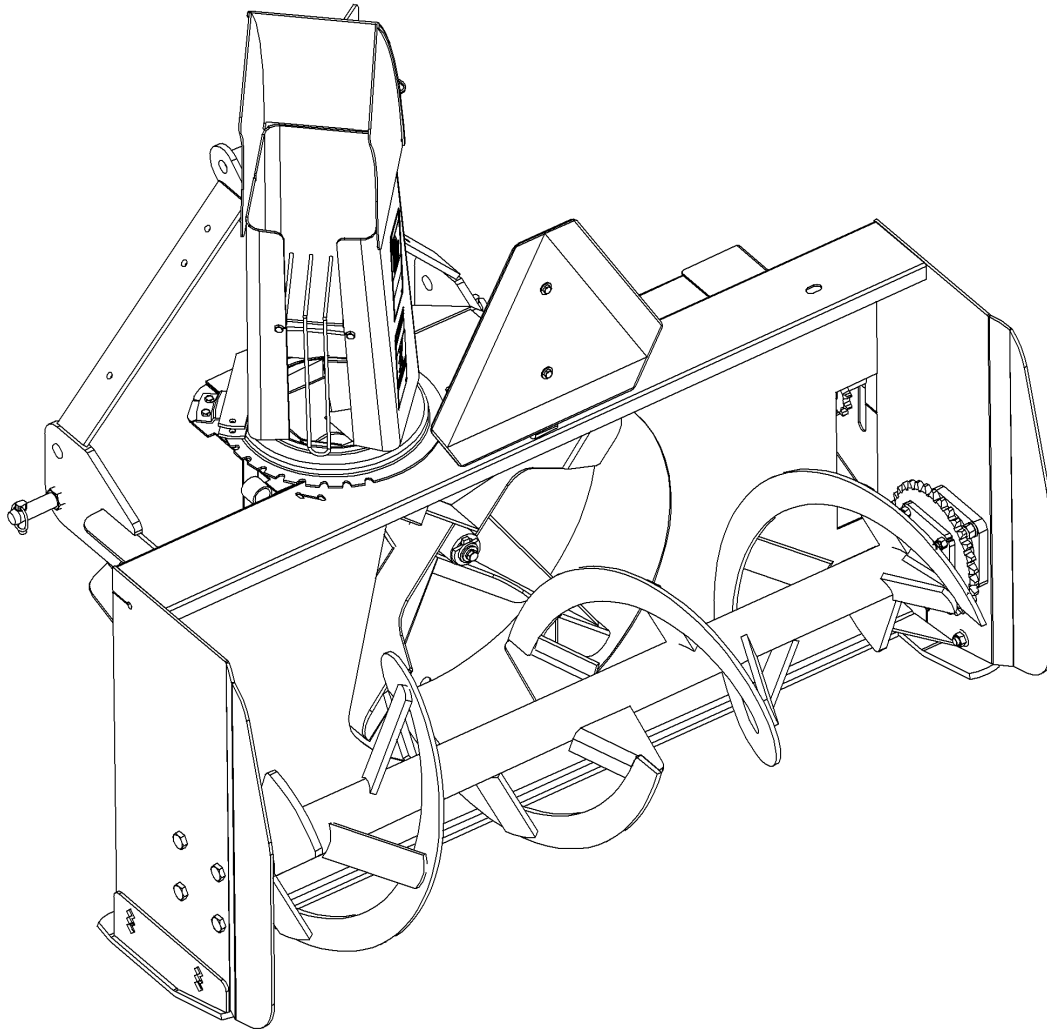


OPERATOR'S MANUAL

# SNOWBLOWERS

**SB1148 | SB1154 | SB1164**



OM0369SB1148-A  
07/09



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# SPECIFICATIONS

Features and Specifications	SB1148	SB1154	SB1164
Function	Snow Removal	Snow Removal	Snow Removal
<b>Working Width</b>	48"	54"	64"
Transport Width	48"	54"	64"
Working Height	24 5/8"	26"	26"
Length	39"	39"	39"
Single/Dual Auger	Single	Single	Single
Auger Diameter	15"	15"	15"
Auger Flighting Thickness	1/4"	5/16"	5/16"
Impeller Diameter	20"	24"	24"
Impeller Width	6"	7"	7"
Impeller Shaft Diameter	1"	1 3/8"	1 3/8"
Number of Impeller blades	4	4	4
Roller Chain	50	60	60
Drive sprocket (# of teeth)	17	10	10
Driven sprocket (# of teeth)	36	32	32
Chain idler	Manual adjustment	Manual adjustment	Manual adjustment
Gearbox Manufacturer	Comer	Comer	Comer
Gearbox Description	Model L-25J	Model T-281A	Model T-281A
Tractor RPM	540	540	540
Impeller RPM	540	540	540
Auger RPM	170	170	170
PTO Manufacturer	Comer	Comer	Comer
PTO Description	20	40	40
Skid Shoe	Adjustable	Adjustable	Adjustable
Skid Shoe Material	Steel	Steel	Steel
End Plate Thickness	3/16"	3/16"	3/16"
Back Plate Thickness	12ga	12ga	12ga
Impeller Housing Thickness	12ga	12ga	12ga
Impeller Blade Thickness	3/16"	3/16"	3/16"
Side Panel Bottom Thickness	3/16"	3/16"	3/16"
Cutting Edge	Welded	Welded	Welded
Cutting Edge Dimension	3/8" x 2"	3/8" x 2"	3/8" x 2"
Chute Base	Standard	Standard	Standard
Parking Stand	Standard	Standard	Standard
Hitch Category	Cat. 1	Cat. 1	Cat. 1
Quick Hitch Compatibility	ASABE Compatible	ASABE Compatible	ASABE Compatible
HP Requirements - min-max (hp)	16-35	16-35	20-50
Operating Weight (lbs)-hyd. rot. & defl.	437	455	479
Shipping Weight (lbs)	370	390	421
Approx. Set-up Time (min.)*	40	35	35
Chute Deflector Adjustment (standard)	Manual	Manual	Manual
Chute Deflector Adjustment (option)	Hydraulic cylinder (2"x6") - including hoses, and tips	<b>Hydraulic</b> - cylinder (2"x6") - including hoses, and tips <b>Electric</b> - 4" actuator - 1000 lbs. including hardware, switch, and electric cable.	<b>Hydraulic</b> - cylinder (2"x6") - including hoses, and tips <b>Electric</b> - 4" actuator - 1000 lbs. including hardware, switch, and electric cable.
Chute Rotation	<b>Manual</b> - worm gear w/ crank. <b>Hydraulic</b> - cylinder (2"x6") - including bracket, hoses, and tips	<b>Manual</b> - worm gear w/ crank. <b>Hydraulic</b> - cylinder (2"x6") - including bracket, hoses, and tips	<b>Manual</b> - worm gear w/ crank. <b>Hydraulic</b> - cylinder (2"x6") - including bracket, hoses, and tips
Chute	Two-part	Two-part	Two-part

\* With manual chute rotation

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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 implements. The information was 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 an implement into service. Familiarize yourself with the operating instructions and all the safety recommendations contained in this manual and those labeled on the implements and on the tractor. 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**

Right Hand and Left Hand are determined by those seen by the conductor standing behind the equipment.

*The Dealer is responsible for warranty registration of the unit you have purchased. To assist your dealer in handling your needs, please record hereafter the model number and serial number of your implement and tractor. It is also advisable to supply them to your insurance company. It will be helpful in the event that an implement or tractor is lost or stolen.*

MODEL :

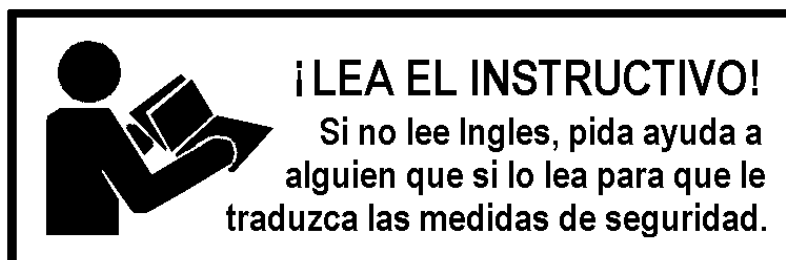
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SERIAL NUMBER :

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DATE OF PURCHASE :

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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 imminently 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 and Bystanders**

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 and look for small children.
4. Never carry children while operating the machine. They may fall off and be seriously injured or interfere with safe operation of the machine.
5. Never allow children to play on the machine or attachment even when 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 insurance 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 an implement. Please read the following section and pay particular attention to all safety recommendations contained in this manual and those labeled on the implements and on the tractor.

## **THE SNOWBLOWER**

### **Before Operation**

1. Read and understand this operator's manual and tractor 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 tractor and implement. It may catch on moving parts or controls, leading to the risk of accident.
3. Before the snow season, thoroughly inspect the area where the equipment is to be used and remove all doormats, sleds, boards and other foreign objects.
4. Disengage clutch and shift into neutral before starting the engine.
5. Do not operate equipment in wintertime without wearing adequate winter garments.
6. Never attempt to make any adjustments while engine is running. Read this manual carefully to acquaint yourself with the equipment as well as the tractor operator's manual. Working with unfamiliar equipment can lead to accidents. Be thoroughly familiar with the controls and proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
7. Keep all shields in place and properly tighten all mounting hardware.
8. Periodically, inspect all moving parts for wear and replace with authorized service parts if an excessive amount of wear is present.
9. Replace all missing, illegible, or damaged safety and warning decals. See list of decals in the operator's manual.
10. Do not modify or alter this equipment or any of its components, or any equipment function without first consulting your dealer.
11. Keep safety decals clean of dirt and grime.



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## **SAFETY PRECAUTIONS - continued**

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### **Snowblower Operation**

- 1.** Before leaving the tractor unattended, take all possible precautions. Disengage the PTO, stop the engine and remove the ignition key. Lower the implement to the ground.
- 2.** Before starting the snowblower, remove any ice that has accumulated in the auger/impeller.
- 3.** Watch carefully for foreign objects that could enter the blower while operating.
- 4.** Be sure the clutch switch/lever is in OFF position before starting engine.
- 5.** Do not put hands or feet near rotation parts. Keep clear of discharge opening at all times.
- 6.** Exercise extreme caution when operating on or crossing a gravel drive, walks, or roads. Stay alert for hidden hazards or traffic. Do not carry passengers.
- 7.** Adjust collector housing height to clear gravel or crushed rock surface.
- 8.** Stop the engine, remove the key, and allow the rotating parts to stop before unclogging the collector/impeller housing or chute, and making any repairs, adjustments or inspections. Use only a 36" long piece of wood to unclog blower.
- 9.** If the snowblower starts to vibrate abnormally, stop the engine immediately and check for cause. Excessive vibration is generally a sign of trouble.
- 10.** Do not run the engine indoors except when starting engine and transporting attachment in or out of building. Carbon monoxide gas is colorless, odourless and deadly.
- 11.** Exercise extreme caution when changing direction on slopes. Do not attempt to operate on steep slopes.
- 12.** Never operate snowblower without guards, and other safety protective devices in place.
- 13.** Never operate snowblower near glass enclosures, automobiles, window wells, embankments, etc., without proper adjustment of snow discharge angle.
- 14.** Never operate machine at high transport speeds on a slippery surface.
- 15.** Use extra caution when backing up.
- 16.** Do not direct discharge at bystanders or animals. Ejected objects may cause injury.
- 17.** Disengage power to auger/impeller when transporting or when not in use.
- 18.** Never operate the snowblower without good visibility and lighting.
- 19.** 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

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# SAFETY PRECAUTIONS - continued

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## **THE TRACTOR**

### **General Information**

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

### **Operating the Tractor**

1. Never run the tractor 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. Make sure the shield is installed when using a PTO-driven equipment and always replace the shield if damaged.
4. Always bring the tractor to a complete stop, shut off the engine, lower the implement to the ground and remove the ignition key before leaving the tractor.
5. Never park the tractor on a steep slope.
6. Do not attempt to operate on steep slopes.
7. Use of tire chains for better traction and stability is recommended.
8. Always drive the tractor at speeds compatible with safety, especially when operating over rough ground, crossing ditches, or when turning.
9. Handle fuel with care, as it is highly flammable.
10. Use approved fuel container.
11. Never add fuel to a running engine or a hot engine.
12. Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors. Replace fuel cap securely and wipe up spilled fuel.
13. Never allow anyone to operate the snowblower until they are thoroughly familiar with basic tractor and snowblower operation.
14. A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.
15. Always make sure all snowblower components are properly installed and securely fastened BEFORE operation.

### **During Operation**

1. Do not allow anyone to ride on the tractor/snowblower at any time. There is no safe place for passengers on this equipment. The operator MUST sit in the tractor seat.
2. Eye and hearing protection is recommended when operating the snowblower.
3. Operate only during daylight hours, or when the area is well lit with bright artificial light.
4. Disengage the PTO (turn to "OFF"), place the transmission in neutral, set the parking brake, shut off the engine and remove the key, and make sure rotating components have stopped BEFORE leaving the operator's seat.
5. Inspect the snowblower after striking any foreign object to assure that all snowblower parts are safe and secure and not damaged.

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# SAFETY PRECAUTIONS - continued

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## MAINTENANCE

1. Park the tractor/snowblower on level ground, set the parking brake, disengage the PTO, shut off the engine, remove the key, and lower the implement to the ground **BEFORE** making any snowblower adjustments.
2. To avoid injury, do not adjust, unclog or service the snowblower with the tractor engine running. Making sure rotating components have completely stopped before leaving the operator's seat
3. Keep the tractor/snowblower clean. Snow and ice build-up can lead to malfunction or personal injury from thawing and refreezing in garage.
4. Always wear eye protection when cleaning or servicing the snowblower.
5. Do not work under any part of the tractor or snowblower, unless it is securely supported by safety stands.
6. Make sure all shields and guards are securely in place following all service, cleaning, or repair work.
7. Do not modify or alter this equipment or any of its components or operating functions. If you have questions concerning modifications, consult with your dealer.

## TRANSPORTATION

1. If the tractor/snowblower is to be driven on public roads, it must be equipped with an SMV (Slow Moving Vehicle) sign. Check local traffic codes that may apply to unit usage on public roads and highways in your area.
2. Be alert for all other traffic when driving the tractor/snowblower on public roads or highways.

## STORAGE

1. Before storing the snowblower, certain precautions should be taken to protect it from deterioration.
2. Clean the snowblower thoroughly.
3. Make all the necessary repairs.
4. 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.
5. Repaint all parts from which paint has worn or peeled.
6. Lubricate the snowblower as instructed under "**Lubrication**" section.
7. When the snowblower is dry, oil all moving parts. Apply oil liberally to all surfaces to protect against rust.
8. Attach driveline shield safety chain around driveline by passing it over the upper hitch
9. Store in a dry place.

# SAFETY DECALS

Replace immediately if damaged.

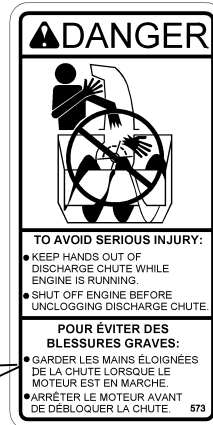
LOCATED ON HYDRAULIC ROTATION



5RD664548



5RD2500616



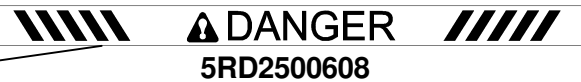
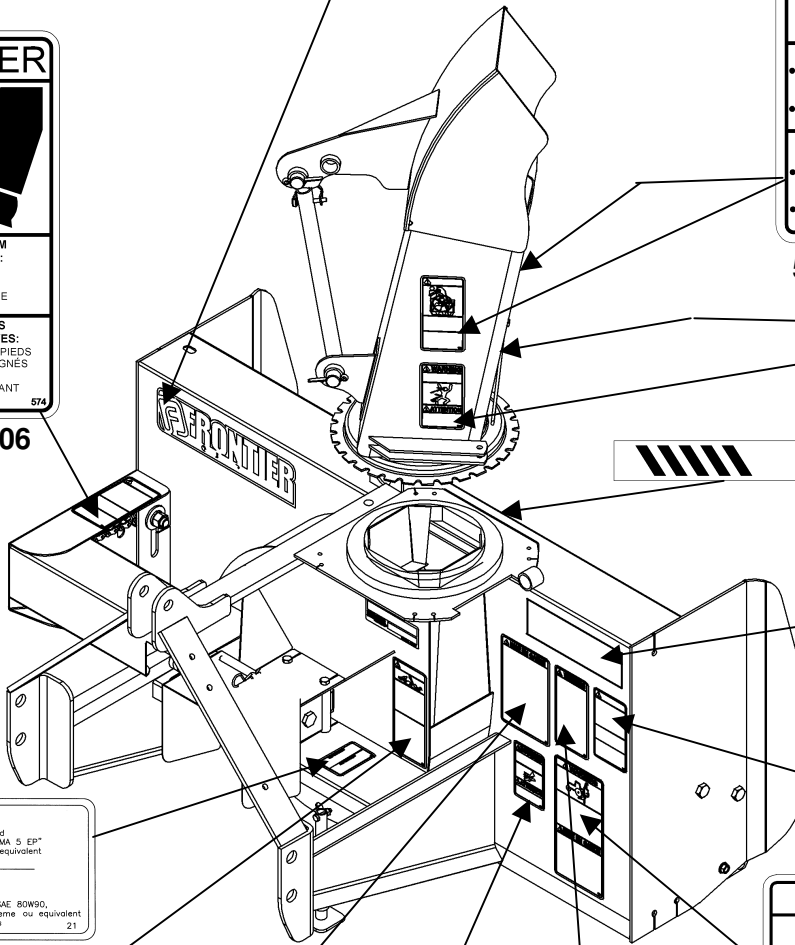
5RD2500605



5RD2500607



5RD2500606



5RD2500608



5RD2500619



5RD2500606

**IMPORTANT**  
Before using:  
-Oil level must be checked  
-Fill with SAE 80W90, "AGMA 5 EP" extreme pressure oil or equivalent  
-Read instructions manual  
**IMPORTANT**  
Avant usage:  
-Vérifier le niveau d'huile  
-Remplir avec de l'huile SAE 80W90, "AGMA 5EP" pression extrême ou équivalent  
-Lire manuel d'instructions

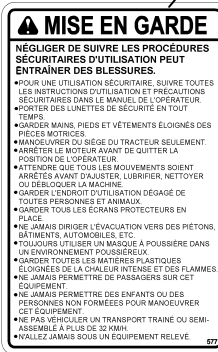
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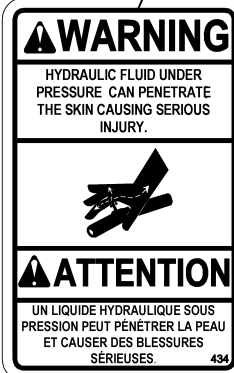
5RD2500614



5RD2500604



5RD2500611



5RD2500400



5RD2500610

# ASSEMBLY

## TRACTOR PREPARATION

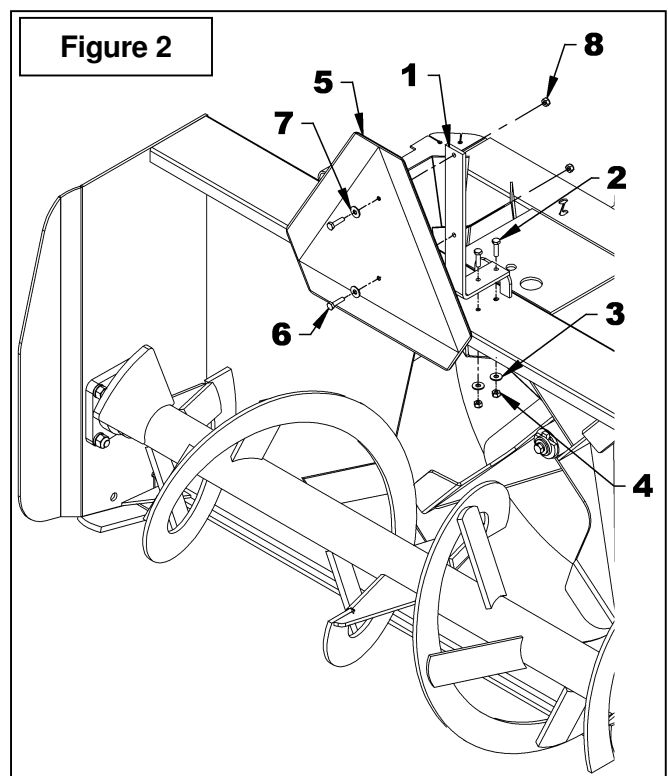
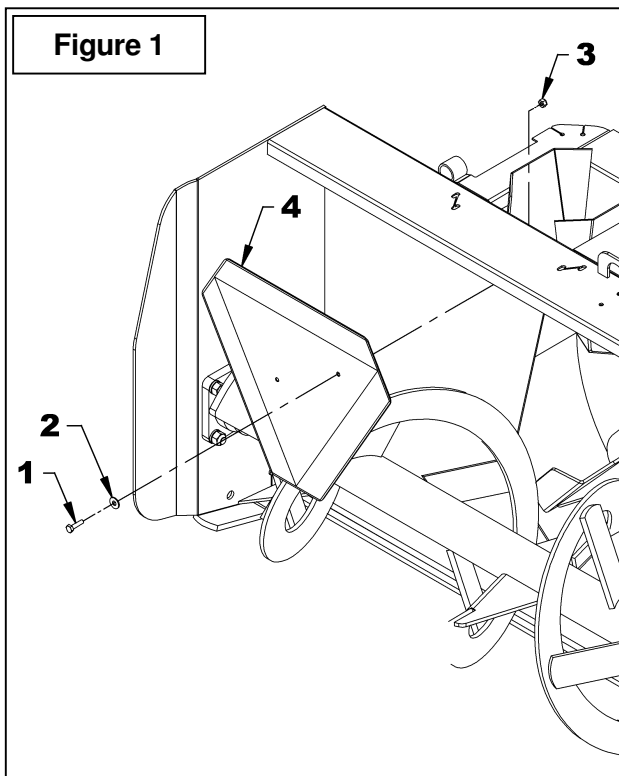
See Dealer for Tractor Preparation information.

