

Inspecting a Gear Shifter Fork

Checklist Category
Fork Stiffness

Checklist Name	Answer Type
Is the gear shift quality in manual transmissions satisfactory?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Is the stiffness of the fork adequate to ensure smooth and precise gear changes?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Has the stiffness of the fork been verified using "Contact Pattern Analysis" and "Stiffness Analysis (with MSC Nastran tool)"?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA

Checklist Category
Alignment and Straightness

Checklist Name	Answer Type
Has the fork's alignment and straightness been measured to check for any deviation from the correct position of gear engagement?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Have precision instruments been used to check the alignment along the fork's length and ensure it aligns correctly with the gear shift rail?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA

Checklist Category
Fork Teeth Dimensional Accuracy

Checklist Name	Answer Type
Have the key dimensions (width, height, pitch) of the fork teeth been measured using precise tools like calipers and micrometers?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Have the fork teeth been inspected for proper dimensions?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Do the fork teeth match the corresponding gear's tooth profile for smooth meshing during shifts?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA

Checklist Category
Synchronizer Interaction

Checklist Name	Answer Type
Has the interaction between the fork and the synchronizer sleeve been evaluated, considering that the fork's stiffness affects synchronization force?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Has the force applied to the fork pads during synchronization been measured to ensure optimal distribution and prevent excessive wear?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA

Checklist Category
Gap and Clearance

Checklist Name	Answer Type
Has the gap between the fork and other components (such as the synchronizer sleeve or gear shift rail) been checked?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Are proper clearances maintained to prevent interference during gear shifts and reduce the risk of binding?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA

Checklist Category
Material Quality

Checklist Name	Answer Type
Has the fork material (usually steel or alloy) been inspected to ensure it meets strength and durability requirements?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Have signs of wear, corrosion, or fatigue been checked for on the fork?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA

Checklist Category
Mounting and Retention Mechanism

Checklist Name	Answer Type
Has it been verified that the fork mounts securely to the gear shift rail?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Have the retaining pins, bolts, or clips used to secure the fork been inspected?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Has proper torque been ensured during assembly?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA

Checklist Category
Functional Testing

Checklist Name	Answer Type
Has the fork been installed in the transmission and functional tests been performed?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Have all gears been shifted through to verify smoothness, engagement, and absence of binding?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA
Has the force required during shifts and any abnormal noises been monitored?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No NA