

# OWNER'S/ OPERATOR'S MANUAL

## MODEL NO.'s

**SBS-2160**

**SBS-2172**

**SBS-2790A**

**SBS-27108A**

**SBFL-2160**

**SBFL-2172**

**SBFL-2790A**

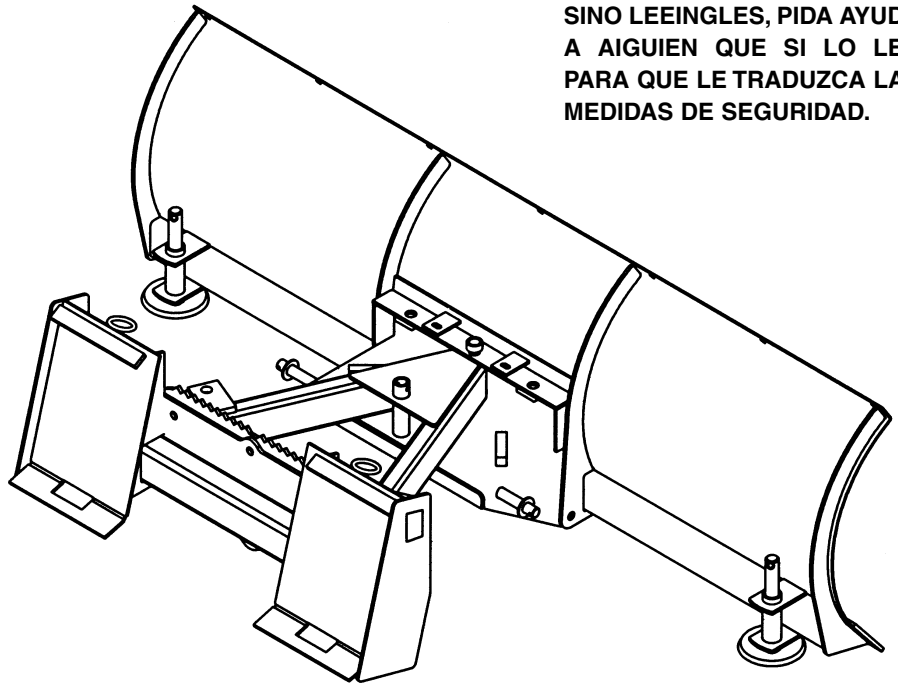
**SBG-2790A**

**SBG-27108A**

**SBFL-27108A**

### **⚠ CAUTION**

For Safe Operation  
Read Rules And  
Instructions Carefully



Model SBS-2790A Shown

# Snow Blades for Skid Steer and Tractor Front Loaders

**Safety Instructions**  
**Tractor Preparation**  
**Operating Instructions**

**Assembly & Mounting**  
**Maintenance**  
**Repair Parts**

## **⚠ CAUTION ⚠**

### **THE FOLLOWING SAFETY PRECAUTIONS SHOULD BE THOROUGHLY UNDERSTOOD BEFORE ATTEMPTING TO BEGIN ASSEMBLING THIS MACHINE**

1. Select an area for assembly that is clean and free of any debris which might cause persons working on the assembly to trip.
2. Do not lift heavy parts or assemblies. Use crane, jack, tackle, fork trucks or other mechanical devices.
3. Preview the assembly instructions in your operator's manual before proceeding further.
4. If the assembly instructions call for parts or assemblies to be blocked up, use only blocking material that is in good condition and is capable of handling the weight of the assembly to be blocked. Also insure that the blocking material is on a clean, dry surface.
5. Never put hands, or any part of body, under blocked up assemblies if at all possible.
6. After completing assembly, thoroughly inspect the machine to be sure that all nuts, bolts, hydraulic fittings or any other fastened assemblies have been thoroughly tightened.
7. Before operating the machine, thoroughly read the operation section of your operator's manual.
8. Before operating, read the maintenance section of your operator's manual to be sure that any parts requiring lubrication, such as gearboxes, are full, to avoid any possible damage.
9. **Before operating equipment – If you have any questions regarding the proper assembly or operation, contact your dealer or representative.**

# TABLE OF CONTENTS

WARRANTY .....	2
SAFETY INFORMATION .....	3-10
SAFETY SIGNS .....	11-12
PREPARATION INSTRUCTIONS .....	13
ASSEMBLY .....	14-16
OPTIONAL HYDRAULIC ANGLE KIT INSTRUCTIONS ..	17
OPERATING INSTRUCTIONS .....	18-20
OWNER SERVICE .....	21
MODELS SBFL-2160 & SBFL-2172 PARTS .....	22
MODELS SBS-2160 & SBS-2172 PARTS .....	23
MODELS SBS-2790A & SBS-27108A PARTS .....	24
MODELS SBFL-2790A & SBFL-27108A PARTS .....	25
MODELS SBG-2790A & SBG-27108A PARTS .....	26
OPTIONAL HYDRAULIC ANGLE KIT PARTS .....	27-31
OPTIONAL MARKER KIT .....	32
NOTES .....	33-36

SINO LEEINGLES, PIDA AYUDA A AIGUIEN QUE SI LO LEA PARA QUE LE TRADUZCA LAS MEDIDAS DE SEGURIDAD.

## STATEMENT OF POLICY

It is the policy of Worksaver, Inc. to improve its products where it is possible and practical to do so. Worksaver, Inc. reserves the right to make changes or improvements in design and construction at any time, without incurring the obligation to make these changes on previously manufactured units.

## TO THE OWNER:

Read this manual before using your Snow Blade. This manual is provided to give you the necessary operating and maintenance instructions for keeping your Snow Blade in top operating condition. Please read this manual thoroughly. Understand what each control is for and how to use it. Observe all safety signs on the machine and noted throughout the manual for safe operation of implement. Keep this manual handy for ready reference.

Like all mechanical products, it will require cleaning and upkeep.

Use only genuine Worksaver, Inc. service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model and serial number of your Snow Blade here:

Model: \_\_\_\_\_ Serial Number: \_\_\_\_\_

## RETAIL CUSTOMER'S RESPONSIBILITY

**It is the Retail Customer and/or Operator's responsibility to read the Operator's Manual, to operate, lubricate, maintain, and store the product in accordance with all instructions and safety procedures. Failure of the operator to read the Operator's Manual is a misuse of this equipment.**

**It is the Retail Customer and/or Operator's responsibility to inspect the product and to have any part(s) repaired or replaced when continued operation would cause damage or excessive wear to other parts or cause a safety hazard.**

**It is the Retail Customer's responsibility to deliver the product to the authorized Worksaver Dealer, from whom he purchased it, for service or replacement of defective parts which are covered by warranty. Repairs to be submitted for warranty consideration must be made within forty-five (45) days of failure.**

**It is the Retail Customer's responsibility for any cost incurred by the Dealer for traveling to or hauling of the product for the purpose of performing a warranty obligation or inspection.**

# LIMITED WARRANTY

Worksaver warrants to the original purchaser of any new Snow Blade (Models SBS-2160, SBS-2172, SBS-2790A, SBS-27108A, SBFL-2160, SBFL-2172, SBFL-2790A, SBFL-27108A, SBG-2790A, SBG-27108A), that the equipment be free from defects in material and workmanship for a period of six (6) months for non-commercial, state, and municipalities. Use sixty (60) days for commercial use from date of retail sale.

Replacement or repair parts installed in the equipment covered by this warranty are warranted for sixty (60) days from the date of purchase of such part or to the expiration of the applicable new equipment warranty period, whichever occurs later.

Such parts shall be provided at no cost to the user during regular working hours. Worksaver reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

## DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES

Worksaver's obligation under this warranty, to the extent allowed by law, is in lieu of all warranties, implied or expressed, including implied warranties of merchantability and fitness for a particular purpose and any liability for incidental and consequential damages with respect to the sale or use of the items warranted. Such incidental and consequential damages shall include but not be limited to: transportation charges other than normal freight charges; cost of installation other than cost approved by Worksaver; duty; taxes; charges for normal service or adjustments; loss of crops or any other loss of income; rental of substitute equipment, expenses due to loss, damage, detention or delay in the delivery of equipment or parts resulting from acts beyond the control of Worksaver.

## THIS WARRANTY SHALL NOT APPLY:

1. To vendor items which carry their own warranties, such as hydraulic cylinders, tires, and tubes.
2. If the unit has been subjected to misapplication, abuse, misuse, negligence, fire or other accident.
3. If parts not made or supplied by Worksaver have been used in connection with the unit, if, in sole judgement of Worksaver such use affects its performance, stability, or reliability.
4. If the unit has been altered or repaired outside of an authorized Worksaver dealership in a manner which, in the sole judgement of Worksaver affects its performance, stability or reliability.
5. To normal maintenance service and normal replacement items such as gearbox lubricant, hydraulic fluid, worn blades, or to normal deterioration of such things as belts and exterior finish, due to use or exposure.
6. To expendable or wear items such as bushings, cutting edge, belts, springs and other items that in the company's sole judgement is a wear item.

NO EMPLOYEE OR REPRESENTATIVE OF WORKSAVER IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGE IS MADE IN WRITING AND SIGNED BY WORKSAVER'S SERVICE MANAGER, POST OFFICE BOX 100, LITCHFIELD, ILLINOIS 62056-0100.

# To the Owner/Operator/Dealer

All implements with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes the potential hazards and follows reasonable safety practices. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.

## BEFORE YOU START!!

**Read the safety messages on the implement and shown in your manual.  
Observe the rules of safety and common sense!**



**THIS SYMBOL MEANS**

- ATTENTION!
- BECOME ALERT!
- YOUR SAFETY IS INVOLVED!

THIS SAFETY ALERT SYMBOL IDENTIFIES IMPORTANT SAFETY WARNING MESSAGES. CAREFULLY READ EACH WARNING MESSAGE THAT FOLLOWS. FAILURE TO UNDERSTAND AND OBEY A SAFETY WARNING, OR RECOGNIZE A SAFETY HAZARD, COULD RESULT IN AN INJURY OR DEATH TO YOU OR OTHERS AROUND YOU. THE OPERATOR IS ULTIMATELY RESPONSIBLE FOR THE SAFETY OF HIMSELF, AS WELL AS OTHERS, IN THE OPERATING AREA OF THE TRACTOR AND ATTACHED EQUIPMENT.

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## UNDERSTAND SIGNAL WORDS

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

**DANGER:** Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

**WARNING:** Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

**CAUTION:** Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

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

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## IMPORTANT SAFETY INFORMATION!

Working with unfamiliar equipment can lead to careless injuries. Read this manual, and the manual for your tractor, skid steer, or forklift, before assembly or operating, to acquaint yourself with the machines. It is the implement owner's responsibility, if this machine is used by any person other than yourself, is loaned or rented, to make certain that the operator, prior to operating:

1. Reads and understands the operator's manuals.
2. Is instructed in safe and proper use.













The use of this equipment is subject to certain hazards which cannot be protected against by mechanical means or product design. All operators of this equipment must read and understand this entire manual, paying particular attention to safety and operating instructions, prior to using. If there is something in this manual you do not understand, ask your supervisor, or your dealer, to explain it to you.

# SAFETY INSTRUCTIONS (continued)



## EQUIPMENT SAFETY GUIDELINES

-  Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.
  
-  In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.
  
-  Replace any CAUTION, WARNING, DANGER or instruction safety sign that is not readable or is missing. Location of such safety signs is indicated in this booklet.
  
-  Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.
  
-  Review the safety instructions with all users annually.
  
-  This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.**
  
-  To prevent injury or death, use a tractor equipped with a Roll-Over Protective System (ROPS). Keep foldable ROPS systems in "locked up" position at all times. Do not paint over, remove or deface any safety signs or warning signs on your equipment. Observe all safety signs and practice the instruction on them.
  
-  Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question – **DON'T TRY IT.**
  
-  Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
  
-  In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and Operation Instructions in each of the appropriate sections of the Tractor, Skid Steer, and Implement Manuals. Pay close attention to the Safety Signs affixed to the Tractor, Skid Steer, and the Implement.

# SAFETY INSTRUCTIONS (continued)



## OPERATIONAL SAFETY



The use of this equipment is subject to certain hazards which cannot be protected against by mechanical means or product design. All operators of this equipment must read and understand this entire manual, paying particular attention to safety and operating instructions, prior to using. If there is something in this manual you do not understand, ask your supervisor, or your dealer, to explain it to you.



Most accidents occur because of neglect or carelessness. Keep all helpers and bystanders fifty feet (50') from an operating power unit and attached equipment. Only properly trained people should operate this machine. It is recommended the tractor be equipped with a Rollover Protection System (ROPS) and a seat belt that is used. Always stop the tractor, skid steer, or forklift, set brake, shut off the engine, remove the ignition key, and lower loader and attachment to the ground before dismounting. Never leave equipment unattended with the engine running.



