Clutch Culprits

"The way some drivers treat a clutch is absolutely criminal!"

You hear it all the time. Clutch crime is everywhere. It may not have hurt you yet. But it can and will if you let it. Clutch crime causes costly comebacks. In the days of 30-minute clutch changes, we tolerated more clutch comebacks than we care to admit. But today, some front-drive clutch jobs take four times longer than they used to. No, clutch crime doesn't pay—it costs!

Some clutches do die a natural death. But many clutch deaths reek of foul play. You've got to become a good detective. If you're a good detective, you'll usually find lots of clues—some obvious, some subtle—at the scene of the crime. Experience—as well as the accompanying mug shots—will show you that most clutch culprits leave *multiple* clues. Pay attention and these clues will take you to the real culprit or culprits. Nab these culprits and you'll do the job once and do it profitably. Nabbing the true offenders is the only way to stem the tide of clutch crime!

Always start your investigation with a thorough road test and interrogation of the driver. Don't be fooled. Have the driver drive his own car. This trick may net you more information than an hour of questioning would.

If he isn't abusing the clutch, maybe his wife or his kids are. Maybe they don't know riding the clutch is a crime. But after all, ignorance of the law is no excuse. Sometimes, all you can do (and should do) is issue an APB (All Points Bulletin) on the work order. The APB should say: "Evidence of driver abuse or towing damage exists. New clutch job in jeopardy until suspects are apprehended and rehabilitated."

The road test can also eliminate cases of mistaken identity and false arrest. There's always the customer who fancies himself to be an automotive Dick Tracy. He tries to tell you the car's noise is a bum clutch. But your road test confirms a universal joint or CV joint noise instead. Ordinarily innocent bystanders such as the differential and the driveshaft's center-support bearing have been known to cause false clutch arrests.

There are other clutch-damaging suspects who don't stray outside the law often. But when they do, it takes extra detective work to track them down. For example, some motor mounts and transmission mounts will look as innocent as your kid sister until you put some load on them. Then they start carrying on, causing clutch chatter and clutch drag problems.

Another low-profile offender is the clutch cable. Some fellows have never seen a cable that's seized up or misrouted so badly that it's binding up. So, they just don't suspect this culprit. Sloppy linkage is also easy to overlook.

Obviously, you can't become a first-rate detective overnight. Here and there, some clutch culprits *will* get away. But the more often you look for and follow those clutch clues, the more clutch culprits you'll catch. Work at it.

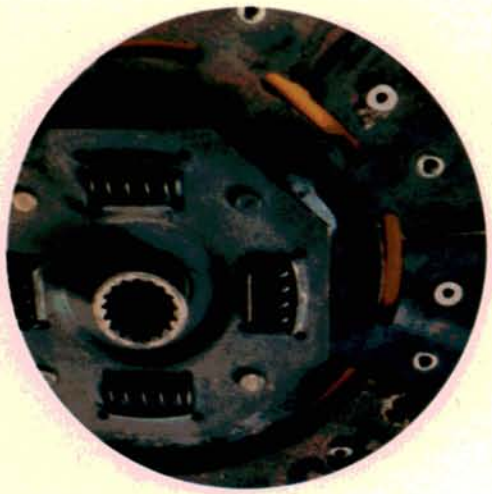
"Book 'em, Dan-o."

—By Dan Marinucci

Clutch Lining Culprits

Depending upon the vehicle's mileage, this could be normal wear. But if the disc lining's down to the rivets at relatively low miles, it could mean driver abuse. It could also mean that the guy who installed the last clutch didn't replace the pressure plate when he should have!

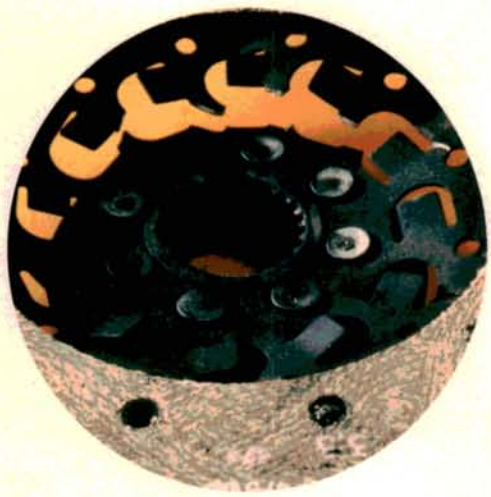
A clutch disc that's overheated due to slippage may have this charred look to it. If an oil leak caused the slippage, the disc'll probably still be oily. Always clean the clutch dust from the bellhousing and flywheel. Severe buildups of clutch dust can actually cause grabbing and/or chattering problems!



