching.

Start engine and slowly cycle the cylinders several times to purge system of air, and check for proper hydraulic connection, hose routing, and hose length.

Check the attachment for proper assembly, installation, and hydraulic leaks.

CTC HYDRAULIC ANGLE AND TILT

If using the selector valve hydraulic kit, mount the selector valve to the loader arm of the CTC (Compact Tool Carrier). If powering the blade with the electrical solenoid valve hydraulic kit, connect the electrical wiring harness to the battery of the CTC and position the control box in a location accessible to the operator.

WARNING! When working around batteries, remember that all of the exposed metal parts are “live”. Never lay a metal object across the terminals, because a spark or short circuit may result.

DANGER! BATTERY ACID CAUSES SEVERE BURNS. Batteries contain sulfuric acid. Avoid contact with the skin, eyes or clothing.
Antidote: EXTERNAL - flush with water. INTERNAL - drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call physician immediately. EYES - flush with water for 15 minutes and get prompt medical attention.

SKID STEER LOADER HYDRAULIC ANGLE AND TILT

When installing the hydraulic angle and tilt blade onto your skid steer loader, connect the wire assembly from the hydro-electric valve on the blade to the optional control box or to the skid steer auxiliary electrical outlet (if so equipped).

NOTE: Waxing the front surface of the blade and moldboard will help keep snow and ice from building up on the blade during winter use.

INSTALLATION AND OPERATION

DETACHING

On firm level ground lower the boom arms completely down on the frame until the blade is level and approximately 2" (5.08 cm) off the ground.

Turn off the engine. Move the control levers back and forth to relieve pressure in line. Disconnect couplers.

Connect couplers together or install caps to prevent contaminants from entering the hydraulic system.

NOTE: If using the electrical solenoid valve on a CTC, disconnect the wire harness coming from the battery to the control box, and attach the control box onto the blade assembly.

NOTE: If detaching your blade from a skid steer loader, place the control box onto the blade before detaching or, unhook the wire assembly from the skid steers auxiliary electrical outlet before detaching.

Follow your power unit operator's manual for detaching (removing) an attachment.

NOTE: Frequent lubrication of grease fittings at the end of the cylinders and pivot points with a multi-purpose grease will greatly increase life of the product.

STORAGE

- Clean the unit thoroughly, removing all mud, dirt, and grease.
- Inspect for visible signs of wear, breakage, or damage. Order any parts required and make the necessary repairs to avoid delays when starting next season.
- Tighten loose nuts, capscrews, and hydraulic connections.
- Seal hydraulic system from contaminants and secure all hydraulic hoses off the ground to help prevent damage.
- Coat the exposed portions of the cylinder rods with grease.
- Store the unit in a dry and protected place. Leaving the unit outside will materially shorten its life.

Additional Precautions for Long Term Storage:

- Touch up all unpainted surfaces with paint, to prevent rust.
-

REMOVAL FROM STORAGE

- Remove Cover.
- Wash unit and replace any damaged and/or missing parts.
- Lubricate grease fittings.
- Check hydraulic hoses for damage and replace as necessary.

OPERATIONAL CONTROLS

The skid steer loader dozer blades and the CTC backfill blades are angled and tilted (if so equipped) hydraulically by cylinders connected from the blade to the frame. The CTC blades can be angled 35° left or right while the skid steer loader dozer blade can be angled 30° left or right. The cylinders are activated by the auxiliary hydraulic system controls of your prime mover.

INSTALLATION AND OPERATION

The CTC blade with hydraulic tilt is either operated by a selector valve or an electric solenoid valve. If your unit has a selector valve the position of the valve handle determines the cylinder being activated (angle or tilt) and if your unit is equipped with an electric solenoid valve the cylinder being activated is determined by the toggle switch on the control box.

The skid steer loader dozer blades can be tilted 10° in each direction and this can be measured by the tilt indicator arrow located on the back of the blade. Depending on how the hydraulic hoses are connected on your unit either the angle or the tilt is the default function and can be activated by the auxiliary hydraulics on your skid steer. If angle/tilt is not the default, HOLD down the toggle switch on the control box for secondary auxiliary controls and operate the blade in the same manner.

IMPORTANT: If after operating your blade you prefer to change the default operation of your blade, refer to the hydraulic parts diagrams in the parts section of the "Original English Operator's Manual" or the Maintenance and Service section of this Handbook.. Switch the existing hoses around to the correct location for your desired default operation.

NOTICE: See your prime mover operator's manual for proper operation of the auxiliary hydraulic system controls.

INTENDED USE: The Paladin Dozers and Backfill blades were designed to move sand, gravel, soils, crushed rock and aggregate with a pushing force. Use in any other way is considered contrary to the intended use.