## SNOWBLOWER ASSEMBLY

The snowblower is assembled at the factory however snowblower kits must be assembled. Use the present manual and lay out all parts for assembly. Separate bolts and nuts into various sizes. After assembly, torque all the bolts according to the **Torque Specification Table** on page 50.

### Installation of SMV Sign (Figures 1-2)

- Figure 1:** Remove the 1/4" NC x 1" bolt, the flat washer and the 1/4" nylon insert nut (items 1-2-3) that fixes the sign (item 4) to the frame. Save the hardware.
- Figure 2:** Install the sign support (item 1) on the snowblower with two 1/4" NC x 1" bolts, two 1/4" flat washers and two 1/4" NC nylon insert nuts (items 2-3-4).
- Figure 2:** Using the hardware previously removed, attach the SMV sign (item 5) with two 1/4" NC x 1" bolts, two flat washers and two 1/4" nylon insert nut (items 6-7-8).
- Remove the black protective film from the SMV sign.



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# ASSEMBLY

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## Installation of Chute and Manual Rotation Kit 5RDF0016

(Figures 3-4-5-6)

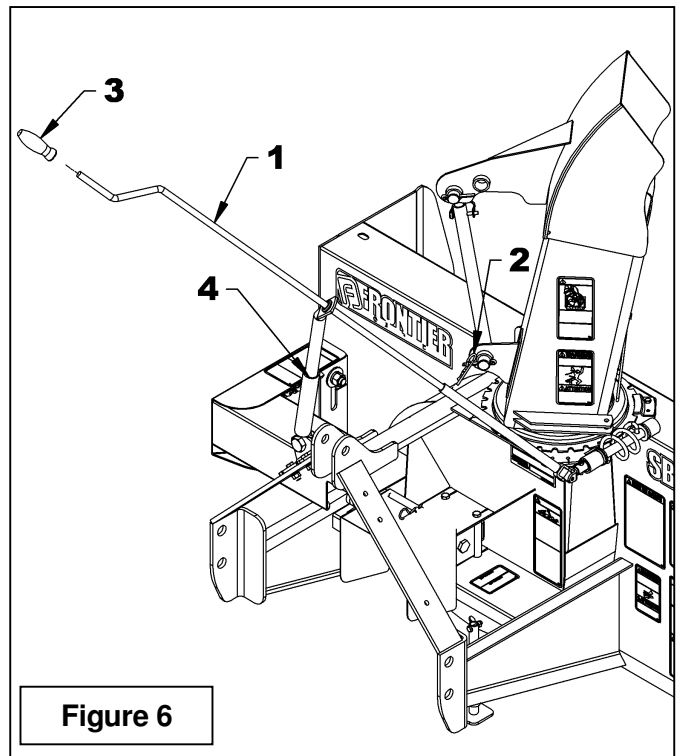
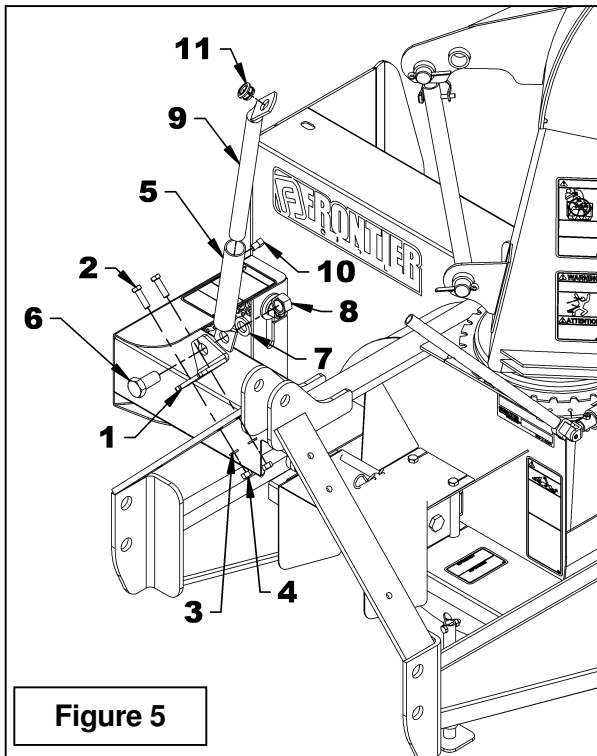
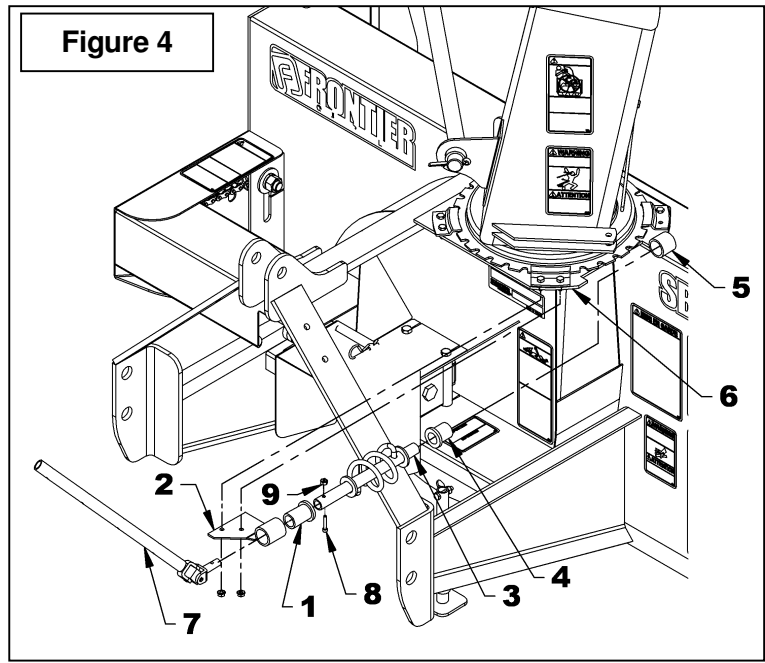
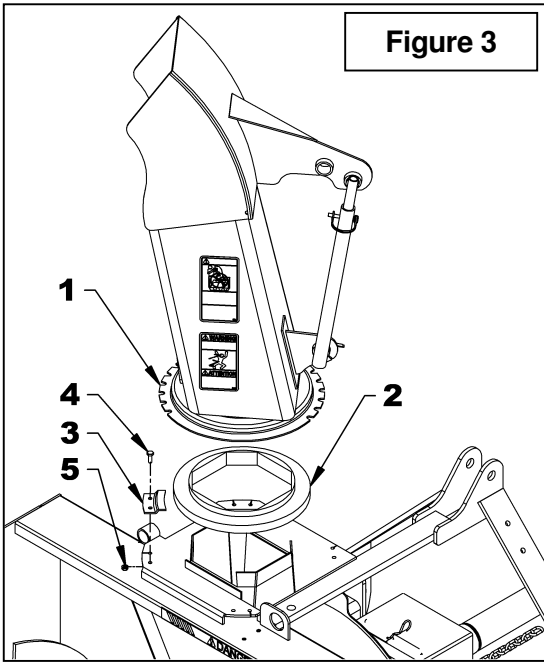
**NOTE:** The rotation handle can be installed on the right or left side of the three point hitch.

- Figure 3:** Install the rotation bushing (item 2) over the chute base.
- Figure 4:** Insert the 1 11/16" plastic bushing (item 1) in the worm support bracket (item 2) and insert the longest end of the rotation worm (item 3).
- Figure 4:** Insert the 1 5/16" plastic bushing (item 4) in the welded tube of the snowblower (item 5).
- Figure 4:** Place the support (item 2) under the snowblower's right upper plate (item 6).
- Figure 3:** Place the chute (item 1) over the rotation bushing (item 2) and install the four retaining plates (item 3) with eight 1/4" x 3/4" bolts and eight serrated flange nuts (items 4-5). Tighten securely.
- Figure 4:** Insert the rotation tube (item 7) in the worm assembly aligning the holes, insert an Allen socket head capscrew 10-24 x 1" (item 8) making sure the screw head sinks into the rotation worm and secure with a nylon insert nut (item 9).
- Figure 5:** Install the rotation bracket (item 1) on the left or right arm of the three point hitch with two 3/8" NC x 1 1/4" bolts, 3/8" lockwashers and 3/8" nuts (items 2-3-4). Tighten firmly.
- Figure 5:** Attach the handle support bracket (item 5) to the rotation bracket (item 1) with a 3/4"NC x 1 1/4" bolt, lockwasher and nut (items 6-7-8) making sure to attach the brackets in the direction illustrated.
- Figure 5:** Insert the handle support (item 9) in the bracket (item 5) adjusting the height of the support according to your needs and secure in place with a 3/8" x 1/2" square head setscrew (item 10).
- Figure 5:** Insert the grommet (item 11) in the handle support (item 9).
- Figure 6:** Insert the handle (item 1) in the handle support (item 4) and in the rotation tube. Select desired length, align nearest holes and secure with the 4 mm x 80mm hairpin (item 2). Install the plastic handle (item 3).
- Figure 5:** Once the snowblower is attached to the tractor, adjust handle position and height to ensure comfort and safe operation. Tighten setscrew (item 10) on the handle support as well as the 3/4" x 1 1/2" bolt, 3/4" lockwasher and 3/4" nut (items 6-7-8).
- Figure 6:** To insure the manual rotation functions properly, position the handle support (item 4) the closest possible to the top link mounting point of the three point hitch while making sure it does not come into contact with the operator's seat when the snowblower is fully raised.
- Tighten all bolts according to the **Torque Specification Table** on page 50.



**To avoid personal injury, check the full lifting range of the snowblower, to ensure that the chute rotation handle is clear of the operator's area when the snowblower is in raised position.**

# ASSEMBLY



# ASSEMBLY

## Installation of Chute and Hydraulic Rotation Kit 5RDF0017

(Figures 7-8-9)

- Figure 7:** Place the rotation bushing (item 2) over the chute base.
- Figure 7:** Place the chute (item 1) over the rotation bushing (item 2) and install the four retaining plates (item 3) with eight 1/4" x 3/4" bolts and eight serrated flange nuts (items 4-5). Tighten securely.
- Figure 8:** Attach the rotation bracket (item 1) in the  $\text{\O}21/32$ " hole in the housing with a 5/8"NC x 1 1/2" hex. bolt, a 5/8" lockwasher and a 5/8" nut (items 2-3-4).

**Note: For SB1148 only.** Place the 5/8" lg spacer (fig. 8, item 5) on the  $\text{\O}9/16$ " x 1" slot in the housing before attaching the other end of the bracket.

- Figure 8:** Attach the other end of the bracket (item 1) in the  $\text{\O}9/16$ " x 1" slot in the housing with a 1/2"NC x 1 1/4" hex. bolt, a  $\text{\O}9/16$ " hole flat washer, a 1/2" lockwasher and a 1/2" hex. nut (items 6-7-8-9). Tighten securely.
- Figure 8:** Attach the bell crank (item 10) by inserting the pivot bushing (item 11) in the tube and slide the bell crank between the flat bars of the rotation bracket (item 1). Secure everything with a 5/8"NC x 5 1/2" hex. bolt, a 5/8" lockwasher and a 5/8" stover nut (items 12-13-14) in the order shown. Tighten firmly.
- Figure 8:** Grease both holes of the push arm generously (item 15) and slide the shortest section between the bell crank arms (item 10). Insert a 3/8" x 1 1/4" bolt from the top and secure with a 3/8"NC stover nut (items 16-17). Tighten leaving some movement to the mechanism.
- Figure 8:** Slide the longest of the push arm (item 15) between the flat bars welded on the base of the chute. Secure everything with a 3/8" x 1 1/4" hex. bolt and a 3/8"NC stover nut (items 18-19). Tighten leaving some movement to the mechanism.

- Figure 8:** Attach the fixed section of the cylinder (item 20) to the rotation bracket (item 1, hole "B") and the sliding section to the bell crank (item 10, hole "A") placing a  $\text{\O} 1 1/16$ " flat washer (item 21) between the cylinder yoke and the top of the bell crank and secure with the cylinder pins and the circlips. Point the hydraulic ports upward as illustrated.

**NOTE:** The 1 1/16" hole flat washer (item 21) prevents the cylinder yoke from rubbing on the bell crank.

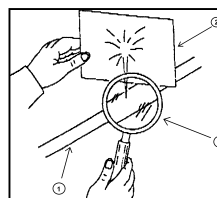
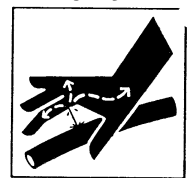
- Figure 9:** Connect the 3/8" ends of both hoses (item 2) to the cylinder (item 1) and install a quick coupler with rubber dust cap (items 6-7) at the end of each hose.
- Figure 9:** Secure the hoses on the three point hitch with the hose clamp, 3/8" NC x 1 1/2" lg bolt and 3/8" NC nylon insert nut (items 4-3-5) and attach hoses together with the nylon tie wraps (item 8) where needed.



## CAUTION

**To avoid serious personal injury. Escaping hydraulic/ diesel fluid under pressure can penetrate the skin causing serious injury.**

- Do not use your hands to check for leaks. Use a piece of cardboard or paper to search for leaks.**



- Hydraulic hose
- Cardboard
- Magnifying glass

- 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.**



# ASSEMBLY

Figure 7

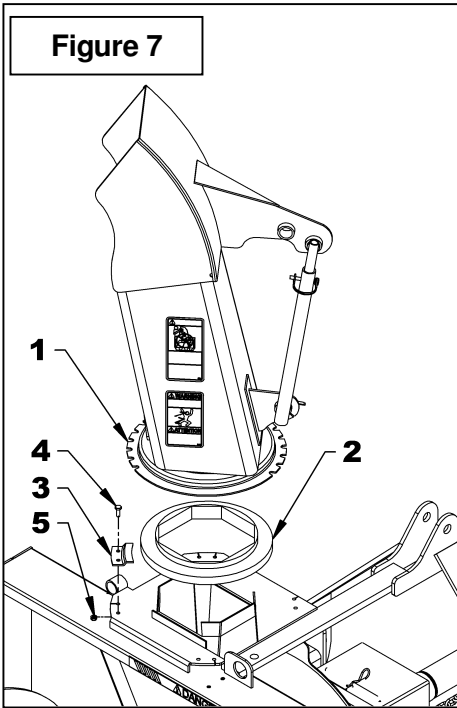


Figure 8

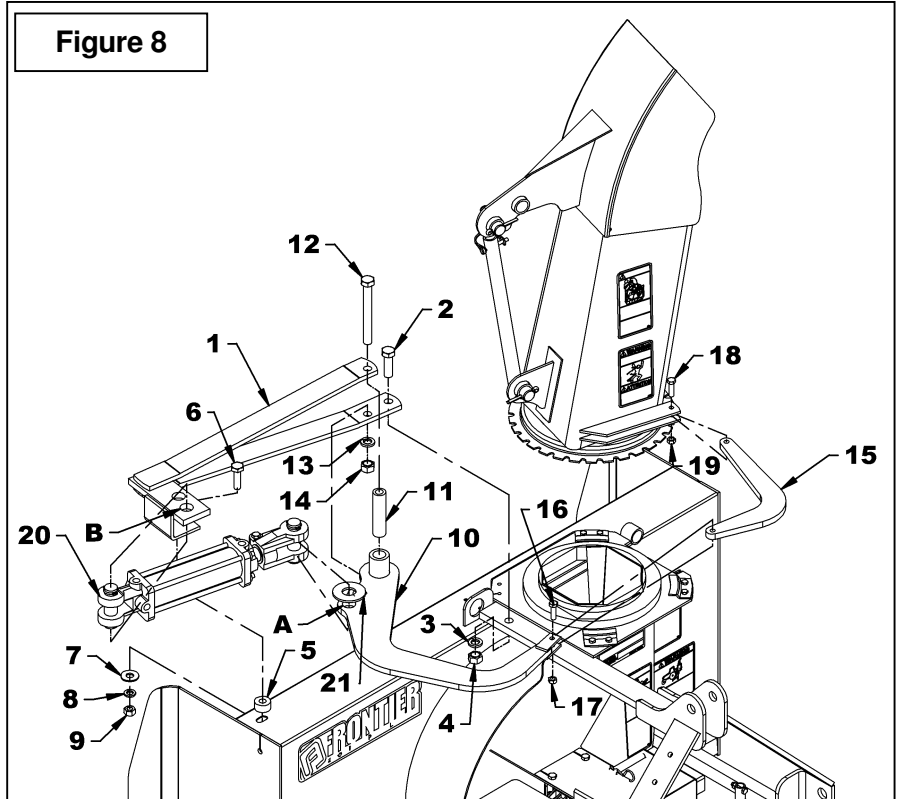
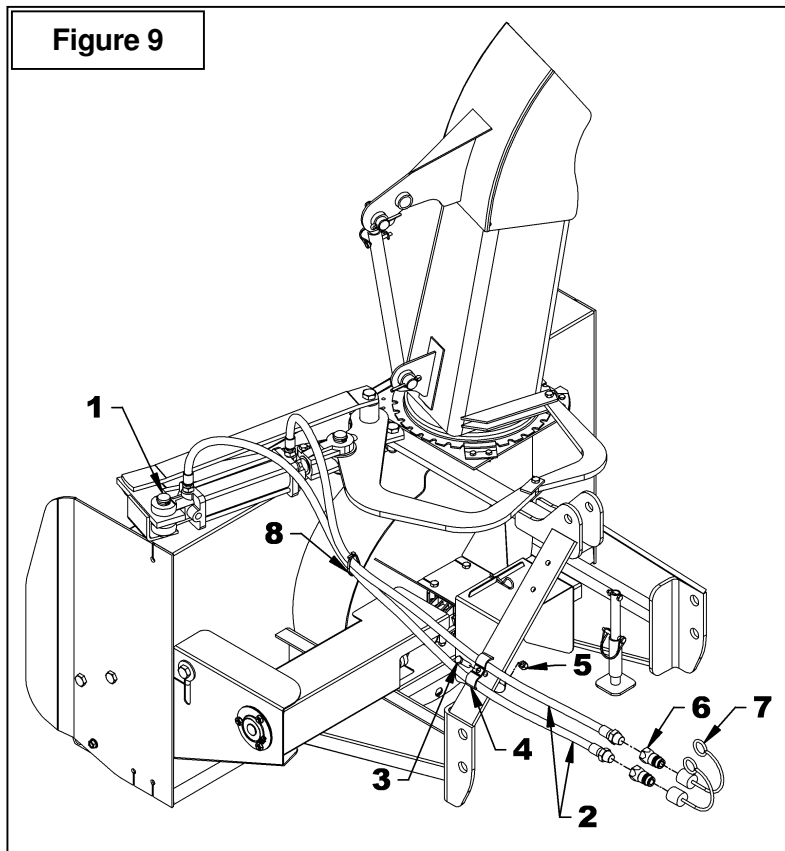


Figure 9



# ASSEMBLY

## ***Installation of Electric Deflector Kit 5RDF0020 – For SB1154 & SB1164 Only*** ***(Figures 10-11-12 & Electrical Diagram)***

1. **Figure 10:** Install the longest clevis (item 1) on the actuator base (item 2), the shortest one (item 3) on the other end and attach using two 1/2" NC x 2 1/2" bolts and 1/2" NC nylon insert locknuts (items 4-5).
2. **Figure 10:** Install a 3/16" x 1 3/4" spring pin (item 6) on each 1" pin (item 7).
3. **Figure 10:** Attach the actuator on the chute in the position shown on figure using two 1" pins (item 7) and secure with 4mm x 80mm hairpins (item 8).

