



# Rotary Broom

## RB400

### Installation Instructions

**⚠ CAUTION**

Read Owner's Manual before operating or servicing rotary broom.

# SAFETY

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## SAFETY DEFINITIONS

### **WARNING**

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious personal injury.

### **CAUTION**

Indicates a potentially hazardous situation that, if not avoided, may result in minor to moderate injury. It may also be used to alert against unsafe practices.

**NOTE:** Indicates a situation or action that can lead to damage to your rotary broom or other property. Other useful information can also be described.

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## SAFETY PRECAUTIONS

Improper assembly and operation could cause personal injury and/or equipment and property damage. Read and understand labels, these instructions, and the Owner's Manual before assembling, operating, or making adjustments.

The machine is intended exclusively for use for brushing operations in property maintenance and snow clearance. Examples of intended use are: snow clearing; sidewalk, driveway and parking lot cleaning (with multi-purpose brushes); spring debris clean-up; dethatching; clearing debris from artificial turf; and leaf clean-up (with multi-purpose brushes).

### **WARNING**

- Always make sure personnel are clear of areas of danger when using equipment.
- Before working with the rotary broom, secure all loose-fitting clothing and unrestrained hair.
- Do not climb onto or ride on rotary broom.

### **CAUTION**

- Do not operate a rotary broom in need of maintenance.
- Before operating the rotary broom, reassemble any parts or hardware removed for cleaning or adjusting.
- Before operating the rotary broom, remove materials such as cleaning rags, brushes, and hand tools from the rotary broom.
- Tighten all fasteners according to the Torque Chart. Refer to Torque Chart for the recommended torque values.

**NOTE:** Lubricate grease fittings after each use. Use a good quality multipurpose grease.

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# SAFETY

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## PERSONAL SAFETY

- Wear only snug-fitting clothing while working on your rotary broom.
- Do not wear jewelry or a necktie, and secure long hair.
- Wear safety goggles to protect your eyes from dirt, dust, and flying debris.
- Be aware of and avoid pinch points when assembling and operating. Pinch points can exist around levers and when putting two parts together (during assembly).

## FIRE AND EXPLOSION

### **⚠ WARNING**

**Gasoline is highly flammable and gasoline vapor is explosive. Never smoke while working on vehicle. Keep all open flames away from gasoline tank and lines. Wipe up any spilled gasoline immediately.**

## VENTILATION

### **⚠ WARNING**

**Engine exhaust contains lethal fumes. Breathing these fumes, even in low concentrations, can cause death. Never operate an engine in an enclosed area without venting exhaust to the outside.**

## NOISE

Airborne noise emission during use is below 70 dB(A) for the rotary broom operator.

## VIBRATION

Operating rotary broom vibration does not exceed 2.5 m/s<sup>2</sup> to the hand-arm or 0.5 m/s<sup>2</sup> to the whole body.









# SAFETY

## TORQUE CHART

### ⚠ CAUTION

Read instructions before assembling. Fasteners should be finger tight until instructed to tighten according to torque chart. Use standard methods and practices when assembling rotary broom, including proper personal protective safety equipment.

To prevent damage to the equipment, do not tighten fasteners with plastic nuts or directly contacting plastic parts to the recommended torque. Tighten until it feels tight.

<b>Recommended Fastener Torque Chart</b>					
<b>Inch Fasteners Grade 5 and Grade 8</b>					
Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	 Grade 5	 Grade 8		 Grade 5	 Grade 8
1/4-20	8.4	11.9	9/16-12	109	154
1/4-28	9.7	13.7	9/16-18	121	171
5/16-18	17.4	24.6	5/8-11	150	212
5/16-24	19.2	27.3	5/8-18	170	240
3/8-16	30.8	43.6	3/4-10	269	376
3/8-24	35.0	49.4	3/4-16	297	420
7/16-14	49.4	69.8	7/8-9	429	606
7/16-20	55.2	77.9	7/8-14	474	669
1/2-13	75.3	106.4	1-8	644	909
1/2-20	85.0	120.0	1-12	704	995
<b>Metric Fasteners Class 8.8 and 10.9</b>					
Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	 Class 8.8	 Class 10.9		 Class 8.8	 Class 10.9
M6 x 1.00	7.7	11.1	M20 x 2.50	325	450
M8 x 1.25	19.5	26.9	M22 x 2.50	428	613
M10 x 1.50	38.5	53.3	M24 x 3.00	562	778
M12 x 1.75	67	93	M27 x 3.00	796	1139
M14 x 2.00	107	148	M30 x 3.50	1117	1545
M16 x 2.00	167	231	M33 x 3.50	1468	2101
M18 x 2.50	222	318	M36 x 4.00	1952	2701
These torque values apply to fasteners except those noted in the instructions.					