Please remember it is important that you read and heed the safety signs on the front loader attachment and loader, and the safety rules set forth. Clean or replace all safety signs if they cannot be clearly read and understood. They are there for your safety as well as the safety of others. The safe use of this machine is strictly up to you, the operator.



Be sure power unit is in good condition. Read all the safety precautions and make sure all operators are familiar with the safety rules of operation. Working with unfamiliar equipment can lead to careless injuries. It is the equipment owner's responsibility, if this machine is used by any person other than yourself, is loaned or rented, to make certain that the operator, prior to operating:

1. Reads and understands the operator's manuals.
2. Is instructed in safe and proper use.



Train all new personnel and review instructions frequently with existing workers. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.



Do not allow children to operate this machine.



Know your controls and how to stop the power unit and engine quickly in an emergency. **READ THIS MANUAL AND THE ONE PROVIDED WITH YOUR TRACTOR AND LOADER, OR SKID STEER.**



When the use of hand tools is required to perform any part of assembly, installation, adjustment, maintaining, repairing, removal, or moving the implement, be sure the tools used are designed and recommended by the tool manufacturer for that specific task.



Personal protection equipment including safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving the attachment.
















Always use two people to handle heavy, unwieldy components during assembly, installation, removal, or moving the loader attachment.

# SAFETY INSTRUCTIONS (continued)



## OPERATIONAL SAFETY

-  Never place any part of your body where it would be in danger if movement should occur during assembly, installation, operation, maintaining, repairing, removal, or moving the implement.
-  The use of any loader attachment is NOT recommended on tractor with a tricycle wheel arrangement. Tricycle type tractors are unstable for front loader use.
-  A heavy load can cause instability in driving a power unit. Make sure the front or rear of the power unit is properly counter-balanced with weights. Always drive slowly – especially around turns. An unstable power unit could steer badly and possibly tip over, causing injury or death.
-  Do not allow others to ride on the power unit with an operator. Riders are subject to injury such as being struck by foreign objects or being thrown off. Riders obstruct the operator's view resulting in unsafe operation. **Never allow anyone to ride on the implement!** Keep all bystanders at a safe distance.
-  Before you operate any equipment, check over all pins, bolts and connections to be sure all are securely in place. Replace any damaged or worn parts immediately.
-  Check that this attachment is securely mounted to the loader. Failure to install lock pins or have the latching mechanism engaged could result in injury or death.
-  Do not work under a raised loader unless it is securely blocked or held in position. Do not depend on the power unit hydraulic system to hold the implement in place.
-  Operate the loader controls smoothly, avoiding jerky operation. Stop loader gradually when lowering or lifting loads.
-  Beware of low electrical wires when loader is raised. Serious injury or death can result if contact is made.
-  Only use a power unit equipped with a ROPS cab or rollover protective structure. Keep foldable ROPS systems in “locked up” position at all times. Keep seat belt fastened.
-  Be certain the power unit is in neutral or park position before starting engine.
-  Always shut off power unit and shift to “Park” or set brakes when leaving unit. Always lower bucket or attachment to ground, relieve all hydraulic pressure. Remove key when leaving equipment unattended. Park in level area.
-  Keep alert and watch the rear as well as the front when working with the loader. Beware of lift clearance when raising loader to maximum height.

# SAFETY INSTRUCTIONS (continued)



## OPERATIONAL SAFETY (continued)



When maneuvering close to buildings or passing through narrow areas, be sure to allow sufficient clearance for the power unit, loader, and attachment. Drive slowly.



Operate loader from operator's seat only. Remain at controls until operating cycle is complete.



Use extreme care when working on inclines and hillsides.



Do not operate close to ditches, creeks or holes. Slow down when operating over rough surface. Use extreme caution when backfilling deep holes or trenches.



Allow for additional length of loader and attachment on power unit while turning.



Do not lift or carry anyone on loader or in bucket or on attachment.



When removing or changing the angle, be sure that your feet are never under the blade. Keep hands and feet away from blade pivot points and from under blade edge. Make adjustments only when the implement is attached to the power unit.



Do NOT exceed 10 miles per hour when operating. Avoid excessive speed during operation.



When moving snow, do not operate with the blade in the locked position.



Never lift blade above the operator's eye level or to a height where visibility is obstructed.



When using the blade, use extra care. **Do not ram blade** into piles of dirt or snow. **Ramming** can also dislodge operator from seat and/or tractor controls, resulting in possible serious injury or death.



Always ease the tractor into the load. It may be necessary to reposition and take less "bite" on the material to move it safely.



ALWAYS lower loader to the ground or block securely before performing any maintenance work.

















Inspect the entire machine periodically as indicated in the Maintenance Section of this manual. Look for loose fasteners, worn or broken parts, pinched hydraulic hoses, and leaky or loose fittings. Make sure all pins have cotter pins and washers. Serious injury may occur from not maintaining this machine in good working order.



# SAFETY INSTRUCTIONS (continued)



## TRANSPORT SAFETY

-  Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
-  The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
-  When driving the power unit and equipment on the road or highway under 20 mph (32 kph) at night or during the day, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.
-  Always be sure the implement is in the proper raised position for transport.
-  Reduce speed when transporting mounted implements to avoid bouncing and momentary loss of steering control.
-  Plan your route to avoid heavy traffic.
-  Always install transport locks, pins or brackets before transporting.
-  Do not drink and drive!
-  Watch for traffic when operating near or crossing roadways.
-  Turn curves or go up or down hills only at a low speed and at a gradual steering angle. Slow down on rough or uneven surfaces, and loose gravel.
-  Use extreme care and maintain minimum ground speed when transporting on hillside, over rough ground and when operating close to ditches or fences. Be careful when turning sharp corners.
-  Never allow riders on either power unit or implement. Falling off can kill.
-  Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, inter-sections, etc.
-  Do not exceed 20 mph (32 kph). Reduce speed on rough roads and surfaces.

# SAFETY INSTRUCTIONS (continued)



## MAINTENANCE SAFETY

**Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.**



Before working on this machine, drive to a level area, disengage the PTO, lower implement or loader (or if working underneath, raise and block securely), shut off the engine, relieve all hydraulic pressure, set the brakes, and remove the ignition keys.



Never work under equipment unless it is blocked securely. Never depend on hydraulic system to keep implement in raised position.



Do not use blocking made of concrete blocks, logs, buckets, barrels or any other material that could suddenly collapse or shift positions. Use only good quality blocking material.



Never operate controls from the ground. Operate the controls only from the operator's station.



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



Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance.



Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.



When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.








Openings in the skin and minor cuts are susceptible to infection from hydraulic fluid. If injured by escaping hydraulic fluid, see a doctor at once. Gangrene and death can result. Without immediate medical treatment, serious infection and reactions can occur.

# **SAFETY INSTRUCTIONS (continued)**








## **MAINTENANCE SAFETY (continued)**

-  After servicing, be sure all tools, parts and service equipment are removed.
-  Check to ensure all safety signs are installed and in good condition. (See safety sign section for location drawing.)
-  Do not allow grease or oil to build up on any deck or platform.
-  Never replace hex bolts with less than grade five bolts unless otherwise specified, i.e. shear bolts. Refer to bolt torque chart for head identification marking.
-  A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.

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



## **STORAGE SAFETY**

-  Following operation or when unhooking, stop the tractor, set the brakes, shut off the engine, relieve all hydraulic pressure and remove the ignition keys.
-  Store the unit in an area away from human activity. Do not permit children to play on or around the stored unit.
-  Do not park equipment where it will be exposed to livestock for long periods of time. Damage and livestock injury could result.
-  Make sure all parked machines are on a hard, level surface and engage all safety devices. Storage location should be level and solid to make connecting and unconnecting to power unit easy.
-  If blocking is used, make sure it is solid and secure before leaving area.

# SAFETY SIGNS

**⚠ WARNING**

TO AVOID SERIOUS INJURY OR DEATH:

- Read Operator's Manual before operating, servicing or repairing equipment. Follow all safety rules and instructions. (Manuals are available from your selling dealer.)
- Never allow riders.
- Keep bystanders away from equipment during operation.
- Operate from operator's seat only.
- Keep all shields in place and in good condition.
- Lower equipment to ground, stop engine, remove key and set brake before dismounting power unit.
- Never allow children or untrained persons to operate equipment.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

101289

**⚠ WARNING**

**Stand clear**

101027

**⚠ WARNING**



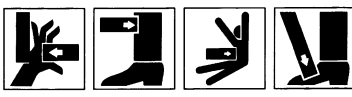
**HIGH-PRESSURE FLUID HAZARD**

To prevent serious injury or death:

- Relieve pressure on system before repairing or adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

700

**⚠ WARNING**

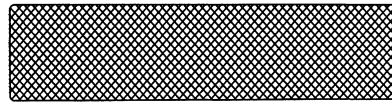


**CRUSHING AND PINCHING HAZARD**

- Be extremely careful with various parts of the machine. Pivoting blade can crush or pinch body parts.
- Operate controls from operator's seat only.
- Make sure parking brake is engaged before leaving operator's seat.
- Stand clear of machine while in operation or when it is being raised or lowered.

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.

101288



**Red Reflector #101260  
on 2790A & 27108A  
Models only**

**⚠ CAUTION**



**NO STEP**  
Enter from right side

For  
SBS Models only →

**⚠ CAUTION**

When getting on and off unit:

- Always face unit.
- Use hand holds on skid steer and steps with at least three points of support.
- Always mount and dismount from this side.

101290

REMEMBER: If Safety Signs have been damaged, removed, become illegible or parts replaced without Signs, new Safety Signs must be applied. New Safety Signs are available from your authorized distributor or factory.

## PLACEMENT OR REPLACEMENT OF SAFETY SIGNS

1. Clean the area of application with non-flammable solvent, and then wash the same area with soap and water.
2. Allow the surface to fully dry.
3. Remove the backing from the safety sign, exposing the adhesive surface.
4. Apply the safety sign to the position shown in the diagram above and smooth out any bubbles.

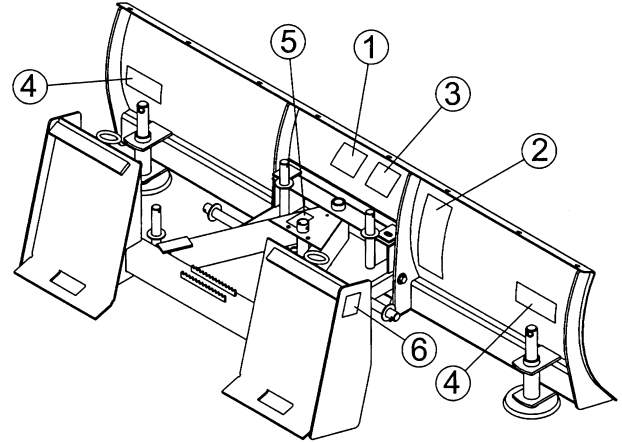
## INSTRUCTIONS

- Keep all safety signs clean and legible.
- Replace all missing, illegible, or damaged safety signs.
- Replacement parts for parts with safety signs attached must also have safety signs attached.

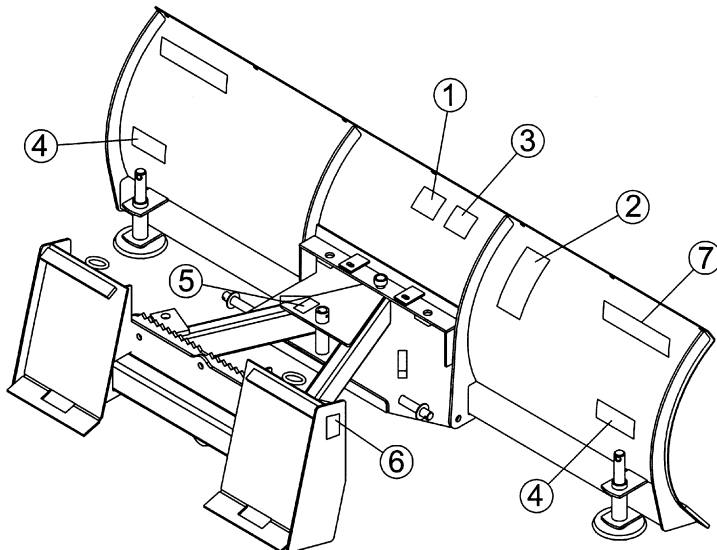
# SAFETY SIGN LOCATION

The types of safety signs and locations on the equipment are shown in the illustration below. Good safety requires that you familiarize yourself with various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

## Models 2160 & 2172



Ref. No.	Part No.	Description	No. Req'd.
1	101289	Safety Sign - Warning (Avoid Serious Injury)	1
2	101288	Safety Sign - Warning (Crushing and Pinching)	1
3	101122	Safety Sign - Warning (High-Pressure Fluid)	1
4	101027	Safety Sign - Warning (Stand Clear)	2
5	101291	Safety Sign - Caution (No Step) Model SBS-2160/72 only	1
6	101290	Safety Sign - Caution (Getting On/Off) Model SBS-2160/72 only	1



## Models 2790A & 27108A

Ref. No.	Part No.	Description	No. Req'd.
1	101289	Safety Sign - Warning (Avoid Serious Injury)	1
2	101288	Safety Sign - Warning (Crushing and Pinching)	1
3	101122	Safety Sign - Warning (High-Pressure Fluid)	1
4	101027	Safety Sign - Warning (Stand Clear)	2
5	101291	Safety Sign - Caution (No Step) SBS-2790A/27108A only	1
6	101290	Safety Sign - Caution (Getting On/Off) SBS-2790A/27108A only	1
7	101260	Safety Sign - Red Reflector (2x9)	2

The model and serial number plate is located on the right side of main frame.

