



Thank you for purchasing your GM 90°-to-OM617 adapter from Doomsday Diesel LLC! Please read this entire page **BEFORE** installation. Please be aware of potentially sharp edges!

#### **Adapter Plate to Engine:**

- (7) M10-1.5x30 10.9 FHCS

Use medium-strength-thread locker and torque to 40 lb\*ft.

The adapter plate must first be mated to the engine block. The back of the block should be bare. Make sure both 12mm dowel pins are in the engine block. Install the plate over the dowels and tap it tight against the block with a dead-blow hammer. You may choose to mock everything up and make the modifications to the upper oil pan before final torquing of the M10 bolts.

#### **Starter Block:**

- (2) Dowel Sleeves
- (1) 7/16-14 x 1-1/2 FHCS
- (2) M6x1.0x16 SHCS w/ lock washers
- 6.2/6.5 GM Diesel Starter (gas starters will not work)

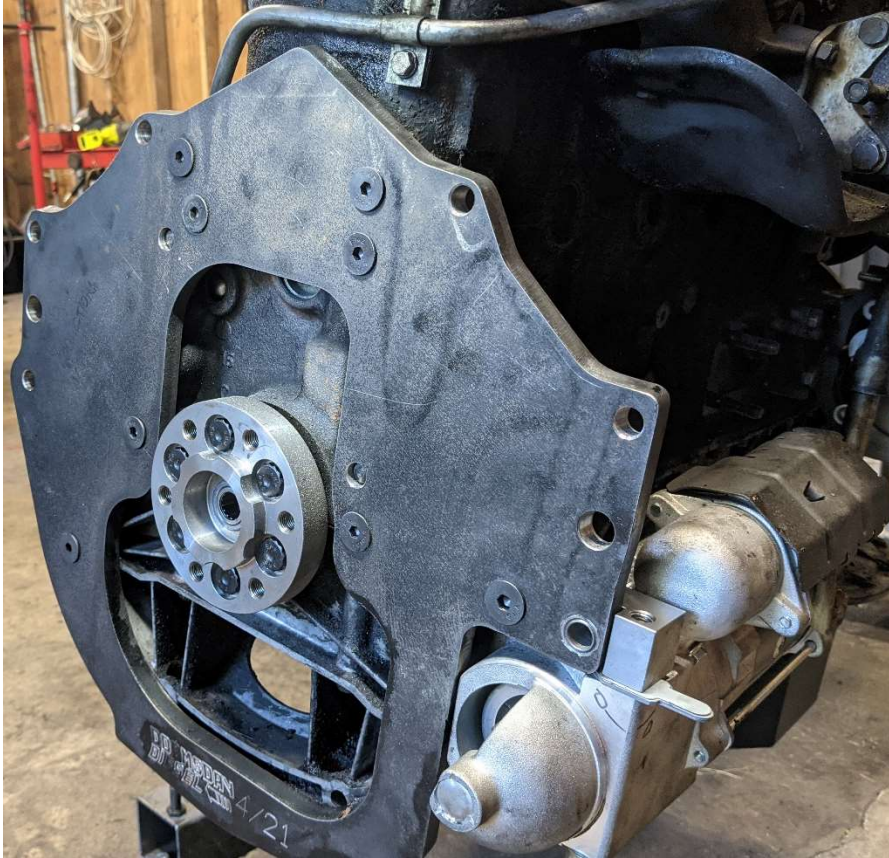
Install the (2) provided dowel sleeves into the starter block and mount to the adapter plate. Temporarily, partially install the longer 7/16-14 hex bolt thru the RH side of the plate into the starter block to help keep things aligned. Install the 7/16-14 x 1-1/2 flat head bolt thru the adapter plate into the LH side of the starter block and ensure the bolt does not bottom out on the dowel sleeve. Shorten the sleeve, if necessary. Torque to 60 lb\*ft using medium-strength thread-locker. You may now remove the RH-side bolt.

Using an angle grinder with an aluminum grinding disc or other suitable method, remove *just enough* of the upper oil pan to allow the 6.2/6.5 starter to be installed. Do not leave any sharp or jagged edges. Feather out the grind marks to make smooth transitions, as to prevent stress cracks from forming in the upper oil pan during service.



Locate the (2) M6 bolts and loosely mount the front starter brace to the engine block. Install your GM 6.2/6.5 starter as you would on a 6.2/6.5 diesel, using shims, if necessary. Attach the support bracket on the front and tighten the

hardware. If the support bracket is not properly used, failure of the starter system *will* occur. A rule of thumb for starter shimming is to maintain no less than 1/8" of gap between the outside of the flywheel teeth and the starter-gear shaft. The starter gear should fully retract when you remove voltage from the starter. If it sticks in the ring gear, you need to add a shim.



#### Crankshaft adapter:

- (6) M10x1.0x20 ARP Flywheel Bolts  
Use medium strength thread locker on the threads, assembly lube under the head, and torque to 70 lb\*ft.

Install your pilot bearing into the crankshaft adapter. Make sure the crankshaft mating surface and outside diameter are clean and smooth. Mount the crankshaft adapter and install the supplied ARP flywheel bolts, applying lube under the heads and medium-strength thread-locker to the threads. Torque in a star pattern.

#### Flywheel/flexplate to crankshaft:

- Factory hardware and torque specs

You will use your GM flywheel/flexplate and GM hardware. Install to factory specifications.

Manual adapters (ex. SM465, NV4500, NV3500):

**You must use a neutral-balanced flywheel (350) and install a 6.2/6.5 139-tooth ring gear (such as FRG-139G). The 6.2 and 454 used counter-balanced flywheels, and won't work without significant material removal, which is not advisable.**

Automatic adapters:

TH400, 4L80e, etc. - You must use 6.2/6.5 139-tooth flexplate with an Ø11.5" torque converter bolt pattern (ex. ATP Z136)

TH350, 700R4, 4L60, etc. – You must use the <1985 139-tooth flexplate for a 6.2/700R4 with Ø10.75" bolt pattern (ex. ATP Z135)



### Bellhousing to Adapter Plate:

Start by installing the dowel sleeves into the adapter plate. You may want to dimple/chisel the dowel pin holes on the front side of the adapter plate to prevent the dowel pins from every coming out.

Holes may have to be drilled out on bellhousing for hardware to fit thru.

- (3) 7/16-20 x 2 HCS, Washers, Lock Nut

Torque to 60lb\*ft.

- (2) 3/8-16 x 1-1/4 FHCS (flanged)

Use medium strength thread locker and torque to 23lb\*ft.

- (1) 7/16-14 x 2-1/4 HCS, Washer – Position 3 o'clock (threads into starter block)

Use medium strength thread locker and torque to 60 lb\*ft.



All torque values were attained from Fastenal. This product is for off road use only. This kit carries no warranty.