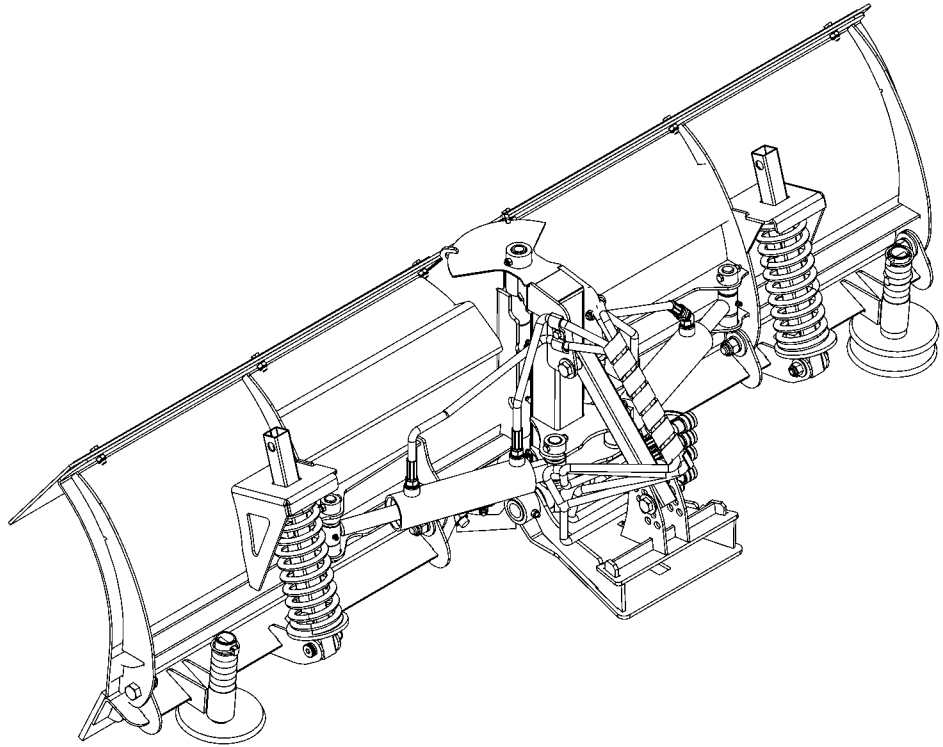


# Kubota®



## ***OPERATOR'S AND PARTS MANUAL***

***72" V-BLADE***

***MODEL V4291***

***FOR RTV900 & RTV1100 Series***

***SERIAL NO. 2903531 AND UP***

***OM 0387VB-A  
04/09***

***MANUAL PART NUMBER 77700-01200***



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# INTRODUCTION

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## TO THE PURCHASER

All products are designed to give safe, dependable service if they are operated and maintained according to instructions. **Read and understand this manual before operation.**

This manual has been prepared to assist the owner and operators in the safe operation and suitable maintenance of the equipment. The information is applicable to products at the time of manufacture and does not include modifications made afterwards.

Read and understand this operator's manual before attempting to put equipment into service. Familiarize yourself with the operating instructions and all the safety recommendations contained in this manual and those labeled on the equipment and on the vehicle. Follow the safety recommendations and make sure that those with whom you work follow them.

### **Illustrations**

The illustrations may not necessarily reproduce the full detail and the exact shape of the parts or depict the actual models, but are intended for reference only.

### **Direction Reference**

All references to right and left, forward or rearward are from the operator seat.

*To assist your dealer in handling your needs, please record hereafter the model number and serial number of your equipment and vehicle. It is also advisable to supply them to your insurance company. It will be helpful in the event that equipment or vehicle is lost or stolen.*

**RTV**

**BLADE**

MODEL:

SERIAL NUMBER:

DATE OF PURCHASE:

DEALER NAME:

DEALER TELEPHONE NUMBER:

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# SAFETY PRECAUTIONS

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## SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully. It is essential that you read the instructions and safety regulations before you attempt to assemble or use this unit.

-  **DANGER :** Indicates an immediate hazardous situation which, if not avoided, will result in death or serious injury.
-  **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.
- IMPORTANT :** Indicates that equipment or property damage could result if instructions are not followed.
- NOTE :** Gives helpful information.

All products are designed to give safe, dependable service if they are operated and maintained according to instructions. **Read and understand this manual before operation.** It is the owner's responsibility to be certain anyone operating this product reads this manual, and all other applicable manuals, to become familiar with this equipment and all safety precautions. Failure to do so could result in serious personal injury or equipment damage. If you have any questions, consult your dealer.

## **BEFORE OPERATION**

### **Children**

Tragic accidents can occur if the operator is not alert to the presence of children. Children are generally attracted to machines and the work being done. Never assume children will remain where you last saw them.

1. Keep children out of the operating area and under the watchful eye of another responsible adult.
2. Be alert and turn machine off if children enter the work area.
3. Before and when backing, look behind for small children.
4. Never carry children while operating the machine. They may fall off and be seriously injured or interfere with the safe operation of the machine.
5. Never allow children to play on the machine or attachment even when they are turned off.
6. Never allow children to operate the machine even under adult supervision.
7. Use extra care when approaching blind corners, shrubs, trees, or other obstructions that might hide children from sight.

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# SAFETY PRECAUTIONS - continued

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## **NOTICE**

A safe operator is the best assurance against accidents. All operators, no matter how experienced they may be, should read this operator's manual and all other related manuals before attempting to operate the equipment. Please read the following section and pay particular attention to all safety recommendations contained in this manual and those labeled on the equipment and on the vehicle.

## **THE BLADE**

### **Before Operation**

1. Read and understand this operator's manual and the vehicle's operator's manual. Know how to operate all controls and how to stop the unit and disengage the controls quickly.
2. Never wear loose, torn, or bulky clothing around the vehicle, the frame and the blade. It may catch on moving parts or controls, causing injury.
3. Before and during seasons, thoroughly inspect the area where the equipment is to be used and remove all objects that may be thrown or cause damage to the equipment.
4. Do not operate equipment in wintertime without wearing adequate winter garments. Always wear protective clothing.
5. Never attempt to make any adjustments while engine is running. Read this manual carefully to acquaint yourself with the equipment as well as the vehicle operator's manual. Working with unfamiliar equipment can lead to accidents. Be thoroughly familiar with the controls and proper use of the equipment.
6. Keep all safety guards in place and verify hardware for proper tightening.
7. Check for moving parts excessive wear regularly. Replace worn parts with genuine parts.
8. Replace all missing, illegible, or damaged safety and warning decals. See list of decals in operator's manual.
9. Keep safety decals clean of dirt and grime.
10. Do not modify or alter this equipment or any of its components, or any equipment function without first consulting your dealer.

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## SAFETY PRECAUTIONS - continued

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### **Blade Operation**

1. Before leaving the vehicle unattended, take all possible precautions. Park the vehicle/blade on level ground, set the parking brake, lower the equipment to the ground, place all levers in neutral, shut off the engine and remove the ignition key BEFORE leaving the vehicle.
2. Prior to operation, clear work area of all objects that can be picked up and thrown. Mark all curbs, pipes, etc. that cannot be moved.
3. Exercise extreme caution when operating on or crossing a gravel drive, walks, or roads. Stay alert for hidden hazards or traffic.
4. Do not carry passengers.
5. Keep clear of all rotating parts. Do not put hands or feet under blade and frame.
6. Do not run the engine indoors except when starting engine and transporting attachment in or out of building. Carbon monoxide gas is colorless, odorless and deadly.
7. Do not attempt to operate on steep slopes. If operating on slopes is necessary, exercise extreme caution when changing direction.
8. Never operate blade without safety protective devices in place. All vehicle and equipment shields and covers must be correctly installed at all times. When necessary to remove these, they must be reinstalled immediately.
9. Never operate machine at high transport speeds on a slippery surface.
10. Use extra caution when backing up.
11. Never operate the blade without good visibility and lighting.
12. Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable noises.
13. Never allow anyone near the work area.
14. Never allow anyone to operate the blade until they have read the manual completely and are thoroughly familiar with basic vehicle and blade operation.
15. Make sure the vehicle is counterweighted and has tire chains, as recommended by your dealer. Weights provide the necessary balance to improve stability, traction and steering.
16. Always make sure all blade components are properly installed and securely fastened BEFORE operation.