# INSTRUCTIONS

## TRACTOR AND SKID STEER REQUIREMENTS AND PREPARATION

### 2160 & 2172 MODELS:

The Model SBS-2160, SBS-2172, SBFL-2160 and SBFL-2172 are for most compact tractor loaders up to 40hp. The SBS Models will also fit smaller skid steer models up to 35 hp.

The Models SBS-2160 and SBS-2172 are designed to mount on smaller skid steer units and tractor front loaders equipped with the universal quick-attach connection.

The Model SBFL-2160 and SBFL-2172 Snow Blades are designed for compact tractor front-end loaders. Optional mounting brackets are available for several quick-coupler type front-end loaders or pin-on type loaders.

An optional hydraulic angle control kit is offered for the 2160 and 2172 Models (#360170).

### 2790A & 27108A MODELS:

The Model SBS-2790A, SBS-27108A, SBFL-2790A, and SBFL-27108A Snow Blades are for most skid steer and tractor front loaders rated from 30 to 80 hp.

The Models SBS-2790A and SBS-27108A are designed to mount on skid steer units and tractor front loaders equipped with the universal quick-attach attachment connection.

The Models SBFL-2790A and SBFL-27108A are designed for farm tractor front-end loaders. Optional mounting brackets need to be ordered. They are available to fit most popular quick coupler front-end loaders or pin-on type loaders.

Optional hydraulic angle control and cross-over relief kits are available for the SBS-2790A and SBFL-2790A Models.

Models SBS-27108A and SBFL-27108A have hydraulic angle control and the hydraulic cross-over relief as standard equipment.

Snow blade Models 2790A and 27108A have side oscillation so the wider blade can follow ground contour.

Hoses and flat face couplers from the snow blade to the skid steer unit are included in kit #360165 only (skid steer applications).

Since the length of hoses required from the front of front-end loaders to the rear remote hydraulic outlets of the tractor vary, these hoses and hydraulic couplers are not included in kit #360168 (for front loader applications).

### ALL MODELS:

The blade can be locked with two bolts so it can be used for light dirt moving only. See page 20 for instructions.

#### NOTE:

- Blades are designed for moving snow and loose dirt only. Do not abuse blades by prying rocks or stumps with high impact loads.
- Skid Shoes should always be used for snow moving applications.
- When moving snow, do not operate with the blade in the locked position.



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

Check the power unit's hydraulic system. Be sure the hydraulic oil and filter have been serviced according to manufacturer's recommendations. Refer to your tractor or loader operator's manual or dealer for any adjustments necessary to put the hydraulic system in good working order.



**Be sure your tractor and loader, or skid steer is in good condition. Read all the safety precautions and make sure all equipment operators are familiar with the safety rules of operation.**

The operator is responsible for the safe operation of this equipment. The operator must be properly trained. Operators should be familiar with the power unit, loader and loader attachment, and all safety practices before starting operation. Read the safety rules and safety signs on pages 3-12.

# INSTRUCTIONS (continued)

## ASSEMBLY

This unit is shipped almost completely assembled.

Refer to the “exploded views” on pages 22-28 of this manual.

Carefully follow instructions for final assembly.

Before attempting assembly check the following items.

Having all the needed parts and equipment readily at hand will speed up your assembly task and will make the job as safe as possible.

- Check for fasteners and pins that were shipped with the Snow Blade.
- Have a fork lift or loader along with chains and safety stands that are sized for the job ready for the assembly task.
- Have a minimum of 2 people at hand during assembly.
- Check to see that all nuts are tightened properly.

Remove the bucket from your front end loader or skid steer. Check your loader to make sure it is in good working order. Check all frame mounting bolts to make sure they are tight.

Loaders that attach to the tractor frame rails should have a cross-tie installed for stability.

**NOTE: The quick-attach brackets and pin-on brackets for the SBFL-2160/2172 loaders are different than the brackets required for the SBFL-2790A and SBFL-27108A Models.**

## ASSEMBLY – TRACTOR LOADERS PIN ON ATTACHMENT

(2160/2172 MODELS ONLY)

Measure the width of your loader arms and figure how to best attach the loader mounting brackets so the front loader attachment is centered on your loader.

Assemble the four (4) lift brackets on the main frame with the  $\frac{5}{8}$ " x 3" I.D. U-bolts. Leave the U-bolts loose.

Measure the width of each loader arm at the lower end (where the lower pin goes through). Then position the mounting brackets on each side for this width plus  $\frac{1}{8}$ " -  $\frac{1}{4}$ ". This will keep the loader attachment from having excessive side movement.

**NOTE:** The width of the loader arms will vary with the different makes and models of loaders. Depending on the width of your loader and the relationship to the width of the front loader attachment, you may need to use one of the bracket mounting arrangements shown below. The majority of loaders will best use the normal mounting arrangement as shown in “A”.



**A. Normal Mounting Arrangement**



**B. Arrangement For Wide Loader Arms**



**C. Arrangement For Narrow Loader Arms**

Optional pin-on bracket sets available.

PIN DIAMETER	BRACKET SET #
.75" ( $\frac{3}{4}$ " )	811220
1.0" (1" )	811235
1.125" ( $1\frac{1}{8}$ " )	811240
1.1875" ( $1\frac{3}{16}$ " )	811245
1.25" ( $1\frac{1}{4}$ " )	811250

Brackets with extra rollback or with pin holes of different size are also available.

Tighten the U-bolts that connect the brackets to the main frame.

# INSTRUCTIONS (continued)

## ASSEMBLY – QUICK ATTACH (2160/2172 MODELS)

---

If your tractor loader has a bucket Quick Attach feature, check with your dealer on the availability of adapter brackets for your brand and model loader.

Measure the width of the front adapter on your loader and locate the Quick Attach brackets on the main frame. Locate these brackets so the main frame will be centered on your loader.

Tighten the U-bolts that connect the brackets to the main frame.

Some popular front loaders are offered with a “skid steer universal quick-attach” to connect the bucket or other front loader attachments. The Models SBS-2160 and SBS-2172 are designed for these loader applications.

## ASSEMBLY – TRACTOR LOADERS PIN ON ATTACHMENT (MODELS SBFL-2790A & SBFL-27108A)

---

Assemble the two (2) lift brackets on the main frame with the  $\frac{5}{8}$ " x 3" I.D. U-bolts. Leave the U-bolts loose.

**NOTE:** The standard (#830345) lift channel brackets are supplied with 1" diameter pins to fit your loader. If your loader requires  $1\frac{1}{8}$ " pins, it will be necessary for the hole diameter in the channel brackets to be drilled out to  $1\frac{5}{32}$ " (1.156") and ask your dealer to order  $1\frac{1}{8}$ " diameter pins. The  $1\frac{1}{8}$ " pins are part #830318. Be sure to indicate if two or four  $1\frac{1}{8}$ " pins are required.

If your loader requires  $1\frac{1}{4}$ " diameter pins, please ask your dealer to order adapter bushings (part #830319). Be sure to indicate how many adapter bushings are required.

Connect the assembly to the loader arms using the bottom hole in the channel and attach the upper control cylinder to the top hole in the lift channels. Center the main frame (side to side) with your loader arms and tighten the four (4)  $\frac{5}{8}$ " x 3" U-Bolts.

The upper hole positions in the lift channels can be used to obtain more angle movement. However, if the frame becomes too parallel with the loader lift arms, the loader may not have enough power (mechanical advantage) to bring the frame back.

**NOTE:** Generally, it is not recommended to have the tilt cylinders located any closer than 10-12 inches to the main loader lift arms. **Check the spacing of mounting pins on your loader bucket and use this as a guide.**

If tilt cylinders are located too close to the loader arms, they may go “over center” when fully extended. If this happens, damage may occur to the cylinders and/or mounting brackets.

## ASSEMBLY – QUICK ATTACH (MODELS SBFL-2790A & SBFL-27108A)

---

If your tractor loader has a bucket Quick Attach feature, check with your dealer on the availability of adapter brackets for your brand and model loader.

Measure the width of the front adapter on your loader and locate the Quick Attach brackets on the main frame. Locate these brackets so the main frame will be centered on your loader.

Tighten the U-bolts that connect the brackets to the main frame.

## OPTIONS

---

The following optional attachments are available for the snow blade in addition to the hydraulic angle kits.

PART #	ITEM
360235 . . . . .	Optional sight indicator for all snow blade models
360220 . . . . .	Optional top deflector for 5 ft. blade
360223 . . . . .	Optional top deflector for 6 ft. blade
360227 . . . . .	Optional top deflector for 7.5 ft. blade
360230 . . . . .	Optional top deflector for 9 ft. blade



# INSTRUCTIONS (continued)

## **SKID STEER SNOW BLADE INSTALLATION/REMOVAL**

---

### **To install:**

1. Read and understand skid steer or loader manufacturer's instructions for installing attachments.
2. Make sure attachment pins are in "unlock" position in skid steer mounting plate.
3. Line up skid steer and snow blade on level ground.
4. Tilt skid steer attachment mounting plate to fit snow blade mounting plate.
5. Move skid steer forward and raise skid steer mounting plate until it meets snow blade mounting plate with skid steer mounting plate tilted slightly forward.
6. Raise skid steer mounting plate until the snow blade leaves the ground.
7. Tilt skid steer mounting plate back to secure snow blade mounting plate.
8. Turn off skid steer and make sure auxiliary hydraulic controls are off (see skid steer manual).
9. Lock snow blade to skid steer. Flip the spring loaded latch pins to the "latch lock" position and check to see they are properly latched.
10. Connect auxiliary hydraulic hoses (if so equipped).

### **To Remove Snow Blade From Skid Steer:**

1. Turn off skid steer and make sure auxiliary hydraulic controls are off (see skid steer manual).
2. Disconnect auxiliary hydraulic hoses. Cap all hoses.
3. Unlatch skid steer attachment pins from snow blade mounting plate.
4. Lower skid steer attachment mounting plate to the ground.
5. Tilt skid steer attachment mounting plate forward and back skid steer away from snow blade.

## **ATTACHING (OPTIONAL) HYDRAULIC BLADE ANGLE KIT**

---

Preview the assembly instructions and exploded views of the hydraulic angle kit in this operator's manual (pages 26-28) and become familiar as to how the parts or assemblies go together.

Install the hydraulic cylinders as shown and install the hydraulic fittings and hoses supplied in the kit.

1. You must purchase and install two hydraulic hoses that have fittings permanently attached to each end. These hoses and fittings must meet the following specifications: (**NOTE:** If your Snow Blade was supplied with hoses (Model SBS-2790A with Hydraulic Kit #360165) skip to step 4.)

- Inside Diameter: 0.375" (3/8")
  - Minimum Operating Pressure: 4,000 psi.
  - Hose End Fittings: One hose end must be a 9/16-18 female JIC fitting. The fitting for the other end can be whatever you determine to be the most beneficial to making the connection to your power unit.
  - Length: The hoses must be long enough to avoid applying any tension to them (i.e. stretching) in all operating positions of this product. The hoses must not be excessively long either, because this could cause the hoses to drag on the ground, be pinched in the equipment, become entangled in moving parts, etc., any of which will shorten the life of the hose and could cause injury to the operator or others near the equipment.
2. Make certain that the threads, as well as the inside of the hoses, are clean, then place the 9/16-18 hose ends on/in to the fittings on the left hydraulic cylinder.
  3. Make the connection to your power unit using the appropriate method below for your power unit:
    - If your power unit has male or female threads for connecting the hydraulic hoses to the auxiliary hydraulic lines, make certain that the threads, as well as the inside of the fitting and hoses, are clean, and then secure the hoses to the fittings.

