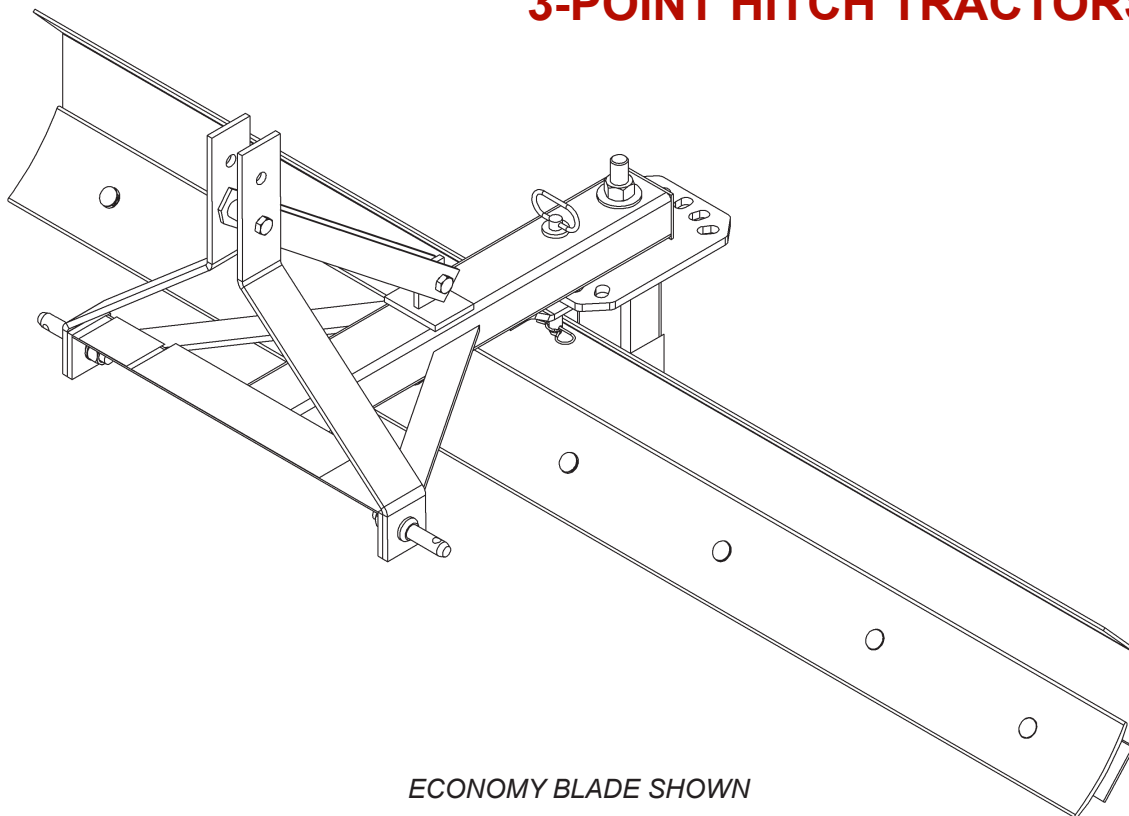




# OPERATOR'S MANUAL

## REAR BLADES ALL Series

**FOR  
3-POINT HITCH TRACTORS**



SERIAL NUMBER: \_\_\_\_\_

Manual Number: KDK06-0198

MODEL NUMBER: \_\_\_\_\_

Rev. 3



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# PREFACE

## GENERAL COMMENTS

Congratulations on the purchase of your new product! 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.

This manual has been designed to help you do a better, safer job. Read this manual carefully and become familiar with its contents.

**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 operators.

## 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 mover, 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>.

## 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 INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.



### **WARNING**

THIS SIGNAL WORD INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.



### **CAUTION**

THIS SIGNAL WORD INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN MINOR OR MODERATE INJURY.

### **NOTICE**

NOTICE IS USED TO ADDRESS PRACTICES NOT RELATED TO PHYSICAL INJURY.

## 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.

## 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.

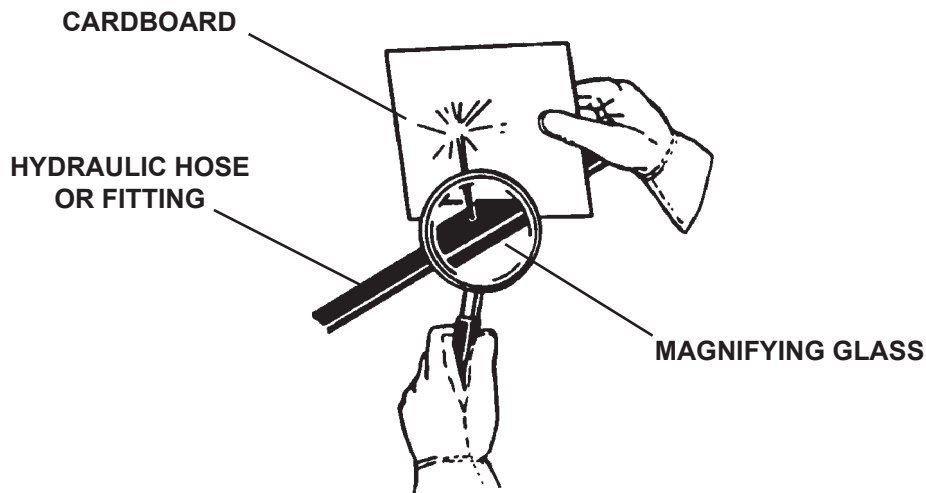
### WARNING!



