

INVESTOR PRESENTATION

MAY 12, 2021



KONGSBERG
AUTOMOTIVE

FORWARD-LOOKING STATEMENTS AND NON-IFRS MEASURES

FORWARD-LOOKING STATEMENTS

This presentation contains certain “forward-looking statements”. These statements are based on management’s current expectations and are subject to risks, uncertainty and changes in circumstances, which may cause actual results, performance, financial condition or achievements to differ materially from anticipated results, performance, financial condition or achievements. All statements contained herein that are not clearly historical in nature are forward-looking and the words “anticipate,” “believe,” “expect,” “estimate,” “plan,” and similar expressions are generally intended to identify forward-looking statements. We have no intention and are under no obligation to update or alter (and expressly disclaim any such intention or obligation to do so) our forward-looking statements whether as a result of new information, future events or otherwise, except to the extent required by law. The forward-looking statements in this presentation include statements addressing our future financial condition and operating results. Examples of factors that could cause actual results to differ materially from those described in the forward-looking statements include, among others, business, economic, competitive and regulatory risks, such as conditions affecting demand for products, particularly in the automotive industries; competition and pricing pressure; fluctuations in foreign currency exchange rates and commodity prices; natural disasters and political, economic and military instability in countries in which we operate; developments in the credit markets; future goodwill impairment; compliance with current and future environmental and other laws and regulations; and the possible effects on us of changes in tax laws, tax treaties and other legislation. More detailed information about these and other factors is set forth in the 2020 Kongsberg Automotive Annual Report and the Kongsberg Automotive Quarterly Reports.

NON-IFRS MEASURES

Where we have used non-IFRS financial measures, reconciliations to the most comparable IFRS measure are provided, along with a disclosure on the usefulness of the non-IFRS measure, in this presentation.



AGENDA

- > **TODAY'S PRESENTERS**
- > **INTRODUCTION OF CEO JOERG BUCHHEIM**
- > **NEW PLANTS AND EXPANSIONS**
- > **PRODUCTS FOR ELECTRICAL VEHICLES (EV)**
- > **Q&A – MODERATED BY PETTER KONGSLIE**



TODAY'S PRESENTERS



JOERG BUCHHEIM

President & CEO

JOINED KA
2021

EXPERIENCE

CEO Inalfa roof systems
(2016 - 2021)
President & CEO HELLA China
(2012 - 2016)

EDUCATION

HSD University of Applied
Sciences, Düsseldorf,
BA Electronics



NORBERT LOERS

CFO

JOINED KA
2017

EXPERIENCE

CFO, Hay Group/Musashi Automotive
(2013-2016)
CFO, Neumayer Tekfor Holding Int.
(2007-2013)

EDUCATION

University of Bonn, Master of
Economics



ROBERT PIGG

SVP Off-Highway
Interim EVP Interior

JOINED KA
2006

EXPERIENCE

VP Driver Interface
(2015-2016)
VP Program Management, FTS
(2013-2015)
Engineering Director
(2008-2013)

EDUCATION

Auburn University, BA Mech.
Eng.; FHU, BA-Physical Sciences



BOB RIEDFORD

President Powertrain & Chassis

JOINED KA
2016

EXPERIENCE

Automotive Consultant, Cary
(2012-2017)

EDUCATION

University of Evansville,
BS Electrical Engineering



DAVID REDFEARN

EVP Fluid Transfer Systems
(FTS)

JOINED KA
1993

EXPERIENCE

VP Sales, FTS
(2013-2016)
Sales Director, FTS
(2008-2013)

EDUCATION

Stockholm School of
Economics, MBA



LINDA NYQUIST-EVENRUD

SVP Couplings


JOINED KA
2008

EXPERIENCE

Sales & Marketing Director, Couplings
(2016-2017)
Sales & Marketing Manager, Couplings
(2008-2016)

EDUCATION

Halmstad University, BA
Product, Innovation, Int. Mgmt.

An aerial photograph of a winding asphalt road through a dense forest, overlaid with a semi-transparent blue filter. The road curves from the top left towards the bottom right. A large white arrow points to the right in the upper right quadrant.

**ABOUT
KONGSBERG
AUTOMOTIVE**

COMPANY OVERVIEW

- Headquartered in Zurich, Switzerland and listed on the Oslo Stock Exchange
- Three segments:
 - » **Interior:** interior comfort systems and light duty cables
 - » **Powertrain & Chassis:** clutch and gearshift systems, actuators and vehicle dynamics applications
 - » **Specialty Products:** couplings, fluid transfer systems and off-highway applications
- We estimate that approximately one out of five light duty (LDV) or heavy duty (HDV) vehicles contain our products globally
- Diverse customer and end-market base with strong market positions



WORLDWIDE FOOTPRINT



~11,000
EMPLOYEES IN
19
COUNTRIES
WORLDWIDE

- ▲ HEADQUARTERS
- PLANT
- ⬡ SITE OFFICE
- TECHNICAL CENTER
- ◇ WAREHOUSE



An aerial photograph of a winding asphalt road through a dense forest, overlaid with a semi-transparent blue filter. The road curves from the top left towards the bottom right. A large white arrow points to the right in the upper right quadrant.

NEW PLANTS AND EXPANSIONS

COUPLINGS

PART OF SPECIALTY PRODUCTS
BUSINESS UNIT



Couplings new plants and expansions

SERVICING OUR WORLDWIDE CUSTOMERS LOCALLY THROUGH OUR GLOBAL FOOTPRINT



FLUID TRANSFER SYSTEMS

PART OF SPECIALTY PRODUCTS
BUSINESS UNIT



FTS new plants and expansions

RAMOS ARIZPE MEXICO



FTS new plants and expansions

RAMOS ARIZPE MEXICO



HIGHLIGHTS

- > Sales increase by 30% for next 3 years
- > Quality performance improve by 50% customer complaints reduction YOY
- > Nominated Top Supplier by PACCAR 2020 and 2021
- > Best performance for absenteeism and turnover, below 2% per month
- > New project introduction flawlessly for Daimler and Cummins
- > Start up of introduction of new product for EV – SOP 2022
- > ISO 9000 / ISO 14001 and Maquiladora Certifications successfully achieved

PRODUCTS

- > Tube bending lines, 6 mm up to 25 mm O.D., Low carbon and stainless steel
- > Stainless steel braided hose and bent tube assemblies
- > Formed PTFE hose and tube assemblies.
- > Formed PTFE hose (Fluorocomp®)
- > Formed nylon hose assemblies
- > Formed nylon hoses for EV

TECHNOLOGIES, EQUIPMENT, PROCESSES

- > 2 Forming plastic ovens
- > 1 CNC tube cutting machine
- > 1 CNC tube forming machine
- > 6 CNC benders - Robot handler
- > 5 Forming machines
- > 17 Leak tester machines
- > 17 Crimper machines
- > 17 Assembly cells

KEY CUSTOMERS

- > Cummins
- > Paccar
- > Navistar
- > Volvo
- > Caterpillar

KEY INFORMATION

ESTABLISHED	2017
SEGMENT(S) AFFILIATION	FLUID TRANSFER SYSTEMS (SPECIALTY PRODUCTS)
KEY FUNCTIONS	MANUFACTURING AND ASSEMBLY FLUID HOSES
PLANT, OFFICE OR WAREHOUSE	PLANT
SIZE (M2)	4173
EMPLOYEES	146
PRODUCTION	116
ENGINEERING	9
SALES & PROGRAMS	1
OTHER	20