GENERAL OPERATION OF THE DOZER AND BACKFILL BLADES

Clean the area of trash, branches and rocks before operation to prevent equipment damage. Always begin with the slowest ground speed possible and increase speed as the surrounding conditions permit.

When leveling, scraping and surface stripping, lower the cutting edge to the ground, the blade will bite into the ground as you move forward.

Watch for holes, rocks, or other hidden hazards. Always inspect area prior to operation.

CAUTION! Drive slowly and with caution when operating the blade. The force of the impact if the blade hits an immovable object could cause damage to the blade and prime mover, and injury to the operator.

Take the time to become familiar with the blade and its controls. Learn how to operate before you start the job.

TRANSPORTING

Follow all local government regulations that may apply along with recommended tie down points and any equipment safety precautions at the front of this handbook when transporting your attachment.

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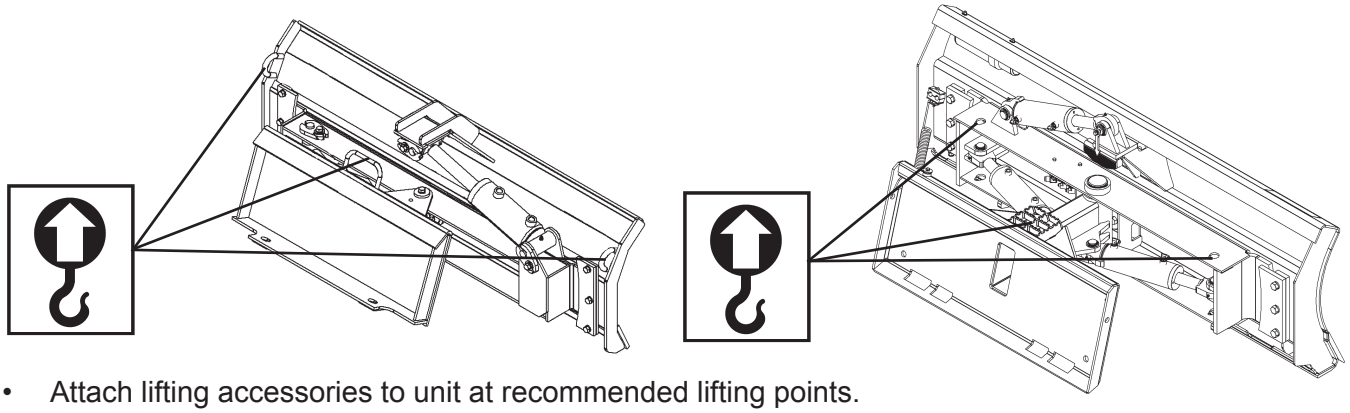
INSTALLATION AND OPERATION

LIFT POINTS

Lifting points are identified by lifting decals where required. Lifting at other points is unsafe and can damage attachment. Do not attach lifting accessories around cylinders or in any way that may damage hoses or hydraulic components. See Diagram

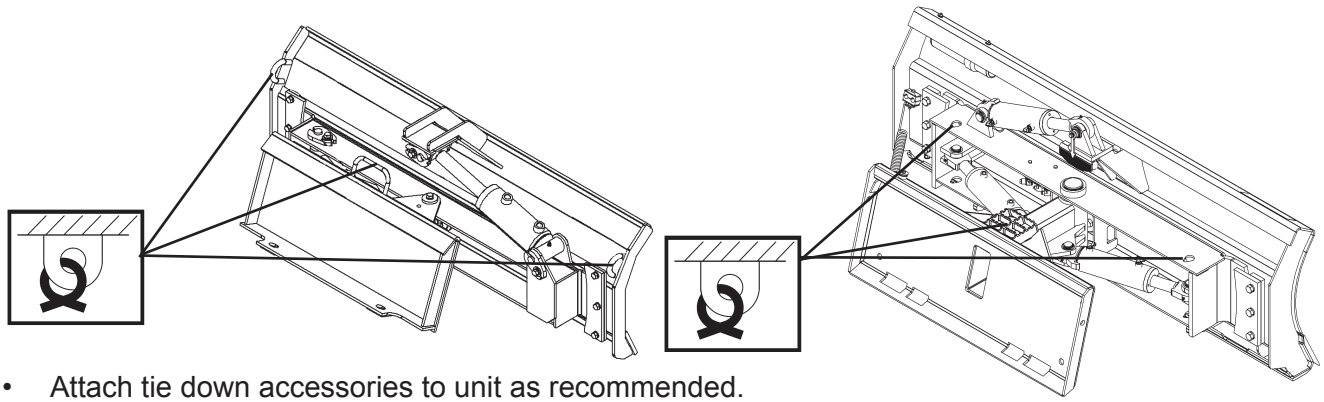


- Attach lifting accessories to unit at recommended lifting points.
- Bring lifting accessories together to a central lifting point.
- Lift gradually, maintaining the equilibrium of the unit.