#### 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.



## 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 Protective 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.

### WARNING!



#### CALIFORNIA PROPOSITION 65 WARNING

This product may contain a chemical known to the state of California to cause cancer, or birth defects or other reproductive harm. [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



## 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 ATTACHMENT

- Do not exceed the capacity of your prime mover when pushing or pulling loads.
- Operate only from the operator's station.
- Avoid steep hillside operation which could cause the prime mover to overturn. Consult your prime move operator's and safety manuals for maximum incline allowable.
- Reduce speed when driving over rough terrain, on a slope, or turning, to avoid overturning the vehicle.
- 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.
- 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, always make sure all rotation has stopped, attachment is lowered to the ground, PTO is disengaged, parking brake is engaged, engine is turned off and the keys are removed.

# EQUIPMENT SAFETY PRECAUTIONS



## TRANSPORTING THE ATTACHMENT

- Travel only with the attachment in a safe transport position to prevent uncontrolled movement. Drive slowly over rough ground and on slopes.
- When transporting on a trailer: Secure attachment using tie down accessories that are capable of maintaining attachment stability.
- Use extra care when loading or unloading the attachment onto a truck or trailer.
- 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.



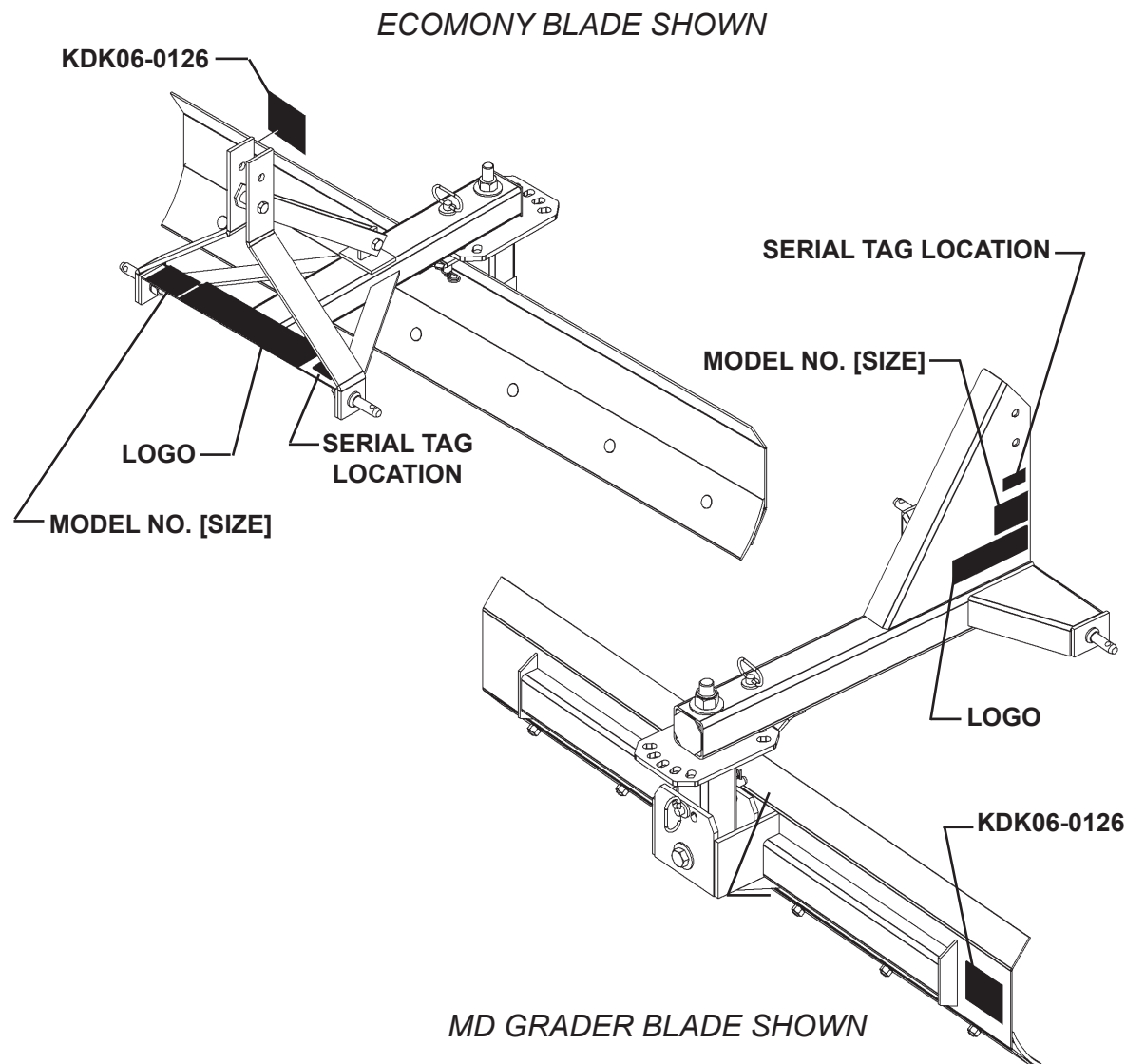
## MAINTAINING THE ATTACHMENT

- Before exiting the prime mover to perform maintenance, always make sure attachment is lowered to the ground, parking brake is engaged, engine is turned off and the keys are removed.
- Never perform any work on the attachment unless you are authorized and qualified to do so. Always read the operator manual's 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 work under a raised attachment unless it is securely blocked.

