

Company Profile Presentation By

MINDA VAST ACCESS SYSTEMS PRIVATE LIMITED.

Plant Location : Pune , Manesar (India)

Place : Pune - India



Key Solutions for the automotive world

~ ~ 50 : 50% JV between SparkMinda Group and VAST LLC ~ ~



About SparkMinda Group



Founded in 1958 by
Late Shri. S.L Minda



ASHOK MINDA GROUP

Powered by Passion

FURUKAWA
ELECTRIC



VAST

UZAVTOSONOAT



Primarily
Automotive
Industry



Spark Minda Employees
– 15,800 People &
Growing



Group Annual Turnover:
INR 3500 Cr./ USD 585 Mn.
(FY 2015-16)



About SparkMinda Group



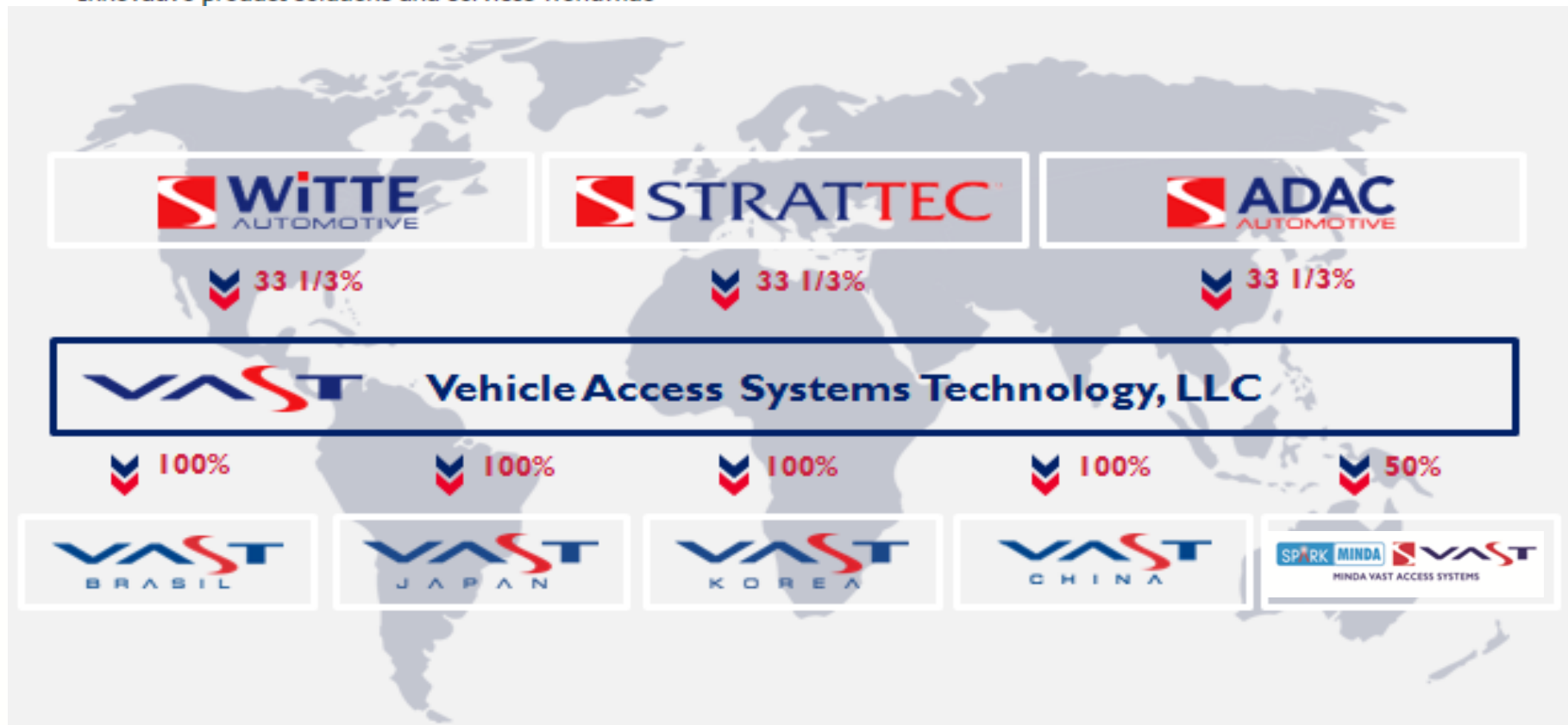
Existing Plant
Upcoming Plant

About VAST LLC

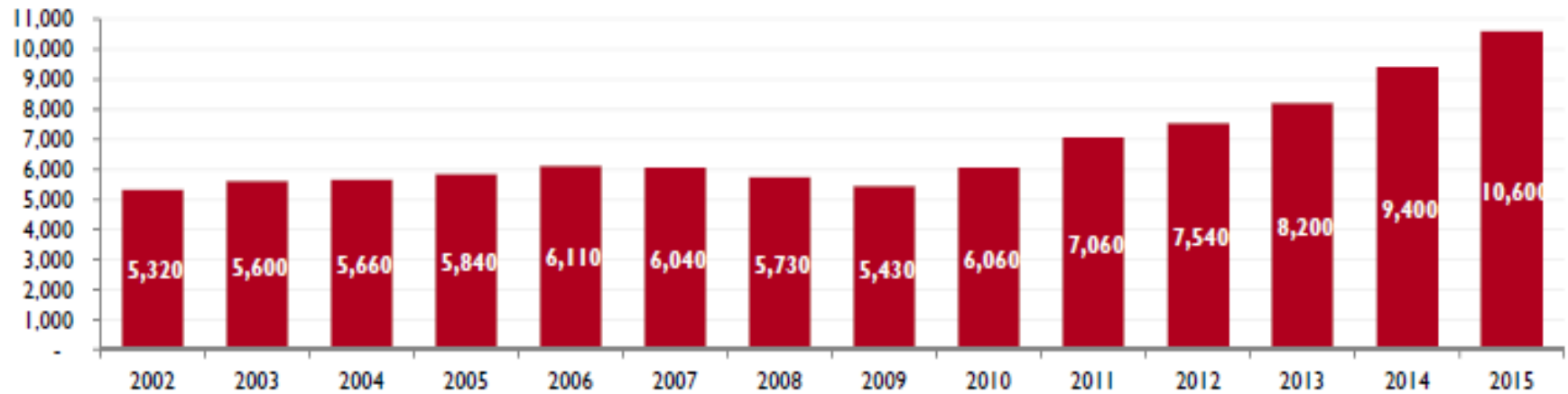
Vehicle Access Systems Technology (VAST)

