



Dirt and Rock Stakes

2024 and 4045 Directional Drill

Model No. 23812
 Model No. 23812E
 Model No. 23813
 Model No. 23813E
 Model No. 23814
 Model No. 23814E
 Model No. 23815
 Model No. 23815E

Installation Instructions

⚠ WARNING

CALIFORNIA **Proposition 65 Warning**

This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects, or reproductive harm.

Loose Parts

Use the chart below to verify that all parts have been shipped.

Description	Qty.	Use
2024 Dirt stakes	2	Install the stakes on the 2024 directional drill.
2024 Rock stakes	2	
Coupler	2	
Stake pin	2	
O-ring	2	
Locknut (M12)	8	
Bolt (M12-1 3/4 x 80 mm)	8	
Grease fitting	2	
Stake guide	2	
Guide ring	2	
Bolt (M8-1 1/4 x 20 mm)	8	
Rock or Dirt stake	2	Install the stakes for the 4045 directional drill.
Guide ring	2	
Stake guide	2	
Bolts (M10-1 1/2 x 25 mm)	6	



Installing the Stakes on the 2024 Directional Drill

Preparing the Machine and Installing the Coupler

Note: Having 2 people or a lifting mechanism makes it easier to install the stakes.

1. Position the thrust frame 25.4 cm (12 inches) off the ground, with the stakes in the up position.
2. Turn off the engine and the battery disconnect switch.
3. If your machine has a cage, remove the stake-down cage assembly.
4. While holding the stakes, remove the O-rings and pins securing the stakes to the motors (Figure 1).

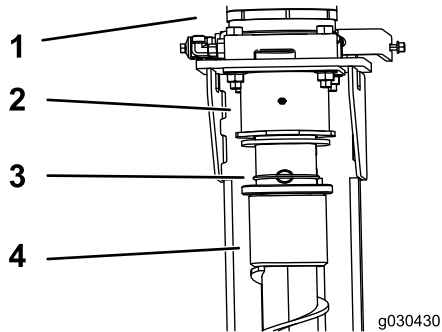


Figure 1

- | | |
|------------|--|
| 1. Motor | 3. Pin and O-ring (pin and e-clip on 4045) |
| 2. Coupler | 4. Stake |

5. Remove the existing stakes.
6. Remove the existing couplers and install the new couplers using 8 bolts (M12-1 3/4 x 80 mm), 8 locknuts (M12), and 2 grease fittings (Figure 2).

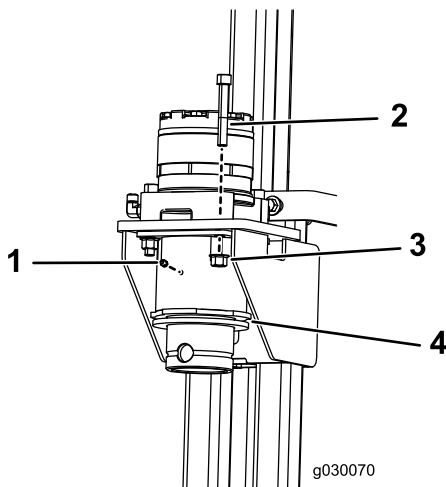


Figure 2

- | | |
|-------------------|------------------|
| 1. Grease fitting | 3. Locknut (M12) |
| 2. Bolt (M12) | 4. Coupler |

7. Torque the bolts to 127 to 155 N-m (94 to 114 ft-lb).
8. Pump grease into the fittings until grease begins to ooze out of the bearings (approximately 3 pumps) and wipe up any excess grease.

Installing the Dirt Stakes on the 2024 Directional Drill

Install the new stakes by aligning the hole in the stake with the hole in the motor coupler and secure it with the O-rings and pins included in this kit (Figure 3).

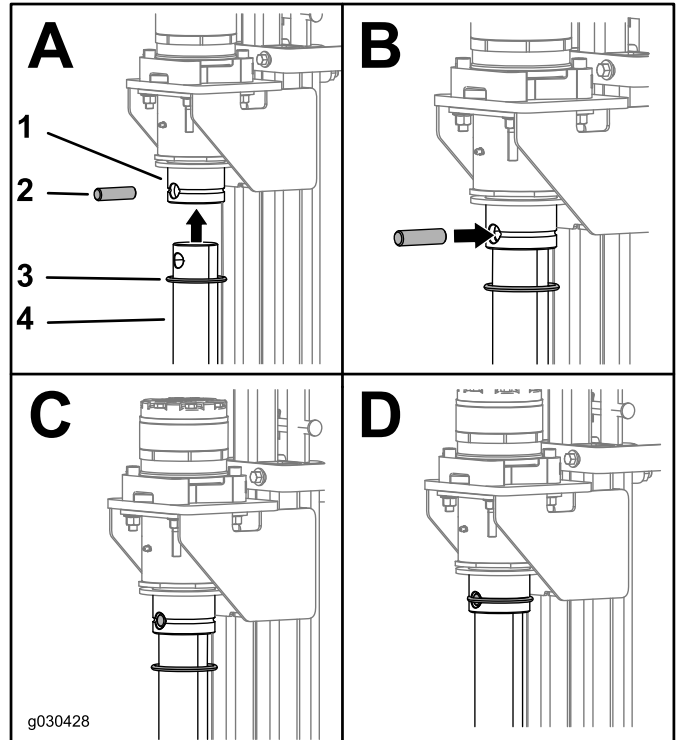


Figure 3

- | | |
|------------|-----------|
| 1. Coupler | 3. O-ring |
| 2. Pin | 4. Stake |

If your machine has a cage, install the cage assembly and latch the cage door.