FTS new plants and expansions

RAMOS ARIZPE PRODUCTION FLOOR AND KEY PROCESSES



ASSEMBLY CELL
Fully integrated
Crimping and leak test



QUALITY LABORATORY
Measurement and test
capability



METAL BENDING – WAFIOS
with integrated robot



METAL BENDING – CRIPPA
CNC forming machine



FORMING OVEN – NYLON
Several forms and length



FORMING OVEN – FLUORCOMP
Several forms and length



METALLURGY LABORATORY
Metal Testing Capability

KEY INFORMATION

- ▶ Process Flow fully integrated from Tube cutting to final Assembly
- ▶ Lean Manufacturing cell concept
- ▶ Quality and Metallurgical Laboratories supporting shop floor and new projects
- ▶ Robot handling equipment to reduce headcount and better quality consistency
- ▶ Lead time for a complete assembly tube to test is 1 day
- ▶ Supplier localization strategy ongoing
- ▶ Flexible plant for high volume – low variety and Low volume high variety
- ▶ Sufficient floor space – growing for 2021 – 2025 with no additional floor space requirements

INTERIOR

INTERIOR COMFORT SYSTEMS
AND LIGHT DUTY CABLES



Interior new plants and expansions

WUXI SHUOFANG CHINA



Interior new plants and expansions

WUXI SHUOFANG CHINA



- > Sales increase by 65% for the next 3 years
- > Construction started in January 2020
- > Tesla Model 3 SOP April 2020
- > Construction completed in October 2020
- > Office personnel moved in November 2020
- > Seat Heat and Seat Vent transfer complete December 2020
- > Seat Support / Massage transfer will be complete November 2021

PRODUCTS

- > Seat Vent
- > Seat Heat
- > Seat Support / Massage

TECHNOLOGIES, EQUIPMENT, PROCESSES

- > Harness Assembly
- > S2C and Sinus Wiring
- > Press Cutting
- > Soldering
- > Manual Assembly

KEY CUSTOMERS

- > Volvo
- > Tesla
- > BMW
- > Nio
- > Daimler
- > Shanghia GM

KEY INFORMATION

ESTABLISHED	2020
SEGMENT(S) AFFILIATION	INTERIOR, ICS
KEY FUNCTIONS	ADMINISTRATION, OPERATIONS, SALES, AND ENGINEERING
PLANT, OFFICE OR WAREHOUSE	PLANT
TECH CENTER	YES
SIZE (M ²)	11333
EMPLOYEES	
PRODUCTION	338
ENGINEERING	22
SALES & PROGRAMS	23
OTHER	58

Interior new plants and expansions

WUXI SHUOFANG RECEPTION, OFFICES AND PRODUCTION FLOOR



Interior new plants and expansions

BRZESC POLAND



Interior new plants and expansions

BRZESC POLAND



HIGHLIGHTS

- > Sales increase by 30% for the next 3 years
- > FTS is growing from €13 to €25 M in the coming 2 years
- > Construction April 2017 - December 2017
- > First production in March 2018
- > ISO 14001 certification in December 2018
- > ISO 45001 certification in December 2019
- > Seat Heat transfer completed December 2019
- > Project/NPI team established February 2020
- > IATF 16949 certification in February 2021
- > Prototype area transfer completed January 2021

PRODUCTS

- > Seat Heat
- > Fluid transfer

TECHNOLOGIES, EQUIPMENT, PROCESSES

ICS

- > Harness Assembly
- > S2C and Sinus Wiring
- > Press Cutting
- > Manual Assembly

FTS

- > Pre-cutting
- > Marking
- > Forming
- > Manual Assembly

KEY CUSTOMERS

- > Mercedes-Benz
- > Volvo
- > Volkswagen
- > JLR
- > Toyota
- > Audi
- > Ford

KEY INFORMATION

ESTABLISHED **2018**

SEGMENT(S)
AFFILIATION **INTERIOR - ICS
FLUID TRANSFER
SYSTEMS- FTS**

KEY FUNCTIONS **OPERATIONS**

PLANT, OFFICE OR
WAREHOUSE **PLANT**

TECH CENTER **NO**

SIZE (M2) **15 918**

EMPLOYEES **1400**

PRODUCTION &
MAINTENANCE **1275**

MFG ENGINEERING &
PROJECTS(NPI) **15**

QUALITY **30**

LOGISTICS &
WAREHOUSE **45**

OTHER **35**

Interior new plants and expansions

BRZESC PRODUCTION FLOOR



PUNE INDIA



PUNE INDIA



HIGHLIGHTS

- > Engineering activities for ICS started in 2019 with the support of industry partner (Capgemini)
- > Legal entity “Kongsberg Automotive Technology Center India Private Limited” incorporated in March 2021
- > Highly efficient team of 25 electronics and software engineers transferred from Industry Partner to KA-TCI
- > Office infrastructure ready in May 2021

PRODUCTS

Electronics and Software for:

- > Seat Heat
- > Seat Support/ Massage
- > Seat Vent

TECHNOLOGIES, EQUIPMENT, PROCESSES

- > Generic electronic platform
- > Software architecture AUTOSAR compliant
- > Software verification and validation
- > Vector toolchain

KEY CUSTOMERS

- > BMW
- > Daimler
- > GM, SGM
- > Grammar
- > JLR
- > Nio
- > Stellantis
- > Toyota
- > Volvo

KEY INFORMATION

ESTABLISHED	2019
SEGMENT(S) AFFILIATION	INTERIOR, ICS
KEY FUNCTIONS	ENGINEERING
PLANT, OFFICE OR WAREHOUSE	OFFICE, LAB
TECH CENTER	YES
SIZE (M2)	1250
EMPLOYEES	
PRODUCTION	0
ENGINEERING	27
SALES & PROGRAMS	0
OTHER	2

Interior new plants and expansions

PUNE ADDITIONAL INFORMATION/ IMAGES

TCI OFFICE SPACE ON 3RD FLOOR



POWERTRAIN & CHASSIS

DRIVELINE AND ON-HIGHWAY



KOLUSZKI POLAND



P&C new plants and expansions

KOLUSZKI POLAND



HIGHLIGHTS

- Products engineered in Kongsberg, Norway innovation center
- Factory opened in 2016
- Factory extended in 2018 by 10,000 sqm
- Painting line installed in 2020

PRODUCTS

- Truck Axle Stabilizers (V-Stays)
- Truck Cabin Stabilizers
- Truck Cabin Crash Brackets

TECHNOLOGIES, EQUIPMENT, PROCESSES

- Robotic Welding
- CNC metal machining
- Steel Upsetting and induction hardening
- Manual & Robotic Assembly cells
- Paint Line

KEY CUSTOMERS

- Scania
- Volvo
- DAF

KEY INFORMATION

ESTABLISHED	2016
SEGMENT(S) AFFILIATION	POWERTRAIN & CHASSIS
KEY FUNCTIONS	MANUFACTURING PROCESS ENGINEERING LOGISTICS
PLANT, OFFICE OR WAREHOUSE	PLANT
SIZE (M2)	SITE: 32,105 PRODUCTION: 15 310
EMPLOYEES	153
PRODUCTION	147
ENGINEERING	2
SALES & PROGRAMS	0
OTHER	4

