

**TORO**<sup>®</sup>

Consumer Products

# **LX Lawn Tractor**

## **Service Manual**



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# SPECIFICATIONS

2

## Standard Torque for Dry, Zinc, and Steel Fasteners (Metric Fasteners)

Thread Size	Class 8.8 Bolts, Screws, and Studs with Regular Height Nuts (Class 8 or Strong Nuts)		Class 10.9 Bolts, Screws, and Studs with Regular Height Nuts (Class 10 or Strong Nuts)	
M5 X 0.8	57 ± 5 in-lb	640 ± 60 N-cm	78 ± 7 in-lb	885 ± 80 N-cm
M6 X 1.0	96 ± 9 in-lb	1018 ± 100 N-cm	133 ± 13 in-lb	1500 ± 150 N-cm
M8 X 1.25	19 ± 2 ft-lb	26 ± 3 N-m	27 ± 2 ft-lb	36 ± 3 N-m
M10 X 1.5	38 ± 4 ft-lb	52 ± 5 N-m	53 ± 5 ft-lb	72 ± 7 N-m
M12 X 1.75	66 ± 7 ft-lb	90 ± 10 N-m	92 ± 9 ft-lb	125 ± 12 N-m
M16 X 2.0	166 ± 15 ft-lb	225 ± 20 N-m	229 ± 22 ft-lb	310 ± 30 N-m
M20 X 2.5	325 ± 33 ft-lb	440 ± 45 N-m	450 ± 37 ft-lb	610 ± 50 N-m

**Note:** Reduce torque values listed in the table above by 25% for lubricated fasteners. Lubricated fasteners are defined as threads coated with a lubricant such as oil, graphite, or thread sealant such as Loctite.

**Note:** The nominal torque values listed above are based on 75% of the minimum proof load specified in SAE J1199. The tolerance is approximately ± 10% of the nominal torque value. Thin height nuts include jam nuts.

**Note:** Torque values may have to be reduced when installing fasteners into threaded aluminum or brass. The specific torque value should be determined based on the fastener size, the aluminum or base material strength, length of thread engagement, etc.

27. Remove the pivot bar bracket (Fig. 025).



Fig 025

PICT-7450

28. Remove the front pivot axle (Fig. 026).



Fig 026

PICT-7451

## Installation

1. Position the front pivot axle to the front of the frame (Fig. 027).



Fig 027

PICT-7451

2. Position the pivot bar bracket to the front pivot axle (Fig. 028).



Fig 028

PICT-7450

## Installation

1. Position the axle assembly into the axle pivot (Fig. 065).



Fig 065

PICT-7087

2. Install a cap/push nut onto the axle assembly (Fig. 066).



Fig 066

PICT-7471

3. Position the ball joint into the axle assembly (Fig. 067).



Fig 067

PICT-7078

4. Install a nut onto the ball joint and torque to 12.5 to 29 ft-lbs. (16.94 to 39.54 Nm) (Fig. 068).



Fig 068

PICT-7077a

## Electric PTO Clutch Replacement

### Removal

1. Remove the mower deck from the tractor. Refer to "50" Mower Deck Removal" on page 7-74.
2. Raise the tractor so the clutch can be accessed.
3. Unplug the clutch from the wire harness (Fig. 105).
4. Route the clutch connector out through the slot in the frame.
5. Remove the bolt and lock washer securing the clutch to the crankshaft (Fig. 106).