# DECALS

## GENERAL INFORMATION

The diagram on this page shows the location of the decals used on your attachment. The decals are identified by their part numbers, with reductions of the actual decals located on the following page. Use this information to order replacements for lost or damaged decals. Be sure to read all decals before operating the attachment. They contain information you need to know for both safety and product longevity.



**IMPORTANT:** Keep all safety decals clean and legible. Replace all missing, illegible, or damaged safety decals. When replacing parts with safety decals attached, the safety decals must also be replaced. Safety decals are available, free of charge, from your local dealer or Paladin.

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

## DECALS



**PART # KDK06-0126**

**WARNING! GENERAL WARNING**

**NOTE: CONTACT YOUR LOCAL DEALER FOR MODEL  
NUMBER AND LOGO DECALS.**

# INSTALLATION

## GENERAL INFORMATION

The Kodiak blades are designed completely assembled for attaching to a tractor and come with Cat. I 3-point mounting on all blades with the additional Cat. II mounting on the HD Grader Blades only.

## INSTALLATION

### **DANGER!**



**A crushing hazard exists when installing onto a tractor. Place the tractor in park, set parking brake, shut off engine and remove key before allowing anyone, including the operator, in the area between the tractor and the attachment during installation or detaching the attachment from the tractor. Do not operate the 3-point lift controls while anyone is directly behind the tractor or near the attachment.**

1. Place this product on a firm, level surface that is large enough to safely accommodate this product, your prime mover and all workers involved in the mounting process.
2. Back the tractor to the blade aligning the 3-point lower arms up with the A-frame.
3. Verify that the PTO is disengaged, set parking brake, shut engine off and remove the key and exit the prime mover.
4. With the sway links adjusted to prevent excessive side movement, lift A-frame and attach to the 3-point hitch lower arms using the pins provided.
5. Remove tractor top link and install to top link location using the existing pin.

## DETACHING

1. Lower the blade to the ground (verify that the PTO is disengaged) set parking brake, shut engine off and remove the key and exit the prime mover.
3. Unhook blade from top link hitch (retain pin for re-use).
4. Remove pins securing A-frame to lower 3-point hitch arms and carefully remove A-frame from lower hitch arms being prepared for the weight of the blade. Lower A-frame to the ground or onto supporting blocks.

# OPERATION

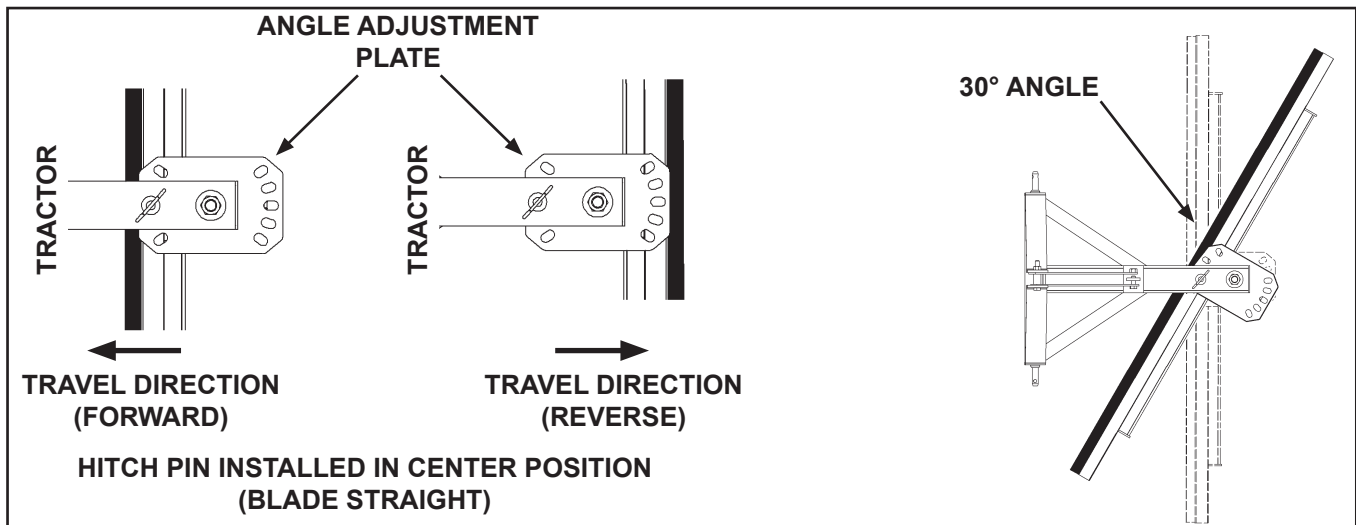
## INTENDED USE:

This unit is designed for homeowner use. Landscaping applications, driveway maintenance and snow removal. Use in any other way is considered contrary to the intended use.

All rear mounted blades are designed with 5 different angle positions for both forward and reverse travel. The economy series blades are light duty blades designed for light duty applications. The slider, offset and grader blades (SD, MD and HD) are designed with an additional tilt for ditching. Tractor compatibility ranges from 20 to 70 HP and all units are equipped with Cat. I hitches while the HD grader blades are equipped with a combination Cat. I and Cat. II hitch.