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# SAFETY PRECAUTIONS - continued

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## THE VEHICLE

### General Information

1. Read the operator's manual carefully before using vehicle. Lack of operating knowledge can lead to accidents.
2. Do not permit anyone but the operator to ride on the vehicle. There is no safe place for extra riders.

### Operating the Vehicle

1. Never run the vehicle engine in a closed building without adequate ventilation, as the exhaust fumes are very dangerous.
2. Never allow an open flame near the fuel tank or battery.
3. Park the vehicle/blade on level ground, place the transmission in neutral, set the parking brake, disengage the driving system, lower the equipment to the ground, place all levers including auxiliary control levers in neutral, shut off the engine and remove the ignition key BEFORE leaving the vehicle.
4. Never park the vehicle on a steep slope.
5. Do not attempt to operate on steep slopes.
6. Use of tire chains for better traction and stability is recommended.
7. Always drive the vehicle at speeds compatible with safety, especially when operating over rough ground, crossing ditches, or when turning.
8. Handle fuel with care, as it is highly flammable.
9. Use approved fuel container.
10. Never add fuel to a running engine or a hot engine.

11. Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors. Replace fuel cap securely and wipe up spilled fuel.
12. Never allow anyone to operate the equipment until they have read the manual completely and are thoroughly familiar with basic vehicle and blade operation.
13. Make sure the vehicle is counterweighted as recommended by your dealer. Weights provide the necessary balance to improve stability, traction and steering. Use only those recommended by your dealer.
14. Always make sure all components are properly installed and securely fastened BEFORE operation.

### During Operation

1. Do not allow anyone to ride on the vehicle/equipment at any time. There is no safe place for passengers on this equipment. The operator MUST sit in the seat.
2. Eye and hearing protection is recommended when operating the equipment.
3. Operate only during daylight hours, or when the area is well lit with bright artificial light.
4. Park the vehicle/blade on level ground, place the transmission in neutral, set the parking brake, disengage the driving system, lower the equipment to the ground, place all levers including auxiliary control levers in neutral, shut off the engine and remove the ignition key BEFORE leaving the vehicle.
5. Inspect the equipment after striking any foreign object to assure that all equipment parts are safe and secure and not damaged.



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# SAFETY PRECAUTIONS - continued

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## MAINTENANCE

### **ALWAYS USE GENUINE PARTS WHEN REPLACEMENT PARTS ARE REQUIRED**

1. Keep the vehicle and blade properly maintained.
2. Park the vehicle/blade on level ground, set the parking brake, lower the blade to the ground, place all control levers in neutral, shut off the engine and remove the ignition key and allow the rotating parts to stop BEFORE making any blade adjustments.
3. To avoid injury, do not adjust, unblock the driving system, or service the blade with the vehicle engine running. Make sure rotating components have completely stopped before leaving the operator's seat.
4. Keep the vehicle/blade clean. Snow, dirt or ice build-up can lead to malfunction or personal injury from thawing and refreezing in garage.
5. Always wear eye protection when cleaning or servicing the blade or frame.
6. DO NOT service the vehicle while the engine is running or hot, or if the unit is in motion. Always lower blade to the ground. If necessary to service blade in raised position, securely support with stands or suitable blocking before working underneath. Do not rely on support devices already on the vehicle for your safety. They can settle suddenly or be accidentally lowered.
7. Do not attempt to service machine with the engine running. Always shut off engine and allow all motion to cease.
8. Make sure all shields and guards are securely in place following all service, cleaning, or repair work.
9. Do not modify or alter this blade or any of its components or operating functions. If you have questions concerning modifications, consult with your dealer.
10. Do not operate a unit that is defective or has missing parts. Make sure that all recommended maintenance procedures are completed before operating the unit.
11. Check all controls regularly and adjust where necessary. Make sure that the brakes are evenly adjusted.
12. Periodically check all nuts and bolts for tightness, especially wheel hub and rim nuts.

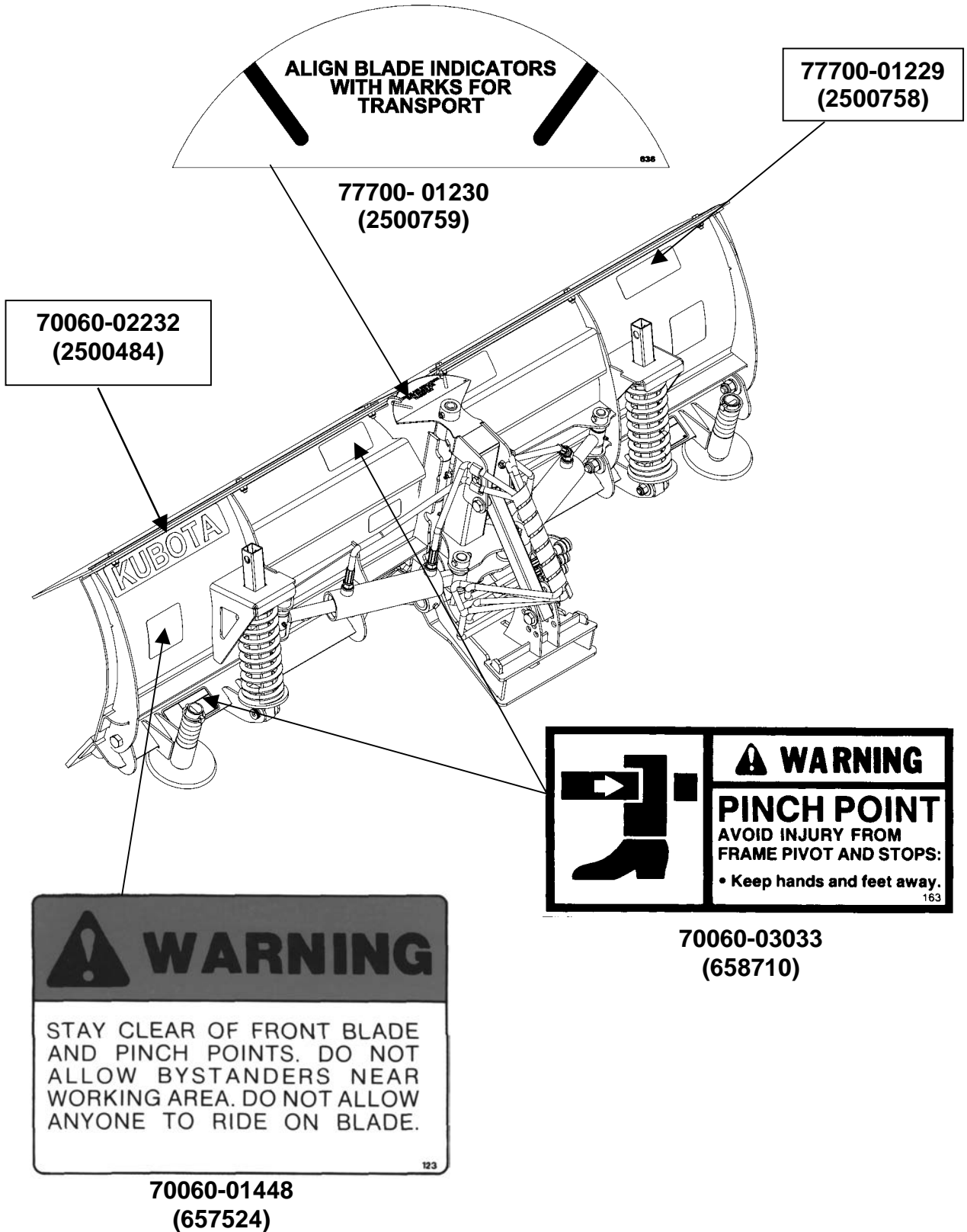
## STORAGE

### **Before storing the subframe or blade, certain precautions should be taken to protect it from deterioration.**

1. Clean the subframe and blade thoroughly.
2. Make all the necessary repairs.
3. Replace all safety signs that are damaged, lost, or otherwise become illegible. If a part to be replaced has a sign on it, obtain a new safety sign from your dealer and install it in the same place as on the removed part.
4. Repaint all parts from which paint has worn or peeled.
5. Lubricate the subframe and blade as instructed under "**Lubrication**" section.
6. When the subframe and blade are dry, oil all moving parts. Apply oil liberally to all surfaces to protect against rust.
7. Store in a dry place.