Installing the Rock Stakes on the 2024 Directional Drill

1. Secure the stake guide onto the guide ring using the 8 bolts (M8) (Box A of [Figure 4](#)).

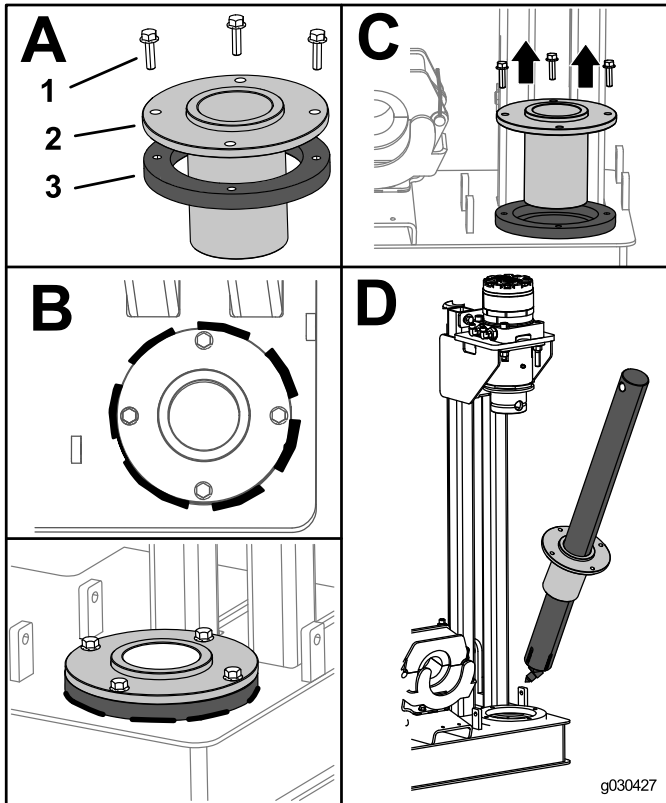


Figure 4

1. Bolts (M8)
 2. Stake guide
 3. Guide ring
2. Place the assembly into the hole of the thrust frame foot.
 3. Align the bolt heads so that they are square with the foot.
 4. Weld the guide ring onto the machine using 7 equally spaced 5 cm by 0.64 cm (2 inch by 0.25 inch) welds as shown in Box B of [Figure 4](#).
 5. Remove the bolts and stake guide (Box C of [Figure 4](#)).
 6. Paint the welded area with black paint.
 7. Place the stake guide on the stake and guide the stake into the guide ring on the machine (Box D of [Figure 4](#)).
 8. Install the new stakes by aligning the hole in the stake with the hole in the motor coupler and secure it with the O-rings and pins included in this kit ([Figure 3](#)).
 9. Secure the stake-guide ring on the welded guide ring using the 8 bolts (M8-1 1/4 x 20 mm) ([Figure 4](#)).
 10. Torque the bolts to 23 to 29 N-m (17 to 21 ft-lb).

Installing the Stakes on the 4045 Directional Drill

Preparing the Machine and Removing the Current Stakes

Note: Having 2 people or a lifting mechanism makes it easier to install the stakes.

1. Position the thrust frame 25.4 cm (12 inches) off the ground, with the stakes in the up position.
2. Turn off the engine and the battery disconnect switch.
3. Support the foot with a jack stand or equivalent.
4. If your machine has a cage, unlatch and open the stake-down cage door.
5. While holding the stakes, remove the pins and e-clips securing the stakes to the motors ([Figure 1](#)).
6. Remove the existing stakes.

Installing the Dirt Stakes on the 4045 Directional Drill

Install the new stakes by aligning the hole in the stake with the hole in the motor and secure it with the pins and e-clips previously removed ([Figure 5](#)).

