

# SAFETY.CAT.COM™

## **MAINTENANCE INTERVALS**

Operation and Maintenance  
Manual Excerpt



# Operation and Maintenance Manual

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## **BR160, BR166, BR172, BR272 and BR378 Brush Cutters**

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SDB1-Up (BR160)  
SWB1-Up (BR166)  
TAB1-Up (BR172)  
DLY1-Up (BR272)  
RDN1-Up (BR378)

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## Maintenance Interval Schedule

**SMCS Code:** 6700

Ensure that all safety information, warnings, and instructions are read and understood before any operation or any maintenance procedures are performed.

The user is responsible for the performance of maintenance, including all adjustments, the use of proper lubricants, fluids, filters, and the replacement of components due to normal wear and aging. Failure to adhere to proper maintenance intervals and procedures may result in diminished performance of the product and/or accelerated wear of components.

Use mileage, fuel consumption, service hours, or calendar time, WHICH EVER OCCURS FIRST, in order to determine the maintenance intervals. Products that operate in severe operating conditions may require more frequent maintenance.

**Note:** Before each consecutive interval is performed, all maintenance from the previous interval must be performed.

### When Required

Blade Bolt - Check/Tighten ..... 46

### Daily

Blade - Inspect/Replace ..... 45

Frame Mounting Bracket - Inspect ..... 47

### Every 50 Service Hours or Monthly

Gearbox Oil Level - Check ..... 48

### Every 500 Service Hours or 1 Year

Gearbox Oil - Change ..... 47

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## Blade - Inspect/Replace

**SMCS Code:** 6060-040; 6060-510

### Inspect

Block the brush cutter away from the ground. Make sure that the brush cutter is securely blocked. Make sure that the hydraulic lines are disconnected from any machine. Connect the hydraulic lines together in order to ensure that no pressure exists in the system. Inspect the blades for dull conditions or damaged conditions.

If the blades are dull or the blades are damaged, replace the blades.

### Replace

In order to replace the blades, use one of the following procedures:

#### Carrier (Design A)

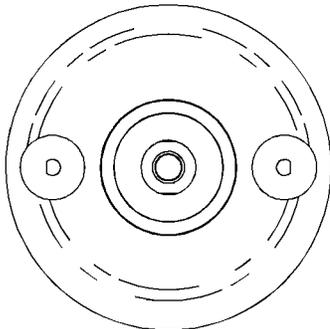


Illustration 43  
Carrier (Design A)

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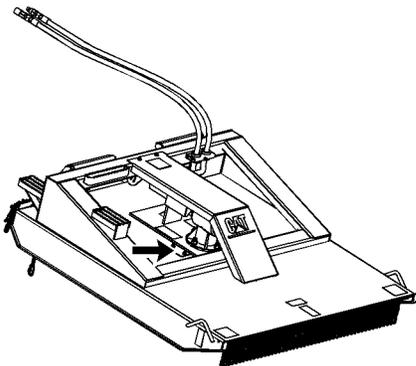


Illustration 44

g01149877

1. Remove the plate that covers the access hole on the top of the brush cutter.

2. Insert a socket through the access hole in order to remove each nut for each blade.
3. Remove blades from the brush cutter.
4. Clean new 264-9552 Pins, 271-2353 lockwashers, and 3D-4904 Locknuts with a cleaner/degreaser. Allow hardware to dry. Before assembly, verify that nothing is contaminating the bolts, lockwashers, locknuts, or hardware on the carrier assembly.
5. Apply 169-5464 Primer Loctite part #7649 to the bolt and nut threads per directions on label.
6. Apply either 154-9731 Thread Lock Loctite part # 271 (10 mil) or 155-0695 Thread Lock Loctite part # 271 (50 mil) in a circumferential band around the first 10 bolt threads in order to ensure full coverage of the mated threads after tightening.

The Loctite should be stored in a sealed container in a dry location between 8 °C (46 °F) and 21 °C (70 °F). Do not use the product past the expiration date that is printed on the bottle.