WARNING! Use lifting accessories (chains, slings, ropes, shackles and etc.) that are capable of supporting the size and weight of your attachment. Secure all lifting accessories in such a way to prevent unintended disengagement. Failure to do so could result in the attachment falling and causing serious personal injury or death.

TIE DOWN POINTS

Tie down points are identified by tie down decals where required. Securing to trailer at other points is unsafe and can damage attachment. Do not attach tie down accessories around cylinders or in any way that may damage hoses or hydraulic components. See Diagram



- Attach tie down accessories to unit as recommended.
- Check unit stability before transporting.

WARNING! Verify that all tie down accessories (chains, slings, ropes, shackles and etc.) are capable of maintaining attachment stability during transporting and are attached in such a way to prevent unintended disengagement or shifting of the unit. Failure to do so could result in serious personal injury or death.

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MAINTENANCE AND SERVICE

GENERAL INFORMATION

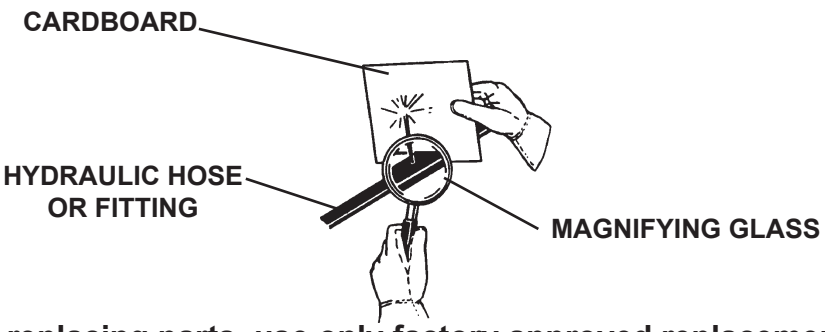
Regular maintenance is the key to long equipment life and safe operation. Maintenance requirements have been reduced to the absolute minimum. However, it is very important that these maintenance functions be performed as described below.

Procedure	Daily	Every 40 Hours
Check all bolts and nuts for tightness.	✔	
Replace any missing bolts or nuts with approved replacement parts.	✔	
Check hydraulic system for hydraulic oil leaks. See procedure below.	✔	
Visually inspect the machine for worn parts or cracked welds, and repair as necessary.	✔	
Lubricate all grease fittings.		✔

WARNING! **Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.**

Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.

If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research it immediately to determine proper treatment.



IMPORTANT: When replacing parts, use only factory approved replacement parts. Manufacturer will not claim responsibility for use of unapproved parts or accessories, and/or other damages as a result of their use.

H061 10-13-10-2

MAINTENANCE AND SERVICE

Periodic waxing of the front surface of the blade and moldboard will help keep snow and ice from building up on the blade during winter use.

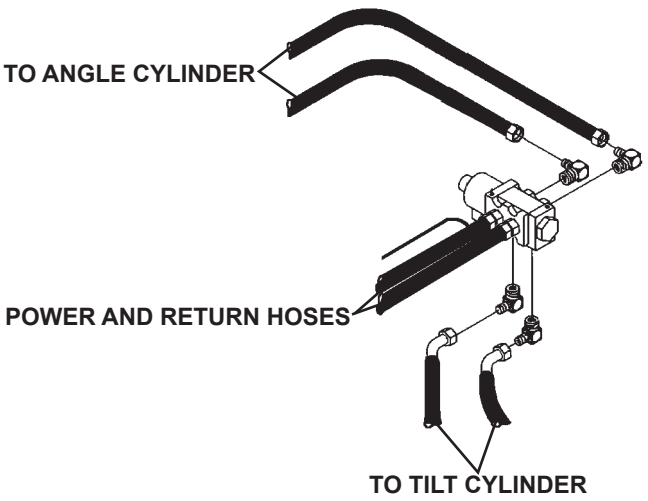
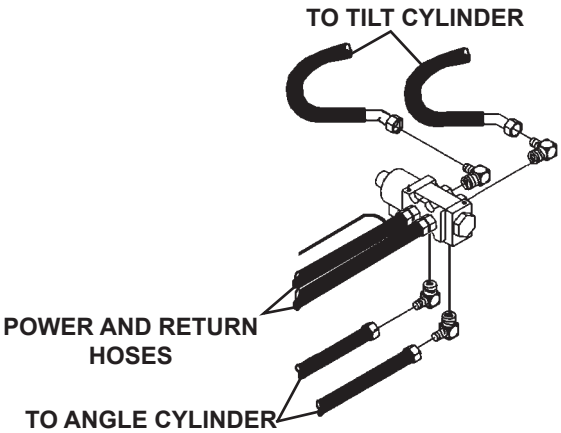
CUTTING EDGE AND SKID SHOE REPLACEMENT

The cutting edge on all blades along with the skid shoe on the Skid Steer Hydraulic Angle and Tilt Blade are subject to wear due to their vary nature. Replacement cutting edges and skid shoes are available from your dealer. Replacement is a simple bolt on procedure.