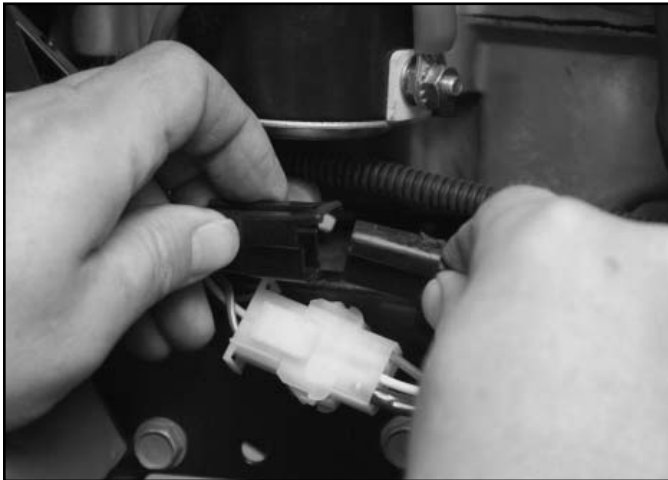


Fig 105

PICT-7977a

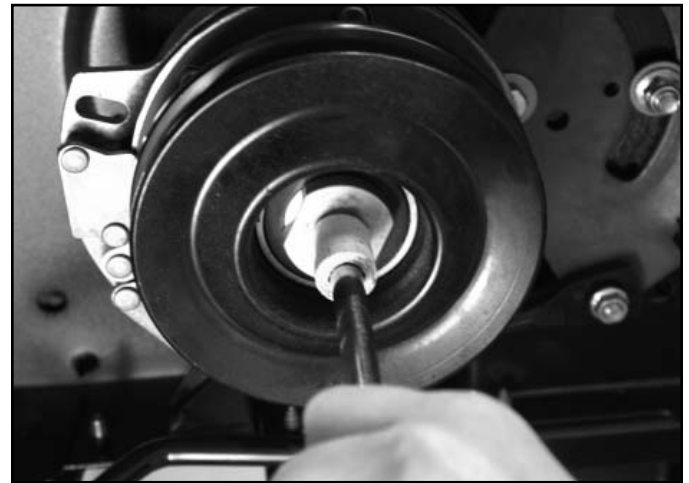


Fig 106

PICT-7982

6. Remove the clutch and washer(s) from the crankshaft (Fig. 107).



Fig 107

PICT-7988

18. Locate the 2 screws under the danger decal on the fender. Cut the decal to expose the bolt heads (Fig. 143).

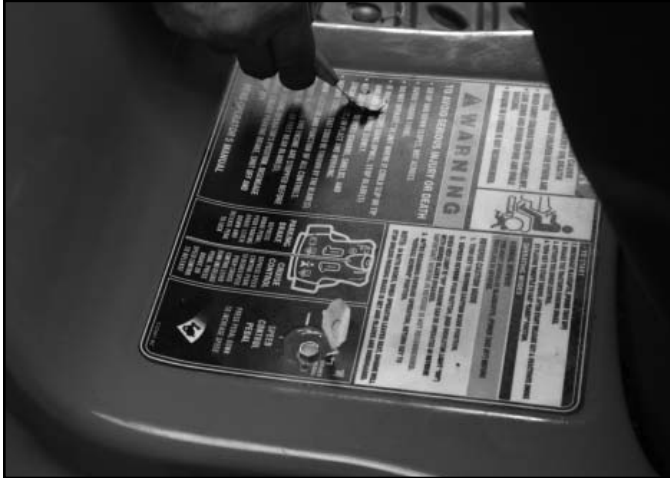


Fig 143

PICT-7129

20. Raise the fender and prop it slightly to access the fasteners securing the brake pedal to the brake control assembly (Fig. 145).



Fig 145

PICT-7131a

19. Remove the 2 screws (Fig. 144).



Fig 144

PICT-7130

- Remove the two sets of fasteners securing the brake pedal lever to the brake control assembly (Fig. 146):

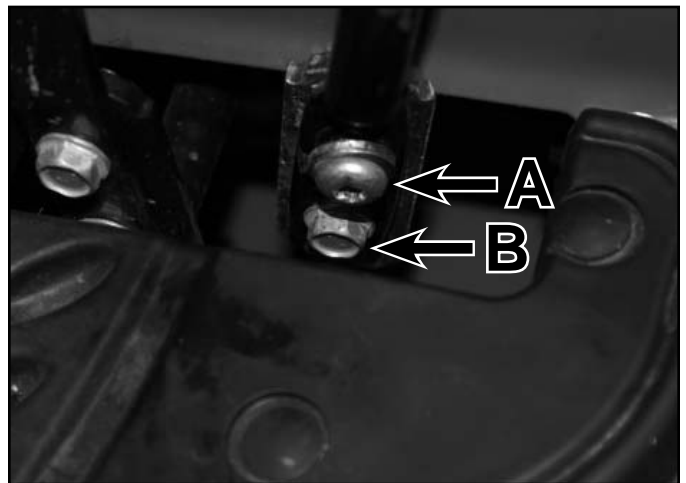


Fig 146

PICT-7132

- A. Torx screw and washer
- B. Hex head bolt, lock washer and nut

10. Disconnect the ignition module from the wire harness (Fig. 183).



Fig 183

PICT-7149

12. Remove the fuse holder from the tower support by depressing the tabs (Fig. 185).



Fig 185

PICT-7210

11. Unplug the ignition switch from the wire harness (Fig. 184).



Fig 184

PICT-7150

13. Remove the throttle decal from the tower (Fig. 186).



Fig 186

PICT-7153

16. Install a cotter pin to secure the park brake rod to the park brake lever (Fig. 223).



Fig 223

PICT-7166

18. Assemble the stop bracket onto the deck engagement handle bolts (manual PTO models) (Fig. 225).



Fig 225

PICT-7164a

17. Insert the two bolts on the deck engagement handle assembly into the PTO engage lever (manual PTO models) (Fig. 224).



Fig 224

PICT-7201

19. Install 2 nuts securing the deck engagement handle assembly and stop bracket to the PTO engage lever (manual PTO models) (Fig. 226).



Fig 226

PICT-7200

## Upper Transmission Drive Belt Replacement - Gear Drive Models

The mower deck has been removed for photo purposes.

### Removal

1. Disconnect the negative battery cable and then the positive battery cable.
2. Remove the battery hold down strap (Fig. 261).