is an alliance of three Member Organizations and related operating entities that is directed by a single management team in order to effectively serve global customers in the motor vehicle industry.

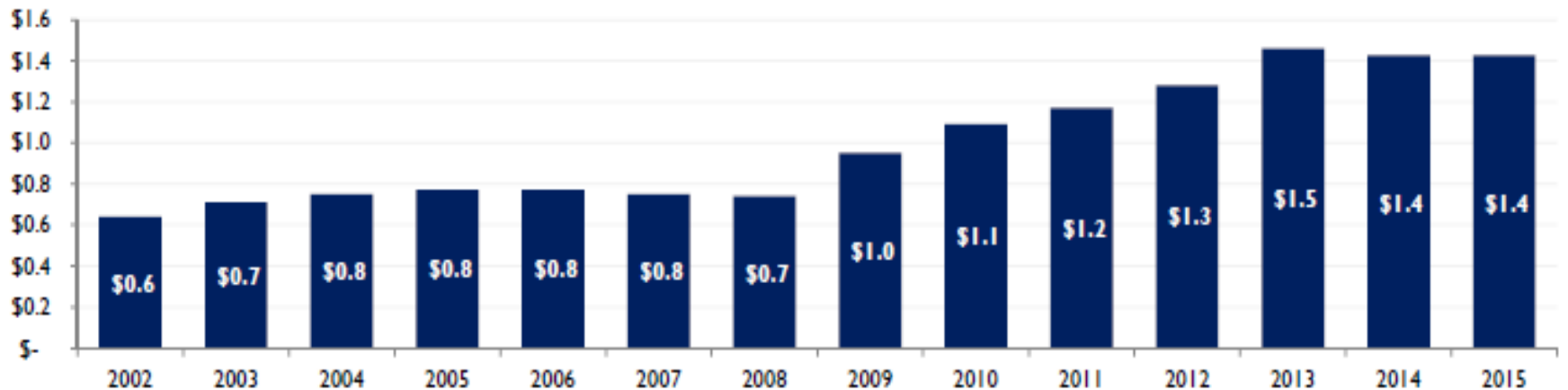
- Alliance of strong partners in Europe and North America
- Common production locations in Asia and South America
- Innovative product solutions and services worldwide
- Common development of high tech and high-quality products
- Exchange of know-how and "best practices"