NOTE: The cutting edge on the Skid Steer Hydraulic Angle and Tilt Blade is a reversible cutting edge and when wear is determined the cutting edge can be removed, flipped end for end and rebolted onto the blade assembly. When both edges are worn replacement is required.

CHANGING THE SKID STEER HYDRAULIC ANGLE AND TILT BLADE DEFAULT OPERATION

Depending on how the hydraulic hoses are connected on your unit either the angle or tilt operation is the default control function and can be activated by the auxiliary hydraulics on your skid steer loader. If after operating your blade you prefer to change the default, refer to the diagrams below and switch the existing hoses around to the correct location for the desired default operation.

HYDRAULIC HOOK UP FOR ANGLE DEFAULT	HYDRAULIC HOOK UP FOR TILT DEFAULT
	

MAINTENANCE AND SERVICE

CYLINDER SEAL REPLACEMENT

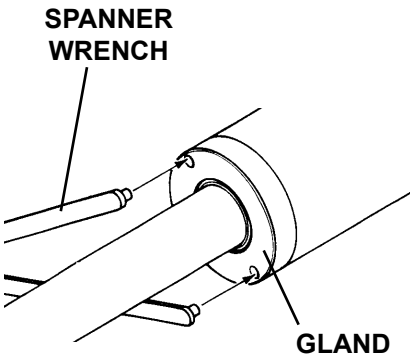
The following information is provided to assist you in the event you should need to repair or rebuild a hydraulic cylinder. When working on hydraulic cylinders, make sure that the work area and tools are clean and free of dirt to prevent contamination of the hydraulic system and damage to the hydraulic cylinders. Always protect the active part of the cylinder rod (the chrome section). Nicks or scratches on the surface of the rod could result in cylinder failure. Clean all parts thoroughly with a cleaning solvent before reassembly.

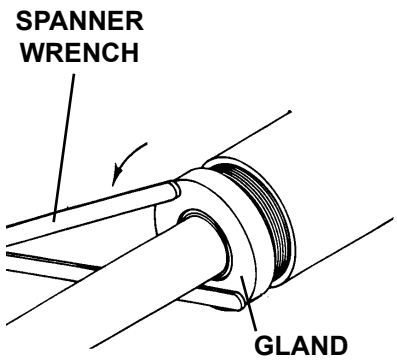
DISASSEMBLY PROCEDURE

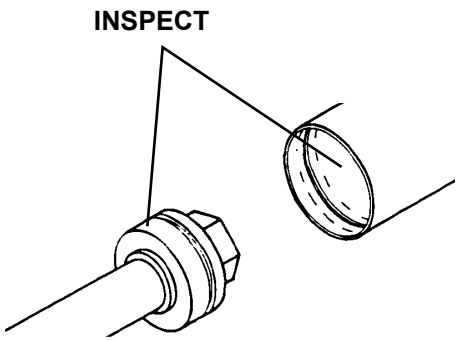
IMPORTANT: Do not contact the active surface of the cylinder rod with the vise. Damage to the rod could result.

THREADED TYPE GLAND

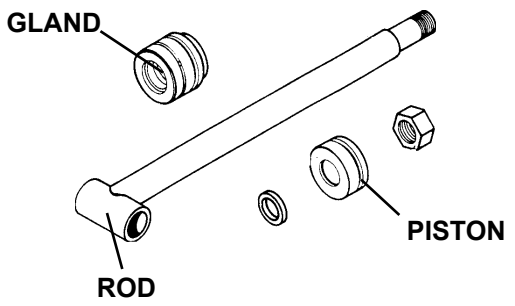
1. Rotate the gland with a spanner wrench counterclockwise until the gland is free of the cylinder tube.
2. Pull the cylinder rod from the cylinder tube and inspect the piston and the bore of the cylinder tube for deep scratches or galling. If damaged, the piston AND the cylinder tube must be replaced.

