

# M1 Series Windrower

## LIFT CYLINDER SEAL KITS (MD #141184 and MD #141185)

### INSTALLATION INSTRUCTIONS

The Lift Cylinder Seal kits are used to repair the lift cylinders on M1 Series Windrowers. Seal kit MD #141184 is for the master lift cylinder, and seal kit MD #141185 is for the slave lift cylinder. A list of parts included in each kit is provided.

- **Seal kit (MD #141184)** – contains the parts required to repair both the current master lift cylinder (MD #209789) and the superseded master lift cylinder (MD #208665).
- **Seal kit (MD #141185)** – contains the parts required to repair both the current slave lift cylinder (MD #209790) and the superseded slave lift cylinder (MD #208666).

**IMPORTANT:** The current cylinders have a different rod seal and wiper than the superseded cylinders. The rod seals and wipers are **NOT** interchangeable. When repairing the cylinders, select the parts from the kit based on what were originally installed.

**NOTE:** Keep your MacDon publications up-to-date. The most current version of this instruction can be downloaded from our Dealer-only site (<https://portal.macdon.com>) (login required).

#### **Conventions**

The following conventions are used in this document:

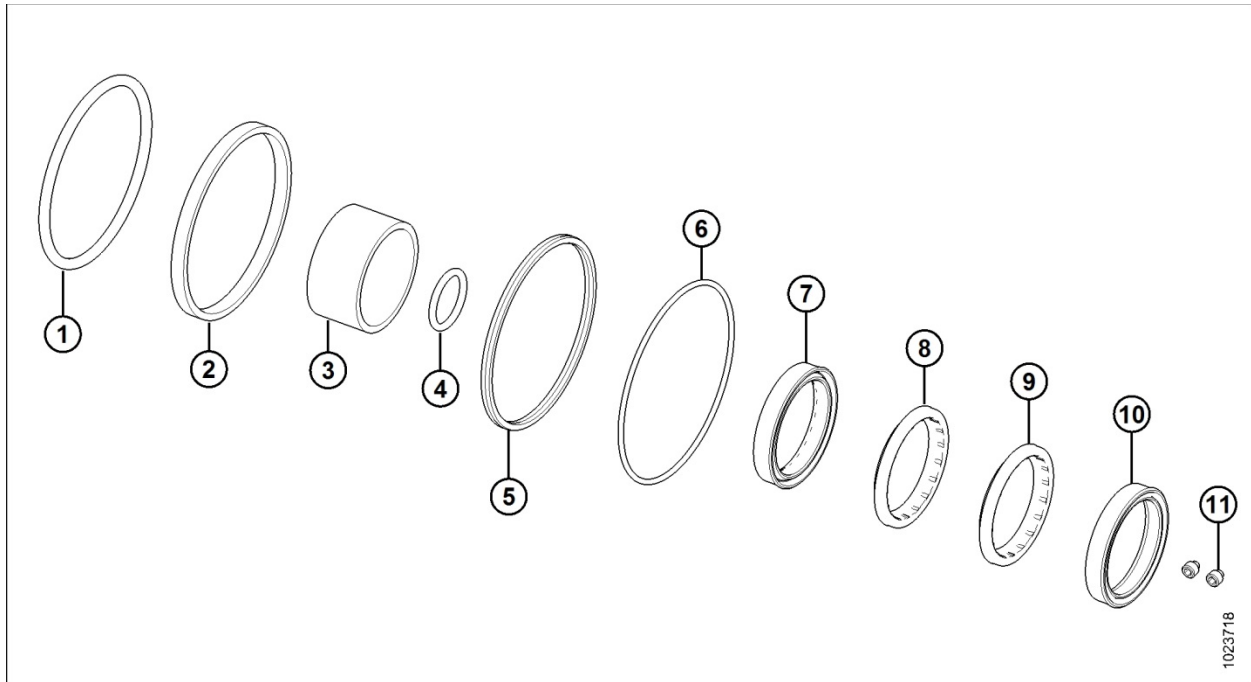
- Right and left are determined from the operator's position, facing forward with the windrower in cab-forward position.
- Unless otherwise noted, use the standard torque values provided in the windrower operator's manual and technical manual.

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**Parts List**

The following parts are included in the kits.

