

**SERVICE****BULLETIN**

**SB #:** F108  
**DATE:** APRIL 2011  
**TO:** ALL AUTHORIZED FERRIS DEALERS  
**SUBJECT:** UPDATES TO IS2500Z ZERO-TURN RIDING MOWERS  
**MODELS:** SEE LIST BELOW

**BRANDS:**

Brand	Model Number	Serial Number Range	Description
Ferris	5900798, 5900943, 5900783, 5900781, 5900799, 5900949, 5900931, 5900932	See chart below.	IS2500Z Series Zero-Turn Riding Mowers

**DESCRIPTION**

This bulletin collects several updates that have been made available for the IS2500Z product in a comprehensive list to help ensure that all applicable changes have been completed on affected machines. **Be sure to inspect units to determine if updates have already been done prior to ordering parts.**

**CORRECTIVE PROCEDURES**

1. Using the chart below verify that your machines have been updated to reflect all of the changes listed below.

Work Required / Kit No.:	Description:	Serial Number Range:	Models Affected:	Notes / Purpose
<b>5600485</b>	Gearbox Mount Kit	2014564481 & Below	24 HP Models	This kit <b>ONLY</b> repairs units that have broken the factory gearbox mount completely away from the frame of the unit.
<b>5600471</b>	Gearbox Support Kit	2014564481 & Below	24 HP Models	This kit adds support to the frame to <b>PREVENT</b> the gearbox mount from breaking away from the frame of the unit.

Work Required / Kit No.:	Description:	Serial Number Range:	Models Affected:	Notes / Purpose
<b>5600479</b>	Clutch Tab Kit	2014564481 & Below	All	This kit updates the clutch anchor from a bolt to a 1/4" steel tab.
<b>5102668</b>	Pump Drive Spring	2014452305 & Below	All	This kit replaces original spring with a new one that features swivel ends.
<b>5102692</b> (Order Qty: 2)	Return-to-Neutral Springs	2014564431 & Below	All	This kit replaces the return-to-neutral spring and clevis pin and replaces it with a new return-to-neutral spring that connects directly to the frame weldment.
<b>5102959</b>	Clutch-to-Gearbox Tensioner Spring	2014564481 - 2014601764	All	This kit replaces the clutch-to-gearbox tensioner spring. Follow the serial number break for this change.

Work Required / Kit No.:	Description:	Serial Number Range:	Models Affected:	Notes / Purpose
5600462	Vent Hose Retainer Kit	2014506832 & Below	All	This kit installs black vinyl clamps that correctly route the vent hoses away from the radiator.
5600453	Idler Update Kit	2014506916 & Below	61" Models	This kit replaces the idler arm pulley on the mower deck. The new pulley is silver colored and has a deeper groove.

**WARRANTY:**

File for warranty reimbursement using e-Claim at [www.ThePowerPortal.com](http://www.ThePowerPortal.com). Use the values listed below when filling out the claim. The information in the "Brand" block indicates which tab the claim should be filed under. *Note: File only one unit per claim form.*

<b>Brand</b>	Ferris			
<b>Failure Location Category</b>	L&G Body/Chassis		<b>Cause of Failure</b>	F108
<b>Failure Location Code</b>	F40		<b>Work Performed</b>	F108
<b>Defect Code/Failure Mode</b>	AW		<b>Repair Parts Used</b>	
<b>Control/Evaluation Number</b>	F108		5600485	5600485
<b>Pick-Up &amp; Delivery</b>	N/A		5600471	5600471
<b>Total Hours (Tenths):</b>			5600479	5600479
<b>Inspection Time (For entire unit):</b>			5102668	5102668
	F108	0.2	5102692	5102692 (Qty: 2)
<b>Repair Times:</b>			5102959	5102959
	5600485	2.5	5600462	5600462
	5600471	0.7	5600453	5600453
	5600479	0.2		
	5102668	0.4		
	5102692	0.2 each		
	5102959	0.4		
	5600462	0.2 each		
	5600453	0.7		

**BRIGGS & STRATTON POWER PRODUCTS GROUP, LLC**  
Distribution Sales & Customer Support

# Installation Instructions

## Gearbox Support Kit

Part No. 5600485

Fits Ferris IS2500Z & Snapper Pro S175X Models w/ 24 HP Engine

Kit Contents					
Part No.	Qty.	Description	Part No.	Qty.	Description
5407615A	1	GEARBOX SUPPORT WELDMENT	5407691A	1	GEARBOX RIGHT ANGLE BRACKET
5407683A	1	GEARBOX BRACKET WELDMENT	5025013X10	1	BOLT, 3/8-16 X 1-1/4 GD5
5025156	1	3/8 FLAT WASHER	5025394	7	3/8 NYLON FLANGE NUT
5025392	12	5/16 NYLON FLANGE NUT	1960268	3	CARRIAGE BOLT, 3/8-16 X 1-1/4
5025011X10	1	BOLT, 5/16-18 X 1-1/4	1931352	1	CARRIAGE BOLT, 3/8-16 X 1-1/2

### ⚠ WARNING



Remove the ignition key prior to performing maintenance on the unit.

Before beginning any service work turn off the PTO, engage the parking brake, turn off the ignition, remove the ignition key, and disconnect the spark plug wire(s).

### Removing the Muffler Guard

1. Park the machine on a flat, level surface. Turn off the PTO, engage the parking brake, turn off the ignition and remove the key.
2. Open the hood by unclasp the two (2) rubber straps from the hood and tilting the hood open.
3. Remove the two (2) 1/4-20 X 3/4 bolts and 1/4 SAE washers (**A**, **Figure 1**) that secure the muffler guard (**B**) to the cowling.
4. Remove the two (2) 5/16-18 X 3/4 bolts, 5/16 gr. 9 washers and 5/16-18 nylon flange nuts (**C**) that secure the muffler bracket to the bumper (**D**).
5. Remove the muffler guard from the machine.

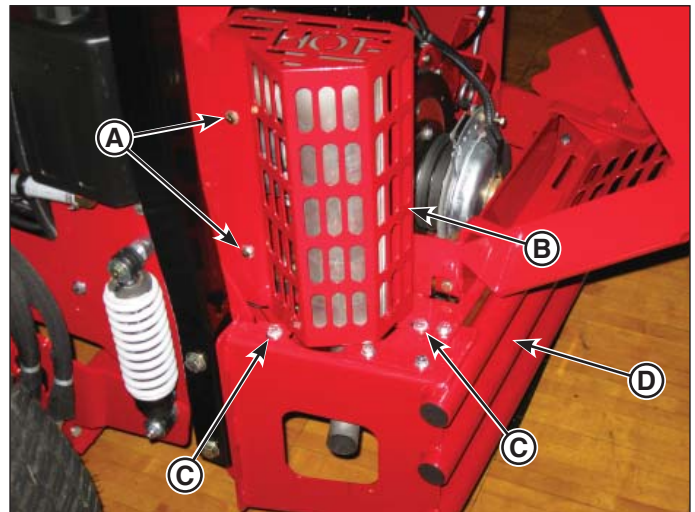


Figure 1. Removing the Muffler Guard

### Removing the Hood & Shields

1. Close the hood by tilting it back down into the closed position. Do not secure the hood in place with the rubber straps at this time.
2. Remove the six (6) 5/16-18 X 3/4 bolts, 5/16 gr. 9 washers and 5/16-18 nylon flange nuts (**A**, **Figure 2**) that secure the hood assembly to the bumper.
3. Remove the 5/16-18 X 3/4 bolt, 5/16 gr. 9 washer and 5/16-18 nylon flange nut that secures the hood to the lower belt guard (**F**, **Figure 3**).
4. Remove the hood assembly from the unit.
5. Remove the oil drain hose from the hose clamp (**A**).
6. Remove the 5/16-18 X 1" bolt (**B**), 5/16 SAE washer (**C**), hose clamp and 5/16-18 hex nut (**D**) from the lower belt guard (**E**) and the frame of the unit.
7. Remove the two (2) 5/16-18 X 1" bolts, 5/16 SAE washers and 5/16-18 hex nuts from the lower belt guard (**F**) and the bumper (**E**).
8. Remove the lower belt guard from the unit.

