

ACTIVE GRILLE SHUTTER (NON-VISIBLE)

Regulates frontal airflow to reduce aerodynamic drag



Application:

- All Vehicle Types
- C_D (Coefficient of Drag) Reduction
- C_L (Coefficient of Lift) Reduction

Magna Experience:

- 14 Production Awards
- 2.5 Million Shipped Annually
- 4 Years Experience
- Passenger Car and PU/SUV Production
- Global Manufacturing Capability



C_D Benefit (Counts)	Fuel Savings (mpg)	CO2 Savings (g/km)	Mass Equivalent (kg)
7-15	0.18	2.14	35

ACTIVE FRONT DEFLECTOR

Redirects airflow which reduces underbody drag, Tire drag and front axis lift

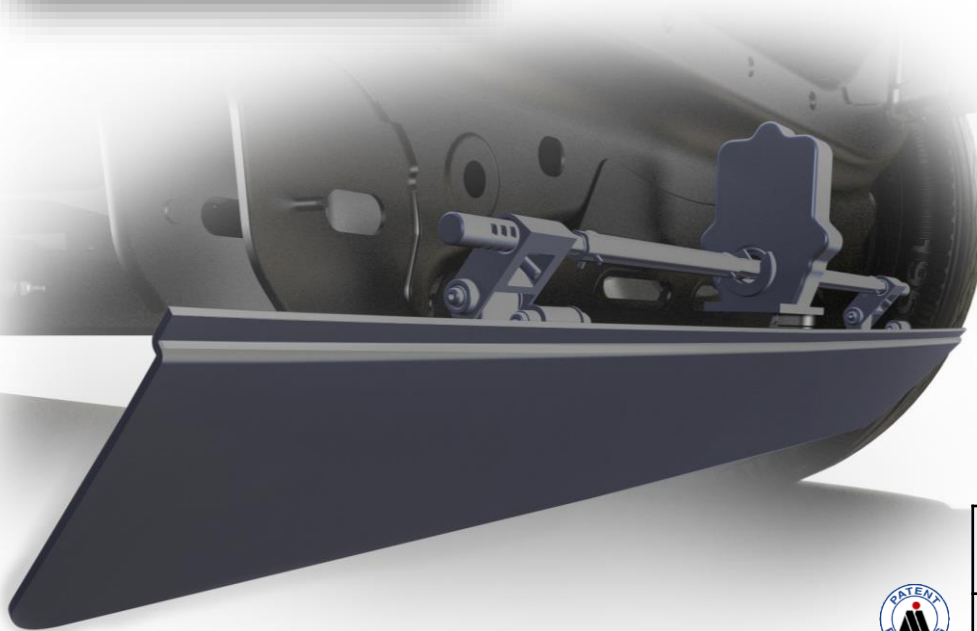


Application:

- Pickup Trucks and SUVs (High Ride Vehicles)
 C_D (Coefficient of Drag) Reduction
- Passenger Vehicles (Lower Ride Vehicles)
 C_L (Coefficient of Lift) Reduction

Magna Experience:

- Passenger Car and PU/SUV Development
- Pick Up Truck/SUV Pre-Production
- Global Manufacturing Capability



C_D Benefit (Counts)	Fuel Savings (mpg)	CO2 Savings (g/km)	Mass Equivalent (kg)
16-20	0.297	3.60	129

ACTIVE UNDERBODY PANELS

Provides underbody air flow redirection that reduces vehicle aerodynamic drag and lift.