# DECALS

**FOR KUBOTA USA**  
**Replace Immediately if Damaged**



# DECALS

**FOR KUBOTA CANADA**  
**Replace Immediately if Damaged**




**ATTENTION**

1. DEMEUREZ ET GARDEZ TOUTE PERSONNE HORS D'ATTEINTE DE LA LAME LORS DE L'UTILISATION OU DE L'AJUSTEMENT.  
 2. NE PAS TRANSPORTER DE PASSAGER SUR LA LAME.

124

**70060-01396  
 (657525)**




**WARNING**

**PINCH POINT**  
 AVOID INJURY FROM FRAME PIVOT AND STOPS:  
 • Keep hands and feet away.

163

**70060-03033  
 (658710)**




**MISE EN GARDE**

**POINT DE PINCEMENT**  
 CHÂSSIS PIVOTANT. PEUT PROVOQUER DES BLESSURES:  
 • Garder mains et pieds éloignés.

231

**70060-03762  
 (660990)**



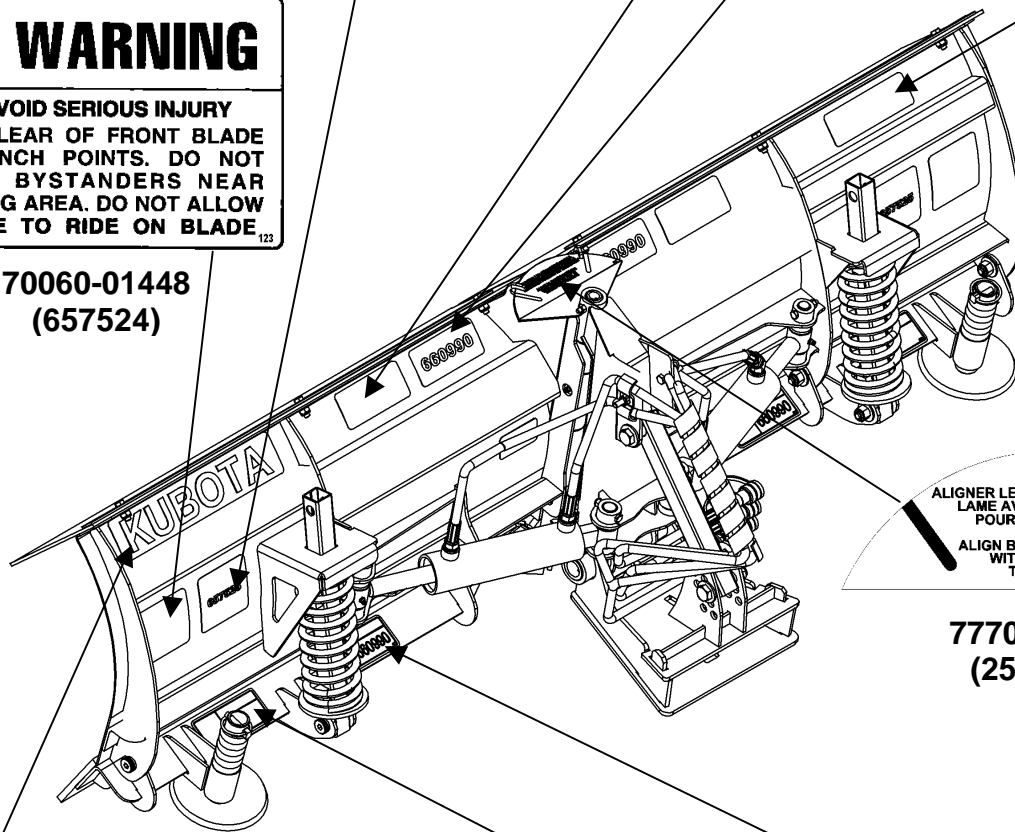
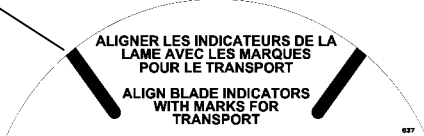
**WARNING**

TO AVOID SERIOUS INJURY STAY CLEAR OF FRONT BLADE AND PINCH POINTS. DO NOT ALLOW BYSTANDERS NEAR WORKING AREA. DO NOT ALLOW ANYONE TO RIDE ON BLADE.

