



Thank you for purchasing our NM Motorsports product.

#### **Included parts list**

- NM Short Shifter V2.5 semi preassembled with OEM Toyota white pivot bushing (PN 33548-31010)
- NM Short Shifter V2.5 base prebuilt with OEM Toyota green shifter bushing (PN 33505-35020)
- 4x M6x35 grade 10.9 bolts, 4x M6 washers

#### **Tools and items needed**

- # 2 Philips screwdriver
- 8mm socket or wrench, 10mm socket if you can find it lol, 2x 17mm sockets (1/4 or 3/8 drive), medium extension, and ratchet
- Ultra Grey Silicone Permatex (PN 599003) or Ultra black Silicone (PN 59803)
- Bench vice and pipe wrench (optional but recommended) - to retain OEM shifter option without welding it back together
- Angle grinder with cut off disk (optional)
- Slip joint pliers or Linesman pliers, and hammer to repair the stock top plate (if required)
- Lucas Red N Tacky grease (PN 10574)
- Torque wrench 3/8 ¼ or best judgment if you don't have these tools

#### **Notes**

The upper NM shifter post has a tight engagement threaded M12x1.25 to match the factory Toyota shift knob threads. This post can be cut/shortened if required. If you cut it too short and need a new one, you can replace it with ½" stainless steel rod.

## Installation of the NM Short Shifter V2.5

### Step 1 – Remove the shifter surround

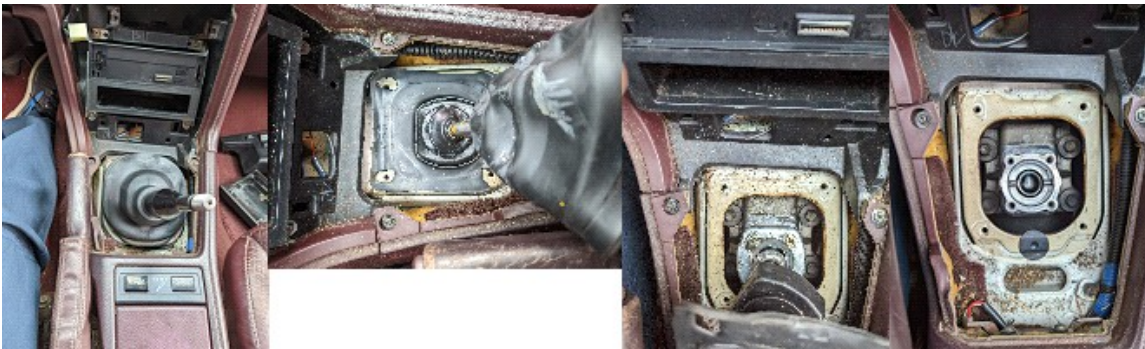
Remove shift knob. Remove the ash tray, stereo/shifter bezel by removing the four Philips screws located by white dots in **Fig 1**. Shift the car into 2nd gear, then pull on the bezel. It is clipped in, so you may have to move steering column to clear the bezel. Unplug the hazard switch, cigarette lighter, and headlight washer switch.



(Fig 1 – Screw locations)

### Step 2 – Remove the stock shifter

Shift the car into neutral. Remove the outer shifter boot held on by four 10mm bolts. Remove the boots, keeping them in order as you take them off. Once you have removed the boots, you will see four 10 mm bolts on the transmission housing that need to be removed to take the stock shifter assembly out. Uninstall the stock shifter assembly. Once the stock shifter assembly is removed, remove the old shifter seat bushing as it is no longer needed **Fig 2**.



(Fig 2 – Stock shifter boots, bolt locations)

### Step 3 – Disassembly of the stock shifter

You need to separate the two parts of the stock shifter assembly. We recommend that you remove the top portion of the shifter (black section with shift knob threads) by clamping the lower metal part of the shifter in a vise and with a pipe wrench, twist upward in a clockwise motion to either rip the soft rubber isolator or break the glue holding it together. Another option is to cut the stock shifter assembly in half, but if you do this you will need to weld it back together if you ever wish to return it to stock (cut the metal part, below the black top portion).

