



2024 Directional Drill

Model No. 23800—Serial No. 313000501 and Up

Model No. 23800A—Serial No. 315000001 and Up

Model No. 23800C—Serial No. 315000001 and Up

Model No. 23800TE—Serial No. 315000001 and Up

Model No. 23800W—Serial No. 315000001 and Up

Software Guide

Note: Install kit Model 132-4193 to use software versions K–V.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Dealer or Toro Customer Service and have the model and serial numbers of your product ready.

You may contact Toro directly at www.Toro.com for product safety and operation training materials, accessory information, help finding a dealer, or to register your product.

Monitor

Startup Screen

When you power up the machine, this is the first screen that appears (Figure 1).

Note: No keys are active from this screen.

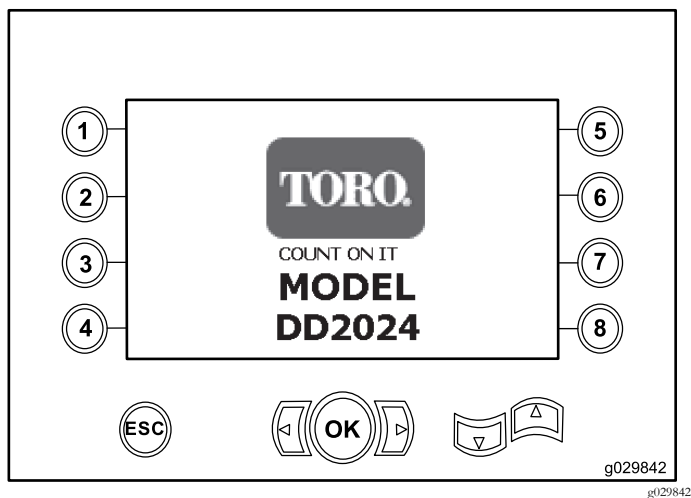


Figure 1
Startup Screen

Main Operating Screen

This screen appears after the Startup Screen if there is not an operator in the seat when the key is turned ON.

To access this screen, press button 4 or the down arrow on the [Machine-Information Screen](#) (page 5).

The main operating screen displays the engine-rpm gauge, the fuel-quantity gauge, and the engine-temperature gauge (Figure 2).

The low-fuel indicator lights up on the main operating screen when the machine is running low on fuel (Figure 2).

Press button number 4 to select the horsepower control (Figure 2).

Note: The icon for button 8 is only for software versions K and up (Figure 25).

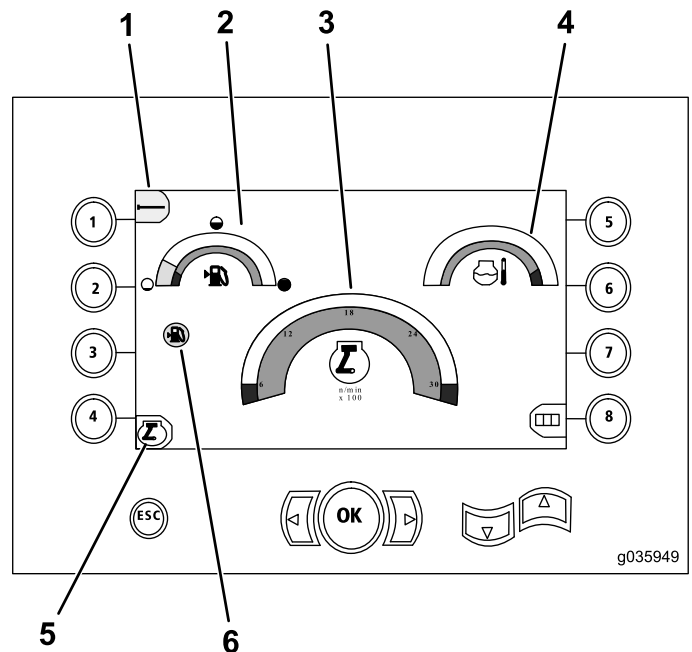


Figure 2
Main Operating Screen

- | | |
|-----------------------------|------------------------------|
| 1. Pipe setting | 4. Coolant-temperature gauge |
| 2. Fuel gauge | 5. Horsepower control |
| 3. Engine-speed (rpm) gauge | 6. Low-fuel indicator |



Main Drill Functions Displayed in the Pressure Screen

To access this screen, press the down arrow on the [Main Operating Screen \(page 1\)](#).

This screen provides measurements on rotary pressure in psi, drilling-fluid pressure in psi, carriage pressure in psi, and drilling-fluid flow rate in gpm ([Figure 3](#)).

There are also 4 indicators (listed from top to bottom in the middle of the screen), which indicate the following:

- Drilling and/or engine-error code warning ([Figure 4](#))
- Low-fuel warning ([Figure 4](#))
- Drilling fluid indicator ([Figure 4](#))

The drilling-fluid indicator displays in 3 colors:

- Red: no fluid is flowing; mud pump approaching maximum pressure
- Yellow: the machine is on and the fluid is on standby
- Green: the fluid is flowing

- Auto drilling is in the ON position ([Figure 4](#))

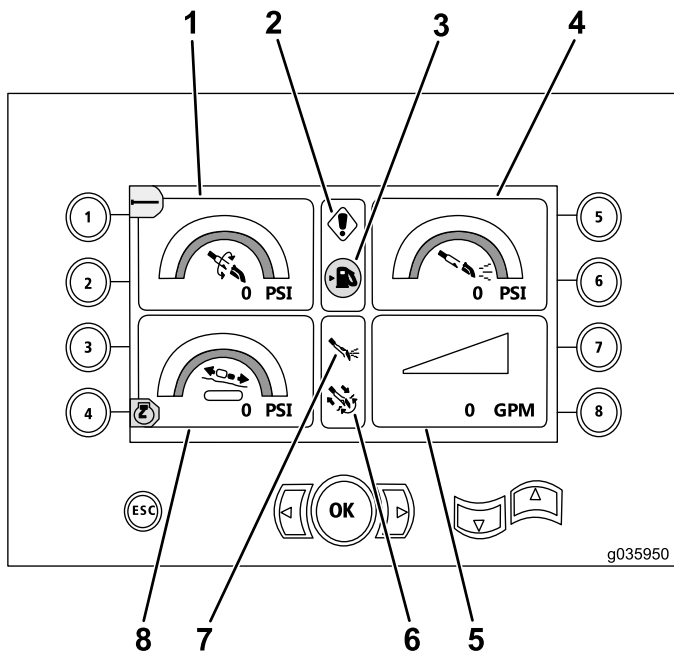


Figure 3

Main Drill Functions Displayed in Pressure Screen

- | | |
|----------------------------------|-----------------------------------|
| 1. Rotary pressure (psi) | 5. Drilling-fluid flow rate (gpm) |
| 2. Drilling-fluid pressure (psi) | 6. Auto-drilling indicator |
| 3. Carriage pressure (psi) | 7. Drilling-fluid indicator |
| 4. Drilling-fluid pressure (psi) | 8. Carriage-pressure gauge (psi) |

Main Drill Functions Displayed in the Torque Screen

To access this screen, press the down arrow on the [Main Drill Functions Displayed in the Pressure Screen \(page 2\)](#).