*This kit can be installed with the rear bumper and ROPS assembly installed on the machine; however, if you require more access to the rear of the machine the bumper and the ROPS assembly can be removed from the machine. The rear bumper and ROPS are removed in the following illustrations for clarity.*

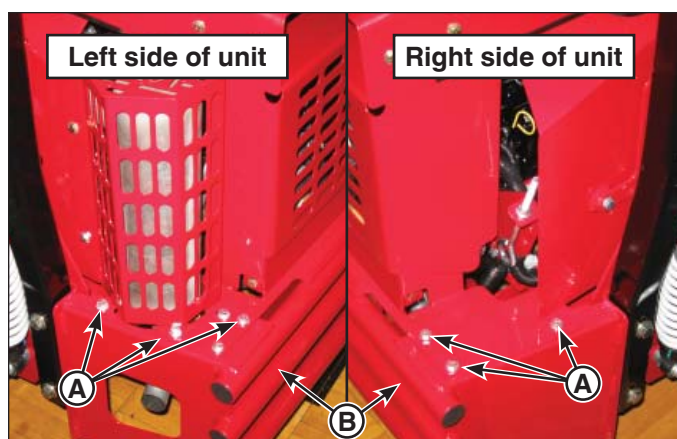


Figure 2. Removing the Hood Assembly

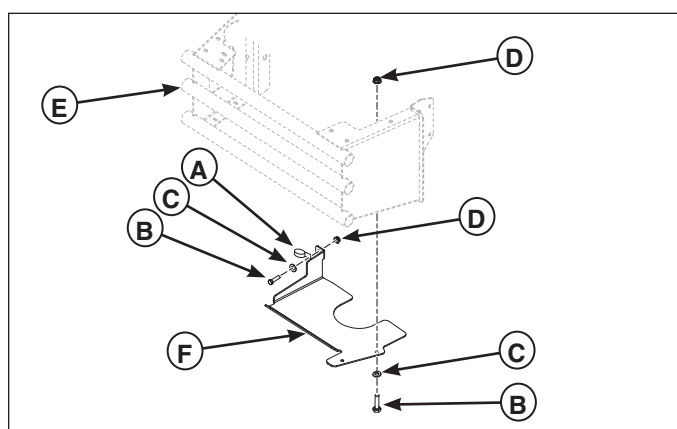


Figure 3. Removing the Lower Belt Guard

### Removing the PTO Belts

1. Remove the PTO clutch anchor bolt (**B, Figure 4**).
2. Disconnect the PTO clutch wire harness (**G**).
3. Using a 1/2" breaker bar, place the square end in the square hole located in the end of the idler arm (**C**). Carefully rotate the breaker bar **CLOCKWISE**, which will relieve tension on the PTO drive belts.
4. Slide the PTO clutch belts over the edge of the gearbox pulley (**D**). Carefully release the tension on the breaker bar.
5. Remove the PTO clutch belts.

### Disconnecting the Idler Arm

1. Loosen the jam nut (**I, Figure 4**) on the spring adjustment eyebolt (**K**).
2. Remove the spring adjustment nut (**J**) from the spring adjustment eyebolt.
3. Remove the spring adjustment eyebolt from the anchor. Allow the idler arm to hang freely pointing down towards the ground.

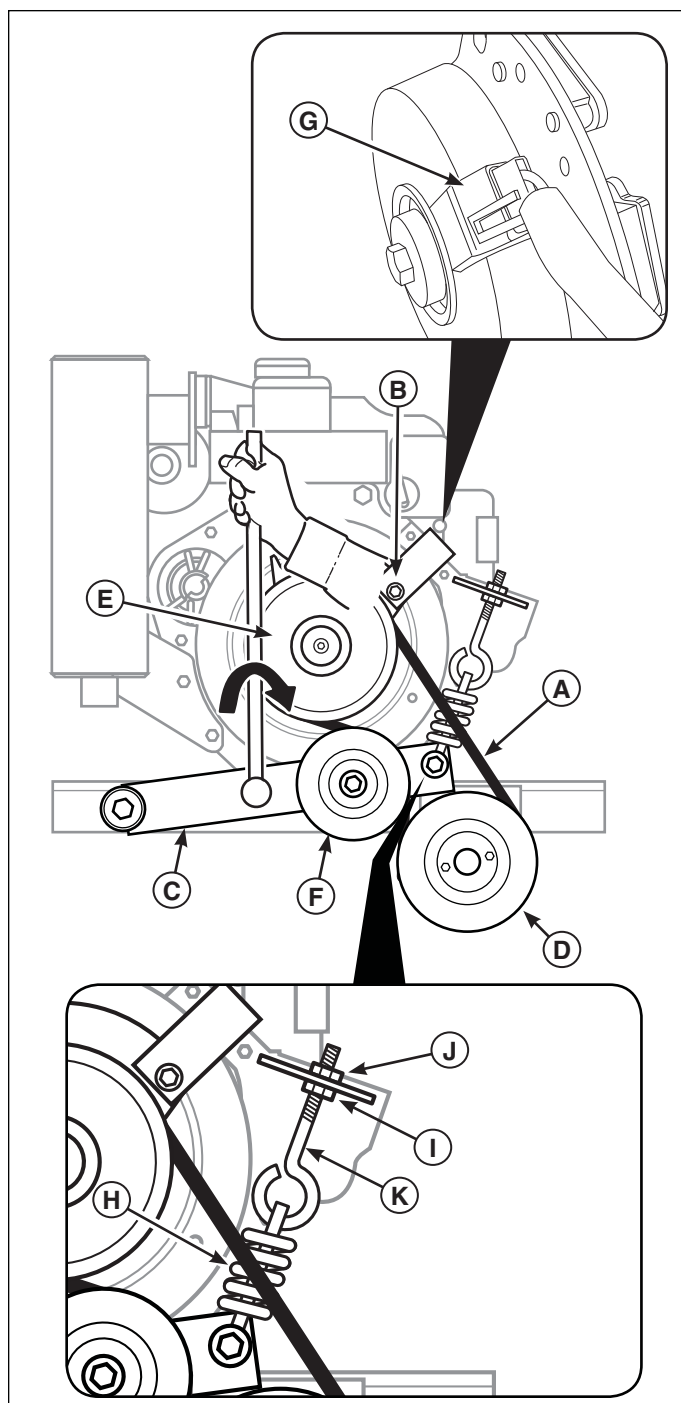


Figure 4. PTO Clutch Belt Replacement

## Remove the Mower Deck Belt

1. Lower the mower deck to its lowest cutting position and remove the mower deck guards.
2. Using a 1/2" breaker bar, place the square end in the square hole located in the end of the idler arm (**A**, **Figure 5**). Carefully rotate the breaker bar COUNTER-CLOCKWISE, which will relieve the tension on the mower deck drive belt exerted from the idler arm.
3. Slide the drive belt over the edge of the stationary idler pulley (**B**). Carefully release the tension on the breaker bar.

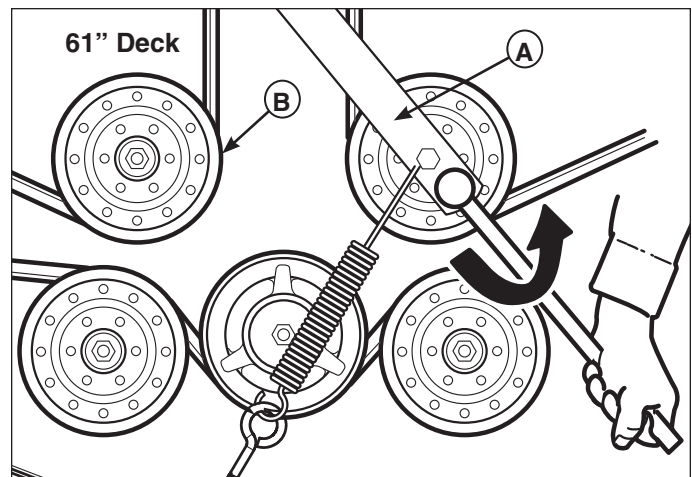


Figure 5. Removing the Mower Deck Drive Belt

## Remove the Gearbox & Bracket

1. Remove the eight (8) 5/16-18 X 1" bolts (**A**, **Figure 6**), 5/16 lock washers (**B**) and 5/16 flat washers (**C**) that secure the gearbox (**D**) to the gearbox bracket (**E**).
2. Remove the gearbox.
3. Remove the two (2) 3/8 X 1" carriage bolts (**F**) and 3/8 nylon flange nuts (**G**) that secure the gearbox bracket to the frame.
4. Remove and discard the gearbox bracket.
5. Remove the 3/8 nylon flange nut (**H**) that installs the right rear ISO mount into the engine cradle (**I**).
6. Push the 3/8-16 X 3" bolt (**J**) up into the ISO mount so that it does not hang below the frame.

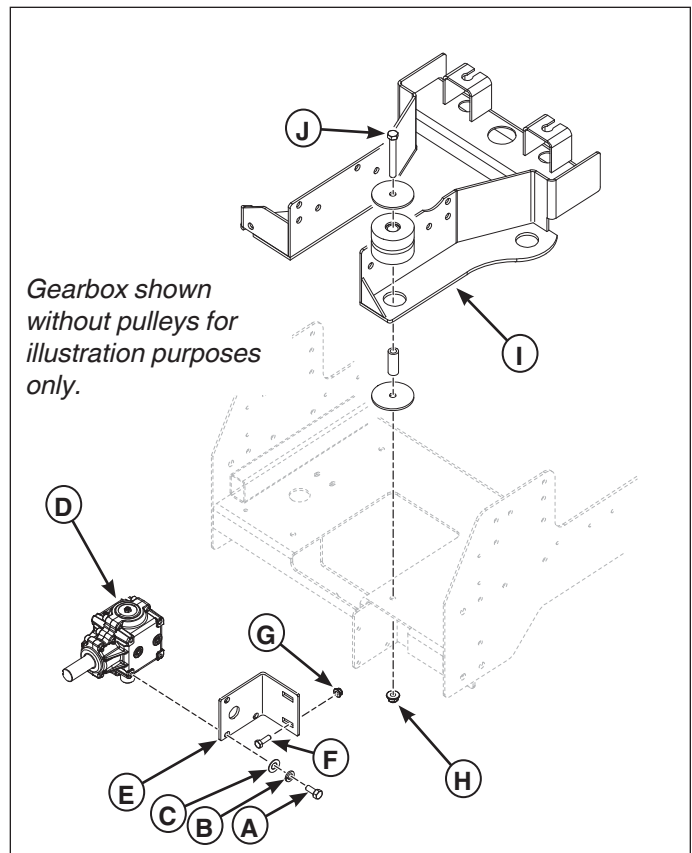


Figure 6. Removing the Gearbox & Bracket

## Inspect the Frame

1. Inspect the frame where the broken gearbox bracket was welded (**A**, **Figure 7**).  
If the back and upper surfaces (**B**) are not completely smooth or if there is any material or weld from the bracket remaining, grind the surfaces so that they are smooth.

