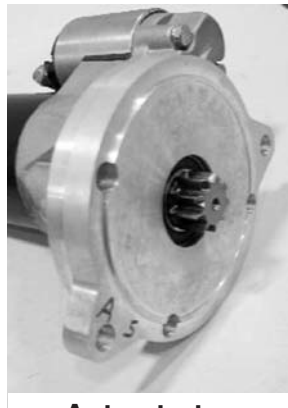


FORD STARTER / FLYWHEEL TECH TIPS

We have all seen the references such as “this starter fits manual transmissions, and that starter fits automatic transmissions” or “auto starters fit T-5 transmissions” etc. Hopefully, I can shed some light on this subject and make it less confusing.

As we look at the two starters (910-67430 Auto & 910-67433 Manual) we see that the **AUTO** unit has a 2 bolt flange, and the **MANUAL** unit has a 3 bolt flange that bolts onto the transmission (or bellhousing). While this seems to be the big difference, actually each starter can be bolted on to the opposing trans.

However, the big difference is the depth of engagement of the starter drive. The **AUTO** starter drive protrudes 3/8” deeper into the bellhousing than the **MANUAL** starter. The **MANUAL** starter drive is actually recessed into the starter mount housing. This is because the starter ring gear on the auto trans flexplate is positioned farther aft into the bellhousing (away from the engine) than does the starter ring on the old manual transmission flywheels.



Auto starter

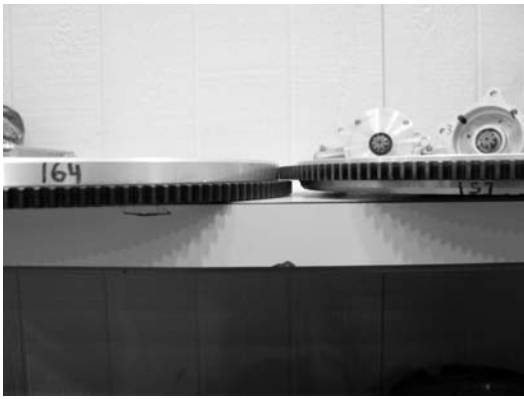


Manual starter

When measured, the distance from the rear face of the engine block to the aft edge of the starter ring is approximately .800 in. The starter ring is .375 thick, thus the forward edge of the starter ring is approximately .430 aft of the rear face of the engine block. All of the frequently used auto trans flexplates, whether 157 tooth or 164 tooth, follow this nominal dimension +or- .035.

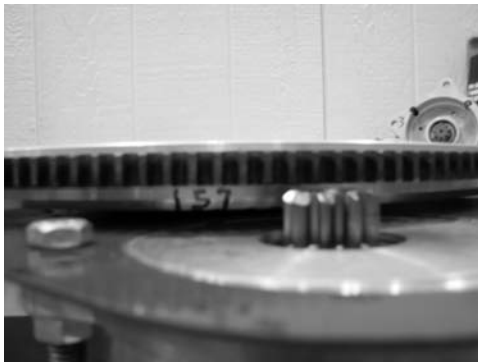
For the manual transmission starters the dimension from the back of the engine block to the aft edge of the ring gear on the flywheel is .420 in, the starter ring is still .375, which leaves the forward edge of the ring gear only .050 aft of the engine block. HOWEVER, this only applies to the old large diameter (14 1/8” dia) 164 tooth flywheels! On the small diameter (13 1/4” dia) 157 tooth flywheels the backspacing is the same as with auto trans flexplates. So, a starter for manual transmissions will not work with the 157 tooth manual transmission flywheel, even though it could be bolted to the engine.

The majority of the late model applications using the T-5 five speed transmission used the small 157 tooth flywheel, hence we see starters designated for a “5 speed manual trans”, it is not actually the transmission, but the diameter of the flywheel (and subsequent ring gear backspacing) that dictates the **AUTO** starter be used. It has nothing to do with a 3,4,5 or 10 speed trans, it is all about the flywheel that they are using.

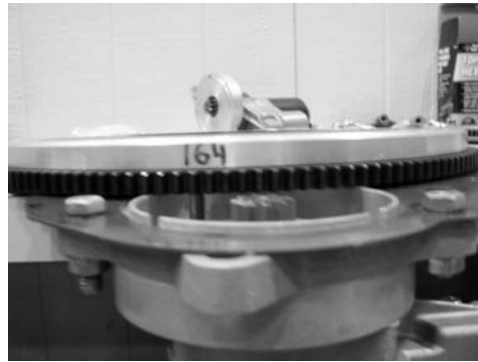


Notice in this pic of the flywheels (placed crank end down on the table), the difference in ring gear spacing. The large 164 tooth flywheel is on the left. The starter ring gear is located toward the engine side of the flywheel, on the 157 tooth flywheel on the right, the ring gear is spaced more toward the transmission side of the flywheel.

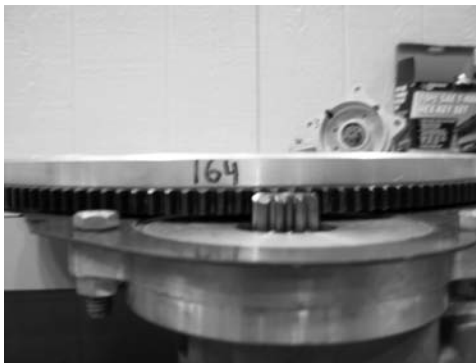
If a customer is using the complete T-5 setup from some late model application (flywheel, clutch, bellhousing, and trans) then they will need the **AUTO** starter. However, if they are using some hybrid combination of parts that may include perhaps an old truck or S-10 5 speed trans or some other combination in which the large 164 tooth flywheel is used, then they will need the **MANUAL** trans starter. When working with one of these customers, just ask which flywheel they will be using to determine which starter to sell them. With a 164 tooth flywheel use the manual starter, with a 157 tooth flywheel use the auto starter.



This is a pic of the AUTO starter and its correct relationship to a 157 tooth flywheel.



This is a pic of the MANUAL starter and its correct relationship to a 164 tooth flywheel.



If the **AUTO** starter is installed with a 164 tooth manual flywheel, the starter will be continuously engaged with the flywheel, and will destroy the starter as soon as the engine starts.

If the **MANUAL** starter is used with the small 157 tooth flywheel (or flexplates) the teeth will not engage the flywheel ring, or if it does engage it will only catch the very end of the teeth and cause damage to the flywheel.

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Speedway Motors Inc., P.O. Box 81906
Lincoln, NE 68501 (402) 323-3200
www.speedwaymotors.com



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