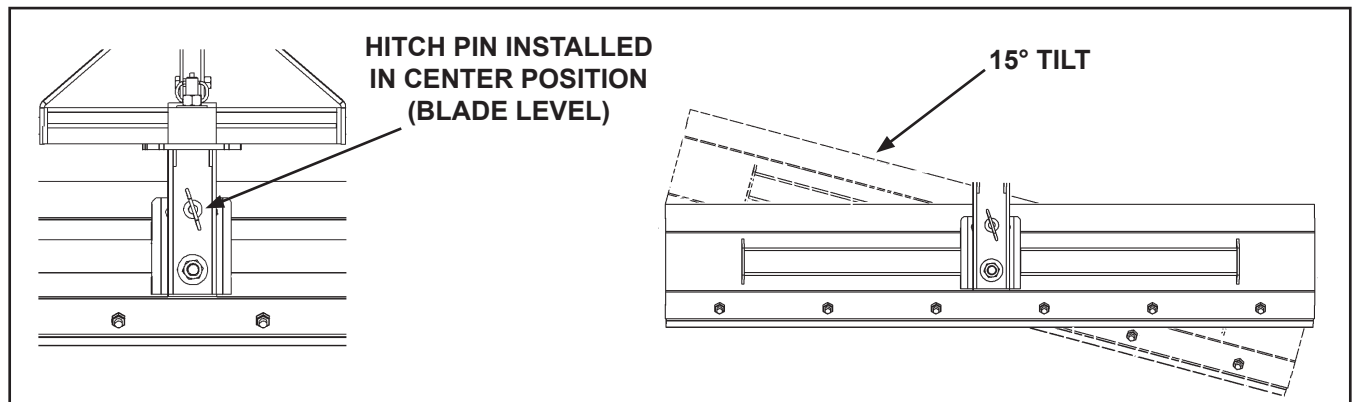
## ANGLE AND FORWARD/REVERSE TRAVEL ADJUSTMENT

All blades have the capability to rotate 180° for forward or reverse travel and can be adjusted 15° and 30° left or right. Remove hitch pin from the angle adjustment plate and manually rotate blade to the desired position and re-install hitch pin.



## TILT ADJUSTMENT

The Slider, Offset and MD/HD Grader blades have the capability to tilt 15° while the SD Grader blades have the capability to tilt 20° to allow for ditching. Remove hitch pin from the back of the blade mount, manually tilt the blade to the desired position and re-install hitch pin.



# OPERATION

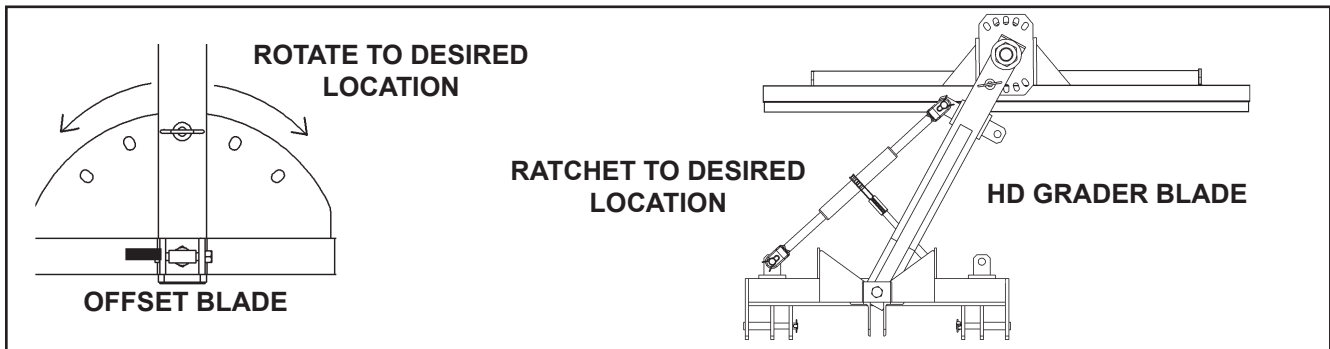
## SLIDE ADJUSTMENT

The Slider blades have the capability to slide left or right to get into tight places. Loosen hex nuts on the slider bars and manually slide blade to the desired location. Re-torque hex nuts to secure in place.

DESCRIPTION	LEFT AND RIGHT OF CENTER
4' SLIDER BLADE	10.75"
5' SLIDER BLADE	10.75"
6' SLIDER BLADE	16.75"
7' SLIDER BLADE	16.75"

## OFFSET ADJUSTMENT

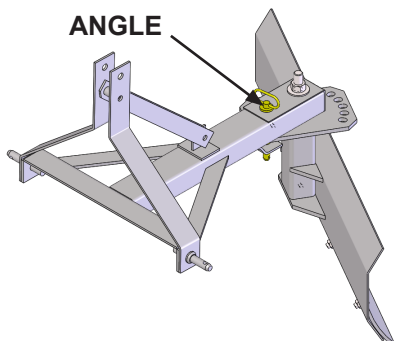
The Offset and HD Grader blades have the capability to offset the blade to the left or right to get into tight places. Remove hitch pin from the offset mounting plate on the Offset Blades and manually rotate blade to the desired position and re-install hitch pin. On HD Grader Blades adjust the ratchet until the desired offset has been achieved.