# ASSEMBLY INSTRUCTIONS

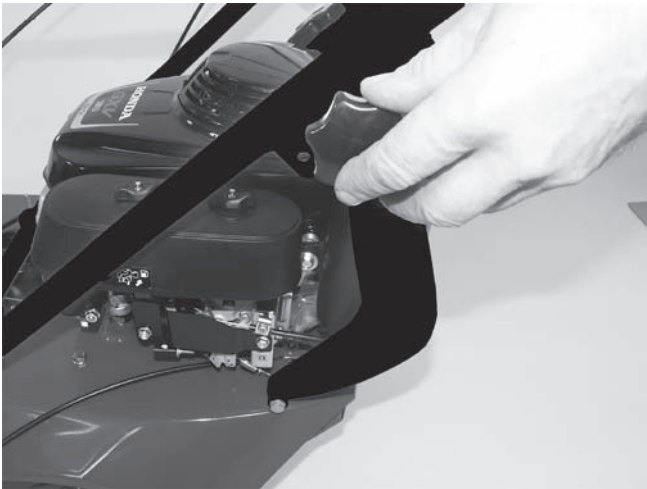
## ROTARY BROOM ASSEMBLY

Use metric tools to assemble the rotary broom. Two people are necessary for this procedure.

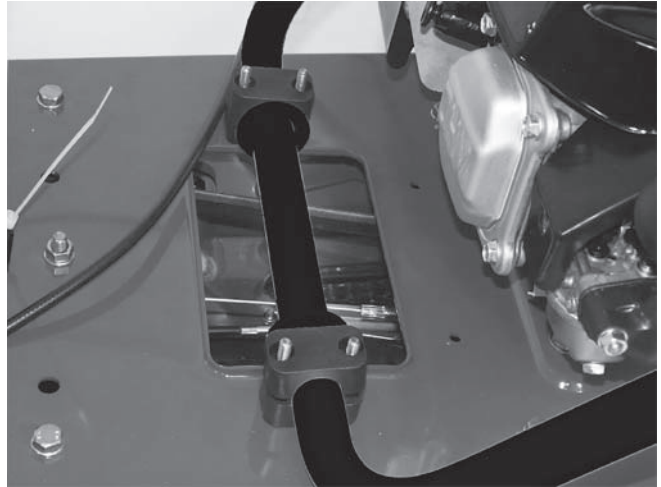
1. Rest the handlebar on the clamps.



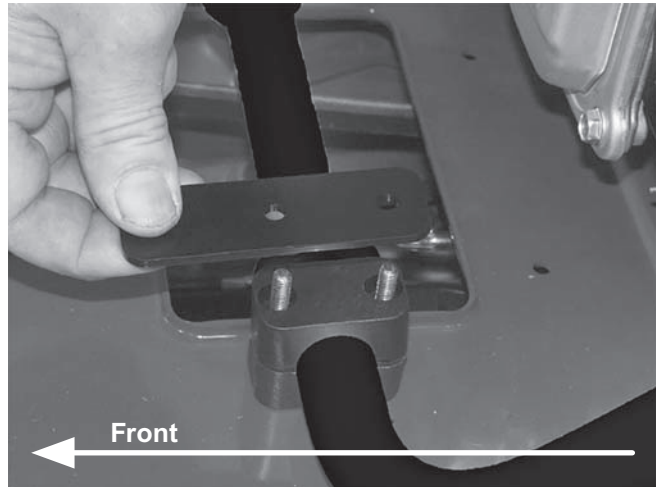
2. Mount handlebar to the supports with the knob.



