

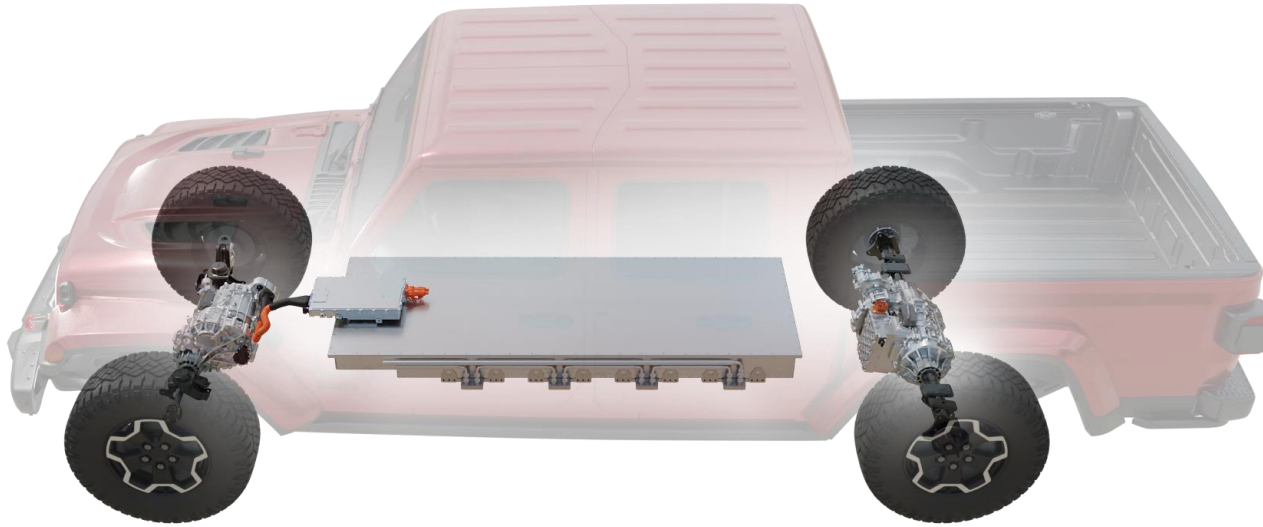
EtelligentTerrain



EtelligentTerrain

BEV

Magna EtelligentTerrain is a battery electric 4WD powertrain system for Sport and Light Utility vehicles. Powered by eBeam™ axles front and rear, it is designed for those who enjoy adventure on- and off-road.



Front Electric Drive System

- Steerable eBeam™ HD Mid
- High structural integrity
- Thermal robustness
- Smooth torque delivery for superior offroad performance

Software/Controls

- Off-road Drive Control
- Drive Torque Strategy
- Optional decoupling strategy

Rear Electric Drive System

- eBeam™ HD High
- High structural integrity
- Thermal robustness
- Smooth torque delivery for superior offroad performance



EtelligentTerrain

BEV 4WD Sport and Light Utility vehicle solution with off-road capability focus

Efficiency

Disconnect capability of front axle

Safety

Magna operating control software supports excellent vehicle stability

Convenience

Uncompromised capability: Magna operating control software supports advanced off-road functionality

Dynamics

Up to 426 kW peak power

Vehicle Integration

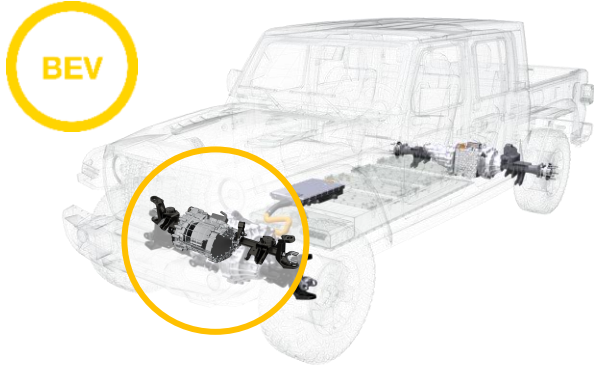
Totally customizable w/o need for architectural changes



Pre-Development Released for Acquisition Serial Development Serial Production

Steerable eBeam™ HD Mid

Secondary Axle (Front)



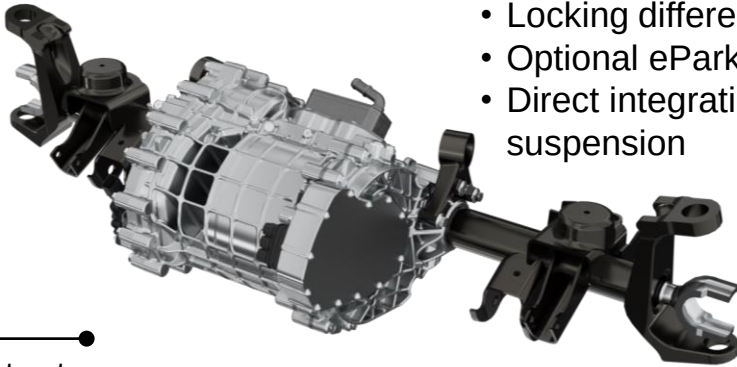
eBeam™ HD Mid, steerable in this application, is an electric axle drive system that offers a structure-oriented design to support high payload vehicles with matching power for continuous duty usage and robustness.