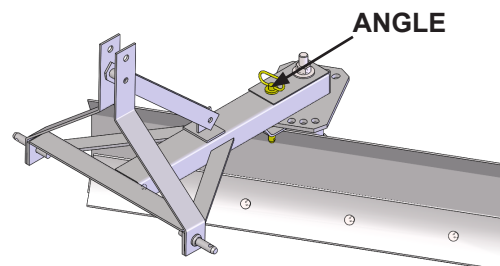
## ECONOMY BLADES:

The Economy Blades come in blade widths of 4', 5', 6' and 7'. They all accept a CAT I Quick Hitch and are capable of angling 15° or 30° to either side.

Description	2WD - HP	4WD - HP
4' Economy Blade	17-24	14-20
5' Economy Blade	24-35	20-29
6' Economy Blade	35-42	29-35
7' Economy Blade	38-46	32-38



REVERSE DIRECTION - MAX ANGLE



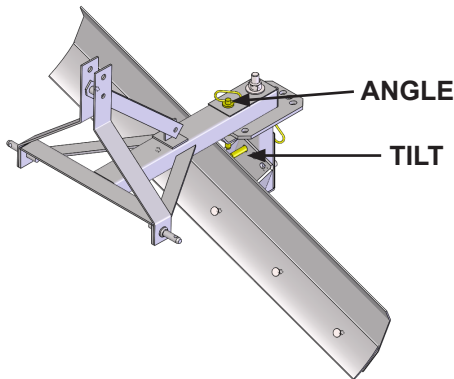
FORWARD DIRECTION - MAX ANGLE

## OPERATION

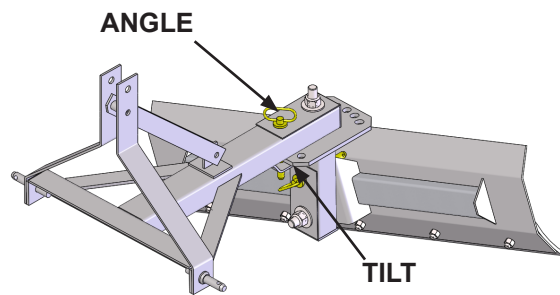
### SD GRADER BLADES:

The Standard Duty Blades come in blade widths of 5', 6' and 7'. They all accept a CAT I Quick Hitch. They are capable of pivoting 15° or 30° to either side. There is also a 3 position 20° tilt adjustment for ditching.

Description	2WD - HP	4WD - HP
4' SD Grader Blade	17-24	14-20
5' SD Grader Blade	20-25	17-20
6' SD Grader Blade	25-28	21-23
7' SD Grader Blade	28-32	23-26



FORWARD DIRECTION - 15° TILT - NO ANGLE

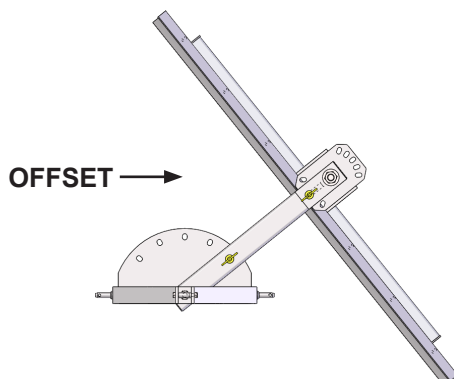


REVERSE DIRECTION - 15° TILT - NO ANGLE

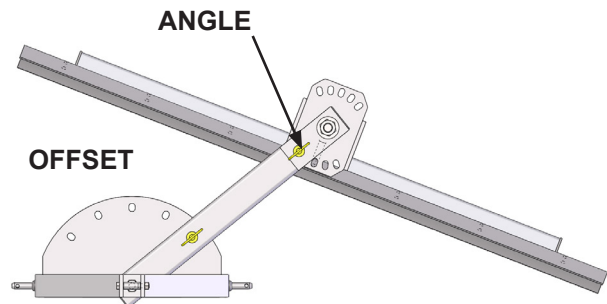
### OFFSET BLADES:

The Offset Blades come in blade widths of 5', 6' and 7'. They all accept a CAT I Quick Hitch. They are capable of pivoting 15° or 30° to either side. There is also a 3 position 15° tilt adjustment for ditching. The Offset Blades are capable of offsetting 26" to either side. This feature allows the blade to swing out beyond the width of the machine.

Description	2WD - HP	4WD - HP
5' Offset Blade	30-38	25-31
6' Offset Blade	35-45	29-37
7' Offset Blade	40-55	33-45



FORWARD DIRECTION - OFFSET TO LEFT - NO ANGLE



FORWARD DIRECTION - OFFSET TO LEFT - MAX ANGLE

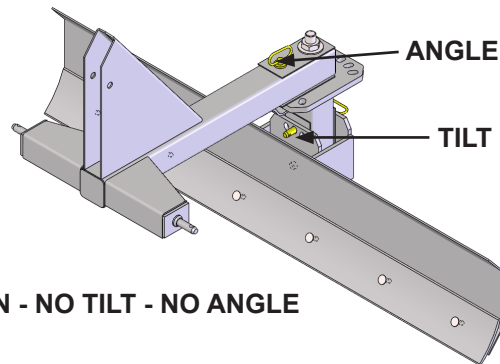


## OPERATION

### MD GRADER BLADES:

The Medium Duty Blades come in blade widths of 5', 6' and 7'. They all accept a CAT I Quick Hitch. They are capable of pivoting 15° or 30° to either side. There is also a 3 position 15° tilt adjustment for ditching. The Medium Duty Blade family has the same adjustment options as the Standard Duty Blades while having a stronger frame and lower assemblies