## INSTRUCTIONS (continued)

- If your power unit has quick-couplers for connecting the hydraulic hoses to the auxiliary hydraulic lines, you may need to purchase the proper quick-coupler fittings that install on the free ends of the two hoses. In most cases, the owner's manual for your power unit will describe the exact type of fitting that is needed for your hydraulic coupling system, but in no case should any fitting have an allowable operating pressure of less than 4,000 psi. Once all the quick-coupler fittings are properly installed, then the hoses can be coupled to the power unit's hydraulic valve body or auxiliary hydraulic lines.
4. Carefully raise the loader and cycle the tilt cylinders to check hose clearances and to check for any interference. Operate the hydraulic cylinder(s) on this product to make the same checks.
  5. Cycle the hydraulic cylinder(s) on this product several times from fully retracted to fully extended until all air has been completely removed from the cylinder(s).

**NOTICE:** When shipped, the hydraulic cylinder(s) on this product contained air or an air-fluid mixture. Failure to remove all the air from the hydraulic cylinder(s) can cause uneven, jerky cylinder movement when the hydraulic controls are being operated and unwanted cylinder movement when the controls are not being operated.

6. Route the hose to avoid pinching or chafing the hose. Use nylon ties or tape to fasten hose on loader arm to keep it in place. Make sure the hose routing and length is adequate for your particular make and model loader.

**IMPORTANT:** Make sure connectors are clean prior to assembly.



**Escaping hydraulic fluid under pressure can penetrate the skin, causing serious injury.**

**DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.**

**Stop engine and relieve pressure before connecting or disconnecting lines.**

**Tighten all connections before starting engine or pressurizing lines.**

**If any fluid is injected into the skin, obtain medical attention immediately, or gangrene may result.**

**ALWAYS OBEY ALL  
SAFETY RULES!!  
ALWAYS BE CAREFUL!!**

# OPERATING INSTRUCTIONS

## PRE-OPERATION CHECKLIST

(OWNER/OPERATOR RESPONSIBILITY)

- \_\_\_\_ Review and follow safety rules and safety signs on pages 3 through 12.
- \_\_\_\_ Check that Snow Blade is properly and securely attached to tractor loader or skid steer.
- \_\_\_\_ Lubricate all grease fitting locations.
- \_\_\_\_ Check that all hardware is properly installed.
- \_\_\_\_ Check that no one enters the area of machine operation. Always work at a safe distance from bystanders.
- \_\_\_\_ Know your controls and how to stop power unit, engine and PTO quickly in an emergency. **READ THIS MANUAL AND THE ONE PROVIDED WITH YOUR POWER UNIT.**
- \_\_\_\_ To avoid accident or injury, do not allow anyone to operate this equipment without proper instructions. Any person who operates this equipment must be instructed in and be capable of the safe operation of the tractor, skid steer, attachment and all controls.

## OPERATION

Be sure tractor is properly counter-balanced with weights before attempting to operate the Snow Blade. It is recommended to attach a heavy implement or weight box on the 3 pt. hitch of the tractor for counter weight.

Make sure all operators have read the Owner's Manual and are familiar with the instructions and the safety rules of operation.



- **Do not operate this product until you have positive indication that this attachment is securely mounted to the loader. Failure to install lock pins or have the latching mechanism engaged could result in injury or death.**
- **Do not exceed 10 miles per hour while operating.**
- **A heavy load can cause instability in driving a power unit. Make sure the rear of the tractor is properly counterbalanced with weights. Always drive slowly – especially around turns. An unstable power unit could steer badly and possibly tip over, causing injury or death.**

## OPERATE SAFELY

- Become familiar with controls.
- Operate from operator's seat only. Remain at controls until operating cycle is complete.
- Never lift blade to a height where visibility is obstructed.
- Avoid holes, ditches, and obstructions which may cause tractor/loader to tip.
- Allow for additional length of loader and attachment on power unit while turning.
- Never allow anyone to walk or work under a raised loader.
- Be sure that people, livestock, or pets are not standing near the machine while operating.
- Carry the attachment slowly and as low as possible to the ground.
- Operate the loader hydraulic controls smoothly, avoiding jerky operation. Stop loader gradually.
- Only use a tractor or power unit equipped with a ROPS cab or roll-over protective structure.
- Travel slowly over rough surface or when making turns.
- Lower bucket or attachment to ground when power unit is unattended.

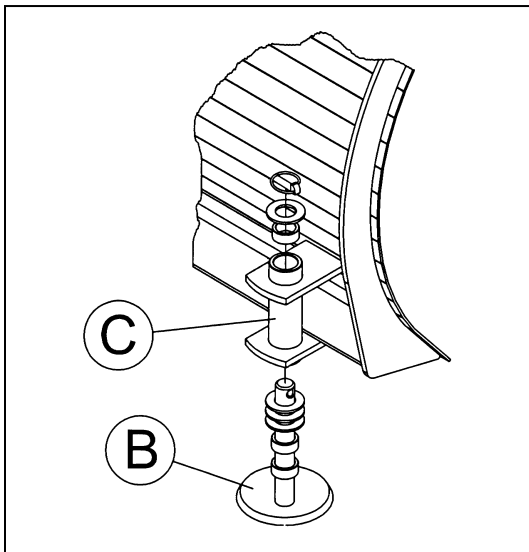
### NOTE:

- For most snow moving applications, operate with the loader in the FLOAT position. (See your power unit/loader manual for details on the FLOAT position.)
- For moving snow, the "A-Frame" part of the main frame should be level. Using the bucket tilt cylinders on your loader, tilt the main frame forward or back until the "A" part of the frame is level.
- Blades are designed for moving snow and loose dirt. Do not abuse blades by prying rocks or stumps with high impact loads.
- Skid shoes should always be used for snow applications.
- When moving snow, do not operate with the blade in the locked position.
- On skid steer models, always place blade in straight (90°) angle position for easier dismounting and entry to skid steer.

# OPERATING INSTRUCTIONS (continued)

## SKID SHOE ADJUSTMENT

The skid shoes provide cutting height adjustment to reduce the chance of blade or surface damage during snow removal on gravel or loose stone driveways.



1. Adjust skid shoe (B) to full retracted height by moving all washers above the blade weldment (C). Adjust skid shoes evenly on both sides of blade.
2. For snow moving, skid shoes should be 3/8" to 3/4" below bottom of cutting edge.
3. For moving loose dirt, skid shoes should be above bottom of cutting edge or removed.

## SNOW BLADE OPERATION

### IMPORTANT

Striking solid objects hidden in snow OR pushing materials other than snow CAN result in damage to this product and WILL void all warranties.

Before any snowfall, inspect the site where your Snow Blade is to be used. Locate any obstructions (i.e. curbs, sidewalks, parking bumpers, pipes, shrubs, fences, etc.) and any variations in elevation (i.e. retaining walls, slopes, holes, etc.) so that these elements can be avoided during the snow plowing operation.

### Operating Tips

- For maximum blade protection, operate with power unit loader boom in the FLOAT position. (See the OPERATING section of the prime mover or loader operator's manual for details on the FLOAT position.)

- For maximum blade down pressure, DO NOT operate with loader in the FLOAT position. (See the OPERATING section of the prime mover or loader operator's manual for details on the FLOAT position.)

### Angling the Blade

#### Hydraulic Control

The optional hydraulic blade angle kits allow you to angle the blade left or right from the operator's seat. You can change the angle while moving. It is a handy, time saving option.

Follow the instructions on page 16 for installation.

If some of the locations you will be moving snow have various obstructions, you may want to also install the cross-over relief valve kit. (#360065)

Upon striking an obstruction, the cross-over relief kit allows the blade to swing back which protects the blade.

Always remove the manual angle control pin when using the hydraulic control.

Hydraulic angle control and the cross-over relief valve is standard on Models SBS-27108A and SBFL-27108A.

#### Manual Control

The snow blades have a selection of five (5) positions for blade angle.

Raise the blade off the ground 2-3 inches. Stop the power unit, set the brakes, and shut off the engine. Carefully dismount from the power unit and remove the angle control pin.

Swing the blade to the desired angle and reinstall the pin.

Remount the power unit and resume operation.



- ▲ Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in "locked up" position at all times.

- ▲ Never allow children or untrained persons to operate equipment.

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

# OPERATING INSTRUCTIONS (continued)

## **CAUTION!**

Beware of lift clearance when raising loader to maximum height.

## **DANGER!**

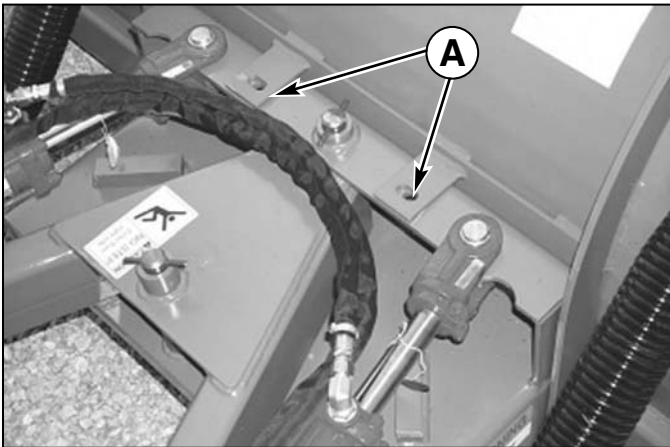
Beware of low electrical wires when loader is raised. Serious injury or death can result if contact is made.

Do not leave the operator's seat if any part of the tractor or implement contacts electric lines.

## PREPARING BLADE FOR LOOSE DIRT APPLICATIONS

This Snow Blade may be used for dozing light, loose materials if blade is locked.

**NOTE:** When moving loose dirt, do not operate with blade in the unlocked position.



To lock blade, install two 1/2" x 1 1/2" hex head cap-screws with lockwashers and nuts into the two tabs at the rear of the moldboard that line up with holes in the top lip of the pivot box (A).

**NOTE:** The above figure is a model 2790A snow blade, the tabs for models 2160 and 2172 are located to the outer edge of the pivot box.

## IMPORTANT

Dozing of undisturbed soil, heavy materials, or similar items CAN result in damage to this product and WILL void all warranties.

**NOTE:** 2790A and 27108 Models

Snow blade Models 2790A and 27108A have side oscillation so the wider blade can follow ground contour. The oscillation is limited to a blade tilt angle of 2.5 degrees.

If the blade is to be used for loose material grading, it will be necessary to install a 3/4" x 1 3/4" bolt in the center of the oscillating plates to lock out the blade tilt feature.

Remember to remove this bolt when moving snow.

## TRANSPORTING

## **CAUTION!**

When traveling on public roads, whether at night or during the day, use accessory light and devices for adequate warnings to operators of other vehicles. Comply with all federal, state and local laws.

Allow for additional length of loader and attachment on power unit while turning.

Select a safe ground travel speed when transporting from one area to another. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely.

When traveling over rough or hilly terrain or when making turns, slow down and use extra care.

Read all the safety warnings in the front of this manual and in the manual of power unit.



**SAFETY . . .  
YOU CAN LIVE WITH IT!**

# OWNER SERVICE

---

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



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

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



- Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower loader and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt. Never leave equipment unattended with engine running.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.



Do not work under a raised loader unless it is securely blocked or held in position. Do not depend on the hydraulic system to hold loader and attachment in place.

## MAINTENANCE

---

Inspect the blade for loose, damaged or worn parts and adjust or replace if needed.

Repaint parts where paint is worn or scratched to prevent rust.

Check all bolts and nuts to be sure they are tight.

Grease main pivot every 8 hours of use.

Check hydraulic hoses and fittings for leaks. Repair any leaks immediately. Never use your hand to check for a hydraulic leak when system is under pressure.

Replace any worn or damaged parts immediately. Do not use attachment with any damaged parts.