KOLUSZKI PRODUCT SPOTLIGHT

CABIN SUSPENSION SCANIA

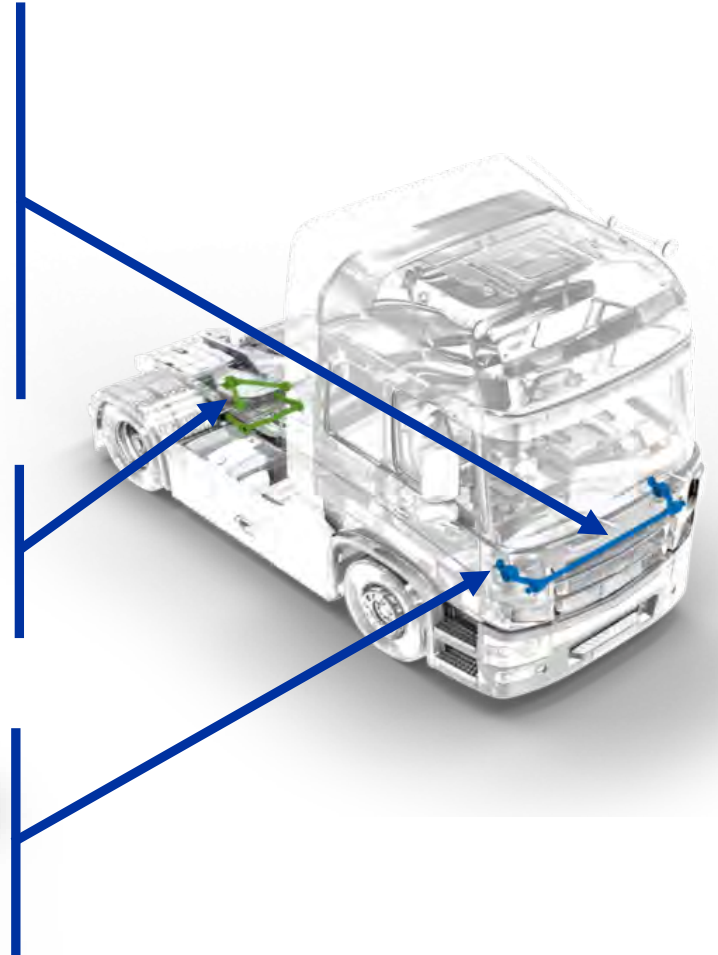
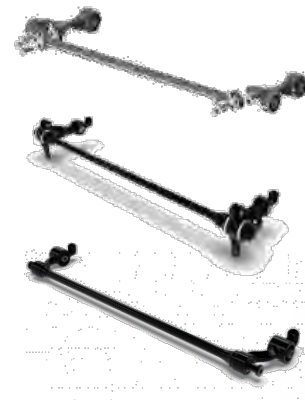
- > Cabin stabilizers
> 105 000+ pcs/year

WHEEL SUSPENSION VOLVO

- > V-stays
> 110 000+ pcs/year

CABIN SUSPENSION DAF

- > Cabin stabilizers
> 55 000+ pcs/year
- > Crash Brackets
> 100 000+ pcs/year



WUXI CHINA



P&C new plants and expansions

WUXI CHINA



- > Products design and developed in Mullsjö, Sweden innovation center
- > Factory opened in 2004
- > Factory extended in 2018 to 20,400 sqm
- > MTM Mechatronic Transmission Modules SOP Nov. 2021
- > Hong Qi Supplier award

PRODUCTS

- > PV AT/MT shifter cable system
- > PV SBW shifter
- > PV ARC/ACM system
- > CV Mechatronic Transmission Modules (MTM)

TECHNOLOGIES, EQUIPMENT, PROCESSES

- > Injecting machine workshop
- > AT/MT shifter and cable assembly line
- > Knob and Boot dressing/stitching line
- > SBW semi-automatic line
- > ARC/ACM semi-automatic line

KEY CUSTOMERS

- > FAW -Red Flag
- > CHANG AN
- > GEELY/Volvo
- > FCA
- > ECJV

KEY INFORMATION

ESTABLISHED	2004
SEGMENT(S) AFFILIATION	POWERTRAIN & CHASSIS
KEY FUNCTIONS	R&D CENTER MANUFACTURING LOGISTICS
PLANT, OFFICE OR WAREHOUSE	PLANT
TECH CENTER	YES
SIZE (M2)	20 400 (TOTAL) / 12 864 (P&C)
EMPLOYEES(P&C)	454
PRODUCTION	365
ENGINEERING	55
SALES & PROGRAMS	13
OTHER	21