Description	2WD - HP	4WD - HP
5' MD Grader Blade	28-35	23-29
6' MD Grader Blade	35-46	29-38
7' MD Grader Blade	38-50	32-44

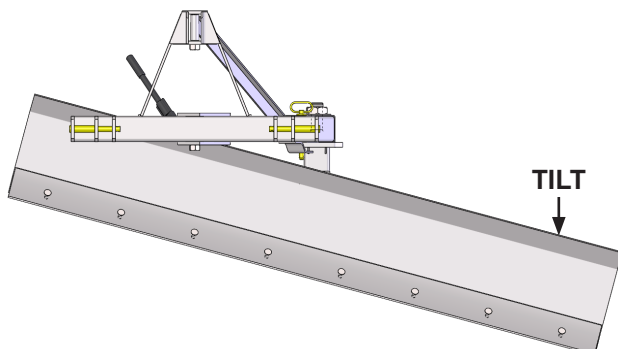


FORWARD DIRECTION - NO TILT - NO ANGLE

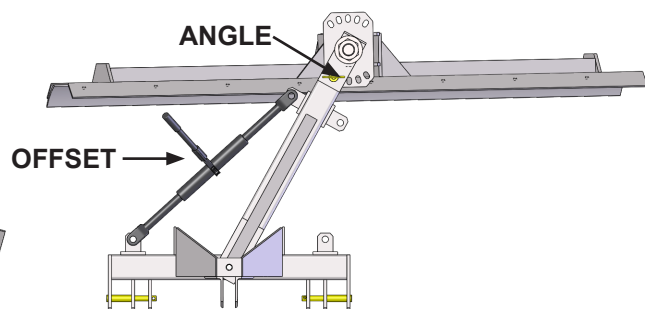
### HD GRADER BLADES:

The Heavy Duty Blades come in blade widths of 6', 7' and 8'. They all accept a CAT I or II Quick Hitch. They are capable of pivoting 15° or 30° to either side. There is also a 3 position 15° tilt adjustment for ditching. A ratchet offset feature allows the blade to swing out beyond the width of the machine.

Description	2WD - HP	4WD - HP
6' HD Grader Blade	35-50	31-41
7' HD Grader Blade	45-60	38-50
8' HD Grader Blade	55-70	45-58



FORWARD DIRECTION - FRONT VIEW - MAX  
OFFSET - MAX ANGLE - 15° TILT



FORWARD DIRECTION - TOP VIEW - MAX  
OFFSET - MAX ANGLE - 15° TILT

# OPERATION

## OPERATION

Simplicity of operation is one of the key features of these blades. The blades mount to the 3-point hitch system of your tractor. Due to this arrangement, thorough knowledge of the tractor controls is necessary for blade operation. Read the prime mover and blade manual for information regarding safety and operation before attempting to use the blade.

Prior to starting the job, take the time to check for and mark any hidden obstructions such as sidewalk edges, water and gas shut offs, etc. Hitting such obstructions when operating the blade, especially at higher speeds, could cause injury to the operator or damage to the obstruction, blade and/or prime mover.

Take notice of the ground conditions and operate accordingly. Be aware of soft ground, icy, or rocky conditions. Additional attention may be necessary for proper traction. Drive slow when traveling on slopes, hilly ground or turning.

The blades are designed for pushing snow and grading material. In the case of pushing snow the best results are usually obtained by angling the blade, If grading shoulder/ditches the best results are usually angling and tilting the blade towards the ditch. For grading driveways you will find the best results are usually obtained with the blade perpendicular to the prime mover frame.

## OPERATING TIPS

- Always begin with the slowest ground speed possible and increase if 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.
- Watch for holes, rocks or hidden hazards. Inspect area prior to operation

## 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 upon removal from storage.
- Tighten loose nuts and capscrews.
- Store 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 avoid rust.

## REMOVAL FROM STORAGE:


- Remove cover.
- Wash unit and replace any damage and/or missing parts.

# 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.


- 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.

- 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.**

## 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 manual when transporting your attachment.

# MAINTENANCE

## GENERAL INFORMATION

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

Procedure	Daily (Every 8 Hours)
Check all hardware and tighten if necessary. (See Bolt Torque Specifications)	✓
Visually inspect the machine for worn parts or cracked welds, and repair as necessary.	✓
Replace any missing or damaged bolts or nuts with approved replacement parts	✓
Check for missing or illegible Safety / Warning Decals.	✓
Clean Unit- Remove all mud and dirt	✓

**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.**








# BOLT TORQUE SPECIFICATION

## 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				SAE GRADE 8 TORQUE				Bolt head identification marks as per grade. NOTE: Manufacturing Marks Will Vary
		Ft-lbs		Newton-Meter		Ft-lbs		Newton-Meter		
Inches	mm	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	
<div>Grade 2</div> <div></div> <div>Grade 5</div> <div><div></div><div></div><div></div></div> <div>Grade 8</div> <div><div></div><div></div><div></div></div>										