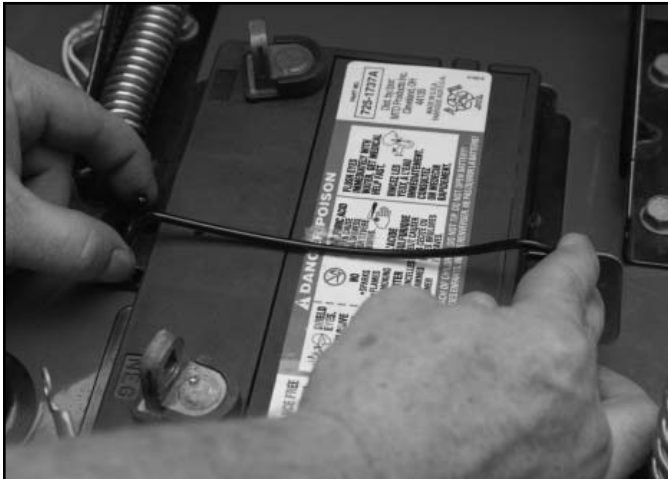


Fig 261

PICT-7109a

3. Remove the battery from battery compartment (Fig. 262).



Fig 262

PICT-7276

4. Remove the battery tray (Fig. 263).



Fig 263

PICT-7277

14. Connect the negative battery cable (Fig. 300).



Fig 300

PICT-7494

15. Purge the system. Refer to "Purging the System" on page 3-82.
16. Check the neutral adjustment. Refer to "Neutral Adjustment" on page 3-84.
17. Check the brake adjustment. Refer to "Brake Adjustment" on page 3-91.

## Variable Speed Pulley Replacement

The mower deck has been removed for photo purposes.

## Removal

1. Disconnect the negative battery cable and then the positive battery cable.
2. Remove the battery hold down strap (Fig. 301).



Fig 301

PICT-7109a

3. Remove the battery from battery compartment (Fig. 302).



Fig 302

PICT-7276

- Rotate the ball joint one turn: clockwise to increase toe-in; counterclockwise to decrease toe-in (Fig. 332).

**IMPORTANT:** If more than one turn is required to meet specifications, alternate between the right and left steering rods to maintain steering wheel alignment.



Fig 332

PICT-7833

- Tighten the jam nut to secure the position of the ball joint to the steering rod (Fig. 333).



Fig 333

PICT-7831

- Install the ball joint to the steering arm and check the toe-in as described in the measurement section.

## Autodrive Pedal Adjustment - Hydrostatic Models

- Remove the mower deck. Refer to "46" Mower Deck Removal" on page 7-69.
- The Autodrive pedal is properly adjusted when the hole found in the double idler bracket has approximately 1-3/8" (3.5cm) of travel with 10 lbs. (4.5kg) of pressure applied to the Autodrive pedal (Fig. 334 and Fig. 335).



Fig 334

PICT-7670

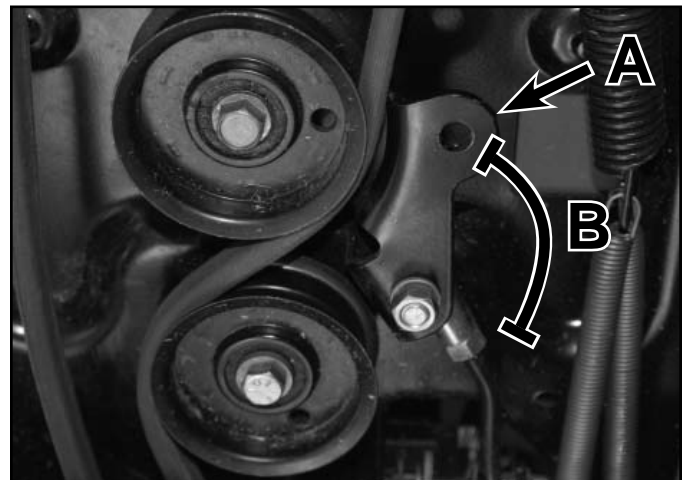


Fig 335

PICT-7673a

- A. Double idler bracket      B. 1-3/8" ravel distance

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- Slide the control knob onto the throttle/choke control lever (Fig. 369).



Fig 369

PICT-9641

- Apply a throttle/choke decal onto the tower, over the 2 screws securing the throttle/choke assembly (Fig. 371).



Fig 371

PICT-9643

- Install a bolt and nut to secure the control knob to the throttle/choke assembly (Fig. 370).



Fig 370

PICT-9642

- Move the throttle/choke control lever to the "CHOKE" position (Fig. 372).



Fig 372

PICT-9644

## Installation

1. Position the engine onto the frame (Fig. 409).



Fig 409

PICT-7386

2. Slide the positive wire onto the starter assembly and install the nut to secure it (Fig. 410).



Fig 410

PICT-7388

3. Unplug the wire harness (Fig. 411).

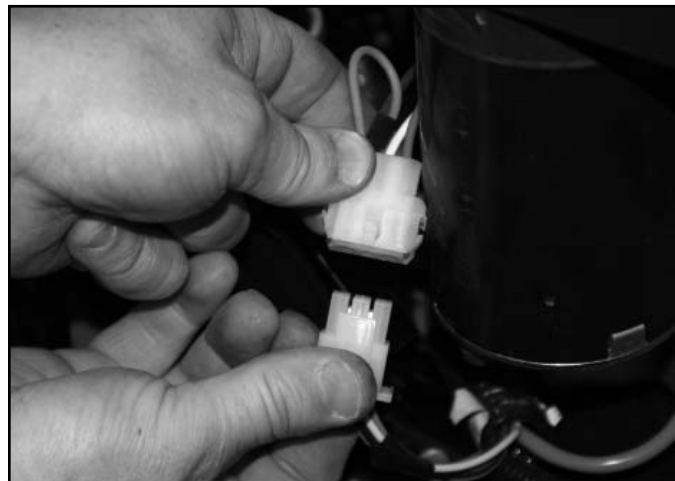


Fig 411

PICT-7380

4. Install the z-bend into the speed control lever (second hole from the top) (Fig. 412).



Fig 412

PICT-7390

4

# GEAR DRIVE SYSTEM

2. With the spacer installed, line the left side rear bolt hole in the transmission with the rear left bolt installed downward from the chassis (Fig. 448).

