



## 44" and 52" Finishing Kit

### 100 Series Z Master 44" Mowers

### 100 Series Z Master 52" Mowers

Model No. 78508

Model No. 78509

## Installation Instructions

**Important** This kit will require significant time to install the first time. A right angle drill is recommended for installation.

### Loose Parts

**Note:** Use the chart below to verify all parts have been shipped.

Step	Description	Qty.	Use
<b>1</b>	Tunnel baffle—front	1	Installing the front tunnel baffle
	Carriage bolt, 5/16 x 5/8 inch	4	
	Flange nut, 5/16 inch	4	
<b>2</b>	Tunnel baffle—rear	1	Installing the rear tunnel baffle
	Carriage bolt, 5/16 x 5/8 inch	3	
	Flange nut, 5/16 inch	3	
<b>3</b>	Center rear baffle	1	Installing the center rear baffle
	Button Head Socket Bolt, 5/16 x 3/4 inch	3	
	Flange nut, 5/16 inch	3	
<b>4</b>	Left rear baffle	1	Installing the left rear baffle
	Button Head Socket Bolt, 5/16 x 3/4 inch	3	
	Flange nut, 5/16 inch	3	
<b>5</b>	Right rear baffle	1	Installing the right rear baffle
	Button Head Socket Bolt, 5/16 x 3/4 inch	2	
	Carriage bolt, 5/16 x 5/8 inch	1	
	Flange nut, 5/16 inch	3	
<b>6</b>			Removing the mower existing pulley assembly
<b>7</b>			Modifying a 44 inch Mower for Belt Clearance
<b>8</b>	Pulley assembly	1	Installing the pulley assembly, belt and cover
	Bagger Belt	1	
	Pulley cover	1	
<b>9</b>	Mounting plate	2	Installing the mounting plate
	Bolt, 3/8 x 1-1/4 inch	4	
	Flange nuts, 3/8 inch	4	

# Before Installation

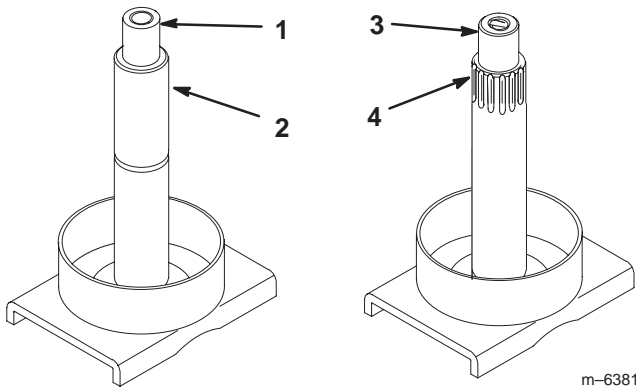
## Checking the Mower for Existing Holes

Check for existing holes. Use existing holes in the mower that align the baffles in their correct positions.

## Checking the Spindle Shaft for 1999 Models

For mowers built in 1999, the right hand blade spindle shaft may need to be replaced (Fig. 1). Check the right blade spindle for splines. The splines are needed to install the pulley assembly shown in Figure 17.

Order a new, year 2000 model, splined spindle shaft from an Authorized Service Dealer (Fig. 1).



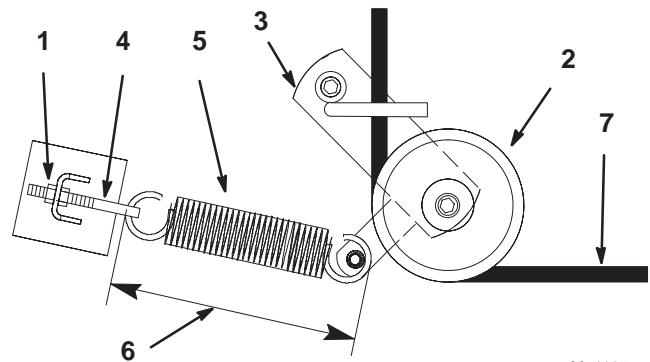
**Figure 1**  
Top View

- |  |   |
|--|---|
| 1. Blade spindle shaft—without splines | 3. Year 2000 blade spindle shaft—with splines |
| 2. No splines                          | 4. Splines                                    |

## Removing the Mower

**Note:** If the mower is already level and is removed from the top bolts, the mower will **not** need to be leveled.

1. Loosen the outer nut on the spring eye bolt (Fig. 2).



**Figure 2**  
Top View

- |                    |  |
|--------------------|--|
| 1. Outer nut       | 5. Spring                                |
| 2. Idler pulley    | 6. 9-3/8 inch ± 1/8 inch (238 mm ± 3 mm) |
| 3. Idler arm       | 7. Mower belt                            |
| 4. Spring eye bolt |  |

2. Remove the mower belt, starting at the right outside pulley.

**Note:** Do not remove the spring.

! **Caution** !

