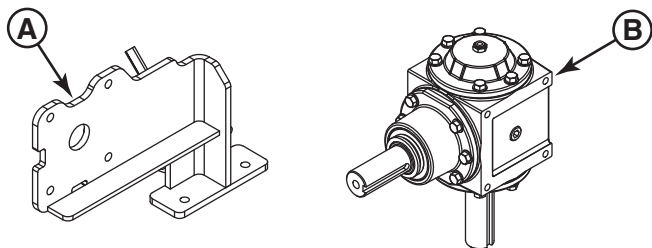


Installation IS2600Z Gearbox Replacement

Instructions

Fits Ferris IS2600Z Domestic Models



Callout	Part Number	Description	Qty
A	5413882B	Gearbox Mount Bracket	1
B	5105400	Gearbox (200 cc)	1
-	5025396	Nut, 1/2-13 Hex Nylock Flange	4
-	5025394	Nut, 3/8-16 Hex Nylock Flange	6
-	5025392	Nut, 5/16-18 Hex Nylock Flange	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 the ignition switch to OFF, and remove the ignition key.

Replacing the Gearbox and Mount Bracket

Removing the Gearbox

1. Park the zero-turn rider on a smooth, level surface such as a concrete floor. Disengage the PTO, engage the parking brake, turn the ignition switch to OFF, and remove the ignition key.
2. Release the hood latches and raise the hood to gain access to the gearbox. The gearbox is located in the rear right hand corner of the machine by the right side rear tire and the bumper.
3. Remove the two (2) 1/4-20 X 1" bolts (A, Figure 1) and 1/4 SAE washers (B) from the muffler shield (C). Remove the 3/8-16 X 1" bolt (D), 3/8 SAE washer (E), and 3/8-16 hex nylock flange nut (F) that secures the muffler shield to the bumper. Remove the muffler shield from the machine. Discard the nut.
4. Remove the three (3) 5/16-18 X 3/4 bolts (A, Figure 2) and 5/16 SAE washers (B) that secure the rear belt guard (C) in place.