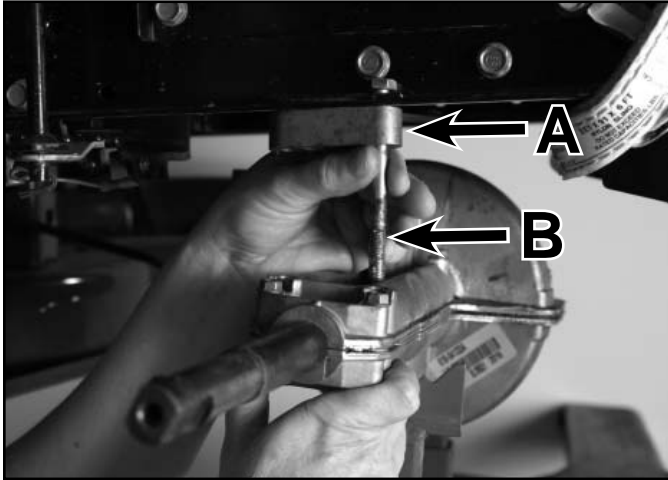


Fig 448

PICT-7251

A. Spacer

B. Bolt

3. Loosely install the nut onto the bolt (Fig. 449).

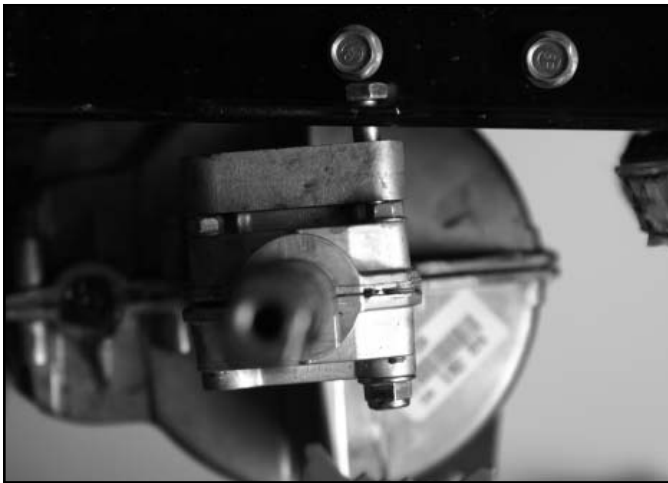


Fig 449

PICT-7253

4. Install the transmission belt onto the transmission pulley (Fig. 450).



Fig 450

PICT-7254

5. Position the second spacer on the right side of the transmission and install a bolt (upward). Insert the bolt up through the frame and loosely install the nut (Fig. 451).

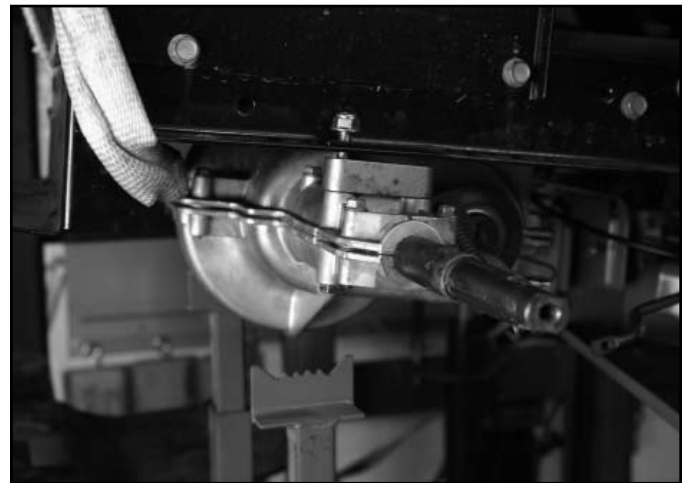


Fig 451

PICT-7255

5

# HYDROSTATIC DRIVE SYSTEM

## Hydro Transmission Replacement

### Removal

1. Remove the mower deck. Refer to "46" Mower Deck Removal" on page 7-69.
2. Disconnect the negative battery cable (Fig. 486).