7. Assemble the new blade, the bolt, the lockwasher and the nut to the carrier. Torque the nuts to  $610 \pm 80$  N·m ( $450 \pm 59$  lb ft).
8. Confirm that blades rotate freely.
9. Attach a Special Instruction, SEHS7332, "Do Not Operate" warning tag or a similar warning tag to the Quick Disconnect of the Brush Cutter.

The thread lock must be allowed to cure at temperatures of at least 4 °C (39 °F) for a minimum of 24 hours.

**Note:** After the thread lock has cured, apply localized heat to the nut and the bolt in order to disassemble the nut and bolt. Heat the nut and bolt to approximately 250 °C (482 °F). Disassemble the nut while the nut is hot.

10. Install the plate that covers the access hole on the top of the brush cutter.

## Carrier (Design B)

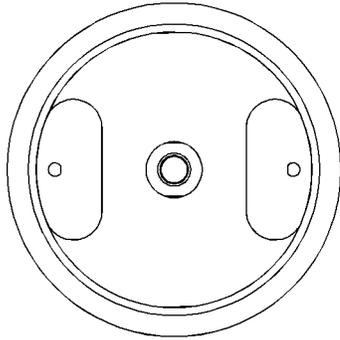


Illustration 45

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Carrier (Design B)

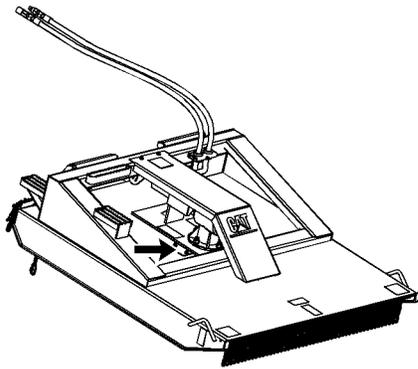


Illustration 46

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1. Remove the plate that covers the access hole on the top of the brush cutter.
2. Insert a socket through the access hole in order to remove each nut for each blade.
3. Remove blades from the brush cutter.
4. Position the new blades on the brush cutter. Replace the nuts.
5. Torque the nuts to  $1050 \pm 80$  N·m ( $775 \pm 60$  lb ft).

There is an optional torque method for this design of carrier. Tighten the nut to an initial torque of  $500$  N·m ( $370$  lb ft). Rotate the nut an additional (60 degrees) in order to achieve the required  $1050 \pm 80$  N·m ( $775 \pm 60$  lb ft) torque value.

6. Install the plate that covers the access hole on the top of the brush cutter.

## Blade Bolt - Check/Tighten

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**SMCS Code:** 6060-527-BC; 6060-535-BC

1. Block the brush cutter away from the ground. Make sure that the brush cutter is securely blocked. Disconnect the hydraulic lines from any machine. Connect the hydraulic lines together in order to ensure that pressure does not exist in the system.

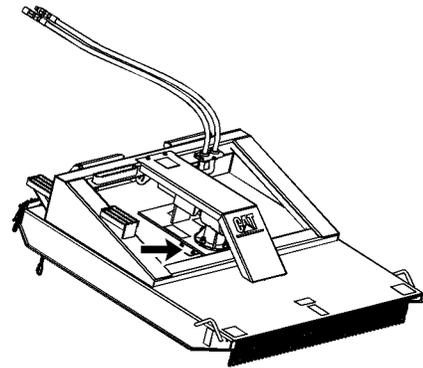


Illustration 47

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2. Inspect the pins that secure the blades to the brush cutter for looseness. The nuts are located under the access plate on top of the deck for the brush cutter. Insert a socket through the access hole in order to tighten the pins.
3. Refer to table 7 in order to inspect the tightness of the blade and the tightness of the pins. If the pins are loose, the blade must be removed. Thoroughly clean the blade. Inspect the blade for dull conditions or damaged conditions. Refer to Operation and Maintenance Manual, "Blade-Inspect/Replace" in order to reassemble the blade.