This screen provides measurements on rotary torque in ft-lbs, drilling-fluid pressure in psi, carriage force in lbs, and drilling-fluid flow rate in gpm ([Figure 4](#)).

There are also 4 indicators (listed from top to bottom in the middle of the screen), which indicate the following:

- Drilling and/or engine-error code warning ([Figure 4](#))
- Low-fuel warning ([Figure 4](#))
- Drilling fluid indicator ([Figure 4](#))

The drilling-fluid indicator displays in 3 colors:

- Red: no fluid is flowing; mud pump approaching maximum pressure
- Yellow: the machine is on and the fluid is on standby
- Green: the fluid is flowing

- Auto drilling is in the ON position ([Figure 4](#))

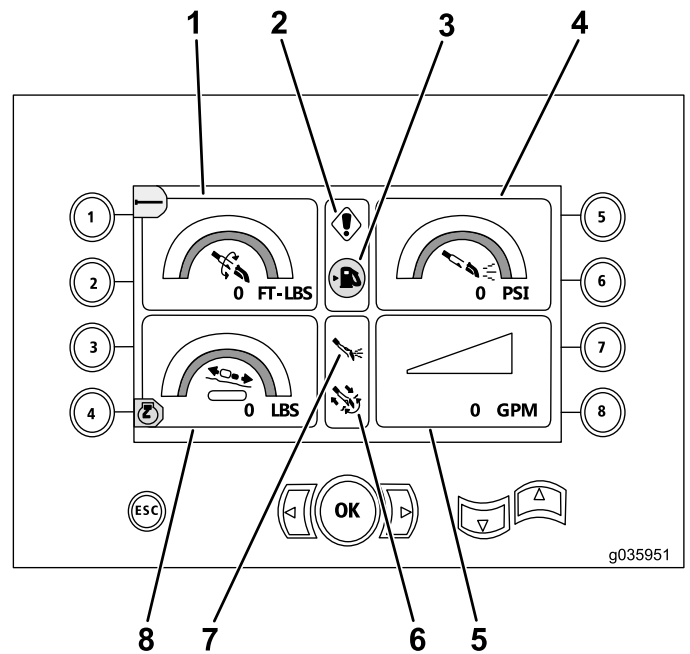


Figure 4

Main Drill Functions Displayed in Torque Screen

- | | |
|----------------------------------|-----------------------------------|
| 1. Rotary torque (ft-lbs) | 5. Drilling-fluid flow rate (gpm) |
| 2. Drilling-fluid pressure (psi) | 6. Auto-drilling indicator |
| 3. Carriage force (lbs) | 7. Drilling-fluid indicator |
| 4. Drilling-fluid pressure (psi) | 8. Carriage-force gauge (lbs) |

Note: Change the units to metric by pushing the left, right, and 8 key simultaneously.

Drill-Rotation-Speed Screen

To access this screen, hold the OK button on the [Main Operating Screen](#) (page 1).

This screen allows the user to increase or decrease the maximum rotation speed of the drill.

To change the rotation speed of the drill, perform the following:

1. Press and hold the OK button.
2. Press the Left arrow to decrease the maximum speed, or press the Right arrow to increase the maximum speed (Figure 5).
3. Release the OK button to set the drill-rotation speed (Figure 5).

Note: The icon for button 8 is only for software versions K and up (Figure 25).

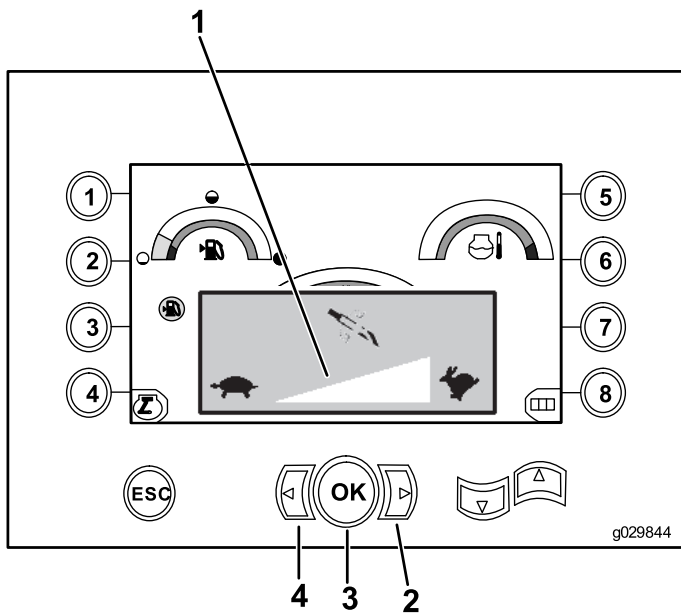


Figure 5
Drill-rotation-speed Screen

- | | |
|---------------------------------|--|
| 1. Drill-rotation speed meter | 3. OK button (sets the drill-rotation speed) |
| 2. Right arrow (increase speed) | 4. Left arrow (decrease speed) |

Horsepower-Control Screen

The horsepower control allows the user to change the engine-speed (rpm) setting that the engine can droop to before the horsepower-control system can activate.

The horsepower control allows the operator to function the unit at low rpm levels, so that the engine can stall under heavy loads.

Note: For example, at the 50% engine-speed (rpm) setting, the engine can stall under heavy loads.

After selecting the horsepower control (Figure 2), select one of the following options:

- Press button number 1 to activate 90% engine speed (rpm) as shown in Figure 6.
- Press button number 2 to activate 75% engine speed (rpm) as shown in Figure 6.
- Press button number 3 to activate 50% engine speed (rpm) as shown in Figure 6.
- Press button number 4 to return to the main-operating screen (Figure 6).