**NOTE:** The base end of the electric actuator attaches in the hole closest to the chute.

4. **Figure 10 & diagram:** Connect the wires to the switch (item 10) as follows:
  - 72" black ground wire (item 9) to terminal "C" (see diagram).
  - 72" red fuse wire (item 11) to terminal "B" (see diagram).
  - 360" red and black actuator wires (item 12) to terminal "A" and "D" (see diagram).

5. **Figure 11:** Insert the switch (item 4) in the switchbox (item 2), secure with the two nuts (items 1-3) supplied with the switch and screw the rubber cap (item 5) on the switch in the order shown.
6. **Figure 12:** Place the switchbox (item 1) on the lever in a position that will be comfortable when the hand is on the knob and attach with the box clamp (item 5), two 1/4"NC x 3/4" hex. bolts and two 1/4" lockwashers (items 3-4) making sure the clamp is in the right direction so the lower openings on the switchbox are not blocked.

**NOTE:** Tighten the bolts just enough to securely fix the clamp and the switchbox on the lever. **DO NOT TIGHTEN TOO MUCH** so the clamp doesn't deform.

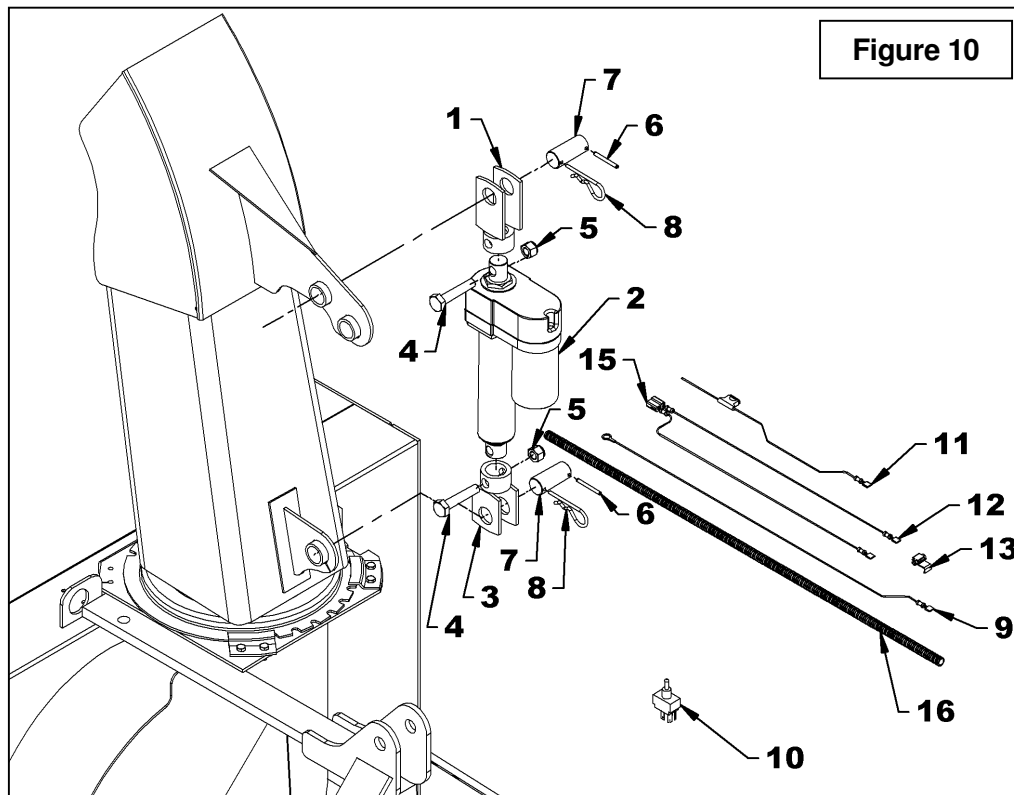
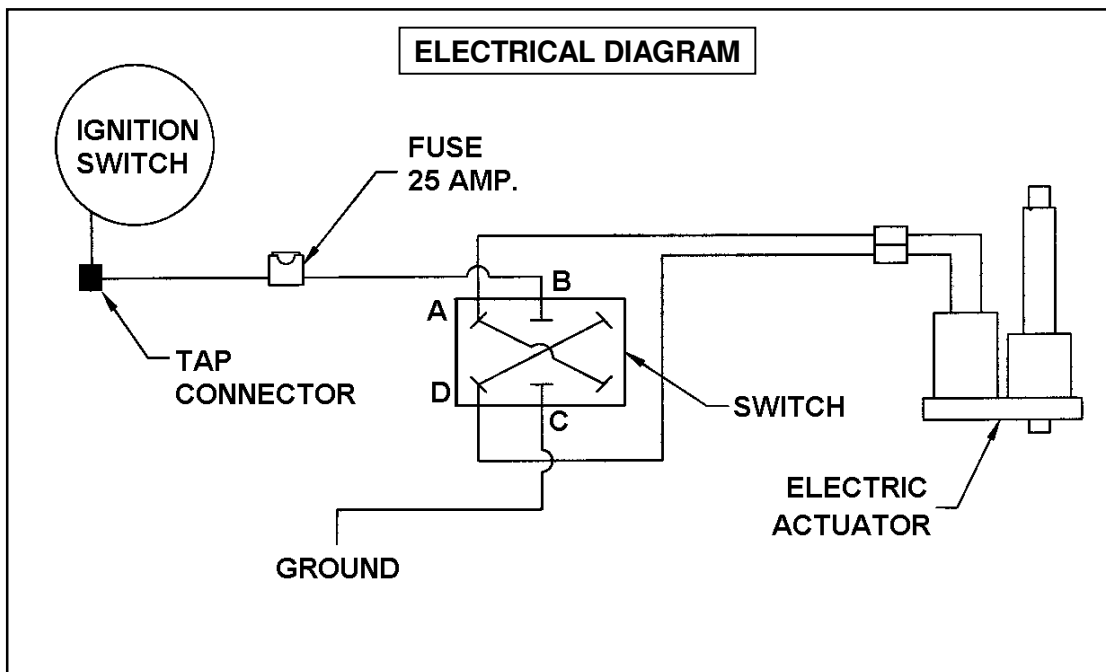
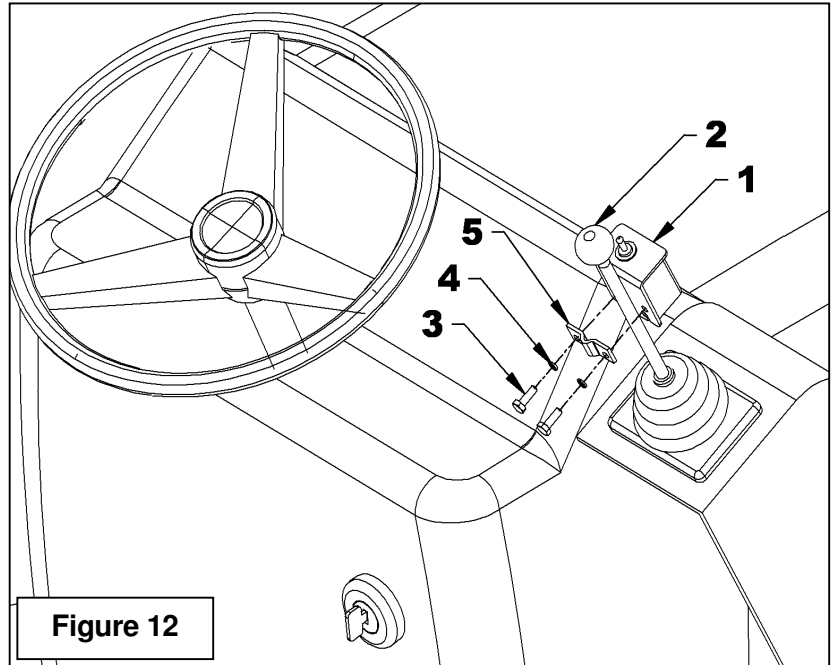
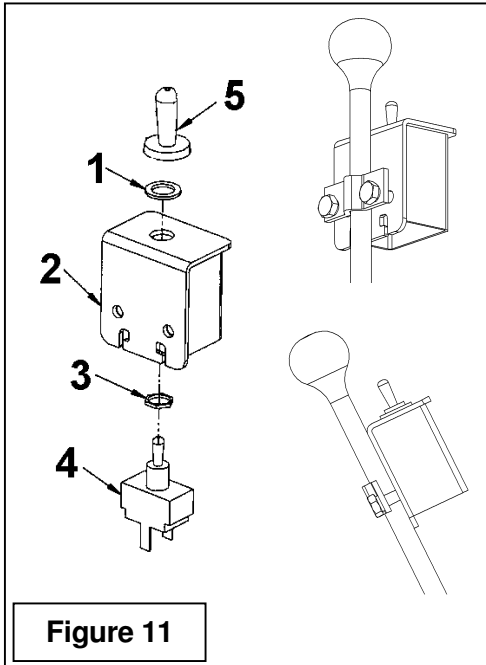


Figure 10

# ASSEMBLY

- Figure 10:** Connect the ground wire's round terminal (item 9) to any grounding screw on the tractor.
- Figure 10:** Connect the fuse wire (item 11) to the tractor ignition switch wire using the tap connector (item 13).
- Figure 10:** Connect the actuator wires' female connector (item 15) to the electric actuator (item 2).
- Figure 10:** Place the loom (item 16) around all the wires to protect them. Secure the loom using tie wraps.



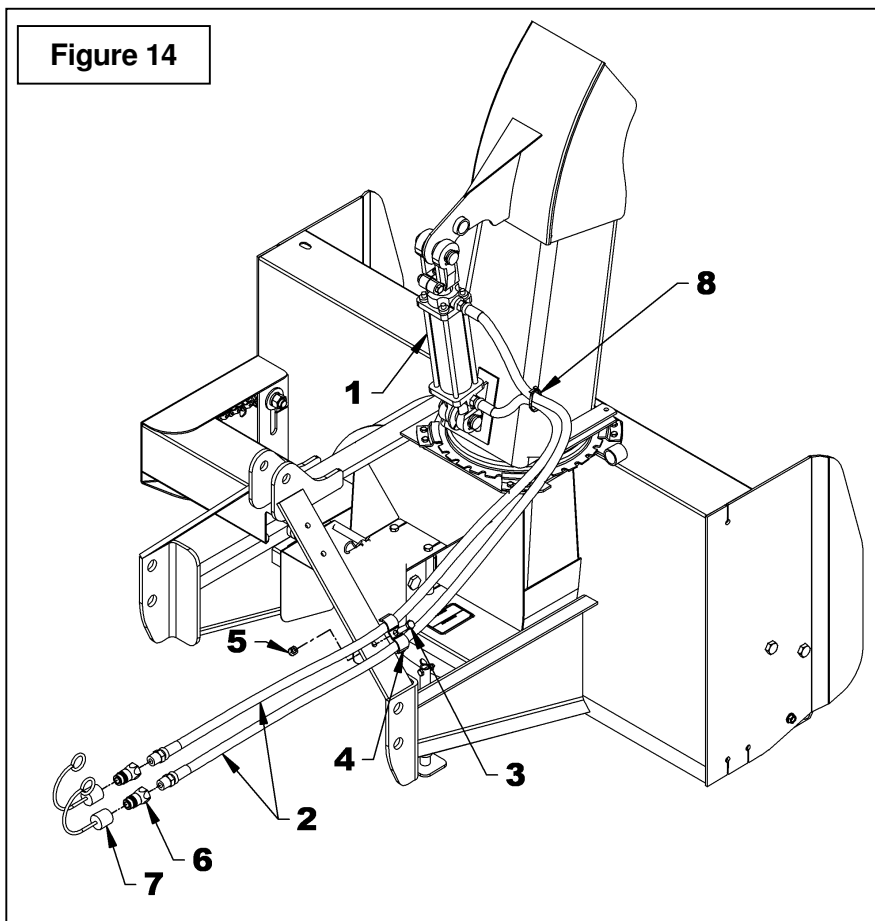
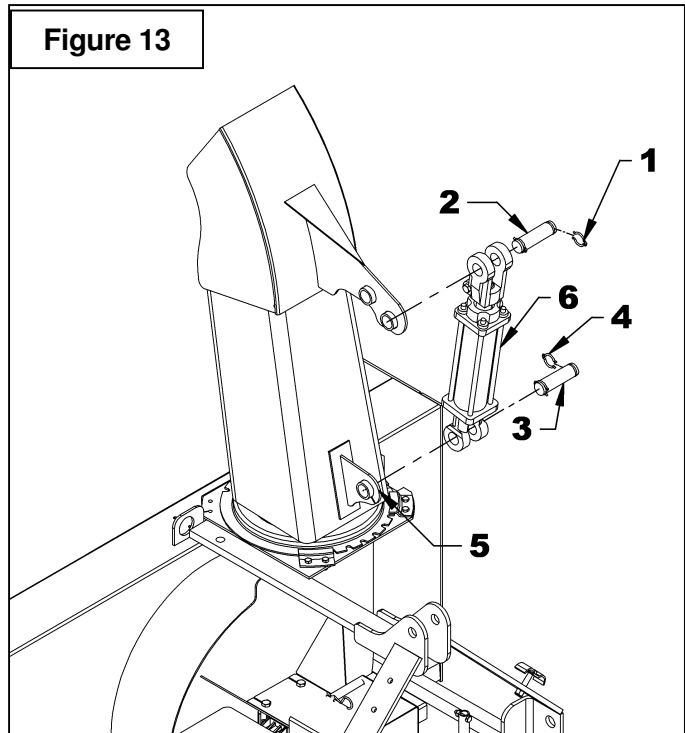
# ASSEMBLY

## Installation of Hydraulic Deflector Kit 5RDF0019

(Figures 13-14)

1. **Figure 13:** Remove a circlip (items 1-4) from each cylinder pin (items 2-3) and remove the pins. Placing the hydraulic ports in the position shown on figure 14, attach the fixed end of the cylinder (item 6) to the chute base (item 5) and the rod end to the upper chute bracket with the pins and circlips (items 1-2-3-4).
2. **Figure 14** Connect the 3/8" ends of both hoses (item 2) to the cylinder (item 1) and install a quick coupler with rubber dust cap (items 6-7) at the end of each hose.
3. **Figure 14:** Secure the hoses on the three point hitch with the hose clamp, 3/8" NC x 1 1/2" lg bolt and 3/8" NC nylon insert nut (items 4-3-5) and attach hoses together with the nylon tie wraps (item 8) where needed.

**Note:** Make sure to leave enough slack to the hoses to allow complete rotation movements.



# ASSEMBLY

## Installation of Snowblower with Three Point Hitch (Figure 15)

1. Install the two cat.1 pins (item 1) on the right and left snowblower hitches in the lower holes as shown on figure.
2. Attach tractor lower links (item 2) to the hitch pins (item 1) and secure with the linchpins (item 3).
3. Attach the tractor upper link (item 4) between the upper attaching plates (item 6) using the tractor pin and linchpin (item 5 – not included).
4. Adjust the snowblower using the tractor upper link so that the snowblower operates parallel to the ground.
5. Set the tractor anti-sway turnbuckles so the snowblower does not sway. Be sure there is no contact with the tires.

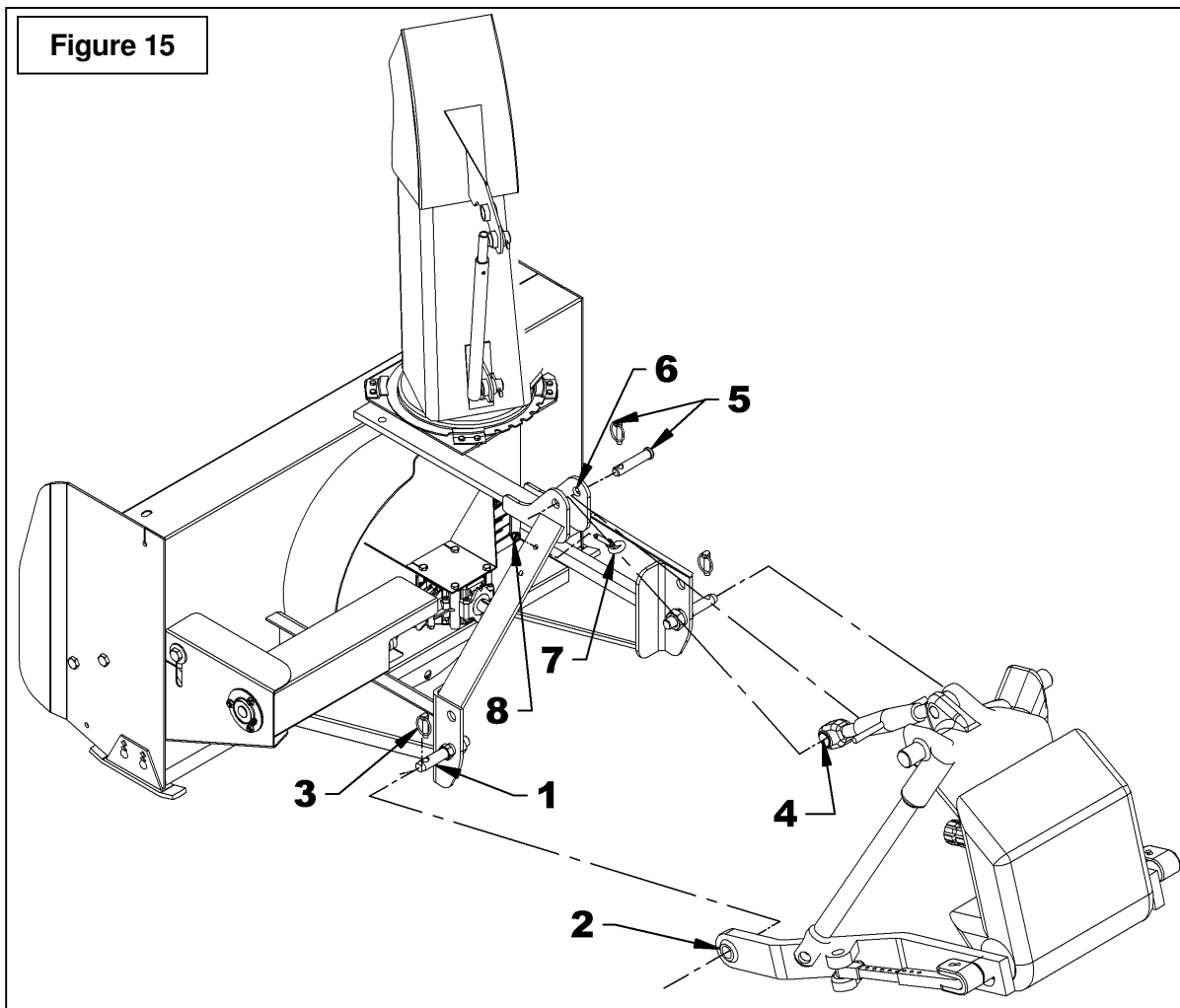


### CAUTION

**Before connecting snowblower driveline to tractor drive shaft, make sure driveline is not too long in raised, lowered and middle position. If the driveline is too long it must be shortened, to avoid damaged to tractor. See pages 21 to 23 for instructions.**

6. Connect driveline to tractor drive P.T.O. making sure that the driveline is properly engaged.
7. Install the eyebolt (item 7) in the upper hole of the left or right side of the three point hitch by screwing the eyebolt nut to the top and locking eyebolt in place with a 3/8" serrated flange nut (item 8).