**Seal Kit (MD #141184)**



**Figure 1: Parts Included in Kit (MD #141184)**

Ref	Part Number	Description	Quantity
	141184	KIT – LIFT CYLINDER SEALS, MASTER	1
			1
1	NSS <sup>1</sup>	O-RING	1
2	NSS <sup>1</sup>	BEARING – WEAR RING	1
3	NSS <sup>1</sup>	BEARING – WEAR RING	1
4	NSS <sup>1</sup>	O-RING	1
5	NSS <sup>1</sup>	O-RING, DUAL SEAL	1
6	NSS <sup>1</sup>	O-RING	1
7	NSS <sup>1</sup>	SEAL – ROD, U-CUP (BLUE-GREEN) <sup>2</sup>	1
8	NSS <sup>1</sup>	SEAL – WIPER (BLUE-GREEN) <sup>2</sup>	1
9	NSS <sup>1</sup>	SEAL – WIPER (BLACK) <sup>3</sup>	1
10	NSS <sup>1</sup>	SEAL – ROD, U-CUP (BLUE) <sup>3</sup>	1
11	NSS <sup>1</sup>	SCREW – SET, HEX SOCKET <sup>3</sup>	2

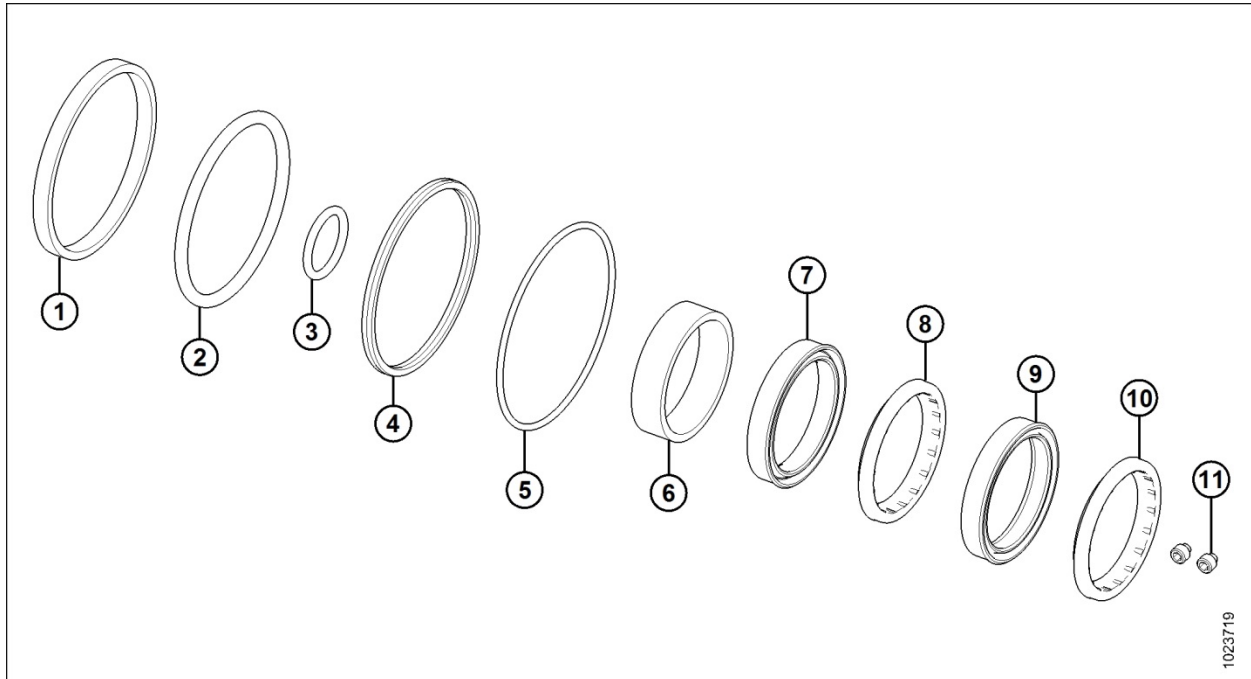
<sup>1</sup> Not serviced separately

<sup>2</sup> For current master lift cylinder (MD #209789)

<sup>3</sup> For superseded master lift cylinder (MD #208665)