**Spring is under tension when installed and can cause personal injury.**

**Do not remove spring from spring eye bolt.**

3. Lower the mower onto wood blocks.

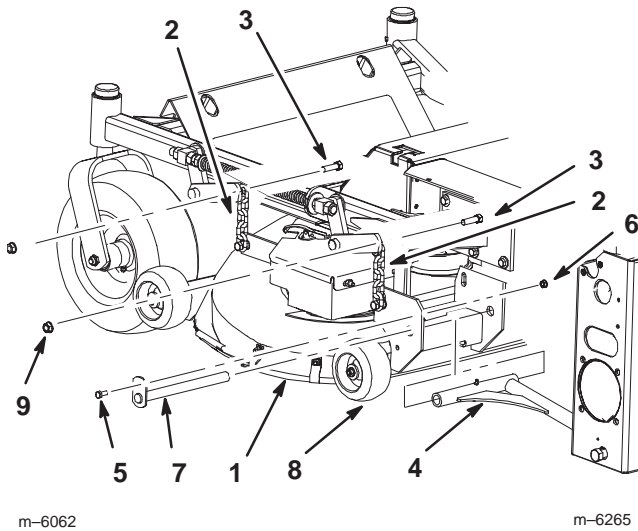
**Note:** If the mower is removed from the top bolts, the mower will **not** need to be leveled.

4. Remove the four bolts and nuts at the top of chains that attached to mower (Fig. 3).
5. Remove the nuts and bolts holding the push arm pins (Fig. 3).

**Note:** The gage wheels may need to be removed to allow the push arm pins to be removed (Fig. 3).

6. Remove the push arm pins (Fig. 3).

7. Raise the height of cut lever and slide the mower out (Fig. 3).



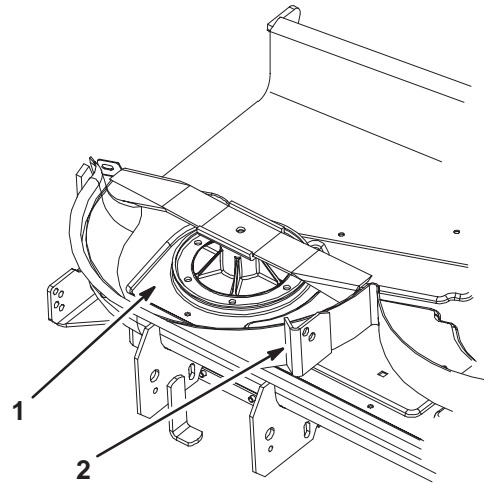
**Figure 3**

- |                  |                 |
|------------------|-----------------|
| 1. Mower         | 6. Push Arm Nut |
| 2. Chain         | 7. Push Arm Pin |
| 3. Chain Bolt    | 8. Gage wheel   |
| 4. Push Arm      | 9. Nut          |
| 5. Push Arm Bolt |                 |

## Removing the Cutting Chamber Stiffener

**Note:** This section is only for mowers with a stiffener welded to the cutting chamber (Fig. 4).

1. Remove the cutting chamber stiffener from the mower (Fig. 4).
2. Grind the welds flat on rear part of the chamber. This will allow the correct fit for the cutting chamber baffle.



**Figure 4**

1. Cutting chamber
2. Cutting chamber stiffener

## Preparing the Mower

1. Tip the mower upside down and block up ends to ease installation of components.
2. Thoroughly clean the mower. All debris must be removed to ensure baffles will fit properly against the mower.
3. Repair all bent or damaged areas of the mower and replace any missing parts.



### Warning



Contact with sharp blade can cause serious personal injury.

- Wear gloves or wrap sharp edges of the blade with a rag.

## Step

# 1

### Parts needed for this step:

- 1 Tunnel baffle—front
- 4 Carriage bolts, 5/16 x 5/8 inch
- 4 Flange nuts, 5/16 inch

## Installing the Front Tunnel Baffle

**Note:** Blades and spindles are not shown in the graphics for clarity.

1. Place the front tunnel baffle against the front wall of the discharge tunnel (Fig. 5).
2. Align the front baffle, flush with the outside of the mounting bracket (Fig. 5).



**Figure 5**

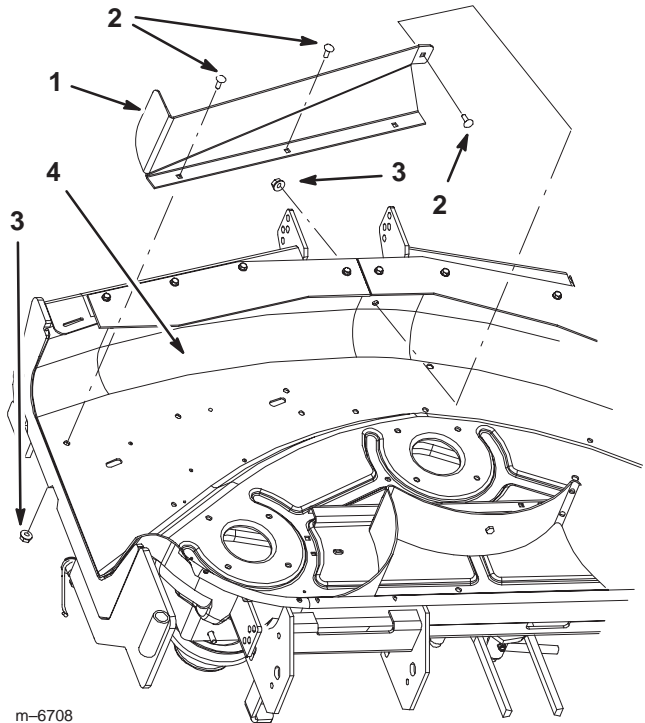
1. Front tunnel baffle
2. Flush edge with outside of mounting bracket
3. Outside of mounting bracket
4. Hole to drill

3. Clamp the baffle in place.

4. Using the baffle as a template, center punch and drill 4 holes (11/32 inch dia.) into the mower (Fig. 5).

5. Remove the clamp.

6. Install the front tunnel baffle to the mower with 4 carriage bolts (5/16 x 5/8 inch) and 4 flange nuts (5/16 inch) (Fig. 6).