WUXI PRODUCT SPOTLIGHT

SHIFT-BY-WIRE

FAW, CHANGAN, GEELY, VOLVO

- > Shift-by-wire
- > 940,000 + pcs/ year

ARC+ACM SYSTEM

FAW, CHANGAN, GEELY

- > ARC/ACM system
- > 400,000+ pcs/ year

AT/MT SHIFTER+CABLE SYSTEM

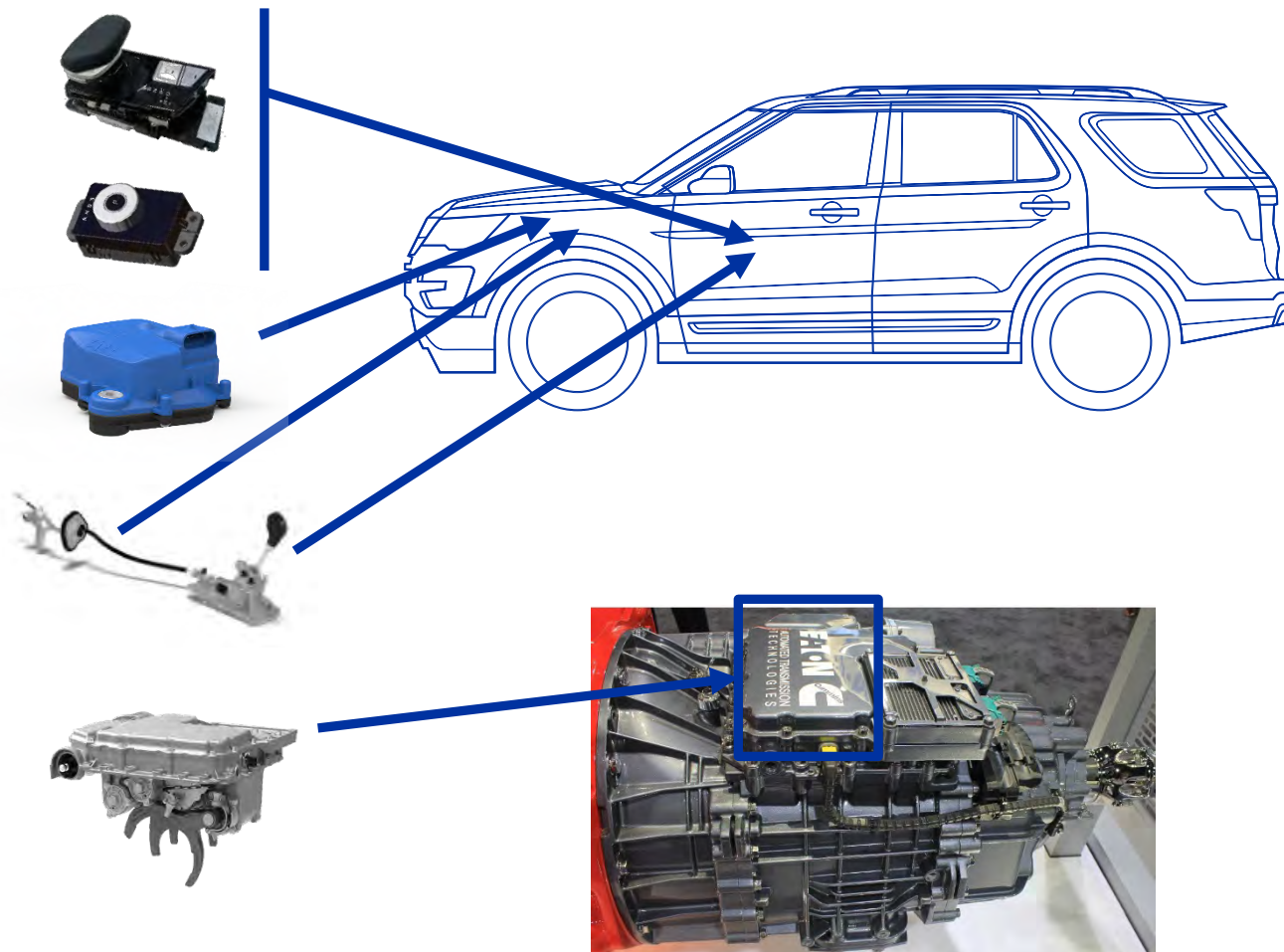
FCA, NISSAN, GEELY

- > AT/MT shifter / cable system
- > 200,000+ pcs/ year

MTM (MECHATRONIC TRANSMISSION MODULES)

ECJV

- > MTM Mechatronic Transmission Modules
- > Launch at Dec.2021
- > 40,000+ pcs in 2022



P&C new plants and expansions

NUEVO LAREDO MEXICO



P&C new plants and expansions

NUEVO LAREDO MEXICO, PLANT #4



HIGHLIGHTS

- > Products designed and developed in Kongsberg, Norway innovation center
- > Clean room environment
- > 12 speed MTM line and stalk shifter assembly launched Summer 2017
 - » Running with 3 shifts since Feb 2021
- > New Flex MTM line
 - » 12 speed MTM China launches end of Q2 2021
 - » 18 speed MTM launches Q1 2022

PRODUCTS

- > Mechatronic Transmission Modules (MTM)
 - > Harness assembly
 - > Glue process
- > Stalk shifters for commercial vehicles

TECHNOLOGIES, EQUIPMENT, PROCESSES

- > Palletized semi-automated final assembly (MTM) with robotic load/unload
- > Manual assembly line (stalk shifter) with robot for End Of line tester
- > Clean room environment

KEY CUSTOMERS

- > Eaton Cummins Joint Venture
- > PACCAR (via ZF)
- > Ford Otosan

KEY INFORMATION

ESTABLISHED	2017
SEGMENT(S) AFFILIATION	POWERTRAIN & CHASSIS
KEY FUNCTIONS	FINAL ASSEMBLY
PLANT, OFFICE OR WAREHOUSE	PLANT
SIZE (M2)	4600
EMPLOYEES	117
PRODUCTION	117
ENGINEERING	0
SALES & PROGRAMS	0
OTHER	0

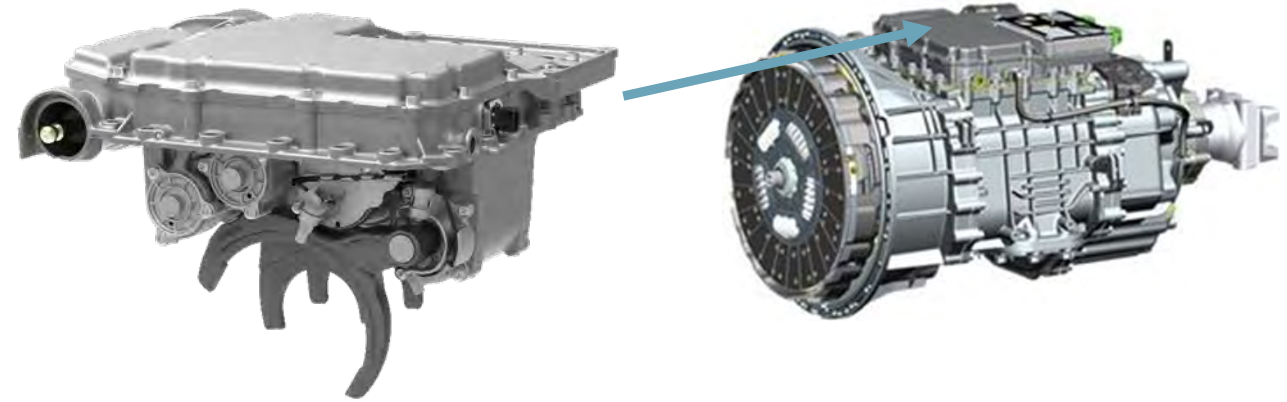
P&C new plants and expansions

NUEVO LAREDO PRODUCT SPOTLIGHT

MTM

EATON-CUMMINS JOINT VENTURE

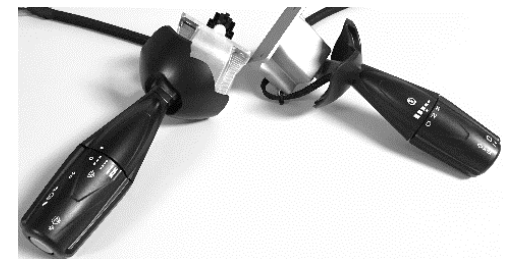
- Mechatronic Transmission Module for commercial vehicles with 12 and 18 speed AMT transmissions
- 100 000+ pcs/year



STALK SHIFTER

PACCAR & FORD OTOSAN

- Stalk shifters for commercial vehicles
- 80 000+ pcs/year



An aerial photograph of a winding asphalt road through a dense forest, overlaid with a semi-transparent blue filter. The road curves from the top left towards the bottom right. A large white arrow points to the right in the upper right quadrant.

