CurveDrill User Guide

Nov 5, 2026 · @Samuel

About CurveDrill

CurveDrill is a phone app for the rig floor that tells you what to do next while you drill the curve, so you land on the planned TVD and inclination. You give it your well plan, your surveys and your slides. It gives back the numbers you steer by.

At every survey, and as you drill between surveys, it works out:

- Where the wellbore is compared with the plan: left or right, above or below, and ahead or behind.
- The build rate and dog leg you need to land on target.
- The toolface to hold, as a gravity toolface, in two versions: one that brings you back to the plan line, and one that fixes angle only.
- How much to slide and how much to rotate, based on your motor yield.
- Where the curve will land in vertical section compared with the plan, short or long.

CurveDrill uses the minimum curvature method. All depths are in feet and all angles in degrees. It assumes the plan is in grid north and that the azimuths you type are already grid-corrected.

Please note: CurveDrill is a calculating aid. It does not replace your directional company's surveys, approved plan or procedures. Check its numbers against them.

Install and activate

Install CurveDrill on your phone's Home Screen, then enter your license key once. You need an internet connection for this step.

iPhone: open **Safari** and go to **app.curvedrill.com**. Tap the **Share** button, then **Add to Home Screen**. If you see an **Open as Web App** switch, leave it on. Tap **Add**.

Android: open **Chrome** and go to the same address. Tap the **three-dot menu**, then **Install app** or **Add to Home screen**.

Then open CurveDrill from its new icon and activate it:

1. Leave the **Account** box set to "CurveDrill".

2. Enter your **license key** from your purchase email. Tap **Show key** if you want to check what you typed.
3. Tap **Activate**.

Enter your key only at the installed icon, because each device you activate counts against your license. After activation CurveDrill works without a connection. It needs to go online now and then to re-check your license, and it will tell you when.

Using DuckDuckGo on iPhone? Read our DuckDuckGo help article first, because DuckDuckGo can erase your saved license.

The four screens

CurveDrill has four tabs along the bottom of the screen. Set up on Wells and Plan once per well, then work from Live and Survey.

Tab	What it is for	When you use it
Wells	Add a well by importing its Excel plan, switch between wells, delete a well	Once per well
Plan	VS direction, landing target, sensor offset, stand length, and the tie-in	Once per well, and when a setting changes
Survey	Enter a survey and see every survey in a table	After each survey
Live	Toolface, slide and rotate, projected bit position, slide log and next survey	All the time while drilling the curve

Set up a well

Import the plan, check the VS direction, set the landing target, then enter your tie-in. The one place you type survey depth instead of bit depth is the tie-in. Everywhere else you type bit depth, and CurveDrill subtracts the sensor offset for you.

1. **Import the plan.** On **Wells**, tap **+ New well from Excel plan** and choose your plan file. It needs columns for MD, Inc and Azi. It also uses TVD, N/S and E/W when they are present, and it reads the plan's VS azimuth from the notes in the file. The well takes the file's name.

2. **Set the VS direction.** On **Plan**, type the VS direction. CurveDrill compares it with the VS azimuth in the plan notes and tells you whether it matches. If it does not match, check your number. Below it, a closure check tells you whether the plan's last station agrees with the closure in the plan notes.
3. **Set the landing target.** Under **Landing target**, enter the **TVD**, **Inc** and **Azi** you want to land on.
4. **Set the sensor offset and stand length. Sensor offset** is how far the survey sensor sits behind the bit, in feet. **Stand length** is the length of a stand, in feet. CurveDrill starts with 65 ft and 94.5 ft.
5. **Enter the tie-in.** Under **Tie-in**, enter your last good survey: **MD survey depth**, **Inc**, **Azi**, **TVD**, **N/S**, **E/W** and **VS**. A new well starts with the plan's first station here, so replace it with your real tie-in. Tap the orange **±** button beside N/S, E/W or VS to make a number negative. If the VS you enter disagrees with the N/S and E/W by more than 1 ft, a red warning appears.

If the plan changes, tap **Replace plan from Excel** at the bottom of the Plan tab and choose the revised file.

Enter a survey

The quickest way is the **Next survey** card at the bottom of the Live screen. It already knows where your next survey is due: the last survey's bit depth plus one stand.

1. Check the **Bit depth**. It is filled in for you. Change it if your bit depth is different.
2. Type the survey **Inc** and **Azm**.
3. Tap **Enter survey**.

CurveDrill takes the slide seen (SS) and slide ahead (SA) from your slide log. SS is the footage slid since the last survey. SA is the footage slid between the sensor and the bit. If you logged no slide for this course, CurveDrill reminds you to log it first. If you really did not slide, tap **No slide this course, enter survey anyway**.

You can also use the **Survey** tab. Type **Bit depth**, **Inc** and **Azm**. Leave **Slide seen (SS)** blank to take it from the slide log, or type it. Type **Slide ahead (SA)**, and 0 is fine. Tap **Add survey**. The survey depth, which is the bit depth minus the sensor offset, is shown under the boxes.