Employee count

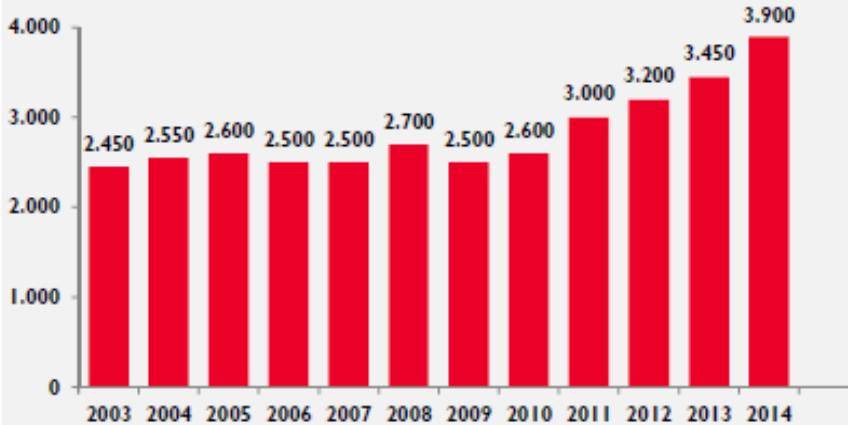


Sales \$Billion USD

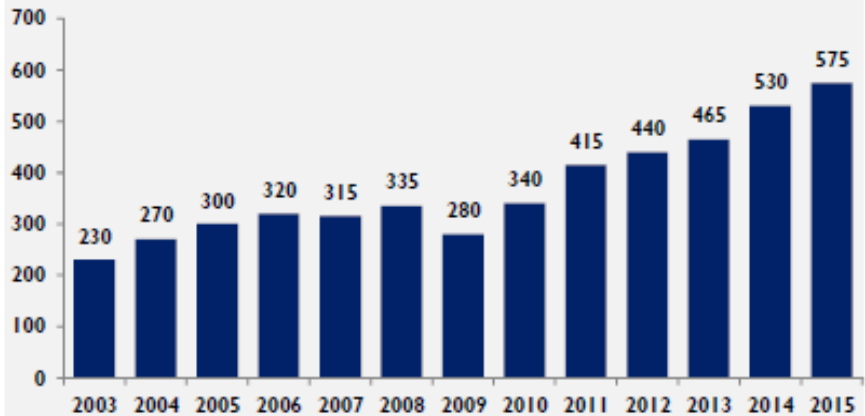


WITTE Automotive in facts and figures

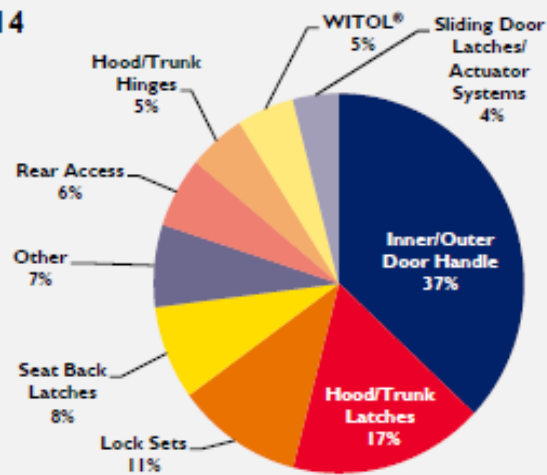
Employee count



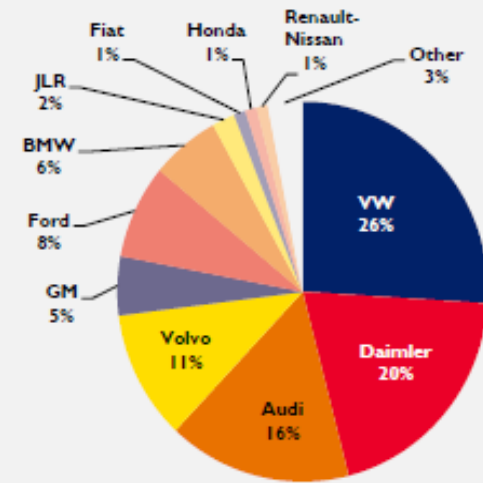
Sales volume in Mio. €



Series sales 2014
by product
groups [%]