Inverter

- Si or SiC power electronics
- Remote and on-unit mounting available
- 400 & 800 V variants

E-motor

- PSM hairpin winding motor to enhance cooling for continuous usage
- Dual media (oil/coolant) cooling



Features

- Locking differential
- Optional ePark-lock, disconnect
- Direct integration to current vehicle suspension

Reduction Unit

- High contact ratio for quiet operation
- Optional ratios via final drive gearset change
- Offset design to meet packaging



Magna eBeam™ HD Mid (Steerable)

Safety

Disconnect provides fast reconnection during slip events for increased traction. Optional integrated park lock.

Convenience

Maintains beam axle image/branding, off-road capability and durability

Dynamics

Scalable power to 200 kW with up to 7,000 Nm axle torque

Vehicle Integration

Utilizes current suspension, achieves required clearances during full suspension movement

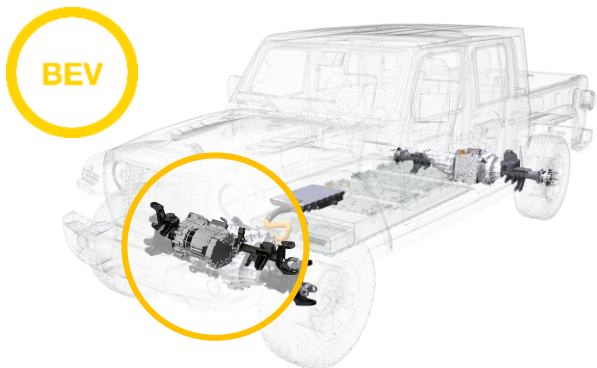


Pre-Development Released for Acquisition Serial Development Serial Production

¹⁾ according to commercial motor vehicle classification FHWA

Steerable eBeam™ HD Mid

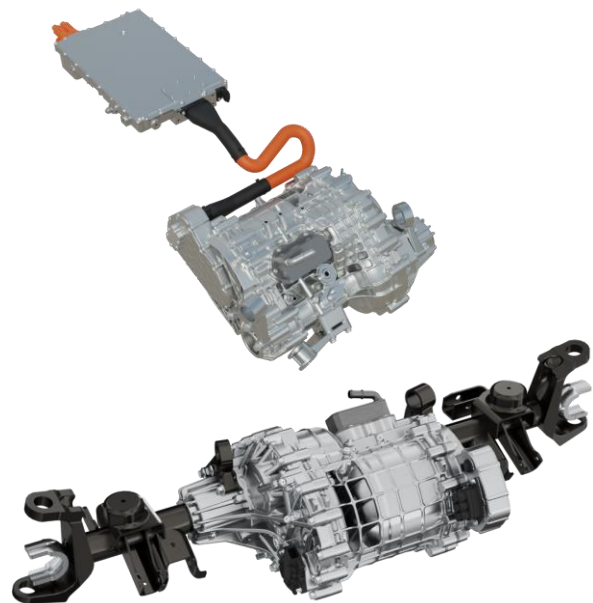
Secondary Axle (Front)



The eBeam™ electric axle drive system offers a structure-oriented design to support high payload vehicles with matching power for continuous duty usage. It supports light commercial vehicles, SUVs, and pickups classes 1, 2a, 2b and 3.¹⁾

eBeam™ HD Mid

Peak axle power:	up to 200 kW for 30 s ²⁾
Peak axle torque:	up to 7,000 Nm ³⁾
Output speed:	1,150 rpm
GAWR:	3,250 kg
Feature:	electric locking differential, ePark-Lock
Reduction ratio:	13.96



Magna eBeam™ HD Mid (Steerable)

Safety

Disconnect provides fast reconnection during slip events for increased traction. Optional integrated park lock.