3. Put the other half of the clamps onto the studs.



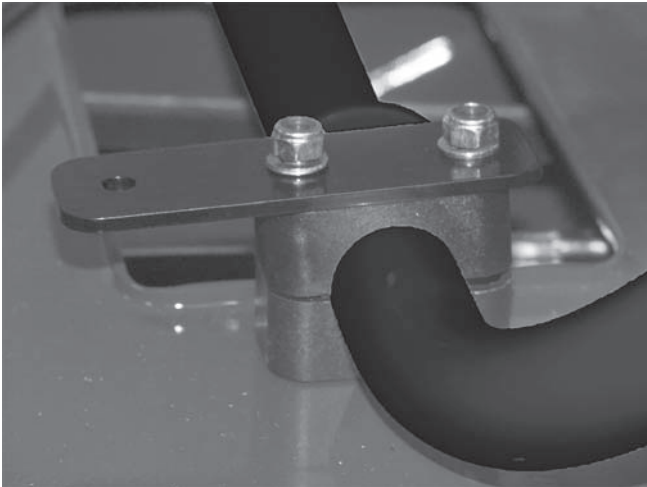
4. Put fixing plates on the studs. Position as shown.



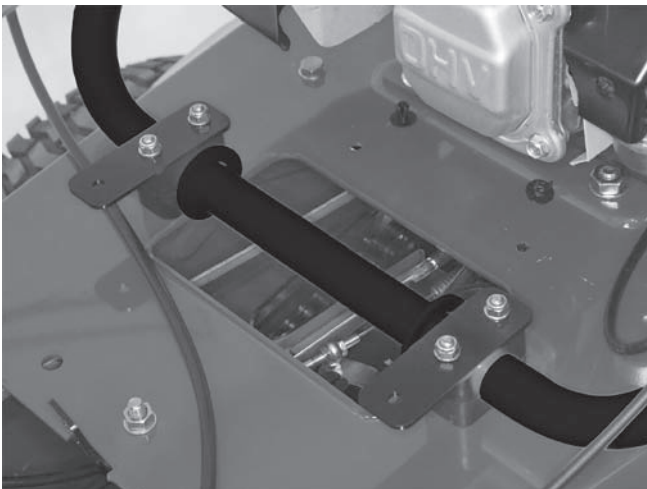
## ASSEMBLY INSTRUCTIONS

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5. Put M6 locknut and washer on the stud.



6. Tighten the nuts so the handlebars will still move, but not fall.



7. Using a 10 mm wrench, attach throttle lever with M6 x 65 mm cap screw, washer, and locknut.



8. Put right and left wheels on the drive axle and secure with the linchpin. Put the linchpin through the axle only. This is the freewheel position (see Owner's Manual for more information).



# ASSEMBLY INSTRUCTIONS

9. Support the machine at the front with a wooden block. Secure the rear wheels with chocks.



2. Push the sleeve through the wheel.



3. Position the support wheel as shown.



## Attach Support Wheel

1. Wheel with fasteners.



4. Push the M10 x 100 mm cap screw through and thread on the nut. Use a 17 mm wrench.



# ASSEMBLY INSTRUCTIONS

5. Use two 17 mm wrenches to tighten the fasteners.



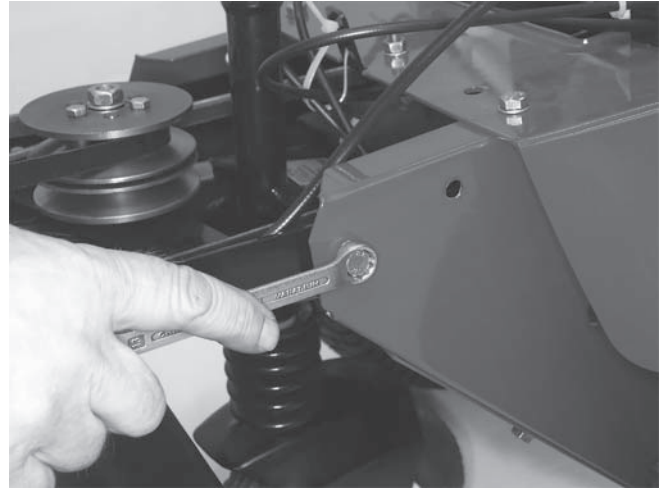
6. Completed.



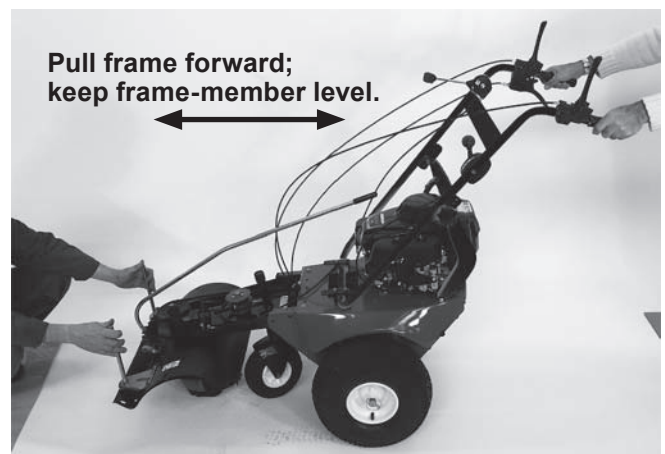
## Wheel Drive Housing/Brush Drive Extension

Have another person hold the machine firmly by the handlebars.

