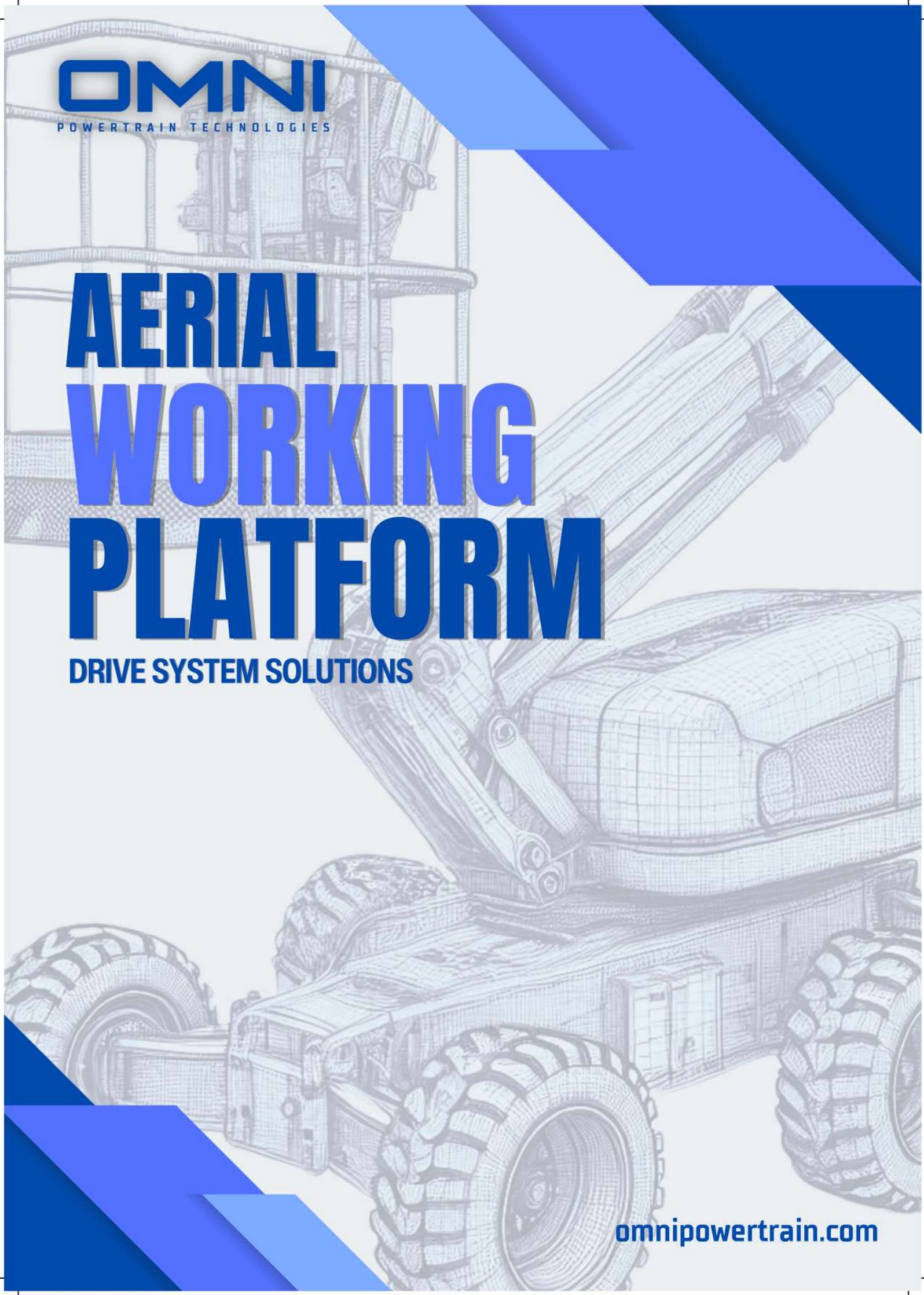
OMNI
POWERTRAIN TECHNOLOGIES

AERIAL WORKING PLATFORM

DRIVE SYSTEM SOLUTIONS



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INNOVATION IN MOTION, POWER IN ACTION

OMNI

POWERTRAIN TECHNOLOGIES

Your Vision, Our Power.

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WHY CHOOSE OMNI?

With over 60 years of experience, OMNI Powertrain Technologies is a privately owned, fully vertically integrated company, giving us complete control over every stage of design, engineering, and manufacturing.

This ensures unmatched flexibility, quality, and reliability in our advanced powertrain solutions, including high-torque axial flux motors, precision engineered gearboxes, electric and hybrid propulsion, and intelligent efficient power control systems.