PRODUCTS FOR ELECTRICAL VEHICLES

COUPLINGS

PART OF SPECIALTY PRODUCTS
BUSINESS UNIT



"NO 1 CHOICE FOR ELECTRICAL VEHICLE MANUFACTURERS"

HIGHER SYSTEM REQUIREMENTS OPEN NEW DOORS

- > Pneumatic brake systems remains transferring from ICE to EV. No negative effect on air couplings
- > No air leakage saves energy - increasing driving distance
- > Optimal airflow leads to shorter time for braking, suspension and auxiliary systems
- > «Click-click» assembly and disassembly improve installation cost and reduce vehicle down time
- > Light weight materials contributes for light weight vehicle and increased payload

COMPETITIVE POSITIONING

- > **Leverage relationship** with already existing OEMs to enter new, electrical based platforms
- > Provide **"best in class performance"** to capture new customers entering electrical vehicle market
- > Meet future **zero emission** and **safety critical** performance requirements which results in **higher quality** standards and **product differentiation**
- > High focus on **developing new products** and enter **new markets**

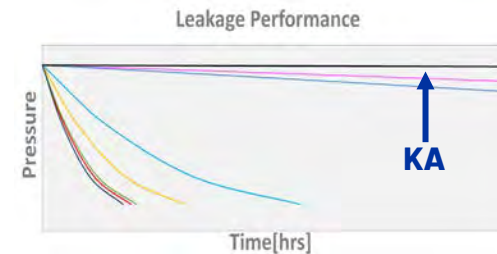


**POLE POSITION
IN ELECTRICAL
VEHICLE SEGMENT**

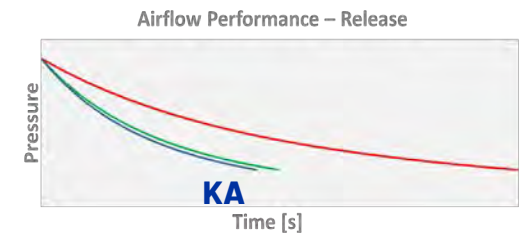
INCREASED GLOBAL MARKET SHARE

FEATURES & BENEFITS

BEST IN CLASS - LEAKAGE LEVEL



OPTIMAL AIRFLOW



EASY BUILDING BLOCK SYSTEM



COMPOSITE MATERIAL BASE



LIGHT WEIGHT



**INSTALLATION
COST BENEFITS**



**PERFORMANCE
BENCHMARKING**

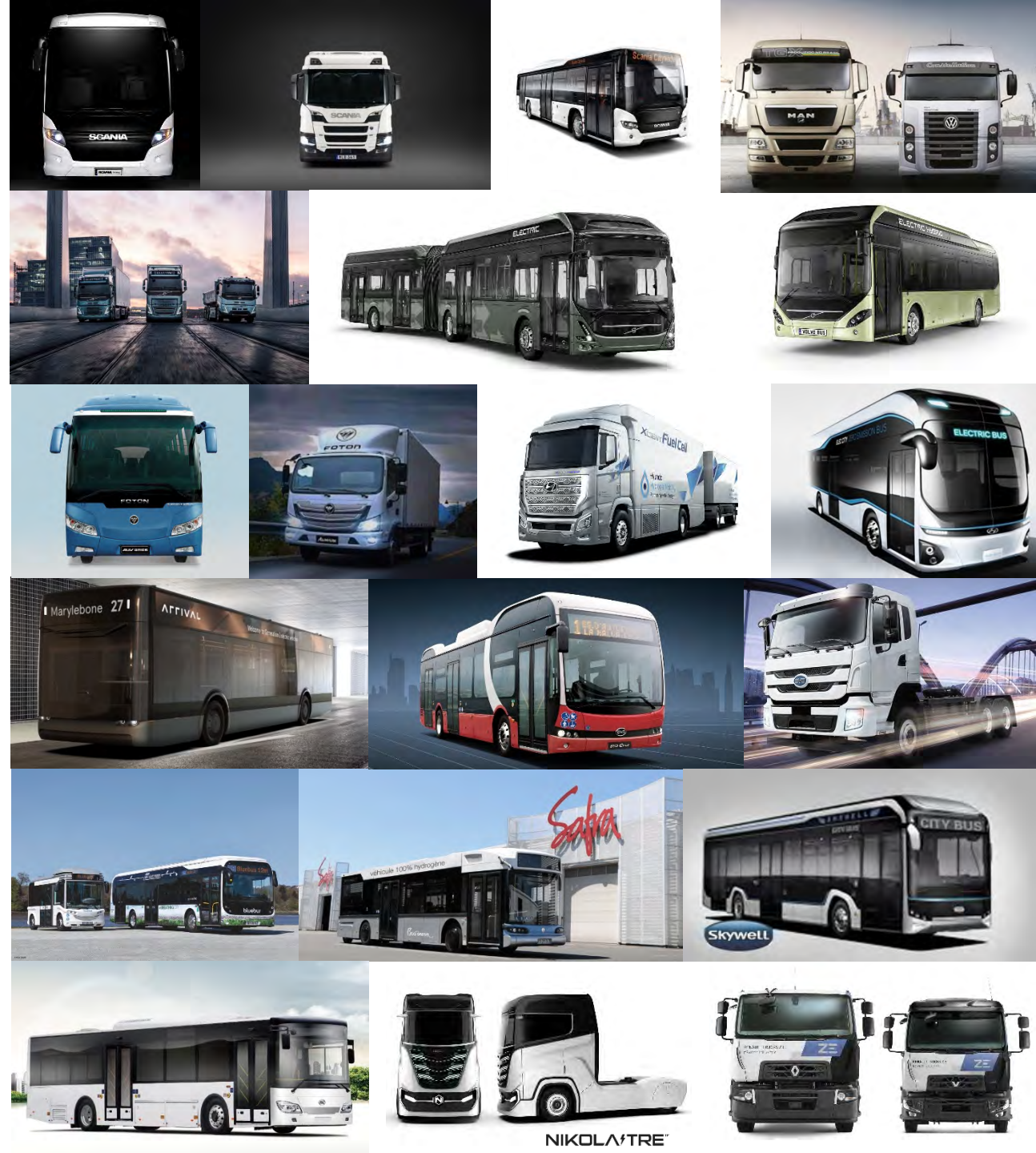
Couplings EV products

AIR COUPLINGS FOR ELECTRICAL VEHICLE PLATFORMS

SERIAL DELIVERIES 2021

REGION	BRAND	TYPE OF VEHICLE	BATTERY OR FUEL CELL	APPLICATION
Europe	VW/Scania	City Bus	Hybride	Urban
Europe	VW/Scania	City Bus	Battery	Urban
Europe	VW/Scania	HD Truck	Hybride	Intercity
Europe	Volvo	City Bus	Battery	Urban
Europe	Volvo	City Bus	Hybride	Urban
Europe	Volvo	HD Truck	Battery	Urban
Europe	Volvo	HD Truck	Battery	Intercity
Europe	Renault	HD/MD Truck	Battery	Intercity/Urban
Europe	NIKOLA	HD Truck	Battery	Intercity
Europe	ARRIVAL	City Bus	Battery	Urban
Europe	Bolloré	City Bus	Battery	Urban
Europe	Safra	City Bus	Fuelcell	Urban
South America	VW/MAN	MD Truck	Battery	Intercity
Asia	Skywell	Bus	Battery	Intercity
Asia	BYD	Bus	Battery	Intercity
Asia	BYD	HD/MD Truck	Battery	Intercity/Urban
Asia	FOTON AUV	BUS	Hybride	Urban
Asia	Ankai	BUS	Hybride	Intercity
Asia	FOTON LDT	TRUCK	Fuel cell	Intercity
Asia	Hyundai	Truck HD	Fuel cell	Intercity
Asia	Hyundai	Bus	Battery	Urban