## Inspect the Gearbox

1. Inspect the gearbox for any signs of damage.  
If there are any visible signs of damage to the gearbox, contact the Service Department at 1-800-933-6175 ext. 709.

## Inspect the Engine Oil Drain Hose

1. Inspect the engine oil drain hose and fittings for any signs of damage.  
If there are any visible signs of damage to the engine oil drain hose and fittings contact the Service Department at 1-800-933-6175 ext. 709.
2. Inspect the positioning of the oil drain hose. The oil drain hose should be positioned so that the oil drain hose does not contact the frame.

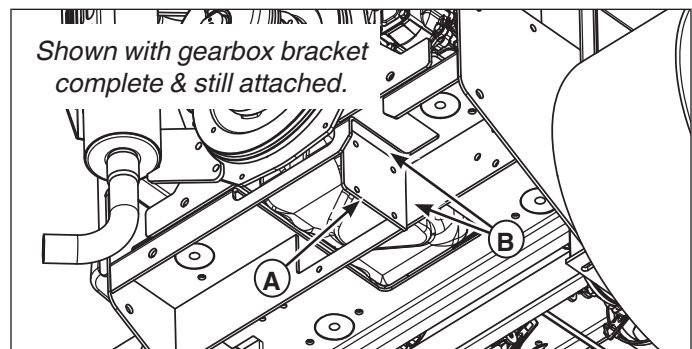


Figure 7. Inspecting the Frame



### Install the Gearbox Right Angle Bracket, Gearbox Support Weldment & Gearbox Bracket Weldment

The gearbox right angle bracket (**A, Figure 8**) will first be installed and used as a drill template. Follow the procedures below:

1. Install the bracket as shown in Figure 8. Use a 3/8 X 1" bolt (**B**) and 3/8 nylon flange nut (**C**) to secure the right side of the bracket. Use a 5/16" X 1" bolt (**D**) and 5/16-18 nylon flange nut (**E**) to secure the middle of the bracket. This hardware must be tightened prior to drilling.
2. Using a .390 drill bit, drill a hole into the frame using the hole in the bracket (**F**) as a template as shown in Figure 8.
3. Remove the bracket and the hardware from the frame.
4. Install the bracket (**A, Figure 9**) on the inside of the frame. See Figure 9. Use the new 3/8 X 1-1/4" bolt (**B**), 3/8 flat washer (**C**) and 3/8 nylon flange nut (**D**) to secure the left side of the bracket.
5. Install the gearbox support weldment (**E**) and secure the left side of the weldment using a 5/16" X 1" bolt (**F**) and 5/16-18 nylon flange nut (**G**). On the right side of the bracket for the top hole use a 3/8 X 1-1/4" carriage bolt (**H**) and 3/8 nylon flange nut (**I**). For the bottom hole use a 3/8 X 1-1/2" bolt (**J**) and 3/8 nylon flange nut.
6. Position the gearbox support weldment as far up and as far forward as possible so that it contacts the frame
7. Press the 3/8-16 X 3" bolt (**J, Figure 6**) down through the ISO mount and the frame. Secure using a new 3/8 nylon flange nut (**H**).
8. Tighten all hardware to secure the gearbox support weldment into place.
9. Using a .390 drill bit, drill two (2) holes into the frame using the holes in the bracket (**K, Figure 9**) as a template as shown in Figure 9.
10. Install two (2) 3/8 X 1-1/4" carriage bolts (**A, Figure 10**) through the holes drilled in step # 9 and secure with new 3/8 nylon flange nuts (**B**). Tighten this hardware.
11. Remove the 3/8 X 1-1/4" carriage bolt (**H, Figure 9**), 3/8 X 1-1/2" bolt (**J**) and 3/8 nylon flange nuts (**I**) from the gearbox support weldment (**E**).
13. Refer to Figure 10. Loosely install the gearbox bracket weldment (**C, Figure 10**) using a 3/8 X 1-1/4" carriage bolt (**A**) and a new 3/8 nylon flange nut (**B**) in the upper hole. In the lower hole, use a 3/8 X 1-1/2" carriage bolt (**D**) and a new 3/8 nylon flange nut.

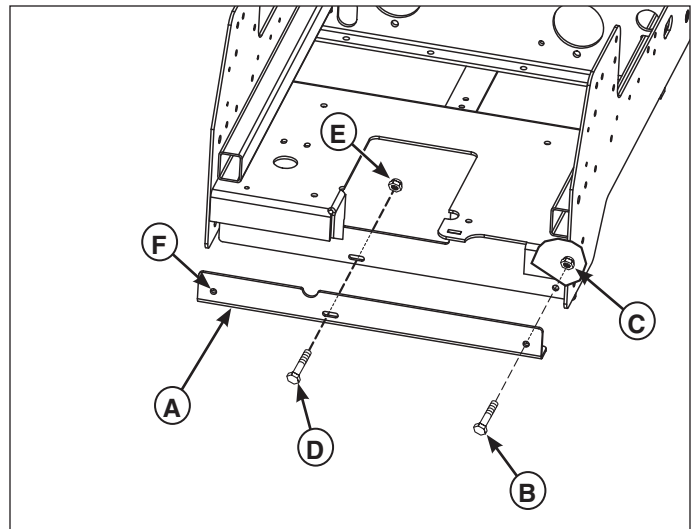


Figure 8. Install the Gearbox Right Angle Bracket

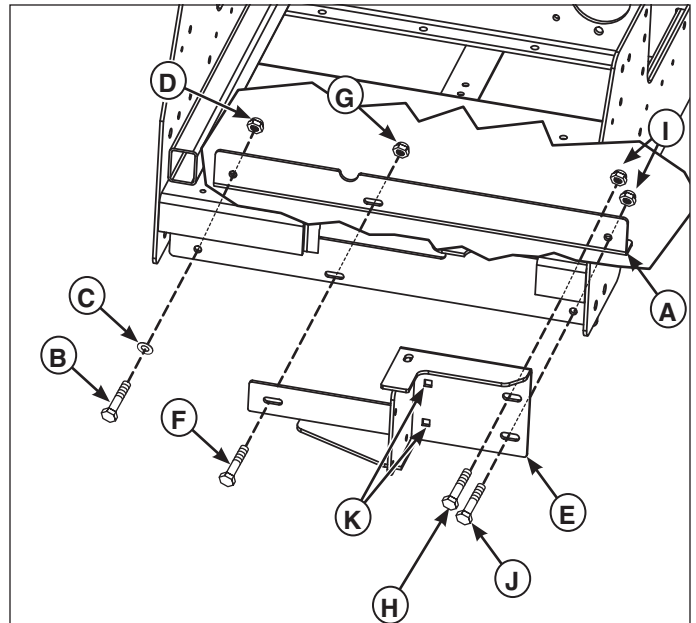


Figure 9. Installing the Gearbox Support Weldment

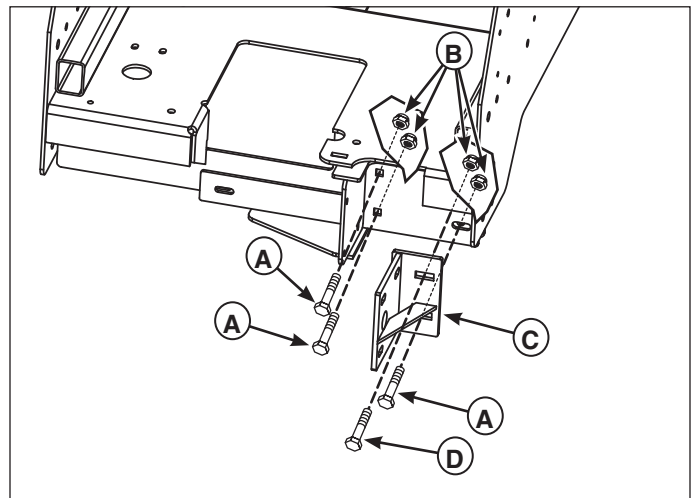


Figure 10. Installing the Gearbox Bracket Weldment

### Reinstall the Gearbox

1. Install the gearbox (**A**, **Figure 11**) to the gearbox support weldment (**B**) using four (4) 5/16-18 X 1" bolts (**C**), 5/16 lock washers (**D**) and 5/16 flat washers (**E**). Tighten this hardware.
2. Press the gearbox bracket weldment (**F**) up against the gearbox and forward until it contacts the frame and loosely install (4) 5/16-18 X 1" bolts, 5/16 lock washers and 5/16 flat washers.
3. Tighten the carriage bolts (**A & D**, **Figure 10**) and 3/8 nylon flange nuts (**B**) that secure the gearbox bracket weldment (**C**) to the frame.
4. Tighten the four (4) 5/16-18 X 1" bolts (**C**, **Figure 11**), 5/16 lock washers (**D**) and 5/16 flat washers (**E**) that secure the gearbox bracket weldment (**F**) to the gearbox (**A**).
4. Check the alignment of the gearbox pulley to the idler arm pulley and the PTO clutch pulley. If they are not correctly aligned, loosen the two (2) pulley hub bolts and move the pulley and hub to align with the other pulleys.
5. Reinstall the PTO clutch belts on the PTO clutch (**E**, **Figure 4**) and the gearbox pulley (**D**). Make sure that the V-side of the belts runs in the pulley grooves.