1. Remove the cap screws on both sides that hold the wheel drive housing to the brush drive extension. **DO NOT REUSE THE REMOVED HARDWARE.**



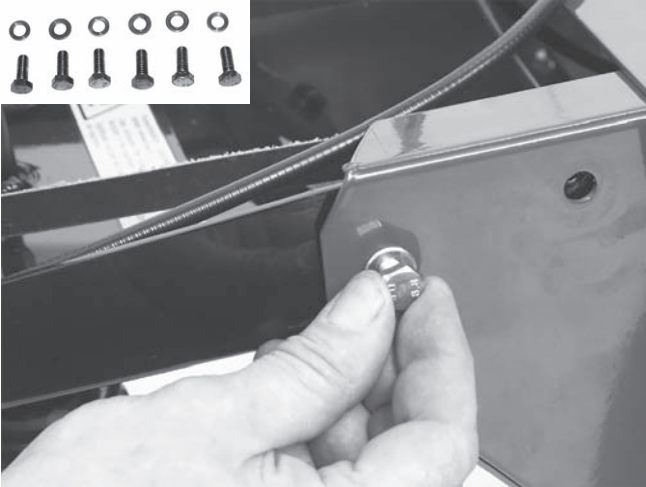
2. Remove the cap screws on both sides that hold the wheel drive housing to the brush drive frame. Pull the brush drive frame forward keeping the frame-member as level as possible and keeping the frame from scraping the cover. **DO NOT REUSE THE REMOVED HARDWARE.**





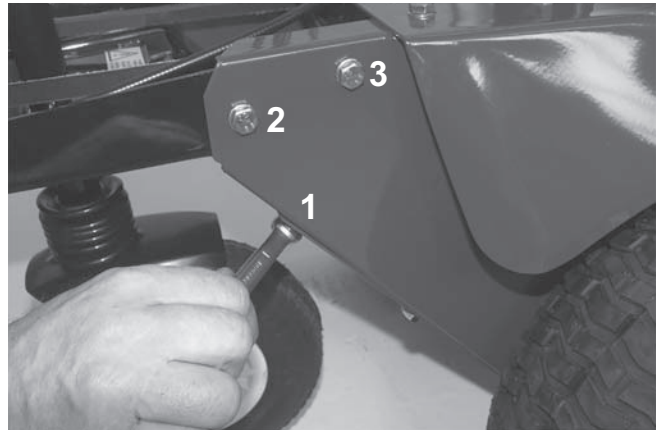
# ASSEMBLY INSTRUCTIONS

- Loosely preassemble the brushing subassembly to the axle drive housing with cap screws and washers. Begin at the front.

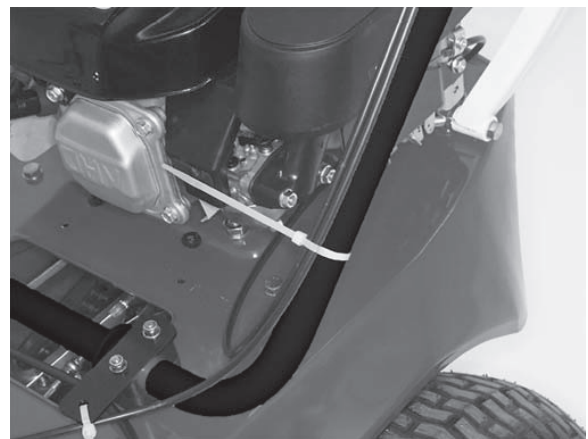


- Use a 13 mm wrench to tighten the fasteners that hold the brushing mechanism to the axle drive housing. Tighten in the order shown.

