

PROJECT 25 ★

Installing a New Clutch or Flywheel

Time: 5 hours

Tools: Socket set with an assortment of extensions, clutch tool, torque wrench, jacks, penetrating oil, straps, and a friend; air tools will make the job much easier

Talent: ★★ ★

Applicable years: All

Tab: \$200–900

Tinware: Clutch, throwout bearing, pilot bearing

Tip: Make sure the clutch is properly lined up before you try to install the transmission

Performance gain: Faster acceleration with a lighter flywheel, no more clutch slip

Complementary modification: Change the shift boots

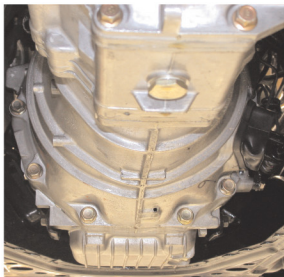
Miata clutches last around 80,000 to 140,000 miles, depending on their use. Signs of a worn clutch are a pedal that takes up very high or a slipping clutch, especially in higher gears. Slipping means that the engine can change speed but the car does not. Changing your own clutch can save a fair amount of money and it is relatively simple on the Miata, thanks to the classic front engine/rear drive layout.

If you're not planning on making any significant modifications to the power output of your engine, a stock clutch (or equivalent) will suit you just fine. The pedal feel will be the same as stock and it will last just as long, however, they won't stand up to most forms of forced induction because they're not intended to handle more than about 170 horsepower at the rear wheels. If you're planning on supercharging or turbocharging the car, it's a good idea to put in a clutch that will handle your planned final output. If you want a little more strength on a 1.6 without going to a high-dollar clutch, you can install the clutch and flywheel from a 1.8 Miata without having to make any other changes.

A lightened flywheel, on the other hand, gives an engine a much more sporting feel. In lower gears, you'll gain some acceleration, but the biggest difference will be felt when you change gears and the engine speed drops quickly. It's a lot of fun. Downsides include more transmission noise on some cars and an engine that's less forgiving when you do a standing start. The lighter the flywheel, the more exaggerated

all of these traits will be. I recommend around 9 pounds as a happy medium. You can either get a stock flywheel lightened by a competent shop or buy one from the aftermarket.

Get ready for some heavy lifting. This is an awkward job, but it can be done in a home garage. Air



This is the transmission viewed from underneath, looking at the bellhousing bolts. Five are visible in this photo. The clutch slave is on the right side of the bellhousing, pressing on the clutch release fork that is surrounded by the rubber boot.