Figure 15



# ASSEMBLY

## Installation of Snowblower with Quick Hitch (Figure 16)

1. Install the two cat.1 pins (item 2) on the right and left snowblower hitches in the upper holes leaving 3 1/4" between the jam nut and the end of the pin as shown on figure.
2. Insert the two 2 1/8" lg bushings (item 3) on each pin and secure in place and lock in place with the two 7/16" linchpins (item 4).
3. Insert the 1 7/8" lg bushing (item 5) between the upper attaching plates and lock in place with the tractor hitch pin and a 7/16" linchpin (items 6-7 not included).



### CAUTION

**Before connecting snowblower driveline to tractor drive shaft, make sure driveline is not too long in raised, lowered and middle position. If the driveline is too long it must be shortened, to avoid damaged to tractor. See pages 21 to 23 for instructions.**

4. Connect driveline to tractor drive P.T.O. making sure that the driveline is properly engaged.
5. Install the eyebolt (item 8) in the upper hole of the left or right side of the three point hitch by screwing the eyebolt nut to the top and locking eyebolt in place with a 3/8" serrated flange nut (item 9).

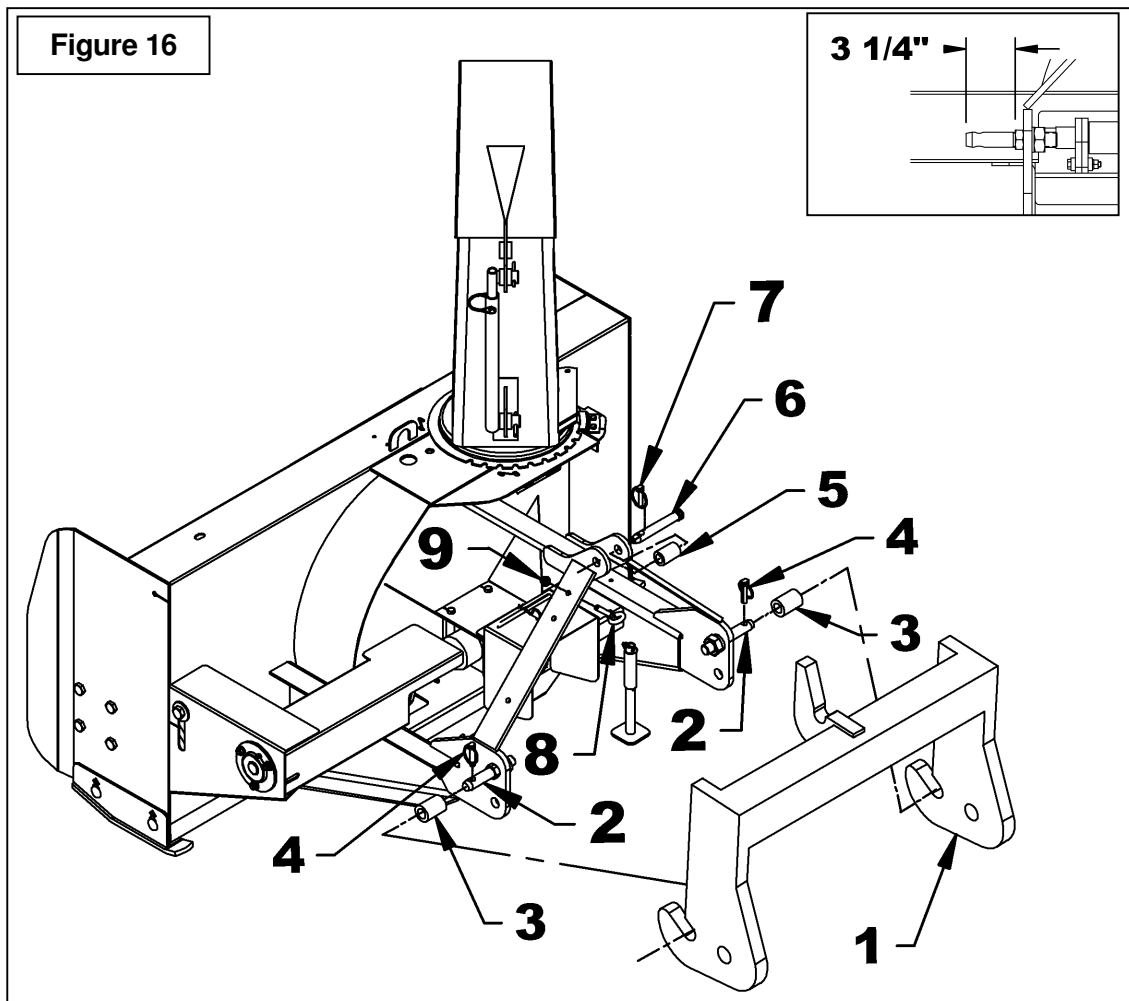


Figure 16

3 1/4"

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# ASSEMBLY

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## **IMPORTANT:**

A proper initial installation will give you years of satisfactory service on your equipment. Please read carefully following instructions that have been specially included to help you and ensure you are satisfied with your purchase.



## **WARNING**

Unfortunately, snowblowers will be faced with forgotten or hidden objects under the snow, such as : chain, tires, stones, pieces of wood, etc. In spite of all our efforts, machines are not built to resist all those conditions.

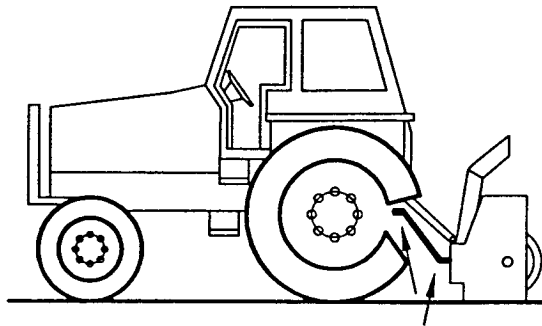
## **How to Determine Driveline Angles**

**IMPORTANT:** To obtain the proper universal joint angles, it is recommended to adjust the three point hitch at the furthest point from the tractor recommended by the manufacturer

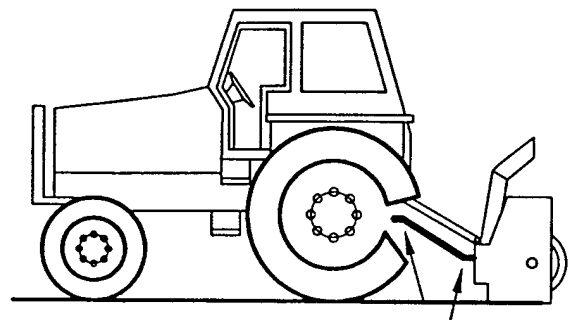
## **Danger: Tractors Too Big**

It is dangerous to use a tractor that is too big and powerful. The tractor will always be able to overload the blower, even if the machine is already at maximum capacity. Furthermore, tractors being very high, the driveline angles will be excessive which means the universal joints will be very vulnerable and the life of the driveline will be dramatically reduced.

The universal joint angle is directly related with the life of driveline. In order to reduce the angle, it is necessary to increase the distance between the snowblower and the tractor.

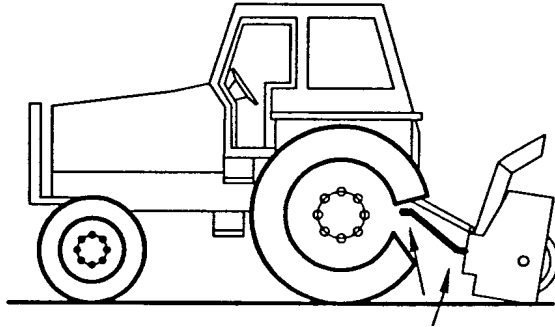


**Angles of Driveline Joints Too Large**  
**Avoid**

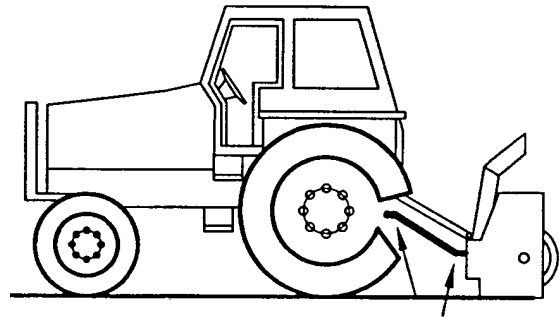


**Reasonable Angles of Driveline Joints**  
**Acceptable**

# ASSEMBLY



**Unequal Angles at Driveline Joints**  
**Avoid**



**Equal Angles at Driveline Joints**  
**Recommended**

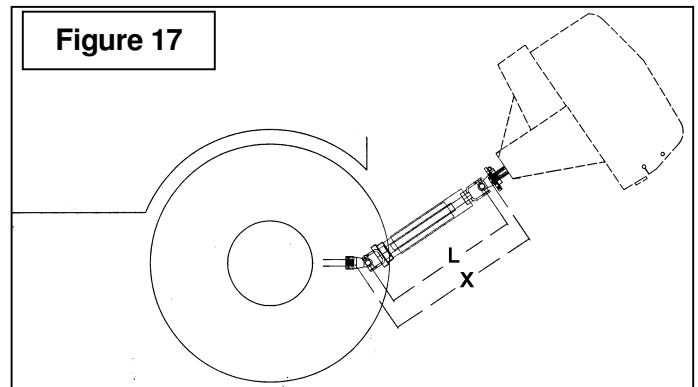
## **Angles at Each End of Driveline**

A popular habit is to change the snowblower angle in order to obtain a better scraping effect. This practice can become harmful to the driveline since the angle at each end is unequal. This results in a fan speed variation as well as a drastic increase of load on cross and bearings. To be avoided: It is recommended to always keep tractor driveline and snowblower input shaft parallel.

## **Determining Driveline Length**

**IMPORTANT:** Before using the equipment, make sure the driveline is not too long. At working position, the two half drivelines must intersect each other sufficiently to insure maximum efficiency but there must not be any interference.

1. To determine the "L" length for your tractor model first find the "X" factor by measuring the horizontal distance between the end of the tractor's drive shaft and the end of the snowblower's driven shaft when the snowblower is in transport position as shown on Figure 17.
2. Choose in the table below the "Y" factor according to the tractor category and deduct that number from "X" to determine "L" which is the center-to-center length between the universal joints.



**Figure 17**

<b>L = X - Y</b>	
<b>3 PTS HITCH CATEGORY</b>	<b>Y</b>
<b>Cat. 1</b>	<b>4 1/2"</b>
<b>Cat. 2</b>	<b>5 1/2"</b>



# ASSEMBLY

**NOTE:** Before cutting, make sure the two shafts intersect by at least 7 3/4" when in working position that is when the snowblower rests on the ground.

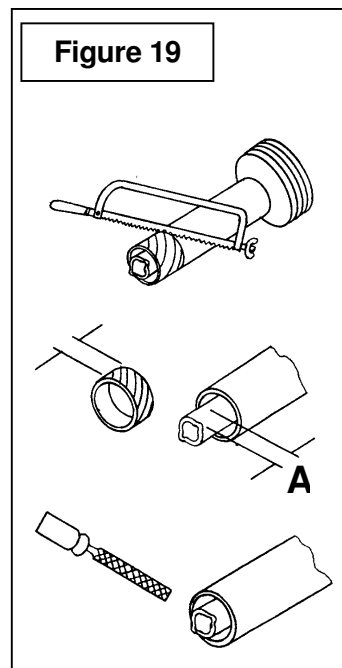
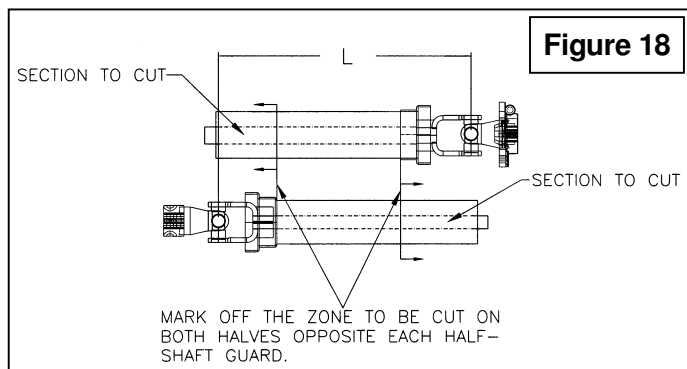
3. Hold the two half-shaft side by side and locate the "L" length between the two center-to-center half-shaft universal joints. Mark off the zone to be cut on both halves opposite each half-shaft guard as shown on Figure 18
4. Cut off inner and outer guard tubes as well as the inner and outer telescopic sections.

5. Cut the guard a second time leaving the same distance between the end of the guard and the end of the shaft as existed before. To obtain the proper distance "A" shown on Figure 19, cut the guard according to the following table:

DISTANCE A	
Male PTO	Female PTO
1 3/4"	1 1/4"

6. File down tubes and remove chips.
7. Apply grease to inside of outer telescopic section.

**IMPORTANT:** Work with fully guarded shafts only!



# ASSEMBLY

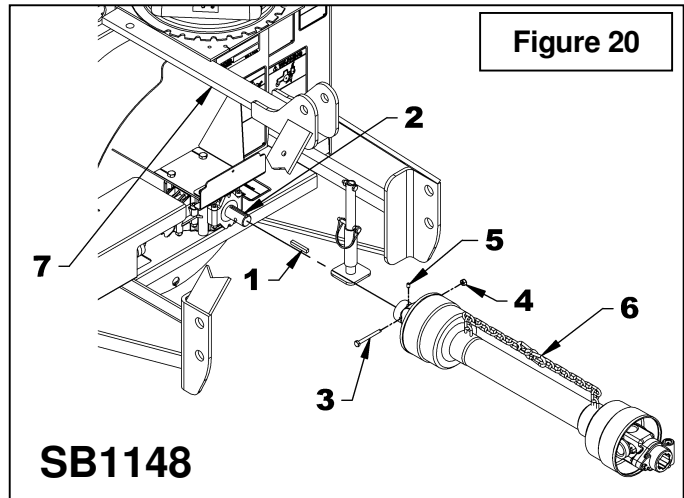
## Driveline Installation

(Figures 20 -21)

### SB1148

(Figure 20)

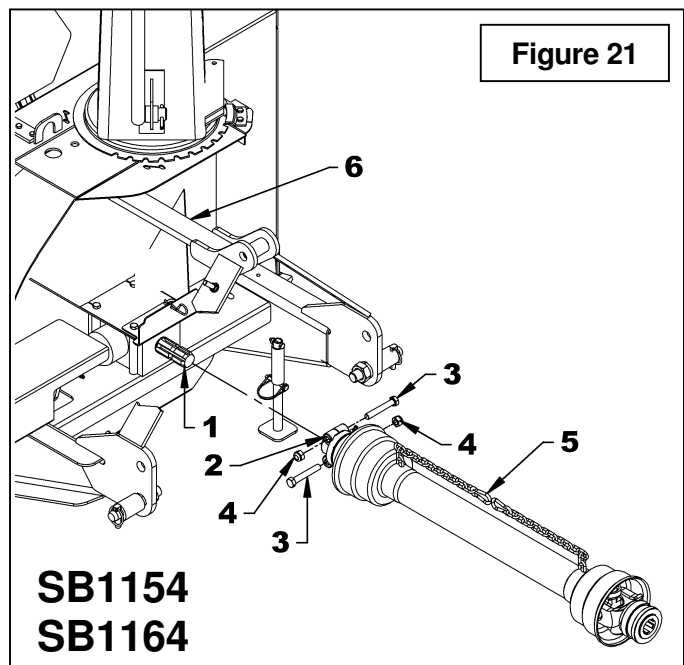
1. Separate the snowblower from the three point hitch.
2. Remove paint from snowblower gearbox shaft (item 2) and grease driveline sliding surfaces and yoke.
3. Insert the 1/4" x 1/4" x 1 1/4" key (item 1) on the gearbox shaft. Connect the Ø1" driveline yoke to the gearbox shaft (item 2). Secure with a 1/4" NC x 2 1/2" bolt, a 1/4" NC nylon insert locknut and a 1/4" NC x 3/8" setscrew (items 3-4-5). Tighten the bolt according to the **Torque Specification Table** on page 50.
4. Attach safety chain (item 6) over the upper link (item 7) to prevent the guard from spinning.



### SB1154 – SB1164

(Figure 21)

1. Separate the snowblower from the three point hitch.
2. Remove paint from snowblower gearbox shaft (item 1) and grease driveline sliding surfaces and yoke (item 2).
3. Remove bolts from the driveline yoke and slide yoke over drive shaft using the sliding action of the driveline. Make sure the driveline is well secured to the shaft by reinstalling the bolts and nuts (item 3-4) in the order shown. Tighten the bolts according to the **Torque Specification Table** on page 50.
4. Attach safety chain (item 5) over the upper link (item 6) to prevent the guard from spinning.

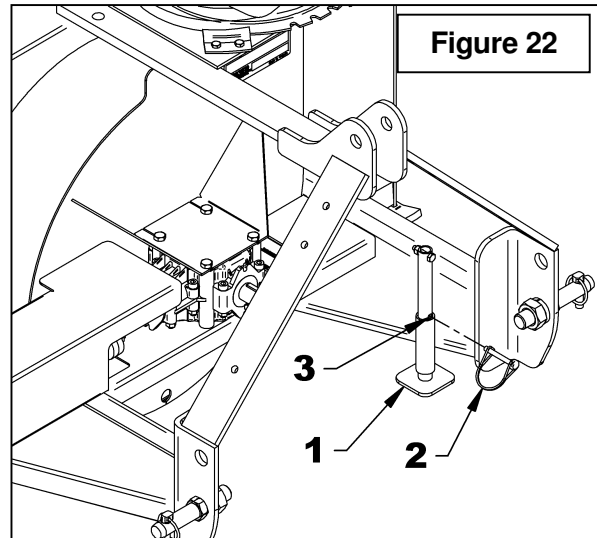


# ASSEMBLY

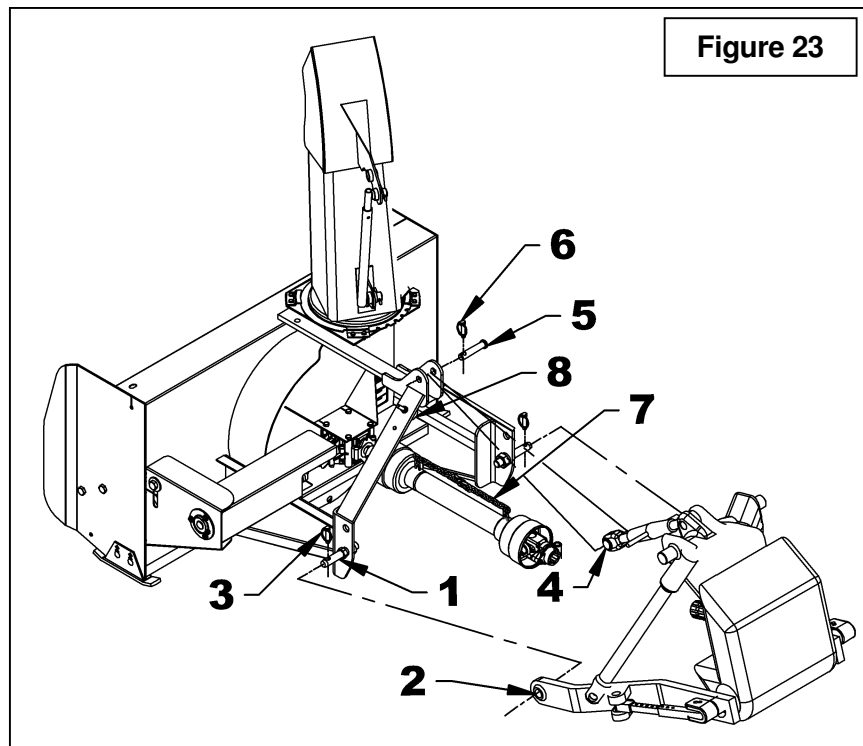
## Removing Snowblower from Tractor (Figures 22-23-24)

### Three Point Hitch

1. Set parking brake and turn engine off.
2. **Figure 22:** Remove the wire round lock pin (item 2), lower the parking stand (item 1) completely to the ground to release all the pressure on the three point and reinsert the wire round lock pin in the lower hole (item 3).
3. **Figure 23:** Detach upper link (item 4) by removing linchpin and pin (items 6-5).
4. **Figure 23:** Disconnect driveline from tractor and attach the driveline safety chain (item 7) to the three point hitch eyebolt (item 8).
5. **Figure 23:** Carefully detach lower links (items 2) from hitch pins (item 1) by removing linchpins (items 3), loosen anti-sway turnbuckles and slowly back tractor away from the snowblower.