## Replacement of Wear Edge

1. Park your power unit on a level surface with snow blade properly attached.
2. Place your power unit's transmission in "Park" and engage the parking brake
3. Lower snow blade onto blocking positioned immediately behind the moldboard. This blocking must be of sufficient height to hold the wear edge approximately 6" to 8" above the level surface.
4. Shut off your power unit's engine, remove the starter key, wait for all moving parts to come to a stop, and relieve all pressure in the hydraulic lines.
5. Loosen the nuts on all the wear edge bolts and remove all nuts and wear edge bolts except the bolts on each end of the wear edge.
6. While holding up the end of the wear edge, remove the nut and bolt from that end and allow that end to pivot down to the level surface.
7. Repeat step 6 for the other end of the wear edge. Properly dispose of the wear edge and all bolts and nuts. These edges are reversible and may be flipped top-to-bottom for reinstallation.
8. Reinstall a new wear edge by reversing the procedures in steps 7 through 5 and tightening the nuts to 75 ft. lbs.

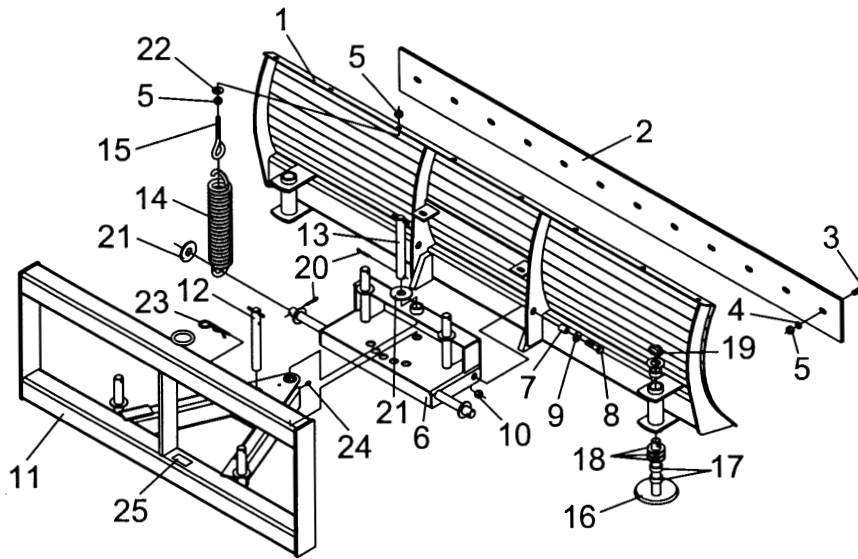
## STORAGE

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- Always store in a clean, dry location away from children and livestock.
- Storage location should be level and solid to make hitching and unhitching easy.
- Coat any exposed portion of hydraulic cylinder rods with grease for protection.

# FRONT LOADER MOUNT SNOW BLADE PARTS DRAWING

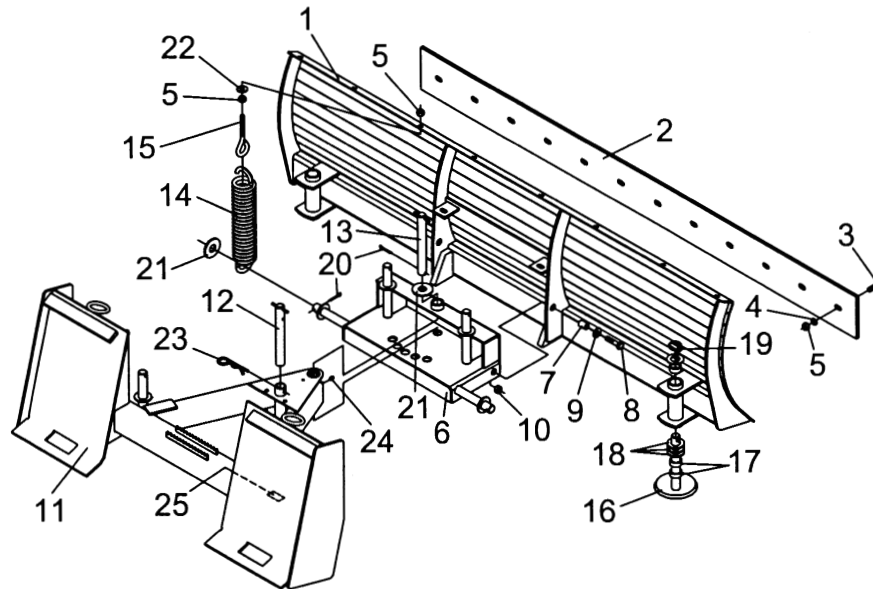
(Models SBFL-2160 and 2172)



Ref. No.	Part No.	Description	No. Req'd.
1	360101	Moldboard Assembly w/Cutting Edge 60"	1
	360131	Moldboard Assembly w/Cutting Edge 72"	1
2	360104	Cutting Edge - 60"	1
	360110	Cutting Edge - 72"	1
3	2503102	Bolt 1/2"-13NC x 1 1/2" Carriage Head	Var.
4	2502002	Washer 1/2" Springlock	Var.
5	2500003	Nut 1/2"-13NC Full Hex	Var.
6	360146	Pivot Box Weldment	1
7	2504249	Bushing, Pivot (3/4" OD x 5/8" ID x 1" Lg.)	2
8	2503152	Bolt 5/8"-11NC x 2" Hex Head Gr. 5	2
9	2501005	Washer 5/8" Flat	2
10	2500094	Nut 5/8"-11NC Hex Toplock	2
11	360115	Front Loader/A-Frame Weldment	1
12	360060	Adjustment Pin Assembly	1
13	360062	Main Pivot Pin Assembly	1
14	2504248	Spring, Extension 2 3/4" OD x 14" Lg.	2
15	2503328	Eye Bolt 1/2"-13NC x 4 3/8"	2
16	346751	Skid Shoe Weldment	2
17	346749	Spacer, Adjustment 3/4"	6
18	2501034	Washer 1 1/4" SAE Flat	8
19	590006	Linch Pin 7/16" (AK-14)	2
20	2504068	Cotter Pin 1/4" x 1 3/4"	3
21	2501014	Washer 1" Flat	3
22	2501003	Washer 1/2" Flat	2
23	590000	Clip, Hair Pin 1/4" (A-74740)	1
24	2504049	Drive Zerk 5/16"	1
25	101388	Serial Number Plate - SBFL-2160	1
	101389	Serial Number Plate - SBFL-2172	1

# SKID STEER MOUNT SNOW BLADE PARTS DRAWING

(Models SBS-2160 and 2172)

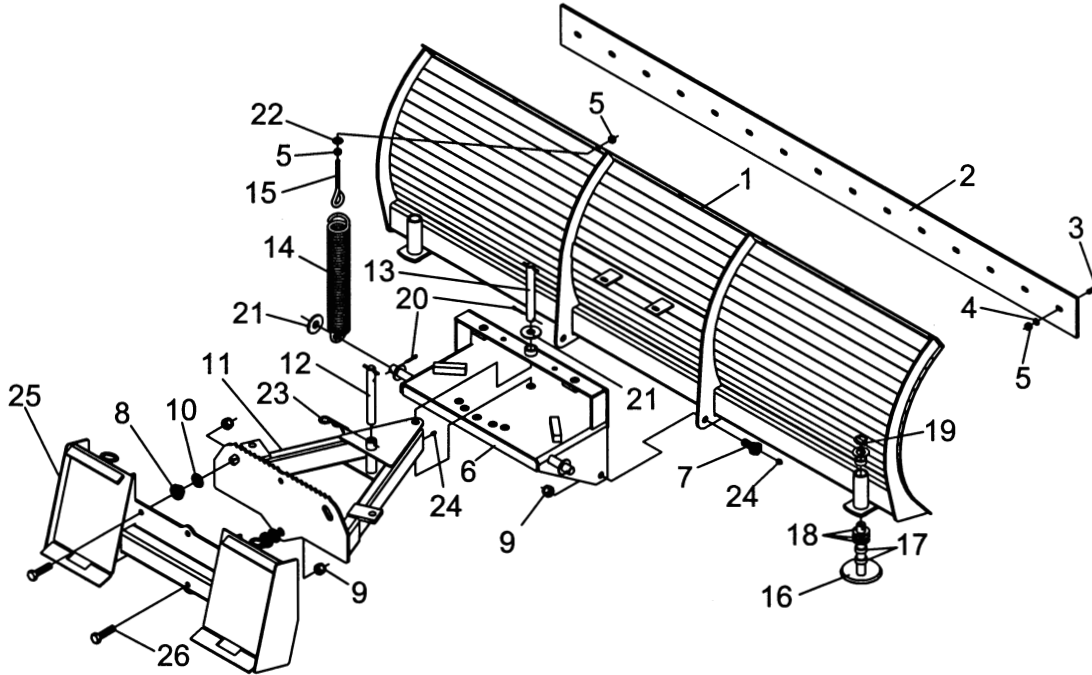


Ref. No.	Part No.	Description	No. Req'd.
1	360101	Moldboard Assembly w/Cutting Edge 60"	1
	360131	Moldboard Assembly w/Cutting Edge 72"	1
2	360104	Cutting Edge - 60"	1
	360110	Cutting Edge - 72"	1
3	2503102	Bolt 1/2"-13NC x 1 1/2" Carriage Head	Var.
4	2502002	Washer 1/2" Springlock	Var.
5	2500003	Nut 1/2"-13NC Full Hex	Var.
6	360146	Pivot Box Weldment	1
7	2504249	Bushing, Pivot (3/4" OD x 5/8" ID x 1" Lg.)	2
8	2503152	Bolt 5/8"-11NC x 2" Hex Head Gr. 5	2
9	2501005	Washer 5/8" Flat	2
10	2500094	Nut 5/8"-11NC Hex Toplock	2
11	360105	Skid Steer/A-Frame Weldment	1
12	360060	Adjustment Pin Assembly	1
13	360062	Main Pivot Pin Assembly	1
14	2504248	Spring, Extension 2 3/4" OD x 14" Lg.	2
15	2503328	Eye Bolt 1/2"-13NC x 4 3/8"	2
16	346751	Skid Shoe Weldment	2
17	346749	Spacer, Adjustment 3/4"	6
18	2501034	Washer 1 1/4" SAE Flat	8
19	590006	Linch Pin 7/16" (AK-14)	2
20	2504068	Cotter Pin 1/4" x 1 3/4"	3
21	2501014	Washer 1" Flat	3
22	2501003	Washer 1/2" Flat	2
23	590000	Clip, Hair Pin 1/4" (A-74740)	1
24	2504049	Drive Zerk 5/16"	1
25	101386	Serial Number Plate - SBS-2160 (located on tube)	1
	101387	Serial Number Plate - SBS-2172 (located on tube)	1



# SKID STEER MOUNT SNOW BLADE PARTS DRAWING

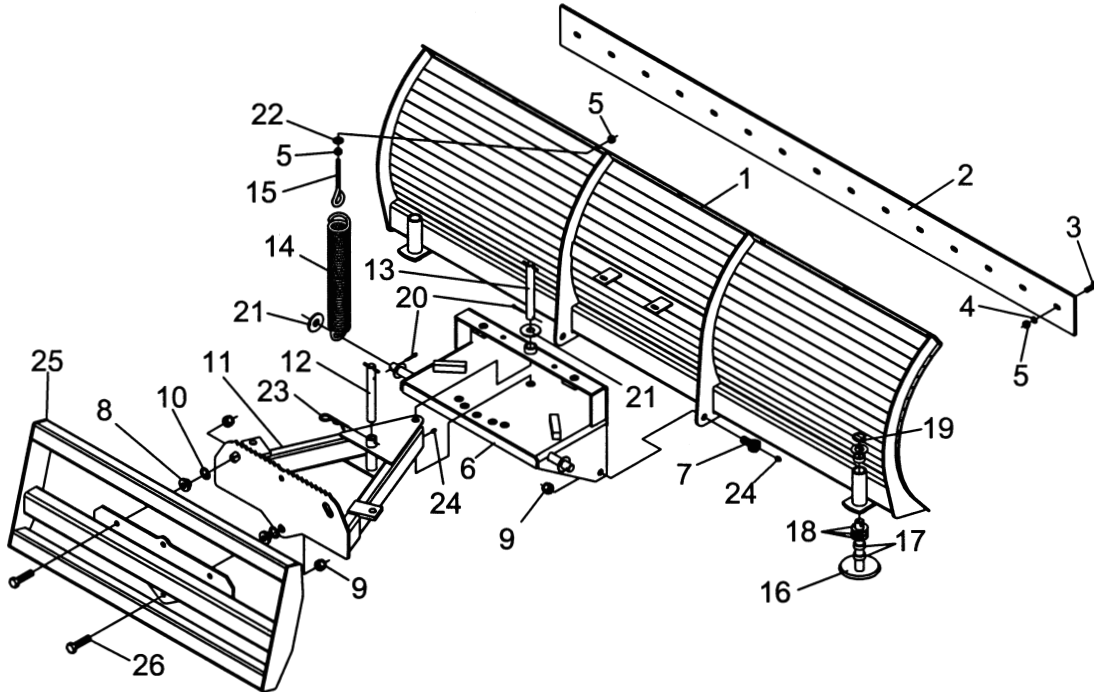
(Models SBS-2790A and SBS-27108A)