122

**70060-01448  
 (657524)**

**77700-01229  
 (2500758)**

ALIGNER LES INDICATEURS DE LA LAME AVEC LES MARQUES POUR LE TRANSPORT  
 ALIGN BLADE INDICATORS WITH MARKS FOR TRANSPORT

637

**77700-01231  
 (2500760)**

**70060-02232  
 (2500484)**




**WARNING**

**PINCH POINT**  
 AVOID INJURY FROM FRAME PIVOT AND STOPS:  
 • Keep hands and feet away.

163

**70060-03033  
 (658710)**



**MISE EN GARDE**

**POINT DE PINCEMENT**  
 CHÂSSIS PIVOTANT. PEUT PROVOQUER DES BLESSURES:  
 • Garder mains et pieds éloignés.

231

**70060-03762  
 (660990)**

# ASSEMBLY

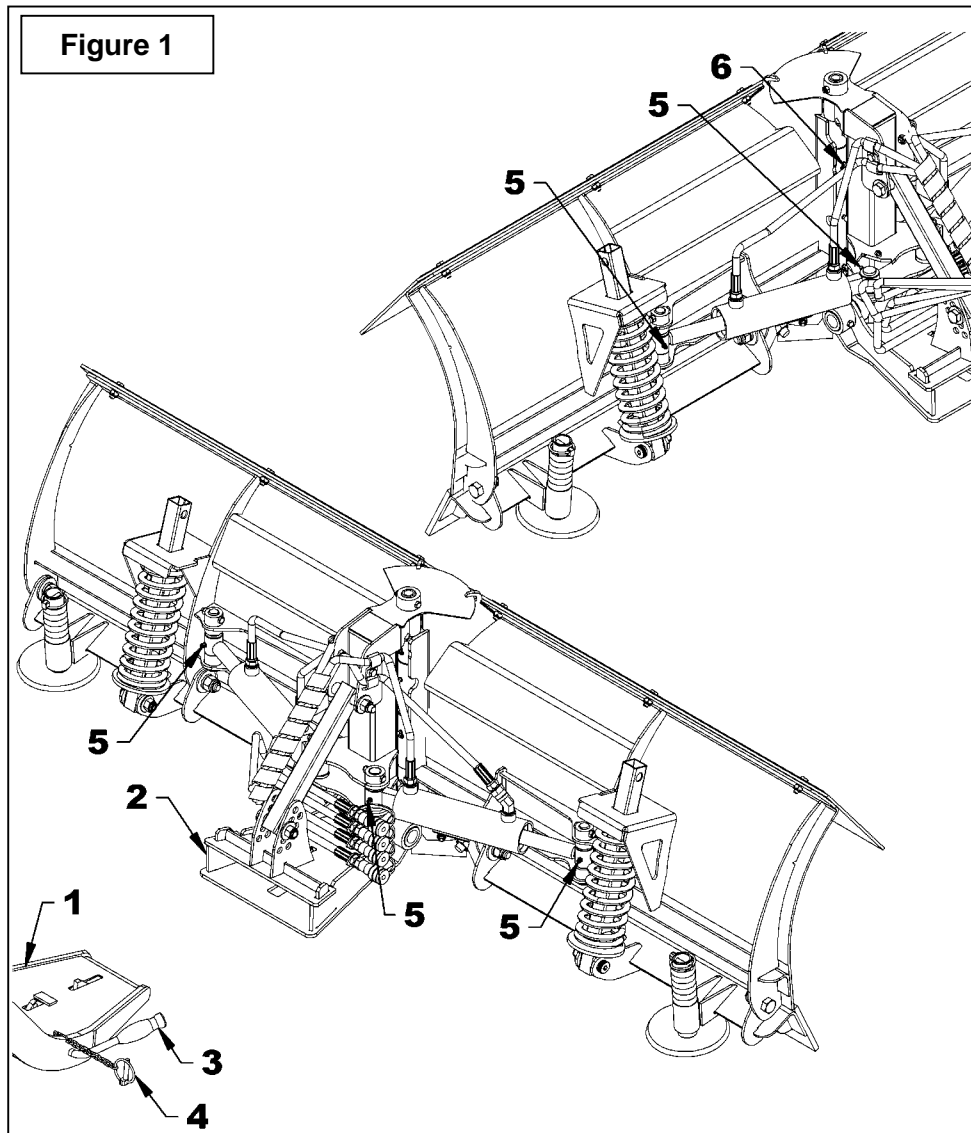
## BLADE INSTALLATION

### Mounting the Blade on the Vehicle

(Figure 1)

1. Insert the male quick hitch (item 1) into the female quick hitch (item 2), turn the engine off and set the parking brake. Lock in place by moving the lever (item 3) to lock position (fully forward). Secure latch with linchpin (item 4).
2. With the engine stopped, relieve pressure from the hydraulic system by putting the vehicle's hydraulic system in the float position.
3. Connect the blade hoses to the male couplers of the hydraulic system installed on the vehicle making sure to match the colored identification rings.
4. Grease the fittings (item 5) at each end of the cylinders as well as the pivot pin (item 6).

**NOTE:** If the blade angling movement is not as desired, turn off the engine, relieve the pressure in the hydraulic block and reverse the hoses on the quick couplers.



# OPERATION

## BLADE OPERATION

The blade has been designed so the cutting edge pivots towards the back when it hits an obstacle. Once the blade clears the obstacle, the cutting edge will return to its normal position.

### Raising, Lowering and Angling the Blade

Refer to the Operator's Manual of the hydraulic control kit (V4204 or upgraded V4203).



#### **WARNING:**

To avoid serious personal injury due to hot, high-pressure oil, never disconnect hydraulic hoses with the blade in raised position.

**IMPORTANT:** To avoid damaging the blade, always operate the blade in float mode and never put pressure downwards.



**WARNING:** To avoid serious personal injury:

- Do not allow bystanders near working area.
- Do not allow anyone to ride on blade or quick hitch.
- Before cleaning, adjusting or repairing the front blade: bring the vehicle to a complete stop, shut off the engine and remove the ignition key.
- Never put any part of your body under the blade while making adjustments.

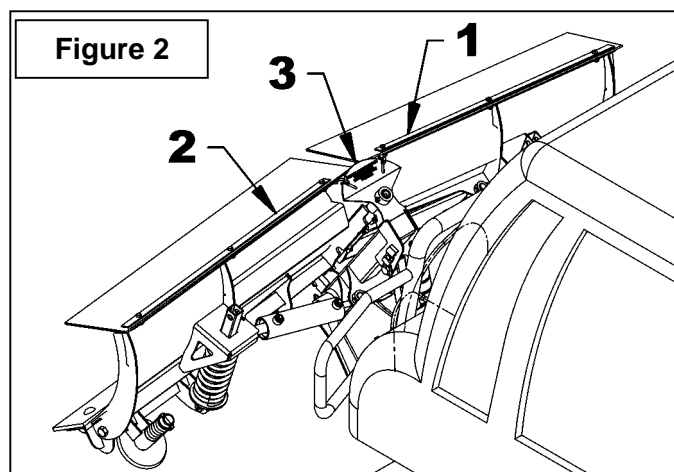
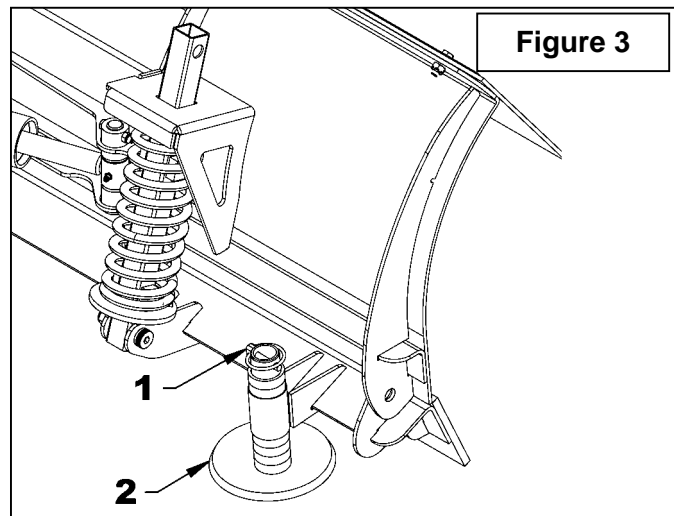
### Transport Mode (Figure 2)

During transport, the blade must be raised to the fullest and the right and left blades (items 1-2) placed in the positions indicated on the decal (item 3).

### Skid Shoe Adjustment (Figure 3)

Park the vehicle/equipment on level ground, place the transmission in neutral, set the parking brake, raise the blade to transport position (provide adequate blocking before working on the blade), shut off the engine and remove the ignition key. Remove the linchpin (item 1) from both skid shoes (item 2).

Remove or add spacers, placing more spacers below the support brackets for more clearance. (There must always be a total of six spacers below and above the support brackets.) Set both skid shoes at the same height. Reinstall the linchpins (item 1).



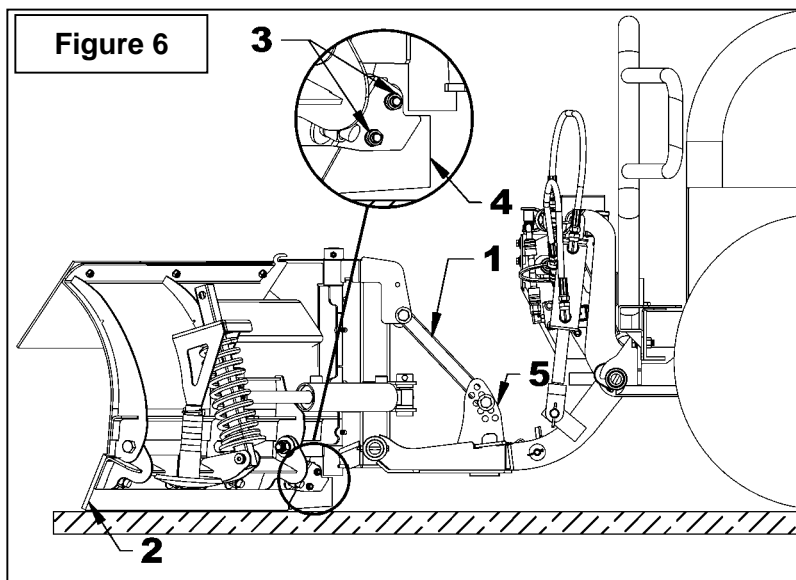
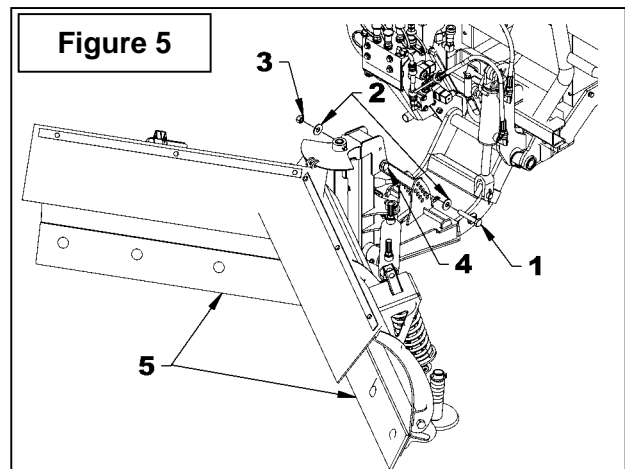
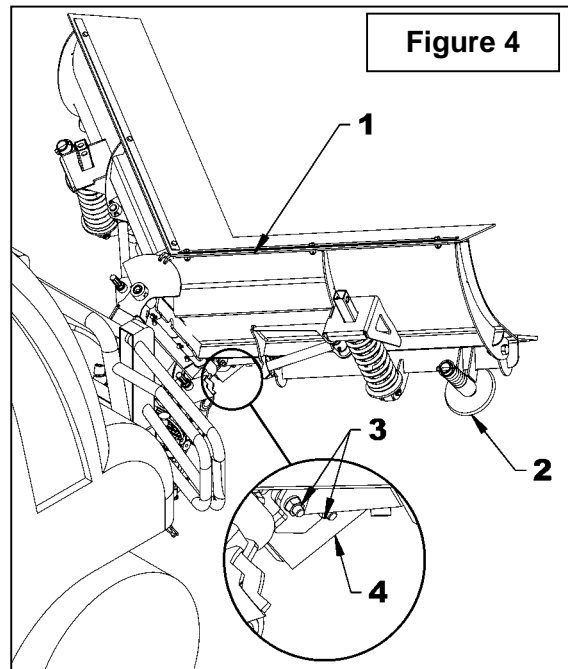
# OPERATION