Grade 2



Grade 5



Grade 8



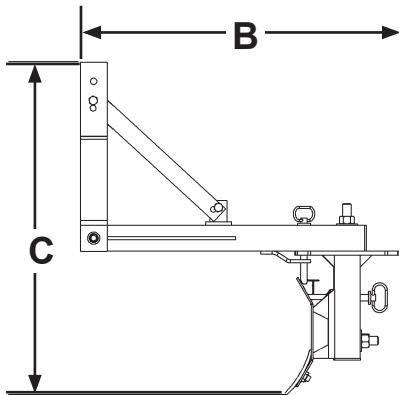
## METRIC BOLT TORQUE SPECIFICATIONS

**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.

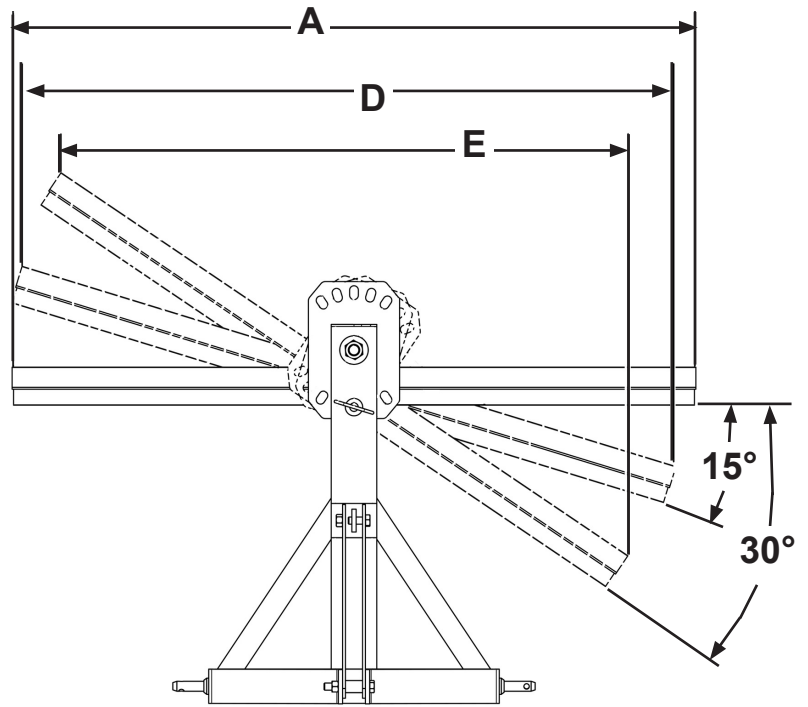
Bolt head identification marks as per grade.		

Bolt Size	Grade No.	Pitch (mm)	Ft-lbs	Newton-Meter	Pitch (mm)	Ft-lbs	Newton-Meter
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