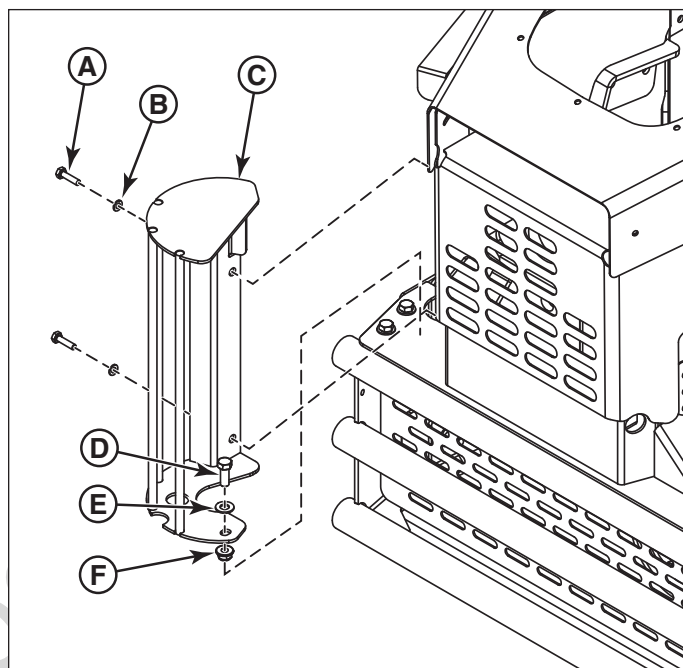


Figure 1. Removing the Muffler Shield

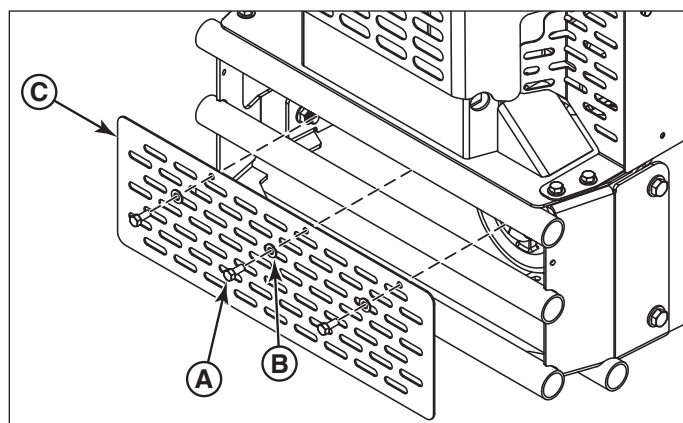


Figure 2. Removing the Belt Guard from the Rear Bumper

5. Remove the four (4) 3/8-16 X 1" bolts (A, Figure 3), and 3/8 SAE washers (B) and 3/8-16 hex nylock flange nuts (C) that secure the rear shielding and hood assembly (D) and flywheel guard, from the rear bumper of the machine. Discard the nuts.
6. Remove the rear shielding and hood assembly from the machine.

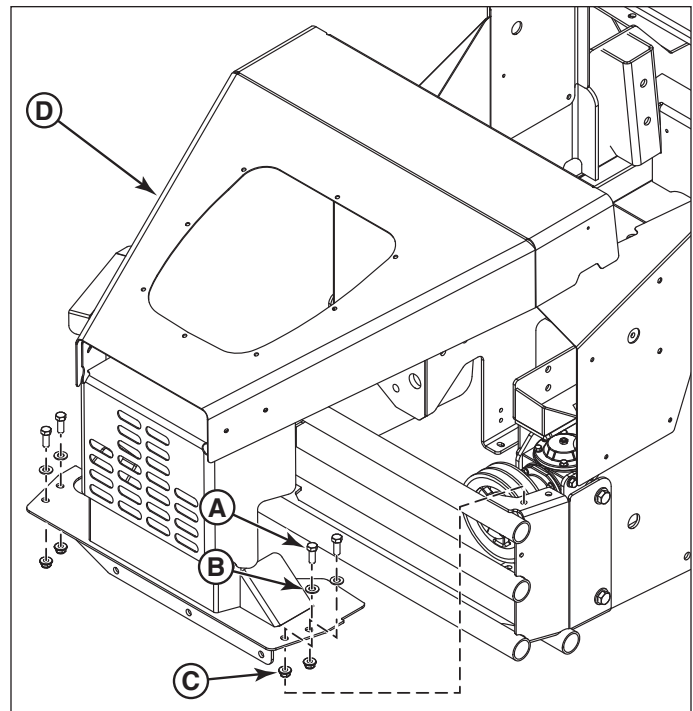


Figure 3. Remove the Rear Shield and Hood Assembly

7. Remove the 1/2-13 X 1-1/4" bolts (A, Figure 4) 1/2 SAE washers (B) and 1/2-13 hex nylock flange nuts (C) that secure the bumper (D) to the rear of the machine. Remove the rear bumper. Discard the nuts.