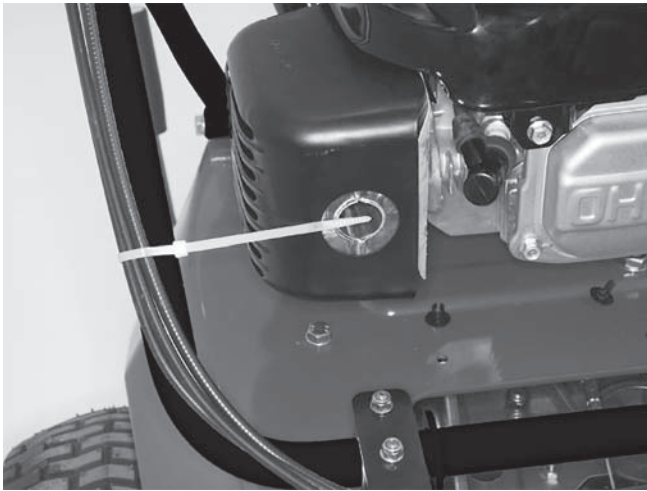
**IMPORTANT:** Tighten the bottom cap screws first, then tighten the cap screws on the side. Please note the order in which the fasteners are tightened. Otherwise, the machine is not exactly aligned and the drive belt could wear down the brush.



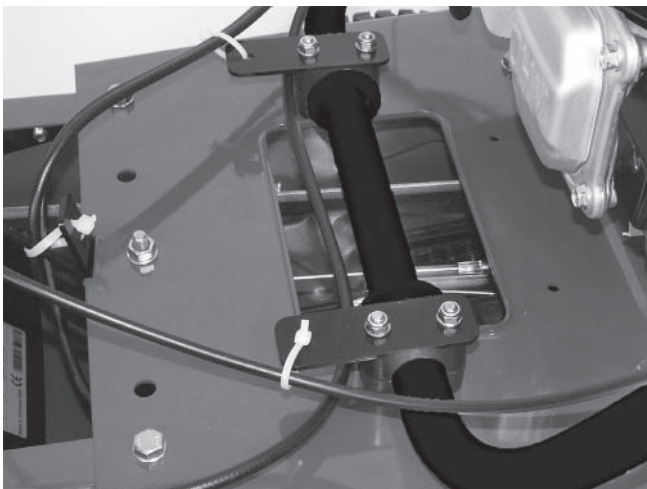
- Fix the cable to the handle bars with cable ties at the locations show. Trim off the excess when finished with all the cable ties.



# ASSEMBLY INSTRUCTIONS



The ties here must form a loop. Do not tighten completely. The cable must be able to move when the handle is folded.



## Attach the Brush Cover Side Panels

### 1. Parts



### 2. Position the side panel so that the holes are concentric.

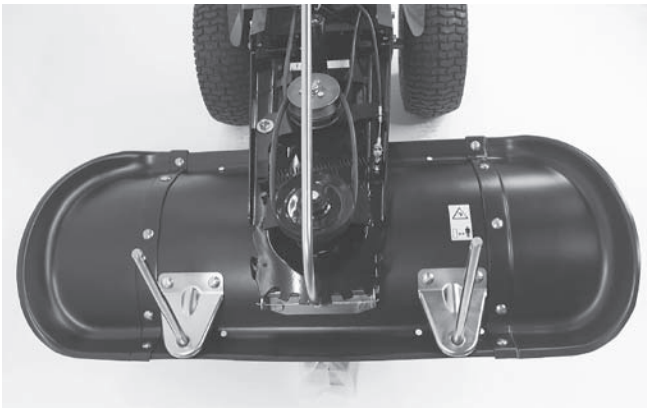


# ASSEMBLY INSTRUCTIONS

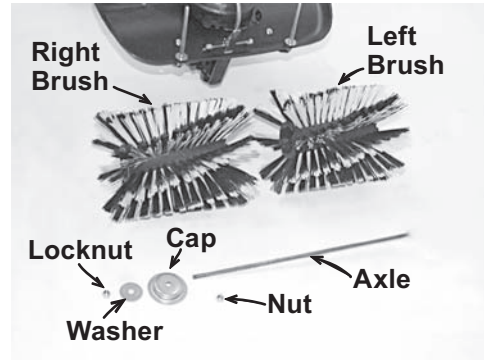
3. Push the cap screws through from above. Push the washers on from below, and screw on the nuts. Tighten with a 13 mm wrench.