Ref. No.	Part No.	Description	No. Req'd.
1	360001	Moldboard Assembly w/Cutting Edge - 90"	1
	360071	Moldboard Assembly w/Cutting Edge - 108"	1
2	360010	Cutting Edge - 90"	1
	360076	Cutting Edge - 108"	1
3	2503102	Bolt 1/2"-13NC x 1 1/2" Carriage Head	Va.
4	2502002	Washer 1/2" Springlock	Va.
5	2500003	Nut 1/2"-13NC Full Hex	Va.
6	360046	Pivot Box Weldment	1
7	360018	Bolt, Blade Pivot (Special)	2
8	360095	Bushing, Oscillation Pivot	3
9	2500037	Nut, Hex Nyloc 3/4-10NC	5
10	2504200	Machinery Bushing, 1.25IDx10Ga	3
11	360093	A-Frame Sub-Weldment w/Plate	1
12	360060	Adjustment Pin Assembly	1
13	360062	Main Pivot Pin Assembly	1
14	2504247	Spring, Extension 2 3/4" OD x 18 3/4" Lg.	2
15	2503327	Eye Bolt 1/2"-13NC x 7"	2
16	346751	Skid Shoe Weldment	2
17	346749	Spacer, Adjustment 3/4"	6
18	2501034	Washer 1 1/4" Flat	8
19	590006	Linch Pin 7/16" (AK-14)	2
20	2504068	Cotter Pin 1/4" x 1 3/4"	3
21	2501014	Washer 1" Flat	3
22	2501003	Washer 1/2" Flat	2
23	590000	Clip, Hair Pin 1/4" (A-74740)	1
24	2504049	Drive Zerk 5/16"	3
25	360032	SS Frame Weld. with Oscillation Plate	1
26	2503085	Bolt, Hex 3/4-10 x 2.50 G5	3

# FRONT LOADER MOUNT SNOW BLADE PARTS DRAWING

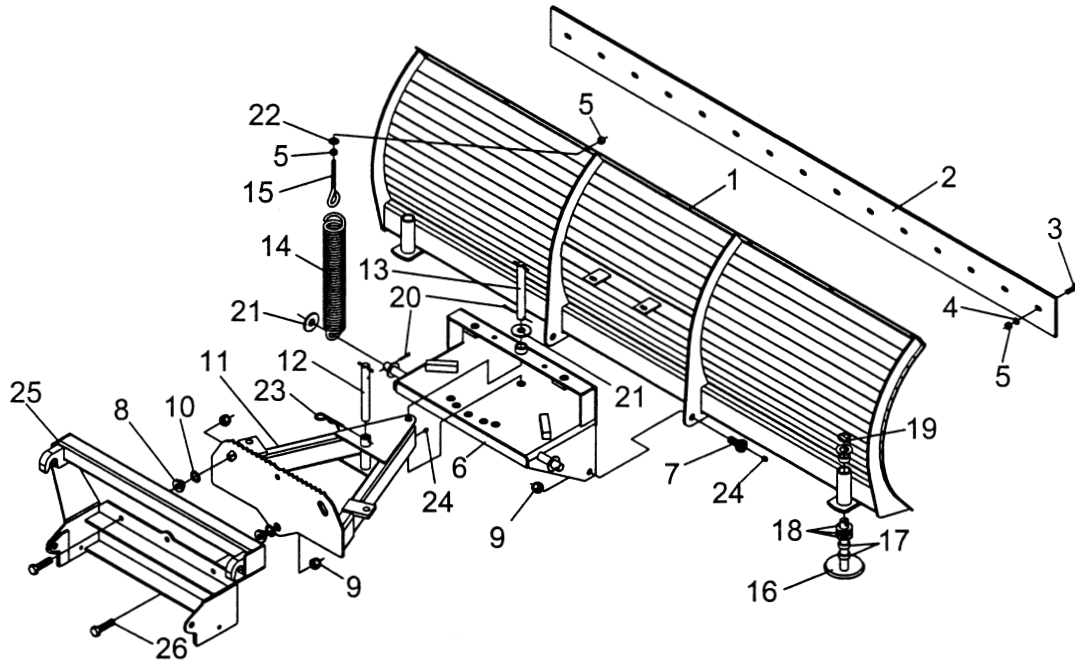
(Models SBFL-2790A and SBFL-27108A)



Ref. No.	Part No.	Description	No. Req'd.
1	360001	Moldboard Assembly w/Cutting Edge - 90"	1
	360071	Moldboard Assembly w/Cutting Edge - 108"	1
2	360010	Cutting Edge - 90"	1
	360076	Cutting Edge - 108"	1
3	2503102	Bolt 1/2"-13NC x 1 1/2" Carriage Head	Va.
4	2502002	Washer 1/2" Springlock	Va.
5	2500003	Nut 1/2"-13NC Full Hex	Va.
6	360046	Pivot Box Weldment	1
7	360018	Bolt, Blade Pivot (Special)	2
8	360095	Bushing, Oscillation Pivot	3
9	2500037	Nut, Hex Nyloc 3/4-10NC	5
10	2504200	Machinery Bushing, 1.25IDx10Ga	3
11	360093	A-Frame Sub-Weldment w/Plate	1
12	360060	Adjustment Pin Assembly	1
13	360062	Main Pivot Pin Assembly	1
14	2504247	Spring, Extension 2 3/4" OD x 18 3/4" Lg.	2
15	2503327	Eye Bolt 1/2"-13NC x 7"	2
16	346751	Skid Shoe Weldment	2
17	346749	Spacer, Adjustment 3/4"	6
18	2501034	Washer 1 1/4" Flat	8
19	590006	Linch Pin 7/16" (AK-14)	2
20	2504068	Cotter Pin 1/4" x 1 3/4"	3
21	2501014	Washer 1" Flat	3
22	2501003	Washer 1/2" Flat	2
23	590000	Clip, Hair Pin 1/4" (A-74740)	1
24	2504049	Drive Zerk 5/16"	3
25	360038	FL Frame Weld. with Oscillation Plate	1
26	2503085	Bolt, Hex 3/4-10 x 2.50 G5	3

# FRONT LOADER MOUNT SNOW BLADE PARTS DRAWING

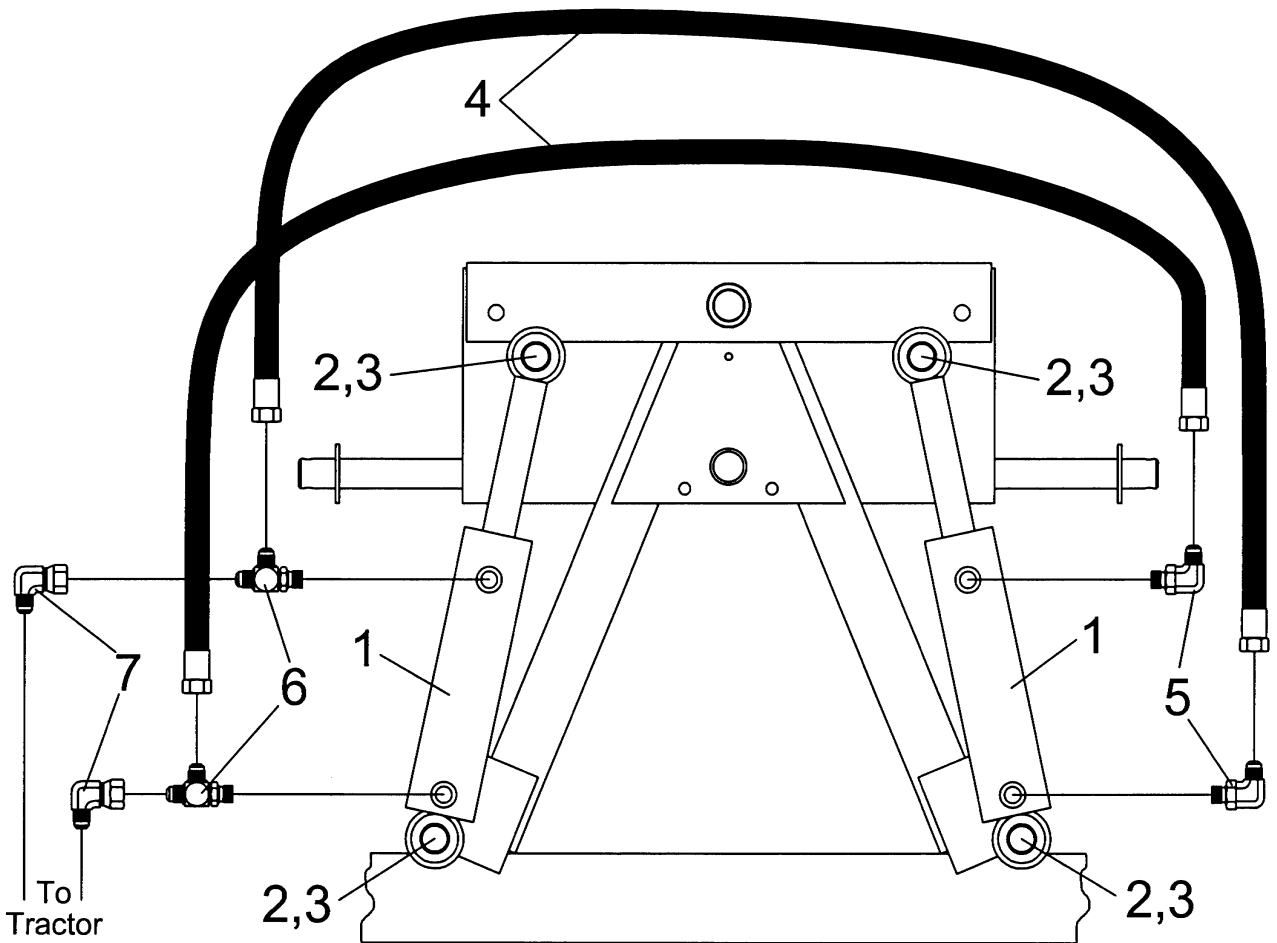
## For Loaders with Euro/Global Style Quick Attach (Models SBG-2790A and SBG-27108A)



Ref. No.	Part No.	Description	No. Req'd.
1	360001	Moldboard Assembly w/Cutting Edge - 90"	1
	360071	Moldboard Assembly w/Cutting Edge - 108"	1
2	360010	Cutting Edge - 90"	1
	360076	Cutting Edge - 108"	1
3	2503102	Bolt 1/2"-13NC x 1 1/2" Carriage Head	Va.
4	2502002	Washer 1/2" Springlock	Va.
5	2500003	Nut 1/2"-13NC Full Hex	Va.
6	360046	Pivot Box Weldment	1
7	360018	Bolt, Blade Pivot (Special)	2
8	360095	Bushing, Oscillation Pivot	3
9	2500037	Nut, Hex Nyloc 3/4-10NC	5
10	2504200	Machinery Bushing, 1.25IDx10Ga	3
11	360093	A-Frame Sub-Weldment w/Plate	1
12	360060	Adjustment Pin Assembly	1
13	360062	Main Pivot Pin Assembly	1
14	2504247	Spring, Extension 2 3/4" OD x 18 3/4" Lg.	2
15	2503327	Eye Bolt 1/2"-13NC x 7"	2
16	346751	Skid Shoe Weldment	2
17	346749	Spacer, Adjustment 3/4"	6
18	2501034	Washer 1 1/4" Flat	8
19	590006	Linch Pin 7/16" (AK-14)	2
20	2504068	Cotter Pin 1/4" x 1 3/4"	3
21	2501014	Washer 1" Flat	3
22	2501003	Washer 1/2" Flat	2
23	590000	Clip, Hair Pin 1/4" (A-74740)	1
24	2504049	Drive Zerk 5/16"	3
25	360097	Global Frame Weld. with Oscillation Plate	1
26	2503085	Bolt, Hex 3/4-10 x 2.50 G5	3

