

.INSTRUCTIONS




BMW E46 M3 2001- AA Short Shifter

Tools required: 12mm, 13mm socket
Flat blade screwdriver 12" long
Needle nose screwdriver
Extra help with strong arms






Professional installation and or use of a lift is highly recommended.

Installation time: 2.0 Hour


Procedure: Performed Inside the car

	<p>NOTE: If you have a lighted gearshift knob, do this first !!!</p> <ul style="list-style-type: none">-At the base of the gear lever is a shift boot surrounding the lower shaft.-Remove the shift boot by detaching the shift boot base from the console area, it is snapped in at the four sides.-Locate the lighted knob wire that comes from the shift knob, there is a wire connector that can be de-attached, otherwise the lighted knob feature will now be non functional.
	<ul style="list-style-type: none">-Remove the factory gearshift knob by pulling straight up.-Lift the rubber that is around the gearshift. Again, this shift boot just comes straight up.-Remove the foam insulation under the shift boot.
	<p>Factory shift knob separated from boot so that AA shift knob can be installed.</p>

Procedure: Performed under the car

	<ul style="list-style-type: none">-The rear exhaust and heat shield needs to be removed to access installation of the short shifter.-Support the rear exhaust before removal, it is heavy.-The rear exhaust has (2) mounts on the left side and (1) on the right side. Use 13mm socket to remove the nuts.-A lift is recommended. The rear muffler is removed with the rear resonator as one piece.-If doing this without a lift, disconnect the rear muffler from the resonator to save weight and ease of removal.
	<ul style="list-style-type: none">-Disconnect the chassis rear brace to ease the rear muffler removal.
	<p>Rear chassis brace removed for illustration.</p>
	<ul style="list-style-type: none">-Have a friend ready before the rear muffler is disconnected. Again, it is heavy.
	<ul style="list-style-type: none">-(2) plates cover the rear exhaust flanges to the exhaust catalysts.-Use 13mm socket to remove plates-Do not unbolt the flanges connecting the rear muffler to exhaust catalysts.-They come down as one piece.





Procedure: Performed under the car

	<p>-Plates being removed</p>
	<p>-Disconnect the front resonator to where it joins the front pipes.</p>
	<p>-Rear exhaust on the ground</p>
	<p>-With the rear exhaust removed, the heat shield needs to be removed as well to access the gear shifter.</p>



Procedure: Performed under the car

	-Left side of heat shield mounted to under carriage.
	-Right side of heat shield mounted to under carriage
	-All preliminary components remove to gain access for the short shifter installation.
	-Heat shield separated from the undercarriage of the M3.


Procedure: Performed under the car

	<ul style="list-style-type: none">-Factory shifter visible above the drive shaft.-At the end of the factory shifter, a "E-Clip" connects the shifter rod to the factory shifter. Use a small screwdriver or needle nose pliers to separate the "E-Clip"-Push the shifter rod out of the factory shifter.-At the end of the aluminum carrier assembly, the carrier has a pointed spear like end. This spear like end goes through a round cylindrical bushing that just snap up and into the drive shaft tunnel at the rear. Unsnap the cylinder bushing by putting a 5mm wide flat blade screwdriver about 1 ft long in groove of bracket that holds rubber mount up and pry outwards.-Cylindrical bushing should jump out. <p>NOTE: Take note of how bushing comes off (Usually rubber flange will be towards front of car).</p>
	<ul style="list-style-type: none">-Shown is a factory shifter with carrier and clip.-Inspect and make a note of the components.-DO NOT WORRY, the AA Short Shifter comes with new components including retaining clip and hardware.-Notice the retaining clip and the barbs on the side of the clip. Noticing how the clip secures to the gearbox helps understand removal of the retaining clip.
	<ul style="list-style-type: none">-In some cases the retaining clip it is hard to see making it almost un-visible.-Lower back of gearbox by dropping gearbox cross-member for a easier access.-Using a long screwdriver, try to pry off the retaining clip.-It has barb like ends that attaches to the side of the gearbox to secure this retaining clip.-Pry with as much force that is needed. If the clip becomes damaged, a new retaining clip is provided in the AA short Shifter Kit.-With the retaining clip out, the complete carrier assembly can be removed from the under carriage of the car.-Complete carrier and factory shifter comes out as one piece.
	<ul style="list-style-type: none">-AA Short Shifter with components shown, ready to be installed.-Install the AA carrier, not the shifter at this time.-Install a new retaining clip to the carrier front, and rotate until the barbs are secure.-Install the spear like end of the carrier into the cylindrical bushing. Remember, the rubber flange on this bushing faces forward.-Push up the rear of the carrier until it snaps in place.

Procedure: Performed Inside the car

	<ul style="list-style-type: none">-While sitting in the drivers seat, inspect the AA Short Shifter for proper amount of white lithium grease. This is recommended on the shifter cup before installation.-Test that the new AA short shifter carrier assembly is properly secured.-Install the AA Short Shifter through the carrier hole and push down the shifter.-Push until the white cup makes a "CLICK" sound indicating that it is secured.
	<ul style="list-style-type: none">-Reinstall the console area back in reverse order.-Install the gear shift knob

Procedure: Performed under the car

	<ul style="list-style-type: none">-Connect to the end of the AA Short Shifter, a "E-Clip".-This connects the shifter rod to the new AA Short Shifter.-Use a small screwdriver or needle nose pliers to install the "E-Clip" <p>Parts removed and shown for illustration.</p> <ul style="list-style-type: none">-Reverse all the heat shield, mounting parts, etc. back in reverse order. Check back all nuts, etc. for proper torque.-Perform a basic function test, going through the gears without the engine running. If everything seems OK, start the car and do a road test. <p>This concludes the installation.</p>
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