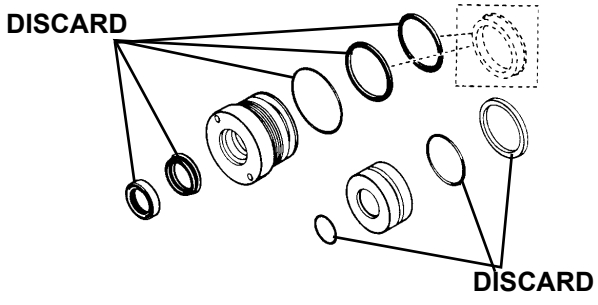






3. Remove the hex nut, piston, flat washer or spacer tube (if so equipped), and gland from the cylinder rod. If the cylinder rod is rusty, scratched, or bent, it must be replaced.
4. Remove and discard all the old seals.





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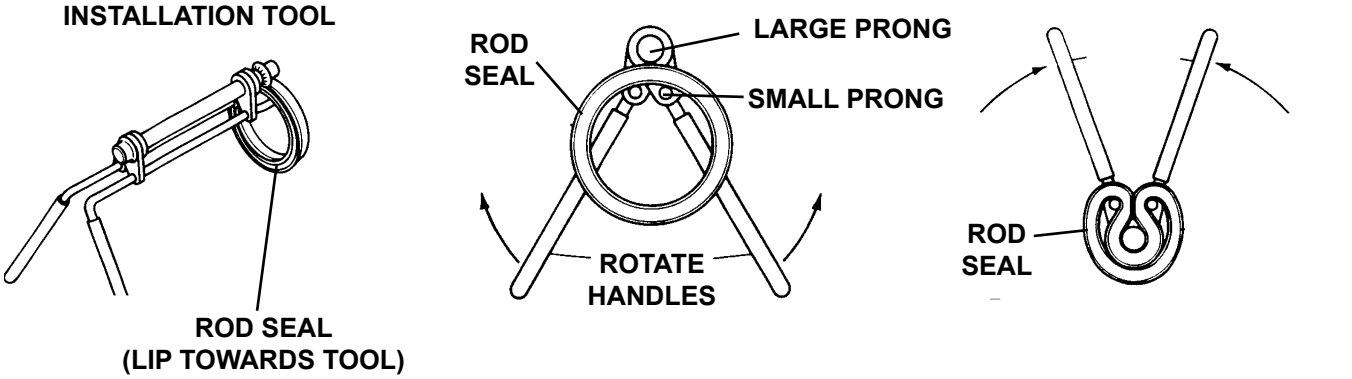
MAINTENANCE AND SERVICE

ASSEMBLY PROCEDURE

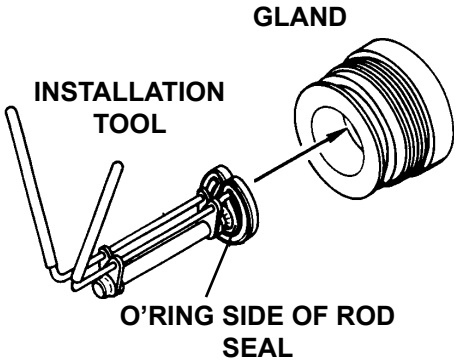
IMPORTANT: Replace all seals even if they do not appear to be damaged. Failure to replace all seals may result in premature cylinder failure. NOTE: Seal kits will service most cylinders of similar bore size and rod diameter.

1. Install the cylinder rod seal in the gland first. Be careful not to damage the seal in the process, as it is somewhat difficult to install.

NOTE: A special installation tool (Part #65349) is available to help with installing the seal. Simply fit the end of the tool over the seal so that the large prong of the tool is on the outside of the seal, and the two smaller prongs on the inside. The lip of the seal should be facing towards the tool. Rotate the handles on the tool around to wrap the seal around the end of the tool.

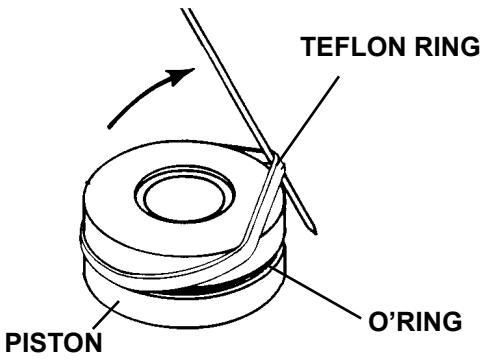


Now insert the seal into the gland from the inner end. Position the seal in its groove, and release and remove the tool. Press the seal into its seat the rest of the way by hand.



2. Install the new piston ring, rod wiper, O-rings and backup washers, if applicable, on the piston.

Be careful not to damage the seals. Caution must be used when installing the piston ring. The ring must be stretched carefully over the piston with a smooth, round, pointed tool.



