

B&M 45126 vs. UUC usce

DIRECT COMPARISON B&M TO UUC - BMW SHORT SHIFTER (45126 to USCE)

	B&M 45126	UUC USCE
Piece by piece component construction		
A. Upper Stick	billet 6061-T6 aerospace quality aluminum, clear anodized to military specifications.	billet 6061-T6 aerospace quality aluminum (did not appear to be anodized)
Conclusion	While the UUC piece maybe slightly more “shiny” initially, it is more susceptible to scratches and corrosion – over time, the B&M piece will hold its appearance as the UUC piece begins to oxidize and dull.	
B. Vibration isolation system	fully rebuildable high compression Buna-n (nitrile) o-rings that meet or exceed ASTM D200, SAE J200, and Aerospace Standard (AS) 568A for complete 6th axial damping (100% isolated).	custom fabricated non-rebuildable silicone (unknown material standards) that does allow up to _” height adjustment but uses a metal set screw to hold the upper stick to the lower stick (not 100% isolated) and a compression fitting that must be released and re-set for adjustment.
Conclusion	The UUC piece does allow up to _” knob height adjustment but in doing so sacrifices 100% vibration isolation and creates a varying damping compression pre-load of the isolation material. This means that the vibration isolating properties and the upper to lower stick “flex” set at the factory can and will change depending upon whether or not you choose to adjust the shifter. The B&M unit is 100% isolated to tight tolerance compression as calculated and modeled by the B&M engineering department. Ensuring a constant factory setting means no vibration and less upper to lower stick “flex” than the UUC unit.	
C. Lower stick	billet 416 heat treated high strength stainless steel	billet 303 stainless steel (non-heat treatable)
Conclusion	The B&M unit has a yield strength (point at which the material starts to deform and cannot return to its original shape) that is 3 to 5 times stronger than the UUC unit.	
D. Center pivot bearing	Raised pivot point to keep shift rod angle at original position. True spherical bearing consisting of an oil impregnated sintered bronze sphere and Nyloy (high temperature resistant nylon based fiber composite) race, which creates a slight preload for ultra-smooth precision operation and a self-cleaning and lubricating seal. This spherical bearing is specifically designed for long-term high stress operation over millions of cycles. With the pre-loaded design and self-lubricating there is no end-play or “slop” in the bearing to race construction and there are no maintenance concerns over the life of the vehicle.	Raised pivot point to keep shift rod angle at original position (competition kit only). Stock BMW nylon pivot housing (a new one is supplied in the kit) riding on the 303 stainless steel pivot ball of the lower stick and lubricated with supplied lithium grease.

Conclusion The UUC bearing construction is a very good design for sealed, low-temperature environments and is employed in many of B&M's short throw shifters that are inside the vehicle or in enclosed housings away from high-heat and the environment. Unfortunately, in this application, the main pivot is located in an area directly above the drive shaft and exhaust where it is subject to high-heat and contamination. Unmodified (white) nylon has an operational temperature range rating of -40°F to 200°F over which the material begins to deteriorate rapidly. Also, over time, unsealed exposed lithium grease will attract contaminants into the pivot area pushing out the grease and eventually causing wear, rough movement, and "slop" or excessive free play as seen in older stock shifter applications that uses this exact same bearing construction. The B&M unit eliminates all of these problems by using a spherical bearing specifically designed for high-temperature, road dirt and contaminant environments. This bearing is maintenance free since it is self-lubricating and self-cleaning and will not compromise smooth and accurate movement over the entire life of the vehicle.

E. Lower change rod pivot German made high precision T-500 high temperature self-lubricating Igus bushings. Stantard polymer (unknown material or temperature rating) or optional sealed cartridge ball bearing.

Conclusion In an area of only a few degrees of axial rotation and extreme axial point loading, a ball bearing (which is designed specifically for high speed rotation) will eventually "flat-spot". Only one or two of the "balls" in the ball bearing cartridge will bear the full force of shifting over the entire life of the vehicle, which could possibly be millions of shifts! Yes, a cartridge ball bearing will initially feel smoother than a bushing due to less initial internal friction, but over time a cartridge bearing will simply not hold up to the force and pressure. B&M's self-lubricating high-temperature bushing is designed for extreme pressure and abuse that racing and day-to-day driving will create.

Installation

A. Instructions (Included and posted on-line) detailed step-by-step instructions with photos. (Included and posted on-line) detailed step-by-step instructions with photos.

B. Installation time with drive on lift: 20mins.(expert) / 40mins.(novice). with jack and jack stands: 40mins.(expert) / 1.3hrs.(novice) with drive on lift: 2hrs.(expert) / 3.5hrs.(novice). with jack and jack stands: 2.5hrs.(expert)/ 4hrs.(novice).

Conclusion The B&M unit is less time consuming to install and thus less costly to install.

Cost

\$285.72 retail \$295.00 retail + \$25.00 retail (cartridge bearings)

Warranty

One Million Mile Warranty- covers the original purchasing consumer. This warranty is limited to repair or replacement by B&M of any B&M part that fails because of a defect in materials or workmanship. Implied warranty: Any warranties implied by law are limited to the duration of this warranty, (except in those states where prohibited by law). None advertised.

Racing background

VAC Motorsports (Speed Channel World Challenge) Team Terra (DooWop PRO Rally)