Note: The icon for button 8 is only for software versions K and up (Figure 25).

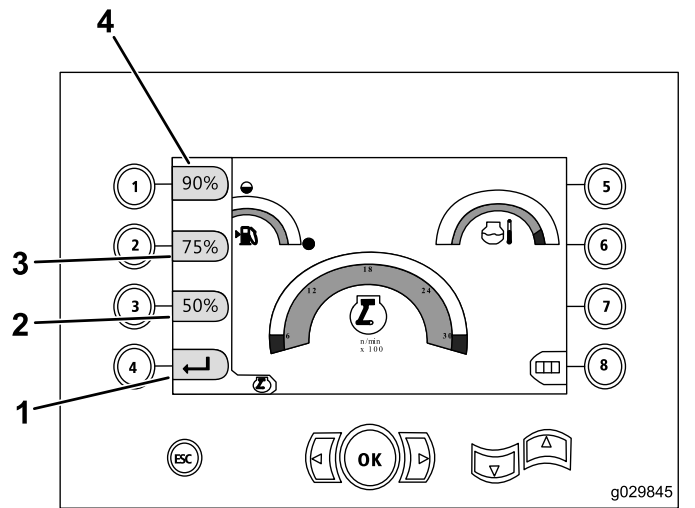


Figure 6
Horsepower-control Screen

- | | |
|------------------------------|---------------------------|
| 1. Return to previous screen | 3. 75% engine speed (rpm) |
| 2. 50% engine speed (rpm) | 4. 90% engine speed (rpm) |

Carriage-Pressure Screen

To access this screen, press the down arrow on the [Main Drill Functions Displayed in the Torque Screen](#) (page 2).

When this screen appears, the carriage-pressure selection (button 7) is in the ON position (green) or OFF position (red), as shown in [Figure 7](#).

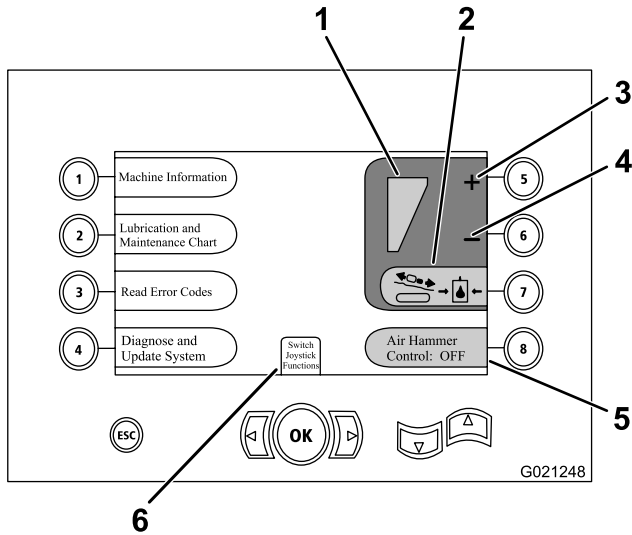


Figure 7

- | | |
|---|---|
| 1. Selected maximum thrust | 4. Decrease the maximum carriage pressure |
| 2. Carriage-pressure limiting - The icons will be red when the thrust limiting is off and green when the thrust limiting is on. | 5. Air-hammer control |
| 3. Increase the maximum carriage pressure | 6. Joystick mode selection |

Control-Select Screen

Access this screen by selecting Switch Joystick Functions from the [Carriage-Pressure Screen](#) (page 4).

The 2 control layouts that the operator can choose from consist of the following:

- Mode I—places the drilling functions on right joystick, while the left joystick operates the pipe loader and the wrench functions ([Figure 8](#)).

Press button number 4 to select this mode ([Figure 8](#)).

- Mode II—splits the drilling, wrench, and pipe loading between the left and right joysticks ([Figure 8](#)).

Press button number 8 to select this mode ([Figure 8](#)).

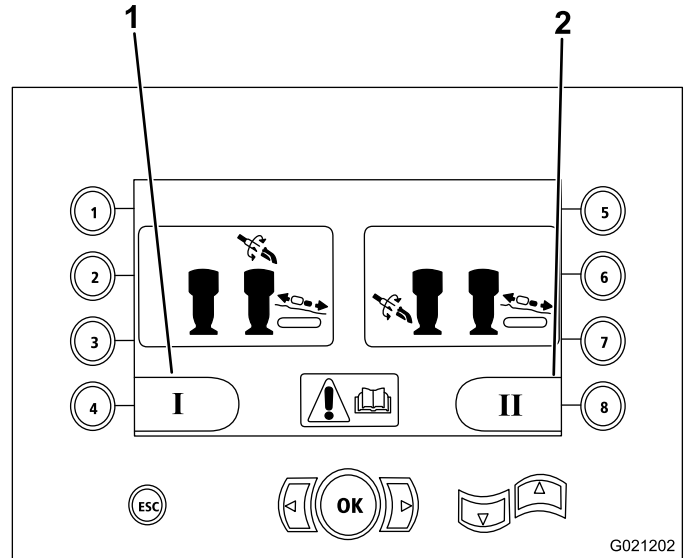


Figure 8

Control-Select Screen

- | | |
|-----------|------------|
| 1. Mode I | 2. Mode II |
|-----------|------------|

Machine-Information Screen

This screen contains the following information:

- The machine model and serial number (Figure 9).
- The number of engine hours for the machine (Figure 9).
- The number of drilling fluid-gallons used and the number of re-settable drilling-fluid (mud) used (Figure 9).

Note: Press button 3 to reset the number of drilling-fluid (mud) gallons since the last reset (Figure 9).