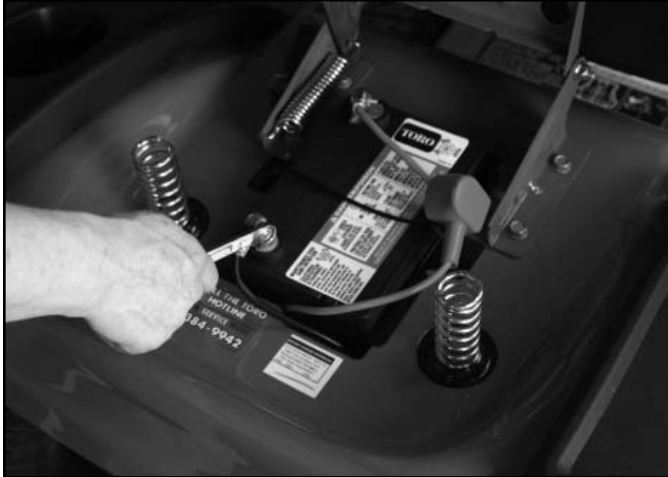


Fig 486

PICT-7494

3. Disconnect the positive battery cable (Fig. 487).



Fig 487

PICT-7495

4. Remove the battery hold down strap (Fig. 488).



Fig 488

PICT-7497

5. Lift the battery out of the battery tray (Fig. 489).



Fig 489

PICT-7499

# HYDROSTATIC DRIVE SYSTEM

15. Install the 2 bolts and washers to secure the wheels to the axles (Fig. 526).



Fig 526

PICT-7519

17. Using the spring removal tool, hook the hydro linkage return spring to the stud (Fig. 528).



Fig 528

PICT-7555a

16. Insert a spring removal tool through the opening in the rear of the machine (Fig. 527).



Fig 527

PICT-7553

18. Route the transmission drive belt around the transmission fan and pulley (Fig. 529).



Fig 529

PICT-7518

# MOWER DECK

3. Remove the nut securing the idler pulley to the idler bracket (Fig. 565).

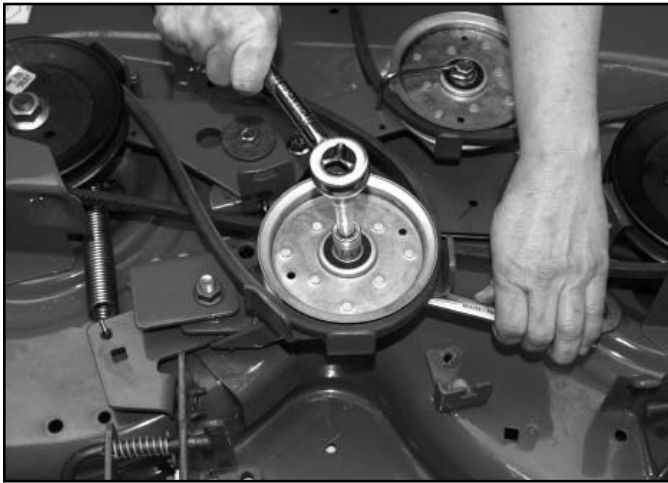


Fig 565

PICT-7796

5. Remove the 2 self-tapping screws and lock washers securing the idler bracket to the mower deck (Fig. 567).

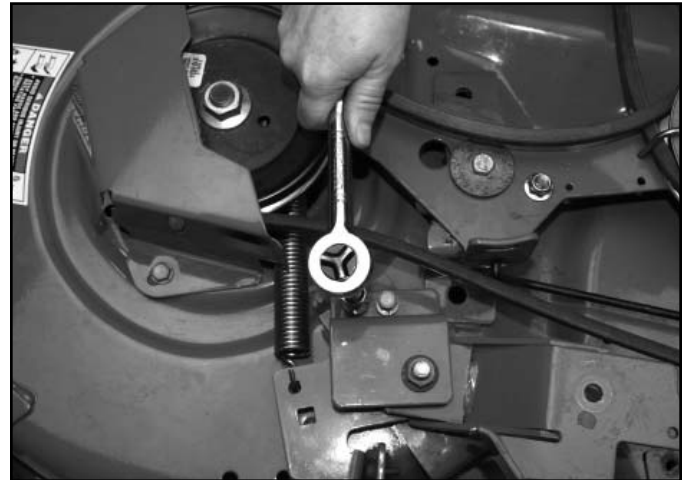


Fig 567

PICT-7799

4. Remove the pulley assembly from the idler bracket (Fig. 566).

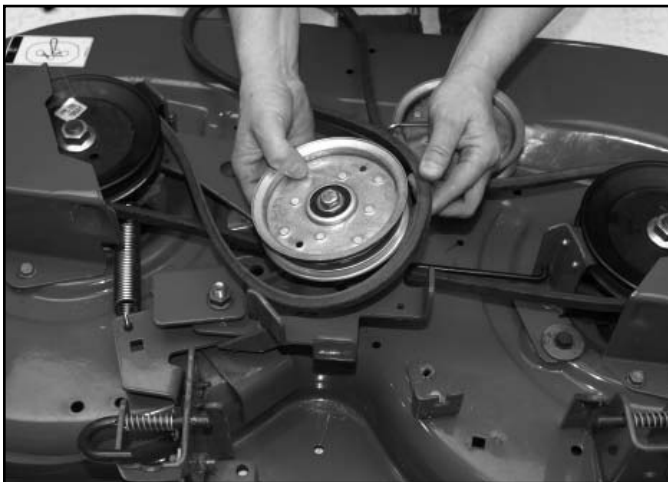


Fig 566

PICT-7797

6. Remove the nut from the bolt securing the idler bracket to the mower deck (Fig. 568).

**Note:** The bolt and washer will fall through to the underside of the mower deck.



Fig 568

PICT-7801

# MOWER DECK

2. Install the shoulder bolt and nut through the right hand idler bracket and the mower deck (Fig. 605).

**Note:** Make sure the lower mower belt is routed to the inside of the right hand idler bracket assembly where it is mounted to the mower deck.