**IMPORTANT:** To avoid damages to the snowblower, retorque all bolts after the first 10 hours of operation.



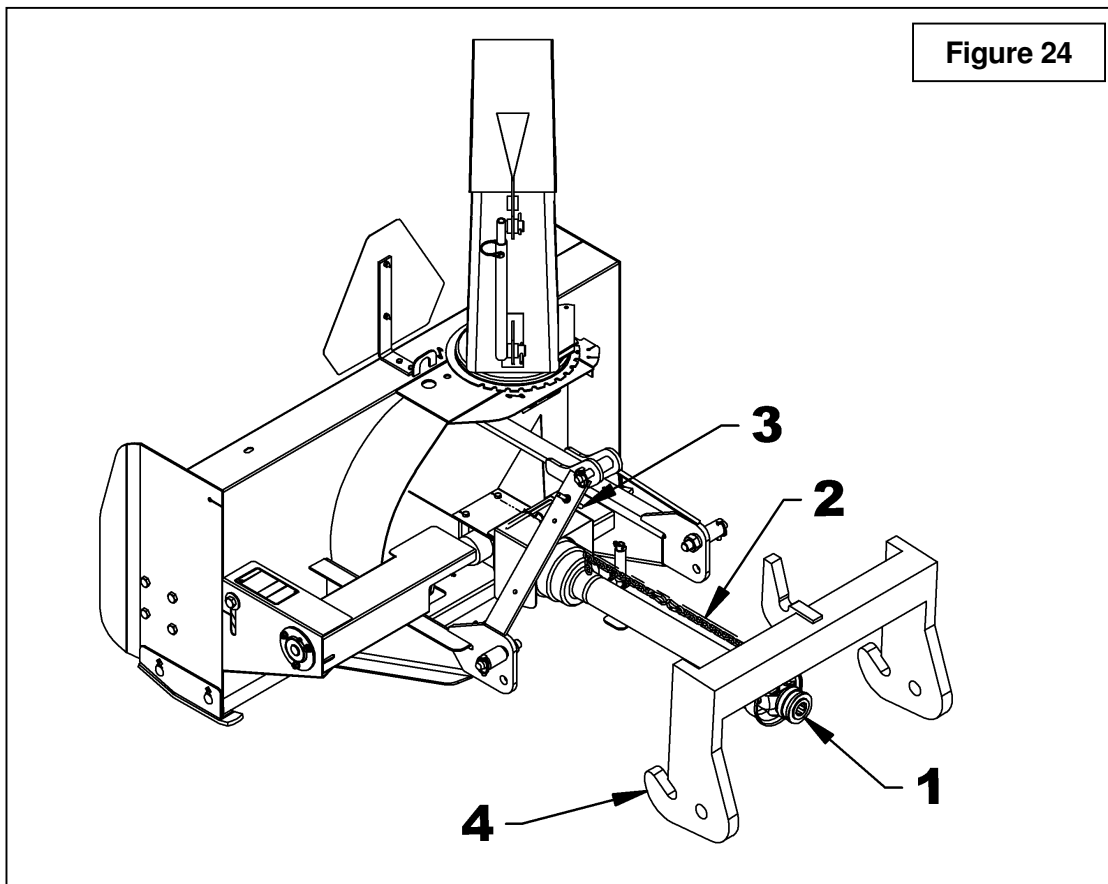
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# ASSEMBLY

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## Quick Hitch

1. **Figure 22:** Remove the wire round lock pin (item 2), lower the parking stand (item 1) and reinsert the wire round lock pin in the lower hole (item 3).
2. **Figure 24:** Disconnect driveline (item 1) from tractor and attach the driveline safety chain (item 2) to the three point hitch eyebolt (item 3).
3. **Figure 24:** Slowly back the tractor away to release quick hitch (item 4) from the snowblower.



# OPERATION

## GENERAL PREPARATION

1. Read the operator's manual carefully before using the tractor and snowblower. Be thoroughly familiar with the controls and proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
2. Make sure the snowblower is clear of snow before engaging the driveline.
3. Make sure the auger and fan operate freely.
4. Check the oil level in the worm Gearbox and if necessary, add 80W90 SAE gear oil, AGMA 5EP oil or equivalent.
5. Check the two shear bolts, one on the driving shaft, and the one on the PTO, for proper tightness.
6. Adjust so that the snowblower skid shoes run level.
7. Wear adequate winter outer garments while operating equipment.

## OPERATING CONTROLS

### Work and Travel Speed

Working ground speed will depend on the depth and density of the snow to be cleared. Normally, ground speed will range from 4 to 7 MPH for light, dry snowfalls 3 to 6 inches, and 1 to 3 MPH for heavy, wet or drifted snow. To transport, disengage the drive shaft and raise the snowblower to full transport height.

### Raising and Lowering the Snowblower

Move the three point lever on right hand side of seat down or forward to lower, and up or rearward to raise.



**WARNING**

To avoid personal injury, be sure the tractor engine is off, the drive shaft disengaged, and all movement has stopped before making any adjustments.

## ADJUSTMENTS

### Chain Tension Adjustment (Figure 25)

The premature wear of the chain may be caused by tension being too tight. It is therefore important not to tighten chain to its maximum.

- To adjust the tension on the drive chain, loosen the bolt (item 1) securing the idler sprocket to the snowblower housing.
- To tighten the chain, lower the bolt. Leave approximately 1/8" deflection in one span of the chain. Retighten securely the bolt holding the idler sprocket.

### Skid Shoe Adjustment (Figure 25)

Adjust the skid shoes so that the snowblower runs level and according to the surface conditions so that stones are not thrown with the snow.

Adjust both skid shoes to the same height to keep the cutting edge level and adjust upwards for smooth surfaces.

Loosen skid shoe bolts (item 2) and adjust according to instructions below, and securely tighten bolts:

#### **Clearance between cutting edge and surface:**

- *Paved surface:* Insert bolts in lower hole.
- *Uneven or gravel surface:* Insert bolts according to distance needed:  
1/2" - middle hole  
1" - upper hole

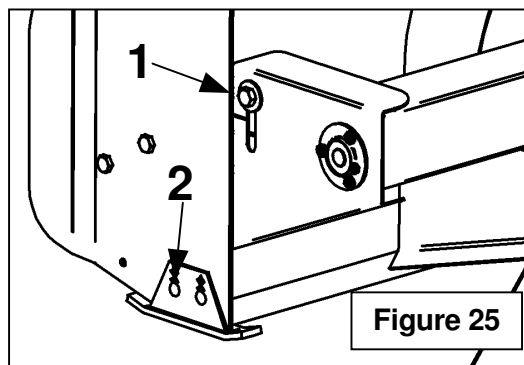


Figure 25

### Manual Deflector Adjustment

Set the angle of deflection according to the distance the snow must be thrown. To set the deflector angle, remove the adjusting pipe hairpin and adjust the adjusting rod to the desired deflector angle. Secure with the adjusting pipe hairpin.

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# OPERATION

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## SNOW REMOVAL METHODS

When removing snow, do not use the snowblower as a dozer blade to push snow. Let the snowblower work its way through deep drifts. If the speed of your tractor is too fast, the snowblower may become overloaded and clog. For best results, raise the snowblower and remove a top layer of snow. A second pass with the snowblower will remove the remaining snow.

**IMPORTANT:** Use full RPM power when removing wet, sticky snow. Low RPM power will tend to clog the chute.

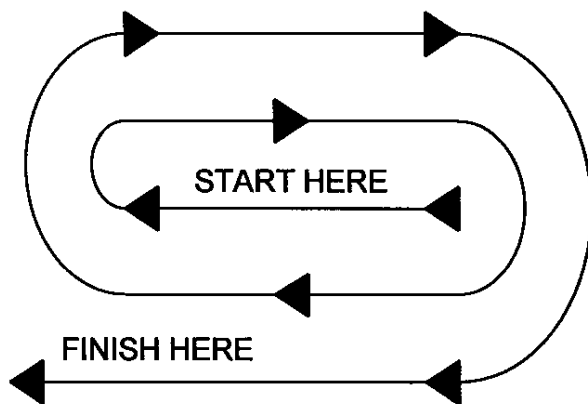


Do not use hands or feet to unclog chute. Do not attempt to clear clogged chute of snow while tractor engine is running. If the chute clogs, disengage the drive shaft, shut off the tractor engine, remove the ignition key, wait for all movement to stop, and then clear the snow from the chute.

A definite pattern of operation is required to thoroughly clean the snow area. These patterns will avoid throwing snow in unwanted places as well as eliminating a second removal of snow

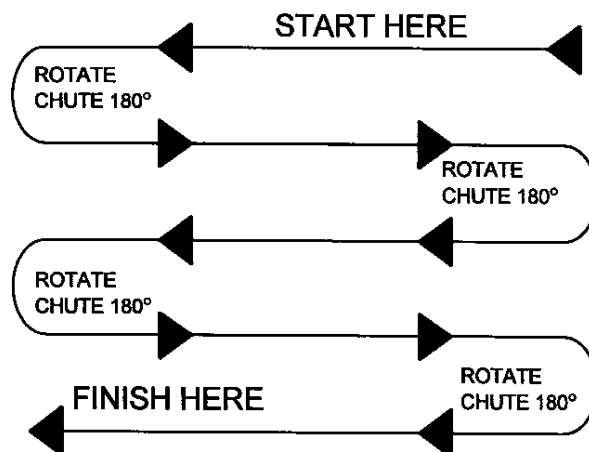
### PATTERN 1

DISCHARGE SNOW BOTH SIDES



DISCHARGE SNOW BOTH SIDES

### PATTERN 2



DISCHARGE SNOW THIS SIDE ONLY

Where it is possible to throw the snow to the left and right (above), as on a long driveway, it is advantageous to start in the middle. Plow from one end to the other, throwing snow to both sides without changing the direction of the discharge guide

If the snow can only be thrown to one side of the driveway or sidewalk (above), start on the opposite side. At the end of the first pass, rotate the discharge guide 180 degrees for the return pass. At the end of each succeeding pass, rotate the discharge guide 180 degrees to maintain direction of throw in the same area.

# MAINTENANCE

## MAINTENANCE

### Shearbolts

Check the shearbolts indicated on the figure below at frequent intervals for proper tightness to be sure the blower is in safe working condition. If the shearbolts need replacement, use the following parts only:

#### Drive shaft:

##### **SB1148:**

Shearbolt hex. 1/4" NC x 1 3/4" gr.5, including 1/4"NC insert locknut. Part # 5RD663837.

##### **SB1154-SB1164**

Shearbolt hex. 5/16" NC x 1 3/4" gr.5, incl. nut PTD Part # 5RD665547.

#### Driveline:

##### **SB1148:**

Bolt M6 x 1.00 x 40mm long gr.8.8 PTD and nut. Part #5RD4700105

##### **SB1154-SB1164**

Bolt M10 x 1.25 x 45mm long gr.8.8 and nut. Part # 5RD4700060.

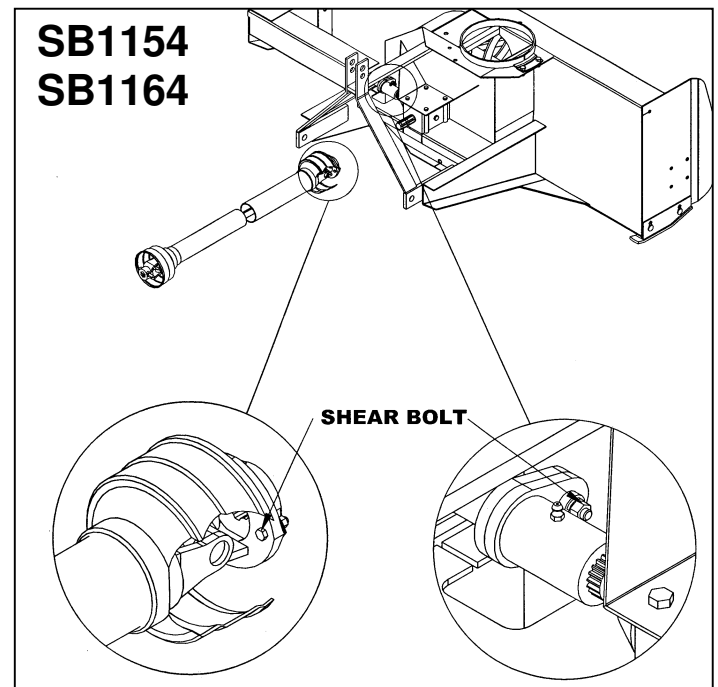
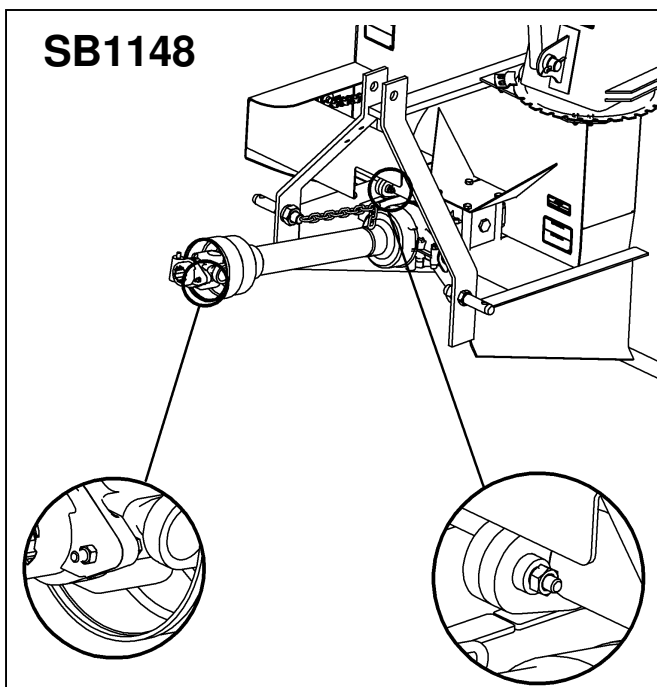


## WARNING

Provide adequate blocking before working under the snowblower when in the raised position.

### Driveline

**IMPORTANT:** When the snowblower is not used for more than two weeks, perform driveline maintenance and always store it in a dry place, away from bad weather conditions.

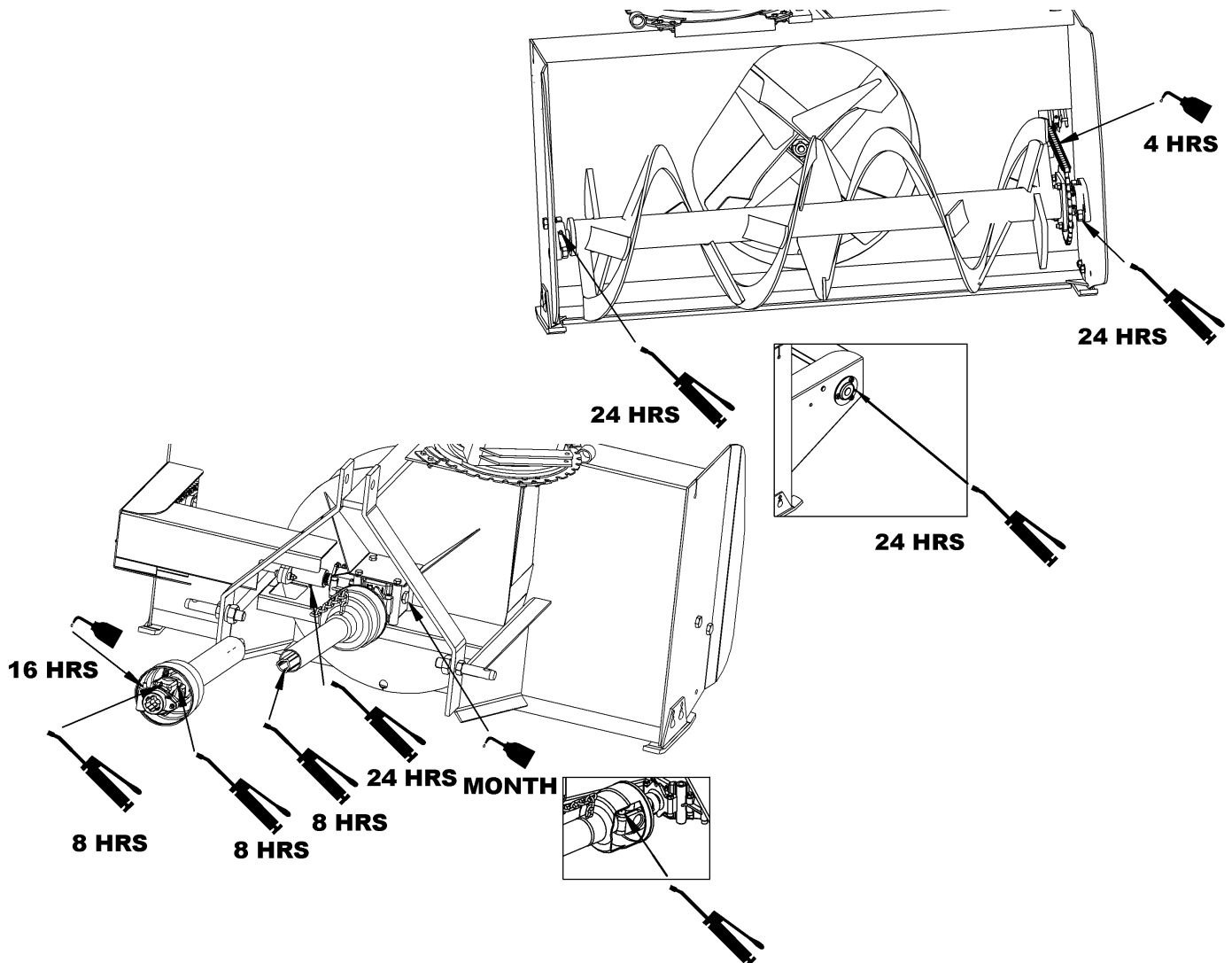


# MAINTENANCE

## LUBRICATION

Use oil or a grease gun and lubricate as follows:

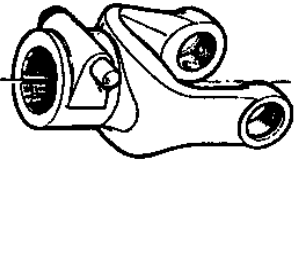
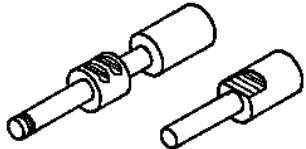
DESCRIPTION	INTERVAL	LUBRICATION REQUIRED
Driveline	8 hours	Grease each universal joint. Separate the sliding parts and cover each one of them with grease
	16 hours	Oil the connections
Chain	4 hours and after each operation	Lubricate with chain lube
Drive Shaft	24 hours of operation	Grease fitting on shear plate
Gearbox	Every month	Check oil level. If needed, add AGMA 5EP extreme pressure oil, SAE 80W90 gear oil or equivalent.
	Once a year	Replace oil
Bearing	24 hours of operation	Grease each auger bearing





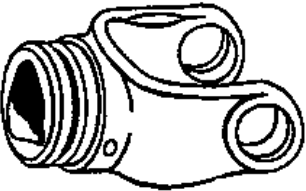
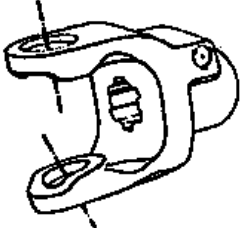
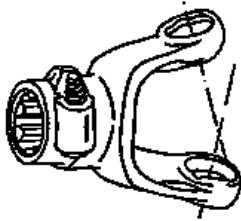
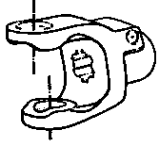
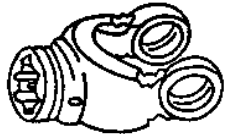


