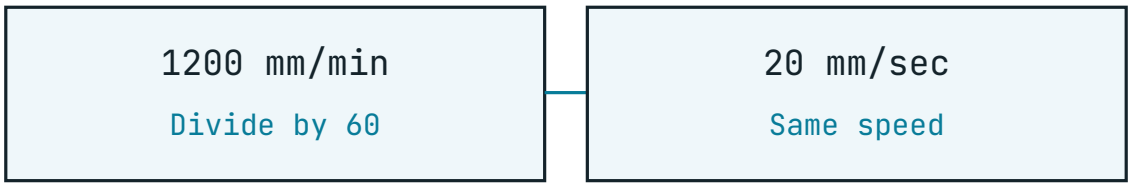
LESSON GUIDE

Speed, power and passes

Read speed units correctly, set commanded power and inspect repeated passes.

Disconnected software practice

Leave **No Machine** selected and stay disconnected. The projects have no machine profile. Output is enabled where needed for software Preview; the example values are not material settings. Keep each lesson pack in its own folder.



An exact unit conversion. The speed display changes; the requested motion does not.

1. Extract this lesson into its own folder. Open **settings-start.lzrproj** and keep its Line operation. Set Speed to **1200 mm/min** and apply.

2. Open Preferences with **Cmd + comma** on Mac, or use Preferences from the app menus. Under **Units & Grid**, keep millimeters and change **Speed Time Unit** to seconds. Save.

3. Confirm **20 mm/sec**. Return Speed Time Unit to minutes and save the preference. Project speeds are stored in mm/min.

4. Set layer **Power to 40%** and **Passes to 2**. Power is a commanded percentage, not optical watts.

5. Preview with Show Travel off. Go to start and play at 4x to inspect two passes around the rectangle. The 4x setting changes playback only.

6. Close Preview, save your own result and compare with **settings-finished.lzrproj**.

INDEPENDENT PRACTICE

Independent practice

Open **settings-practice.lzrproj** from this lesson's folder. Set **900 mm/min, 30% power and 3 passes**. Keep the one 40 x 20 mm rectangle unchanged.

☐ Predict the speed in mm/sec before changing the display preference.

☐ Switch the display to seconds, read the result, then return it to minutes.

☐ Inspect the repeats in Preview, save a separate copy and compare with settings-practice-answer.lzrproj.

900 mm/min is how many mm/sec?

How many planned passes should Preview show?

What changes when you choose 4x playback?

Restore the display preference

Speed Time Unit is an app preference. Opening the answer project does not reset that preference for you.

EXPLAINED ANSWER

Explained answer

Practice answer
900 mm/min is 15 mm/sec. The operation uses 30% power and three passes.

Demonstration answer
1200 mm/min is 20 mm/sec. The operation uses 40% power and two passes.

Different controls
Speed requests motion along the path. Power requests a percentage. Passes repeat the operation. These controls do not guarantee a finished cut or a particular darkness.

settings-start.lzrproj
Demo starter: Line, 600 mm/min, 20%, one pass.

settings-finished.lzrproj
Demo answer: Line, 1200 mm/min, 40%, two passes.

settings-practice.lzrproj
Independent starter for the 900 / 30% / 3 task.

settings-practice-answer.lzrproj
Independent answer with unchanged rectangle geometry.

Use the unit printed beside Speed every time. A number without its time unit can be 60 times different from what you intended.

Matches the demonstrated Beam Bench 0.2.37 interface. Panel layout may differ in later versions.