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**Seal Kit (MD #141185)**



**Figure 2: Parts Included in Kit (MD #141185)**

Ref	Part Number	Description	Quantity
	141185	KIT – LIFT CYLINDER SEALS, SLAVE	1
			1
1	NSS <sup>4</sup>	BEARING – WEAR RING	1
2	NSS <sup>4</sup>	O-RING	1
3	NSS <sup>4</sup>	O-RING	1
4	NSS <sup>4</sup>	O-RING, DUAL SEAL	1
5	NSS <sup>4</sup>	O-RING	1
6	NSS <sup>4</sup>	BEARING – WEAR RING	1
7	NSS <sup>4</sup>	SEAL – ROD, U-CUP (BLUE-GREEN) <sup>5</sup>	1
8	NSS <sup>4</sup>	SEAL – WIPER (BLUE-GREEN) <sup>5</sup>	1
9	NSS <sup>4</sup>	SEAL – ROD, U-CUP (BLUE) <sup>6</sup>	1
10	NSS <sup>4</sup>	SEAL – WIPER (BLACK) <sup>6</sup>	1
11	NSS <sup>4</sup>	SCREW – SET, HEX SOCKET <sup>6</sup>	2

<sup>4</sup> Not serviced separately

<sup>5</sup> For current slave lift cylinder (MD #209790)

<sup>6</sup> For superseded slave lift cylinder (MD #208666)

# M1 Series Windrower LIFT CYLINDER SEAL KITS (MD #141184 and MD #141185) INSTALLATION INSTRUCTIONS

## Installation Instructions

The seal replacement instructions are the same for the master lift cylinder and the slave lift cylinder. However, some parts have different diameters so ensure you have the correct seal kit for the cylinder being repaired.

- **Seal kit (MD #141184)** – contains the parts required to repair both the current master lift cylinder (MD #209789) and the superseded master lift cylinder (MD #208665).
- **Seal kit (MD #141185)** – contains the parts required to repair both the current slave lift cylinder (MD #209790) and the superseded slave lift cylinder (MD #208666).

**IMPORTANT:** The current cylinders have a different rod seal and wiper than the superseded cylinders. The rod seals and wipers are **NOT** interchangeable. When repairing the cylinders, select the parts from the kit based on what were originally installed.

## Disassembling Lift Cylinder

1. Thoroughly clean outside of cylinder assembly.
2. Securely clamp cylinder base end into a vise.
3. **Superseded cylinders (MD #208665) and (MD #208666) only:** Remove two setscrews (A) that secure the gland (B) to the cylinder body.

**NOTE:** The current cylinders (MD #209789) and (MD #209790) do not have two setscrews in the cylinder body.

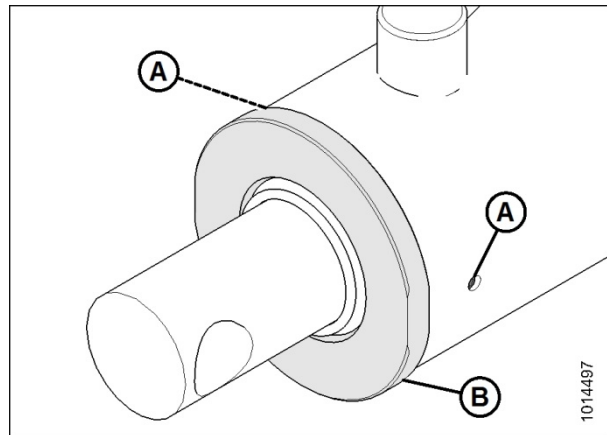


Figure 3: Cylinder Body

4. Using a gland wrench in holes (A) or an appropriate spanner across flats (B), loosen in a clockwise direction and remove gland end (C), complete with piston rod and piston.

**IMPORTANT:** Use caution not to damage cylinder body.

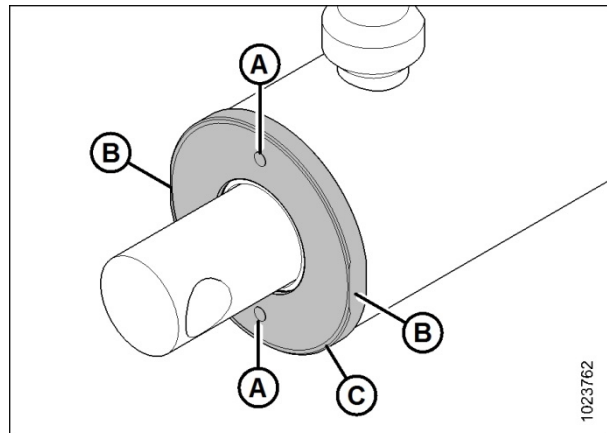
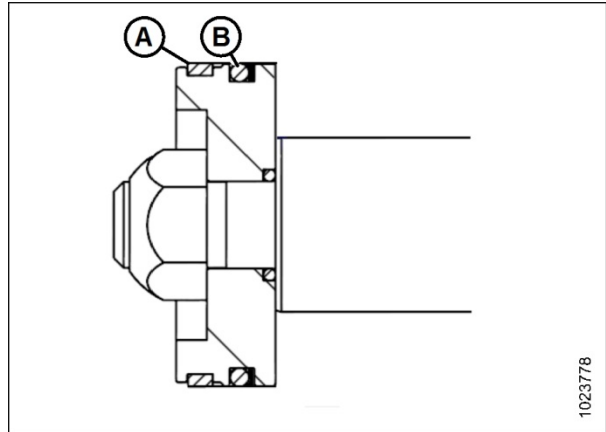