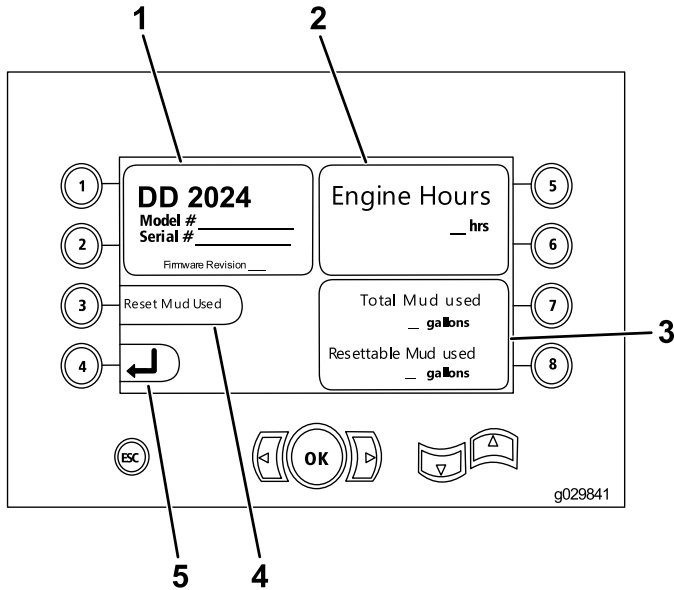


Figure 9

Machine-information Screen

- | | |
|--|--|
| 1. Model and machine serial number | 4. Reset drilling-fluid (mud) gallons used |
| 2. Number of engine hours | 5. Previous screen |
| 3. Total number of drilling-fluid (mud) gallons used and re-settable drilling-fluid (mud) gallons used | |

Lubrication and Maintenance Screens

These screens provide the user with the daily maintenance schedule and at the 50-hour, 250-hour, 500-hour, and 1,000-hour increments.

Note: Press the ESC button to exit this screen.

The daily maintenance screen will display once. To access the screen again, turn the machine off and on again.

Press the following button to attain the subsequent maintenance schedule:

- Button 1—50-hour maintenance schedule (Figure 11)
- Button 2—250-hour maintenance schedule (Figure 12)
- Button 3—500-hour maintenance schedule (Figure 13)
- Button 4—1,000-hour maintenance schedule (Figure 14)