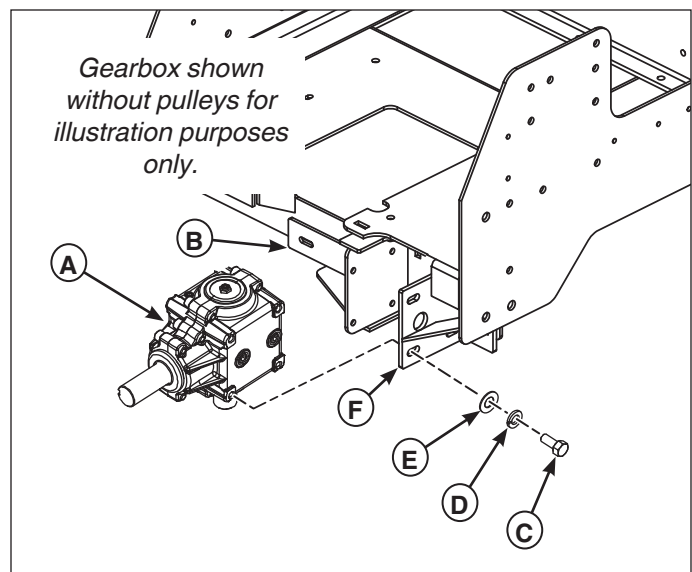


Figure 11. Installing the Gearbox

**IMPORTANT NOTE:** If you have kit # 5600479 - "Kit, Clutch Tab - Spring Update" and it has not already been installed on your machine, please install it at this time.



### Reconnect the Idler Arm

1. Install the spring adjustment eyebolt (**K**, **Figure 12**) into the anchor and loosely install with a new 3/8-16 nylon flange nut (**J**).
2. Turn the spring adjustment nut **CLOCKWISE** until the coil-to-coil spring measurement equals 6" (15,24 cm).
3. When the coil-to-coil spring measurement equals 6" (15,24 cm) retighten the jam nut (**I**).
4. If you have installed kit # 5600479 - "Kit, Clutch Tab - Spring Update" the PTO clutch is already anchored if not, reinstall the clutch anchor bolt (**B**).
5. Reconnect the PTO clutch wire harness (**G**).

### Reinstall the Mower Deck Belt

1. Using a 1/2" breaker bar, place the square end in the square hole located in the end of the idler arm (**A**, **Figure 5**). Carefully rotate the breaker bar **COUNTER-CLOCKWISE**, which will relieve the tension on the mower deck drive belt exerted from the idler arm.
2. Slide the drive belt over the edge of the stationary idler pulley (**B**). Carefully release the tension on the breaker bar.
3. Reinstall the mower deck guards.

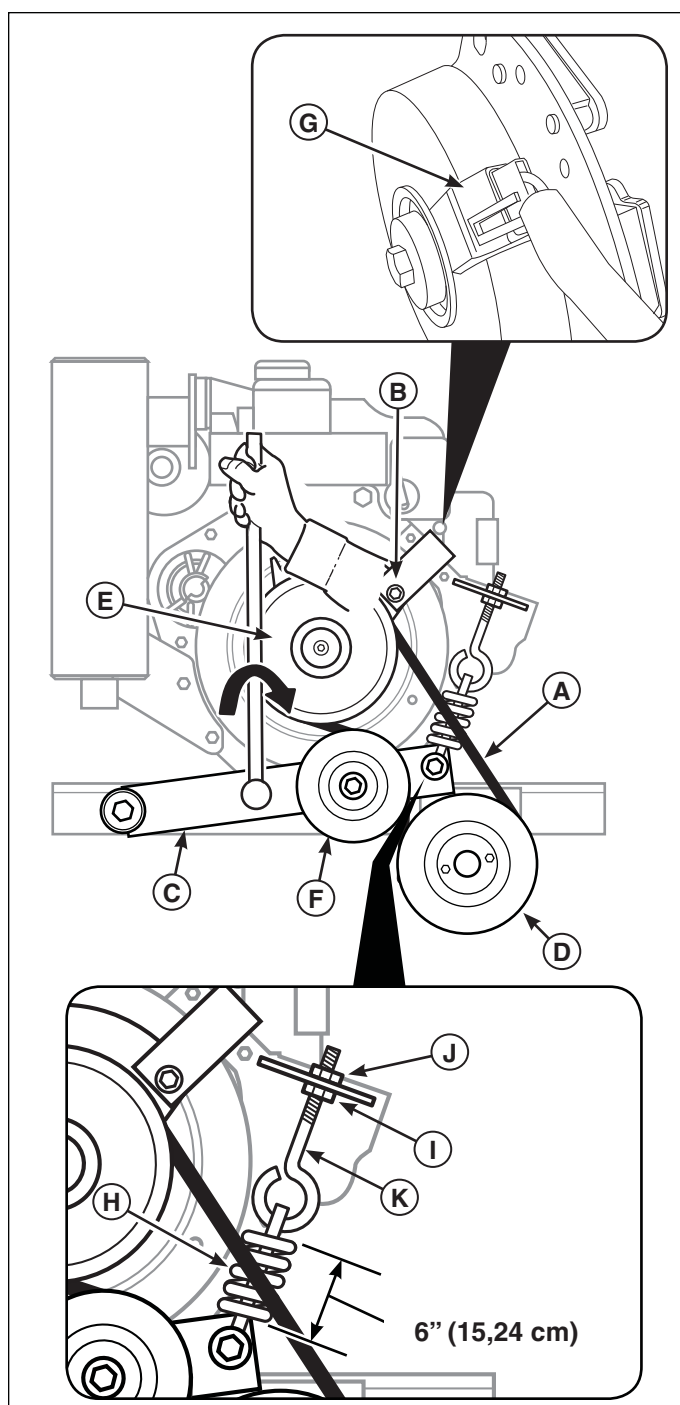


Figure 12. PTO Clutch Belt Replacement

### Reinstall the Hood & Shields

1. If you removed the rear bumper and the ROPS assembly from the unit reinstall it now.
2. Reinstall the lower belt guard (F, Figure 13) to the bumper (E) and secure with two (2) 5/16-18 X 1" bolts (B), 5/16 SAE washers (C) and new 5/16-18 nylon flange nuts (D).
3. Remove the 5/16" X 1" placeholder bolt (F, Figure 9) and 5/16-18 nylon flange nut (G) and replace with a 5/16-18 X 1-1/4" bolt (G, Figure 13), 5/16 SAE washer (C), the hose clamp and secure with a new 5/16-18 nylon flange nut (D).
4. Reinstall the oil drain hose through the hose clamp (A).
5. Place the hood assembly back on the unit.
6. Secure the hood assembly to the bumper using six (6) 5/16-18 X 3/4 bolts, 5/16 gr. 9 washers and new 5/16-18 nylon flange nuts (A, Figure 14).
7. Secure the hood assembly to the lower belt guard using a 5/16-18 X 3/4 bolt, a 5/16 gr. 9 washer and a new 5/16-18 nylon flange nut.

### Reinstalling the Muffler Guard

1. Place the muffler guard back on the machine.
2. Using two (2) 5/16-18 X 3/4 bolts, 5/16 gr. 9 washers and new 5/16-18 nylon flange nuts (C, Figure 15) secure the muffler bracket to the bumper (D).
3. Using two (2) 1/4-20 X 3/4 bolts and 1/4 SAE washers (A) secure the muffler guard (B) to the cowling.
4. Tilt the hood into the closed position and secure with the two (2) rubber straps.