# MAINTENANCE

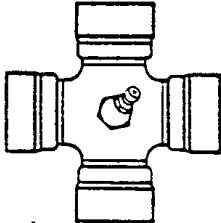
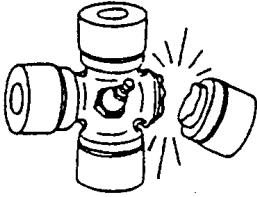
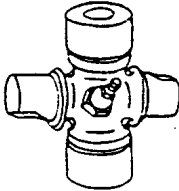
## DRIVELINE TROUBLESHOOTING

	AVOIDABLE DAMAGES	POSSIBLE CAUSES	CORRECTIVE ACTIONS
<p><u>QUICK-DISCONNECT YOKE</u></p> 	<ul style="list-style-type: none"> <li>Quick-disconnect pin tight or completely seized.</li> <li>Quick-disconnect pin damaged (broken or bent)</li> <li>Quick-disconnect pin damaged in the locking portion.</li> </ul> 	<ul style="list-style-type: none"> <li>Quick-disconnect pin dirty (insufficient maintenance).</li> <li>Quick-disconnect pin defective (forced engagement, incorrect handling)</li> <li>Excessive shaft length.</li> <li>Axial loads too high.</li> </ul>	<ul style="list-style-type: none"> <li>Clean, oil and follow service instructions.</li> <li>Replace quick-disconnect pin.</li> <li>Shorten shaft length (cut both telescopic tubes as well as shield and remove burrs).</li> <li>Replace quick-disconnect pin.</li> <li>Clean and grease telescopic tubes, and replace both tubes, if necessary.</li> <li>Replace quick-disconnect pin.</li> </ul>

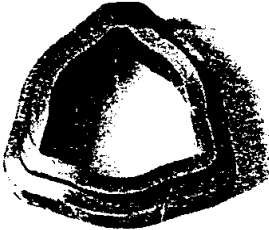

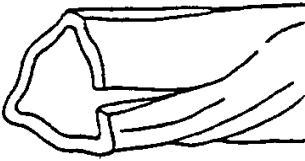

**Note:** Quick-disconnect pins must be cleaned and greased every 16 hours.

	AVOIDABLE DAMAGES	POSSIBLE CAUSES	CORRECTIVE ACTIONS
<p><u>YOKE</u></p>   	<ul style="list-style-type: none"> <li>Yoke ears deformation</li> </ul>  	<ul style="list-style-type: none"> <li>Excessive shaft length.</li> <li>Axial loads too high.</li> <li>Excessive working angle and torque.</li> </ul>	<ul style="list-style-type: none"> <li>Shorten shaft length (cut both telescopic tubes as well as shields and remove burrs).</li> <li>Replace defective yokes.</li> <li>Clean and grease telescopic tubes, and replace both tubes, if necessary.</li> <li>Replace defective yokes.</li> <li>Verify compatibility between shaft and working conditions (torque vs. angle).</li> <li>Disengage tractor driveline during cornering or when lifting or lowering the implement.</li> <li>Change to a larger driveline size.</li> <li>Replace defective yokes.</li> </ul>
	<ul style="list-style-type: none"> <li>Yoke ears distorted.</li> </ul> 	<ul style="list-style-type: none"> <li>Overload caused by high starting and peak torques.</li> </ul>	<ul style="list-style-type: none"> <li>Engage driveline more carefully.</li> <li>Use appropriate safety devices.</li> <li>Replace defective yokes.</li> </ul>
	<ul style="list-style-type: none"> <li>Yoke ears worn or pounded.</li> </ul> 	<ul style="list-style-type: none"> <li>Excessive working angle.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid excessive working angle.</li> <li>Disengage tractor driveline during cornering.</li> <li>Replace defective yokes.</li> </ul>

# MAINTENANCE

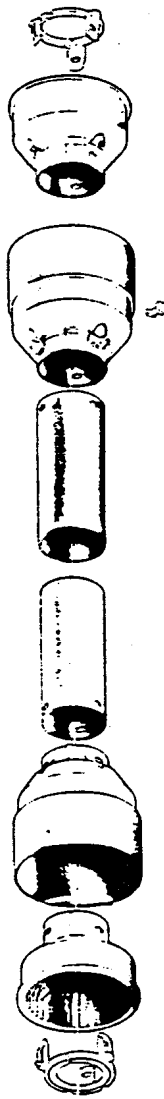
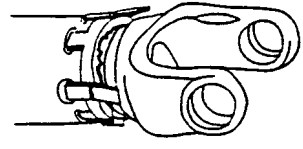
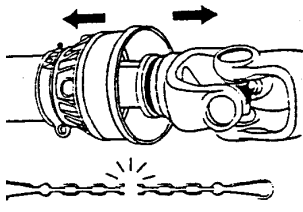
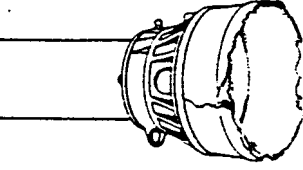
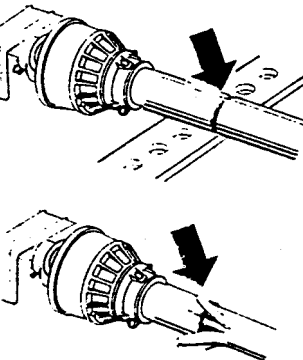
	AVOIDABLE DAMAGES	POSSIBLE CAUSES	CORRECTIVE ACTIONS
<p><u>CROSS KIT</u></p> 	<ul style="list-style-type: none"> <li>◆ Cross arms broken.</li> </ul> 	<ul style="list-style-type: none"> <li>◆ Extreme torque peak or shock load.</li> <li>◆ Axial loads too high.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Use appropriate safety device.</li> <li>◆ Change to a larger driveline size.</li> <li>◆ Shorten driveline shaft.</li> <li>◆ Replace defective cross bearings.</li> </ul>
	<ul style="list-style-type: none"> <li>◆ Bearing caps turning in their cross journal.</li> <li>◆ Overheated bearing caps.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Excessive continuous torque and/or excessive working angle.</li> <li>◆ Inadequate greasing.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Verify compatibility between shaft and working conditions.</li> <li>◆ Carefully follow greasing instructions.</li> <li>◆ Replace defective cross bearings.</li> </ul>
	<ul style="list-style-type: none"> <li>◆ Accelerated wear of cross kit.</li> </ul> 	<ul style="list-style-type: none"> <li>◆ Excessive continuous torque and/or excessive working angle.</li> <li>◆ Inadequate greasing.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Verify compatibility between shaft and working conditions.</li> <li>◆ Carefully follow greasing instructions.</li> <li>◆ Replace defective cross bearings.</li> </ul>

**Note: Cross bearings must be greased every 8 working hours.**

	AVOIDABLE DAMAGES	POSSIBLE CAUSES	CORRECTIVE ACTIONS
<p><u>TELESCOPIC TUBES</u></p>  	<ul style="list-style-type: none"> <li>◆ Telescopic tubes failure or twisting.</li> </ul> 	<ul style="list-style-type: none"> <li>◆ Extreme torque peak or shock load.</li> <li>◆ Short tube engagement.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Use appropriate safety device.</li> <li>◆ Change to a larger driveline size.</li> <li>◆ Replace the driveline drive shaft with one having adequate length.</li> <li>◆ Replace defective tubes.</li> </ul>
	<ul style="list-style-type: none"> <li>◆ Accelerated wear of telescopic tubes.</li> </ul> 	<ul style="list-style-type: none"> <li>◆ Extreme load when sliding.</li> <li>◆ Short tube engagement.</li> <li>◆ Inadequate greasing.</li> <li>◆ Dirt</li> </ul>	<ul style="list-style-type: none"> <li>◆ Change to a driveline with rilsan coated inner tube.</li> <li>◆ Replace the driveline with one having adequate length.</li> <li>◆ Carefully follow greasing instructions.</li> <li>◆ Replace defective tubes.</li> </ul>

**Note: Telescopic tubes must be cleaned and greased every 8 working hours.**

# MAINTENANCE

<b>SHIELD</b>  	<b>AVOIDABLE DAMAGES</b>	<b>POSSIBLE CAUSES</b>	<b>CORRECTIVE ACTIONS</b>
	<ul style="list-style-type: none"> <li>◆ Excessive wear of shield bearings.</li> </ul> 	<ul style="list-style-type: none"> <li>◆ Insufficient lubrication.</li> <li>◆ Incorrect chain mounting.</li> <li>◆ Shield interfering with implement.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Follow lubrication instructions.</li> <li>◆ Mount chain to allow maximum angularity.</li> <li>◆ Avoid contact of the shields with fixed parts of the machine or tractor.</li> <li>◆ Replace shield bearings.</li> </ul>
	<ul style="list-style-type: none"> <li>◆ Chain moving or failure.</li> </ul> 	<ul style="list-style-type: none"> <li>◆ Shield interfering with implement.</li> <li>◆ Incorrect chain mounting.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Avoid contact of the shields with fixed parts of the machine or tractor.</li> <li>◆ Mount chain to allow maximum angularity.</li> <li>◆ Replace defective parts.</li> </ul>
	<ul style="list-style-type: none"> <li>◆ Shield cone damaged.</li> </ul> 	<ul style="list-style-type: none"> <li>◆ Shield cone in contact with components on the tractor and/or implement.</li> <li>◆ Excessive angularity.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Eliminate interference between Shield cones and any part on the tractor and/or implement.</li> <li>◆ Avoid excessive angle during cornering or when lifting or lowering the implement.</li> <li>◆ Replace damaged Shield cones.</li> </ul>
<ul style="list-style-type: none"> <li>◆ Shield tubes damaged (deformed and split at one side).</li> </ul> 	<ul style="list-style-type: none"> <li>◆ Shields in contact with components on the tractor and/or implement.</li> <li>◆ Shield tubes overlap too short or no overlap at all with extended driveline.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Eliminate interference between Shield cones and any part on the tractor and/or implement.</li> <li>◆ Replace damaged tubes.</li> <li>◆ Adjust Shield tubes length with longer tubes.</li> </ul>	

**Note: Shield bearings must be greased every 8 working 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 are determined by those seen by the conductor standing behind the equipment.

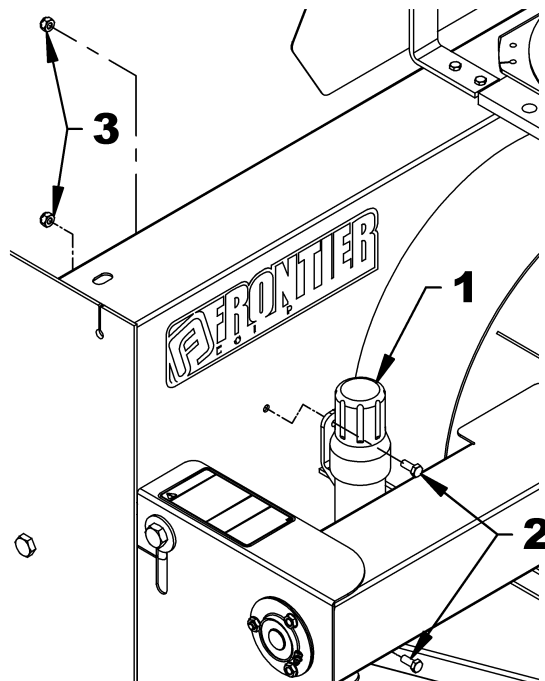
The manufacturer reserves the rights to change, modify, or eliminate from time to time, for technical or other reasons, certain or all data, specifications, or the product or products themselves, without any liability or obligation.

The parts listed here are available through your local dealer.

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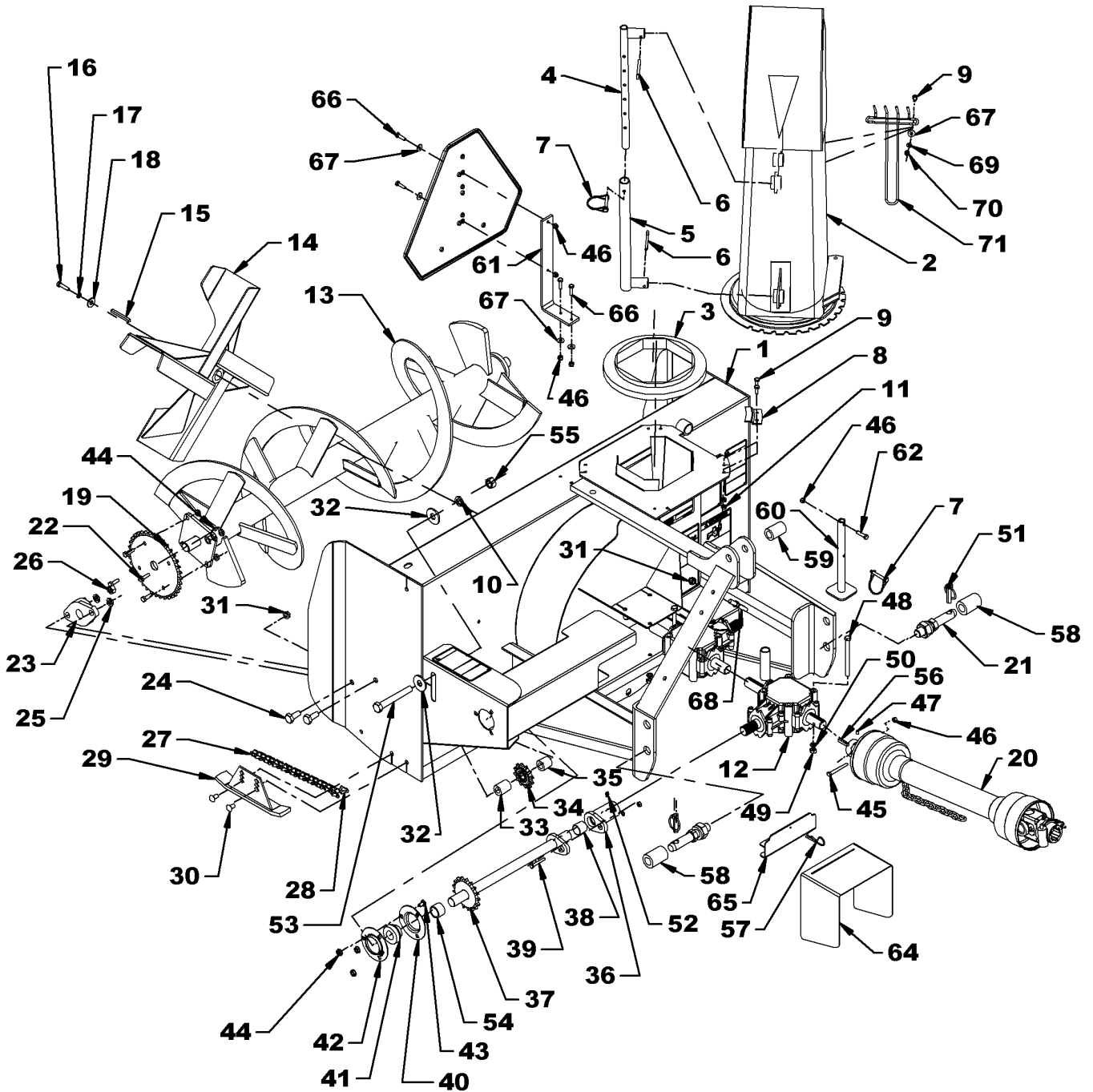
## MANUAL HOLDER – ALL MODELS

REF.	DESCRIPTION	QTY	PART #
1	Manual holder	1	5RD4200030
2	Bolt hex. 5/16" NC x 3/4" lg gr. 5, PTD	2	5RD0100018
3	Nut nylon insert 5/16" NC, PTD	2	5RD1000005



# PARTS

## SNOWBLOWER – SB1148



# PARTS

## **SNOWBLOWER – SB1148**

REF.	DESCRIPTION	QTY	PART #
1	Housing	1	---
2	Chute assembly (including adjustment tube and rod)	1	5RD668054
3	Rotation bushing	1	5RD659151
4	Adjustment rod	1	5RD654074
5	Adjustment tube	1	5RD654076
6	Cotter pin Ø1/4" x 2" PTD	2	5RD1500022
7	Round wire lock pin 1/4" x 2" PTD	2	5RD1900006
8	Retaining plate	4	5RD659146
9	Bolt hex. 1/4" NC x 3/4" gr.5 PTD	10	5RD0100003
10	Lockwasher 5/8" PTD	1	5RD1200007
11	Serrated flange nut 1/4" NC PTD	8	5RD0900058
12	Gearbox	1	5RD4500039
13	Auger	1	5RD667636
14	Fan	1	5RD667637
15	Key 1/4" x 1/4" x 2 1/2" lg	1	5RD660924
16	Bolt hex. 5/16" NC x 1 1/4" gr.5 PTD	1	5RD0100020
17	Lockwasher 5/16" PTD	1	5RD1200003
18	Flat washer (hole 7/16" diam.)	1	5RD1400004
19	Sprocket #50A36	1	5RD3300014
20	Driveline, series 20	1	5RD4700100
21	Hitch pin Cat. 1	2	5RD654196
22	Bolt hex. 5/16" NC X 1" gr.5 PTD	4	5RD0100019
23	Bearing 1" hole, 2 holes	2	5RD4300025
24	Bolt hex. 1/2" NC x 1 1/4" gr.5 PTD	4	5RD0100069
25	Lockwasher 1/2" PTD	4	5RD1200006
26	Nut hex. 1/2" NC PTD	4	5RD0900006
27	Chain #50 x 84 links incl. connecting link.	1	5RD3300016
28	Connecting link #50	1	5RD655837
29	Skid shoes, adjustable	2	5RD665664
30	Bolt carriage 3/8" x 3/4" gr.5 PTD	4	5RD0300007
31	Serrated flange nut 3/8" NC black	4	5RD0900065
32	Flat washer 5/8" (hole 11/16" diam.)	2	5RD1400008
33	Spacer 1 13/32" lg	1	5RD668111
34	Sprocket #H50A12	1	5RD655426
35	Spacer 1 1/8" lg	1	5RD668112
36	Shear plate	1	5RD667639
37	Driving shaft	1	5RD667638
38	Oilite bushing	1	5RD4300055
39	Shear bolt hex. 1/4" NC x 1 3/4" gr.5, with nut PTD	1	5RD663837
40	Flange with grease slot	1	5RD4300030
41	Bearing 1" hole with locking collar	1	5RD4300038
42	Flange, 3 holes with grease fitting and groove	1	5RD4300031
43	Bolt carriage 5/16" x 5/8" gr.5 PTD	3	5RD0300001
44	Serrated flange nut 5/16" NC PTD	7	5RD0900036