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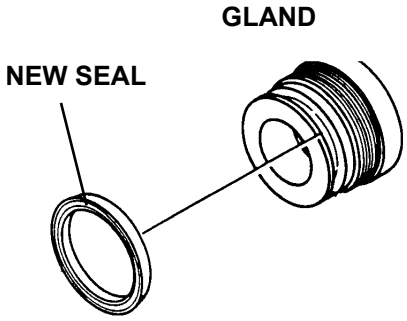
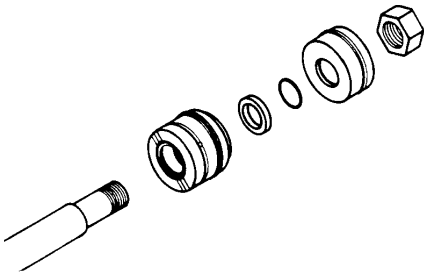
MAINTENANCE AND SERVICE



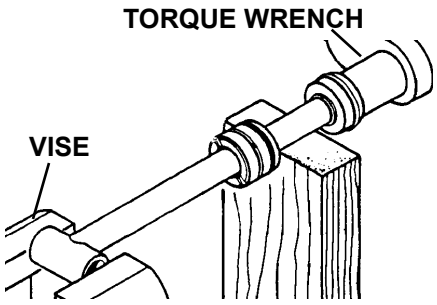
3. After installing the rod seal inside the gland, as shown in step #1, install the external seal.

NOTE: Threaded glands may have been equipped with a separate O-ring and backup washer system or a polypak (all in one) type seal. Current seal kits contain a polypak (all in one) type seal to replace the discarded seal types on ALL THREADED GLANDS.



4. Slide the gland onto the cylinder rod, being careful not to damage the rod wiper. Then install the spacer, or flat washer (if so equipped), small o-ring, piston, and hex nut onto the end of the cylinder rod.

5. Secure the cylinder rod (mounting end) in a vise with a support at its center. Torque the nut to the amount shown for the thread diameter of the cylinder rod (see chart).



Thread Diameter	POUNDS - FEET	NEWTON-METERS
7/8"	150-200	203.4-271.2
*1"	230-325	311.8-440.6
1-1/8"	350-480	474.5-650.8
1-1/4"	490-670	664.4-908.4
1-3/8"	670-900	908.4-1 220.2

*** 1" Thread Diameter WITH 1-1/4" Rod Diameter**
Min. 230 ft. lbs. (311.8 N·m) Max. 250 ft. lbs. (339.0 N·m)

IMPORTANT: Do not contact the active surface of the cylinder rod with the vise. Damage to the rod could result.

6. Apply a lubricant (such as Lubriplate #105) to the piston and teflon ring. Insert the cylinder rod assembly into the cylinder tube.

IMPORTANT: Ensure that the piston ring fits squarely into the cylinder tube and piston groove, otherwise the ring may be damaged and a leak will occur.

7. Use a spanner wrench to rotate the gland clockwise into the cylinder. Continue to rotate the gland with the spanner wrench until it is tight.

WARNING! Cylinders serviced in the field are to be tested for leakage prior to the attachment being placed in work. Failure to test rebuilt cylinders could result in damage to the cylinder and/or the attachment, cause severe personal injury or even death.

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TROUBLESHOOTING

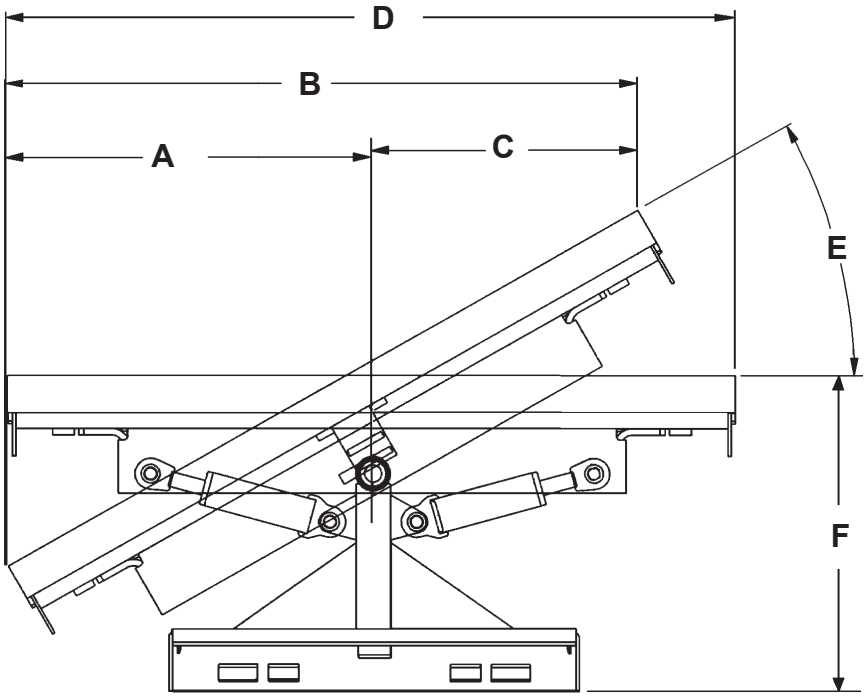
PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Blade fails to angle or tilt.	Obstruction in hydraulic line.	Remove obstruction or replace.
	Hydraulic couplers not completely connected.	Check and tighten couplers.
	Hydraulic couplers malfunctioning or non-compatible.	Replace.
	Defective hydraulic cylinder.	Replace cylinder.
Blade angling or tilting too slowly.	Cold oil.	Warm oil with engine at idle.
	Engine speed too slow.	Open throttle.
	Oil leaking past cylinder packings.	Replace cylinder seals.
	Restriction in valve. (If so equipped.)	Clean or replace.
	Oil leaking past cylinder packings.	Replace cylinder seals.
Blade fails to maintain angle or tilt.	Broken or leaking hydraulic lines.	Replace broken hose and check for leaks.
	Oil leaking past cylinder packings.	Replace cylinder seals.
	Internal leak in valve. (If so equipped.)	Clean or replace.
	Skid steer relief too low.	Check skid steer owners manual and adjust as required.
External leaking.	Cylinder seals damaged.	Replace and Repair.
	Broken or loose hydraulic fittings or line.	Check for leaks and repair or replace.
	Spool in valve leaking.	Replace seals.