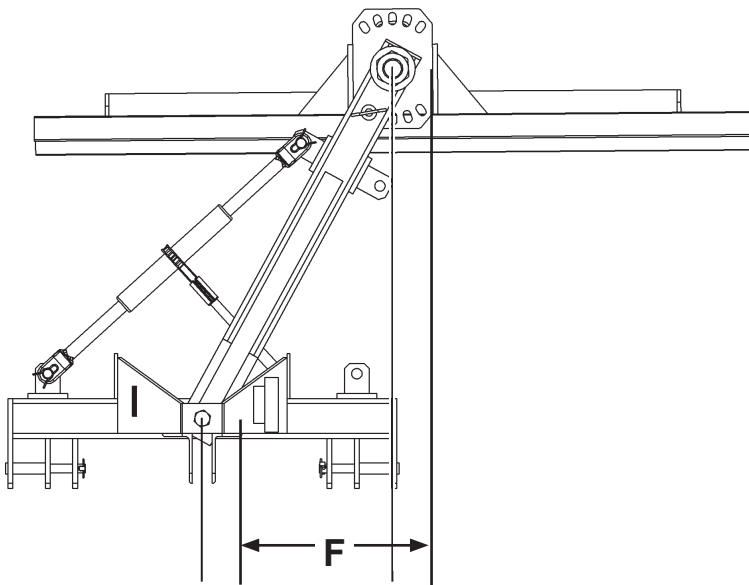
# SPECIFICATIONS



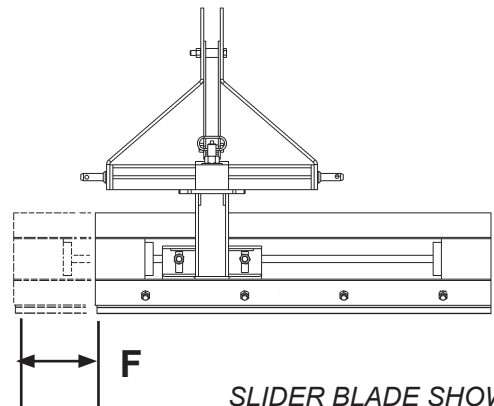
OFFSET BLADE SHOWN



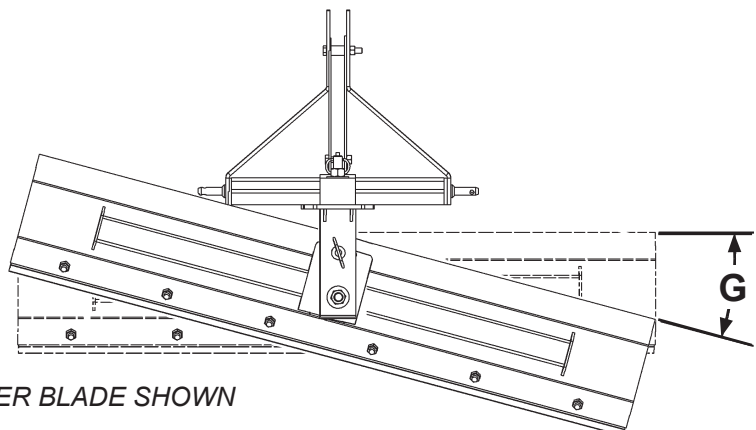
ECONOMY BLADE SHOWN



HD GRADER BLADE SHOWN



SLIDER BLADE SHOWN



STANDARD GRADER BLADE SHOWN

# SPECIFICATIONS

DESCRIPTION	SPECIFICATIONS				
ECONOMY BLADES	4'	5'	6'	7'	8'
A. Overall Width	48.00"	60.00"	72.00"	84.00"	NA
B. Overall Length	36.00"	36.00"	36.00"	36.00"	NA
C. Overall Height	38.50"	38.50"	38.50"	38.50"	NA
D. Cutting Width at 15° Angle	45.75	57.00	68.50	80.00	NA
E. Cutting Width at 30° Angle	39.50	59.75	59.50	69.5	NA
SLIDER BLADES	4'	5'	6'	7'	8'
A. Overall Width	48.00"	60.00"	72.00"	84.00"	NA
B. Overall Length	37.00"	37.00"	37.00"	37.00"	NA
C. Overall Height	37.00"	37.00"	37.00"	37.00"	NA
D. Cutting Width at 15° Angle	45.75"	57.00"	68.50"	80.00"	NA
E. Cutting Width at 30° Angle	39.50"	49.50"	59.50"	69.50"	NA
F. Offset Slide from Center (Left / Right)	10.75"	10.75"	16.75"	16.75"	NA
OFFSET BLADES	4'	5'	6'	7'	8'
A. Overall Width	NA	60.00"	72.00"	84.00"	NA
B. Overall Length	NA	42.00"	42.00"	42.00"	NA
C. Overall Height	NA	36.50"	36.50"	36.50"	NA
D. Cutting Width at 15° Angle	NA	57.00"	68.50"	80.00"	NA
E. Cutting Width at 30° Angle	NA	49.50"	59.50"	69.50"	NA
F. Offset (Left / Right)	NA	14.25"	14.25"	14.25"	NA
G. Tilt	NA	15°	15°	15°	NA
STANDARD GRADER BLADES	4'	5'	6'	7'	8'
A. Overall Width	48.00"	60.00"	72.00"	84.00"	NA
B. Overall Length	37.00"	37.00"	37.00"	37.00"	NA
C. Overall Height	38.00"	38.00"	38.00"	38.00"	NA
D. Cutting Width at 15° Angle	45.75"	57.00"	68.50"	80.00"	NA
E. Cutting Width at 30° Angle	39.50"	49.50"	59.50"	69.50"	NA
G. Tilt	20°	20°	20°	20°	NA
MEDIUM GRADER BLADES	4'	5'	6'	7'	8'
A. Overall Width	NA	60.00"	72.00"	84.00"	NA
B. Overall Length	NA	42.00"	42.00"	42.00"	NA
C. Overall Height	NA	43.38"	43.38"	43.38"	NA
D. Cutting Width at 15° Angle	NA	57.00"	68.50"	80.00"	NA
E. Cutting Width at 30° Angle	NA	49.50"	59.50"	69.50"	NA
G. Tilt	NA	15°	15°	15°	NA
HEAVY DUTY GRADER BLADES	4'	5'	6'	7'	8'
A. Overall Width	NA	NA	72.00"	84.00"	96.00"
B. Overall Length	NA	NA	53.00"	53.00"	53.00"
C. Overall Height	NA	NA	42.25"	42.25"	42.25"
D. Cutting Width at 15° Angle	NA	NA	68.50"	80.00"	91.50"
E. Cutting Width at 30° Angle	NA	NA	59.50"	69.50"	79.38
F. Offset (Left / Right)	NA	NA	10.50"	10.50"	10.50"
G. Tilt	NA	NA	15°	15°	15°

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## PARTS

In order to provide you with the most UP-TO-DATE part information, all parts for this attachment have been moved to our website at [www.paladinattachments.com/Manuals](http://www.paladinattachments.com/Manuals). Please use these diagrams and parts lists to locate replacement parts.

When servicing your attachment, remember to use only original manufacturer replacement parts. Substitute parts may not meet the standards required for safe, dependable operation.

To facilitate parts ordering when contacting the factory, please have the product control number (PCN or C/N) or model and serial number of your product ready to ensure that you receive the correct parts for your specific attachment.

The product control number, model and serial number for your attachment should be recorded in the space provided on the cover of this manual. This information may be obtained from the serial number identification plate located on your attachment.

**NOTE: Most daily and emergency parts orders (in stock) received by 10:30 A.M. (Eastern Standard Time) will be shipped UPS Ground the same day received. UPS Next Day orders must be received by 1:30 PM (Eastern Standard Time.)**

### SERVICE DEPARTMENT

(734) 996-9116

(800) 456-7100

### For Fax and E-mail Orders

PLC\_Sales@paladinattachments.com

(734) 996-9014

## WARRANTY

In order to provide you with the most UP-TO-DATE Warranty information, Paladin Warranty Statement and Warranty Procedures along with Warranty Registration and Claim Forms have been moved to our website at [www.paladinattachments.com](http://www.paladinattachments.com).