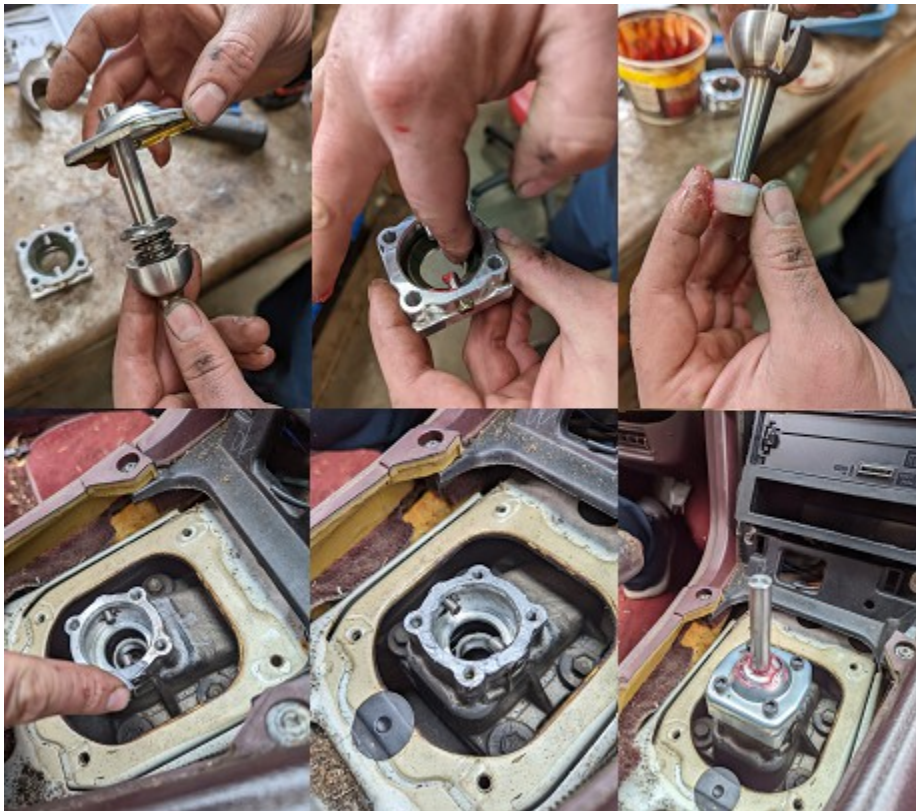
The parts needed from the stock shifter are the top plate, the spring pivot washer, and the spring. Some top plates will be damaged from the old shifter seat bushing breaking down over time. This can be fixed with pliers and some hammering, see **Fig 3. on next page**



(Fig 3 – Disassembly of the stock shifter)

#### Step 4 – Installing the NM Short Shifter

Loosen the two 8mm nuts holding the NM lower shifter post in the preassembled NM Shifter, and remove the lower shifter post. Assemble (in order) the spring, spring pivot washer, and top plate onto the lower shifter post. Apply a light coat of grease to the shifter seat (the green bushing) and the pins of the NM shifter base for proper break in. You do not have to remove the pivot bushing (the white bushing) because it was lubed during assembly, but adding a light coat of grease on the outside of the pivot bushing will help with installation. Clean the top of the transmission with brake clean on a rag (do not spray brake clean into the transmission), then apply a light coat of silicon sealant. Place the NM shifter base on top of the transmission, with the pivot pins on the sides like on the stock transmission, lining up the bolt holes. Install the preloaded NM lower shifter post with the stock parts into the NM shifter base, maneuvering the white pivot bushing into the transmission linkage. Install and torque the 4 supplied M6x35 bolts to **11 Ft-lb / 15 Nm**, then apply a light coat of grease on the top of the shifter, see **Fig 4**.



(Fig 4 – Installing the NM lower shifter)

### Step 5 - Reassembly

Reinstall the shifter rubber cap onto the NM shifter base, followed by the second boot. Remove the metal ring from the outer boot (the boot with bigger opening, right side image in **Fig 5**) and discard the boot. Reinstall the plate and tighten it down by hand.

Now for the fun part, installing the brand new NM Short Shifter V2.5 knuckle. The shift knob position is fully adjustable by tightening/loosening the small nuts and the center bolt in the knuckle. Position the shift knob however you want, then tighten all the fasteners. The new V2.5 knuckle allows you to position the knuckle in two ways, either the new sandwiched position or the opposed position, depending on where you want to position the shift knob, see **Fig 5**. Once you are happy with your new custom shifter setup, do the reverse order of Step 1 to reinstall the shifter surround, and enjoy!

**Max torque rating on the center bolt is 55 ft-lb/75nm and the post clamp bolts are 60 in-lbs/7Nm**



(Fig 5 – Reassembly)

#### Reference: Fastener List

- 4x M6x35 bolts
- 4x M6 washers
- 1x M10x30 bolt
- 2x M10 washers
- 1x M10 Nylock nut
- 4x M5x22 bolts
- 4x M5 washers
- 4x M5 Nylock nuts
- 2x Pivot pin – Shoulder bolt: 6mm Shoulder x 25mm Shoulder Length x M5-0.8, cut and deburred
- 2x Pivot pin lock nut: M5 nut