**Figure 6**

1. Front tunnel baffle
2. Carriage Bolt, 5/16 x 5/8 inch
3. Flange nut, 5/16 inch
4. Front tunnel wall

# Step 2

## Parts needed for this step:

- 1 Tunnel baffle—rear
- 3 Carriage bolt, 5/16 x 5/8 inch
- 3 Flange nut, 5/16 inch

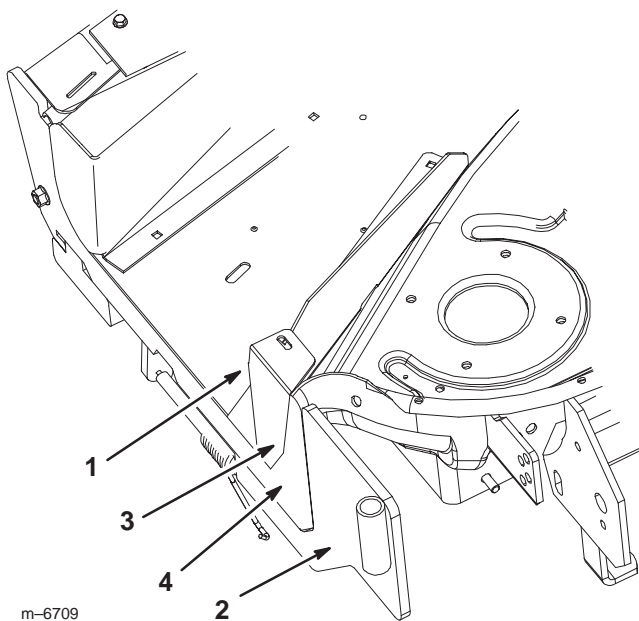
## Installing the Rear Tunnel Baffle

**Note:** Blades and spindles are not shown in the graphics for clarity.

1. Place the rear tunnel baffle against the rear wall of the discharge tunnel (Fig. 7).

**Note:** The rear tunnel baffle must not extend past the outside of the mounting bracket.

2. Align the rear tunnel baffle, flush with the outside of the mounting bracket (Fig. 7).



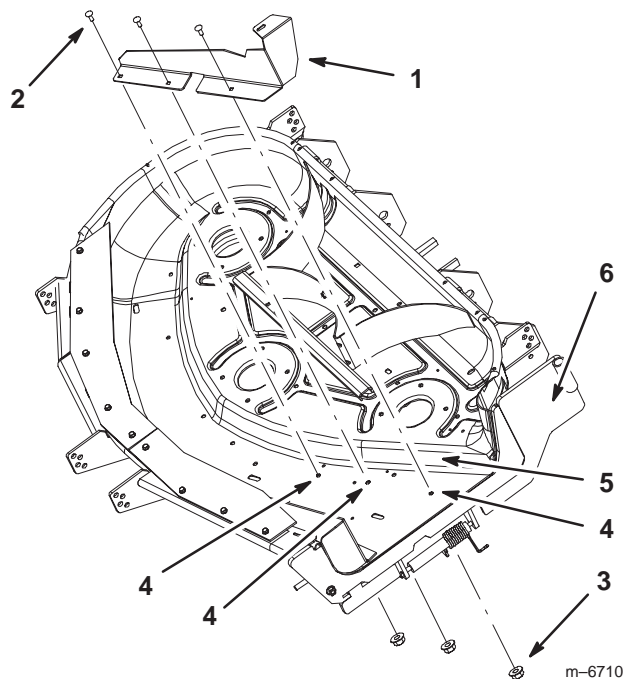
**Figure 7**

1. Rear tunnel baffle
2. Mounting bracket
3. Flush edge with outside of mounting bracket
4. Outside of mounting bracket

3. Clamp the baffle in place.

4. Using the baffle as a template, center punch and drill 3 holes (11/32 inch dia.) into the top of the mower (Fig. 6).
5. Remove the clamp.
6. Install the rear tunnel baffle with 3 carriage bolts (5/16 x 5/8 inch) and 3 flange nuts (5/16 inch) (Fig. 8).

**Important** Make sure the bolt heads are installed on the inside of the cutting chamber.



**Figure 8**

1. Rear tunnel baffle
2. Carriage Bolt, 5/16 x 5/8 inch
3. Flange nut, 5/16 inch
4. Hole to drill
5. Tunnel rear wall
6. Mounting bracket

Step

3

### Parts needed for this step:

- 1 Center cutting chamber baffle
- 3 Button Head Socket Bolts, 5/16 x 3/4 inch
- 3 Flange nuts, 5/16 inch

## Installing the Center Rear Baffle

A right angle drill is recommended to install this baffle.

1. Place the center rear baffle behind the center cutting blade chamber (Fig. 11).
2. Align the center rear baffle so the baffle ends are touching the back mower flange (Fig. 9).

**Note:** The center baffle ends will rest on the mower flange (Fig. 9).

3. Align the middle part, of the center rear baffle, **9/16 to 11/16 inch from the blade tip**. See Figures 9 and 10 on where to measure.