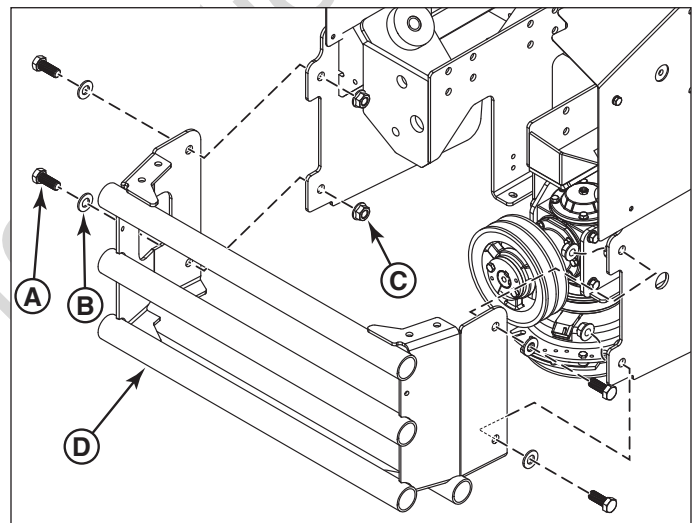


Figure 4. Remove the Rear Bumper

⚠ WARNING

Use extreme caution when rotating the idler arm with the breaker bar, due to the increased tension in the spring as the idler arm is being rotated. Injury may result if the breaker bar is prematurely released while the spring is under tension.

8. 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 exerted from the idler arm.
9. Slide the gearbox drive belt over the edge of the gearbox pulley (**B**). Carefully release the tension on the breaker bar.
10. Remove the gearbox drive belt (**C**).

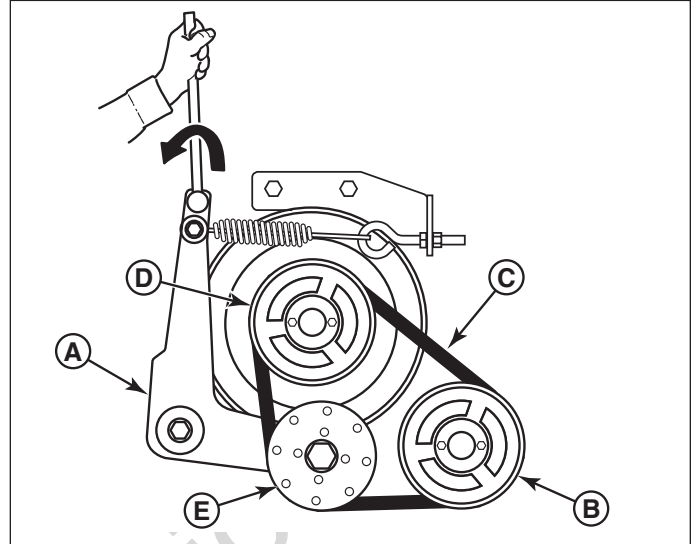


Figure 5. Removing the Gearbox Drive Belt

11. Lower the mower deck to its lowest cutting position and remove the mower deck guards and floor pan to gain access the mower deck drive belt (**A**, **Figure 6**).
12. Using a 1/2" breaker bar, place the square end in opening located in the idler arm (**B**) and rotate the idler arm **counter-clockwise**, which will relieve the tension on the belt exerted from the idler arm.
13. Slide the drive belt over the edge of the rear stationary pulley (**C**). Carefully release the tension on the breaker bar.
14. Remove the belt from the PTO clutch (**D**).

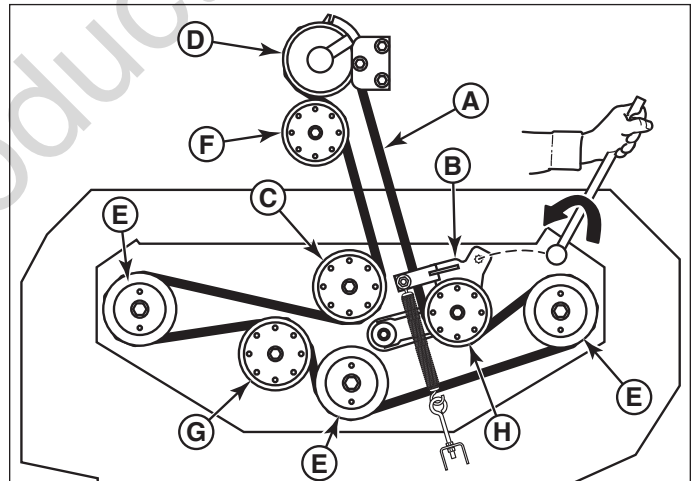


Figure 6. Removing the Deck Drive Belt

Installation Instructions

Gearbox Replacement Instructions

Note: **Figure 7** depicts the transmission drive belt setup as seen from the top side of the unit and the arrow (A, **Figure 7**) indicates the front of the unit.