## Adjusting the Tilt System and the Middle Cutting Edges

### (Figure 4)

To maintain the cutting edges parallel with the ground, adjusting the tilt is necessary to compensate for cutting edge wear and the height of the vehicle. This adjustment must be performed on flat and leveled grounds.

1. **Figure 4:** Raise the blade (item 1) and place in the "V" position. Raise the skid shoes (item 2) to the maximum and partially unscrew the nuts (item 3) that hold the middle cutting edges (item 4).
2. **Figure 5:** Place the blade in float mode and lower it to the ground. Remove the 1/2"NC x 3" lg bolt (item 1), the two 1/2" flat washers (item 2) and the 1/2" NC nylon insert nut (item 3). Loosen the bolt (item 4) but do not remove.
3. **Figure 6:** Position the adjustment arm (item 1) in one of the adjustment plate holes (item 5) that will allow the cutting edges (item 2) to rest completely on the ground. Reinstall the hardware removed at step 2. Make sure the middle cutting edges (item 4) sit well on the ground. Screw in the nuts (item 3) that hold the middle cutting edges (item 4).



# OPERATION - MAINTENANCE

## Inverting the Cutting Edges (Figure 7)

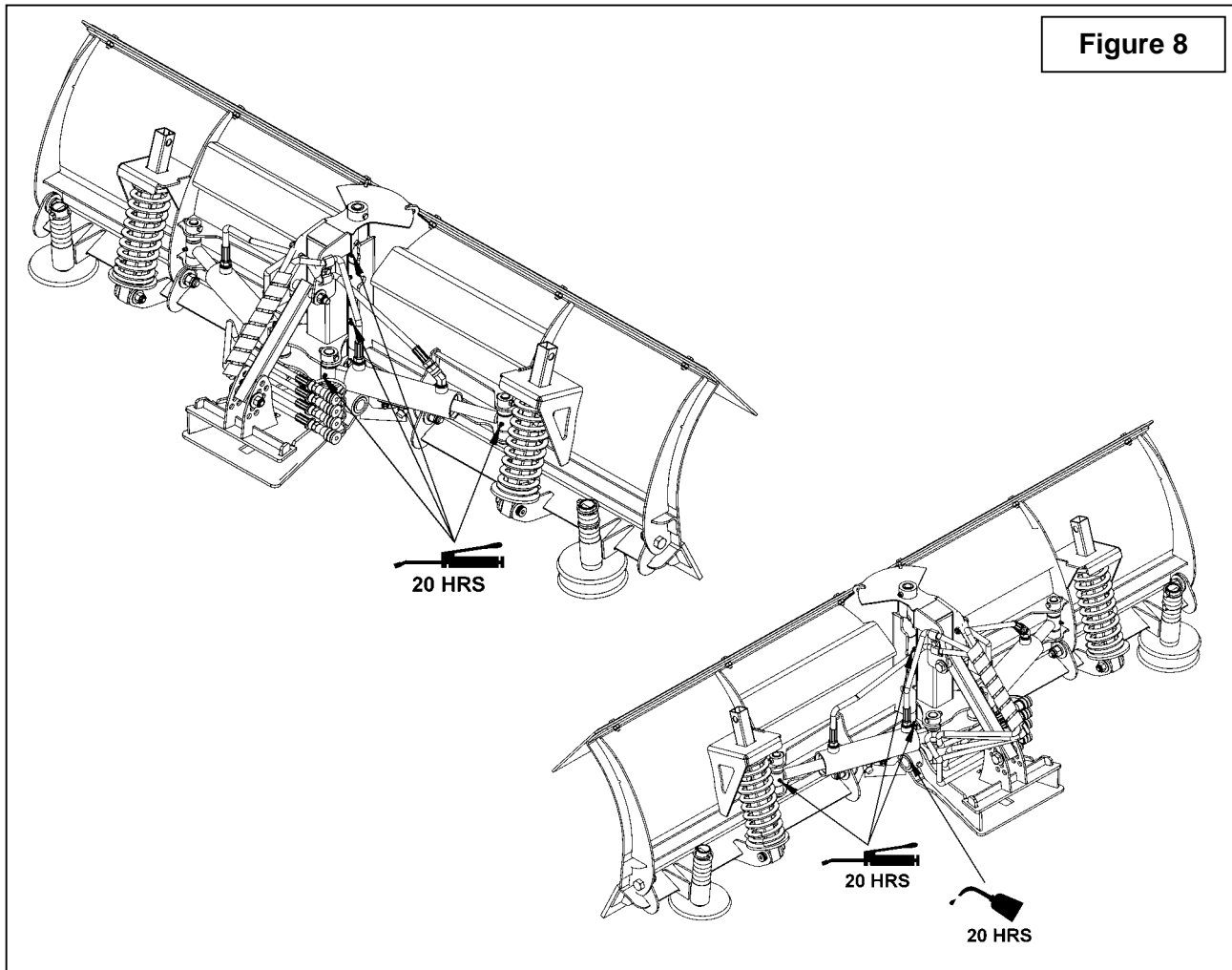
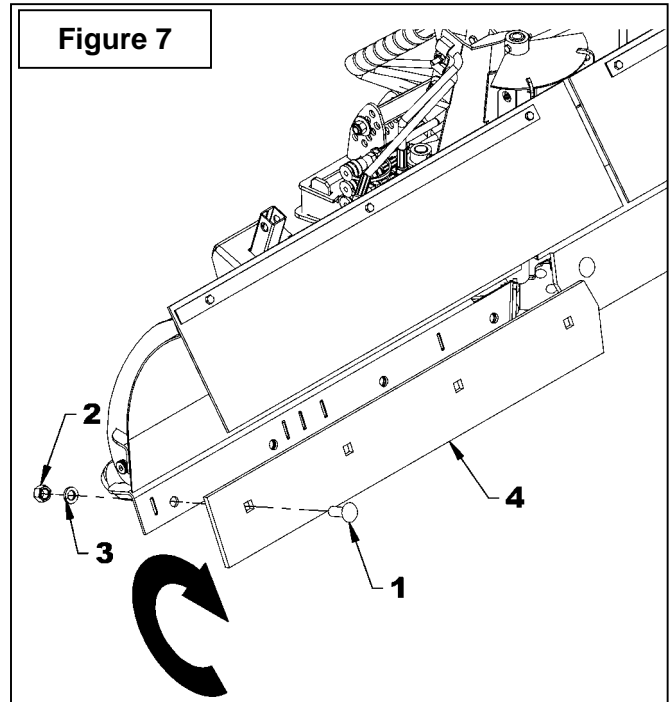
When the cutting edges are worn, remove the 5/8"NC x 1 1/2" cutting edges (item 1), the 5/8"NC nuts (item 2) and the 5/8" flat washers (item 3). Turn the cutting edge 180° (item 4) and reinstall the hardware.