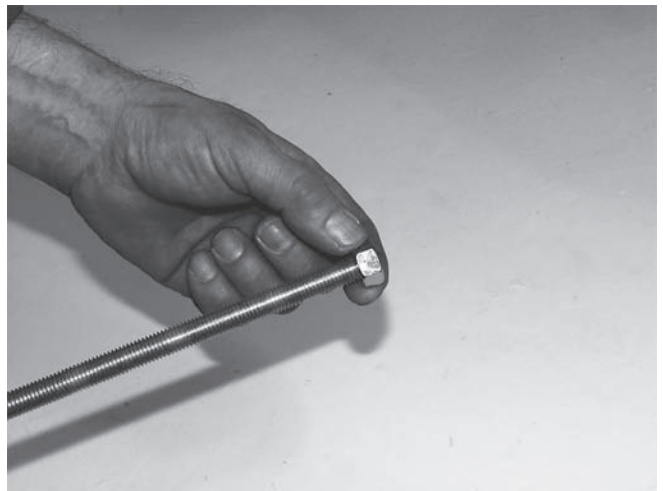
4. Repeat this procedure for the second panel.



## Installing the Brushes



1. Screw the nut onto the axle until about 3/4" extends beyond the nut.

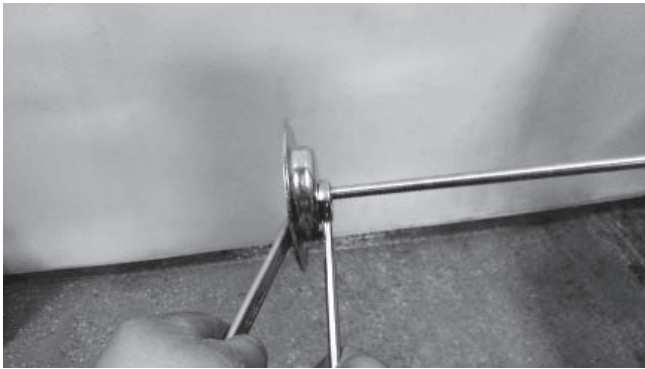


## ASSEMBLY INSTRUCTIONS

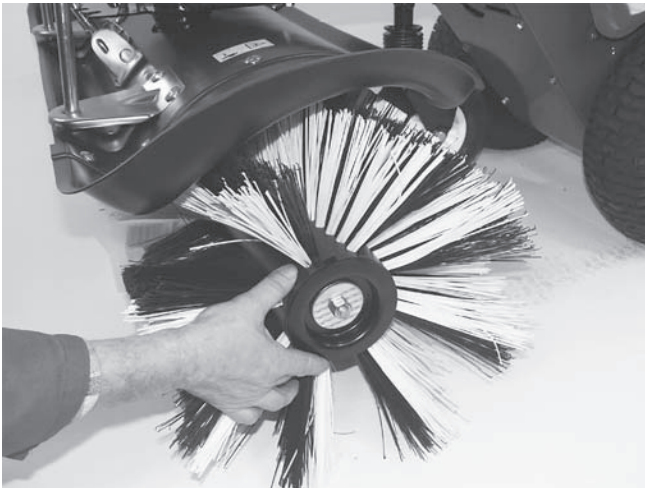
2. Put cap, washer, and locknut on the axle.



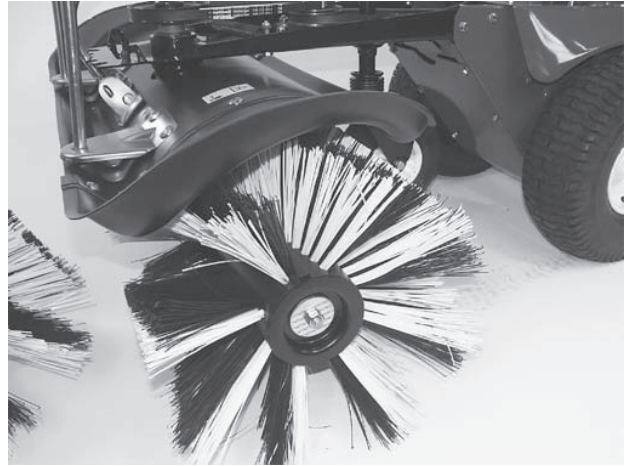
3. Tighten nuts to hold the cap and washer in place.