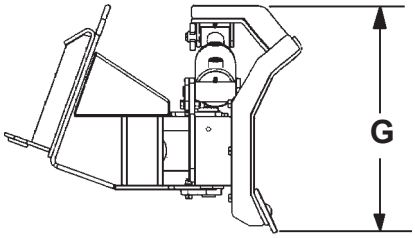
TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Blade functions in one circuit only.	No electrical power to the blade solenoid valve. (If so equipped.)	Check for proper connection in control box and power from skid-steer.
	Selector valve set to opposite operation. (If so equipped.)	Position selector valve to correct operation.
Blade functions in one circuit or the default circuit ONLY WITH power to the solenoid valve. (If so equipped.)	Blade valve malfunctioning.	Replace and Repair.
	Spool in valve sticking.	Clean or Replace.

SPECIFICATIONS

DOZER AND BACKFILL BLADES





SPECIFICATIONS AND DESIGN ARE SUBJECT TO CHANGE WITHOUT NOTICE AND WITHOUT LIABILITY THEREFOR.

DESCRIPTION	CTC AP46	CTC AP67	CTC ATP46	CTC ATP67	SKID STEER ATP84	SKID STEER ATP96
A. Width From Centerline to Inside Edge @ Max. Angle	22.25”	31.75”	22.50”	31.25”	42.25"	47.50"
B. Dozer Blade Width @ Max. Angle	37.75”	57.75”	40.00”	57.75”	73.25"	83.75"
C. Width From Centerline to Outside Edge @ Max. Angle	15.50”	26.00”	17.50”	26.50”	31.00"	36.25"
D. Overall Width	46.75”	67.25”	46.75”	67.25”	84.00"	96.00"
E. Maximum Angle Left and Right	35°	30°	30°	30°	30°	30°
F. Overall Length	22.75”	22.75”	22.25”	22.25”	36.75"	36.75"
G. Overall Height	17.00”	17.00”	17.00”	17.00”	30.00"	30.00"
Max. Blade Tilt	n/a	n/a	6°	6°	10°	10°
Approx. Weight	183#	290#	257#	310#	1365#	1460#

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BOLT TORQUE SPECIFICATIONS

GENERAL TORQUE SPECIFICATION TABLES

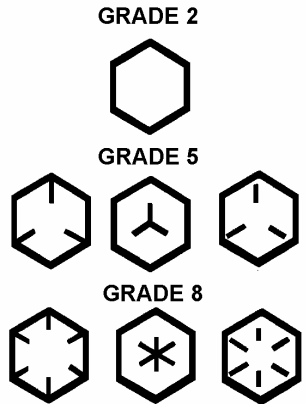
Use the following charts when determining bolt torque specifications when special torques are not given. Always use grade 5 or better when replacing bolts.

SAE BOLT TORQUE SPECIFICATIONS

NOTE: The following torque values are for use with extreme pressure lubricants, plating or hard washer applications Increase torque 15% when using hardware that is unplated and either dry or lubricated with engine oil.