*Estimated annual production volume 2021 is 50.000 Vehicles



NIKOLA TRE



Couplings EV products

AIR COUPLINGS FOR ELECTRICAL VEHICLE PLATFORMS DEVELOPMENT PROJECTS 2021

REGION	BRAND	TYPE OF VEHICLE	BATTERY OR FUEL CELL	APPLICATION
Europe	Confidential	MD Truck	Battery	Urban
Europe	Confidential	MD Truck	Battery	Urban
Europe	Confidential	MD Truck	Battery	Urban
Europe	Confidential	MD Truck	Battery	Urban
Europe	Confidential	HD Truck	Fuel Cell	Intercity
Europe	Confidential	Seaports/Airport vehicle	Battery	Autonomous truck
Europe	Confidential	Bus	Battery	Urban
Europe	Confidential	Bus	Battery	Urban
Europe	Confidential	Bus	Battery	Urban
Europe	Confidential	Bus	Fuel Cell	Intercity
Europe	Confidential	Bus	Battery	Urban
Europe	Confidential	Bus	Battery	Urban
Europe	Confidential	MD truck	Battery	Urban
Europe	Confidential	MD truck	Battery	Urban
Europe	Confidential	MD truck	Battery	Urban
Europe	Confidential	HD Truck	Battery	Urban
Europe	Confidential	HD Truck	Battery	Urban
Europe	Confidential	HD Truck	Battery	Intercity
Europe	Confidential	HD Truck	Battery	Intercity
North America	Confidential	Class 7/8	Battery	Intercity
North America	Confidential	Pickup	Battery	Urban
North America	Confidential	Class 7/8	Both	Intercity
North America	Confidential	Bus	Battery	Urban



FLUID TRANSFER SYSTEMS

PART OF SPECIALTY PRODUCTS
BUSINESS UNIT



GROWING BUSINESS BENEFITING FROM EV TRANSITION

RELEVANCE

RELEVANCE	ICEV TODAY	ICEV FUTURE	PHEV	BEV	FCEV
AIR SUSPENSION LINES	✓	✓✓	✓	✓	✓✓
(FLEXIBLE) HYDRAULIC BRAKE LINES	✓	✓	✓	✓	✓
FUEL LINES (BIOFUELS, HYDROGEN)	✓	✓	✓✓		✓
EMISSION CONTROL LINES	✓	✓	✓		
(FLEXIBLE) TURBO LINES	✓	✓✓	✓✓		
COOLANT LINES	✓	✓	✓✓✓	✓✓	✓✓✓

PRODUCT TRENDS

- > **Weight savings**
 - » replacement of steel and rubber by high performance plastic fluid transfer lines
- > **Tighter packaging**
 - » increasing need for flexible high-performance plastic fluid transfer lines
 - » for ICEV increased temperature resistance fluid transfer lines
- > **Increased durability**
 - » high performance plastic fluid transfer lines
- > **Increased safety**
 - » increase crash and flammability resistance by high performance plastic fluid transfer lines
- > **Increased cleanlines**
 - » supports fuel savings and enables hydrogen fuel cell technology

MARKET DYNAMICS



SAFETY REGULATIONS



CO₂ EMISSION LEGISLATIONS FOR ICE VEHICLES



MILES-PER-GALLON LEGISLATION DRIVING NEW ENGINE TECHNOLOGY

COMPETITIVE POSITIONING



#1

IN HIGH PERFORMANCE LINES

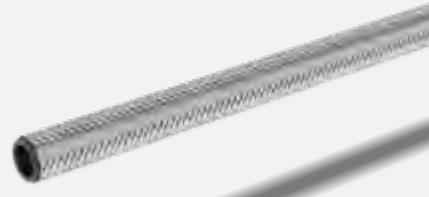
PRODUCT LINES

AIR SUSPENSION



- Increasing comfort by leveling capability
- Extending driving range by optimizing the aerodynamics drag depending driving speed
- Personalizing driving feeling depending actual road conditions
- Improving battery cooling conditions

HYDRAULIC BRAKE



- Guaranteed safety in addition to electrical brake system
- Ultra low volumetric expansion for amazing brake 'feel'
- Negligible water ingress, no lose of brake power over time
- FMVSS-106 compliance
- State of art manufacturing ensuring customers efficiencies

FUEL



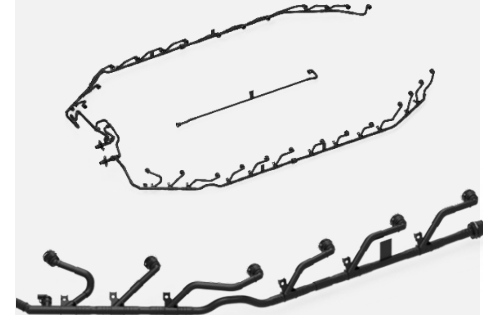
- Resistance to all (aggressive) biofuels
- Meeting the (increasing) vehicle emission legislations for fossil fuels and hydrogen
- Mid to high purity to avoid blockage of fuel injectors or poisoning the fuel cells
- Increased crash resistance and easier to built on vehicle against rigid steel lines

EMISSION CONTROL+ TURBO



- Fluorocomp™ Unique hose design
- Weight savings
- Tight packaging capabilities to enable double drivelines in PHEV and downsizing of engines
- Superior temperature resistance to enable tight packages and emission sensor lines