15. Remove the hardware (B) that secures the clutch anchor pad (C) to the PTO clutch (D) and disconnect the wire harness from the PTO clutch.
16. Loosen the jam nut (E) on the spring anchor eye bolt (F).
17. Loosen the adjustment nut (G) on the spring anchor eye bolt to release the majority of the belt tension. Do not remove the nut completely.
18. Remove the belt from the single groove pulley (J). To assist in removing the belt it may be necessary to loosen the hardware that secures the rear guide pulley (F, **Figure 6**).

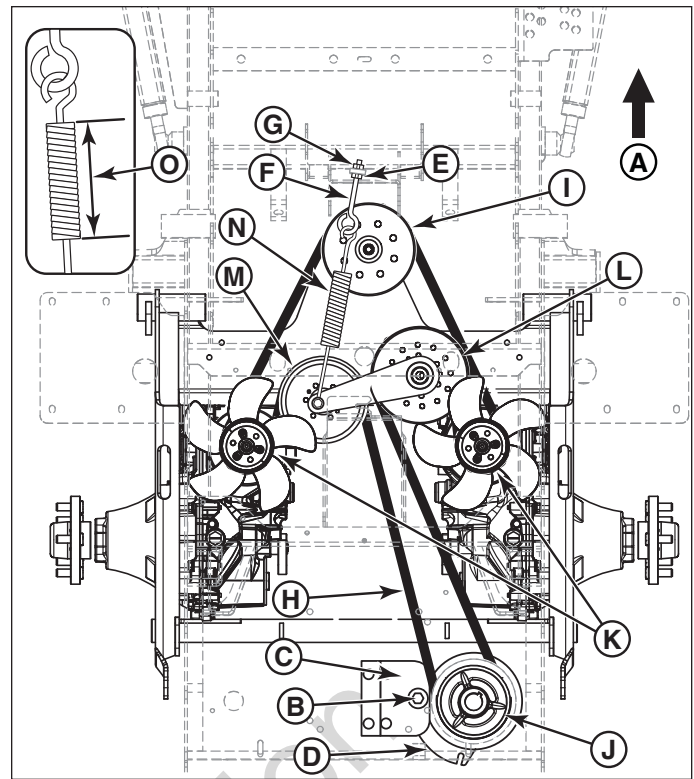


Figure 7. Removing the Transaxle Drive Belt

19. Remove the PTO clutch retaining bolt (A, **Figure 8**), two (2) belleville washers (B), the PTO clutch (C), single groove pulley (D), and 1/4" SQ X 1-1/4" key (E), from the bottom shaft of the gearbox (F).
20. Remove the two (2) 1/4-20 X 1" bolts (G) from the tapered hub (H).
21. Use the two (2) 1/4-20 X 1" bolts to remove the tapered hub from the center of the tapered double pulley (I). Remove the tapered double pulley and the 1/4" SQ X 1-1/4" key (J) from the back side shaft of the gearbox.
22. Remove the four (4) 5/16-18 X 1" bolts (N) and 5/16 washers (L) that secure the gearbox to the gearbox mount (O).

NOTE: It may be necessary to adjust the positioning to oil drain hose to provide enough clearance to remove some of the gearbox mounting bolts. If the fitting is re-positioned, torque it to 30 ft. lbs. (41 Nm).

23. Remove the four (4) 5/16-18 X 3/4" bolts (K) and 5/16 washers (L) that secure the gearbox to the engine mount (M).
24. Remove the gearbox from the unit.