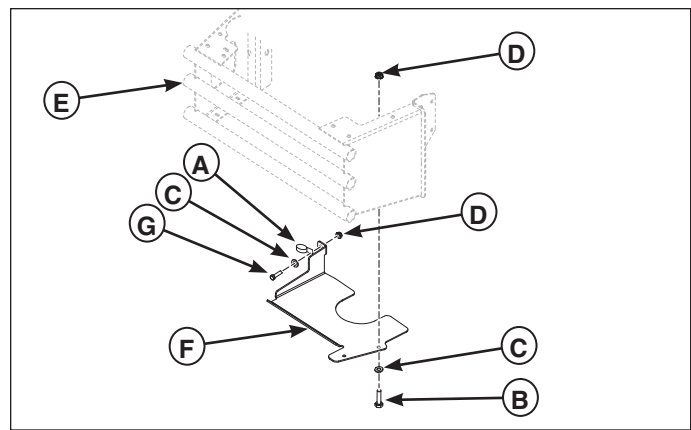


Figure 13. Removing the Lower Belt Guard

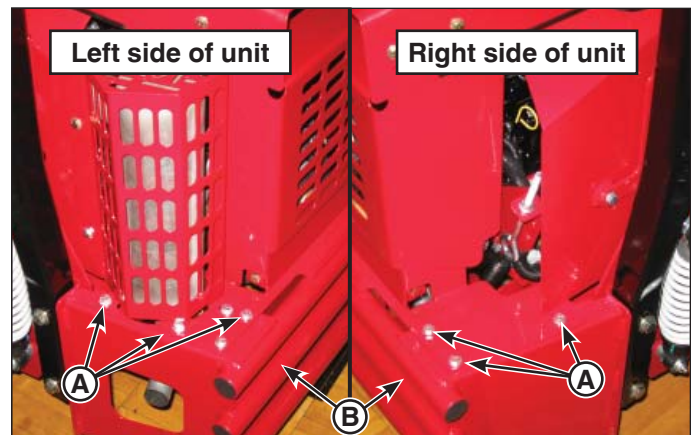


Figure 14. Removing the Hood Assembly

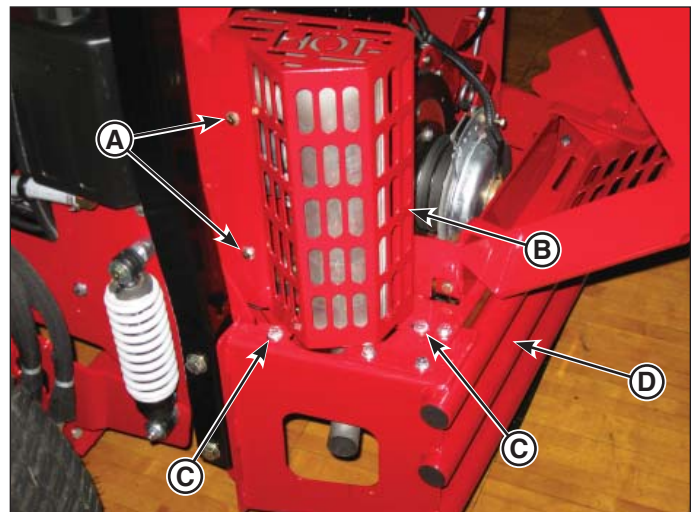


Figure 15. Removing the Muffler Guard

# Installation Instructions

## Gearbox Support Kit

Part No. 5600471

Fits Ferris IS2500Z & Snapper Pro S175X Models w/ 24 HP Engine

Kit Contents					
Part No.	Qty.	Description	Part No.	Qty.	Description
5407615A	1	GEARBOX RIGHT ANGLE BRACKET	5407718A	1	GEARBOX SUPPORT BRACKET
5025011X9	2	BOLT, 5/16-18 X 1-1/8 GD5	5025011X10	1	BOLT, 5/16-18 X 1-1/4 GD5 YZ
5025392	12	5/16 NYLON FLANGE NUT	5025394	2	3/8 NYLON FLANGE NUT

### ⚠ WARNING



Remove the ignition key prior to performing maintenance on the unit.

Before beginning any service work turn off the PTO, engage the parking brake, turn off the ignition, remove the ignition key, and disconnect the spark plug wire(s).

### Removing the Muffler Guard

1. Park the machine on a flat, level surface. Turn off the PTO, engage the parking brake, turn off the ignition and remove the key.
2. Open the hood by unclasping the two (2) rubber straps from the hood and tilting the hood open.
3. Remove the two (2) 1/4-20 X 3/4 bolts and 1/4 SAE washers (**A**, **Figure 1**) that secure the muffler guard (**B**) to the cowling.
4. Remove the two (2) 5/16-18 X 3/4 bolts, 5/16 gr. 9 washers and 5/16-18 nylon flange nuts (**C**) that secure the muffler bracket to the bumper (**D**). Discard the two (2) 5/16-18 nylon flange nuts.
5. Remove the muffler guard from the machine.

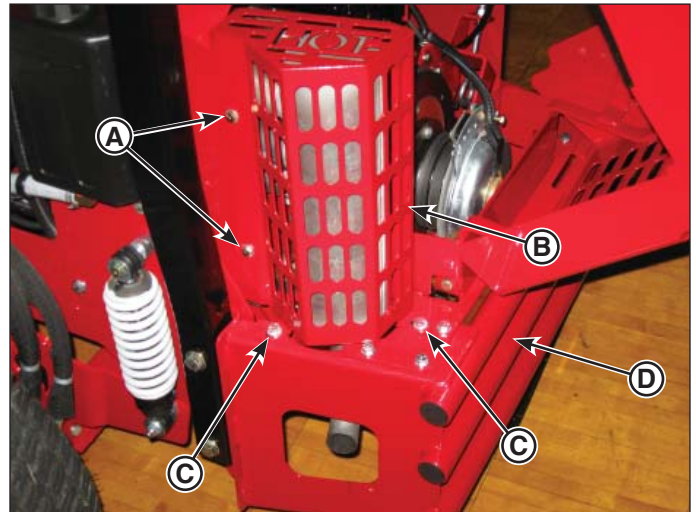


Figure 1. Removing the Muffler Guard

### Removing the Hood & Shields

1. Close the hood by tilting it back down into the closed position. Do not secure the hood in place with the rubber straps at this time.
2. Remove the six (6) 5/16-18 X 3/4 bolts, 5/16 gr. 9 washers and 5/16-18 nylon flange nuts (**A**, **Figure 2**) that secure the hood assembly to the bumper. Discard the six (6) 5/16-18 nylon flange nuts.
3. Remove the 5/16-18 X 3/4 bolt, 5/16 gr. 9 washer and 5/16-18 nylon flange nut that secures the hood to the lower belt guard (**F**, **Figure 3**). Discard the 5/16-18 nylon flange nut.
4. Remove the hood assembly from the unit.
5. Remove the oil drain hose from the hose clamp (**A**).
6. Remove the 5/16-18 X 1" bolt (**B**), 5/16 SAE washer (**C**), hose clamp and 5/16-18 hex nut (**D**) from the lower belt guard (**E**) and the frame of the unit. Discard the 5/16-18 X 1" bolt and the 5/16-18 hex nut.
7. Remove the two (2) 5/16-18 X 1" bolts, 5/16 SAE washers and 5/16-18 hex nuts from the lower belt guard (**F**) and the bumper (**E**). Discard the two (2) 5/16-18 hex nuts
8. Remove the lower belt guard from the unit.

*This kit can be installed with the rear bumper and ROPS assembly installed on the machine; however, if you require more access to the rear of the machine the bumper and the ROPS assembly can be removed from the machine. The rear bumper and ROPS are removed in the following illustrations for clarity.*

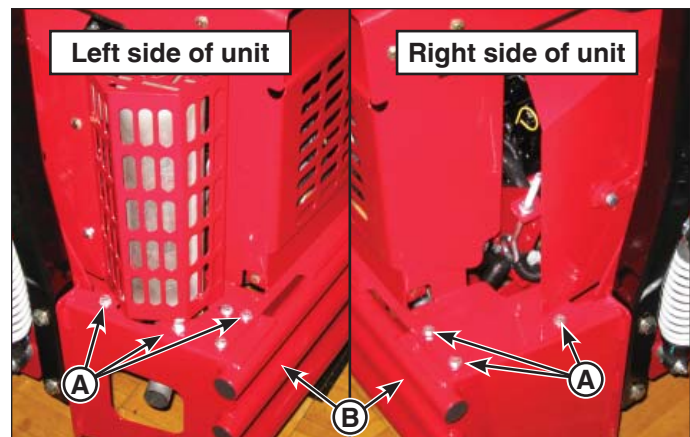


Figure 2. Removing the Hood Assembly

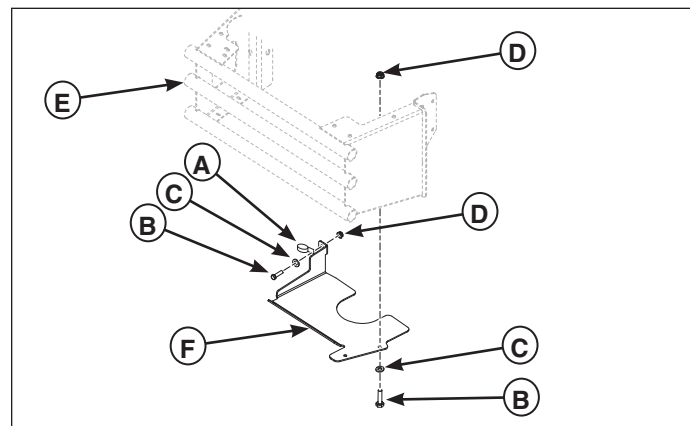


Figure 3. Removing the Lower Belt Guard

### Install the Gearbox Support Bracket & Gearbox Right Angle Bracket

1. Loosen and remove the four (4) 5/16-18 X 1" bolts (**A**, **Figure 4**), 5/16 lock washers (**B**) and 5/16 flat washers (**C**) that secure the existing gearbox right angle bracket (**F**) to the gearbox.
2. Loosen and remove the two (2) 3/8 X 1" carriage bolts (**G**) and 3/8 nylon flange nuts (**H**) that secure the gearbox right angle bracket to the frame. Discard the two 3/8 nylon flange nuts.
3. Position the new gearbox right angle bracket (**I**) against the right side of the gearbox as shown in Figure 4. Snugly bolt the bracket to the gearbox using the four (4) 5/16-18 X 1" bolts, 5/16 lock washers and 5/16 flat washers removed in step # 1. The bracket should be able to slide forward and back.
4. Route two (2) 3/8 X 1" carriage bolts through the gearbox right angle bracket and the frame and loosely install two (2) new 3/8 nylon flange nuts.
5. Position the gearbox right angle bracket as far forward against the frame as possible and then tighten the two (2) 3/8 X 1" carriage bolts and 3/8 nylon flange nuts.
6. Tighten the four (4) 5/16-18 X 1" bolts, 5/16 lock washers and 5/16 flat washers that secure the bracket to the gearbox.
7. Remove the two (2) 5/16-18 X 1" bolts (**A**), 5/16 lock washers (**B**) and 5/16 flat washers (**C**) that bolt into the two bottom holes on the left side of the gearbox (**D**). Retain the lock washers and flat washers. Discard the 5/16-18 X 1" bolts.
8. Position the gearbox support bracket (**E**) against the left side of the gearbox as shown in Figure 4. Snugly bolt the bracket to the gearbox using two (2) 5/16-18 X 1-1/8" bolts, 5/16 lock washers and 5/16 flat washers.