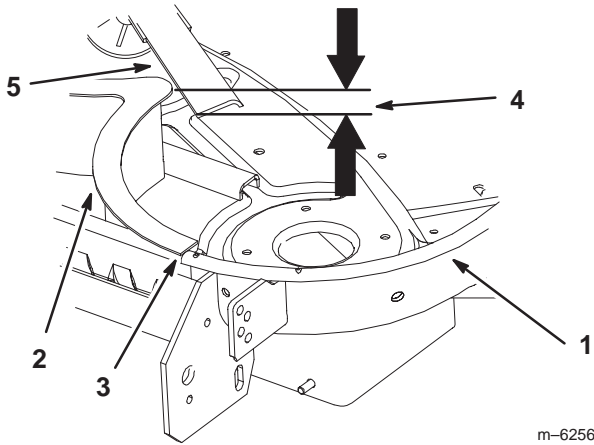


Figure 9

- |                                     |   |
|-------------------------------------|---|
| 1. Mower flange                     | 4. Blade clearance, 9/16 to 11/16 inch (14 mm to 17 mm) |
| 2. Center baffle                    | 5. Center blade   |
| 3. Center baffle end touching mower |   |

**Important** Make sure the baffle flange is 9/16 to 11/16 inch (14 mm to 17 mm) from the mower blade (Figures 9 and 10).

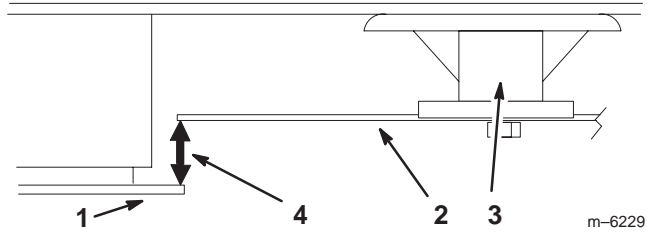


Figure 10

- |                  |   |
|------------------|---|
| 1. Baffle flange | 4. Blade clearance, 9/16 to 11/16 inch (14 mm to 17 mm) |
| 2. Blade         |   |
| 3. Spindle       |   |

4. Clamp the center baffle tightly against the cutting chamber (Fig. 11).
5. Using the baffle as a template, mark, center punch and drill 1/8 inch pilot holes at the 3 locations (Fig. 11).
6. Drill 11/32 inch dia. holes through the pilot holes (Fig. 11).
7. Install the center baffle with 3 button head socket bolts (5/16 x 5/8 inch) and 3 flange nuts (5/16 inch) (Fig. 11).

**Important** Make sure the bolt heads are installed on the inside of the cutting chamber (Fig. 11).

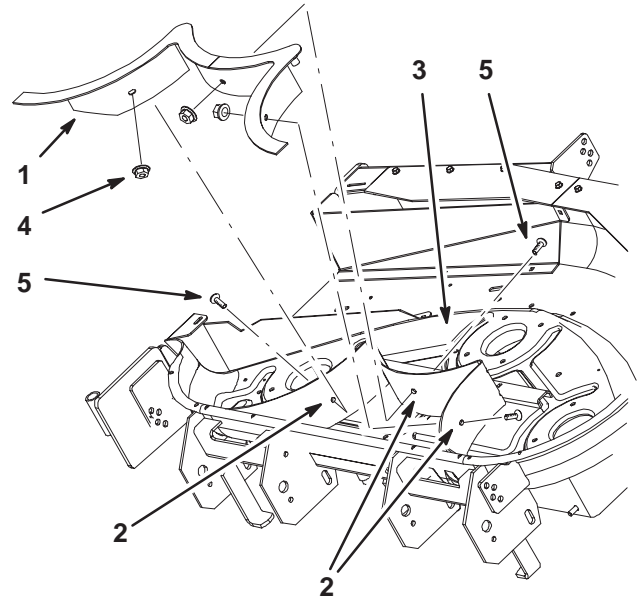


Figure 11

- |                                 |   |
|---------------------------------|---|
| 1. Center Baffle                | 4. Flange nuts, 5/16 inch                   |
| 2. Hole to drill                | 5. Button head socket bolt, 5/16 x 5/8 inch |
| 3. Center cutting blade chamber |   |

## Step

# 4

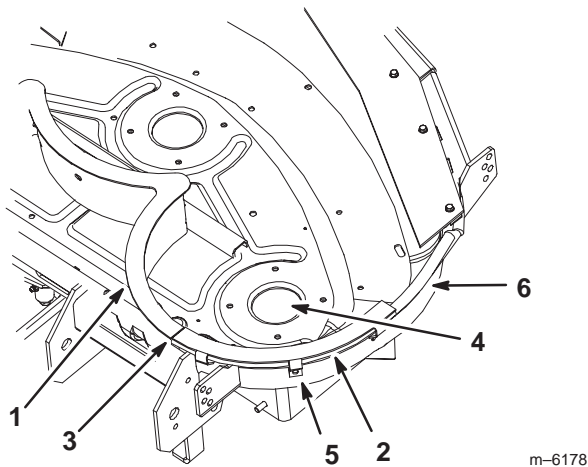
### Parts needed for this step:

- 1 Left rear baffle
- 3 Button Head Socket Bolts, 5/16 x 3/4 inch
- 3 Flange nuts, 5/16 inch

### Installing the Left Rear Baffle

**Note:** Blades and spindles are not shown in the graphics for clarity.

1. Place the left rear baffle behind the left cutting chamber (trim side of mower) (Fig. 12). The tabs will mount on the outside of the mower.
2. Align the left rear baffle tight against and flush with the bottom of the center baffle and against the mower flange (Figures 12 and 13).
3. Clamp the baffle in place.