Table 7

Carrier Assembly	Static Inspection Torque <sup>(1)</sup>
Carrier (Design A)	480 N·m (350 lb ft)
Carrier (Design B)	900 N·m (660 lb ft)

<sup>(1)</sup> Torque values for assembly are referenced in Operation and Maintenance Manual, "Blade-Inspect/Replace".

**Reference:** Refer to Operation and Maintenance Manual, "Blade-Inspect/Replace" in order to determine the design of your carrier assembly.

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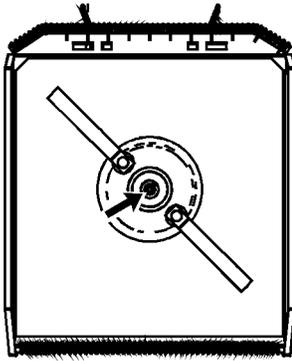


Illustration 48

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4. Inspect the center bolt that secures the carrier assembly to the brush cutter. If the center bolt appears loose or the cotter pin is missing, refer to Service Manual, RENR4483 for proper reassembly of the carrier assembly to the brush cutter.
5. Install the plate that covers the access hole on the top of the brush cutter.

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## Frame Mounting Bracket - Inspect

SMCS Code: 7050-040-MT

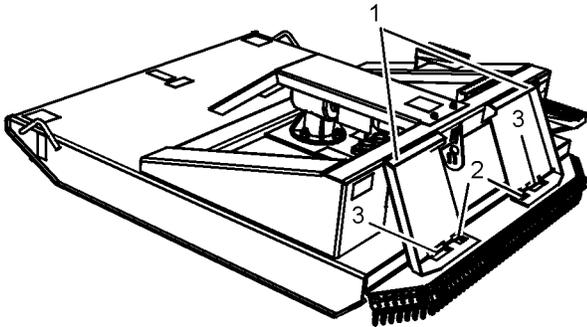


Illustration 49

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Inspect upper angled plate (1) and ensure that the plate is not bent or otherwise damaged. Inspect holes (2) for wear and for damage. Inspect lower angled plate (3) and ensure that the plate is not bent or otherwise damaged. Consult your Caterpillar dealer if any wear is suspected or any damage is suspected.

## Gearbox Oil - Change

SMCS Code: 79P3-044-OC

### NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, NENG2500, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

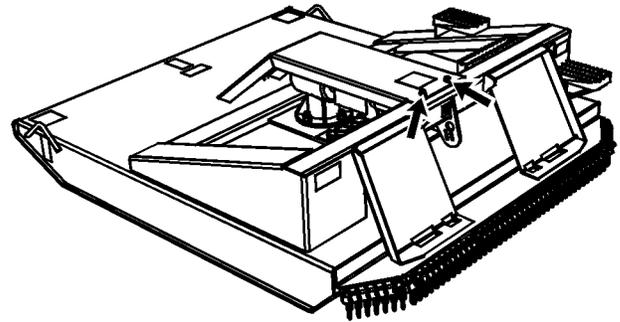


Illustration 50

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1. Remove the bolts from the rear of the gearbox cover.
2. Open the cover in order to gain access to the filler plug on the gearbox.