Our structure allows us to support projects of all sizes across different industries, from startups to large OEMs, whether you need a small production run or thousands of units per year.

With a commitment to innovation and sustainability, we deliver tailored solutions that drive performance and keep you moving.

OFF-HIGHWAY/INDUSTRIAL

LIGHT, HEAVY & COMMERCIAL VEHICLES

AGRICULTURAL

OMNI
POWERTRAIN TECHNOLOGIES

FAMILY PORTFOLIO

OMNIGEAR®

Low and high-speed enclosed transmissions using cylindrical, bevel and worm gears and suited for on & off-highway machinery.

Providing the complete electric powertrain, producing permanent magnet axial flux motors & generators, IGBT and SiC MOSFET based motor control units and geared transmissions.

MAGELEC™ PROPULSION

Omni Solutions™

Planetary drives providing an extended range of torque outputs ranging from 6,000 to 1,000,000 Nm.

All of the OMNI Powertrain Technologies brands and product lines have stemmed from our privately owned, completely vertically integrated business, ensuring the same quality, trust and reliability throughout our entire portfolio and seamless integration of our product lines, creating innovative and trusted solutions.

YOUR SINGLE SOURCE POWERTRAIN SUPPLIER AND PARTNER

Any activity that requires motion can be refined with products from OMNI Powertrain.

Whether you require engineering expertise with gearboxes and transmissions, driveshafts, hydraulic motors and controls, or electric drivetrains, Omni has the talent and resources to solve your complex engineering challenges.
Exceeding an extensive array of standard products, Omni can also provide custom solutions tailored for your unique requirements.

As mobile elevating work platforms transition to electric drives, OMNI Powertrain Technologies support manufacturers that have a need to operate in zero emissions or “no spill” conditions.

INNOVATION IS OUR CORE

Omni PowertrainTechnologies has created the most compact, powerful, light-weight axial flux electric powertrains on earth. Innovation is our core value, and whether we are manufacturing mechanical drivelines for agricultural equipment, hydraulic powertrains for off-highway equipment or state-of-the-art electric powertrain for commercial vehicles and motorsports, we strive to exceed the power and quality demanded by our clients no matter their industry.

FULL SERVICE PROVIDER

Our diverse family of manufacturing firms ensure that Omni always provides unparalleled service, distribution and support. From conception through development we have a single objective: to provide the highest performance electric, hydraulic and mechanical powertrain systems that meet the objectives of our clients.

DRIVE & MOTION
WHEEL DRIVES

CONVENTIONAL & ELECTRIFIED

Model	Ratio	Torque	Peak Torque	Max input speed	Weight	Brake
	/1	Nm	Nm	rpm	Kg	Y-N
VS02	23 - 104	1000	2000	1000	38	N
VS07	99.3	3500	7000	4500	45	N
VB04	6.15	2000	4000	1000	33	Y
VB07	16 - 64	3500	7000	4500-5000	48	Y
VB07L	58	2000	4000	4500	43	Y
VB09	16 - 64	4500	9000	4500	49	Y
VB11 -2T	14 - 57	5500	11000	5000	83	Y
VB11 -3T	71 - 122	5500	11000	4500	97	Y
VB13-2T	14 - 43	6500	13000	4500	95	Y
VB13-3T	55 - 125	6500	13000	5000	100	Y
VB18	27 - 162	9000	18000	4500	123	Y
VB24	29 - 178	17000	24000	3500	132	Y
VB30	19 - 53	20000	30000	3800	375	Y
VE002	35.04 – 47.74	125	250	4000	17	N
VE005	52.31	250	500	5000	25	N
VE009	57.11	450	900	5000	26	N
VE01/01S	21,26 - 50,62	500	1000	5000	35	N
VE07	58 - 153	3500	7000	4500-5000	49	N
E9	41.9 - 150	6600	10000	6000	49	N
E24	84.6 - 203	16700	24000	6000	100	N
E36	93.8 - 239	23200	36000	6000	138	N
E44	84.6 - 203	33600	44000	6000	196	N
E60	938 - 227	42400	60000	6000	268	N

High torque density in a small footprint for efficient output.
250 Nm to 36,000 Nm, suitable for various industrial uses.
Multiple configurations, including bearing hubs, electric, cartridge-style, and SEA flange.
Optional for secure stationary operation.
Precision ground gears and bearing-centered carrier for durability.
Optimized for use with Magelec Axial Flux Motors and Motor Control Units for seamless performance.