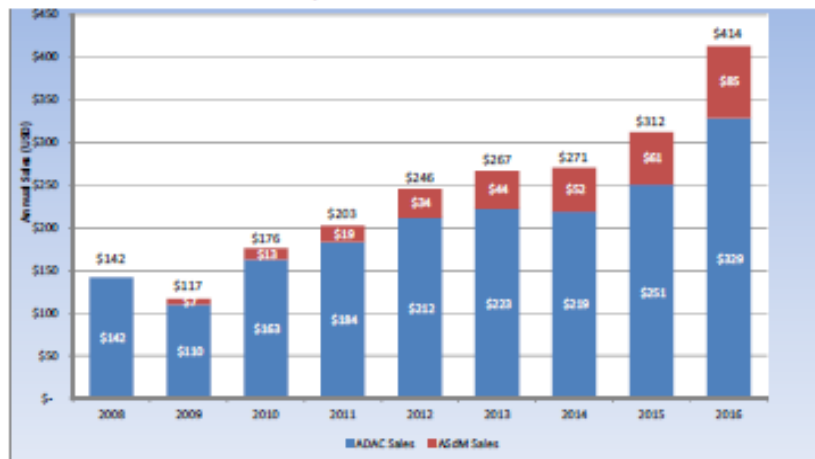


Series sales
2014 by
Customer

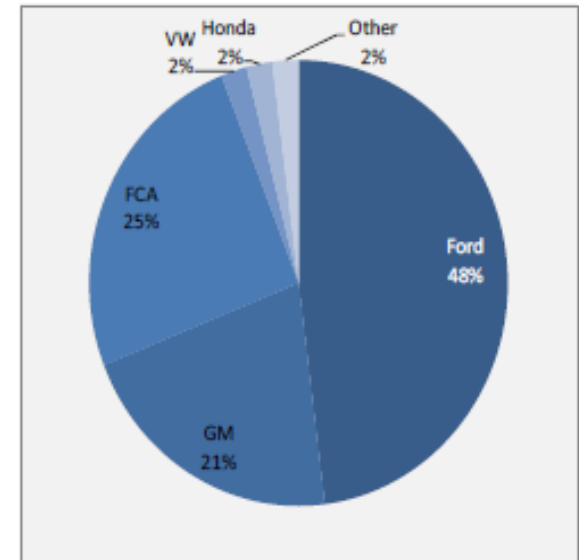


ADAC Automotive in facts and figures

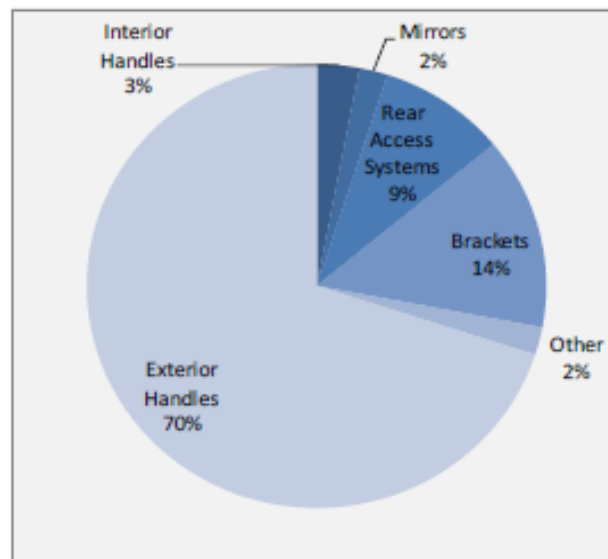
Sales volume in US-\$



Series sales 2014 by Customer

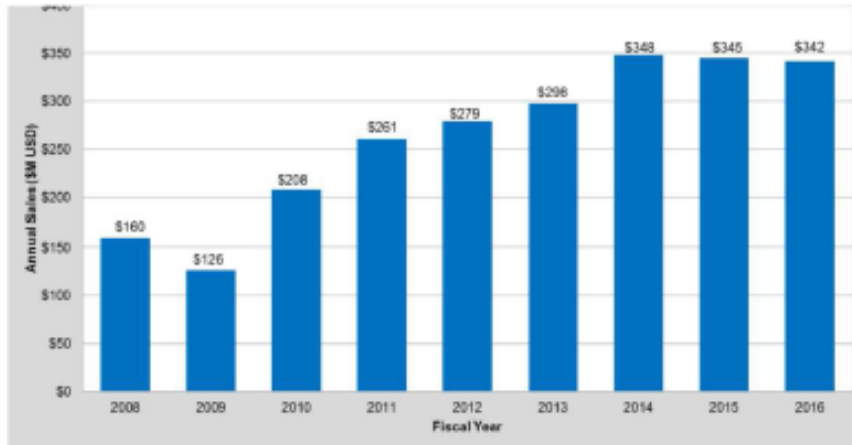


Series sales 2014 by product groups [%]

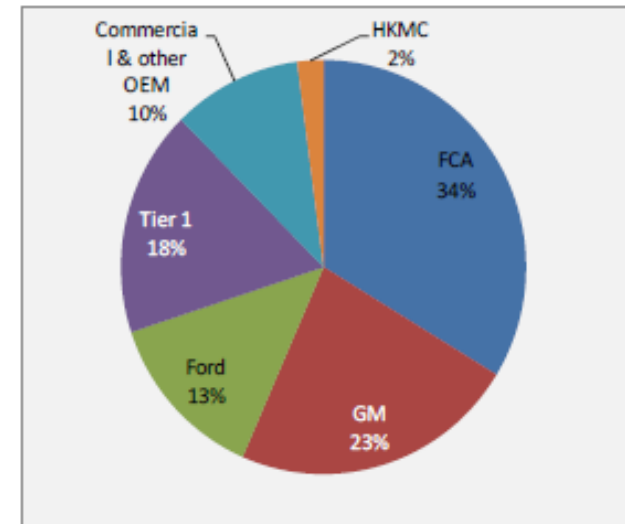


STRATTEC in facts and figures

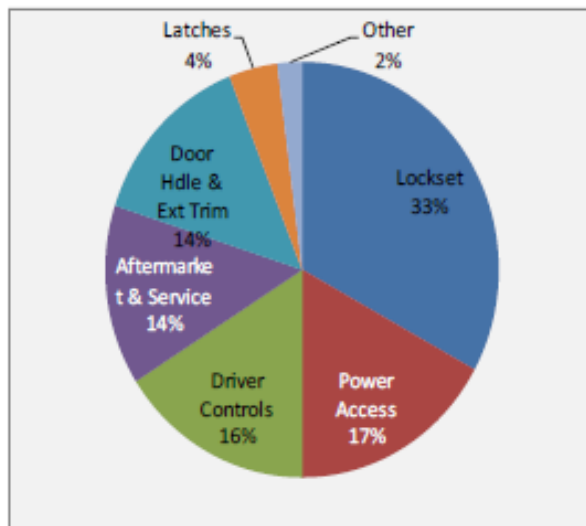
Sales volume in US-\$



Series sales 2014 by Customer



Series sales 2014 by product groups [%]



About

Minda VAST Access Systems Pvt. Ltd.
(MVAS)





Products : Electronic & Mechanical Security System, Immobilizers, Latches, Striker, Door Handles

Employee : 750

Turnover : INR 238 Cr (FY 2015-16)

Certification : ISO TS 16949, ISO14001, OHSAS 18001

Plants: Pune , Manesar

Hoods and Lids :
Pedestrian Protection Systems
Latches
Safety Hooks
Hinges



Tail Gate and Trunk Lids :
Power Closing Actuators & Controllers
Camera Module
LED Soft Touch
Multifunction Modules



Doors :
Outside / Inner Door Handles
Bracket
Keyless Entry System
Keys / Locksets
Ignition System
Side Door Latches / Striker
Power Closer Units
Door Check Arms
Power Sliding Doors
Mini Door Modules
Door Edge Protector
Electronic Steering Column Lock