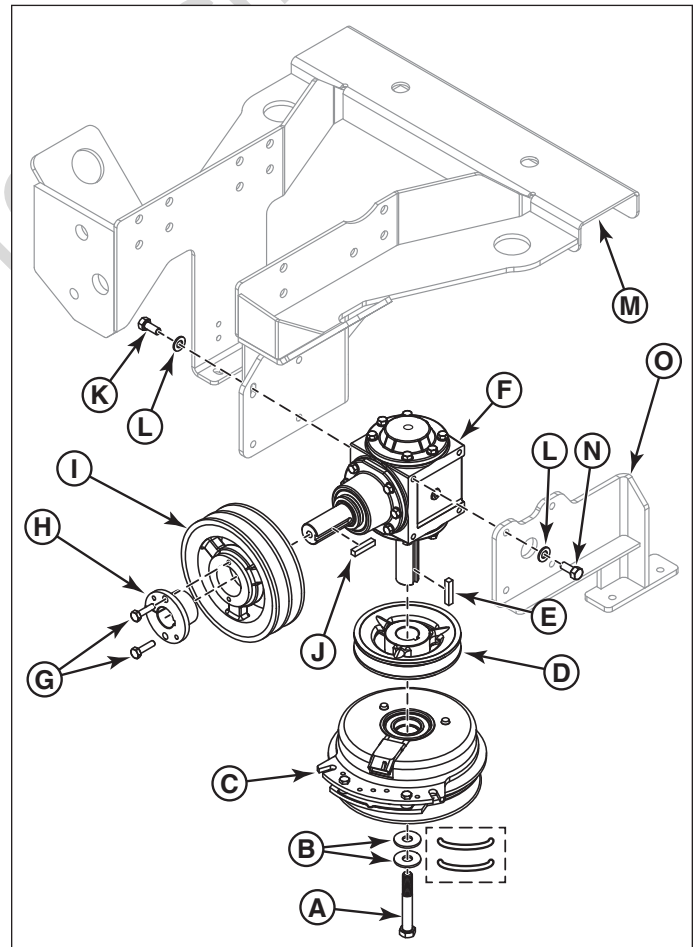


Figure 8. Removing the Gearbox

25. Remove the two (2) 5/16-18 X 1" bolts (A, Figure 9), 5/16 flat washers (B), and 5/16-18 hex nylock flange nuts (C) that secure the gearbox mount (D) to the lower pulley support plate (E). Discard the nuts and the gearbox mount.

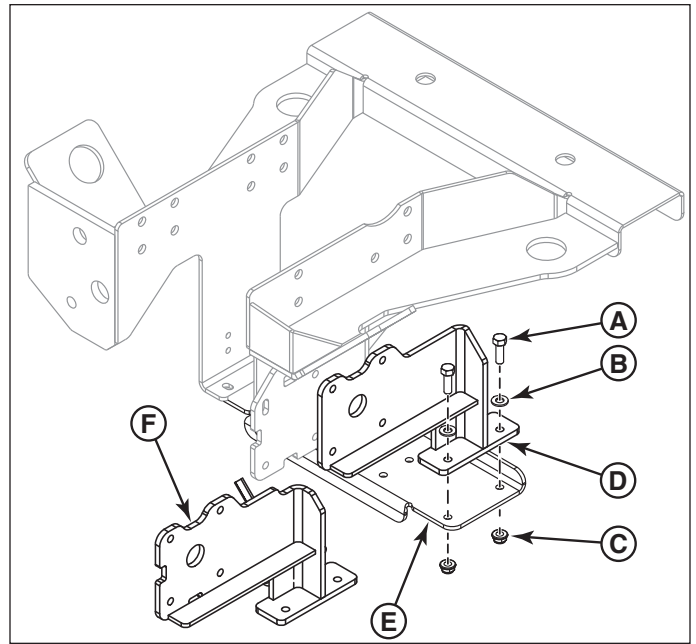


Figure 9. Replacing the Gearbox Mount

Preparing the Unit for the New Gearbox

Grinding the Engine Cradle Mount

The frame's engine cradle mount (A, Figure 10) needs to be modified to provide adequate clearance for the new gearbox.