Bolt Size		SAE GRADE 5 TORQUE Pounds Feet		SAE GRADE 5 TORQUE Newton-Meters		SAE GRADE 8 TORQUE Pounds Feet		SAE GRADE 8 TORQUE Newton-Meters	
Inches	Millimeters	UNC	UNF	UNC	UNF	UNC	UNF	UNC	UNF
1/4	6.35	8	9	11	12	10	13	14	18
5/16	7.94	14	17	19	23	20	25	27	34
3/8	9.53	30	36	41	49	38	46	52	62
7/16	11.11	46	54	62	73	60	71	81	96
1/2	12.70	68	82	92	111	94	112	127	152
9/16	14.29	94	112	127	152	136	163	184	221
5/8	15.88	128	153	174	207	187	224	254	304
3/4	19.05	230	275	312	373	323	395	438	536
7/8	22.23	340	408	461	553	510	612	691	830
1	25.40	493	592	668	803	765	918	1037	1245
1-1/8	25.58	680	748	922	1014	1088	1224	1475	1660
1-1/4	31.75	952	1054	1291	1429	1547	1700	2097	2305
1-3/8	34.93	1241	1428	1683	1936	2023	2312	2743	3135
1-1/2	38.10	1649	1870	2236	2535	2686	3026	3642	4103

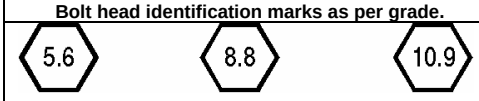
Bolt head identification marks as per grade. NOTE: Manufacturing Marks Will Vary



METRIC BOLT TORQUE SPECIFICATIONS

NOTE: The following torque values are for use with metric hardware that is unplated and either dry or lubricated with engine oil. Reduce torque 15% when using hardware that has extreme pressure lubricants, plating or hard washer applications.

Bolt head identification marks as per grade.



Size of Bolt	Grade No.	Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-.4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	8.8		34-40	46.1-54.2		35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
M12	5.6	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6
	8.8		51-59	69.1-79.9		56-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7
	8.8		81-93	109.8-126		90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.5-112.5
	8.8		116-130	157.2-176.2		120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	8.8		150-168	203.3-227.6		177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	8.8		186-205	252-277.8		206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6

PALADIN™
CONSTRUCTION GROUP

CE

EU DECLARATION OF CONFORMITY

I, the undersigned, on behalf of:

Manufacturer/Technical Document Holder

Paladin Construction Group
2800 N. Zeeb Road
Dexter, MI 48130 USA
Phone: 734-996-9116
Fax: 734-996-9014

hereby declare that the following product:

Description of Equipment: **Hydraulically operated Blades for compact tool carrier and skid steer loader applications. Used to move sand, gravel, soils, crushed rock and aggregate with a pushing force.**

Attachment Model: **AP46, AP67, ATP46, ATP67, ATP84, ATP96**

Serial Number: _____

Conforms to: **2006/42/EC Machinery Directive**
EN ISO 474-1:2009, EN ISO 982:2008,
EN ISO 12100-1:2009, EN ISO 12100-2:2003
EN ISO14121-1:2007, EN ISO 2860:1992,
EN ISO 2867:2006

Certification method: **Self-certified, per Annex V of the Directive**

Name and address of the person in the Community authorized to compile the technical construction file:

GENESIS GmbH
Alpenstrasse 71
Memmingen, GERMANY D – 87700

At Delhi, Signature, Title, Date

Signature: _____

Title: _____

Date: _____

UKCA DECLARATION OF CONFORMITY

The undersigned, representing the following manufacturer:

Manufacturer:

Paladin Attachments
2800 N Zeeb Rd.
Dexter, MI 48130
United States

Declares that the product(s)

Product identification:

Description:	HYDRAULIC CABLES CUTTING TOOLS WITH 18V RECHARGEABLE BATTERY
Model:	**BCP040GC - BCP045GC - BCP055GC - BCP065CC - BCP085G+**
Serial number:	L-00001 à L-99999

Conforms to the UK Regulations:
The supply of Machinery (Safety) Regulations 2008, S.I. 2008/1597 (as amended)
Electromagnetic Compatibility Regulations, 2016, S.I. 2016/1091 (as amended)
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012, S.I. 2012/3032 (as amended)

Designated Standards:

SI 2008/1597	NF EN ISO 15744 (December 2008) NF EN ISO 3744 (February 2012) NF EN ISO 20643 (September 2008) NF EN ISO 11201 (December 2010) NF EN 12096 (September 1997)
SI 2016/1091	EN 62233 (September 2013) EN 55014-1 (June 2017) EN 55014-2 (July 2015) EN 62311 (October 2008)
S.I. 2012/3032	NF EN IEC 63000 (December 2018)

The undersigned is responsible for compilation of the technical file and makes this declaration on behalf of DUBUIS.

Signature

Blois, July 28, 2021

Patrick VERVIER,

Engineering Manager