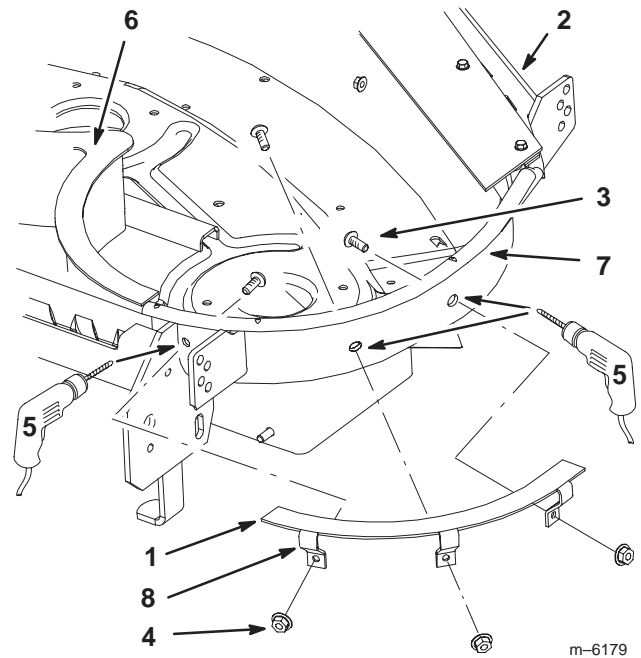
**Figure 12**

1. Center Baffle
2. Left rear baffle against mower flange
3. Flush with bottom of center baffle
4. Left cutting chamber
5. Tab
6. Trim side of mower

4. Using the baffle as a template, mark, center punch and drill 1/8 inch pilot holes at the 3 locations (Fig. 13).
5. Drill 11/32 inch dia. holes through the pilot holes (Fig. 13).

6. Install the left rear baffle with 3 button head socket bolts (5/16 x 3/4 inch) and 3 flange nuts (5/16 inch) (Fig. 13).

**Important** Make sure the bolt heads are installed on the inside of the cutting chamber. See figure 13.



**Figure 13**

1. Left rear baffle
2. Left side of mower
3. Button head socket bolt, 5/16 x 3/4 inch
4. Flange nut, 5/16 inch
5. Hole to drill
6. Rear center baffle
7. Mower flange
8. Tab

## Step

# 5

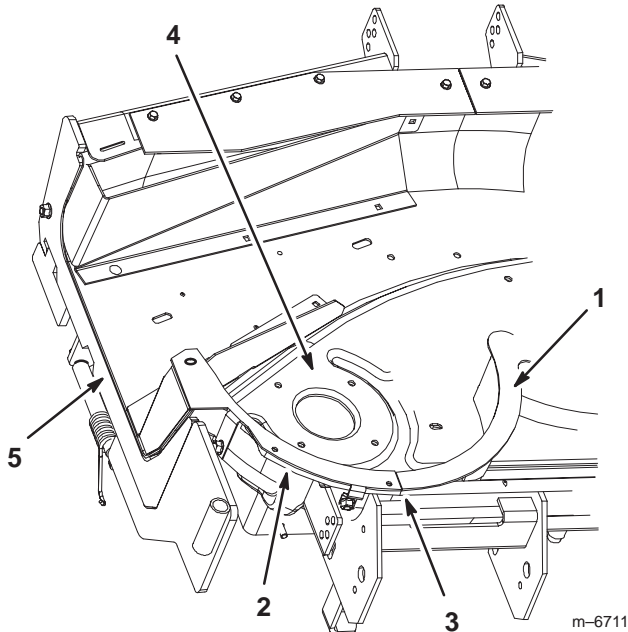
### Parts needed for this step:

- 1 Right rear baffle
- 2 Button Head Socket Bolts, 5/16 x 3/4 inch
- 1 Carriage bolts, 5/16 x 5/8 inch
- 4 Flange nuts, 5/16 inch

## Installing the Right Rear Baffle

**Note:** Blades and spindles are not shown in the graphics for clarity.

1. Place the right rear baffle (side discharge side) behind the right cutting chamber (Fig. 14). The tabs will mount on the outside of the mower.
2. Align the right rear baffle tight against and flush with the bottom of the center baffle and against the mower flange (Fig. 14 and 15).

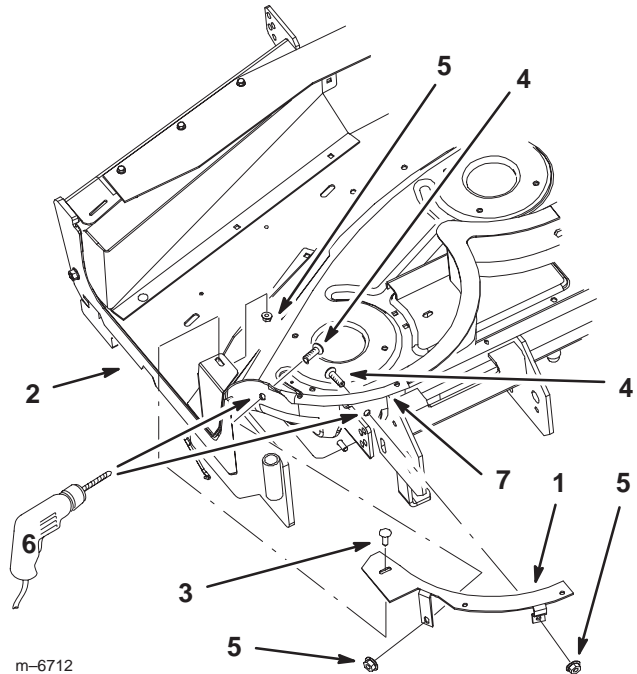


**Figure 14**

1. Center Baffle
2. Right rear baffle against mower flange
3. Flush with bottom of center baffle
4. Right cutting chamber
5. Side discharge opening

3. Clamp the baffle in place.
4. Using the baffle as a template, mark, center punch and drill 1/8 inch pilot holes at the 2 locations (Fig. 15).
5. Drill 11/32 inch dia. holes through the pilot holes (Fig. 15).
6. Remove the clamp.
7. Install the right rear baffle to the mower with 2 button head socket bolts (5/16 x 3/4 inch) and 2 flange nuts (5/16 inch) (Fig. 15).
8. Install the right rear baffle to the rear tunnel baffle with a carriage bolt (5/16 x 5/8 inch) and a flange nut (5/16 inch) (Fig. 15).