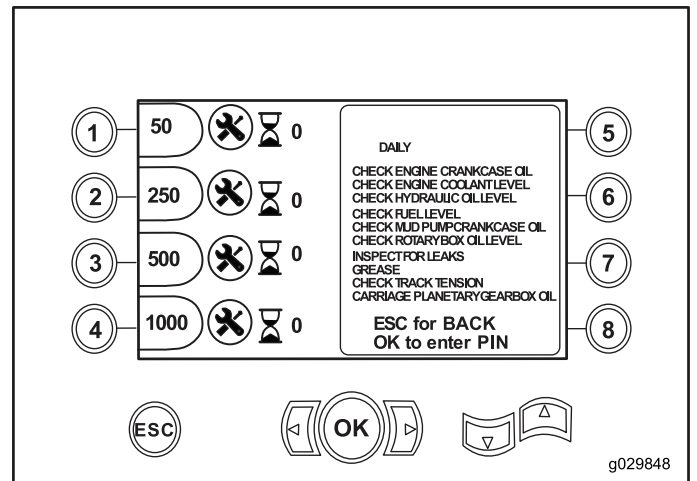


Figure 10

Main Maintenance Screen

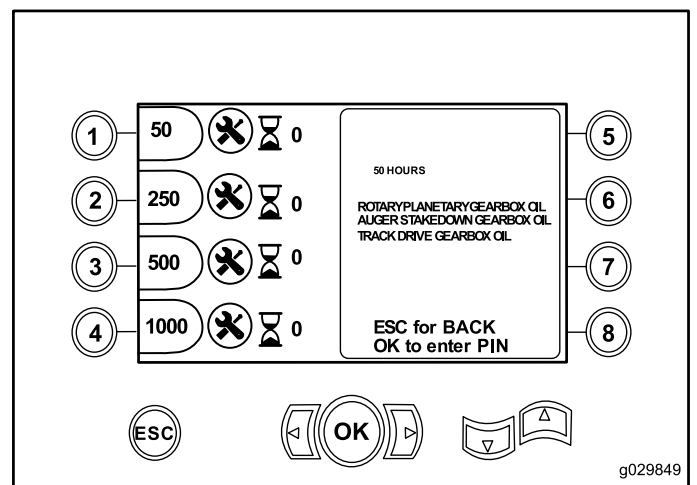


Figure 11

50-Hour Maintenance Screen

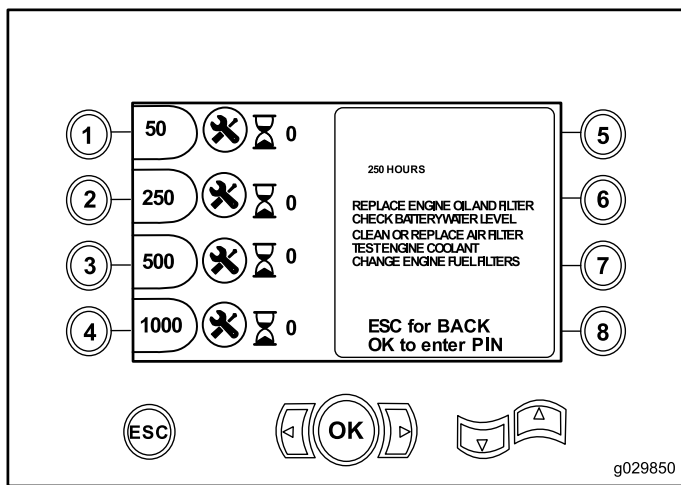


Figure 12
250-Hour Maintenance Screen

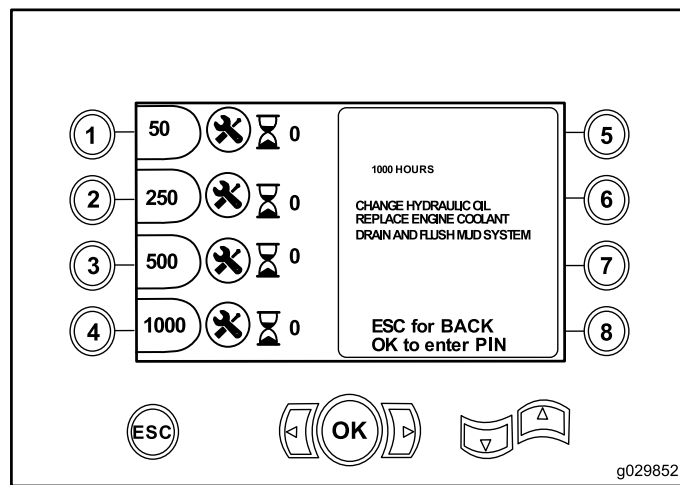


Figure 14
1000-Hour Maintenance Screen

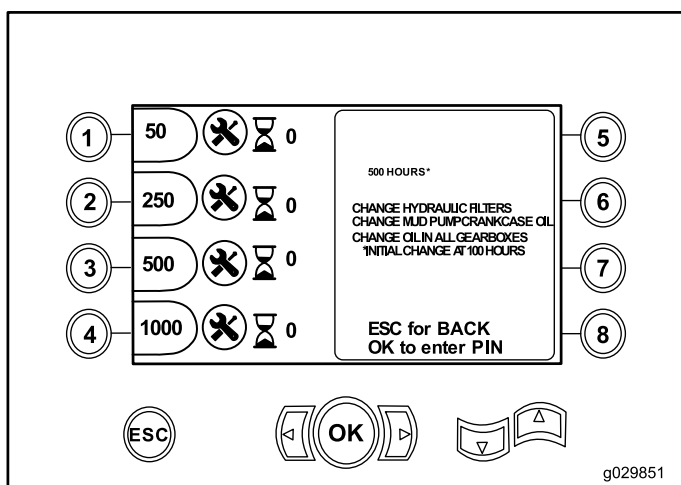


Figure 13
500-Hour Maintenance Screen

Error Codes Screen

This screen displays the number of drill errors that have occurred.

If more than 1 drill error is shown on the screen, press button 6 to see the next drilling error (Figure 15).

Note: If there are no drilling errors, press the OK button to exit this screen (Figure 15).

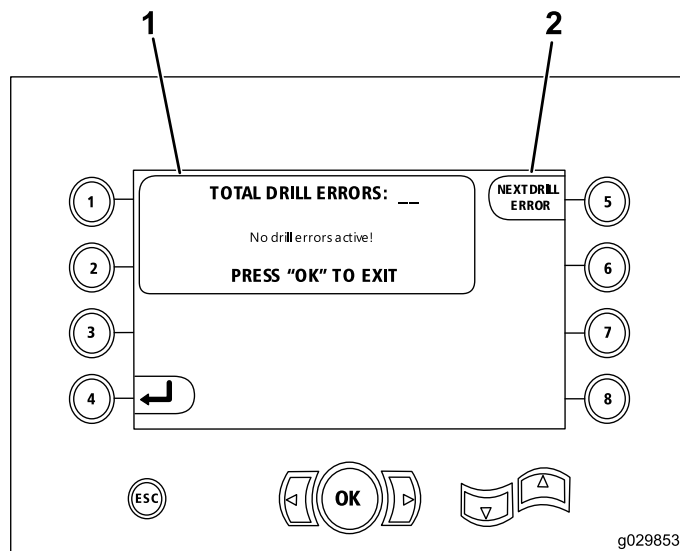


Figure 15

1. Total number of drilling errors
2. Next drilling error

Stored/Reset Error Codes Screen

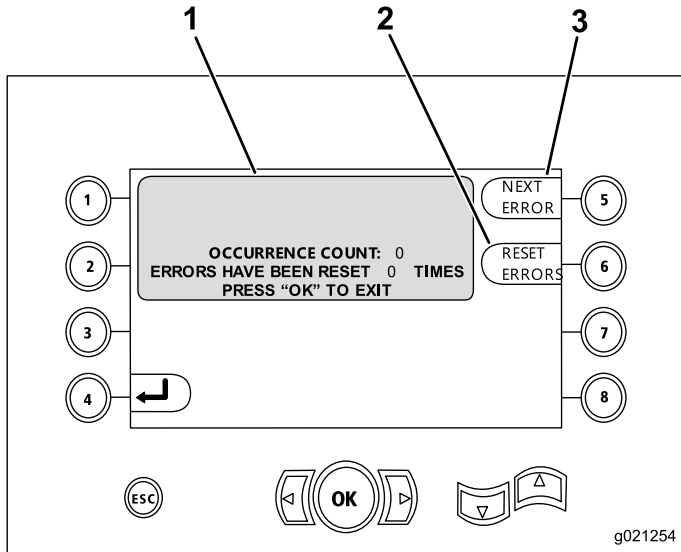


Figure 16

1. Number of errors and number of reset errors
2. Reset error
3. Next error

The following figure is an example of how an error code appears.

Notice that the text before the occurrence count entails what the actual error is.

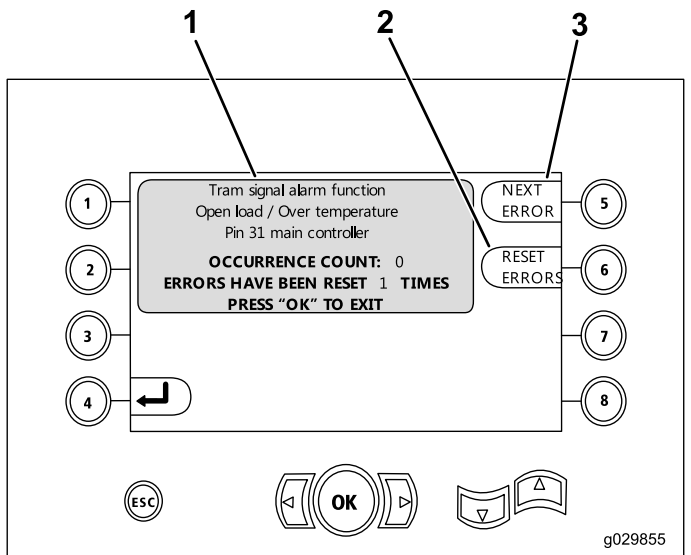


Figure 17

1. Number of errors and number of reset errors
2. Next error
3. Reset error

Diagnose and Update Screen

Access this screen from the [Carriage-Pressure Screen](#) (page 4).

Software versions K and up only: use this screen to calibrate the loader cams ([Figure 18](#)) as described in [Figure 26](#).

Software versions V and up only: use this screen to the auto throttle option ([Figure 18](#)).