Application:

- Passenger Car
 - C_D (Coefficient of Drag) Reduction
 - C_L (Coefficient of Lift) Reduction
- Actuator Technology Under Development

Magna Experience:

- Passenger Car Development
- Global Manufacturing Capability

C_D Benefit (Counts)	Fuel Savings (mpg)	CO2 Savings (g/km)	Mass Equivalent (kg)
9-17	0.21	2.53	41



ACTIVE LIFTGATE SPOILER

Rear Spoiler with Multi Mode
Functionality AERO, SPORT and CLEAN
settings



Application:

- Passenger Vehicles
- Aero Mode C_D (*Coefficient of Drag*) Reduction
- Sport Mode C_L (*Coefficient of Lift*) Reduction
- Clean Mode reduces debris collection on rear window

Magna Experience:

- SUV Development
- Global Manufacturing Capability

C_D Benefit (Counts)	Fuel Savings (mpg)	CO2 Savings (g/km)	Mass Equivalent (kg)
3-7	0.07	0.86	14

ACTIVE TAILGATE PANEL

Integrated into the vehicle tailgate to reduce aerodynamic drag

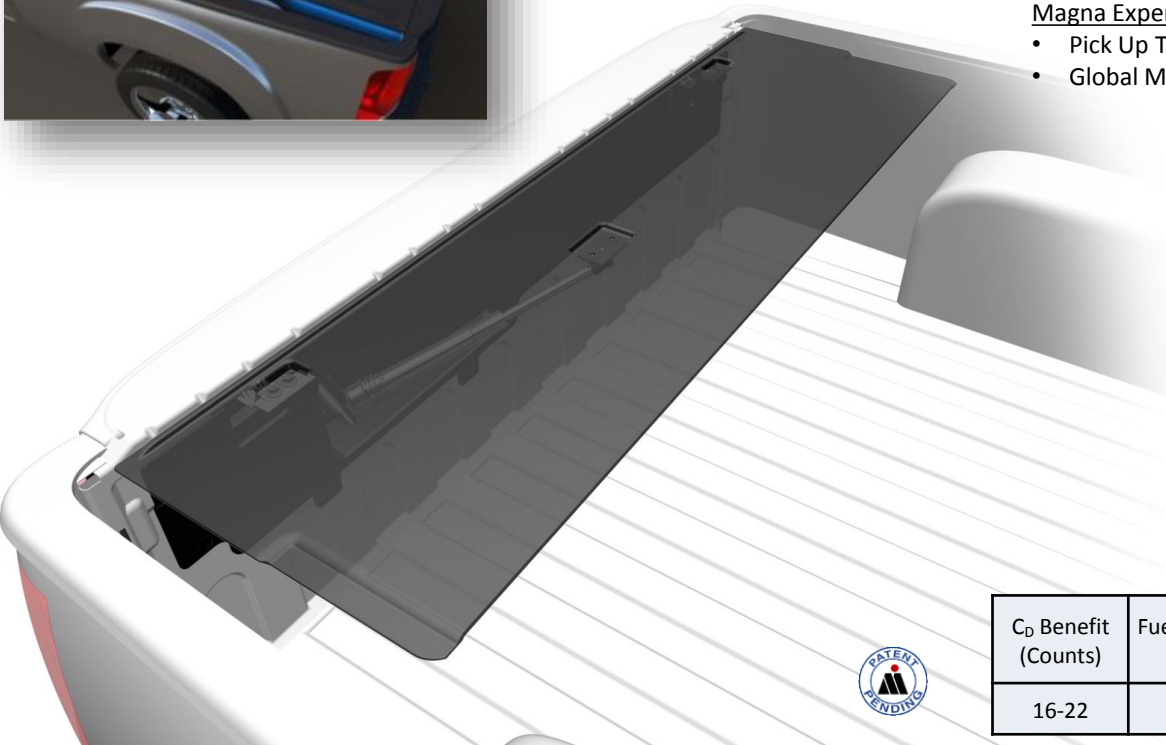


Application:

- Pickup Trucks
- C_D (Coefficient of Drag) Reduction

Magna Experience:

- Pick Up Truck Development
- Global Manufacturing Capability



C_D Benefit (Counts)	Fuel Savings (mpg)	CO2 Savings (g/km)	Mass Equivalent (kg)
16-22	0.27	3.27	53