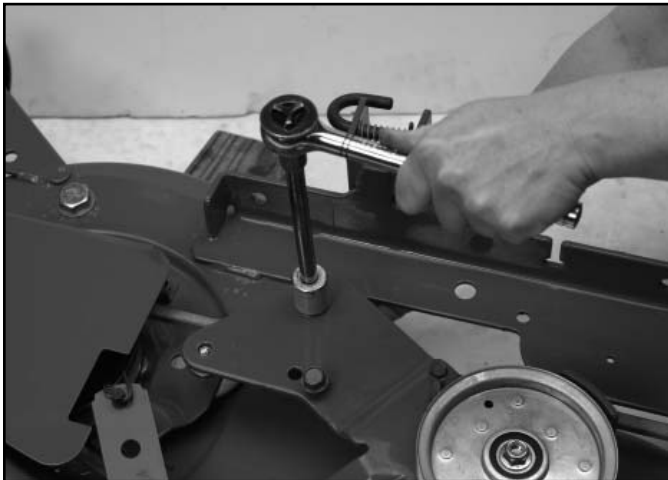


Fig 605

PICT-7886

3. Install the shoulder bolt between the brake bracket and the right hand idler bracket. Tighten the bolt and nut (Fig. 606).

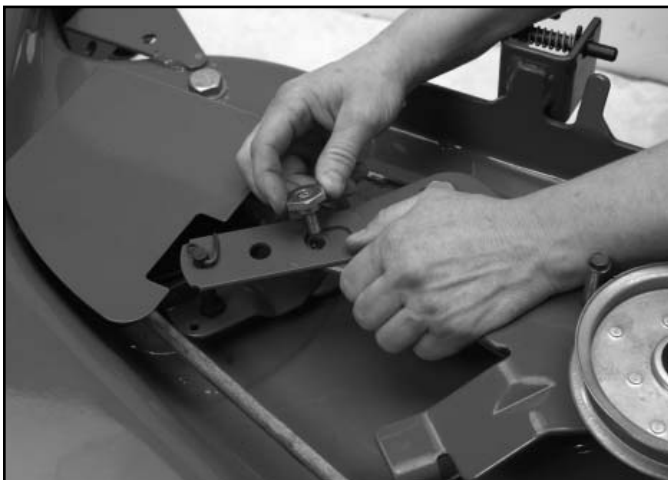


Fig 606

PICT-7888

4. Install the extension spring between the left and right idler brackets (Fig. 607).

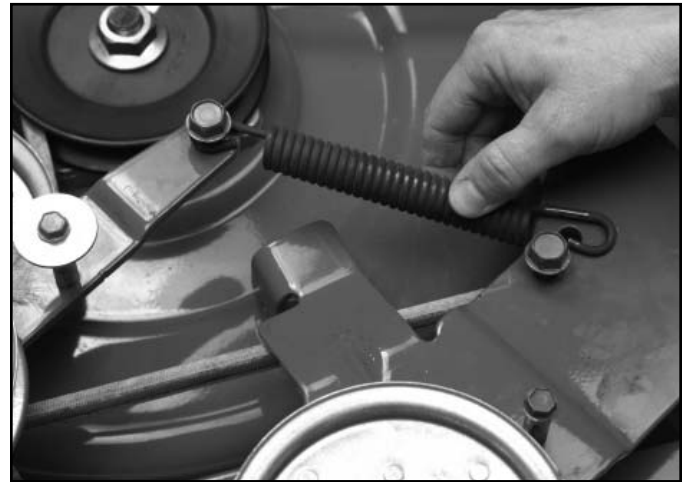


Fig 607

PICT-7854

5. Install the extension spring between the brake arm and the right hand side belt cover (Fig. 608).

**Note:** The extension spring installs in the upper hole on the belt cover.



Fig 608

PICT-7851

- A. Spring removal tool (Toro P/N 92-5771)