Broken disc lining can be caused by driver error such as driving too long in the wrong gear. Over-revving can also cause it. This means that when the driver pushed in the pedal, the rear wheels drove the clutch faster than it wanted to rev.

The disc's fairly new, but it's already slipping or chattering. Whenever the disc lining's worn only in the center or only on the edges, you know the flywheel has to be resurfaced or replaced. Sometimes, you ignore a marginal flywheel and get away with it. Other times, you don't get away with it!

Clutch Damper Culprits



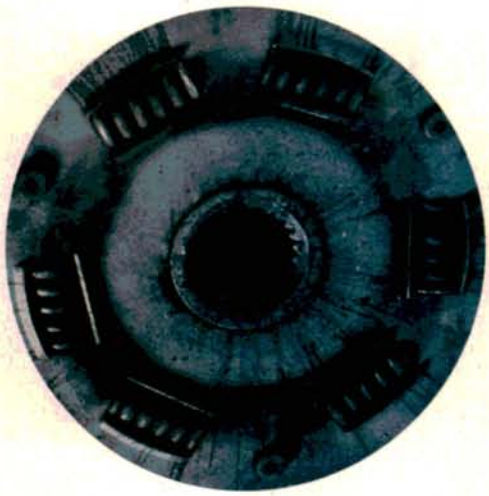
The guy changed his own clutch but then he couldn't get the car out of the driveway. You tow it in, take it apart, and find one side of the clutch hub is cracked away. Poor quality? No, the guy let the transmission hang down unsupported and the weight of the trans damaged the clutch.

A severe trans-to-engine alignment problem can tear the damper completely out of the clutch plate. Maybe someone pinched a cable or wiring harness between the bellhousing and the block. Maybe someone forgot to install the pilot bearing—or just overlooked a severely worn one.

The complaint is a noisy clutch. You find that the damper cover's been torn off the damper. Odds are, this driver's too lazy to downshift. He lugged the engine down in high gear one time too many. Here, the debris may wedge itself on one side of the disc or the other and then jam up the clutch.

After a while, your otherwise-thorough clutch job has started to slip, grab, or make noise. The car has a stepped or recessed flywheel? Those shiny wear marks on the damper tell you that the machinist ground one flywheel surface instead of two. Now the flywheel's clutch recess is too shallow.

Clutch Spline Problems



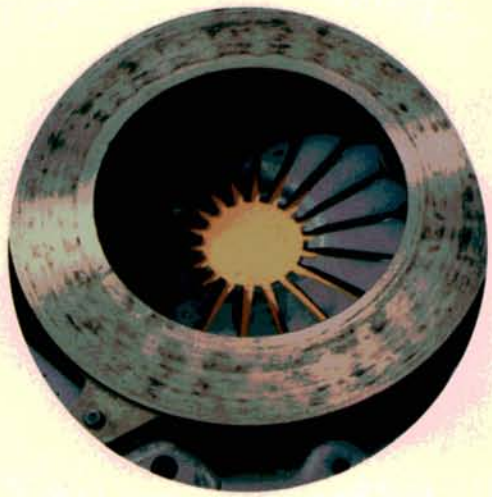
The new clutch begins slipping and/or chattering. This grease splatter tells you the installer slopped too much grease on the trans splines. All the splines need is a *film* of grease. And don't over-lube the pilot bearing, either! Also watch out for leaking or missing seals on the pilot bearing.

The clutch doesn't engage or disengage smoothly. Rusted splines confirm that either the transmission splines weren't lubed or they weren't lubed with the right grease. Use moly grease or white lithium grease. Slide the disc on and off the lubricated splines and then wipe off any excess grease.

The clutch may chatter or may not disengage. The trans may be hard to shift. Stripped splines suggest damaged or badly worn *trans* splines or trans-to-engine alignment problems. The pilot bearing may be missing or severely worn. Or, some gorilla may have forced the input shaft into these splines.