COOLANT

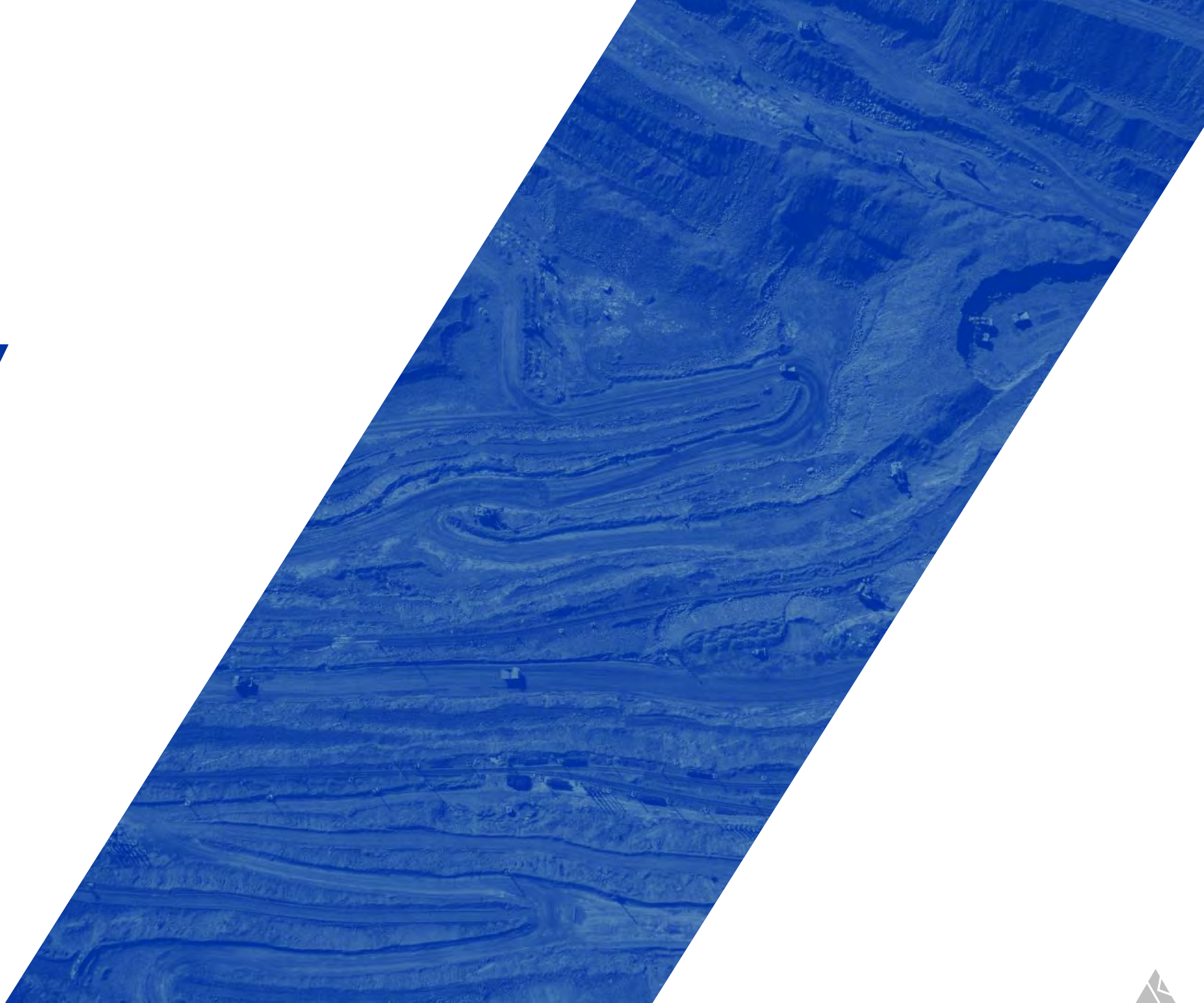


- Battery coolant lines
- Chassis coolant lines to the electrical engines and in/convertors
- Light weight, tight packaging, leak-tight, serviceable
- OEMs exploring various design concepts and philosophies
- FTS in/depth vehicle hose competencies are key



OFF-HIGHWAY

PART OF SPECIALTY PRODUCTS
BUSINESS UNIT



ELECTRIC VEHICLES MARKET

MARKET DYNAMICS



**ELECTRIFICATION,
AUTONOMOUS
& DIGITIZATION**

PRODUCTS & OPPORTUNITIES

- > **Electric Power Steering**
 - » STD EPS for Powersport Vehicles
 - » Lightweight EPS for applications sensitive to size, weight, and power consumption.
- > **Electronic Pedals and Hand controls:**
 - » Brake by wire
 - » Throttle by wire
 - » Shift by wire
 - » Driver input/button modules
- > **Battery Management Systems:**
 - » Supporting key customer developing battery management subsystems and components
- > **Other compatible devices**
 - » Such as power efficient solid-state relays, programmable modules, and sensors

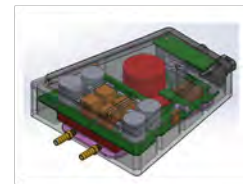
PRODUCT HIGHLIGHTS

ELECTRIC PEDALS AND HAND CONTROLS



- > X by wire products: Throttle, Shift, and Brake
- > Multiple signal and communication protocols supported, including CAN, analog, and PWM
- > Designed specifically for Off Highway Vehicles

BATTERY MANAGEMENT SYSTEMS



- > Manufacturing services for sub-components, such as PCBA assembly
- > Battery Chargers, monitoring & diagnostics, inverters

Off Highway EV products

AUTONOMOUS VEHICLES MARKET

MARKET DYNAMICS



ELECTRIFICATION,
AUTONOMOUS
& DIGITIZATION

PRODUCTS & OPPORTUNITIES

- > **Electric Power Steering**
 - » Demonstrated on Agricultural Vehicle
 - » Provides precise fine movement and sufficient torque to drive existing hydraulic steering systems
- > **GPS + Steering actuator**
 - » Demonstrated on a watercraft to provide a functional auto-pilot
- > **Other compatible devices**
 - » Such as power efficient solid-state relays programmable modules, and sensors

PRODUCT HIGHLIGHTS

STEERING ACTUATOR



- > Contactless torque sensor with a rigid shaft
- > Optional integrated torque sensor
- > Multi-mode capability
- > Designed specifically for Off Highway Applications

GPS + STEERING ACTUATOR



- > Small light weight package
- > Can be sold as a standalone actuator w/o electronics

INTERIOR

INTERIOR COMFORT SYSTEMS
AND LIGHT DUTY CABLES



GROWING MARKET POSITION IN EV SEGMENT

MARKET DYNAMICS



**INCREASING FOCUS
ON COMFORT
AND TECHNIFICATION
OF SEATS**



**SEAT FEATURES AS
PAY-AS-A-SERVICE**



**DIRECTED BUY
TOWARDS TIER-2
SUPPLIERS**



**PREMIUM TO MASS
MARKET LEADING TO
UPTAKE IN TAKE-/
FITMENT RATES**

COMPETITIVE POSITIONING

- > Leverage favorable EV market trends towards comfort and climate systems
- > Benefit from cross-selling between the products and standardization
- > Continue expansion of customer base esp. with "new" OEMs in Electric vehicle segments, i.e Lucid, Lordstown Motor, Tesla, Xpeng

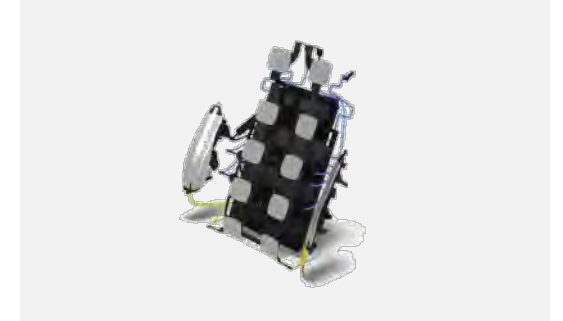
PRODUCT HIGHLIGHTS

SEAT VENTILATION



- > Vent incorporates highly modular KA fan (Njord blower – gen3)
- > Made to be adaptable to many seat types
- > Aerodynamic (slim) design for best-in-class performance and fast cooling
- > Increased comfort features of occupant positions seen in electric vehicles, tuned to help both range and comfort

MESSAGE SYSTEMS



- > Design offers scalability of the system (basic lumbar to adding multiple massage cells + vent into 1 system)
- > Can use Small Modular Valve (SMV) with best-in-class package size and weight
- > With Autonomous vehicles, higher expectation on long term seating comfort resulting in increase of take rates for massage and lumbar

POWERTRAIN & CHASSIS

DRIVELINE AND ON-HIGHWAY



DRIVELINE SEGMENT WITH HIGH MARKET DYNAMIC AND NEW EMERGING CUSTOMERS

MARKET DYNAMICS



SHIFT FROM ICE TO XEV



SHIFT IN CAR PARC MIX



TRANSFER TO DRIVE AND SHIFT-BY-WIRE SYSTEMS



MARKET CONSOLIDATION

COMPETITIVE POSITIONING

- > Leverage deep skilled R&D team at Mullsjo, Sweden innovation center
- > Build upon 15% shift-by-wire market share in China with innovative products for shift-by-wire shifters and actuators
- > Continue winning new BEV-related applications
- > Sustainably improve customer relationship with existing OEMs
- > Double-down on patents in application process