**Important** Make sure the button head socket bolt heads are installed on the inside of the cutting chamber. See figure 15.



**Figure 15**

1. Right rear baffle
2. Right side of mower
3. Carriage Bolt, 5/16 x 5/8 inch
4. Button head socket bolt, 5/16 x 5/8 inch
5. Flange nut, 5/16 inch
6. Holes to drill
7. Mower flange

9. Rotate the blades and check if the blades make contact with the baffles.

10. If contact is made, **do not use the mower**. Adjust and make sure all baffles are installed properly.

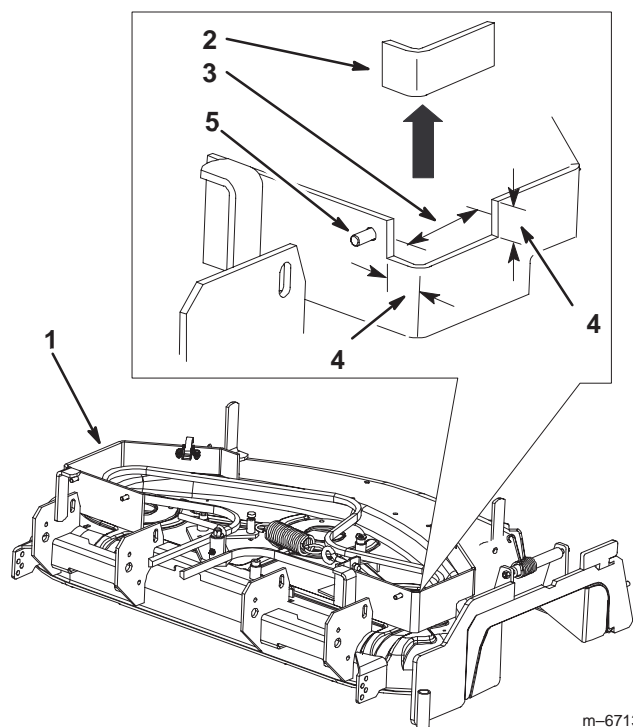
Step  
**6**

No Parts needed for this step.

## Removing the Existing Mower Pulley

**Note:** Clean the area around pulley before removing pulley assembly. Hold spindle up from underneath the deck. It can fall when nut and washer are removed.

1. Turn the mower over.
2. Remove the right belt cover from the mower and discard.
3. Remove the nut and washer on top of the spindle (Fig. 17). Save the nut and washer.
4. Remove the existing pulley assembly.



m-6713

**Figure 16**

- |                       |                      |
|-----------------------|----------------------|
| 1. 44 inch mower      | 4. 1 inch            |
| 2. Remove this corner | 5. Pulley cover stud |
| 3. 3-1/4 inches       |                      |

Step  
**7**

No Parts needed for this step.

## Modifying a 44 inch Mower for Belt Clearance

**Note:** This section is only for 44 inch mowers that do not have a belt clearance notch.

1. Remove the right rear corner of the pulley cover plate (Fig. 16). This will give clearance for the blower belt.
2. Refer to Figure 16 for the correct dimensions of the cutout.

**Note:** Do not cut out the stud in the back of the pulley cover plate. The stud is needed for the pulley cover.

## Step

# 8

## Installing the Belt Cover and Bagger Belt

Refer to the bagger *Operator's Manual* for installing the belt cover and bagger belt.

### Parts needed for this step:

- 1 Pulley assembly
- 1 Bagger Belt
- 1 Pulley cover

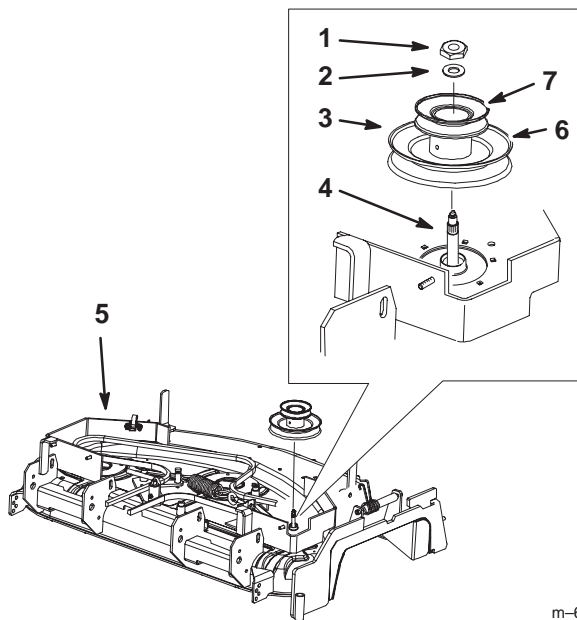
## Installing the Pulley Assembly

**Note:** For mowers built in 1999, check the right blade spindle for splines. Refer to Checking the Spindle for 1999 Models on page 2.