Convenience

Maintains beam axle image/branding, off-road capability and durability

Dynamics

Scalable power to 200 kW with up to 7,000 Nm axle torque

Vehicle Integration

Utilizes current suspension, achieves required clearances during full suspension movement



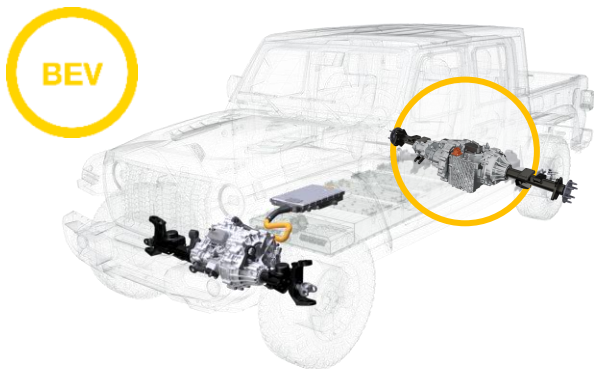
¹⁾ according to commercial motor vehicle classification FHWA

²⁾ A-sample application limitation by software for protection reasons

³⁾ A-sample application limitation by software for protection reasons

eBeam™ HD High

Primary Axle (Rear)



The eBeam™ HD High electric axle drive system offers a structure-oriented design to support high payload vehicles with matching power for continuous duty usage. It supports light commercial vehicles, SUVs, and pickups classes 1, 2a, 2b and 3.

Inverter

- Si or SiC power electronics
- Remote and on-unit mounting available
- 400 & 800 V variants



E-motor

- PSM hairpin winding motor to enhance cooling for continuous usage
- Dual media (oil/coolant) cooling

Features

- Locking differential
- Optional ePark-lock
- Direct integration to current suspension
- Coaxial design for optimum ride & handling

Reduction Unit

- High contact ratio for quiet operation
- Optional ratios via final drive gearset change
- Coaxial arrangement for reduced space claim



Magna eBeam™ HD High

Safety

Robust design for safe towing and hauling

Convenience

Drop-in solution that maintains OEM suspension interfaces, with uncompromised towing/payload capabilities

Dynamics

Scalable power to 350 kW with up to 12,500 Nm axle torque

Vehicle Integration

Adaptable to current suspension, achieves required clearances during full suspension movement

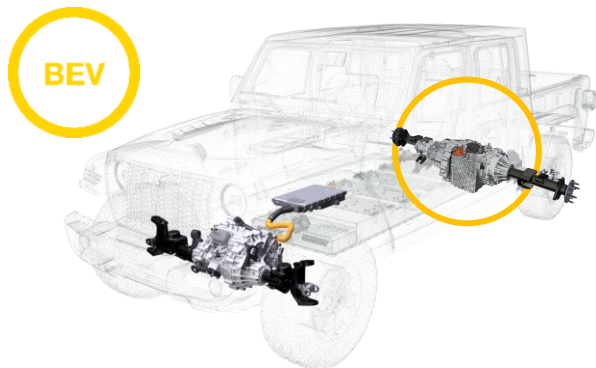


Pre-Development Released for Acquisition Serial Development Serial Production

¹⁾ according to commercial motor vehicle classification FHWA

eBeam™ HD High

Primary Axle (Rear)



The eBeam™ HD High electric axle drive system offers a structure-oriented design to support high payload vehicles with matching power for continuous duty usage. It supports light commercial vehicles, SUVs, and pickups classes 1, 2a, 2b and 3.¹⁾ Banjo support up to class 6 trucks.

eBeam™ High



Peak axle power:	up to 250 kW for 30 s ²⁾
Peak axle torque:	up to 10,000 Nm ³⁾
Output speed:	1,400 rpm
GAWR (Coaxial):	3,250 kg
GAWR (Banjo):	7,850 kg
Feature:	electric locking differential

¹⁾ according to commercial motor vehicle classification FHWA

²⁾ A-sample application limitation by software for protection reasons

³⁾ A-sample application limitation by software for protection reasons



Magna eBeam™ HD High

Safety

Robust design for safe towing and hauling

Convenience

Drop-in solution that maintains OEM suspension interfaces, with uncompromised towing/payload capabilities

Dynamics

Scalable power to 350 kW with up to 12,500 Nm axle torque

Vehicle Integration

Adaptable to current suspension, achieves required clearances during full suspension movement



EtelligentTerrain: Uncompromised Off-Road Capability

BEV

Magna EtelligentTerrain is a battery electric 4WD powertrain system for Sport and Light Utility vehicles. Powered by eBeam™ axles front and rear, it is designed for those who enjoy adventure on and off-road.



Features/Specifications

Rear Axle Electric Drive System Magna eBeam™ HD High

Peak axle power up to 238 kW ¹⁾

Peak axle torque 7200 Nm

Ratio rear axle 12.67

Front Electric Drive System

Magna eBeam™ HD Mid Steerable

Peak axle power up to 188 kW ¹⁾

Peak axle torque 5430 Nm

Ratio front axle 13.96

Energy & Motion Control

Off-road specific Drive Modes (selectable crawl, auto hill ascent/descent)

Torque distribution (high range, e-selectable low range)

Slip control

Active damping controls

Inverter-based traction and user-adjustable regen settings

Disconnect strategy for secondary front axle

Axle locker strategy

Vehicle physics model

Pre-Development

Released for Acquisition

Serial Development

Serial Production

¹⁾ 400V 10 sec duration