STRONG POSITION IN ACTUATION SYSTEMS

PRODUCT HIGHLIGHTS

SHIFT-BY-WIRE



TOGGLE SHIFTER

- > Small packaging & compact design
- > Low noise level vs. competition
- > Designed for BEV and ICE vehicles



ROTARY SHIFTER

- > New locking mechanism w/ low current consumption and quick response
- > Low noise level
- > Designed for BEV and ICE vehicles



DOG CLUTCH ACTUATOR

- > Complete gearshift actuator for BEV T/M
- > Incl. spring assistance and shift fork
- > High performance
- > Compact design



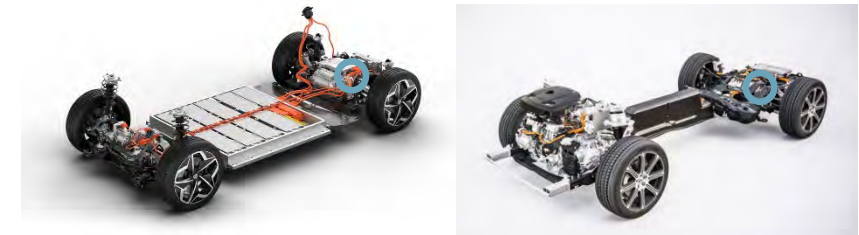
DECOUPLING UNIT

- > Actuator to decouple eAWD to save energy when in 2WD mode
- > Incl. spring assistance

P&C DRIVELINE PRODUCTS & TECHNOLOGY FOR PHEVs & EVs

VEHICLE TYPE	SBW GEAR & FORWARD/REVERSE SHIFTER	TRANSMISSION ACTUATOR	PARK LOCK ACTUATOR	CONNECT / DISCONNECT E-DRIVE AXLE
PHEV Plug-in Hybrid Electric Vehicle	YES Lever, Stalk, Rotary, Toggle SBW Shifter	YES (PRND) KA ARC <i>Some transmissions</i>	YES KA ARC <i>Some transmissions</i>	YES KA DCA <i>Electrified 2nd axle</i>
EV Electric Vehicle	YES Lever, Stalk, Rotary, Toggle SBW Shifter	YES (2/3 speed EV) KA DCA <i>Some transmissions</i>	YES KA ARC <i>Some transmissions</i>	YES KA DCA 4WD EVs

DECOUPLING ACTUATOR FOR ELECTRIC DRIVE



KA ARC GENERIC ROTARY ACTUATOR *for PRND & Park Lock applications*



ROTARY ACTUATOR FOR DECOUPLING APPLICATION



KA DCA GENERIC DOG CLUTCH ACTUATOR



CUSTOM SBW SHIFTERS



ON-HIGHWAY HIGH PERFORMING TRANSMISSION BUSINESS

MARKET DYNAMICS



SHIFT TO ELECTRIC POWERTRAIN



INCREASING MODULARIZATION



ADOPTION OF AIR SUSPENSION YIELDS OPPORTUNITIES



FUEL ECONOMY AND ENERGY SAVINGS DRIVING AMT* DEMAND



INCREASING TOTAL COST OF OWNERSHIP CONSCIOUSNESS

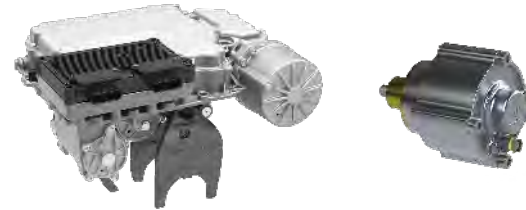
* Automated manual transmission

COMPETITIVE POSITIONING

- > Leverage deep skilled R&D team at Kongsberg, Norway innovation center
- > Further enhance system supplier capabilities
- > Leverage significant transmission knowledge
- > Push high performance actuators
- > Double-down on systems applicable for MD and HD commercial vehicles

PRODUCT HIGHLIGHTS

GEAR ACTUATION SYSTEMS



- > Pneumatic actuation can also be used for BEV trucks in addition to ICE based powertrains like AMT
- > Full electric actuator solutions based on existing technology in development
- > High performance and precise actuation

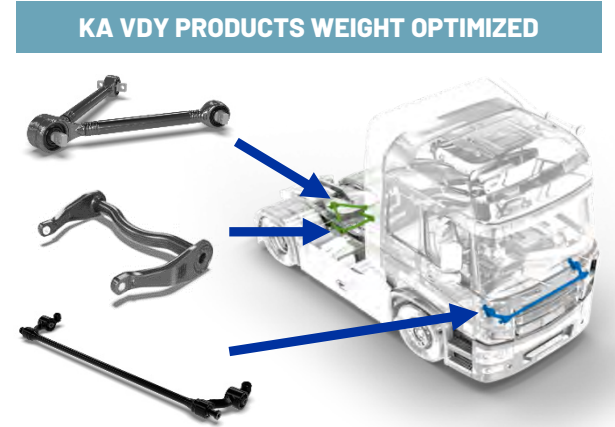
CLUTCH ACTUATION SYSTEMS



- > First high performance full electric clutch actuator for HD transmissions launched
- > Qualified for extreme requirements related to robustness and durability to secure uptime for the vehicles
- > Spin off and knowledge can be utilized for other actuators as gear actuation etc.
- > Can be used for hybrid trucks

P&C ON-HIGHWAY PRODUCTS & TECHNOLOGY FOR HEVS & EVS

VEHICLE TYPE	CLUTCH ACTUATOR	TRANSMISSION ACTUATOR	PARK LOCK ACTUATOR (24 V)	CONNECT / DISCONNECT E-AXLE AND/OR E-MOTOR(S)	VEHICLE DYNAMICS, CAB AND AXLE SUSPENSION
HEV Hybrid Electric Vehicle	Yes Electric clutch actuator	Yes Electric or pneumatic actuators	N/A	Yes KA DCA	Yes V-Stay, Cab stabilizer and rear axle stabilizer
EV Electric Vehicle	N/A No clutch in a EV	Yes Electric or pneumatic actuators	Yes KA ARC <i>Some transmissions on LDCV</i>	Yes KA DCA	Yes V-Stay, Cab stabilizer and rear axle stabilizer



KA ARC ROTARY ACTUATOR
Park Lock applications

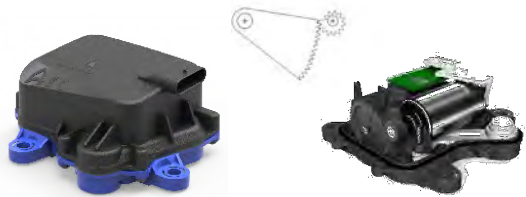
ROTARY ACTUATOR FOR DECOUPLING APPLICATION

KA DCA GENERIC DOG CLUTCH ACTUATOR

ELECTRIC CLUTCH ACTUATOR

ELECTRIC GEAR ACTUATOR

PNEUMATIC GEAR ACTUATOR



Q&A





KONGSBERG
AUTOMOTIVE

**A GLOBAL SUPPLIER OFFERING SUPERIOR
CUSTOMIZED PRODUCT SOLUTIONS
TO LEADING OEM AND TIER-1 CUSTOMERS.**