1. Use a hand grinder with a 4-1/2" grinding wheel and grind the frame's engine cradle mount to provide adequate clearance for the new gearbox.

Starting at the lowest point of the bend grind off about 1/4 inch of material from the gearbox mount (the shaded area (B) in the inset 1, Figure 10). This is only required on the leg of the cradle mount that is closest to the rear of the machine.

2. Apply touch-up paint to the bare metal that has been exposed by grinding.

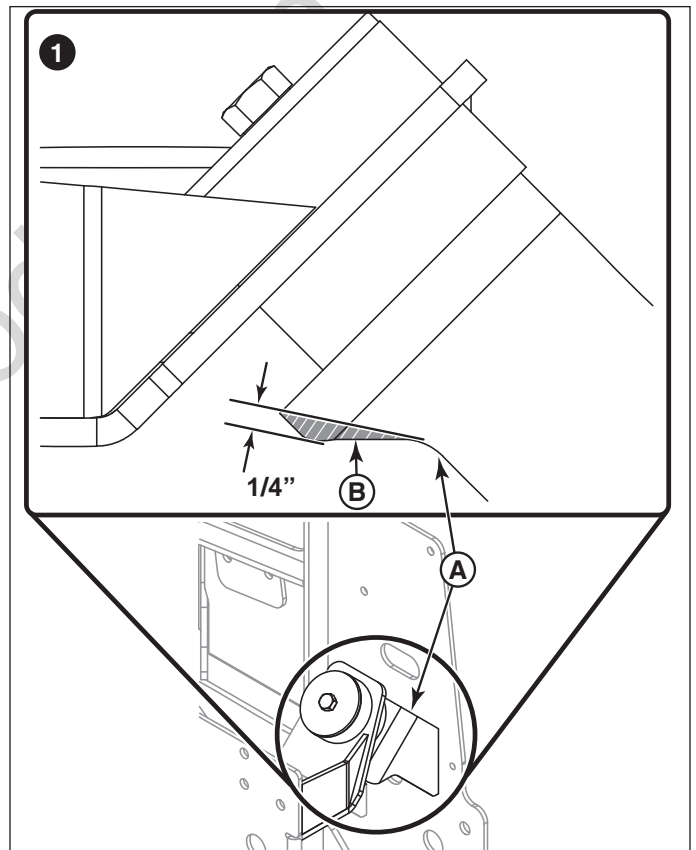


Figure 10. Grinding the Engine Cradle Mount

Change the Direction of the Pulley Mounting Hardware

The orientation of the hardware that secures the rear guide pulley (**A**, **Figure 11**) to the lower pulley support plate (**B**) must be changed to provide adequate clearance for the new gearbox.

1. See **inset 1, Figure 11**. Remove the 3/8-16 X 3" bolt (**C**), 3/8 SAE washer (**D**), and 3/8-16 hex nylock flange nut (**E**) that secures the rear guide pulley (**A**), pulley shield (**F**), and spacer (**G**) to the lower pulley support plate (**B**). Discard the 3/8-16 hex nylock flange nut.
2. See **inset 2, Figure 11**. Route the existing 3/8-16 X 3" bolt down through the 3/8 SAE washer, lower pulley support plate, spacer, dust shield, rear guide pulley and secure with a new 3/8-16 hex nylock flange nut.