## BLADE MAINTENANCE

Remove dirt from pivot points and angling cylinders every 8 hours of operation, especially in cold weather.

## Lubrication (Figure 8)

- Grease or oil all points indicated every 20 hours of operation.
- Lubricate all moving parts every 8 hours.



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# PARTS

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## **INTRODUCTION**

All parts are illustrated in "exploded views" which show the individual parts in their normal relationship to each other. Reference numbers are used in the illustrations. These numbers correspond to those in the "Reference Number" (REF) column, and are followed by the description and quantity required.

"Right Hand" and "Left Hand" sides of the machine are determined by those seen by the conductor looking at the back of the machine.

Orders must give the complete description, correct part number, the total amount required, the serial number, the method of shipment and the shipping address.

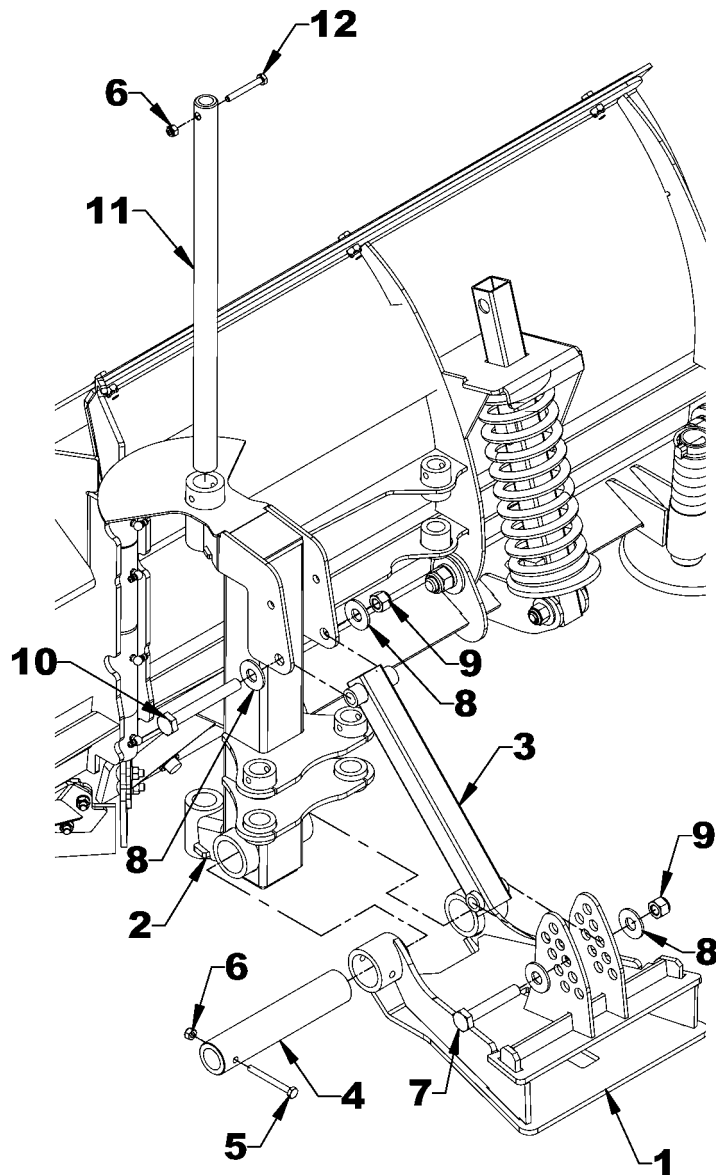
The manufacturer reserves the right to change, modify, or eliminate from time to time, for technical or other reasons, certain or all data, specifications, or the product or products themselves, without any liability or obligation.



# PARTS

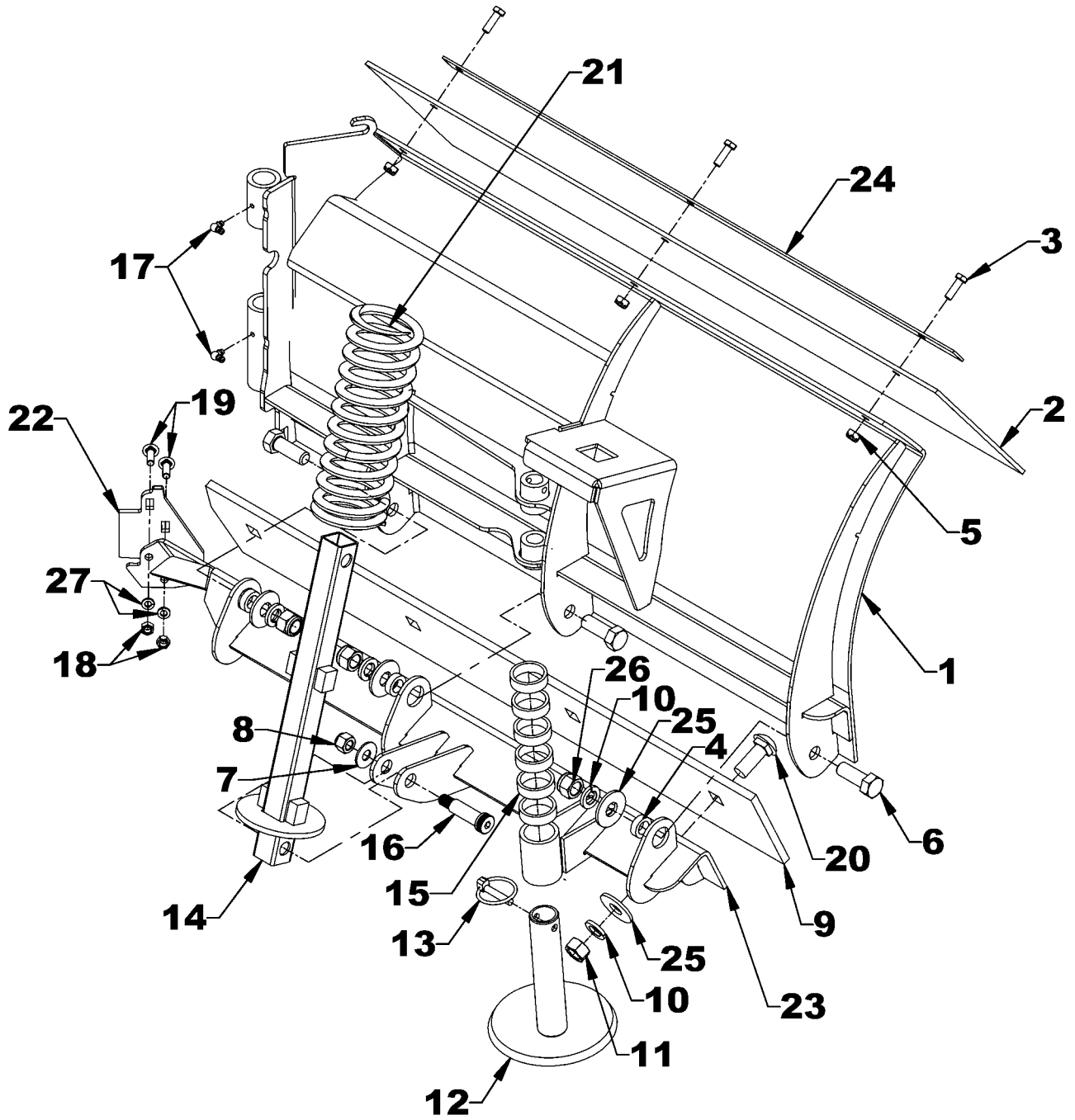
## HITCH AND TILT SYSTEM

REF.	DESCRIPTION	QTY	PART #	CODE
1	Quick hitch	1	77700-01215	668912
2	Tilt system	1	77700-01216	668913
3	Adjustment arm	1	77700-01217	668914
4	Pin 1 1/2" x 7 19/32" lg., PTD	1	77700-01234	668925
5	Bolt hex. 1/4"NC x 2 1/2" lg gr.5 PTD	1	75599-01150	0100012
6	Nut nylon insert 1/4"NC PTD	2	75599-31911	1000003
7	Bolt hex. 1/2"NC x 3" lg. gr.5 PTD	1	75599-01560	0100077
8	Flat washer 1/2" (ø9/16" int.) PTD	4	75599-32016	1400006
9	Nut nylon insert ø1/2"NC, PTD	2	75599-31915	1000011
10	Bolt hex 1/2"NC x 4" lg. gr. 5. PTD	1	75599-01580	0100080
11	Pin 1" x 19" lg., PTD	1	77700-01224	668922
12	Bolt hex. 1/4" NC x 2" lg gr. 5 PTD	1	75599-01140	0100010



