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Service Tips and Best Practices

Axial Spline Type Wheel Hub Assembly Identification

Brand	Supreme/TTX	Product	Wheel Hub Assemblies	Date	July 2021
Part Number(s)	N/A				

Conventional driven wheel hub assemblies utilize a male-splined CV axle shaft to mate with the female-splined bore of the assembly. An axle nut joins the two components together.

Owing to increased performance and durability requirements, specifically from high torque turbo and electric drivelines, some OEMs have begun to transition away from the conventional design. Newer axial spline wheel hub assemblies relocate the female splines from the hub bore to the face of the assembly. Matching splines are found on the CV axle shaft and the two components are joined with an axle bolt. These splines take the appearance of spur gear teeth. **See Figure 1**.

This design approach permits transmission of additional torque to the wheel, reduces the diameter of the hub bore (increasing stiffness of the assembly), improves control of the orbital roll forming process by removing splines from the bore and reduces repair time as components no longer require press fitting.

For the Professional Technician, it is important to note that these assembly types are maintenance free and non-serviceable, as they are pre-greased, pre-sealed and the pre-load is set during manufacturing. Additionally, axial spline hub assemblies employ torque-to-yield (TTY) fastening hardware which must not be reused (refer to Mevotech Insider #MI-21-116-04-01 for details on BMW axle bolt identification).

Always refer to the factory service manual for correct diagnostic procedures, component removal and installation methods, as well as fastening torque values and procedures where applicable. Only use a calibrated torque wrench for final fastening.

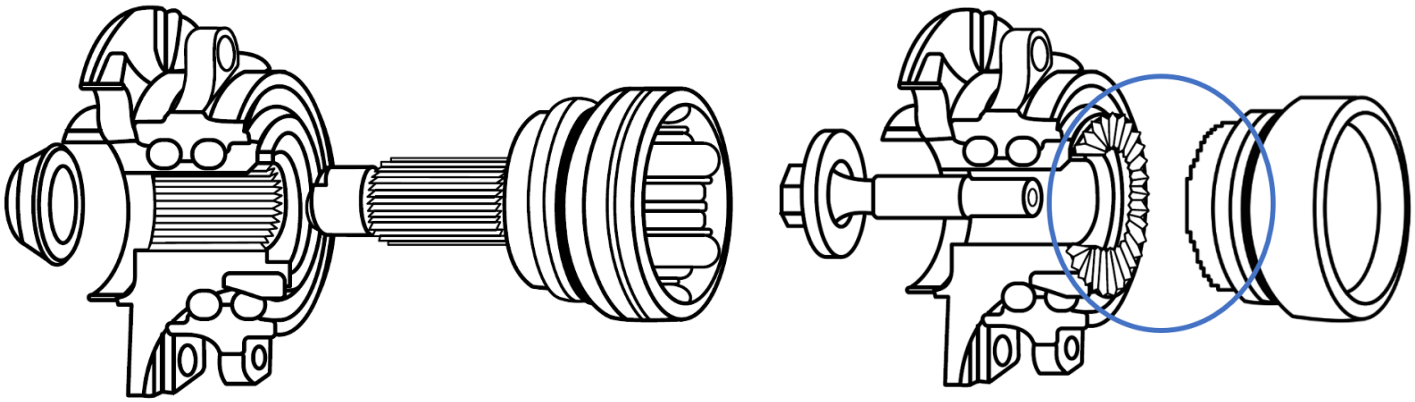


Figure 1. Conventional driven wheel hub assembly (left) and axial spline type wheel hub assembly (right). Note the splines appear as spur gear teeth on both the hub and CV axle shaft side (circled).

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