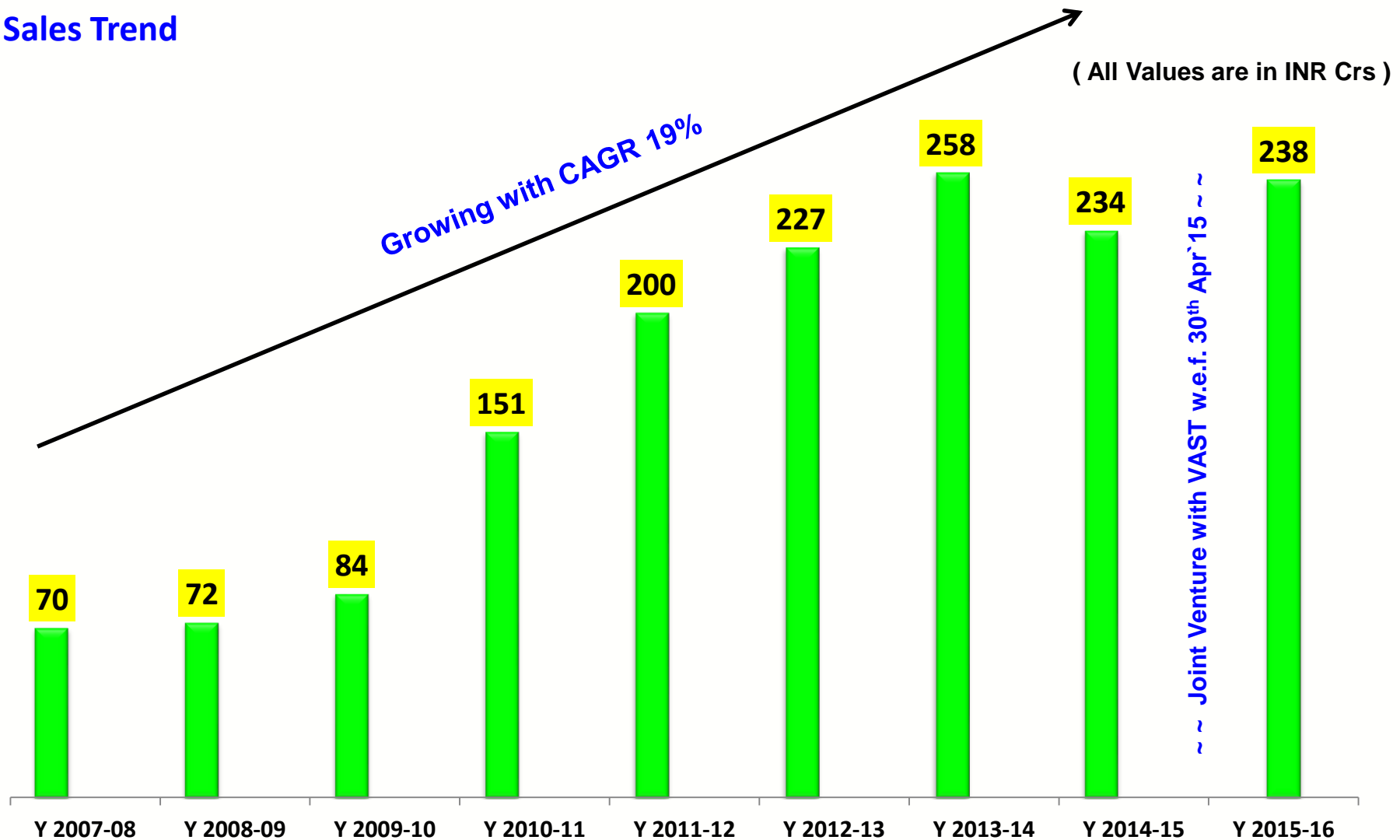
*Key Solutions
for the automotive world*

Seats:
Seat Back Latches
Seat to Floor Latches
Multi Position Seat Latches
Lockable Latches
Handles (With Indication)
Strikers



- **BLUE** : Products newly introduced with support of VAST
- **BLACK** : Legacy Products (Product Range MVAS)

Sales Trend



Major Customers - MVAS

Domestic (India)



Exports (Out of India)



VAST Global Customer Base



Passenger Vehicle Manufacturers



Commercial Vehicle Manufacturers



System Suppliers



Plant Facilities

Molding Facilities

- Injection Molding machines Ranging from (150T – 420T)

Core Competencies

- Gas assisted molding.
- Strict Process control for aesthetic parts.
- Predictive & preventive maintenance of Machines & Tools
- Ultrasonic Welding Process



Assembly Lines

Core Competencies

- Extensive POKA YOKE implementation for Occurrence & detection.
- Low cost automation to avoid manual errors.
- Lean Manufacturing to ensure JIT Supplies.
- Cycle time to match customer TACT time.

Paint Shop Facilities

- Variable Speed conveyors with drying ovens. (2 Nos each as contingency)
- 3 coat wet on wet painting process compatible with 4 coat system.

Core Competencies

- Paint mixing with continuous paint circulation for 10 colors.
- positive pressure & Temperature controlled environment with fully furnished laboratory.
- Competency to handle more than 100 shades for parts of 40 different shapes & sizes.



Product Testing and Validation



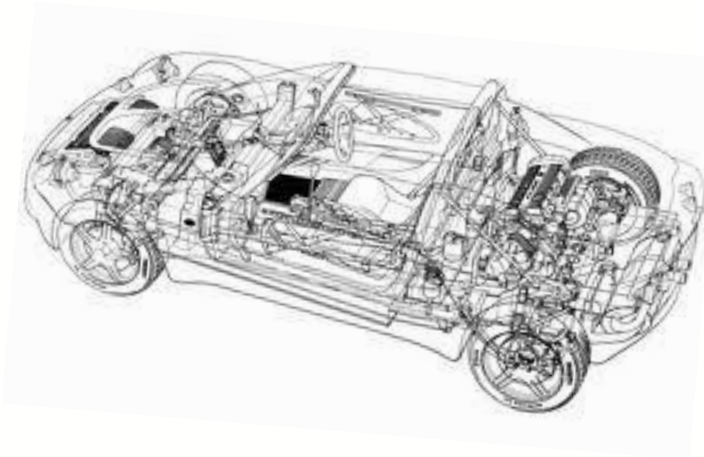
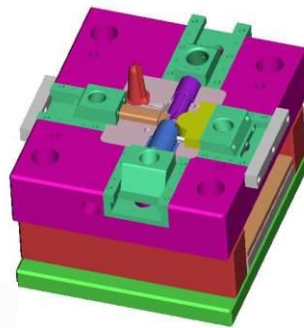
- In house Product Validation Testing Facility.
- In house Environmental Test Facility.
- In-house calibration facility.