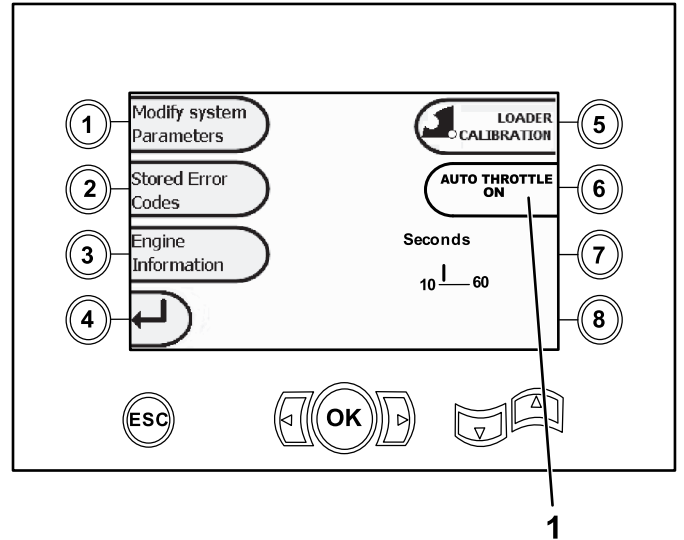


Figure 18

1. Auto throttle

Press button 6 to turn the auto throttle option ON (green) and OFF (red).

Note: The time setting disappears in OFF option.

The auto throttle can only be used when the machine is in DRILL mode. It does not operate when the machine is set to travel mode.

The auto throttle is initiated when the ON option is selected and the engine rpm exceeds 2300 rpm.

Operating the engine below 2300 rpm remains a manual rpm selection regardless if the auto throttle is OFF or ON.

Press the left and right arrow buttons to set the time from 10 to 60 seconds. The settings are maintained when the machine is shut down.

All functions must be off (mud, drilling, elevator, and wrenches) for the time period set before the engine will rescind to idle. Movement of any of the functions (mud, drilling, elevator, and wrenches) will return the engine to 2800 rpm.

Clear-Service-Reminder Screen

To access this screen, press button number 1 in the [Diagnose and Update Screen](#) (page 7) to select Modify System Parameters ([Figure 18](#)).

To clear a service reminder, enter the 8-digit PIN (**16527316**) into this screen ([Figure 19](#)):

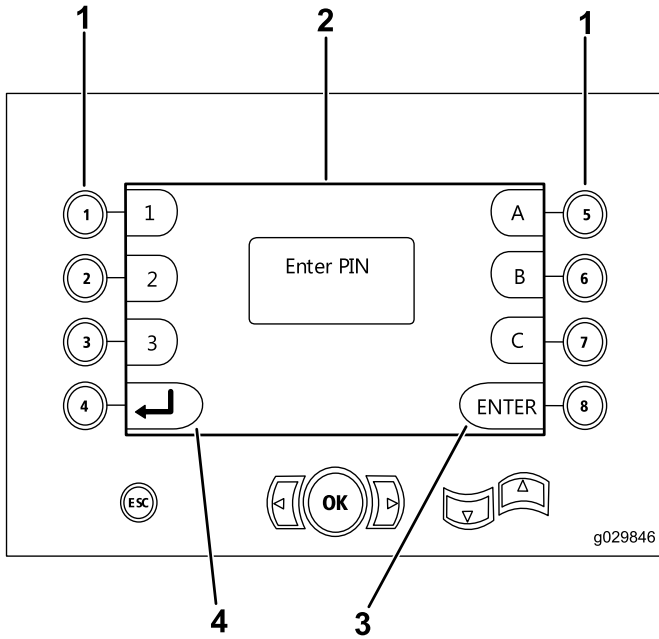


Figure 19
Enter-PIN Screen

- | | |
|--|----------------------------------|
| 1. Buttons for corresponding PIN numbers | 3. Enter PIN |
| 2. PIN entry appears here | 4. Return to the previous screen |

Air-Cleaner Indicator Screen

This icon will display when the air-cleaner filter needs to be serviced ([Figure 20](#)). Refer to the machine *Operator's Manual* on servicing the air-cleaner filters.

Note: The icon for button 8 is only for software versions K and up ([Figure 25](#)).

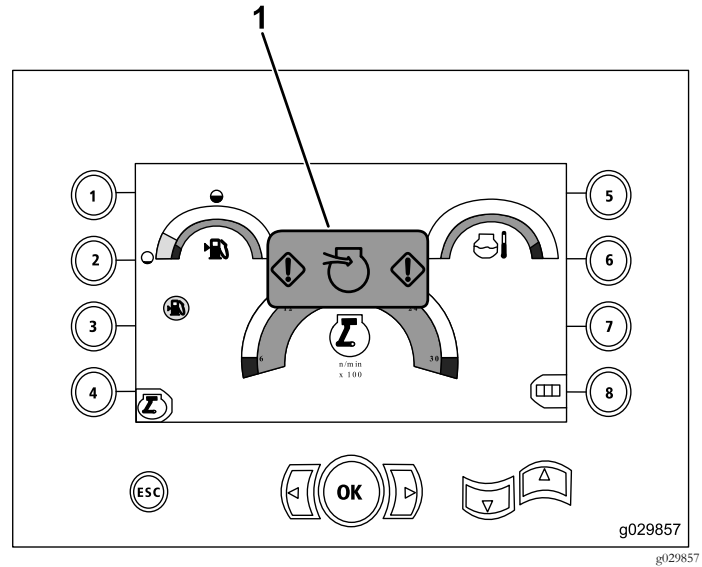


Figure 20

1. Restricted air-cleaner indicator

Rotary and Carriage-Service Screen

From the [Main Operating Screen \(page 1\)](#), press button numbers 1 and 5 simultaneously to access this screen.

The rotary and carriage service screen ([Figure 21](#)) provides the following information:

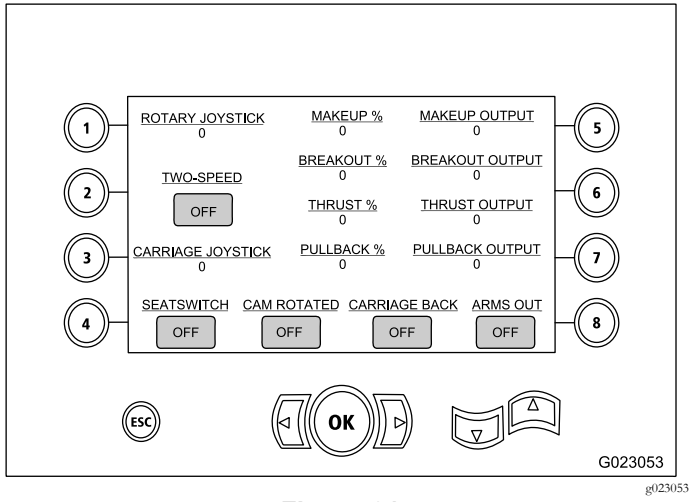


Figure 21

Auxiliary-Activations Screen

Press the down arrow on the [Rotary and Carriage-Service Screen \(page 9\)](#) to access this screen.