# OPTIONAL HYDRAULIC ANGLE KIT (#360170) For Compact Tractor Front Loader Applications For Small Skid Steer Power Units

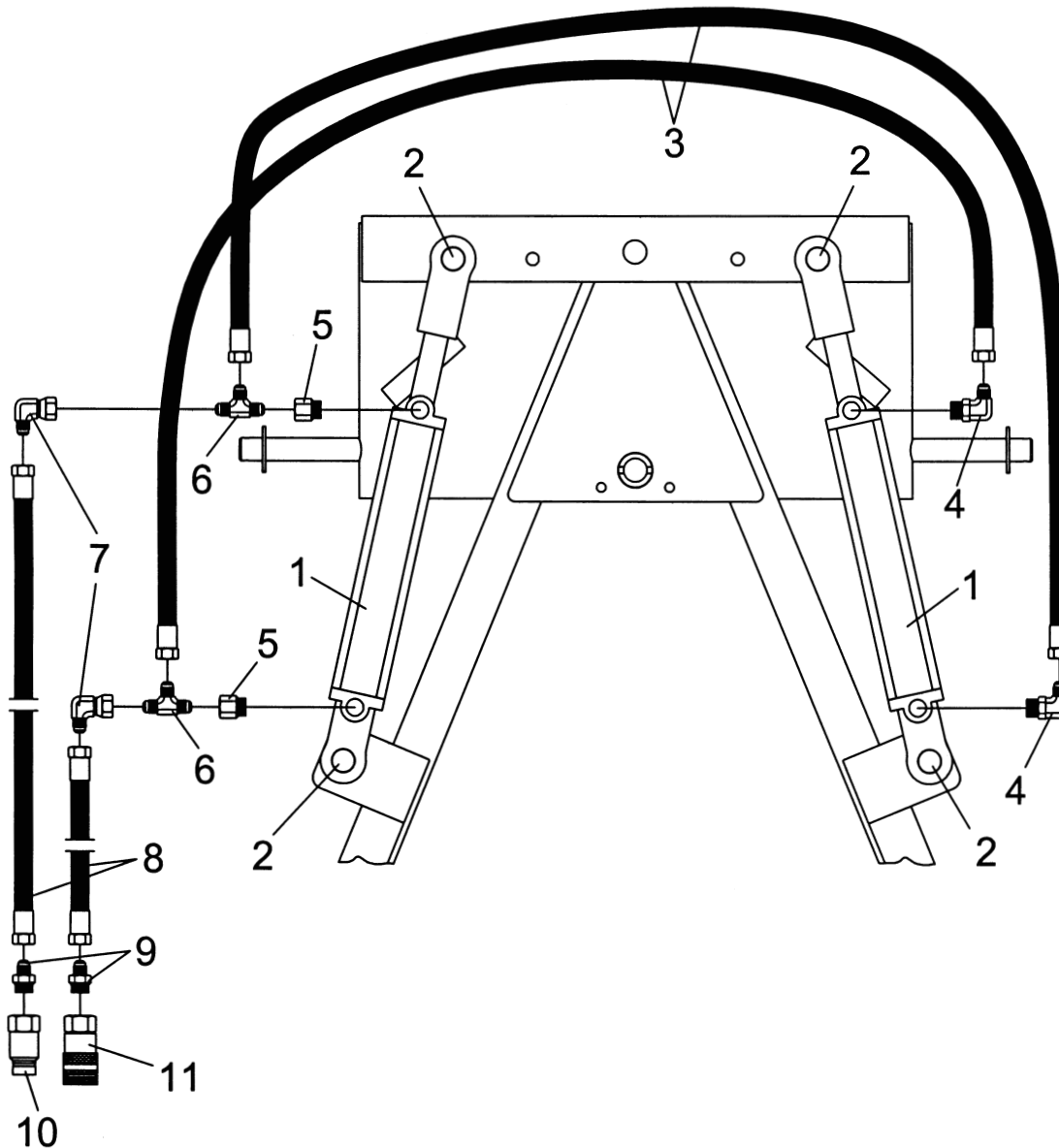
(Models 2160 and 2172 Blades)



(Note: Hose ends must be 9/16"-18 JIC Female)

Ref. No.	Part No.	Description	No. Req'd.
1	360195	Hydraulic Cylinder 2 x 6 1/2	2
2	2504068	Cotter Pin 1/4" x 1 3/4"	4
3	2501001	Washer 1" Flat	4
4	2505672	Hose, Hydraulic 1/4" ID x 30"	2
5	2505712	Elbow, 90° Adj. 9/16"-18 (JIC) to 9/16"-18 (ORB)	2
6	2505711	Tee, Adjustable 9/16"-18	2
7	2505682	Elbow, 90° Swivel 9/16"-18	2

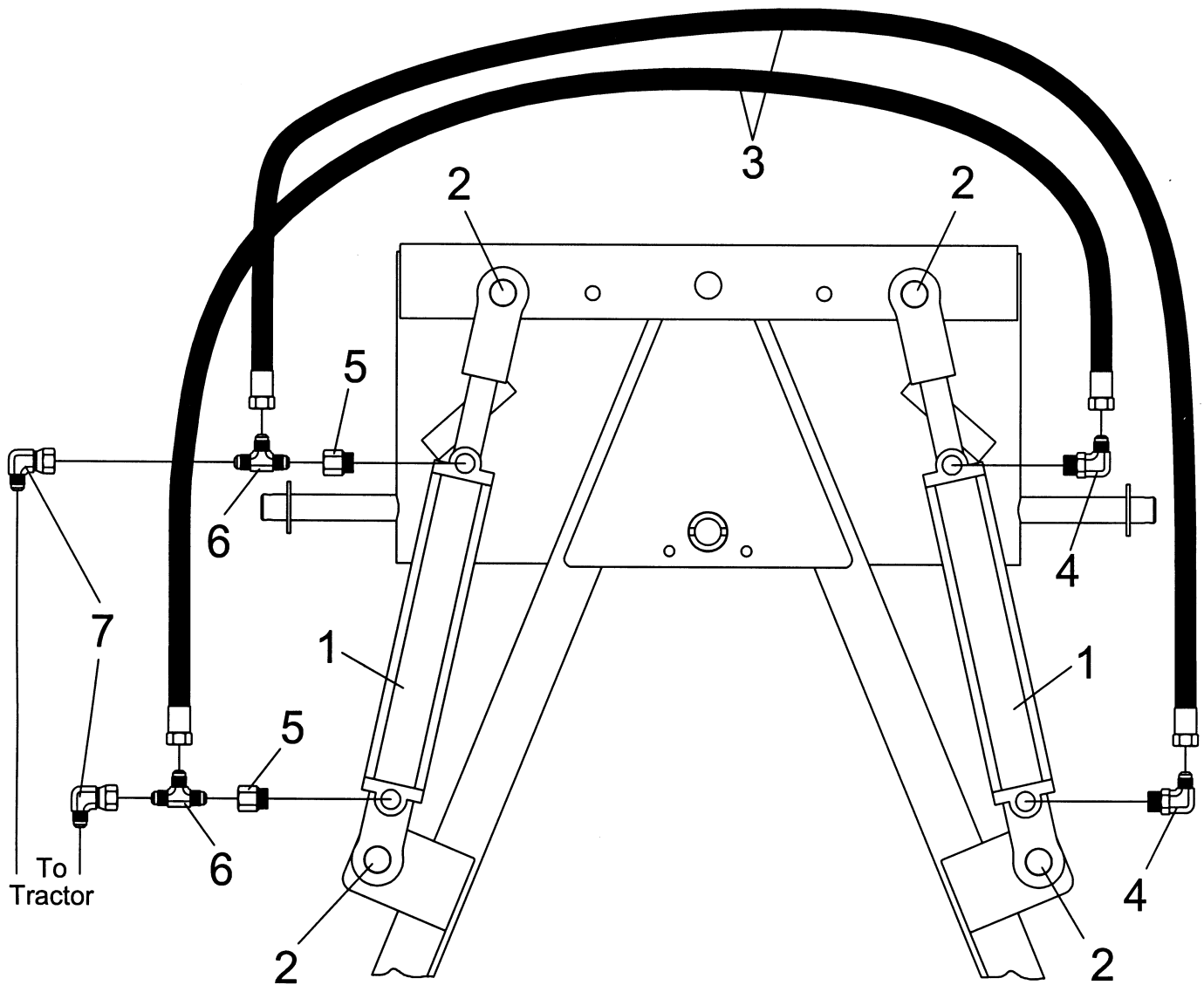
# OPTIONAL HYDRAULIC ANGLE KIT (#360165) For Skid Steer Power Units (For Model SBS-2790A only)



Ref. No.	Part No.	Description	No. Req'd.
1	2504230	Hydraulic Cylinder 2 x 8	2
2	2504121	Cotter Pin 3/16" x 1 1/2"	4
3	2505673	Hose, Hydraulic 1/4" ID x 36"	2
4	2505681	Elbow, 90° Adj. 9/16"-18 to 3/4"-16	2
5	2505710	Bushing 3/4"-16 to 9/16"-18	2
6	2505711	Tee, Adjustable 9/16"-18	2
7	2505682	Elbow, 90° Swivel 9/16"-18	2
8	2505678	Hose, Hydraulic 1/4" ID x 72"	2
9	2505684	Straight Connector 9/16"-18 to 3/4"-16	2
10	2505688	Coupling, SAE 1/2" Male - 3/4"-16 O-Ring	1
11	2505689	Coupling, SAE 1/2" Female - 3/4"-16 O-Ring	1

# OPTIONAL HYDRAULIC ANGLE KIT (#360168) For Tractor Front Loader Applications

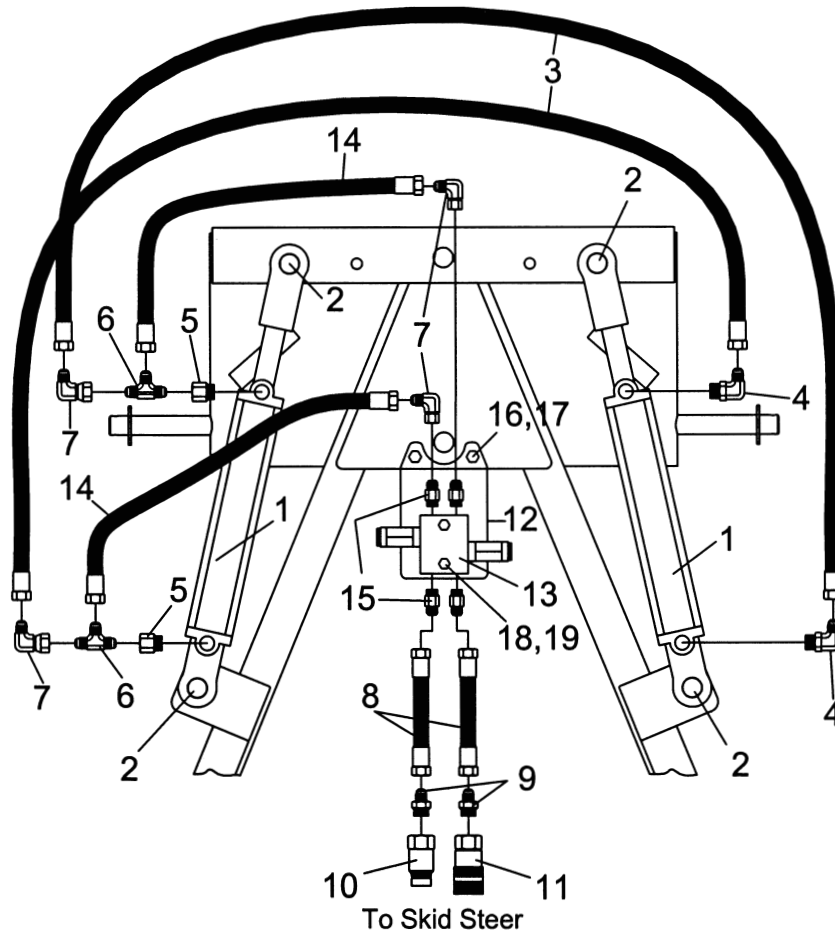
(For Model SBFL-2790A only)



Ref. No.	Part No.	Description	No. Req'd.
1	2504230	Hydraulic Cylinder 2 x 8	2
2	2504007	Cotter Pin 3/16" x 1 3/4"	4
3	2505673	Hose, Hydraulic 1/4" ID x 36"	2
4	2505681	Elbow, 90° Adj. 9/16"-18 to 3/4"-16	2
5	2505710	Bushing 3/4"-16 to 9/16"-18	2
6	2505711	Tee, Adjustable 9/16"-18	2
7	2505682	Elbow, 90° Swivel 9/16"-18	2

# HYDRAULIC ANGLE KIT (#360165) WITH CROSS-OVER RELIEF VALVE KIT (#360065) For Skid Steer Power Units

(Standard on Model SBS-27108A and Optional on Model SBS-2790A)

