

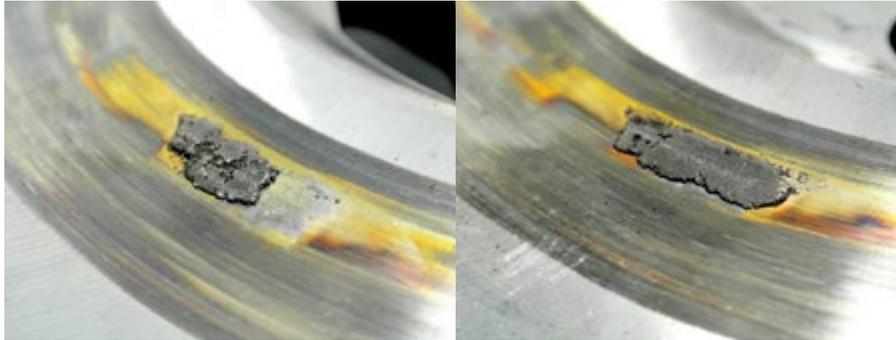


# CLUTCHTECH



## TSB-186

Welding of the friction material to the flywheel and pressure plate surface is a condition that can occur when significant heat build-up or slipping is present with a ceramic friction material. The photos below illustrate the deposits of friction material on a flywheel. It is likely that the driver will experience a period of not being able to disengage the clutch and difficulty changing gears after the deposits of friction material are laid on the flywheel.



Friction material deposited on flywheel

The flywheel shows yellow colorations indicating the presence of heat. The friction buttons on the disc show grooves and sections missing from where the material has mated to the flywheel under extreme heat and pressure from a high clamping force.



Grooving in friction buttons

Yellow colorations in friction face

### Conclusion

The clutch has been subject to localised superheating. As a result of the high clamp load and the extreme temperature the friction buttons have become fused to the flywheel and pressure plate when the clutch was engaged. One reason this can occur is that the clutch was not allowed a reasonable break in period for the friction surface to mate to the flywheel/ pressure plate before hard driving. The other reason is that the horsepower/ torque level of the vehicle surpasses what the clutch is capable of handling and the friction disc is slipping under full clamping force generating extreme heat.

### Resolution

It is very important that all friction surfaces are clean and free of any dirt or debris before installing any new clutch. It is also important to check that the correct bearing and bearing carrier are used to ensure that the bearing is not holding on the diaphragm which could cause premature slipping or wear. The clutch should be beaded in as much as possible to allow the best possible chances of the friction buttons to mate to the pressure plate/ flywheel surfaces. Low RPM engagements with minimal heat build-up are recommended to allow the surfaces to mate (stop start traffic conditions are ideal).

Whilst using the clutch in any high performance or racing applications it is important to try and reduce any heat build-up by keeping the clutch released (foot on floor) in cool-down periods or after any hard engagements. For best results with a ceramic button clutch allow a long bed in procedure before any hard or high RPM engagements like launches or burnouts.

### LEADING BRANDS