The auxiliary-activations screen ([Figure 22](#)) provides the following information:

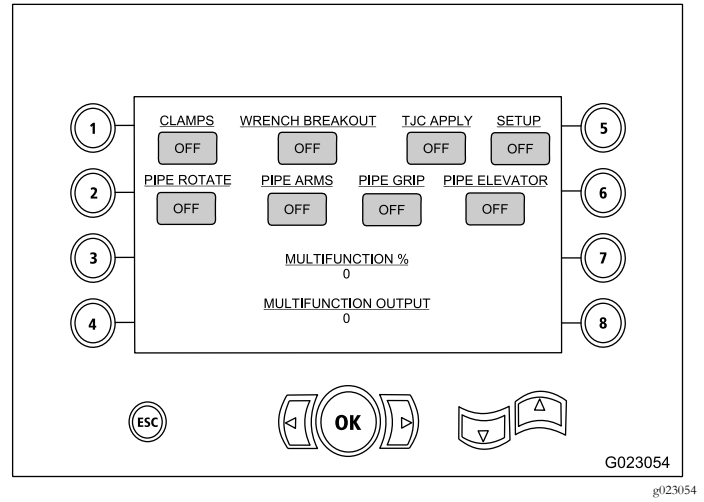


Figure 22

- Rotary and carriage joystick output
- Makeup percentage and output
- Breakout percentage and output
- Thrust percentage and output
- Pullback percentage and output
- On and Off indicators for 2-speed, seats switch, cam rotation, carriage back, and arms out

- On and Off indicators for clamps, wrench breakout, TJC applicator, setup, pipe rotation, pipe arms, pipe grip, and pipe elevator
- Multifunction percentage and output

Drilling-Fluid-Information Screen

Press the down arrow on the [Auxiliary-Activations Screen \(page 9\)](#) to access this screen.

The drilling-fluid-information screen ([Figure 23](#)) provides the following information:

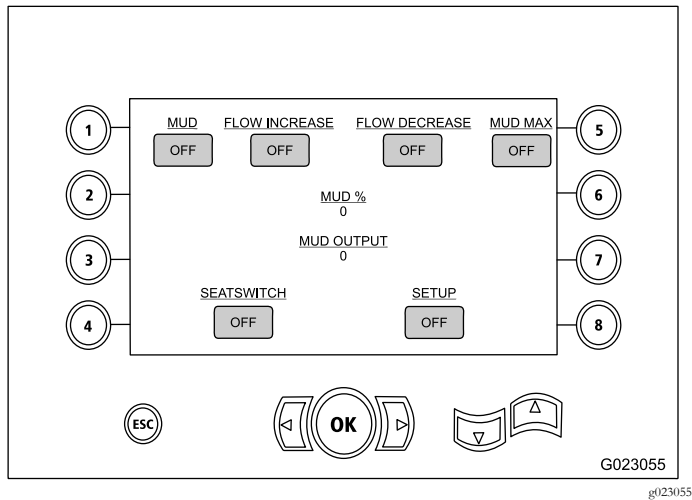


Figure 23

- On and Off indicators for drilling fluid, flow increase, flow decrease, and mud max
- On and Off indicators for seat switch and setup
- Drilling fluid percentage and output

Track-Drive-Information Screen

Press the down arrow on the [Drilling-Fluid-Information Screen \(page 10\)](#) to access this screen.

The track-drive-information screen ([Figure 24](#)) provides the following information:

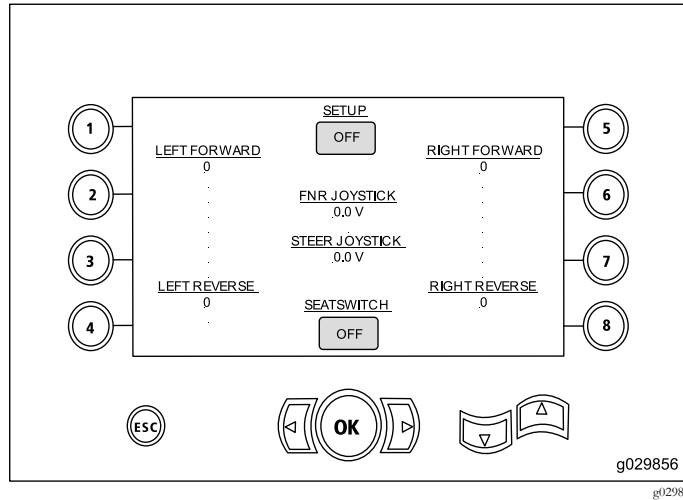


Figure 24

- Output for left forward, left reverse, right forward, and right reverse movements of the track drive
- Front-Neutral-Reverse (FNR) and steer joystick output
- On and Off indicators for setup and seat switch

Pipe-Row-Selector Screen

Software Versions K and up Only

This screen allows you to select the row of pipe(s) that you want to use.

To access this screen, press button number 8 on the [Main Operating Screen](#) (page 1).

To select your pipe row, perform the following:

1. Press the right or left arrow to select the row number to the row you want to access (Figure 25).

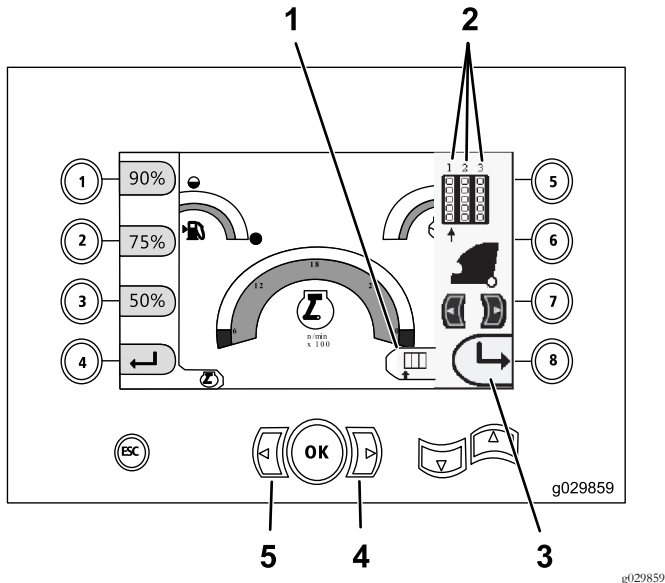


Figure 25

Pipe-row-selector Screen

- | | |
|-------------------------|----------------|
| 1. Row selector | 4. Right arrow |
| 2. Row number | 5. Left arrow |
| 3. Hide the side window | |

2. After placing the arrow beneath the row number you want to access, press the 8 button (Figure 25) to hide the side window.