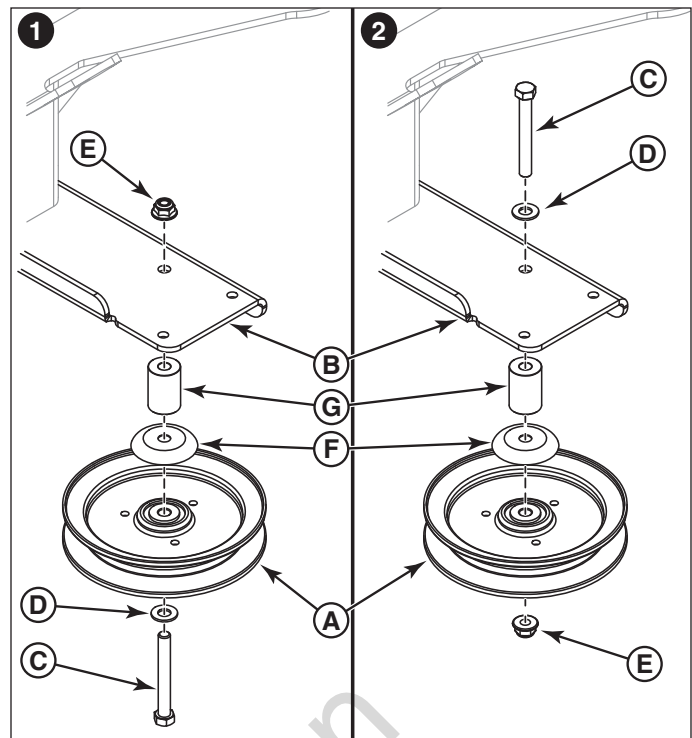


Figure 11. Changing the Orientation of the Hardware for the Rear Guide Pulley

Preparing the New Gearbox for Installation

1. Prior to installing the gearbox (**A**, **Figure 12**) check the gearbox oil level. Remove the gearbox's oil fill plug (**B**). Once the fill plug is removed, oil should seep out of the fill plug hole. If no oil drains out, fill the gearbox with Amsoil® SAE 75W-140 (or equivalent) gear oil until oil starts to seep from the hole and then replace the fill plug.
2. Remove the round internal hex set screw (**C**) from the gearbox and install the raised hex vent (**D**).