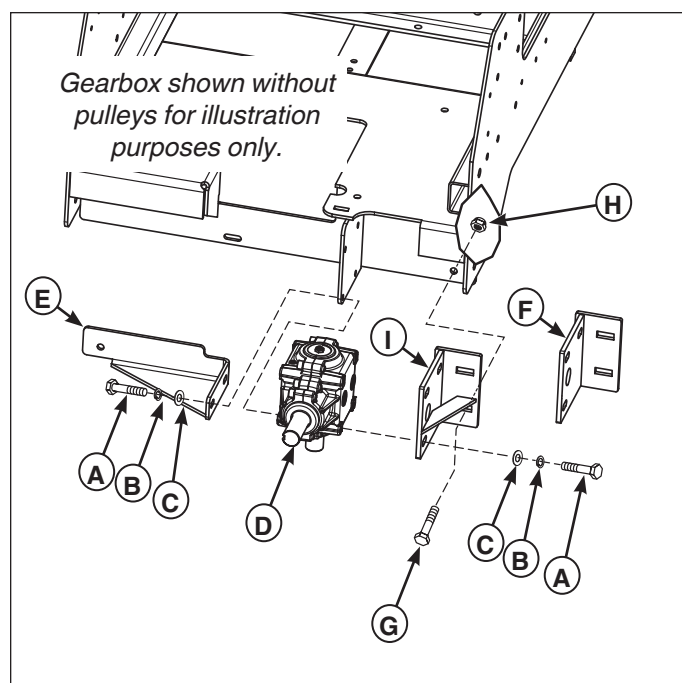


Figure 4. Installing the New Support Brackets



### Reinstall the Hood & Shields

1. If you removed the rear bumper and the ROPS assembly from the unit reinstall it now.
2. Reinstall the lower belt guard (**F, Figure 5**) to the bumper (**E**) and loosely install with two (2) 5/16-18 X 1" bolts (**B**), 5/16 SAE washers (**C**) and new 5/16-18 nylon flange nuts (**D**).
3. Install the 5/16-18 X 1-1/4" bolt (**G, Figure 5**), 5/16 SAE washer (**C**), hose clamp and loosely install with a new 5/16-18 nylon flange nut (**D**).
4. Position the gearbox support bracket (**E, Figure 4**) as far forward against the frame as possible and then tighten the two (2) 5/16-18 X 1-1/8 bolts (**A**), 5/16 lock washers (**B**) and 5/16 flat washers (**C**) that bolt into the two bottom holes on the left side of the gearbox (**D**).
5. Tighten the 5/16-18 X 1-1/4" bolt (**G, Figure 5**), 5/16 SAE washer (**C**), hose clamp and new 5/16-18 nylon flange nut (**D**).
6. Tighten the two (2) 5/16-18 X 1" bolts (**B**), 5/16 SAE washers (**C**) and new 5/16-18 nylon flange nuts (**D**) that secure the lower belt guard (**F**) to the bumper (**E**).
7. Reinstall the oil drain hose through the hose clamp (**A**).
8. Place the hood assembly back on the unit.
9. Secure the hood assembly to the bumper using six (6) 5/16-18 X 3/4 bolts, 5/16 gr. 9 washers and new 5/16-18 nylon flange nuts (**A, Figure 6**).
10. Secure the hood assembly to the lower belt guard using a 5/16-18 X 3/4 bolt, a 5/16 gr. 9 washer and a new 5/16-18 nylon flange nut.

### Reinstalling the Muffler Guard

1. Place the muffler guard back on the machine.
2. Using two (2) 5/16-18 X 3/4 bolts, 5/16 gr. 9 washers and new 5/16-18 nylon flange nuts (**C, Figure 7**) secure the muffler bracket to the bumper (**D**).
3. Using two (2) 1/4-20 X 3/4 bolts and 1/4 SAE washers (**A**) secure the muffler guard (**B**) to the cowling.
4. Tilt the hood into the closed position and secure with the two (2) rubber straps.

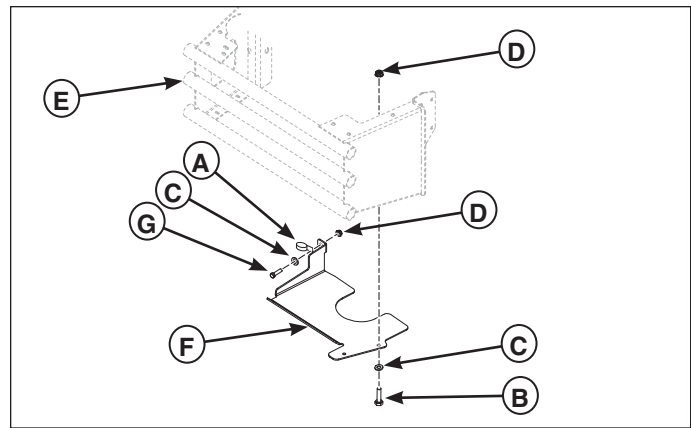


Figure 5. Removing the Lower Belt Guard

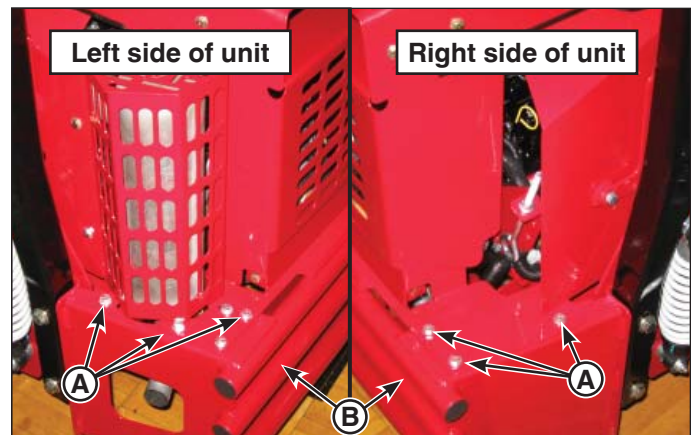


Figure 6. Removing the Hood Assembly

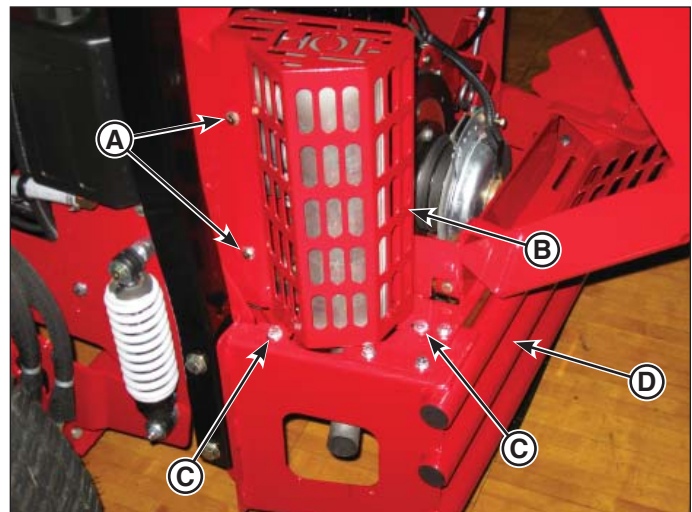


Figure 7. Removing the Muffler Guard



# Installation Instructions

# Clutch Tab - Spring Update Kit

Part No. 5600479

Fits all Ferris IS2500Z & Snapper Pro S175X Models

Kit Contents					
Part No.	Qty.	Description	Part No.	Qty.	Description
5102959	1	EXTENSION SPRING	5025155	1	5/16 SAE WASHER
5407737A	1	CLUTCH ANCHOR BRACKET	5025011X8	1	5/16-18 X 1 GD5 YZ
5025392	1	5/16-18 NYLOCK FLANGE	5025332	1	1/2-13 HEX SIDE LOCK NUT

## ⚠ WARNING



Remove the ignition key prior to performing maintenance on the unit.

Before beginning any service work turn off the PTO, engage the parking brake, turn off the ignition, remove the ignition key, and disconnect the spark plug wire(s).

## Removing the PTO Belts

1. Park the machine on a flat, level surface. Turn off the PTO, engage the parking brake, turn off the ignition and remove the key.
2. Open the hood by unclasp the two (2) rubber straps from the hood and tilting the hood open.
3. Disconnect the PTO clutch wire harness (**G**, **Figure 1**).
4. Remove the PTO clutch anchor bolt (**B**). Discard this hardware.
5. Loosen the jam nut (**I**).
6. Loosen but do not remove the spring adjustment nut (**J**) to relieve the majority of the tension on the spring.
7. Using a 1/2" breaker bar, place the square end in the square hold located in the end of the idler arm (**C**). Carefully rotate the breaker bar **CLOCKWISE**, which will relieve the tension on the PTO drive belts.
8. Slide the PTO drive belts over the edge of the gearbox pulley (**D**). Carefully release the tension on the breaker bar.
9. Remove the 1/2-13 hex side lock nut (**L**) that secures the extension spring (**H**) to the idler arm.
10. Remove the extension spring from the idler arm and the eyebolt (**K**). Discard the extension spring.
11. Install the new extension spring to the idler arm and secure in place with a new 1/2-13 hex side lock nut.