# PARTS

## RIGHT BLADE ASSEMBLY



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# PARTS

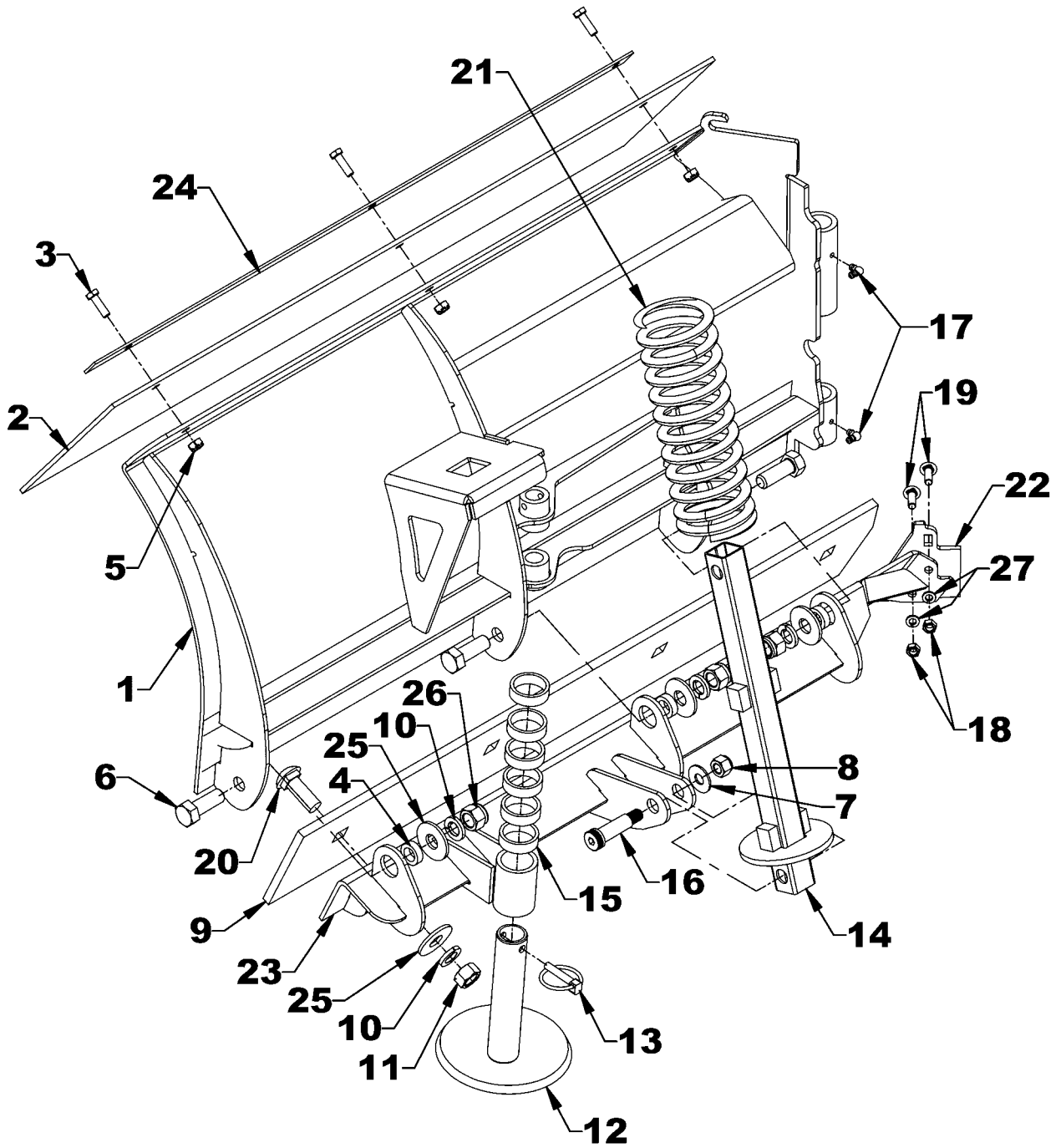
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## RIGHT BLADE ASSEMBLY

REF.	DESCRIPTION	QTY	PART #	CODE
1	Blade - RH	1	77700-01213	668909
2	Snow deflector	1	77700-01212	668756
3	Bolt hex. 5/16" NC x 1" lg. Gr.5, PTD	3	75599-01220	0100019
4	Bushing	3	77700-01251	668969
5	Nut nylon insert 5/16"NC PTD	3	75599-31912	1000005
6	Bolt 5/8" dia. X 1 3/4" lg. gr. 5 PTD	3	77700-01254	0100094
7	Flat washer 7/16" (ø1/2" int.) PTD	1	75599-32015	1400005
8	Nut nylon insert 1/2" NC, PTD	1	75599-31915	1000011
9	Cutting edge	1	77700-01223	668921
10	Lockwasher 5/8" PTD	7	75599-33017	1200007
11	Nut hex. 5/8" NC, PTD	4	75599-31017	0900007
12	Skid shoe	1	77700-00972	668809
13	Linchpin 5/16", PTD	1	70060-02706	1900001
14	Spring guide	1	77700-01221	668919
15	Spacer ring	6	77700-00973	668810
16	Shoulder screw 5/8" dia. X 1 3/4" x 1/2" NC	1	77700-01233	3200026
17	Grease fitting 1/4" NF 90°	2	70060-01627	658566
18	Nut hex 5/16"NC, PTD	2	75599-31012	0900002
19	Bolt carriage 5/16"NC x 1" lg. gr.5 PTD	2	70001-00793	0300003
20	Bolt carriage 5/8"NC x 1 1/2" lg. gr. 5 PTD	4	77700-00955	0300043
21	Compression Spring	1	77700-01228	2200021
22	Middle cutting edge	1	77700-01220	668918
23	Cutting edge support - RH	1	77700-01218	668915
24	Snow deflector reinforcement	1	77700-01222	668920
25	Flat washer 5/8" (11/16" int.) PTD	7	75599-32017	1400008
26	Nut nylon insert 5/8" NC PTD	3	77700-01199	1000012
27	Lockwasher 5/16" PTD	2	75599-33012	1200003