Figure 4: Cylinder Body

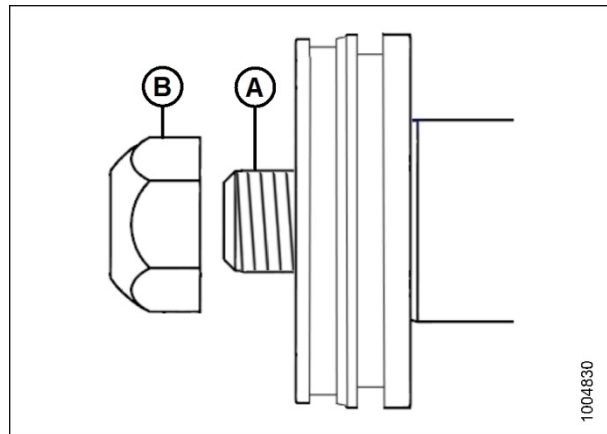
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5. Remove wear ring (A) and O-ring (B) from piston.



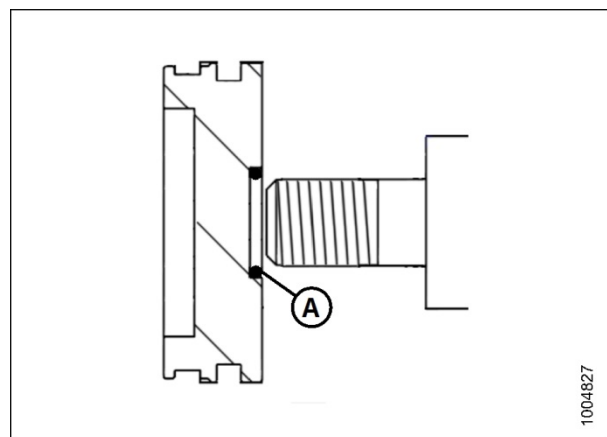
**Figure 5: Piston End**

6. Remove lock nut (B) from piston rod (A).



**Figure 6: Piston Lock Nut**

7. Remove piston to gain access to O-ring (A), and remove O-ring.



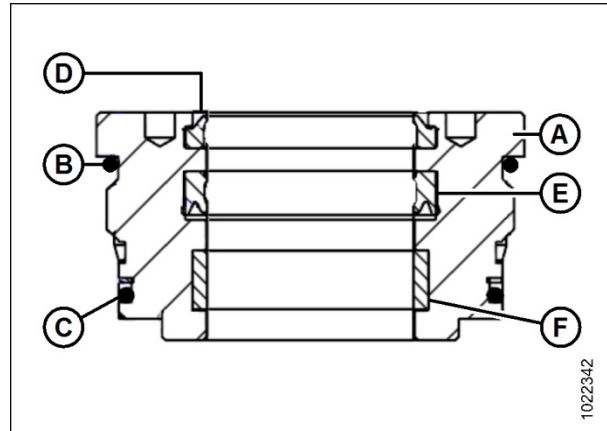
**Figure 7: Piston O-Ring**

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8. Slide gland end (A) over base of rod to separate from rod, and set piston rod assembly aside.
9. Using a pick, remove gland end O-ring (B).
10. Remove dual seal O-ring (C).

**NOTE:** The superseded cylinders (MD #208665) and (MD #208666) have an O-ring and backup washer at location (C) instead of the dual seal O-ring. The new dual seal O-ring included in the seal kit is backwards compatible.

11. Remove wiper (D) and rod seal (E).
12. Remove wear ring (F).



**Figure 8: Gland End**

13. Thoroughly clean all parts, and remove all nicks and burrs with emery cloth.

**NOTE:** Abrasive can be dulled if too coarse by using it on a clean ferrous metal surface first. This will dull the tooth slightly and allow for a smoother finish.