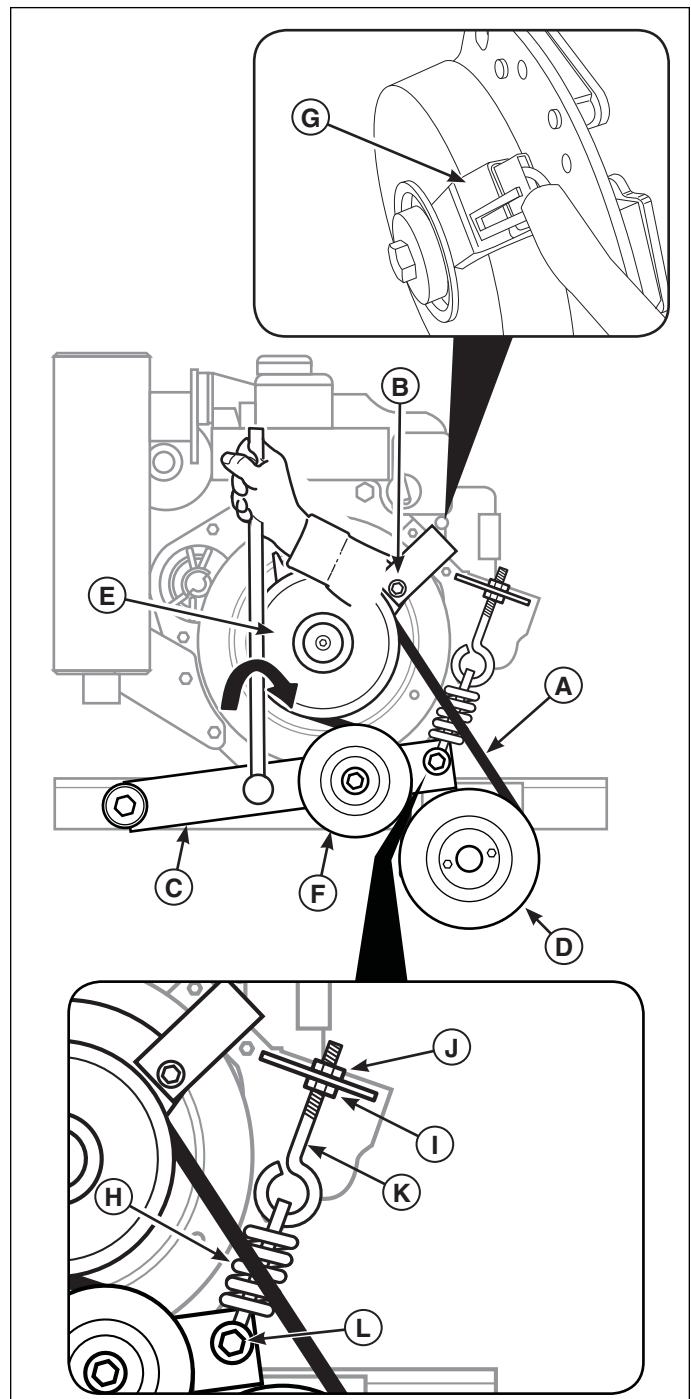


Figure 1. PTO Clutch Belt Replacement

### Installing the Clutch Tab

1. Position the clutch tab (**A, Figure 2**) in the slot of the PTO clutch.
2. Rotate the PTO clutch so that the hole in the clutch tab lines up with the hole in the PTO clutch anchor (**B**).
3. Loosely install the 5/16-18 X 1" bolt and 5/16 SAE washer (**C**) through the PTO clutch anchor, the clutch tab and loosely install a 5/16-18 nylock flange nut (**C**).
4. Position the clutch tab so that the tab is parallel to the slot in the clutch so that the clutch can shift freely. Tighten the hardware.

### Reinstalling the PTO Belts

1. Using a 1/2" breaker bar, place the square end in the square hold located in the end of the idler arm (**C, Figure 1**). Carefully rotate the breaker bar CLOCKWISE.
2. Slide the PTO drive belts over the edge of the gearbox pulley (**D**). Carefully release the tension on the breaker bar. Make sure that the V-side of the belt runs in the pulley grooves.

### Adjusting the Spring Length

1. Turn the adjustment nut (**J, Figure 1**) until the coil-to-coil spring measurement equals 6" (15,24 cm).
2. When the coil-to-coil spring measurement equals 6" (15,24 cm) retighten the jam nut (**I**).
3. Reconnect the PTO clutch wire harness (**G**).
4. Close the hood by tilting the hood down into the closed position and clasp the two (2) rubber straps to the hood.

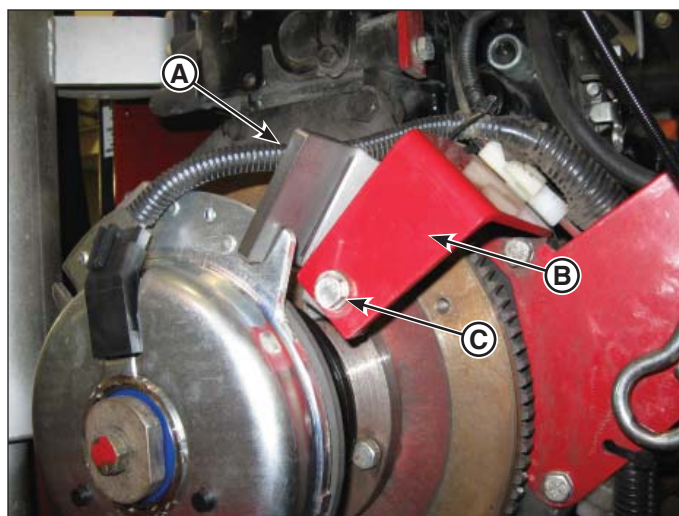


Figure 2. Installing the Clutch Tab

# Installation Instructions

## Vent Hose Retainer Kit

Part No. 5600462

Fits Ferris IS2500Z & Snapper Pro S175X Models

Kit Contents					
Part No.	Qty.	Description	Part No.	Qty.	Description
5025010X8	2	BOLT, 1/4-20 X 1, GD5	5025391	2	NUT, 1/4-20 HEX NYLOCK FLANGE
5021500	2	CLAMP, VINYL INSULATED			

### ⚠ WARNING



Remove the ignition key prior to performing maintenance on the unit.

Before beginning any service work turn off the PTO, engage the parking brake, turn off the ignition, remove the ignition key, and disconnect the spark plug wire(s).

### Installing the Vent Hose Retainer

1. Park machine on a flat, level surface. Turn off the PTO, engage the parking brake, turn off the ignition and remove the ignition key.
2. Raise the hood to gain access to the vent hoses.
3. Remove the 1/4 bolt and washer (**A, Figure 1**) identified in Figure 1 from the radiator shroud. Retain the washer. Discard the bolt.
4. Remove the 1/4 body clip on the inside of the radiator shroud that the 1/4 bolt and washer were secured with.

Using a screwdriver and prying the center of the body clip out can assist in helping to remove the body clip.

5. Remove the vent hose (**A, Figure 2**) from the vent hose clip (**B**).
6. Route the vent hose through the clamp (**C**) and secure to the radiator shroud using the hole vacated in steps 3 & 4. Secure the clamp using the new 1/4 bolt, the 1/4 washer retained in step 3, and the new 1/4 nut.

The clamp should be positioned as shown in Figure 2 with the hardware towards the front of the machine.

7. See insert 1, Figure 2. Reinstall the vent hose in the vent hose clip. The steel line will hang through the vent hose clip and the rubber vent hose will be facing towards the rear of the machine.
8. Repeat this process for the other side of the machine.



Figure 1. Removing the Radiator Shroud Hardware

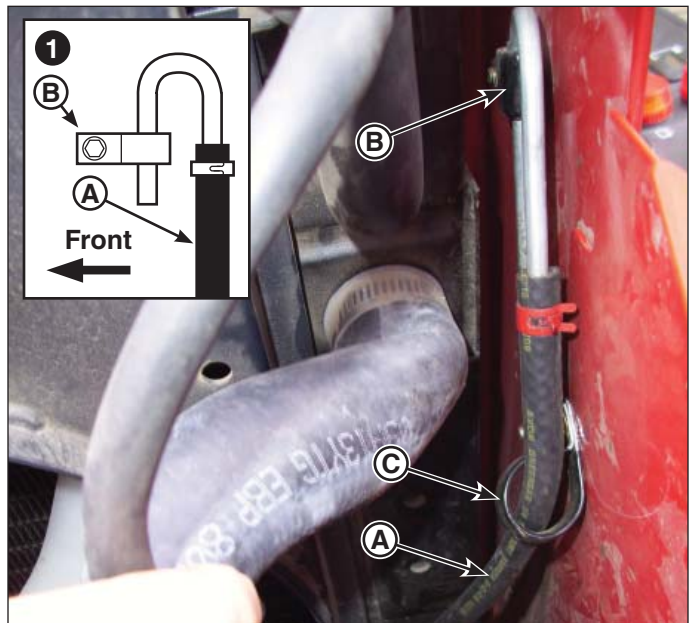


Figure 2. Installing the Vent Hose Retainer

# Installation Instructions

# Idler Arm Update Kit Part Nos. 5600453 / 5600454

Fits 61" Ferris IS2500Z Models / Snapper Pro 61" S175X Models

Kit Contents					
Part No.	Qty.	Description	Part No.	Qty.	Description
5025441	1	EYE BOLT, 3/8-16 X 2-1/2	5025396	2	NUT, 1/2-13 HEX NYLOCK FLANGE
5102678	1	PULLEY, DEEP V-IDLER, 6-1/4" X 1/2"	5407343	1	ASSM, IDLER ARM, IS2500 61 iCD <b>(Kit No. 5600453 Only)</b>
5025394	1	NUT, 3/8-16 HEX NYLOCK FLANGE	5407062	1	ASSM, IDLER ARM, S175 61 iCD <b>(Kit No. 5600454 Only)</b>

## ⚠ WARNING



**Remove the ignition key prior to performing maintenance on the unit.**

Before beginning any service work turn off the PTO, engage the parking brake, turn off the ignition, remove the ignition key, and disconnect the spark plug wire(s).