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# PARTS

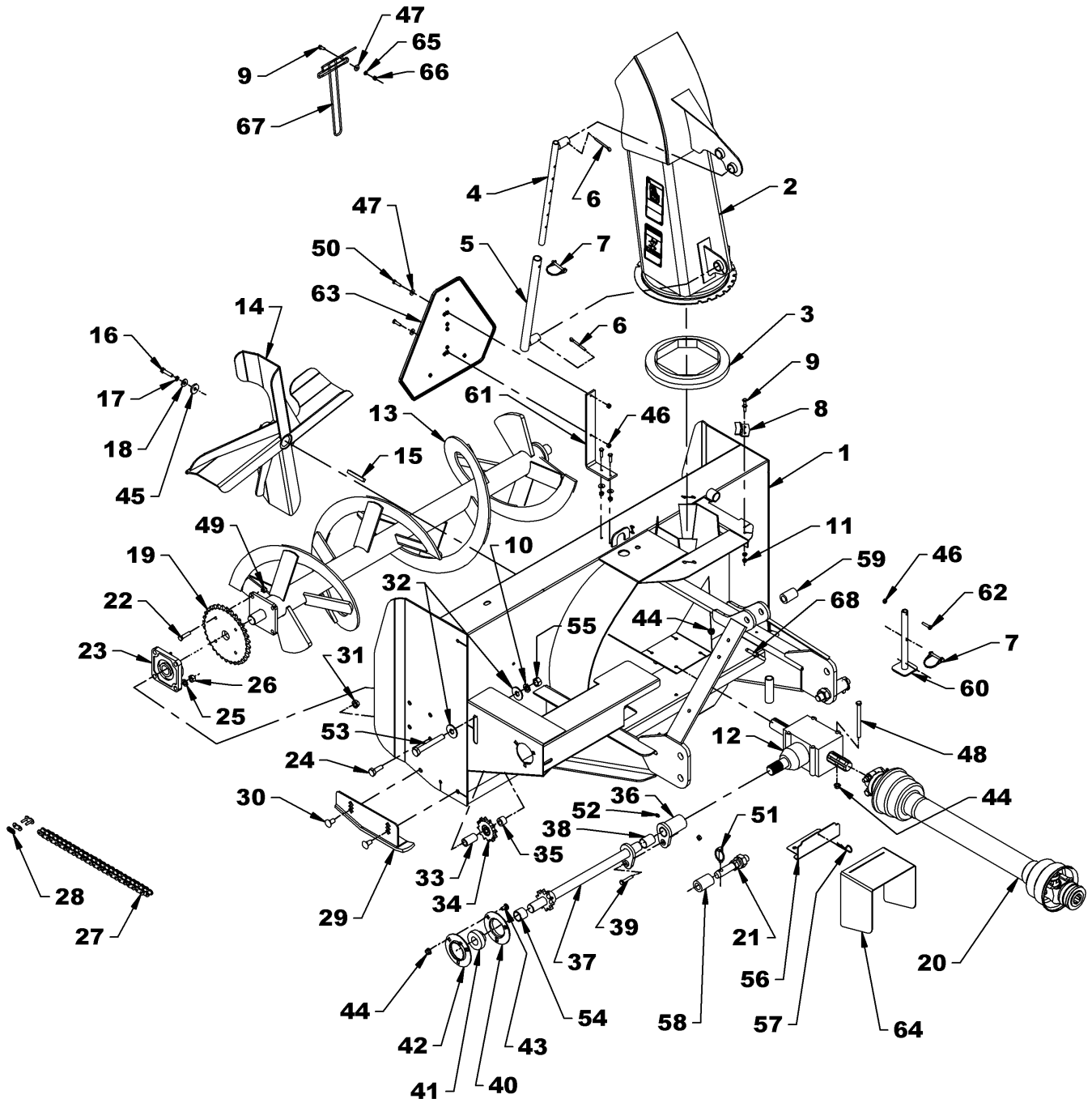
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## **SNOWBLOWER – SB1148**

<b>REF.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>PART #</b>
45	Bolt hex. 1/4" NC x 2 1/2" gr.5 PTD	1	5RD0100248
46	Nylon insert locknut 1/4" NC PTD	6	5RD1000003
47	Allen setscrew 1/4" NC x 3/8" gr.5 black	1	5RD0500005
48	Bolt hex. 3/8" NC x 4 1/2" gr.5 PTD	4	5RD0100040
49	Nut hex. 3/8" NC PTD	4	5RD0900003
50	Lockwasher 3/8" PTD	4	5RD1200004
51	Linchpin 7/16" PTD	2	5RD1900003
52	Grease fitting 1/4" NF	1	5RD654106
53	Bolt hex. 5/8" NC x 4 1/2" gr.5 PTD	1	5RD0100104
54	Spacer 7/8" lg	1	5RD668110
55	Nut hex. 5/8" - 11 NC PTD	1	5RD0900007
56	Key 1/4" x 1/4" x 1 3/4" lg	1	5RD659579
57	Hairpin 3mm x 65 mm lg	1	5RD1800004
58	Bushing 1.5 OD x 2 1/8" lg PTD	2	5RD668059
59	Bushing 1 1/4" OD x 1 7/8" lg PTD	1	5RD668058
60	Parking Stand	1	5RD668053
61	S.M.V. sign support	1	5RD668109
62	Bolt hex. 1/4" NC x 1 1/4" gr.5 PTD	1	5RD0100005
63	S.M.V. reflective sign	1	5RD4200029
64	Driveline shield	1	5RD668057
65	Driveline shield bracket	1	5RD668052
66	Bolt hex. 1/4" NC x 1" lg gr.5 PTD	4	5RD0100004
67	Flat washer 1/4" (hole 5/16" diam.) PTD	6	5RD1400002
68	Eyebolt 3/8" NC x 4" lg inc. nut	1	5RD0400027
69	Lockwasher 1/4" PTD	2	5RD1200002
70	Nut hex. 1/4" NC PTD	2	5RD0900001
71	Hand guard	1	5RD657308

# PARTS

## SNOWBLOWER – SB1154 & SB1164





# PARTS

## SNOWBLOWER – SB1154 & SB1164

REF.	DESCRIPTION	QTY	SB1154	SB1164
1	Housing	1	---	---
2	Chute assembly (including adjustment tube and rod)	1	5RD668054	5RD668054
3	Rotation bushing	1	5RD659151	5RD659151
4	Adjustment rod	1	5RD654074	5RD654074
5	Adjustment tube	1	5RD654076	5RD654076
6	Cotter pin Ø1/4" x 2" PTD	2	5RD1500022	5RD1500022
7	Round wire lock pin 1/4" x 2" PTD	2	5RD1900006	5RD1900006
8	Retaining plate	4	5RD659146	5RD659146
9	Bolt hex. 1/4" NC x 3/4" gr.5 PTD	8	5RD0100003	5RD0100003
10	Lockwasher 5/8" PTD	1	5RD1200007	5RD1200007
11	Serrated flange nut 1/4" NC PTD	8	5RD0900058	5RD0900058
12	Gearbox	1	5RD663485	5RD663485
13	Auger	1	5RD666259	5RD666269
14	Fan	1	5RD668965	5RD668965
15	Key 3/8" x 3/8" x 2 3/4" lg	1	5RD654174	5RD654174
16	Bolt hex. 3/8"NC x 1 1/2" gr.5 PTD	1	5RD0100040	5RD0100040
17	Lockwasher 3/8" dia. hole PTD	1	5RD1200004	5RD1200004
18	Flat washer (7/16" dia. hole) PTD	1	5RD1400004	5RD1400004
19	Sprocket #60A32	1	5RD654167	5RD654167
20	Driveline series 40	1	5RD4700159	5RD4700159
21	Hitch pin Cat. 1	2	5RD654196	5RD654196
22	Bolt hex. 3/8"NC x 1 1/2" gr.5 PTD	4	5RD0100040	5RD0100040
23	Flange bearing 1 1/4" hole, 4 holes	2	5RD4300001	5RD4300001
24	Bolt hex. 1/2"NC x 1 1/2" gr.5 PTD	8	5RD0100070	5RD0100070
25	Lockwasher 1/2" PTD	8	5RD1200006	5RD1200006
26	Nut hex. 1/2" NC PTD	8	5RD0900006	5RD0900006
27	Chain #60 x 72 links, incl. connect. link	1	5RD659143	5RD659143
28	Connecting link #60	1	5RD654839	5RD654839
29	Left adjustable skid shoe	1	5RD666254	5RD666254
	Right adjustable skid shoe	1	5RD666255	5RD666255
30	Bolt carriage 1/2" NC x 1" lg gr. 5 PTD	4	5RD0300022	5RD0300022
31	Serrated flange nut 1/2" NC PTD	4	5RD0900046	5RD0900046
32	Flat washer 5/8" (11/16" dia. hole) PTD	2	5RD1400008	5RD1400008
33	Spacer 1 3/4" lg	1	5RD668093	5RD668093
34	Sprocket 60A12	1	5RD3300022	5RD3300022
35	Spacer .656"int. x .807 lg x 1" ext.	1	5RD667777	5RD667777
36	Shear plate	1	5RD666257	5RD666257
37	Driving shaft	1	5RD666256	5RD666268
38	Oilite bushing	1	5RD4300056	5RD4300056
39	Shearbolt hex. 5/16"NC x 1 3/4" gr.5, incl. nut	1	5RD665547	5RD665547
40	Flange, 3 holes with grease groove	1	5RD4300014	5RD4300014
41	Bearing 1 1/8" with setscrew and grease system	1	5RD4300040	5RD4300040
42	Flange with tip and grease fitting	1	5RD4300015	5RD4300015
43	Bolt carriage 3/8" x 3/4" lg gr.5 PTD	3	5RD0300007	5RD0300007
44	Serrated flange nut 3/8" NC PTD	8	5RD0900035	5RD0900035
45	Fan washer	1	5RD661554	5RD661554

# PARTS

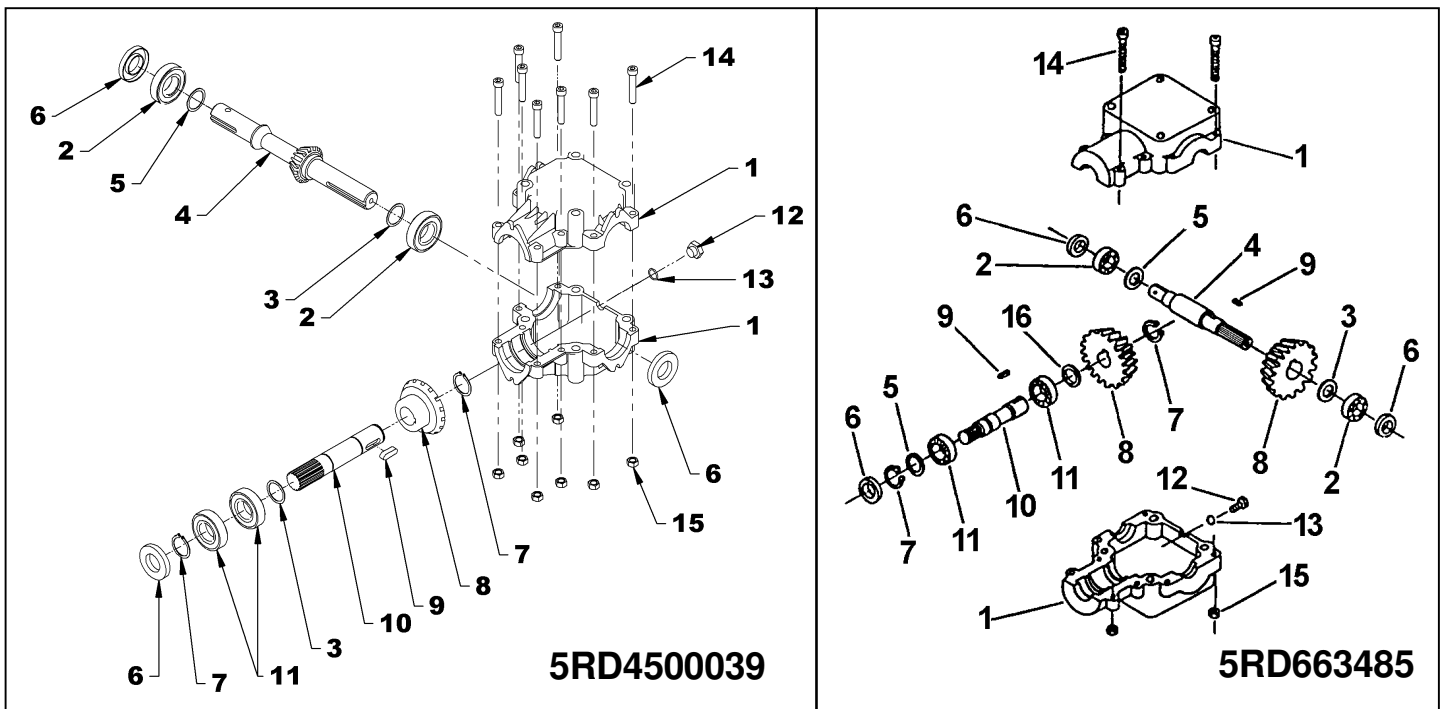
## SNOWBLOWER – SB1154 & SB1164

REF.	DESCRIPTION	QTY	SB1154	SB1164
46	Nylon insert locknut 1/4" NC PTD	5	5RD1000003	5RD1000003
47	Flat washer 1/4" NC (5/16" dia. hole) PTD	4	5RD1400002	5RD1400002
48	Bolt hex. 3/8"NC x 5" gr.5 PTD	4	5RD0100051	5RD0100051
49	Nylon insert locknut 3/8" NC PTD	4	5RD1000006	5RD1000006
50	Bolt hex. 1/4" NC x 1" lg PTD	4	5RD0100004	5RD0100004
51	Linchpin 7/16" PTD	2	5RD1900003	5RD1900003
52	Grease fitting 1/4" NF	1	5RD654106	5RD654106
53	Bolt hex. 5/8" NC x 4 1/2" gr.5 PTD	1	5RD0100104	5RD0100104
54	Spacer 1 3/32"	1	5RD667015	5RD667015
55	Nut hex. 5/8" -11 NC PTD	1	5RD0900007	5RD0900007
56	Driveline shield bracket	1	5RD668052	5RD668052
57	Hairpin 3mm x 65mm lg.	1	5RD1800004	5RD1800004
58	Bushing 1.5 OD x 2 1/8" lg PTD	2	5RD668059	5RD668059
59	Bushing 1 1/4" OD x 1 7/8" lg PTD	1	5RD668058	5RD668058
60	Parking stand	1	5RD668053	5RD668053
61	S.M.V. sign support	1	5RD668109	5RD668109
62	Bolt hex. 1/4" NC x 1 1/4" gr.5 PTD	1	5RD0100005	5RD0100005
63	S.M.V. reflective sign	1	5RD4200029	5RD4200029
64	Driveline shield	1	5RD668057	5RD668057
65	Lockwasher 1/4" PTD	2	5RD1200002	5RD1200002
66	Nut hex. 1/4" NC, PTD	2	5RD0900001	5RD0900001
67	Hand guard	1	5RD657308	5RD657308
68	Eyebolt 3/8" NC x 4" lg inc. nut	1	5RD0400027	5RD0400027

# PARTS

## GEARBOXES

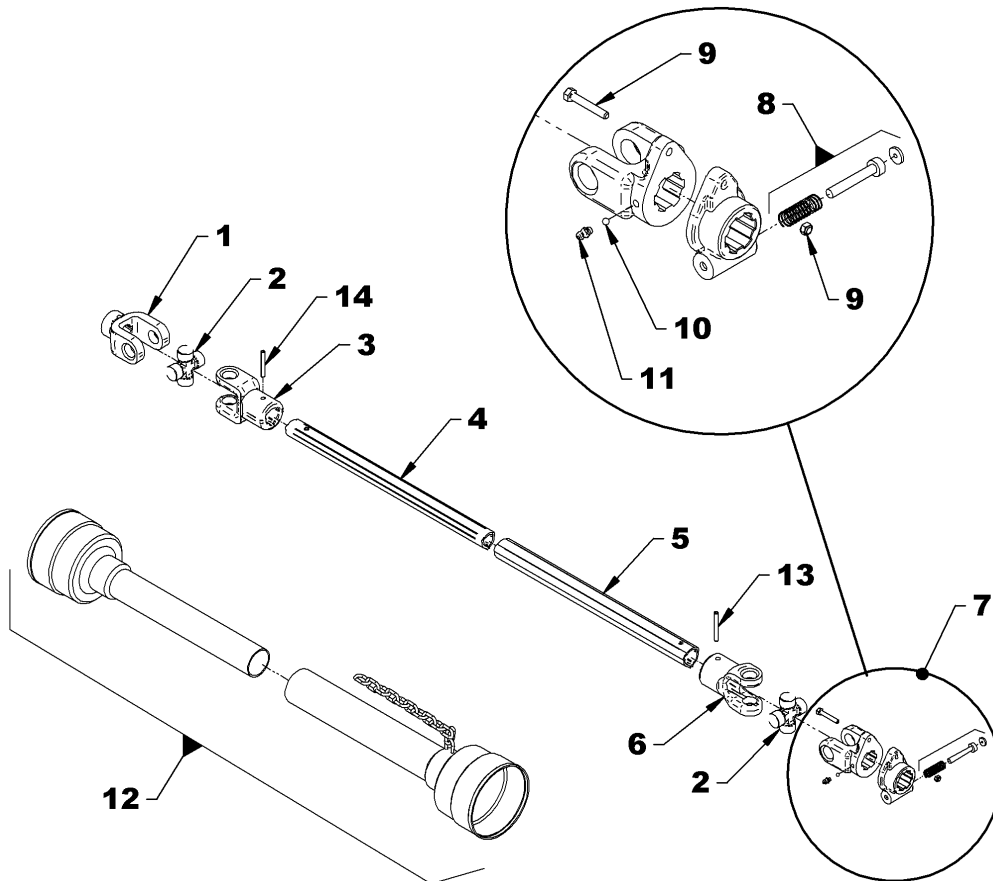
REF. DESCRIPTION	5RD4500039 for SB1148		5RD663485 for SB1154-SB1164	
	QTY	PART #	QTY	PART #
1 Casing	2	5RD4500058	2	5RD659848
2 Bearing	2	5RD4300059	2	5RD659844
3 Shim	2	5RD661731	1	5RD656649
4 Input shaft	1	5RD4500059	1	5RD664663
5 Shim	1	5RD661733	2	5RD659855
6 Oil seal	3	5RD661730	3	5RD659852
7 Snap ring	2	5RD661734	2	5RD656652
8 Gear	1	5RD4500061	2	5RD662236
9 Parallel key	1	5RD660063	2	5RD659850
10 Output shaft	1	5RD4500060	1	5RD659853
11 Bearing	2	5RD4300058	2	5RD659844
12 Plug	1	5RD661739	1	5RD659847
13 O-ring	1	5RD661144	1	5RD661144
14 Allen socket head cap screw M8 x 1.25mm x 45mm – 8.8.	8	5RD0800036	-	-
Allen socket head cap screw M8 x 1.25mm x 55mm – 8.8.	-	-	8	5RD0800032
15 Stover locknut M8 x 1.25mm - 8	8	5RD0900063	8	5RD0900063
16 Shim	-	-	1	5RD659854



# PARTS

## DRIVELINE 5RD4700100 FOR SB1148

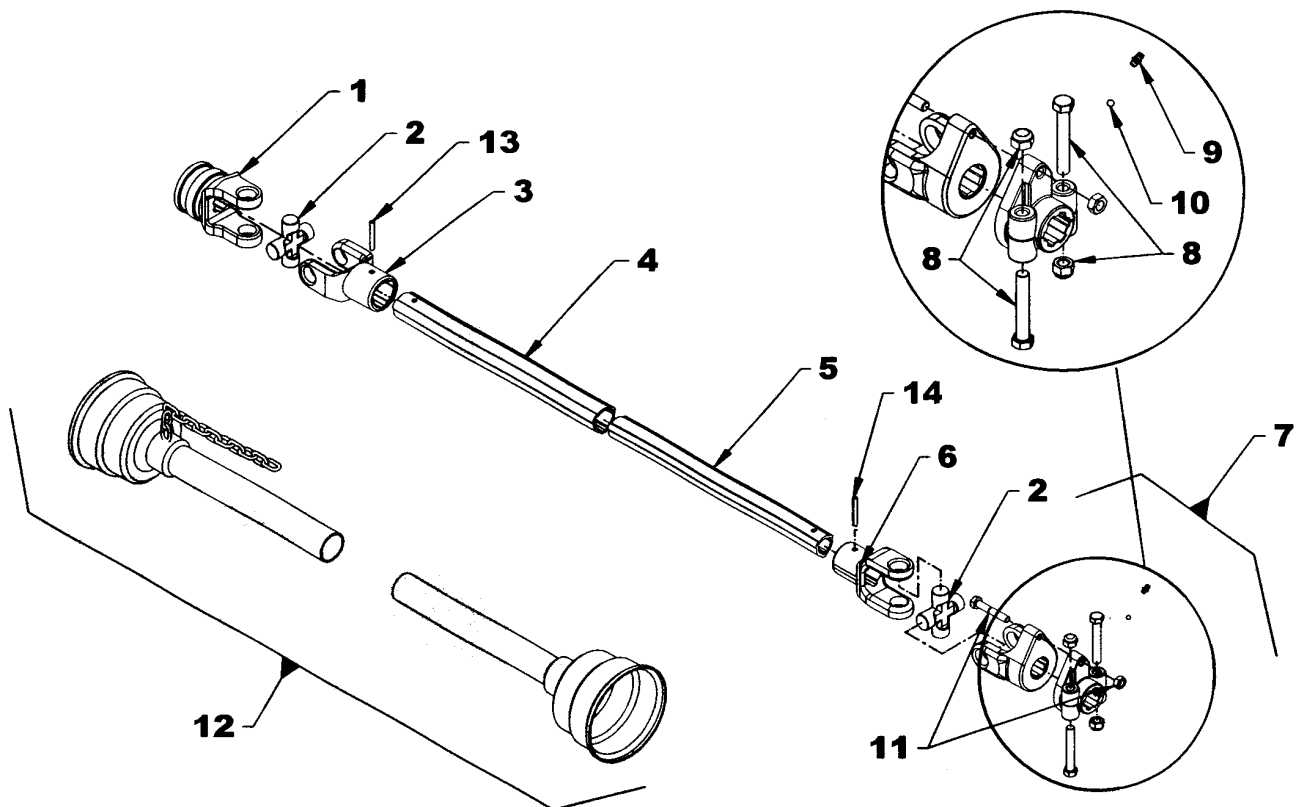
REF.	DESCRIPTION	QTY	PART #
1	Quick disconnect yoke Ø1 3/8", 6 splines	1	5RD4700113
2	Journal Cross	2	5RD4700107
3	Yoke	1	5RD4700111
4	Male Shaft	1	5RD4700112
5	Female Shaft	1	5RD4700109
6	Yoke	1	5RD4700108
7	Yoke Ø1 3/8", 6 splines	1	5RD4700104
8	Push pin set	1	5RD663151
9	Shear bolt M6 x 40 mm 8.8 and nut	1	5RD4700105
10	Ball 7/32"	24	5RD4700106
11	Grease fitting	1	5RD657198
12	Shield and chain	1	5RD4700110
13	Pin for yoke (# 6)	1	5RD4700062
14	Pin for yoke (# 3)	1	5RD4700114