1. Install new pulley assembly onto the spindle. Install it so the large pulley is on the bottom (Fig. 17).
2. Install the washer and nut (Fig. 17).

**Important** Tighten the nut to 115 ft-lb  $\pm$  15 ft-lb torque.

3. Grease the spindle to fill bearings with grease.



**Figure 17**

- |                    |                 |
|--------------------|-----------------|
| 1. Nut             | 5. Mower        |
| 2. Washer          | 6. Lower pulley |
| 3. Pulley Assembly | 7. Upper pulley |
| 4. Blade spindle   |                 |

# Step 9

## Parts needed for this step:

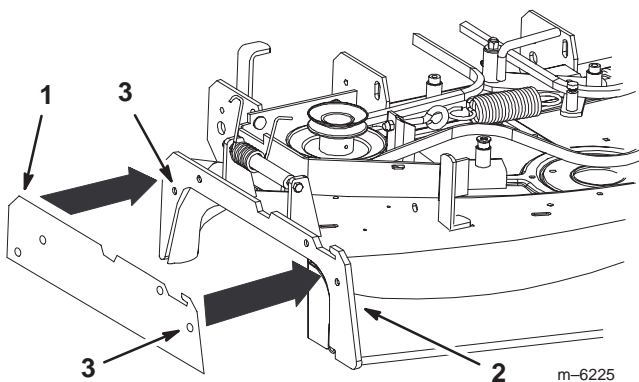
- 2 Mounting plates
- 1 Template
- 4 Bolts, 3/8 x 1-1/4 inch
- 4 Flange nuts, 3/8 inch

## Installing the Mounting Plates

### Drilling the Holes into the Mounting Bracket

This kit contains a metal template for locating the mounting bracket holes to drill.

1. Remove the grass deflector from the mower (Fig. 22).
2. Position the template onto the the mounting bracket and align with the **top and sides** of the mounting bracket. (Fig. 18).
3. Clamp the template to the mounting bracket (Fig. 18).
4. Mark and center punch the 4 holes and remove the template (Fig. 18).
5. Drill 1/8 inch pilot holes at the 4 marked locations and then drill 7/16 inch dia. holes.
6. File the metal burrs from the drilled holes.

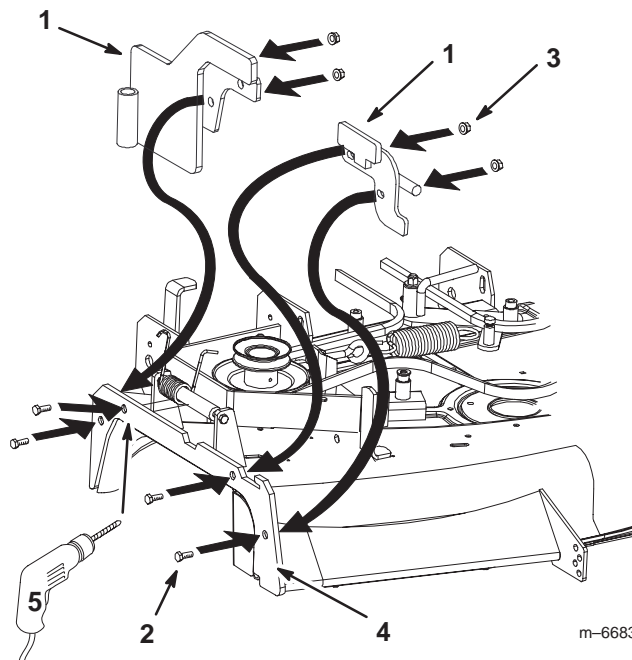


**Figure 18**

1. Template
2. Mounting bracket
3. Mark and center punch holes

## Installing the Mounting Plates

1. Install the mounting plates to the inside of the mounting bracket with 4 bolts (3/8 x 1-1/4 inch) and 4 flange nuts (3/8 inch) (Fig. 19).



**Figure 19**

1. Mounting plate
2. Bolt, 3/8 x 1-1/4 inch
3. Flange nut, 3/8 inch
4. Mounting bracket
5. 7/16 inch holes to drill

## Installing the Blades

**Note:** In certain mowing conditions, improved bagging performance can be achieved by using bagging blades. Contact an Authorized Service Dealer for the proper blades for different mowing conditions.

1. Install the blade onto the spindle shaft (Fig. 20).

**Important** The curved part of the blade must be pointing upward toward the inside of the mower to ensure proper cutting.

2. Install the spring disk and blade bolt (Fig. 20). **Torque the blade bolt to 85–110 ft-lb (115–150 N•m).**
3. Rotate the blades to ensure there is clearance between the blade tips and the baffles.
4. If contact is made, **do not use the mower.** Adjust and make sure the baffles are installed properly.

**Important** Do not use the mower if blades contact the baffles.

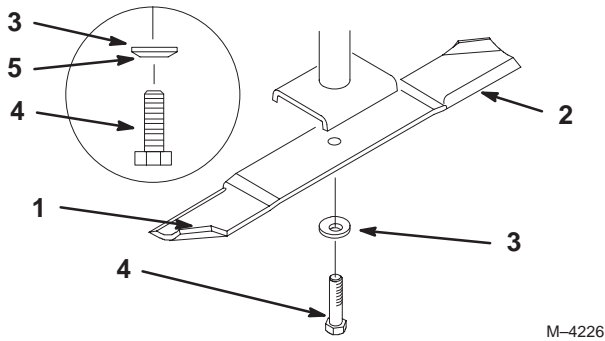


Figure 20

- |                       |                           |
|-----------------------|---------------------------|
| 1. Sail Area of Blade | 4. Blade Bolt             |
| 2. Blade              | 5. Cone Towards Bolt Head |
| 3. Spring Disk        |                           |

## Installing the Mower and Mower Belt

1. Install the mower to the machine. Reverse the instructions in Removing the Mower on page 2.

**Note:** If the mower was already level and was removed from the top bolts, the mower will **not** need to be leveled. Refer to the mower *Operator's Manual* if the mower needs to be leveled.