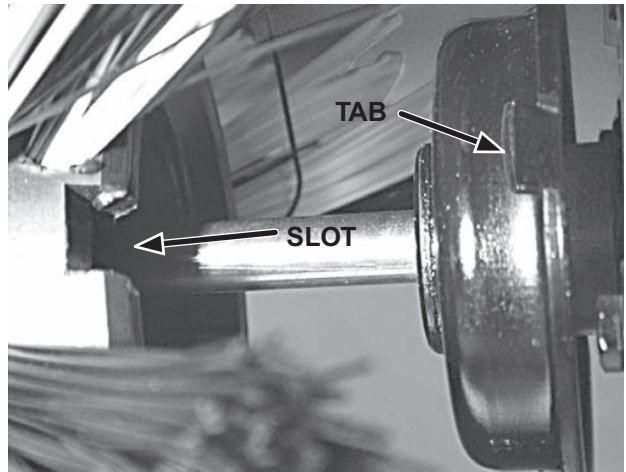
4. Put the axle with the cap, washer and right brush through the drive source (centered underneath the brush cover).



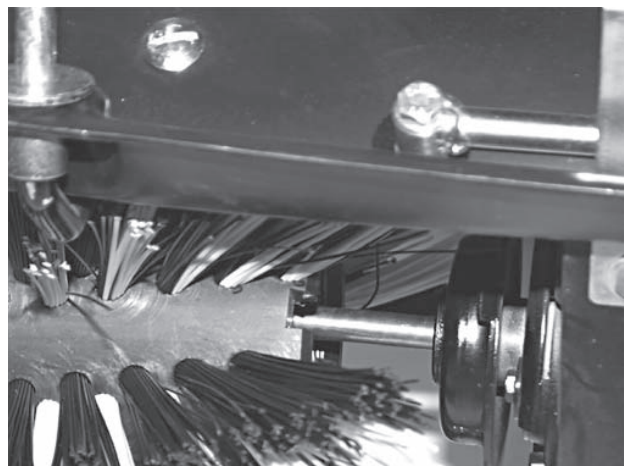
5. Put the axle with the cap, washer, and brush through drive source (centered underneath the brush cover).



6. In the center, the tab on the cap-gear should fit the slot on the brush cylinder.

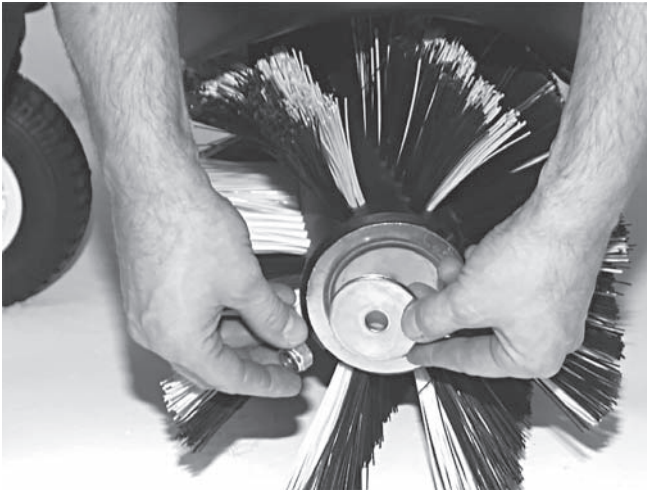


7. Put the left brush on. Make sure the brush is locked onto center cap-gear.

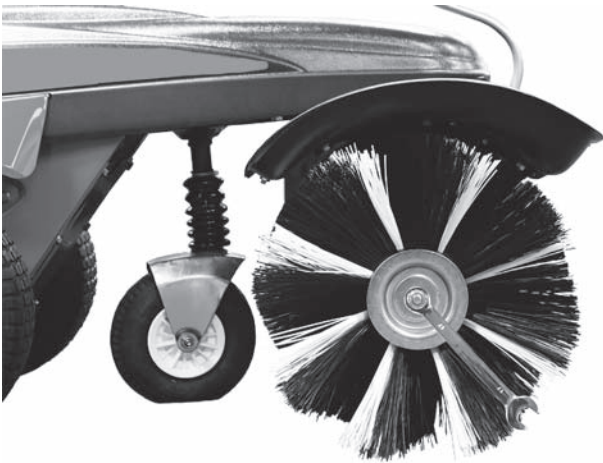


# ASSEMBLY INSTRUCTIONS

- Put the cap and washer on the end. Thread on locknut.