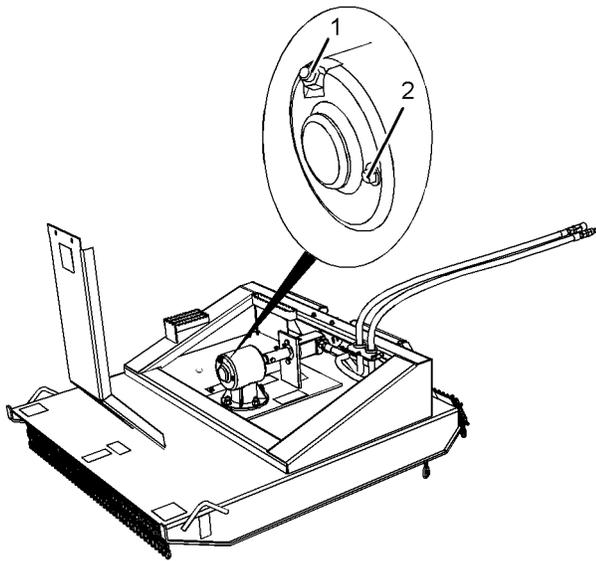


Illustration 51

g01150965

3. Remove the plug for oil level hole (2). Remove the filler plug for filler plug hole (1).
4. Use a suitable vacuum pump to extract the oil from the gearbox. Extract oil through filler plug hole (1). Continue to extract oil from the gearbox until no oil can be extracted.
5. Fill the gearbox with 85W140 oil. Fill the gearbox through filler plug hole (1) until the oil level is at the same level as oil level hole (2).
6. Clean the plug for oil level hole (2) and install the plug for oil level hole (2). Tighten the plug for oil level hole (2) to 16 N·m (12 lb ft).
7. Clean the filler plug for filler plug hole (1) and install the filler plug for filler plug hole (1). Tighten the filler plug for filler plug hole (1) to 60 N·m (44 lb ft).
8. Close the cover and install the bolts in the rear of the cover.

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## Gearbox Oil Level - Check

SMCS Code: 79P3-535-OC

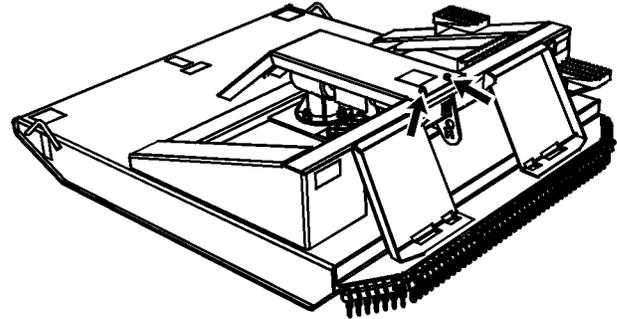


Illustration 52

g01149712

1. Remove the bolts from the rear of the gearbox cover.
2. Open the cover in order to gain access to the filler plug on the gearbox.

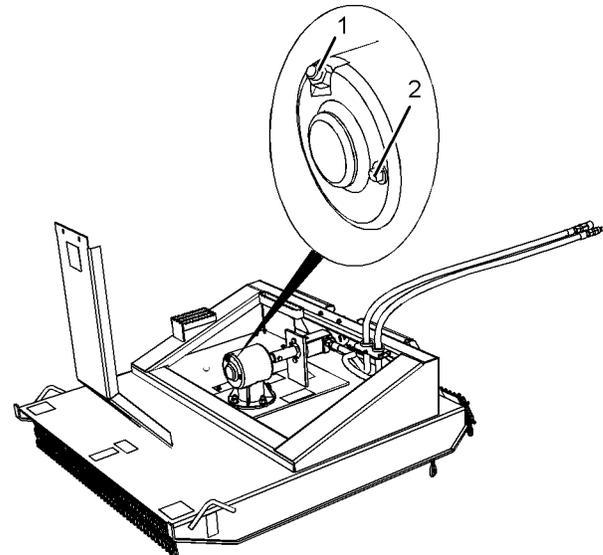


Illustration 53

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3. Remove the plug from oil level hole (2).
4. The oil level should be at the same level as oil level hole (2). Add 85W140 oil through filler plug hole (1), if necessary.
5. Clean the plug for the oil level hole and install the plug for the oil level hole. Tighten the plug for the oil level hole to 16 N·m (12 lb ft). Clean the filler plug for the filler plug hole and install the filler plug for the filler plug hole. Tighten the filler plug for the filler plug hole to 60 N·m (44 lb ft).

6. Close the cover and install the bolts in the rear of the cover.