A new survey must be deeper than the one before it. After you add a survey, the Live screen's bit depth and running inc update to match it. To remove a mistake, tap **Delete last survey** on the Survey tab.

Use the Live screen while drilling

The Live screen is the one to keep open on the curve. It reads top to bottom, and the numbers you steer by are near the top. A typical stand goes like this:

1. Log each slide in the **Slide log**: type the **From (bit)** and **To (bit)** depths and tap **Add**. Tap **Undo last slide** to remove the last one.
2. Type your current **Bit depth** and the latest MWD inclination in **RINC (running inc)**. RINC stands for running inc.
3. Read the toolface boxes and the slide and rotate split, and steer.
4. When the survey comes in, enter it in the **Next survey** card.

What each part shows

- **Bit depth, RINC, SS and SA.** SS (slide seen) and SA (slide ahead) are shown for reference. CurveDrill calculates them from your slide log, so you do not type them here. The RINC depth under them is the bit depth minus the sensor offset.
- **Two toolface boxes.** The yellow **TFO to plan line** box is the toolface that brings you back to the plan line and the landing point. The blue **TFO angle only** box fixes inclination and azimuth only. Each shows the gravity toolface, the build or drop and the turn it gives, and the dog leg needed. **HS 0°** is high side and **LS 180°** is low side. Other values are shown as degrees right or left. **Hold** means you are already at target.
- **Slide and rotate.** Based on the projected bit point, it shows how much to slide and rotate before the next survey, and per stand. If the dog leg you need is more than your motor yield, it tells you to slide 100% and how far short you will land on angle.
- **Landing numbers. Build rate needed** and **Dog leg needed** are in degrees per 100 ft. It also shows the **Land at MD (bit)**, the **Projected VS at bit**, the **Plan landing VS** and the **Projected landing VS**, then whether you will land **Short** or **Long** of the plan landing VS.
- **At bit (projected) vs plan. Left/Right** and **Above/Below** tell you where the bit is compared with the plan. The line under them says what to do, for example turn right or build, in feet.
- **Motor yield. Running yield (RINC)** updates from your running inc and needs at least 3 ft of slide. **Last survey yield** comes from the last two surveys and stays visible. It is the dog leg between them, scaled by how much of the course you slid.
- **Next survey.** The depth where the next survey is due, how many feet to go, and the boxes to enter it.

Read the survey table

The table on the **Survey** tab lists every survey, newest first. Scroll sideways to see all the columns. Distances are in feet, and rates are in degrees per 100 ft.

Column	What it means
MD	Measured depth of the survey sensor. It is the bit depth minus the sensor offset.
Inc, Azi	The survey inclination and azimuth you entered.
TVD	True vertical depth at the survey, by minimum curvature.
VS	Vertical section at the survey, along your VS direction.
DLS	Dog leg severity from the previous survey to this one.
SS	Slide seen: feet slid in the course that ended at this survey.
Yield	Motor yield for that course. It is the dog leg scaled by how much of the course you slid. It shows only when you slid at least 3 ft.
Need DLS	The dog leg needed from this survey to land on target.
Lands VS	Where the curve would land in vertical section compared with the plan landing VS, shown as Short or Long.
L/R	How far the survey is left or right of the plan, measured at the closest approach to the plan.
Above/Below	How far the survey is above or below the plan.

If a number shows a dash, CurveDrill does not have what it needs yet. Check that the landing target and VS direction are set on the Plan tab. Yield also needs a slide of 3 ft or more.

Tips, saving, and troubleshooting

Your data stays on your phone. CurveDrill saves your wells, plans and surveys automatically as you enter them. Clearing your browser's data, removing the app or switching phones erases them, so import the plan and enter your tie-in and surveys again if that happens.

Habits that keep the numbers right

- Set the VS direction first. The Live screen shows a red warning until you do.
- Type bit depth everywhere except the tie-in.
- Log every slide as you drill it. SS and SA depend on the slide log.
- Check that the VS direction matches the plan note before you rely on VS numbers.
- To remove a well, select it on **Wells** and tap **Delete**. Tap it a second time to confirm.

Messages and what to do

Message	What to do
Enter the bit depth first.	Type the bit depth in the Live screen before starting a slide or using the projection.
Survey depth X must be deeper than Y.	The new survey's bit depth minus the sensor offset must be deeper than the previous survey. Check the bit depth you typed.
Bit depth must be deeper than survey depth + offset	The Live bit depth is too shallow compared with the last survey. Correct the bit depth.
Set the landing target on the Plan tab.	Enter the landing TVD, Inc and Azi under Landing target.
Need a motor yield (log a slide).	Log a slide of 3 ft or more so CurveDrill can work out a motor yield.
You typed a slide From/To but did not tap Add.	Tap **Add** to put the slide in the slide log.
Could not read the file. / Import error	Use an Excel plan with MD, Inc and Azi columns, then try again.

For license messages, see our help article on activation. Anything else: **support@curvedrill.com**.