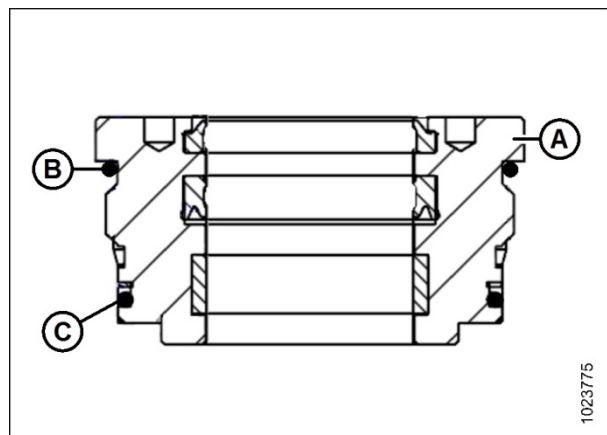
14. Blow out all extension tubes or inlet ports after cleaning to remove any residual solvent.
15. Inspect inside cylinder bore for excessive wear or scoring.
16. Inspect outside of rod for nicks, scratches, or scoring.

### Assembling Lift Cylinder

Ensure you have the correct seal kit for the cylinder being repaired. Seal kit (MD #141184) is for the master lift cylinder, and seal kit (MD #141185) is for the slave lift cylinder.

**IMPORTANT:** Take care not to damage new seals when assembling.

1. Verify that all parts are clean. Lightly oil metal parts and seals prior to reassembly.
2. Install new O-ring (B) into gland end (A).
3. Install new dual seal O-ring (C).



**Figure 9: Gland End**

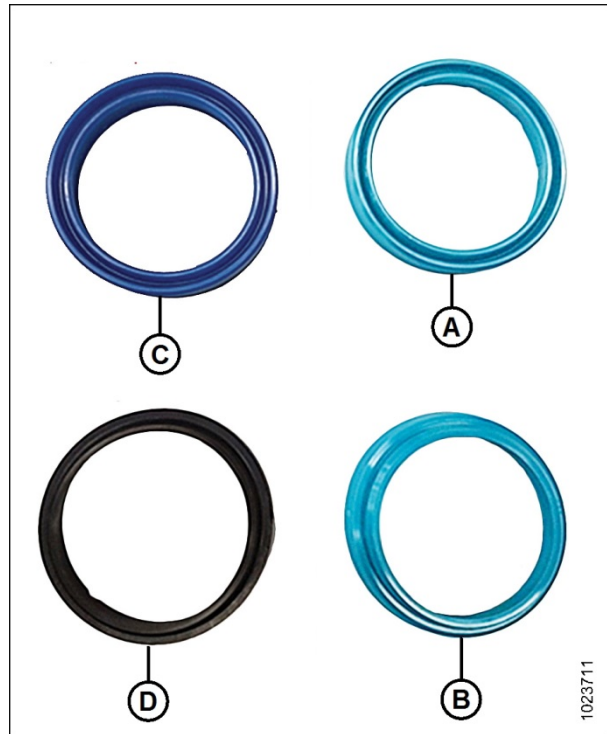
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4. Identify correct rod seal and wiper in seal kit. Refer to Figure 10: Rod Seals and Wipers.

If repairing current cylinder (MD #209789 or MD #209790 [cylinder without setscrews that secure the gland]), locate rod seal (A) (blue-green) and wiper (B) (blue-green).

If repairing superseded cylinder (MD #208665 or MD #208666), locate rod seal (C) (blue) and wiper (D) (black).

**IMPORTANT:** The above parts are **NOT** interchangeable; select the rod seal and wiper based on what was originally installed.