Design and Development

- Fully integrated Design Cell.
- FEA & Simulation support from dedicated suppliers.
- Rapid Prototyping Capability thru' dedicated suppliers.
- Concept Design Capability (Black Box Design).
- Designing Software
 - PRO-E wild fire – 2
 - Catia V-5 Workstation
 - Uni Graphics

Tool Manufacturing Facilities

- Advanced in-house tool making capability.
- Di-edifice software for die casting tools.
- CNC Milling & wirecut Machine.
- Predictive and preventive maintenance of tools.
- SMED

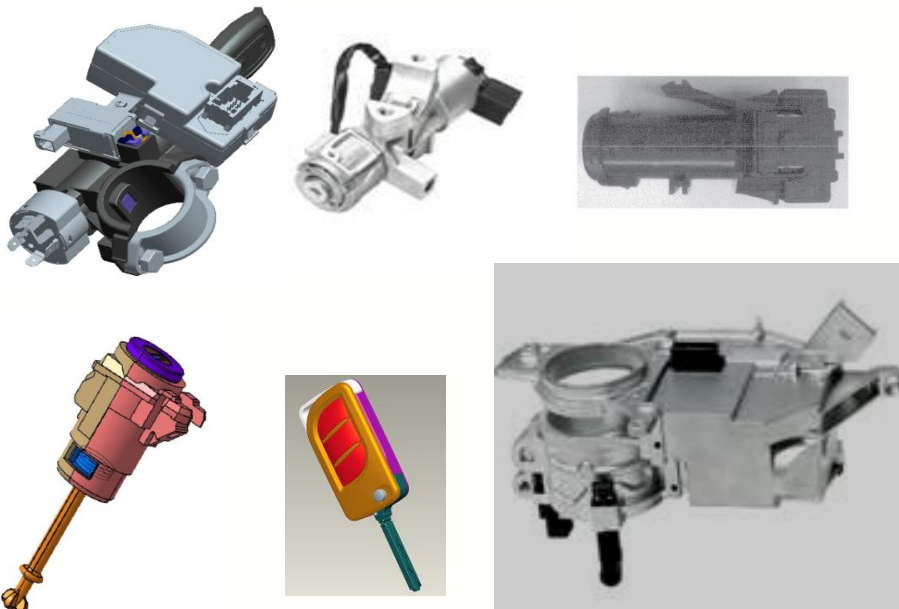




Steering Column Lock (Zamak & Magnesium), door lock & Key Sets

Key Benefits & Fetures :

- MSCL with Interlocking feature for automatic Transmission application
- Higher anti theft features in MSCL & door locks.
- Locks with inside key biting system.
- **Electrical steering column locks**
- **Vehicle weight reduction with light weighted Mg cast MSCL, along with low & High current switches**
- **Plastic Housing**



Foldable Keys & Identifiers

Key Benefits & Features:

- USP for High end cars
- Patented Mechanism
- Reliable Mechanism with high Retention Force in open condition
- Chroming & Over moulded with Logos



(**BLUE : Future Technology** **BLACK : Legacy Products**)

Lockset – Supplies to India OEM's

Customer	Model	Product	Share of business
Nissan / Renault	Micra / Sunny / Pulse / Scala	Lockset	100%
Maruti Suzuki	Alto 800	Lockset	50%
Force Motors	Trax / Traveller	Lockset	100%
Ford India	Eco Sports	Lockset	100%
General Motors	Tavera	Lockset	100%
	Spark	Lockset	100%
Mahindra & Mahindra	Bolero	Lockset	70%
	Scorpio	Lockset	100%
	Xylo	Lockset	100%
Tata Motors	Indica / Indigo	Lockset	100%
	Vista/Manza	Lockset	100%
	Aria	Lockset	100%
	Sumo family	Lockset	70%
	LCV	Lockset	70%
	World Truck	Lockset	100%
Ashok Leyland	G90	Lockset	100%
Eicher Motors	LCV / HCV	Lockset	100%

Outside Handles & Bracket less Handles

Key Benefits:

- Capability to design & develop Mechatronic Handles, integrated with PEPS for current M&M products - S101 ODH
- Higher antitheft Resistance – Thatchem compliant
- Higher Crash resistance – Inertia System
- Bracket less Handles, cost effective solutions.
- Chroming on Nylon in Handle Levers – VW Polo, Vento



Old Generation / Universal Immobilizers

Key Benefits:

- Technology solution for Low Cost Compact Universal Immobiliser
- Designed for Homogeneous Illumination Rings
- Flexible Packaging Solutions For Euro ENCAP Regulation
- Passive Antenna and Integrated ECU Solutions

(BLUE : Future Technology BLACK : Legacy Products)

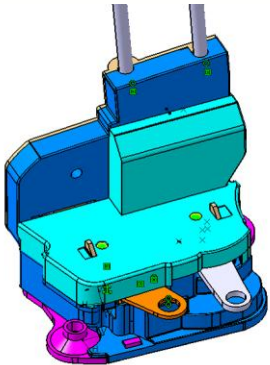


Chrome Plated IDH

Bracket Less Handle

Door Handles – Supplies to India OEM's

Customer	Model	Product	Share of business
Nissan	Micra / Sunny / Pulse / Scala	Outsider Handle	100%
		Inside Handle	100%
Ashok Leyland	NGC	Outsider Handle	100%
		Inside Handle	100%
Maruti Suzuki	YL1 / YAD / YP8 / YBA / RxNB	Outsider Handle	100%
Fiat India	Punto / Linea	Outsider Handle	100%
Mahindra & Mahindra	Scorpio	Outsider Handle	100%
	Xylo / Quanto / Genio	Outsider Handle	100%
Tata Motors	Indica / Indigo	Outsider Handle	100%
	Vista/Manza	Outsider Handle	100%
	Aria	Outsider Handle	100%
VW / Skoda	Polo/Vento/Rapid/Fabia	Outsider Handle	100%
		Inside Handle	100%



Mechanical Latch

Key Benefits: Identified

1. Latch with cable type inside lock-unlock and inside release.
2. Plug and play solution without change in customer door architecture. Mahindra Bolero.
3. Latch meeting regulatory requirement: FMVSS206. with 30g
4. MVAS able to supply complete system, Door Latch with inside door handle (IDH) and outside door handle (ODH)

