Tech Notes No. 05/08
03/14/08

Slip clutch

The slip clutch exists only on the TS75. The main arbor bearing is larger than in the TS55 and if it wears, the blade would rather quickly develop a loose run-out. The clutch spring is composed of 4, back to back, dish-shaped Belville washers packed in the bearing housing. When the two blade flanges are tightened against these Belville springs, the shaft is pulled tight against one side of the bearing race and as the bearing wears the spring tension compensates for it. In addition, this results in a slip clutch that protects the main gears from shattering if the blade comes to a hard stop. It also happens to dampen the forces from a kickback. The only drawback is that the slip surfaces of the flanges need to be perfect, which of course, is a matter of degree. Nothing is perfect, but Festool strives to hold the blade wobble tolerance to within 1 thousandth of an inch. By the way, never run the TS75 or the AT65 saw for any long period without a blade. It may damage the bearing and/or the arbor shaft.

With the Festool guided plunge saws, the effect of any slight blade wobble is minimized by the toe-in skew setting of the blade. The front teeth of the blade make the cut, and the rear teeth stay clear of the freshly cut surface. This eliminates crisscross marks that would occur if the blade is set parallel, but with a slight wobble. Usually, poor cut quality is the result of an improper skew adjustment of the saw, and not due to some almost imperceptible wobble to the blade. Whenever the quality of the cut is less than optimum, it is best to check for good blade skew first.

David McGibbon
Service/Tech Support