# PARTS

## DRIVELINE 5RD4700159 FOR SB1154 & SB1164

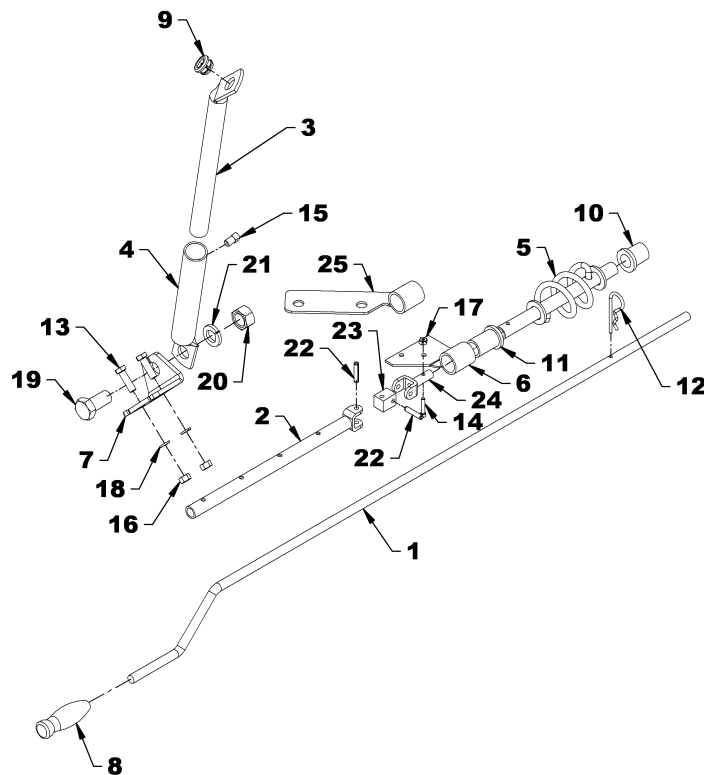
REF.	DESCRIPTION	QTY	PART #
1	Yoke ass'y	1	5RD660764
2	Journal cross	2	5RD660765
3	Yoke for female tube	1	5RD663189
4	Female tube	1	5RD4700160
5	Male tube	1	5RD4700161
6	Yoke for male tube	1	5RD663193
7	Yoke ass'y	1	5RD4700058
8	Bolt M12 x 1.25 x 70 with nut	2	5RD662199
9	Grease fitting	1	5RD 663129
10	Ball Ø1/4"	23	5RD 663163
11	Shear bolt 8mm x 1.25 x 50 gr.5.8 and nut	1	5RD 4700060
12	Protector and chain	1	5RD4700164
13	Pin for outer tube	1	5RD 4700061
14	Pin for inner tube	1	5RD 4700062



# PARTS

## 5RDF0016 - MANUAL ROTATION FOR SB1148 – SB1154 – SB1164

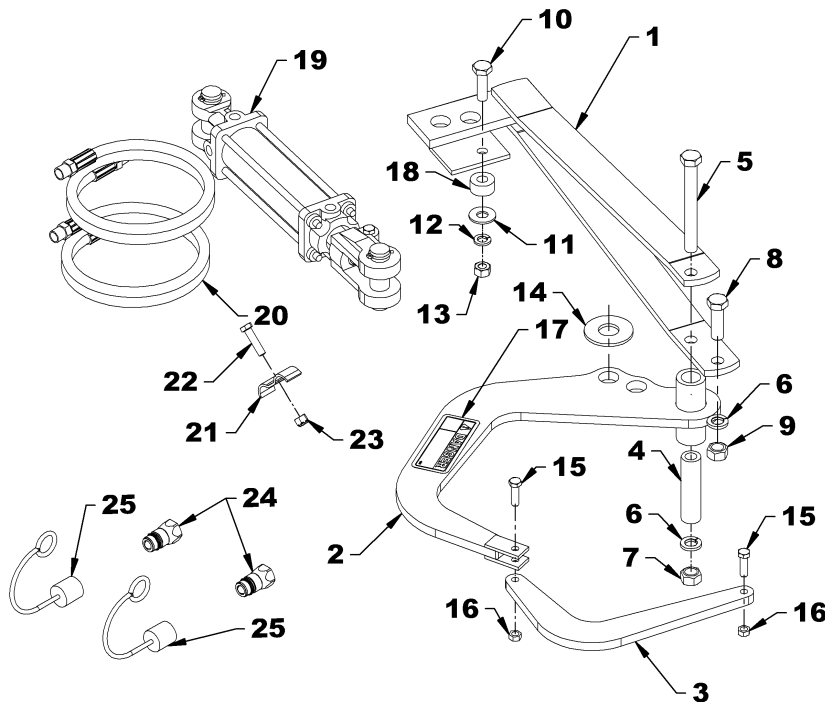
REF.	DESCRIPTION	QTY	PART #
1	Handle	1	5RD664902
2	Rotation tube	1	5RD660188
3	Handle support	1	5RD660187
4	Handle support bracket	1	5RD660269
5	Rotation worm	1	5RD659161
6	Worm support bracket for SB1148-SB1154 & SB1164	1	5RD659145
7	Bracket	1	5RD660388
8	Plastic handle	1	5RD656797
9	Plastic grommet	1	5RD657390
10	Plastic bushing 1 5/16"	1	5RD657335
11	Plastic bushing 1 11/16"	1	5RD657336
12	Hairpin 4mm x 80mm	1	5RD1800002
13	Bolt hex. 3/8"NC x 1 1/4" PTD	2	5RD0100039
14	Allen socket head capscrew 10-24 x 1" PTD	1	5RD0800009
15	Square head setscrew 3/8" x 1/2" black	1	5RD0600006
16	Nut hex. 3/8" NC PTD	2	5RD0900003
17	Nylon insert locknut 10-24 PTD	1	5RD1000002
18	Lockwasher 3/8" PTD	2	5RD1200004
19	Bolt hex. 3/4"NC x 1 1/2" PTD	1	5RD0100115
20	Nut hex. 3/4" NC PTD	1	5RD0900008
21	Lockwasher 3/4" PTD	1	5RD1200008
22	Spring pin 1/4" x 1 1/4" lq PTD	2	5RD1600015
23	Universal block	1	5RD658193
24	Rotation yoke	1	5RD659595
25	Worm support bracket (for SB1174 & SB1184 only)	1	5RD668477



# PARTS

## 5RDF0017 - HYDRAULIC ROTATION FOR SB1148-SB1154-SB1164

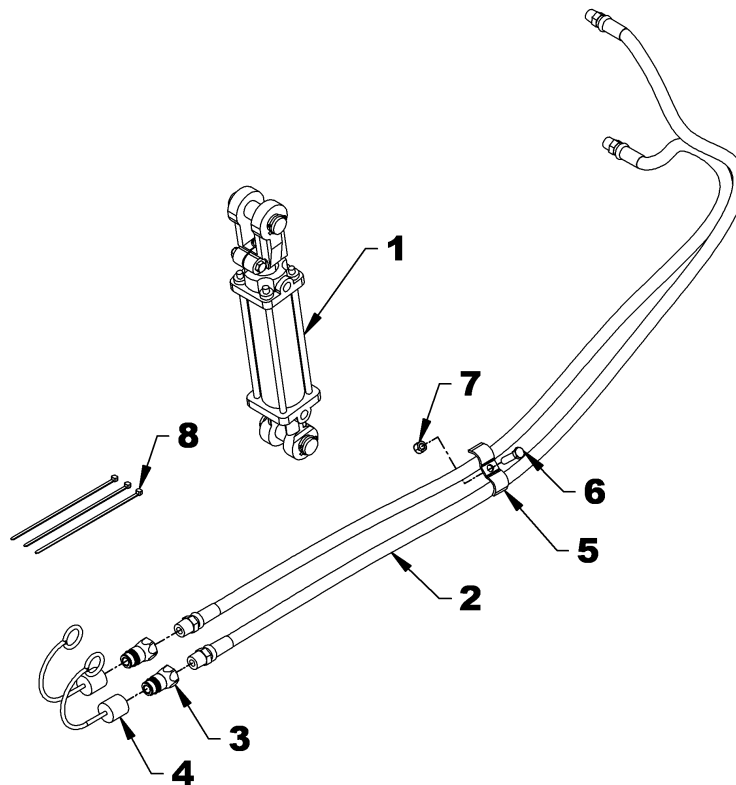
REF.	DESCRIPTION	QTY	PART #
1	Rotation bracket	1	5RD668541
2	Bell crank	1	5RD667703
3	Push arm	1	5RD667704
4	Pivot bushing	1	5RD667706
5	Bolt hex. 5/8" NC x 5 1/2", gr. 5 PTD	1	5RD0100106
6	Lockwasher 5/8" PTD	2	5RD1200007
7	Stover nut hex 5/8" NC PTD	1	5RD1100007
8	Bolt hex. 5/8" NC x 1 1/2" gr. 5 PTD	1	5RD0100095
9	Nut hex. 5/8" NC PTD	1	5RD0900007
10	Bolt hex. 1/2" NC x 1 3/4", gr.5 PTD	1	5RD0100071
11	Flat washer 9/16" hole PTD	1	5RD1400006
12	Lockwasher 1/2" PTD	1	5RD1200006
13	Nut hex. 1/2" NC PTD	1	5RD0900006
14	Flat washer 1 1/16" hole PTD	1	5RD1400013
15	Bolt hex. 3/8" NC x 1 1/4" gr. 5 PTD	2	5RD0100039
16	Stover nut hex 3/8" NC PTD	2	5RD1100003
17	Decal "Danger"	1	5RD664548
18	Spacer ring	1	5RD668542
19	Cylinder 2" X 6" inc. pins	1	5RD3900002
	Seal kit	1	5RD2600047
20	Hose 3/8" x 82" lg 3/8" NPT RM x 1/2" NPT RM	2	5RD3700142
21	Hose clamp	1	5RD660440
22	Bolt hex. 3/8" NC x 1 1/2 gr.5 PTD	1	5RD0100040
23	Nut nylon insert 3/8 NC PTD	1	5RD1000006
24	Quick coupler 1/2-14 NPT male	2	5RD656480
25	Dust cap for male quick coupler	2	5RD664898



# PARTS

## 5RDF0019 - HYDRAULIC DEFLECTOR FOR SB1148-SB1154-SB1164

REF.	DESCRIPTION	QTY	PART #
1	Cylinder 2" X 6" inc. pins	1	5RD3900002
	Seal kit	1	5RD2600047
2	Hose 3/8" x 100" lg 3/8" NPT RM x 1/2" NPT RM	2	5RD3700144
3	Quick coupler 1/2" NPT male	2	5RD656480
4	Dust cap	2	5RD664898
5	Hose clamp	1	5RD660440
6	Bolt 3/8" NC x 1 1/2" lg PTD	1	5RD0100040
7	Nut nylon insert 3/8" NC PTD	1	5RD0900003
8	Tie wraps 8" x 4.8 mm black	3	5RD2100003

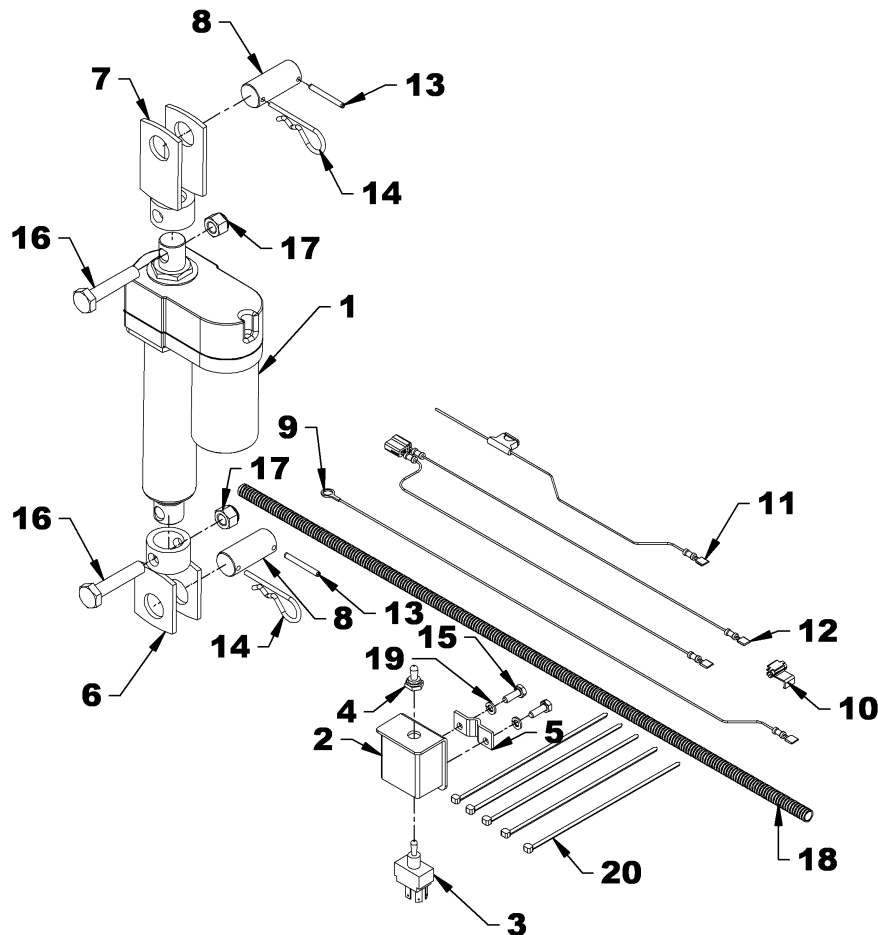




# PARTS

## 5RDF0020- ELECTRIC DEFLECTOR FOR SB1154 – SB1164 ONLY

REF.	DESCRIPTION	QTY	PART #
1	Electric actuator	1	5RD665573
2	Switch box	1	5RD667557
3	Switch	1	5RD663383
4	Rubber cap	1	5RD658666
5	Box clamp	1	5RD667558
6	Clevis – rod end	1	5RD666049
7	Clevis – base	1	5RD666051
8	Pin 1"	2	5RD666057
9	Ground wire 72" (black)	1	5RD666054
10	Tap connector	1	5RD656665
11	Fuse wire 72" (red)	1	5RD666055
12	Actuator wire	1	5RD666056
13	Spring pin 3/16" x 1 3/4" black	2	5RD1600009
14	Hairpin 4mm x 80mm, PTD	2	5RD1800002
15	Bolt hex. 1/4" NC x 3/4" PTD	4	5RD0100003
16	Bolt hex. 1/2"NC x 2 1/2", PTD	2	5RD0100076
17	Nylon insert locknut 1/2"NC, PTD	2	5RD1000011
18	Loom 3/8" x 420"	1	5RD666053
19	Lockwasher 1/4" PTD	2	5RD1200002
20	Tie wraps 8" lg x 4 mm	5	5RD2100003










# 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, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly disulfide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.

SEE Grade No.		2				5				8			
BOLT HEAD IDENTIFICATION MARKS AS PER GRADE NOTE: MANUFACTURING MARKS WILL VARY.						  				  			
		Torque		Torque		Torque		Torque					
BOLT SIZES		Pounds-Foot		Newtons-Meter		Pounds-Foot		Newtons-Meter		Pounds-Foot		Newtons-Meter	
Inches	Millimeters	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
1/4	6.35	5	6	6.8	8.13	9	11.0	12.2	14.9	12	15	16.3	30.3
5/16	7.94	10	12	13.6	16.3	17	20.5	23.1	27.8	24	29	32.5	39.3
3/8	9.53	20	23	27.1	31.2	35	42.0	47.5	57.0	45	54	61.0	73.2
7/16	11.11	25	30	40.7	47.4	54	64.0	73.2	86.8	70	84	94.9	113.9
1/2	12.70	45	52	61.0	70.5	80	96.0	108.5	130.2	110	132	149.2	179.0
9/16	14.29	65	75	88.1	101.6	110	132.0	149.2	179.0	160	192	217.0	260.4
5/8	15.88	95	105	128.7	142.3	150	180	203.4	244.1	220	264	298.3	358.0
3/4	19.05	150	185	203.3	250.7	270	324	366.1	439.3	380	456	515.3	618.3
7/8	22.23	160	200	216.8	271.0	400	480	542.4	650.9	600	720	813.6	976.3
1	25.40	250	300	338.8	406.5	580	696	786.5	943.8	900	1080	1220.4	1464.5
1 1/8	25.58	-	-	-	-	800	880	1084.8	1193.3	1280	1440	1735.7	1952.6
1 1/4	31.75	-	-	-	-	1120	1240	1518.7	1681.4	1820	2000	2467.9	2712.0
1 3/8	34.93	-	-	-	-	1460	1680	1979.8	2278.1	2380	2720	3227.3	3688.3
1 1/2	38.10	-	-	-	-	1940	2200	2630.6	2983.2	3160	3560	4285.0	4827.4

## METRIC BOLT TORQUE SPECIFICATIONS

Size of screw	Grade No.	Pitch mm	Coarse thread				Pitch mm	Fine Thread			
			Pounds-Foot		Newtons-Meter			Pounds-Foot		Newtons-Meter	
			MIN.	MAX.	MIN.	MAX.		MIN.	MAX.	MIN.	MAX.
M6	4T 	1.0	3.6	5.8	4.9	7.9	-	-	-	-	
	7T 		5.8	9.4	7.9	12.7	-	-	-	-	
	8T 		7.2	10	9.8	13.6	-	-	-	-	
M8	4T	1.25	7.2	14	9.8	19.0	1.0	12	17	16.3	23.0
	7T		17	22	23	29.8		19	27	25.7	36.6
	8T		20	26	27.1	35.2		22	31	29.8	42
M10	4T	1.5	20	25	27.1	33.9	1.25	20	29	27.1	39.3
	7T		34	40	46.1	54.2		35	47	47.4	63.7
	8T		38	46	51.5	62.3		40	52	54.2	70.5
M12	4T	1.75	28	34	37.9	46.1	1.25	31	41	42	55.6
	7T		51	59	69.1	79.9		56	68	75.9	92.1
	8T		57	66	77.2	89.4		62	75	84	101.6
M14	4T	2.0	49	56	66.4	75.9	1.5	52	64	70.5	86.7
	7T		81	93	109.8	126		90	106	122	143.6
	8T		96	109	130.1	147.7		107	124	145	168
M16	4T	2.0	67	77	90.8	104.3	1.5	69	83	93.5	112.5
	7T		116	130	157.2	176.2		120	138	162.6	187
	8T		129	145	174.8	196.5		140	158	189.7	214.1
M18	4T	2.0	88	100	119.2	136	1.5	100	117	136	158.5
	7T		150	168	203.3	227.6		177	199	239.8	269.6
	8T		175	194	237.1	262.9		202	231	273.7	313
M20	4T	2.5	108	130	146.3	176.2	1.5	132	150	178.9	203.3
	7T		186	205	252	277.8		206	242	279.1	327.9
	8T		213	249	288.6	337.4		246	289	333.3	391.6



**PART NO.  
5RDSB1148A**



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