DRIVE & MOTION
AXLE DRIVE UNIT

AXLE DRIVE UNITS & DROPBOX

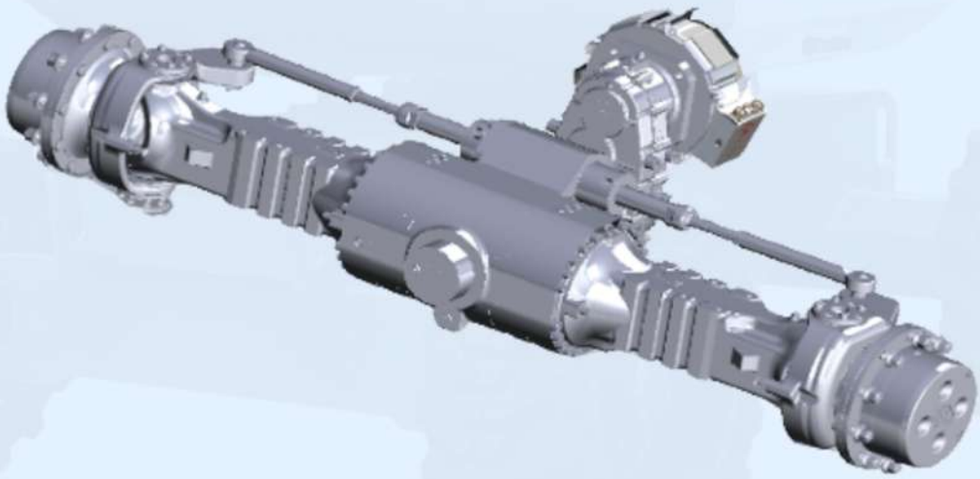
Model	Maximum Lifting Capacity	Dynamic Lifting Capacity	Maximum Output Torque	Planetary Reduction Ratio	Overall Ratio	Track Width	Planetary Hub Length	Wheel Pilot Diameter	Wheel Bolt Circle Diameter	Service Brake	Service Brake	Maximum Steering Angle	Dropbox Options
Unit	Kg	Kg	Nm	/1	/1	mm	mm	mm	mm	-	-	°	-
OM24S	11600	5800	24000	6	12.798~26.25	1530~2310	105	224/280	275/335	Hydraulic applied wet disc brake	Internal spring applied hydraulic release (SAHR) brake	40	
OM24R													OMD35
OM34S	18000	9300	34000			1530~2310						40	
OM34R													OMD35
OM65R	40000	20000	65000		15.846~26.25	2050~2310	128.5	280	335			45	OMD35

Optimized Driveline Efficiency

Flexible Modular Interface accommodates a variety of motor technologies

Low Profile Design for a minimal impact on the vehicle frame, ensuring compatibility without compromising structural integrity.

Designed to accommodate a wide range of motor diameters and sizes



MOTOR CONTROL
LOW VOLTAGE

		N21M			N38M			N64M		
		M2	M3	M3	M1	M2	M3	M1	M2	M3
Battery Voltage	V	48	72	96	24	48	96	24	48	96
Peak Current (20 s)	Arms	210			380			640		
Cont. Current (60 Mins)	Arms	105			190			320		
Output power Peak 1min	KVA	5.8	8.7	11.6	5.2	10.5	21.0	8.7	17.5	35.0
Output power Cont.	KVA	3.7	5.6	7.4	3.3	6.7	1.4	5.5	11.1	22.2
Max. Operating Voltage	VDC	70	139	139	70	70	139	70	70	139
Min. Operating Voltage	VDC	33	52	52	12	33	52	12	33	52
Non-Operating overvoltage	VDC	79	148	148	79	79	148	79	79	148
Switching Frequency	KHZ	4 ~16								
Peak Efficiency	%	≥98%								
IP Rating	-	IP67								
Dimensions LxWxH	mm	165 x 165 x 74								
Volume	L	1.60								
Weight	kg	2.0								
CAN	-	CANopen, SAE J1939, CAN 2.0 customized protocol								
Temperature Sensor	X2	PT100, PT1000, NTC 10k and similar								
LV Connection Solution	-	JAE MX23A series, 12pin and 26pin								
LED Light on-board	-	Single LED In Three Colour								
Coolant	-	Air Cooled (Water Cooled Optional)								

- Compact, cost-effective, and highly efficient
- Advanced control algorithms
- Control Modes: Torque control, Speed control, Current control
- Optimized efficiency
- Field-weakening capability
- Configurable MTPA and MTPV
- Static and dynamic switching frequency
- Active damping compensation and torque preprocessing function
- Ensures efficient and reliable operation in high-demand environments
- Enhances performance, energy efficiency, and productivity

