

Information

Metallic clutch maintenance and care

Before installation onto the vehicle ensure:

- The clutch fits the flywheel correctly i.e. pot or step location, bolt PCD and diameter.
- The mounting bolts or studs are of the correct length.
- All parts are present and are fitted to the clutch in the correct orientation (see installation drawing).
- The driven plate(s) are free to move on the input shaft.
- The pressure and floater plates are free to move on the cover legs.

Installation and removal from flywheel:

Install the clutch on to the flywheel by tightening the bolts/nuts progressively in a star like pattern to the correct torque. When the clutch is tightened down on the flywheel the diaphragm fingers should be almost flat. If the fingers are not flat the flywheel may be incorrect for the clutch e.g. pot instead of flat or an incorrect pressure plate thickness may have been used. Remove the clutch from the flywheel in the same progressive manner as it was installed.

Bedding:

Before using a clutch in an event it is good practice to ensure the clutch is bedded. This achieves two aims:

- The mating surfaces achieve maximum contact with each other.
- The friction surfaces are conditioned for efficient friction and wear.

The bedding in procedure will vary depending on the vehicle, application, friction material etc. so the information below is intended as a guide.

Bedding Procedure:

Use the clutch gently at first avoiding prolonged repeated slipping. Gradually increasing the use will allow contact between the friction faces to develop and achieve the maximum torque capacity. Bedded in friction material will be smooth and shiny in appearance as shown in the picture below.

Note: During the initial bedding process the friction material wear rate may be high but this will reduce dramatically as the bedding process is completed.



Example of bedded friction material

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Maintenance:

Regular checks should be carried out for damage, excessive wear or contamination of the friction material by e.g. oil:

- Firstly clear out all debris from the clutch components.
- Check the pressure and floater plate friction surfaces for flatness. Discolouration from excessive temperatures can be an indicator of “out of flatness”. Replace any plates that are worn or out of flat by more than 0.3mm across the friction face.
- Ensure the plates move freely along the cover legs and using a feeler gauge measure the gap between the plates and the cover wear plates on one side. This must not be less than 0.25mm.
- The diaphragm spring should also be checked for discolouration that would indicate excessive temperatures have been experienced. A diaphragm spring exposed to excessive temperatures can lose clamp load and should be returned to Alcon for Inspection.
- The diaphragm spring fingers should also be inspected for wear from the release bearing. It is normal to have some wear over the life of the clutch. If the wear is uneven or there are signs of localised heat then check the release unit / bearing for problems. Spin the release bearing, if it feels dry or has more resistance than normal replace it.
- Check the hub spline for wear. Worn spline teeth can be a result of a misalignment between the input shaft and the crankshaft. This could include a worn flywheel bearing or even the bell housing flexing during use. Having minimal spline engagement for high torque applications can also result in excessive spline teeth wear.
- Check the thickness of the driven plate(s) and ensure they are within the specified wear limits.
- Ensure the driven plates are reinstalled into the clutch in their original positions.

Usage:

During use where possible avoid prolonged repeated slipping and allow adequate time for the clutch to cool between aggressive periods of use, eg practice starts.