Loader-Cam-Calibration Screen

Software Versions K and up Only

To access this screen, press button number 1 on the [Diagnose and Update Screen](#) (page 7).

This screen allows the user to set the row positions for the pipe holder.

Press the following buttons to set the desired position:

- Button 1—Set position 1 (Figure 26)
- Button 2—Set position 2 (Figure 26)
- Button 3—Set position 3 (Figure 26)

To set the load or unload position, press button number 5 (Figure 26).

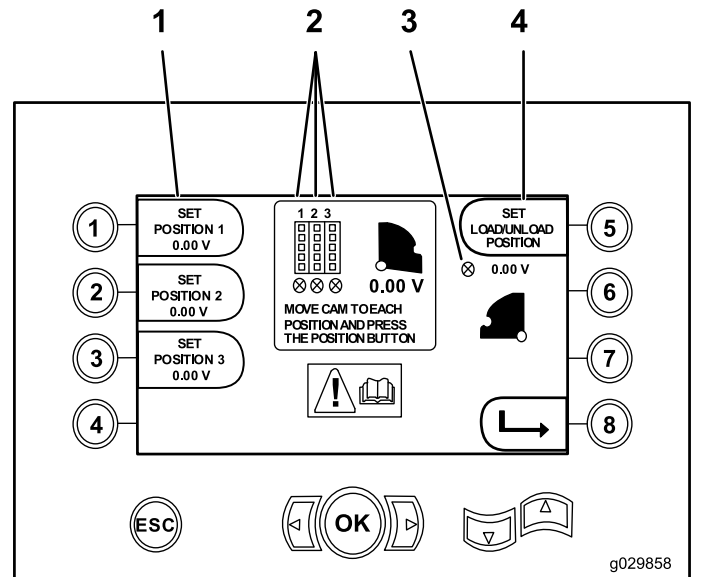


Figure 26

Loader-cam-calibration Screen

- | | |
|-----------------|-------------------------------------|
| 1. Set position | 3. Loader cam not set (X in circle) |
| 2. Row number | 4. Set load/unload position |

If the calibration numbers are acceptable, Calibration Complete displays on the screen. If the numbers are not, the screen displays Calibration Fail.

Collision Condition Indicator Screen

Software Versions K and up Only

The carriage stops and the icon displays when there is a collision condition between the drill head and the pipe/arm loader (Figure 27).

Note: The icon for button 8 is only for software versions K and up .

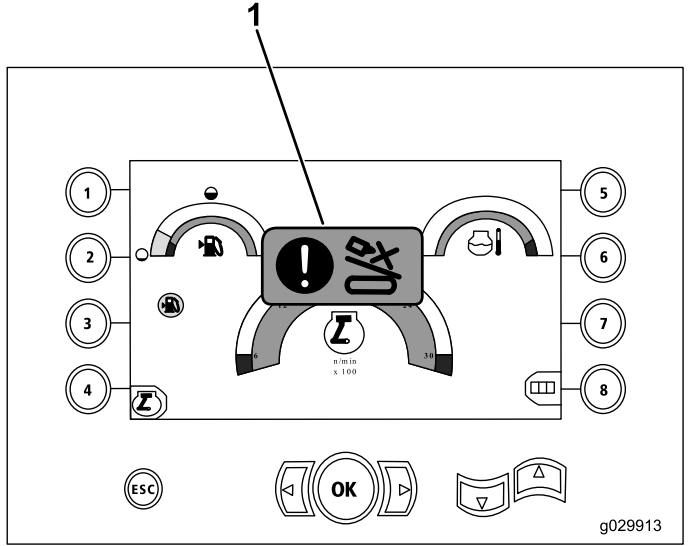


Figure 27

- 1. Collision condition icon

To clear the collision warning icon, press and hold the override button (Figure 28) while moving the carriage or the cam.

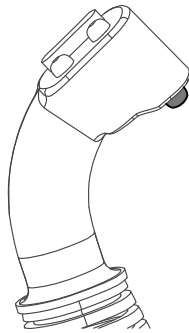


Figure 28

Pipe-Setting-Selector Screen

Software Versions T and up Only

This screen allows you to reduce the number of operations to load pipe.

To access this screen, press button number 1 on the Main Operating Screen (page 1) or the Main Drill Functions Displayed in the Pressure Screen (page 2).

- Button 2: Push Pipe
- Button 3: Neutral
- Button 4: Pull Pipe

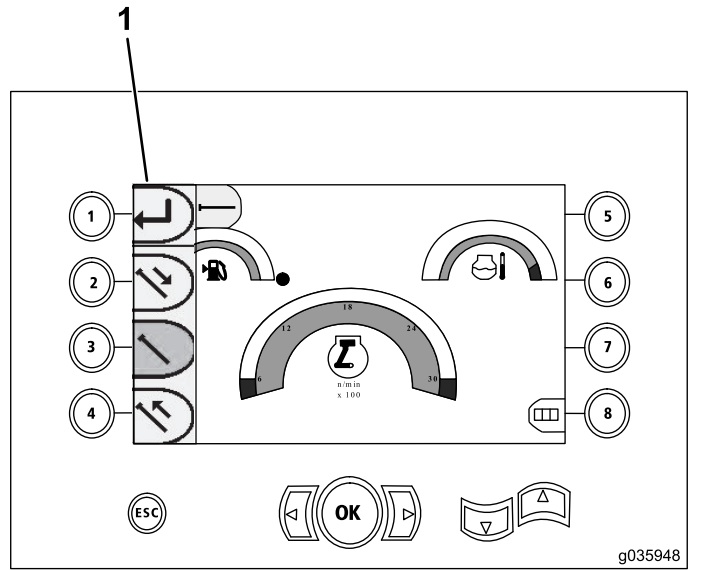


Figure 29

- 1. Pipe setting selector