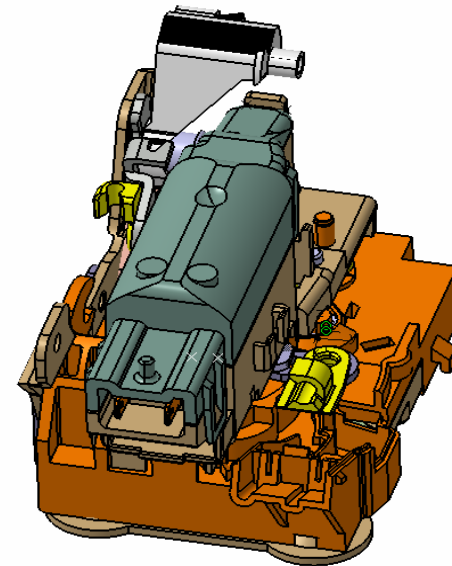
Low cost latch functions :

1. Outside open by link rod
2. Inside open by cable type.
3. Out side lock thro link rods
4. Inside lock /unlock cable type
5. Non override function from inside release.
6. Child lock blocking type .

Integrated Actuator Latch

Key Benefits:

- Validated & proven product currently used Logan Russia, Brazil, Renault Duster & Renault Lodgy
- Optimised / Compact packaging as compared to add-on actuator Latches.
- Upgraded Technology for electrical latch : Integrated actuator
- Medium range actuator speed for lock / unlock function

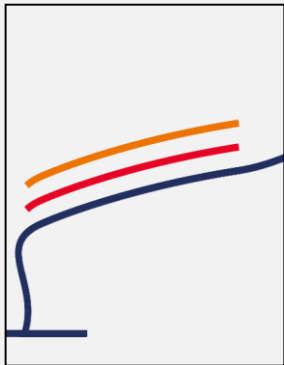


(BLUE : Future Technology BLACK : Legacy Products)



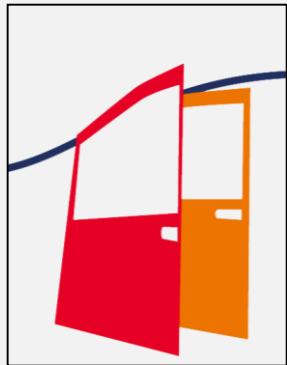
New Product Introduction from VAST

Hoods



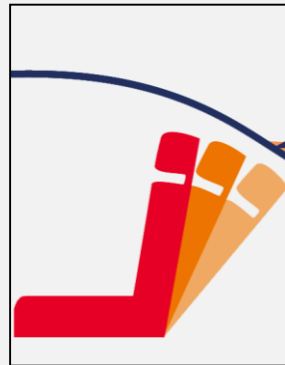
Pedestrian Protection Systems
Latches
Safety Hooks
Hinges

Doors



Handles
Brackets
Keyless Entry Systems
Keys/Lock Sets
Ignition Systems
Latches/Strikers
Power Closing Units
Door Check Arms
Hinges
Power Sliding Doors
Mini Door Modules
Door Edge Protector

Seats



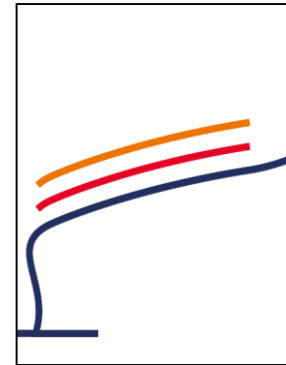
Seat Back Latches
Seat To Floor Latches
Multi-Position Seat
Latches
Lockable Latches
Handles (with Indikation)
Strikers

Lift- /Tailgates Trunk Lids



Power Closing Units
Actuators
Latches
Strikers
Hinges
Multi-Joint Hinges
Multifunction Modules
LED Soft Touch
Camera Modules
Handles

Ignition Systems



Ignition Cylinders
Ignition Housings
Electronic Steering
Colum Locks
Start Systems

Locksets & Keyfobs



- ❑ Integrated RKE and PEPS FOB
- ❑ Immobilizer keys
- ❑ Ignition locks
- ❑ Door locks
- ❑ Decklid locks

Ignition Lock Housings, Push Button Start & Electronic Column Locks



❑ Multiple designs Including:

- ❑ Column mounted
- ❑ Dash mounted
- ❑ Integrated electronics
 - ❑ Sensors
 - ❑ Solenoids
 - ❑ Ignition switches
 - ❑ RFID transceivers
 - ❑ Illuminated bezels



Hood Latches



- High strength and compact construction characterize our products for hoods
- All Safety Hooks are calculated dynamically
- Simple sensor integration
- Double pull unlocking from the interior possible