# MOWER DECK

4. Install the large idler extension spring into the lower idler bracket (Fig. 644).

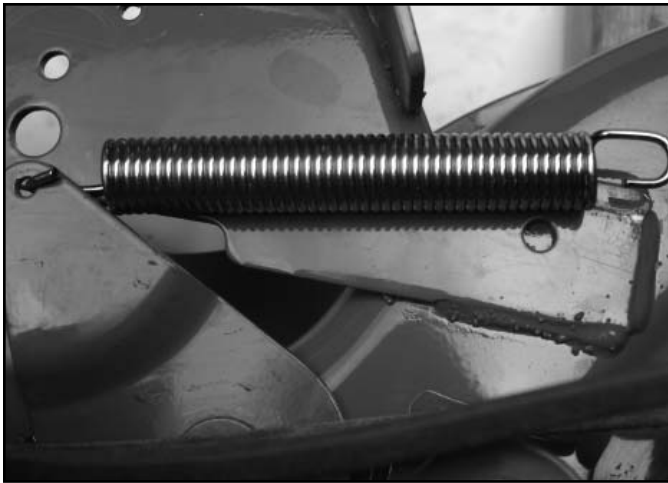


Fig 644

PICT-7913

5. Install the other end of the large idler extension spring to the spring post on the mower deck (Fig. 645).

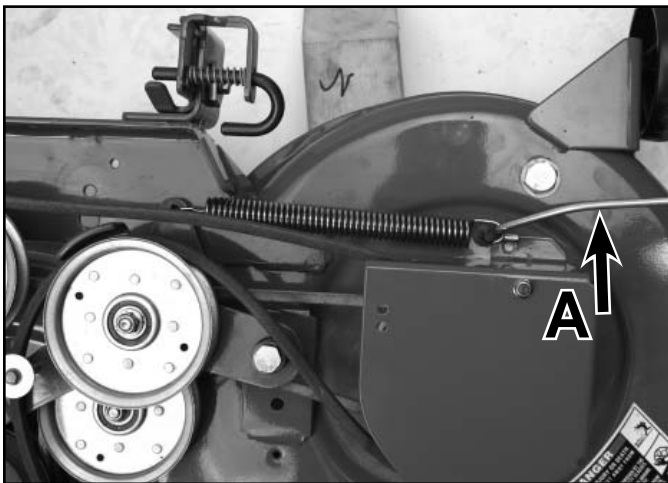


Fig 645

PICT-7898

- A. Spring removal tool (Toro P/N 92-5771)

6. Lower the back of the mower deck to the floor.
7. Install the mower deck to the tractor. Refer to "46" Mower Deck Installation" on page 7-72.

## 46" Mower Deck - Lower Mower Deck Belt Replacement

### Removal

1. Remove the mower deck from the tractor. Refer to "46" Mower Deck Removal" on page 7-69.
2. Remove the 3 self-tapping screws securing the left mower deck belt cover to the mower deck (Fig. 646).