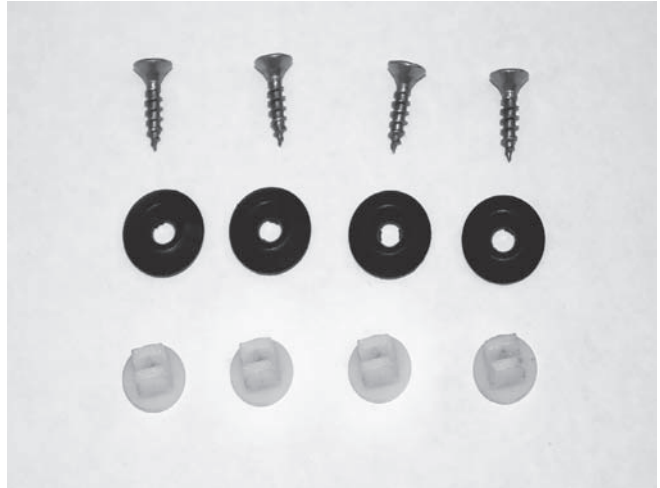


- Tighten the axle using two 19 mm wrenches.



## Install the Belt Cover

- Hardware needed: TORX® screws, countersink washers, and snap nuts.



- Installation of snap nuts.

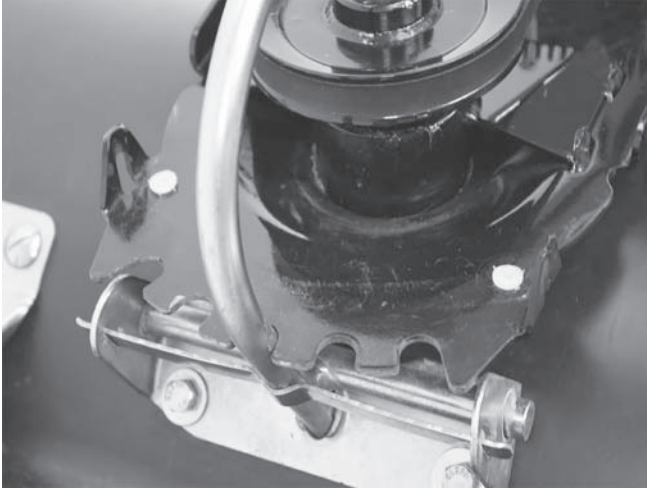


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## ASSEMBLY INSTRUCTIONS

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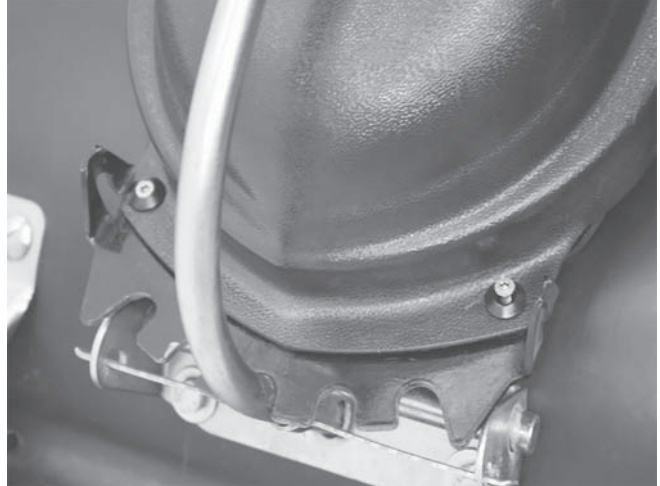
12. Location of snap nuts.



13. Set the brush at an angle. Slip the cover over the belt area and back so the snap Nuts can be seen through the holes in the cover.



14. Put TORX® screws with the countersink washers through the mounting holes on the cover and thread into the snap nuts.



15. Tighten.



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# ASSEMBLY INSTRUCTIONS

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## Install Height Adjustment Knob

Thread the height adjustment knob into the height adjustment mechanism: Put a lubricant on the threads. Push the threads through the rubber bushing. Feel around for the hole in the mechanism. Push down to ensure the threads are lined up. Make sure the knob is standing vertical. Begin tightening. Do not force the knob to tighten. Refer to "Adjusting Brush Height" for instructions to adjust the brush height.

## Install the Plow Blade

1. Hold plow at an angle. Lower plow over receiver bar. The bar will fit between the tabs on the plow.



2. Lower plow until the wheels rest on the ground.



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**IMPORTANT:** Now that assembly is finished, fill the motor with oil and fuel tank with unleaded gasoline. See Maintenance Instructions in Owner's Manual for oil-filling instructions.

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