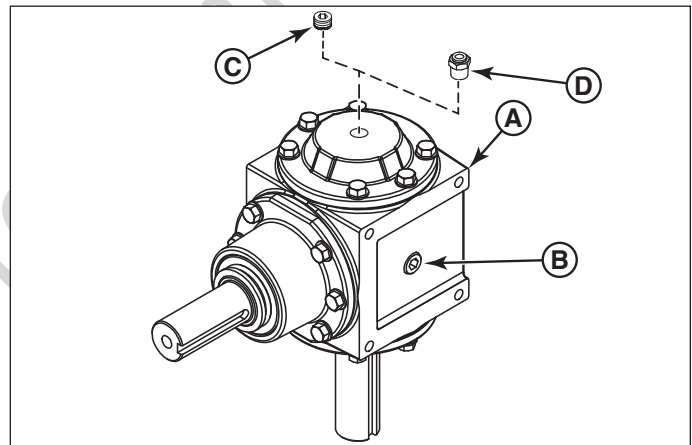


Figure 12. Installing the Gearbox Vent

Installing the New Gearbox

1. Using two (2) 5/16-18 X 1" bolts (**A, Figure 9**) 5/16 SAE washers (**B**) and 5/16-18 hex nylock flange nuts (**C**) to loosely install the new gearbox mount with belt guides (**F**) to the pulley support plate (**E**).
2. **Apply Loctite® Threadlocker Red 271™** on the threads of the four (4) 5/16-18 X 3/4" bolts (**K, Figure 8**) and the four (4) 5/16-18 X 1" bolts (**N**) used to install the gearbox.
3. Install the new gearbox into the machine by routing four (4) 5/16-18 X 3/4" bolts and 5/16 washers (**L**) through the engine mount (**M**) into the face of the gearbox. Tighten this hardware now.
4. Route four (4) 5/16-18 X 1" bolts (**N**) and 5/16 washers through the gearbox mount bracket (**O**) into the face of the gearbox. Tighten this hardware now.
5. Tighten the hardware (**A, B & C, Figure 9**) that secures the gearbox mount (**F**) to the pulley support plate (**E**).
6. Install the 1/4" SQ X 1-1/4" key (**E, Figure 8**), into the bottom shaft of the gearbox and install the single groove pulley (**D**), the PTO clutch (**C**), two (2) belleville washers (**B**) (with their curved domes facing down, see **Figure 8**), and secure in place with the PTO clutch retaining bolt (**A**). **The PTO clutch retaining bolt should have Loctite® Threadlocker Red 271™ installed on it's threads.** Torque the PTO clutch retaining bolt to 65 ft. lbs. (88 Nm).
7. Install the 1/4" SQ X 1-1/4" key (**J**) into the back side shaft of the gearbox and then install the tapered double pulley (**I**) and the tapered hub (**H**).
8. Align the grooves of the tapered double pulley with the grooves of the crankshaft pulley (**D, Figure 5**). Install and tighten the two (2) 1/4-20 X 1" bolts (**G, Figure 8**) into the tapered hub (**H**), ensuring that the pulley groove alignment is maintained.
9. Re-install the belt (**H, Figure 7**) onto the single groove pulley (**J**). Make sure that the V-side of the belt runs in the grooves of the single groove pulley and the transaxle pulleys (**K**) and that the flat side of the belt contacts the face of the right-side stationary idler pulley (**L**) and the adjustable idler pulley (**M**). Make sure that the belt is properly routed through the belt guide of the new gearbox mount (**F, Figure 9**). Install the belt onto the front stationary idler pulley (**I**) last, making sure that the V-side of the belt fits into the pulley grooves. If you loosened the hardware that secures the rear guide pulley (**F, Figure 6**) to the unit re-tighten it now.
10. Tighten the adjustment nut (**G, Figure 7**) on the spring anchor eye bolt (**F**) until the spring (**N**) achieves a coil-to-coil measurement (**O**) of 7" (17,8 cm).
11. Tighten the jam nut (**E**).
12. Re-install the clutch anchor pad (**C**) to the PTO clutch (**D**) and secure using the hardware previously removed (**B**). Reconnect the wire harness to the PTO clutch.
13. Re-install the mower deck drive belt (**A, Figure 6**). Make sure that the V-side of the belt runs in the pulley grooves.
14. Install the drive belt so that the V-side of the belt runs in the pulley grooves of the PTO pulley (**D**) and the spindle pulleys (**E**), and that the flat side of the belt contacts the face of the rear guide pulley (**F**), the front stationary pulley (**G**), and the adjustable idler pulley (**H**).
15. Carefully rotate the breaker bar **counter-clockwise** and install the belt on the rear stationary idler pulley so that the flat side of the belt contacts the face of the pulley.
16. Carefully release the tension on the breaker bar.
17. Re-install the gearbox drive belt (**C, Figure 5**) onto the crankshaft pulley (**D**) and the lower stationary pulley (**E**). Carefully rotate the breaker bar **counter-clockwise** and install the belt on the gearbox pulley (**B**). Carefully release the tension on the breaker bar.
18. Re-install the bumper (**D, Figure 4**) to the rear of the machine and secure in place using four (4) 1/2-13 X 1-1/4" bolts (**A**) 1/2 SAE washers (**B**), and new 1/2-13 hex nylock flange nuts (**C**).
19. Re-install the rear shielding and hood assembly (**D, Figure 3**) and secure in place using the four (4) 3/8-16 X 1" bolts (**A**), 3/8 SAE washers (**B**) and 3/8-16 hex nylock flange nuts (**C**).
20. Re-install the belt guard (**C, Figure 2**) using the three (3) 5/16-18 X 3/4 bolts (**A**) and 5/16 SAE washers (**B**).
21. Re-install the muffler shield (**C, Figure 1**) using the two (2) 1/4-20 X 1" bolts (**A**) and 1/4 SAE washers (**B**) and the 3/8-16 X 1" bolt (**D**), 3/8 SAE washer (**E**), and new 3/8-16 hex nylock flange nut (**F**).
22. Lower the hood and secure in place using the hood latches.