



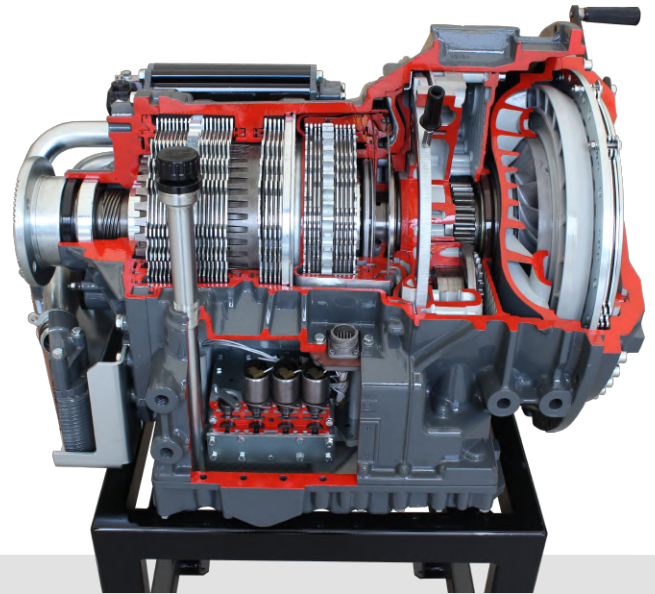
HEAVY TRUCK GEARBOX ZF 5HP CUTAWAY EDUCATIONAL TRAINER

A2

Product number
AE411071M

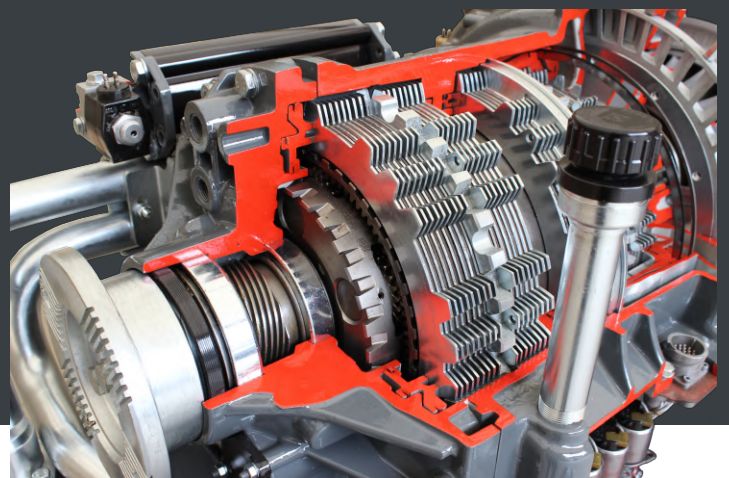
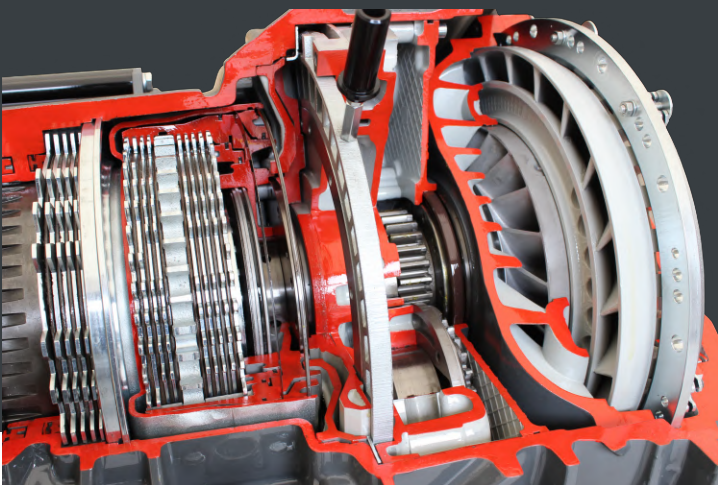


Sectioned model of a heavy-duty automatic transmission, designed for technical and vocational automotive training. It features a torque converter with lock-up clutch, hydrodynamic retarder, rotating multi-disc clutches, fixed-position multi-disc brakes, and an oil cooler with an oil-water exchanger. The gearbox is operated manually through a crank handle, allowing for detailed observation of gear shifting, torque flow, and braking mechanisms. Mounted on a wheeled stand for mobility, this trainer provides practical insights into the inner workings of heavy truck automatic transmissions.



Features

- Cutaway design exposes critical components such as the torque converter, rotating multi-disc clutches, fixed-position brakes, and the hydrodynamic retarder for easy observation and learning.
- Torque converter with lock-up clutch demonstrates the principles of torque multiplication and lock-up mechanisms in heavy trucks.
- Hydrodynamic retarder provides insights into braking without wear using fluid resistance, commonly found in heavy vehicles.
- Oil cooler with oil-water exchanger helps learners understand the heat management systems essential for high-performance transmission operation.
- Integrated electro-valves to demonstrate the electrical control of hydraulic systems in automatic gearboxes.
- Gearbox operated via a crank handle, allowing real-time observation of gear shifting and torque flow.
- Ensures easy mobility for use in different training environments, making it versatile for various classroom setups.





Value for Students

- Essential gearbox elements such as the torque converter with lock-up clutch, hydrodynamic retarder, multi-disc clutches, and fixed-position brakes, developing real-world skills applicable to heavy-duty vehicles.
- Clear view of internal mechanisms, enhancing the understanding of torque transmission, gear shifting, oil cooling systems, and the role of electro-valves in automatic gearboxes.
- Learn manual operation of the gearbox via a crank handle, simulating real vehicle conditions. Understand how to control and troubleshoot automatic transmission systems, focusing on the interaction between mechanical and hydraulic components.
- The integrated oil cooler with an oil-water exchanger provides insights into thermal management within heavy-duty automatic transmissions.
- Enables detailed studies of gearbox maintenance, wear points, and diagnostic procedures necessary for professional-level servicing of heavy vehicles.



Value for Instructors

- The cutaway design facilitates clear, visual demonstrations of the gearbox's working principles, improving students' comprehension of automatic transmission systems.
- The manually operated crank handle allows controlled demonstrations of gear engagement, torque conversion, and braking systems, ideal for classroom use.
- The clearly sectioned gearbox allows educators to focus on individual components, making complex systems easier to explain and understand.
- Mobile and space saving stand, allows concurrent use by multiple students, promoting collaborative learning and practical training opportunities.



Specifications

- Dimensions: 1000 x 700 x 850 mm (39.37 in×27.56 in×33.46 in)
- Weight: 295 kg (650 lb)
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