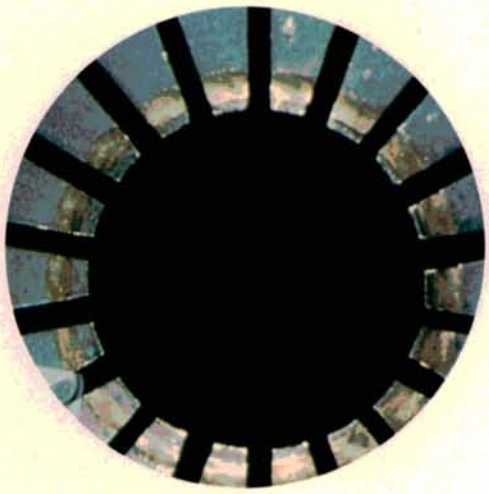
This clutch won't disengage smoothly and freely. This clutch is noisy. There's tapered wear on one side of the clutch splines. This is yet another example of a trans-to-engine alignment problem. But there's also a chance the pilot bearing's severely worn.

Pressure Plate Culprits

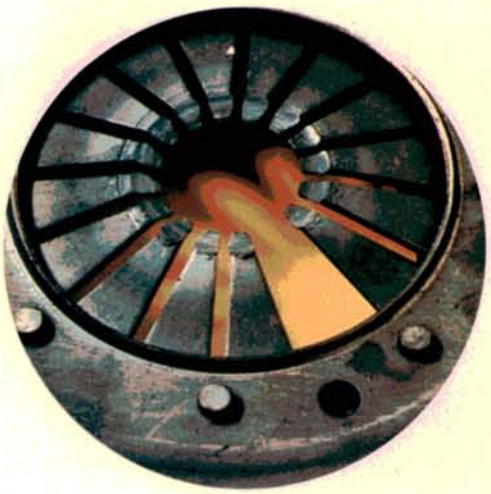


Clutch chatter, accompanied by severe chatter marks on the pressure plate, are often caused by oil or grease contamination. But the pressure plate itself may be warped. And don't overlook soggy, split, or loose engine or transmission mounts. Also watch for sloppy universals or CV joints.

If the clutch has slipped or chattered long enough and severely enough, deep wear grooves and/or hot spots form on the pressure plate. Check the pedal's free play. Insufficient free play is a major cause of slippage and clutch/pressure plate overheating.



Suppose the clutch is noisy or the clutch grabs. You find this off-center wear pattern on the pressure plate. This problem probably began with a worn, misaligned clutch release fork. The fork then wore the clutch release sleeve. Check for a dry or worn release fork pivot, too.

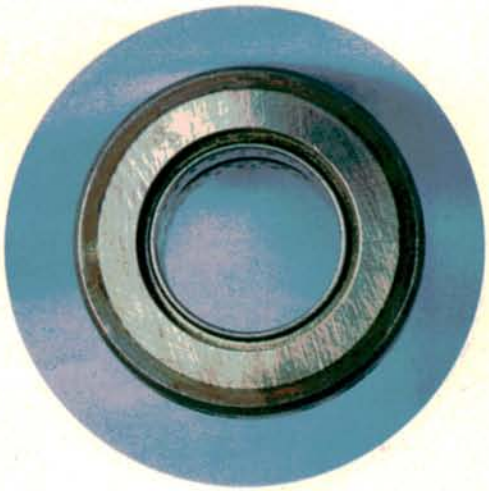


This clutch was noisy or didn't work smoothly. Ignore the missing piece of diaphragm. See the deep groove the release bearing has worn into the diaphragm? This tells you the release bearing is seized up, seizing up, or it's sticking on its sleeve. Check for a dry, worn, or burred sleeve.

Release Bearing Culprits

The more a clutch slips, the more heat it creates. An overheated clutch usually destroys the clutch release bearing. In the worst cases, the bearing will have this burned or carbonized appearance. Don't risk the clutch job. Replace the release bearing as part of the clutch job.

On this type of release bearing, a shiny wear ring around the backside of the bearing tells you to check for a worn clutch release fork. Remember to inspect the point where the fork pivots—or attaches to its pivot—for wear, dryness, or cracks.



This outside wear pattern on the release bearing suggests mismatched parts. The installer used a thinner-than-original disc. However, a perfectly good replacement clutch set may not always look identical to the parts you removed from the car. Your supplier has got to be on the ball!

This swirl or spiral pattern on the front of the bearing suggests a trans-to-engine alignment problem. Alignment dowel pin problems aren't too common. However, it only takes a moment to inspect both the block and bellhousing for signs of a missing dowel pin.