2. Route the mower belt onto the lower pulley (Fig. 17) and idler pulley (Fig. 21).
3. Route the mower belt. Refer to the mower *Operator's Manual*.
4. Tighten the outer nut on spring eye bolt (Fig. 21).

**Note:** Check the spring length. The spring should measure 9–3/8 inch  $\pm$  1/8 inch (238 mm  $\pm$  3 mm) when installed. Adjust if it does not (Fig. 21).

5. Tighten the inner nut on spring eye bolt (Fig. 21).

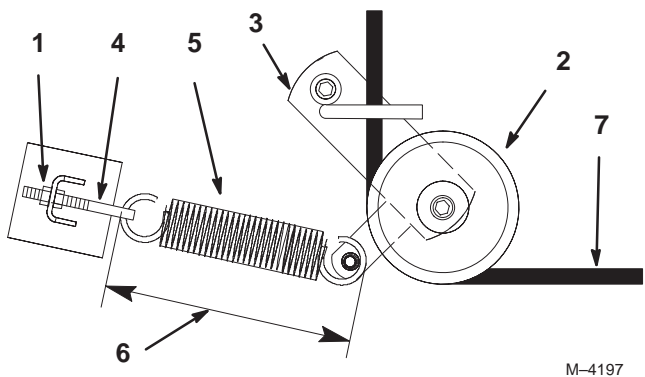


Figure 21

Top View

- |                    |   |
|--------------------|---|
| 1. Outer nut       | 5. Spring   |
| 2. Idler pulley    | 6. 9–3/8 inch $\pm$ 1/8 inch<br>(238 mm $\pm$ 3 mm) |
| 3. Idler arm       | 7. Mower belt                                       |
| 4. Spring eye bolt |   |

## Using the Grass Deflector

**Important** Make sure the grass deflector is installed when the bagger and tubes are removed.

! **Warning** !

Without the grass deflector, bagger tubes or complete bagger assembly mounted in place, you and others are exposed to blade contact and thrown debris. Contact with the rotating mower blade(s) and thrown debris will cause injury or death.

- Always install the grass deflector when removing the bagger and changing to side discharge mode.
- If the grass deflector is ever damaged, replace it immediately. The grass deflector routes material down toward the turf.
- Never put your hands or feet under the mower.
- Never try to clear the discharge area or mower blades unless you move the power take off (PTO) to *off* and rotate the ignition key to *off*. Also remove the key and pull the wire off of the spark plug(s).

1. When the bagger is to be used for dedicated bagging, leave the grass deflector off the machine.
  - Remember to install the grass deflector when changing to side discharge mode.
2. When the mower is switched between bagging and side discharge frequently, leave the grass deflector on the machine. The grass deflector will rest against the blower belt cover.

## Installing the Grass Deflector

**Important** Make sure the grass deflector is installed when the bagger and tubes are removed.

The grass deflector spring will have either an L end or a straight end (Fig. 22).

! **Warning** !

An uncovered discharge opening could allow the lawn mower to throw objects in the operator's or bystander's direction and result in serious injury. Also, contact with the blade could occur.

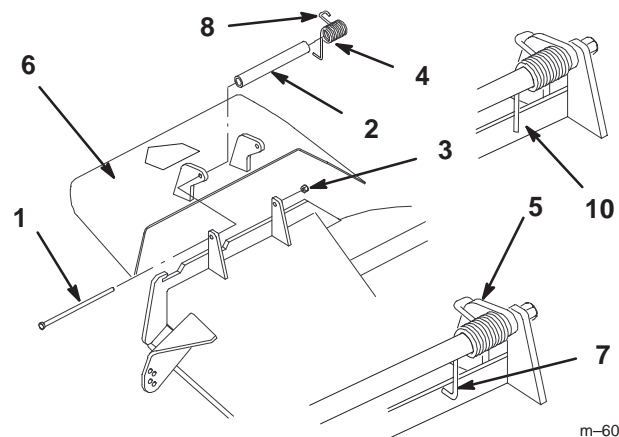
Never operate the lawn mower unless you install a cover plate, a mulch plate, grass deflector or a grass chute and catcher.

1. Place spacer and spring onto grass deflector. Place the L or the straight end of spring behind deck edge.

**Note:** Make sure the L or the straight end of spring is installed behind deck edge before installing the bolt as shown in figure 22.

2. Install bolt and nut. Place J hook end of spring around grass deflector (Fig. 22).

**Important** The grass deflector must be lowered down into position. Lift the deflector up to test that it lowers into the full down position.



**Figure 22**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Bolt</li> <li>2. Spacer</li> <li>3. Locknut</li> <li>4. Spring</li> <li>5. Spring installed</li> <li>6. Grass Deflector</li> </ol> | <ol style="list-style-type: none"> <li>7. L end of spring, place behind mounting bracket before installing bolt</li> <li>8. J hook end of spring</li> <li>9. Mounting bracket</li> <li>10. Straight end—possible style of spring</li> </ol> |
|--|---|