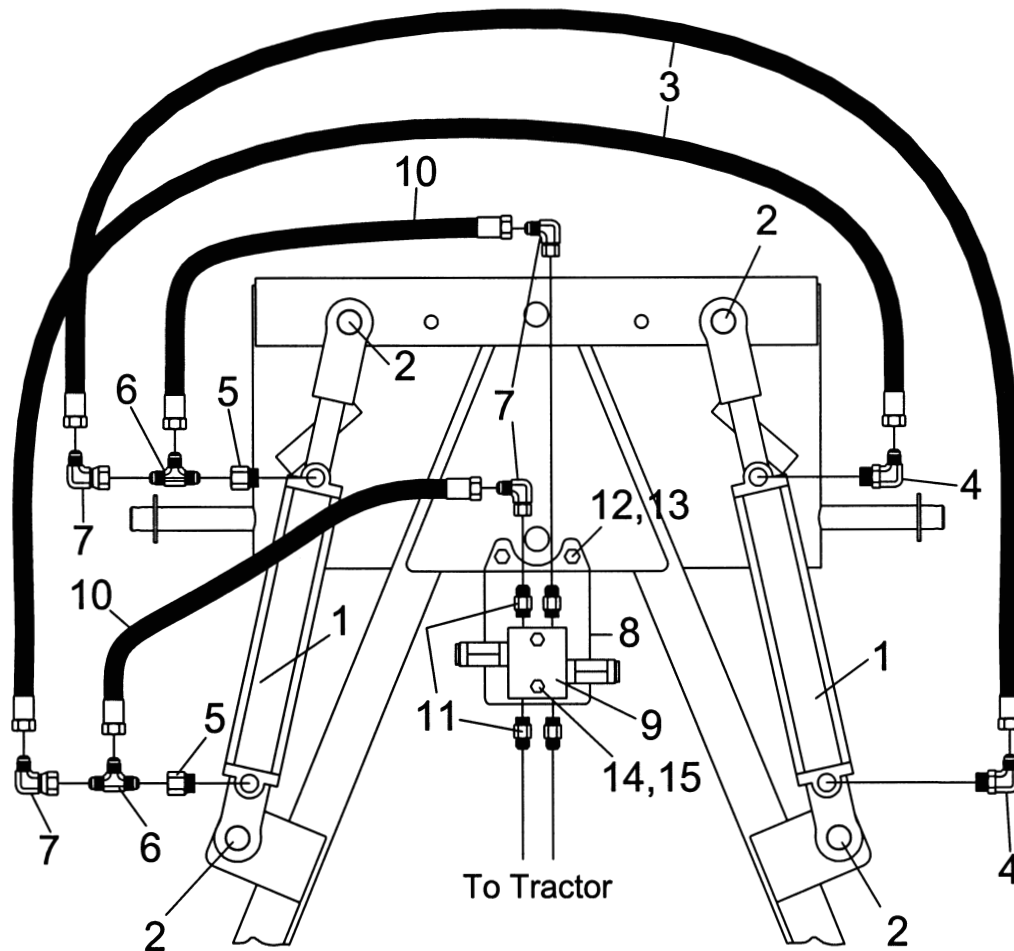


Ref. No.	Part No.	Description	No. Req'd.
1	2504230	Hydraulic Cylinder 2 x 8	2
2	2504121	Cotter Pin 3/16" x 1 1/2"	4
3	2505673	Hose, Hydraulic 1/4" ID x 36"	2
4	2505681	Elbow, 90° Adj. 9/16"-18 to 3/4"-16	2
5	2505710	Bushing 3/4"-16 to 9/16"-18	2
6	2505711	Tee, Adjustable 9/16"-18	2
7	2505682	Elbow, 90° Swivel 9/16"-18	4
8	2505678	Hose, Hydraulic 1/4" ID x 72"	2
9	2505684	Straight Connector 9/16"-18 to 3/4"-16	2
10	2505688	Coupling, SAE 1/2" Male - 3/4"-16 O-Ring	1
11	2505689	Coupling, SAE 1/2" Female - 3/4"-16 O-Ring	1
12	360066	Plate, Mounting (Cross-Over Relief)	1
13	2505713	Valve, Cross Over Relief	1
14	2505671	Hose, Hydraulic 1/4" ID x 24"	2
15	2505683	Straight Connector 9/16"-18	4
16	2503011	Bolt 3/8"-16NC x 1" Hex Head Gr. 2	2
17	2500081	Nut 3/8"-16NC Whiz Flange Hex	2
18	2503111	Bolt 5/16"-18NC x 1 3/4" Hex Head Gr. 2	2
19	2500060	Nut 5/16"-18NC Whiz Flange Hex	2

# HYDRAULIC ANGLE KIT (#360168) WITH CROSS-OVER RELIEF VALVE KIT (#360065)

## For Tractor Front Loader Applications

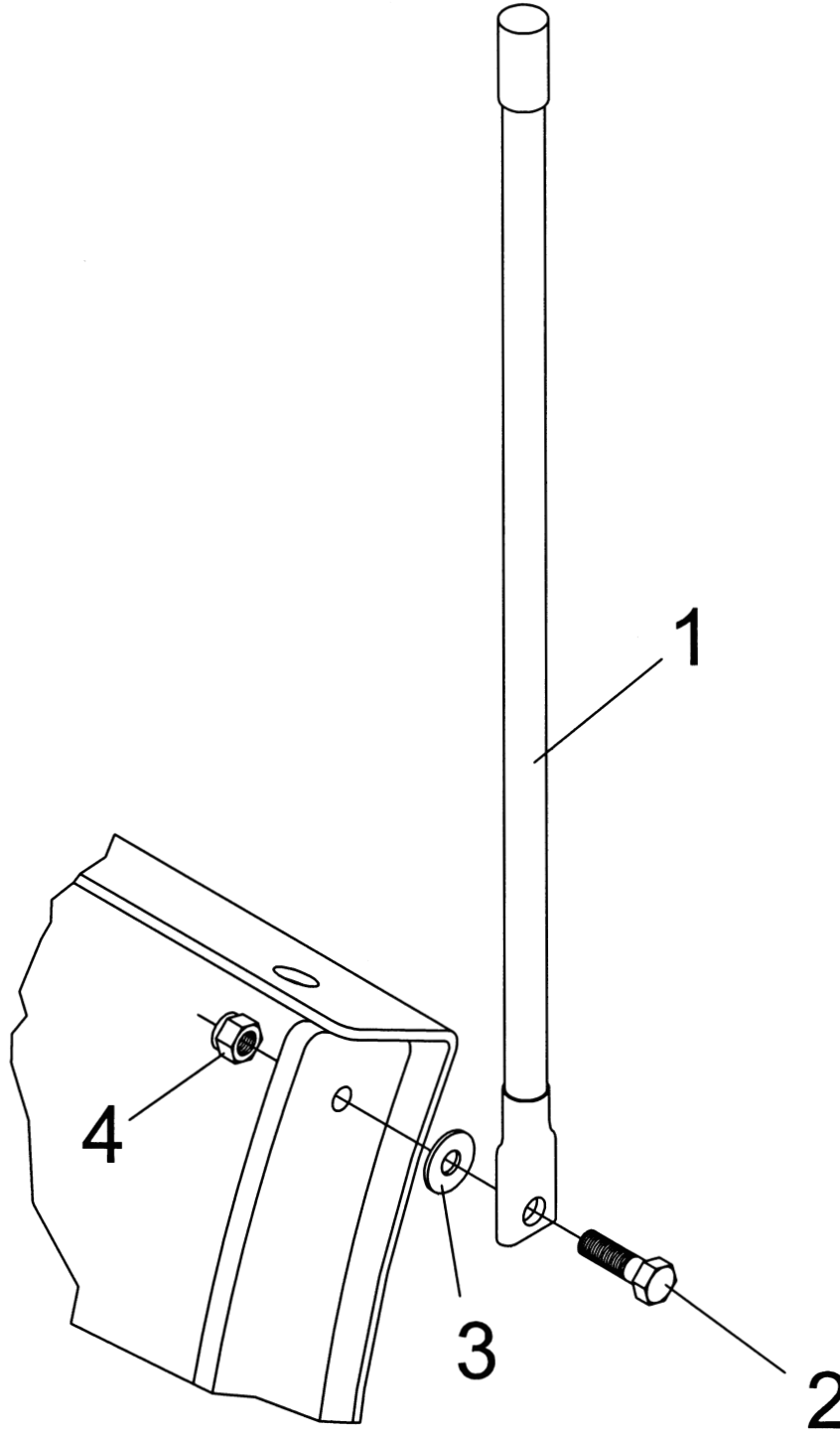
(Standard on Model SBFL-27108A and Optional on Model SBFL-2790A)



Ref. No.	Part No.	Description	No. Req'd.
1	2504230	Hydraulic Cylinder 2 x 8	2
2	2504007	Cotter Pin 3/16" x 1 3/4" Coated	4
3	2505673	Hose, Hydraulic 1/4" ID x 36"	2
4	2505681	Elbow, 90° Adj. 9/16"-18 to 3/4"-16	2
5	2505710	Bushing 3/4"-16 to 9/16"-18	2
6	2505711	Tee, Adjustable 9/16"-18	2
7	2505682	Elbow, 90° Swivel 9/16"-18	4
8	360066	Plate, Mounting (Cross-Over Relief)	1
9	2505713	Valve, Cross Over Relief	1
10	2505671	Hose, Hydraulic 1/4" ID x 24"	2
11	2505683	Straight Connector 9/16"-18	4
12	2503011	Bolt 3/8"-16NC x 1" Hex Head Gr. 2	2
13	2500081	Nut 3/8"-16NC Whiz Flange Hex	2
14	2503111	Bolt 5/16"-18NC x 1 3/4" Hex Head Gr. 2	2
15	2500060	Nut 5/16"-18NC Whiz Flange Hex	2



# OPTIONAL MARKER KIT (#360235)



Ref. No.	Part No.	Description	No. Req'd.
1	360236	Plow Marker (Pair)	1
2	2503038	Bolt 5/16"-18NC x 1" Hex Head Gr. 2	2
3	2501012	Washer 5/16" Flat	2
4	2500046	Nut 5/16"-18NC Nylock Hex	2









# ⚠ SAFETY PRECAUTIONS ⚠

**MOST ACCIDENTS OCCUR BECAUSE OF NEGLIGENCE OR CARELESSNESS.  
AVOID NEEDLESS ACCIDENTS BY FOLLOWING ALL OF THE SAFETY PRECAUTIONS LISTED BELOW.**

- Machinery should be operated only by those who are responsible and are authorized to do so.
- Stop the engine, lower all equipment, lock the brakes, and remove the ignition key before dismounting from the power unit.
- Loose fitting clothing should not be worn, to avoid catching on various parts.
- Detach implement in area where children normally do not play.
- When performing adjustments or maintenance on an implement, first lower it to the ground or block it securely at a workable height.
- Only a qualified operator should be permitted on power unit when in operation; no riders allowed.
- Make certain everyone is in the clear before starting power unit or raising or lowering equipment.
- Operate the power unit and attachment only while seated in the driver's seat.
- Reduce speed when transporting mounted implements to avoid bouncing and momentary loss of steering control.
- A heavy load can cause instability of the power unit. Use extreme care during road travel. Slow down on turns and watch out for bumps. Power unit may need counterweights to counter-balance the weight of the implement.
- Reduce speed on hillsides or curves so there is no danger of tipping.
- Avoid driving too close to the edge of ditches or creeks.
- Do not transport implement on public roads without reflectors and slow moving vehicle emblem in daylight and with approved warning lights at night and other periods of poor visibility.
- Due to the width of some implements, use extra caution on highways, farm roads, and when approaching gates.
- Always be sure the implement is in the proper position for transport.
- Keep alert and watch the front as well as the rear when working with the implement.

## OWNER'S/ OPERATOR'S MANUAL

### MODEL NO.'s

**2160**

**2172**

**2790A**

**27108A**

**WHEN ORDERING REPAIR  
PARTS, ALWAYS GIVE THE  
FOLLOWING INFORMATION:**

1. PART NUMBER
2. PART DESCRIPTION
3. MODEL NUMBER
4. NAME OF ITEM

AUGUST 2009

## **Snow Blades for Skid Steer and Tractor Front Loaders**

### **Models 2160 and 2172**

Compact Tractor/Loaders up to 40 hp  
Skid Steers rated up to 35 hp

### **Models 2790A and 27108A**

Tractor/Loaders from 30 hp - 80 hp  
Skid Steers rated from 30 hp - 80 hp

**MAKE EVERY DAY  
A HOLIDAY FROM ACCIDENTS!**

## **WORKSAVER, INC.**

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