**Figure 10: Rod Seals and Wipers**

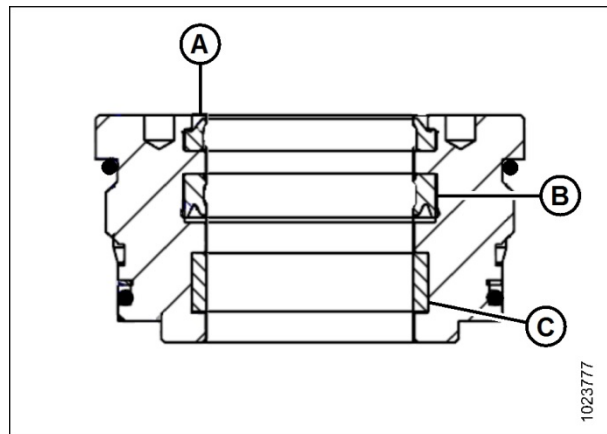
**A - Rod Seal (Blue-Green):** For Cylinders MD #209789 and MD #209790

**B - Wiper (Blue-Green):** For Cylinders MD #209789 and MD #209790

**C - Rod Seal (Blue):** For Cylinders MD #208665 and MD #208666

**D - Wiper (Black):** For Cylinders MD #208665 and MD #208666

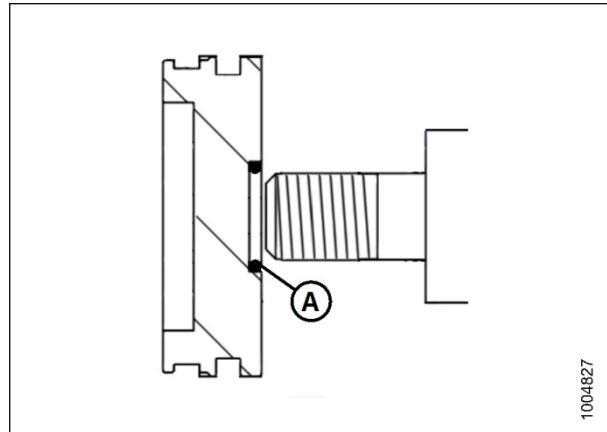
5. Install new wiper (A) and orient as shown (lip out).
6. Install new rod seal (B) and orient as shown.
7. Install new wear ring (C).
8. Lightly oil the piston rod.
9. Carefully slide gland end over piston rod.



**Figure 11: Gland End**

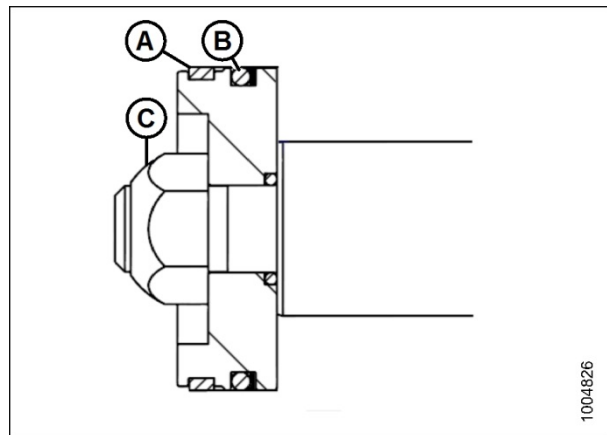
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10. Install new O-ring (A) on piston.
11. Slide piston onto rod.



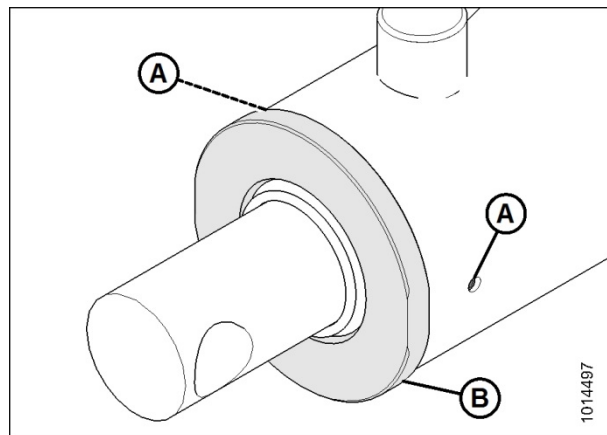
**Figure 12: Installing O-Ring and Piston**

12. Install top lock nut (C) and torque to 41 Nm (30 lbf-ft).
13. Install new wear ring (A).
14. Install new O-ring (B).



**Figure 13: Piston Lock Nut**

15. Oil outside of piston and carefully insert into barrel assembly. It may be necessary to use a sleeve to protect seals when inserting piston into barrel.
16. Using a gland wrench or spanner, tighten gland (B).
17. **Superseded cylinders (MD #208665 and MD #208666) only:** Install two setscrews (A) that secure the gland to the cylinder body. Use Loctite® 263 on setscrews.  
**IMPORTANT:** Once hoses are connected, cycle cylinder and check for leaks.



**Figure 14: Cylinder Body**