## To fit:

Mazda CX-30, CX-3, CX5 I \& II, Mazda 2 III, Mazda 6 III \& IV
Engines: 1.5d, 1.8, 2.2d

## Alternator overrun pulley

## Problem

The vehicle becomes difficult to start and displays signs of overheating, and/or there is a 'squealing' noise from the area around the engine bay. The vehicle's instrument panel shows the error message "charging system malfunction - engine stop possible" and the alternator/charge lamp may also be illuminated along with the 'i-stop' lamp flashing amber. These failure lamps indicate that the battery is unable to charge sufficiently.

## Cause

The alternator overrun pulley is designed to dampen vibrations that occur in the FEAD (front-end auxiliary drive) and should come to a smooth stop when spun. After a certain period of time, the bearing wears from the induced shock loadings - causing the pulley to seize. This in turn triggers the auxiliary belt to slip and delaminate, leading to the eventual breakage of the belt.

## Solution

The auxiliary belt should be removed and the alternator overrun pulley inspected for rubber deposits in the ribs, caused by the belt slipping. Check the rotation of the overrun pulley - it should 'freewheel' and come to a smooth stop. Any feeling of bearing irregularities or seizure and the pulley should be replaced along with a new auxiliary belt. The water pump for this engine is driven by the auxiliary belt so continuing to drive the vehicle with a defective pulley and belt could cause catastrophic engine failure due to overheating. The battery and the alternator should also be tested and replaced if found outside of tolerances. Additionally, any fault codes in the engine control unit (ECU) should be reset.