Passive
Hood Latches



Strikers



Hood Latches with positively steered
Safety Hooks



Latches with Sensor
and Strikers



Hood Latches



Latches with Sensors



Close Systems with Safety Hooks



Safety Hooks and Strikers



- Hoods

Safety Hooks



Multi-Joint Hinges



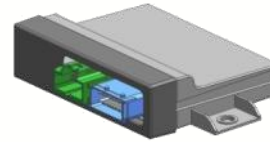
Key Solutions for Hoods

Latches



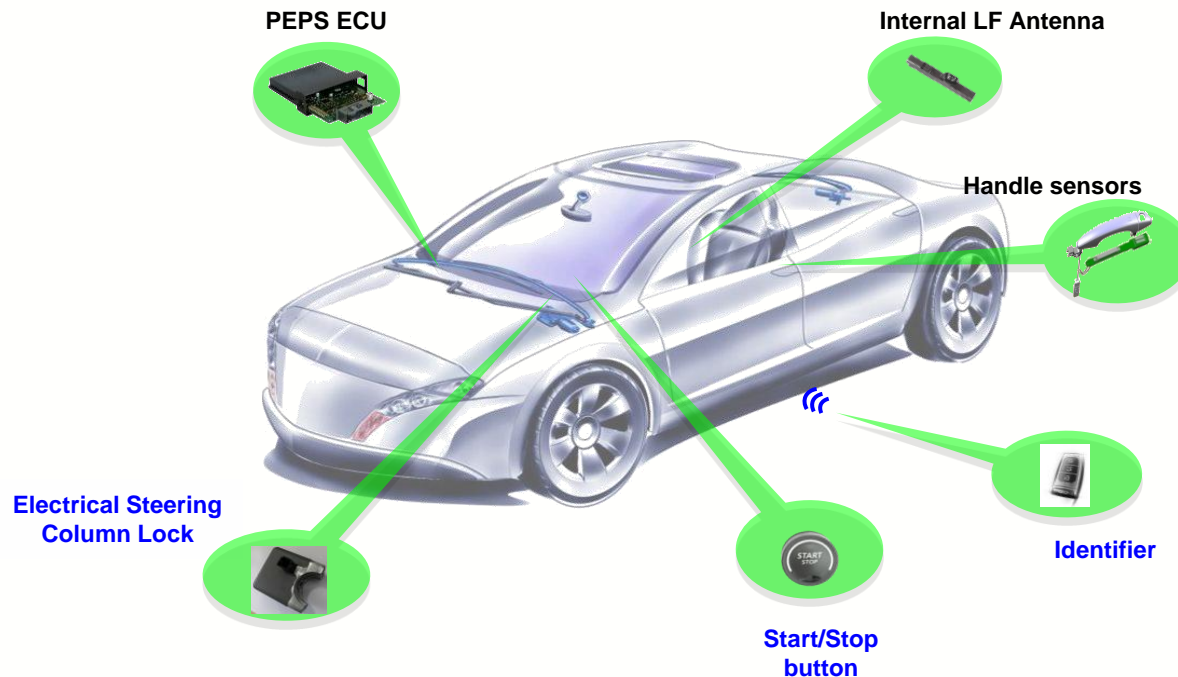
- ❑ Liftgate latches
- ❑ Decklid latches
- ❑ 2nd row seat back latches
- ❑ Tailgate latches
- ❑ Tonneau cover and accessory latches

Power Closure Systems



- ❑ Power sliding door mechanisms
- ❑ Power liftgate mechanisms
- ❑ Power decklid mechanisms
- ❑ Electronic control modules

Passive Entry Passive Start System



Key Features Benefits:

- Highly integrated PEPS system architecture
- RF receiver integrated inside the PEPS ECU – *Higher security and faster unlocking*
- Dual core structure of PEPS ECU satisfies the functional safety (ASIL-D) requirements of ESCL
- Identifier mechanics can be customized as per styling need
- Immobilization function integrated into the Start / Stop button
- Complete system solution to customer – *Reducing the project management complexity for customer*
- Can be integrated with minimum modifications in the vehicle

Outside Door Handle with Lighting Function



- Functional advantages: status display, handle recess- and near field-illumination
- Important stylistic design element
- Concealed illumination (concept of status display) only visible when it is activated





- Side Doors
- Sliding Doors

Outer Door Handles



Inner Door Handles



Power Sliding Doors



Key Solutions For Doors

Actuators for Sliding Doors



- Increased closing force because of the profile of the cable drum
- Slow motion of the Sliding Doors at the end of the closing path
- Controlled and harmonized door motion for user



Door Modules / Mini Door Modules



- Application in the Side Doors
- 100% proved, ready-to-mount delivery scope
- Different combinations of components possible
 - Side Door Latches
 - Brackets
 - Watercovers
 - Outer Door Handles
 - Inner Door Handles
 - Bowden cables
 - Cable Systems



Seat Back Latches with wedge principles



- Very good calming at lowest actuation forces over the complete lifetime
- The two standard versions (30 kN and 40kN) can be installed at nearly every type of vehicle by adaption of the actuator





- **Seat Backs**
- **Seat Floors**

Seat Back Latches



Handles for Seat Back Latches



Seat To Floor Latches



Key Solutions For Seats

Construction kit for Power Closing Units, Latches and Strikers



- The Direct Drive is a quiet, space-saving latch which guarantees highest strength
- With its design and the existing power closures a flexible Construction Kit results which fulfills all requirements



Latches with External Power Closing Units

Diverse Direct Drives

Mini Direct Drives

Multifunction Modules for Deck Lid and Trunk Lid



- The multifunction module is used for actuation of the trunk lid or deck lid, the license plate illumination is integrated
- Version with cylinders as well as cameras are possible
- The LED Soft Touch is a combination of license plate illumination and operating element to a space-saving and cost-effective style unit



Multifunction Modules



LED Soft Touch

LED Soft Touch



Advantages:

- Length reduction (average 400mm compared to current market designs)
- Weight reduction (average 320g compared to current market designs)
- Only one connector required for opening switch and license plate illumination
- All Japanese, European and American legal requirements regarding license plate illumination can be fulfilled (simulated and first testing)
- Cost efforts by reduced assembly complexity
- Possible USP (unique selling point) due to light design
- Comfort increase by using an illuminated handle
- Additional features like a Rear View Camera or a Lock Cylinder can be integrated





- Tailgates
- Trunk Lids

Power Closing Actuators



LED Soft Touch



Key Solutions for Tailgate

Camera Modules



Advantages:

- Integration into the design (application in the front, rear and side area)
- Cover in the car color, chrome or symbols
- Integration of electronic control (power unit, switch logic)
- Camera can be installed separately
- Protection against dirt during operation
- Protection against vandalism
- Increased protection against theft (removal of camera)
- Easy integration in the Soft Touch