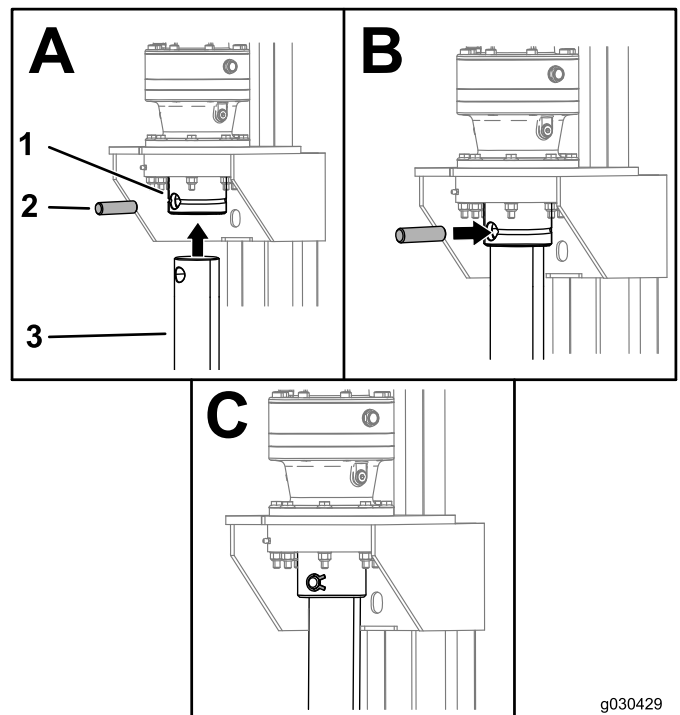


Figure 5

Rock stakes shown for illustrative purposes only

1. Coupler
2. Pin
3. Stake

Installing the Rock Stakes on the 4045 Directional Drill

Have 2 people perform this procedure.

1. Slide the stake guide over the top of the rock stake and place the stake on the machine as shown in [Figure 6](#).

Note: Have 1 person hold the stake in place while the other person continues this procedure.

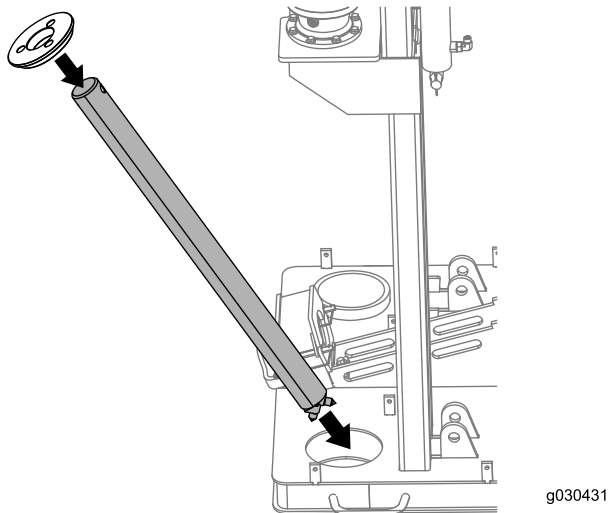


Figure 6

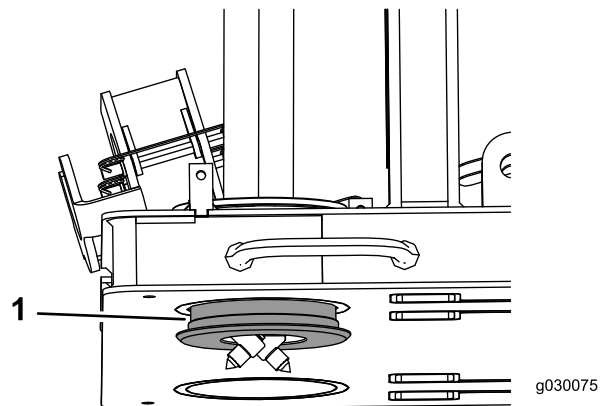


Figure 8

1. Stake guide

-
4. Torque the M10 bolts to 73 to 89 N-m (54 to 66 ft-lb).
 5. Secure the stake to the motor as shown in [Figure 5](#).
 6. If your machine has a cage, close and latch the cage door.

Important: Remove the guide ring from the foot when switching from the rock stakes to the dirt stakes.

-
2. Loosely secure the stake guide to the guide ring base using the 6 Bolts (M10-1 1/2 x 25 mm) as shown in [Figure 7](#).

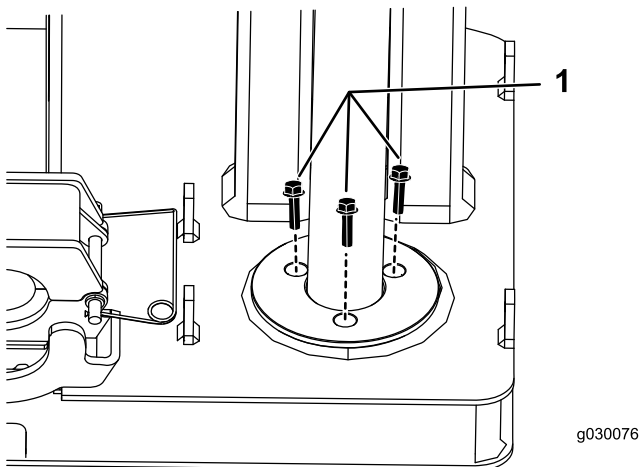


Figure 7

1. Bolts (M10)

-
3. Insert the stake guide from under the platform ([Figure 8](#)) and tighten the bolts.