## REMOVING THE OLD IDLER ARM

1. Park the machine on a flat, level surface. Turn off the PTO, engage the parking brake, turn off the ignition, remove the ignition key, and disconnect the spark plug wire(s).
2. Using a 1/2" breaker bar, place the square end in the square hole located in the end of the idler arm. Carefully rotate the breaker bar COUNTER-CLOCKWISE, which will relieve the tension on the belt exerted from the idler arm.
3. Slide the drive belt over the edge of the stationary idler pulley. Carefully release the tension on the breaker bar.
4. Remove the 1/2-13 X4-1/2" bolt (**A, Figure 1**) and 1/2" nylock nut (**B**) that secures the old idler arm assembly (**C**) to the mower deck. You may discard the nut but be sure to save the bolt for reinstallation.
5. Remove the idler pulley (**D**) from the idler arm, discard the idler pulley, one (1) 1/2" washer and 1/2" nylock nut (**E**), but be sure to save all other hardware for reinstallation.
6. Remove and discard the 3/8" eye bolt (**A, Figure 2**) and 3/8" nylock nut (**B**) from the mower deck, save the 3/8" jam nut (**C**) for reinstallation.

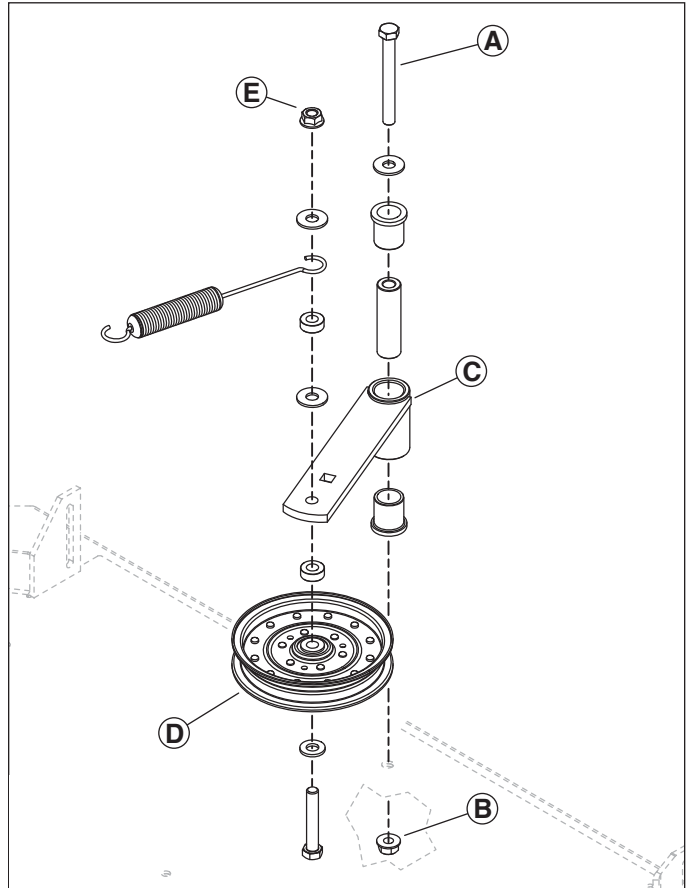


Figure 1. Idler Arm Assembly

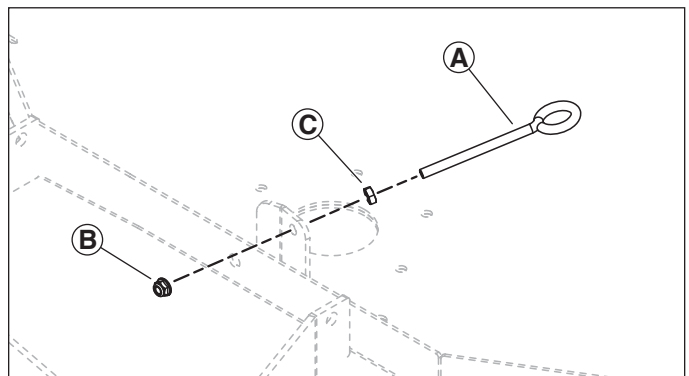


Figure 2. Spring Anchor

## INSTALLING THE NEW IDLER ARM

1. Install the new idler pulley (**A, Figure 3**) onto the new idler arm assembly (**C**) with the existing 1/2-13 X 3" bolt (**B**) with 1/2" washer going up through the spacer, a second washer, a second spacer, the idler arm, another washer and secure it with a new 1/2" nylock nut (**D**). See *Figure 3*
2. Install the idler arm assembly to the mower deck with the existing 1/2-13 X 4-1/2" bolt (**F**) and washer going down through the idler arm with spacer and secure it with a new 1/2" nylock nut (**E**). See *Figure 3*
3. Thread the 3/8" jam nut (**C, Figure 4**) onto the new eye bolt (**A**) and install the eye bolt onto the spring anchor bracket and loosely install the new 3/8" nylock nut (**B**).
4. Connect the belt tension spring between the eye bolt and top spacer on the idler arm assembly.
5. Carefully rotate the breaker bar COUNTER-CLOCKWISE and install the belt on the stationary idler pulley. Carefully release the tension on the breaker bar. Make sure the v-side of the belt runs in the pulley grooves.
6. Adjust the deck to a cut height of 3-1/4" and tighten down the 3/8" nylock nut (**B, Figure 4**) that secures the eye bolt until the belt tension spring body reaches 7-1/2", then tighten down the 3/8" jam nut (**C**) to secure it in place.

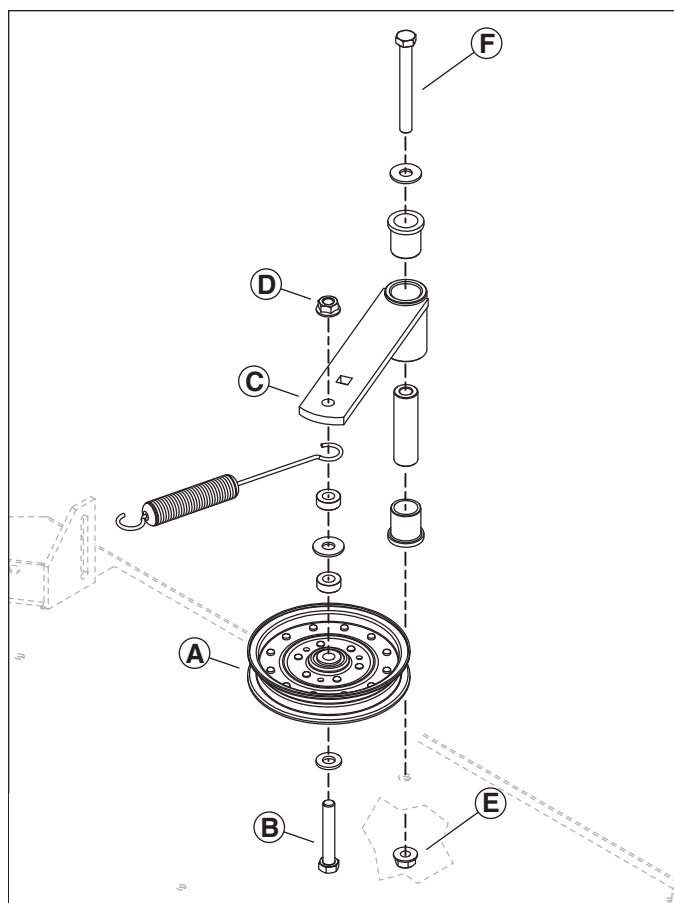


Figure 3. New Idler Arm Assembly

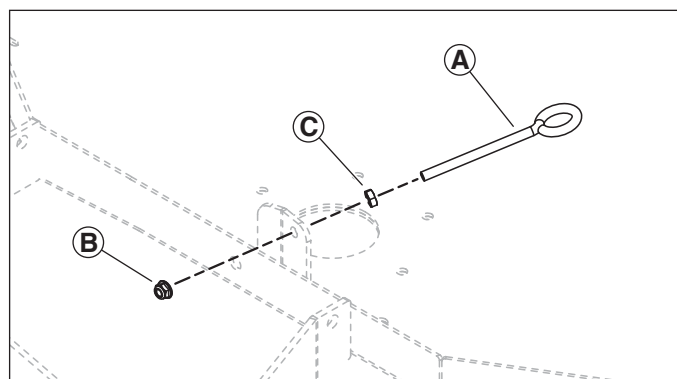


Figure 4. New Spring Anchor