



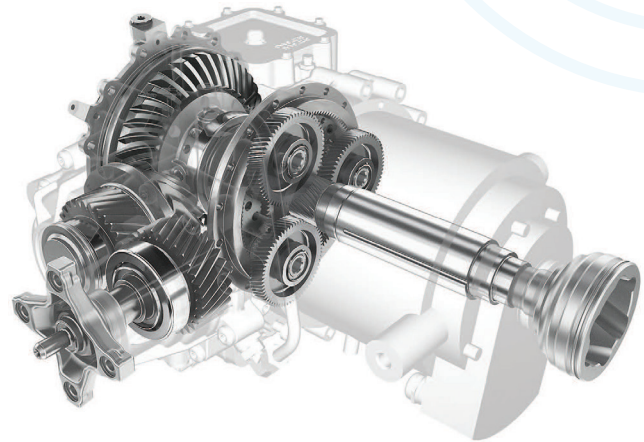
Hybrid Rear Axle Module (HRAM)

Features

- Hydraulic module for actuations
- Single-speed or 2-speed
- eLSD differential (modularity with open diff, MLSD)
- EM coaxial to half shafts

Benefits

- Additional electric power in combination with a high-efficiency mechanical layout
- Highly integrated design
- No modifications needed on the ICE and gearbox
- Battery boost characteristics



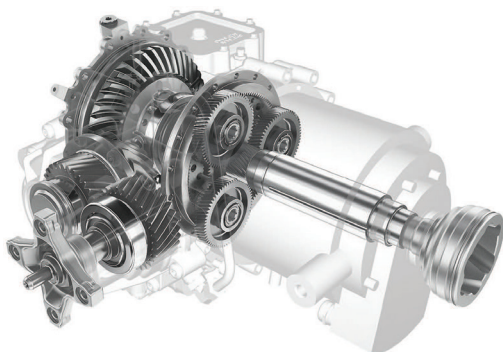
Ideal for high-performance sports car applications.



Hybrid Rear Axle Module (HRAM)

The Graziano™ hybrid rear axle module (HRAM) is available as a single-speed or two-speed variant. It's designed specifically for high-performance hybrid rear wheel and four-wheel drive vehicles. The HRAM features an electronic limited-slip differential (eLSD), hydraulic actuators, and an electric motor with a hollow rotor.

Vehicle	High-performance hybrid 4WD
Driveline Layout	Rear-wheel drive, coaxial electric motor
Product	<ul style="list-style-type: none"> ■ Hybrid rear axle module single-speed or 2-speed variant (ratios, torque, and power ranges flexibility with open diff, MLSD, eLSD modularity matching various applications) ■ P3 and P4 modularity
Motor Features	176 kW, max. speed 15,000 rpm, max. torque 293 Nm
Ratios	<p>E-mode: Single-speed $i = 6,467$ 2-Speed $i_1 = 11,9$ $i_2 = 4,58$</p> <p>ICE mode: from 2,44 to 3,7</p>
Gearbox Features	<ul style="list-style-type: none"> ■ Hybrid functionality for this fully integrated system is provided by an electric motor with a hollow rotor which allows one of the half shafts to pass through it. ■ The electric motor is connected via a transmission ratio (2-speed variant available for a higher torque speed envelope and better efficiency) realized via a planetary gear set to the differential housing. ■ The HRAM comprises a modular hydraulic power-pack for controlling the eLSD and the 2-speed device if needed.
Future Developments	Variant with torque vectoring system under development



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Application Policy

Capacity ratings, features, and specifications vary depending upon the model and type of service. Application approvals must be obtained from SME; contact your representative for application approval. We reserve the right to change or modify our product specifications, configurations, or dimensions at any time without notice.