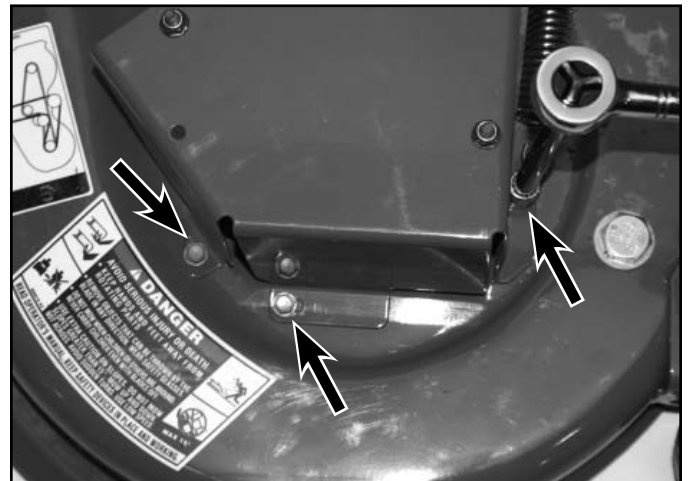


Fig 646

PICT-7835

3. Remove the mower deck belt cover from the mower deck (Fig. 647).



Fig 647

PICT-7839

# MOWER DECK

4. Remove the 3 screws securing the left mower deck belt cover to the mower deck (Fig. 683).



Fig 683

PICT-7920

6. Loosen the bolt and nut securing the idler pulley to the idler bracket (Fig. 685).

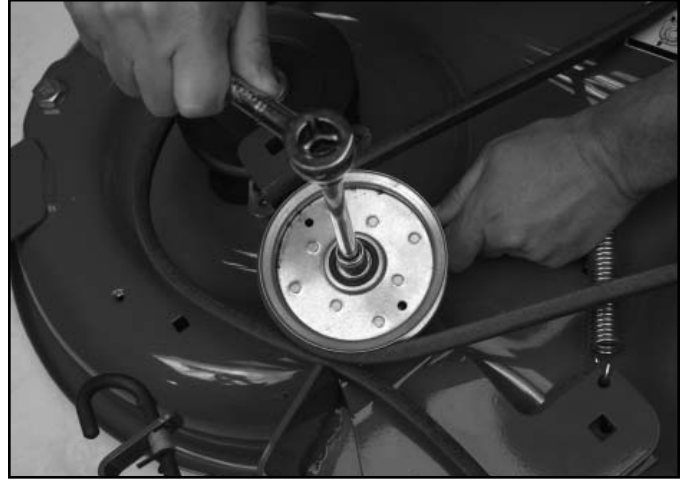


Fig 685

PICT-7923a

5. Remove the left mower deck cover (Fig. 684).

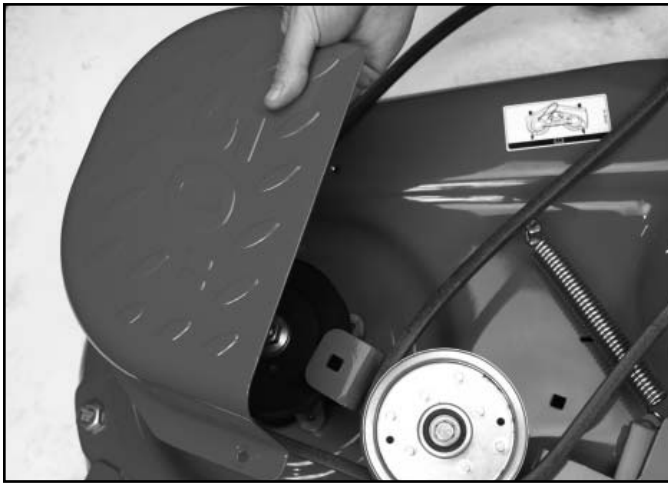


Fig 684

PICT-7921

7. Tilt the idler pulley and remove the belt from the mower deck (Fig. 686).



Fig 686

PICT-7922

7

# MOWER DECK

8. Position the belt cover onto the mower deck (Fig. 722).

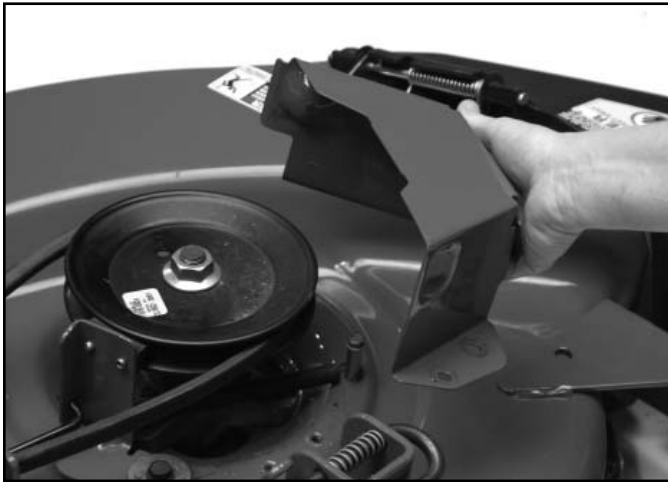


Fig 722

PICT-7712

9. Install 3 screws securing the belt cover to the mower deck (Fig. 723).

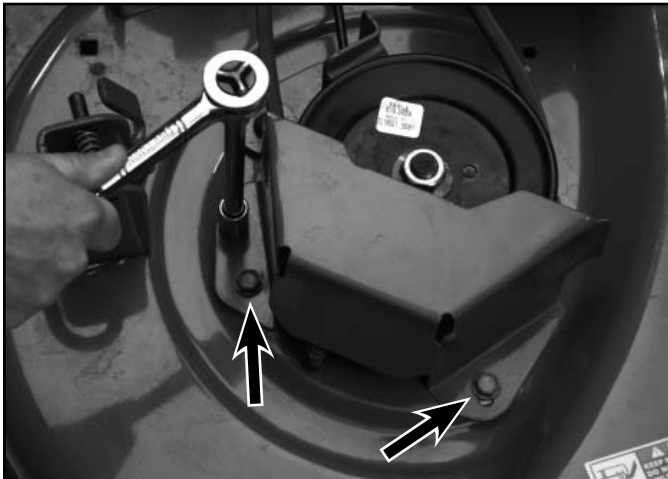


Fig 723

PICT-7711

10. Install the mower deck. Refer to "42" Mower Deck Installation" on page 7-67.

## 42" Mower Deck - Spindle Service

1. Secure the mower deck spindle into a vise.
2. Secure the pulley and remove the nut securing the pulley to the mower deck spindle (Fig. 724).



Fig 724

PICT-7733a

3. Remove the pulley from the spindle shaft (Fig. 725).



Fig 725

PICT-7751

# MOWER DECK

5. Remove the spindle from the vise.
6. Remove the spindle shaft and shoulder bearing assembly from the spindle housing (Fig. 762).



Fig 762

PICT-8000a

8. Remove the bearing and spacer from the blade side of the housing (Fig. 764).

**Note: Since this bearing is staked in place it WILL be damaged if removed.**



Fig 764

PICT-8004

7. Remove the shoulder bearing from the spindle shaft (Fig. 763).



Fig 763

PICT-8001a

9. Remove the second bearing from the pulley side of the housing (Fig. 765).

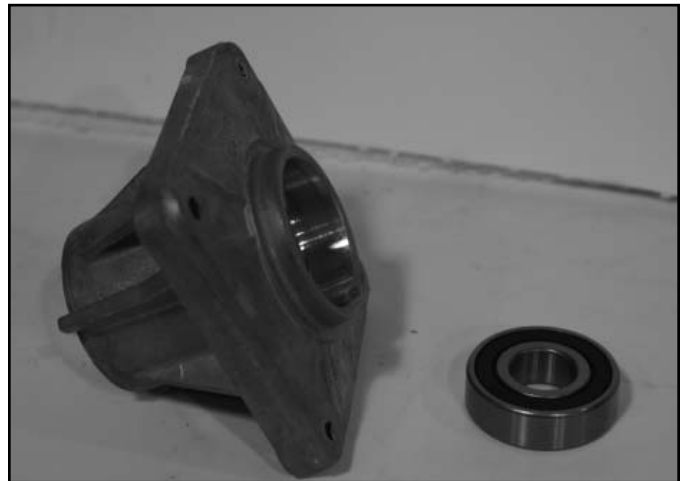


Fig 765

PICT-8005

## 42" Mower Deck Installation

1. Slide the mower deck under the tractor so the side discharge chute is on the right side of the tractor (Fig. 802).



Fig 802

PICT-9684

2. Hook the deck engagement spring to the idler bracket (Fig. 803).



Fig 803

PICT-9678

3. Install the deck engagement cable into the bracket on the rear of the mower deck (Fig. 804).



Fig 804

PICT-9679

4. Install the front adjustment deck rod into the hanger plate (Fig. 805).



Fig 805

PICT-9683

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