# PARTS

## LEFT BLADE ASSEMBLY



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# PARTS

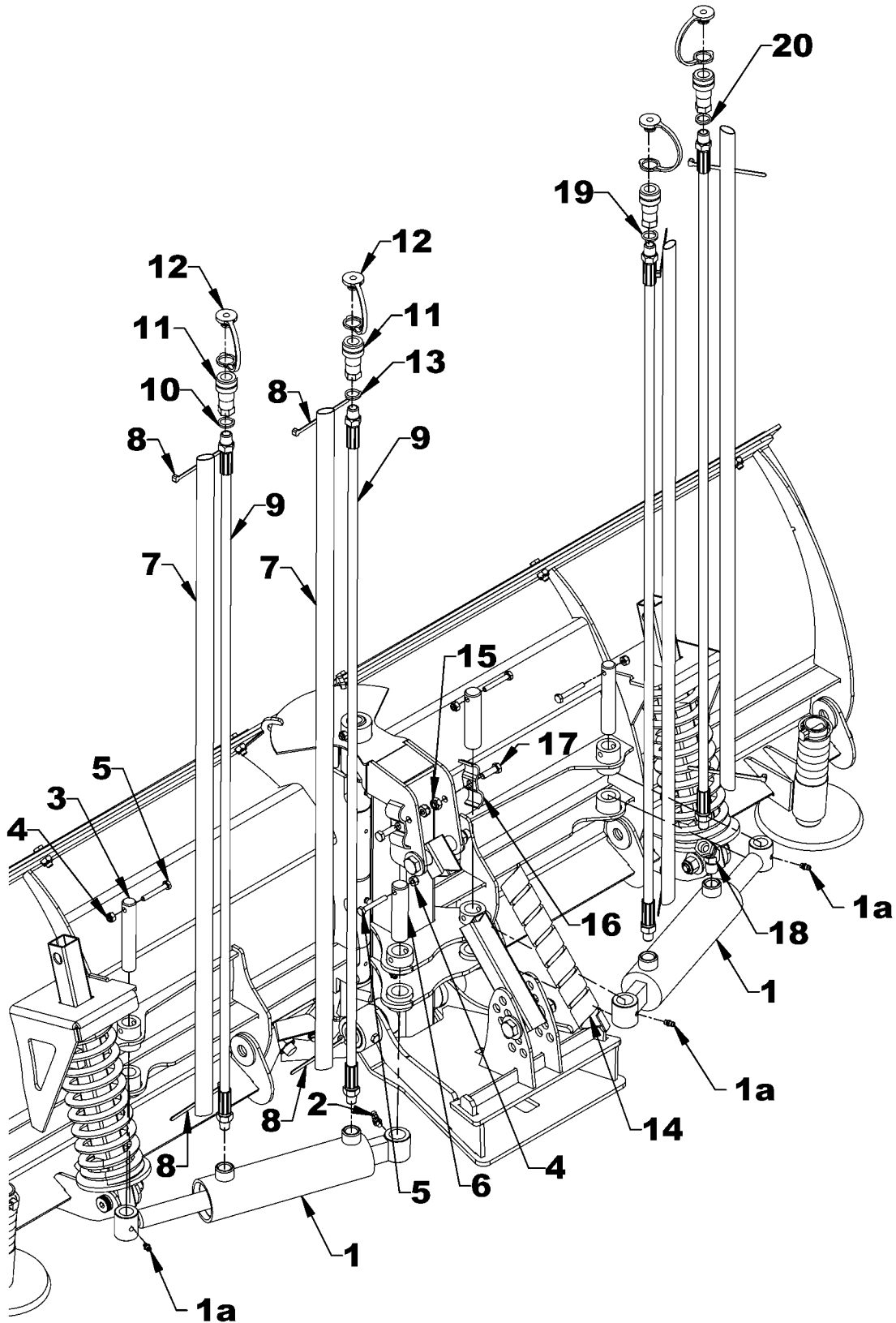
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## LEFT BLADE ASSEMBLY

REF.	DESCRIPTION	QTY	PART #	CODE
1	Blade - LH	1	77700-01214	668911
2	Snow deflector	1	77700-01212	668756
3	Bolt hex. 5/16" NC x 1" lg. Gr.5, PTD	3	75599-01220	0100019
4	Bushing	3	77700-01251	668969
5	Nut nylon insert 5/16"NC PTD	3	75599-31912	1000005
6	Bolt 5/8" dia. X 1 3/4" lg. gr. 5 PTD	3	77700-01254	0100094
7	Flat washer 7/16" (ø1/2" int.) PTD	1	75599-32015	1400005
8	Nut nylon insert 1/2" NC, PTD	1	75599-31915	1000011
9	Cutting edge	1	77700-01223	668921
10	Lockwasher 5/8" PTD	7	75599-33017	1200007
11	Nut hex. 5/8" NC, PTD	4	75599-31017	0900007
12	Skid shoe	1	77700-00972	668809
13	Linchpin 5/16", PTD	1	70060-02706	1900001
14	Spring guide	1	77700-01221	668919
15	Spacer ring	6	77700-00973	668810
16	Shoulder screw 5/8" dia. X 1 3/4" x 1/2" NC	1	77700-01233	3200026
17	Grease fitting 1/4" NF 90°	2	70060-01627	658566
18	Nut hex 5/16"NC, PTD	2	75599-31012	0900002
19	Bolt carriage 5/16"NC x 1" lg. gr.5 PTD	2	70001-00793	0300003
20	Bolt carriage 5/8"NC x 1 1/2" lg. gr. 5 PTD	4	77700-00955	0300043
21	Compression Spring	1	77700-01228	2200021
22	Middle cutting edge	1	77700-01220	668918
23	Cutting edge support - LH	1	77700-01217	668916
24	Snow deflector reinforcement	1	77700-01222	668920
25	Flat washer 5/8" (11/16" int.) PTD	7	75599-32017	1400008
26	Nut nylon insert 5/8" NC PTD	3	77700-01199	1000012
27	Lockwasher 5/16" PTD	2	75599-33012	1200003

# PARTS

## HYDRAULIC COMPONENTS



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# PARTS

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## HYDRAULIC COMPONENTS

REF.	DESCRIPTION	QTY	PART #	CODE
1	Cylinder 2" x 6 1/2"	2	70001-00636	664979
1a	Grease fitting 1/4" NF	2	70060-00940	654106
	Seal Kit	1	70001-00660	665017
2	Grease fitting 1/4" - 45°	1	70060-02853	657749
3	Pin 3/4" x 4 3/8" lg, PTD	2	77700-01225	668923
4	Nut nylon insert 1/4"NC PTD	4	75599-31911	1000003
5	Bolt hex. 1/4"NC x 1 3/4"lg gr.5 PTD	4	75599-01135	0100009
6	Pin 7/8" x 3 1/2" lg. PTD	2	77700-01226	668924
7	Protective nylon sheath 42 1/2" lg.	4	77700-01227	668926
8	Tie wrap2.5mm X 4" lg., black	8	77700-00985	2100001
9	Hose rubber 1/4" x 45" lg. 1/4" NPT male x 3/8" NPT male	4	70060-04244	658376
10	Identification ring - red	1	70060-01726	658204
11	Quick coupler 1/4" NPT female	4	70060-04310	664668
12	Dust plug 1/4" non threaded	4	70060-00336	2600061
13	Identification ring - blue	1	70060-01727	658205
14	Plastic guard for hoses 10" lg black	1	77700-01136	668890
15	Nut nylon insert 5/16"NC PTD	2	75599-31912	1000005
16	Hose clamp	2	70060-02294	666583
17	Bolt hex. 5/16" NC x 1" lg. Gr.5, PTD	2	75599-01220	0100019
18	Elbow 45°, 3/8" NPT RM x 3/8" NPT PVF.	1	70001-00631	655269
19	Identification ring - yellow	1	70060-01569	658206
20	Identification ring - green	1	70060-01570	658209

# TORQUE SPECIFICATION TABLE

## **GENERAL SPECIFICATION TABLE**

Use the following torques when special torques are not given. Note: These values apply to fasteners as received from supplier, when dry. These values do not apply if lubricants are used.

BOLT SIZES (SAE)	TORQUE	
INCHES	Pounds-Foot	Newton-Meters
1/4	5	7
5/16	10	14
3/8	20	27
7/16	25	41
1/2	88	119
5/8	165	224
3/4	297	403
9/16	121	164
7/8	440	597
1	638	865
1 1/8	840	1139
1 1/4	1180	1600
1 3/8	1570	2129
1 1/2	2070	2807

BOLT SIZES (METRIC)	TORQUE	
MILLIMETERS	Pounds-Foot	Newton-Meters
M6	10	13
M8	22	30
M10	40	54
M12	59	80
M14	93	126
M16	130	176
M18	168	228
M20	205	278









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