MOTOR CONTROL
HIGH VOLTAGE IGBT

		N36I*			N75I*		
		I4	I5	I6	I4	I5	I6
DC-Link Voltage Nominal	VDC	360	600	800	360	600	800
DC-Link Voltage Range Operating	VDC	100~400	400~650	650~850	100~400	400~650	650~850
Output Power Peak 1min	KVA	95	158	212	190	316	424
Output Power Continuous	KVA	60	100	133	120	200	266
Peak Current (60 s)	Arms	360			750		
Continuous Current	Arms	200			400		
Switching Frequency Range	kHz	8~12					
Output Fundamental Frequency	kHz	0~2000					
Peak Efficiency	%	>96					
Dimensions	mm	362x258x120			720x500x120		
Weight	kg	7			14		
Volume	L	6.2			12.4		
Auxiliary Battery System	VDC	8 - 16					
CAN	-	CAN 2.0A/B, CAN FD					
IP Rating	-	IP67, IP6K9K (ISO 20653)					
Vibration	m/s2	27.8 ($3g_{rms}$), (ISO16750-3, 4.1.2.4, Test IV)					
Mechanical Shock	m/s2	500 (50g), (ISO16750-3, Test 4.2.2)					
Cooling	-	50/50 Water Ethylene Glycol					

Utilizes cutting-edge automotive-grade insulated-gate bipolar transistor (IGBT) technology
Superior power and current density
Advanced control algorithms
Control Modes: Torque control, Speed control, Current control
Optimized efficiency
Field-weakening capability
Configurable MTPA and MTPV
Static and dynamic switching frequency
Active damping compensation and torque preprocessing function
Ensures efficient and reliable operation in high-demand environments
Enhances performance, energy efficiency, and productivity

MOTOR CONTROL
HIGH VOLTAGE SiC

		N40S6	N36S6	N72S6
DC-Link Voltage Nominal	VDC	750	750	750
DC-Link Voltage Range Operating	VDC	100~900	100~900	100~900
Output Power Peak 1min	KVA	200	200	400
Output Power Continuous	KVA	125	125	250
Peak Current (60 s)	Arms	400	360	720
Continuous Current	Arms	250	250	500
Switching Frequency Range	kHz	15~35	15~35	15~35
Output Fundamental Frequency	kHz	0~2000		
Peak Efficiency	%	>99		
Dimensions	mm	262 x 208 x 90		524 x 416 x 90
Weight	kg	5		10
Volume	L	4.2		8.4
Auxiliary Battery System	VDC	8 - 16		
CAN	-	CAN 2.0A/B, CAN FD		
IP Rating	-	IP67, IP6K9K (ISO 20653)		
Vibration	m/s2	27.8 ($3g_{rms}$), (ISO16750-3, 4.1.2.4, Test IV)		
Mechanical Shock	m/s2	500 (50g), (ISO16750-3, Test 4.2.2)		
Cooling	-	50/50 Water Ethylene Glycol		

- Utilizes cutting-edge automotive-grade SiC Mosfet technology
- Extremely high efficiency of >99%
- Very high switching frequency
- Superior power and current density
- Advanced control algorithms
- Control Modes: Torque control, Speed control, Current control
- Configurable MTPA and MTPV
- Static and dynamic switching frequency
- Active damping compensation and torque preprocessing function
- Ensures efficient and reliable operation in high-demand environments

INTERGRATED POWERTRAIN SOLUTIONS

At OMNI Powertrain Technologies, we specialize in delivering innovative, high-performance powertrain systems that drive efficiency, durability, and power across demanding industries. Our expertise in electric, hybrid, and mechanical drivetrains allows us to develop cutting-edge solutions that maximize performance for OEMs and manufacturers worldwide.

With engineering teams strategically positioned across key markets, we collaborate closely with our customers to design and deliver powertrain solutions that seamlessly integrate into their applications—helping them stay ahead in an evolving industry.

Innovated, Collaborated & Integrated

Collaboration & Expertise

Our team of engineers, system integrators, and technical specialists work closely with OEMs to **develop tailored solutions** - ensuring **seamless integration, reduced downtime,** and **enhanced operational efficiency.**

Systems Approach

We take a **systems-first approach**, ensuring each component—whether an electric motor, gearbox, or inverter **works harmoniously** to enhance overall **performance, efficiency, and reliability.**

Technology & Innovation

We push the boundaries of powertrain innovation, leveraging **precision engineering** and **advanced materials** to create **durable, high-torque solutions** that meet the demands of off-highway, industrial, and electrification applications.

Your Vision, Our Power.

COMPLETE **SOLUTIONS**

AWP RANGE - SCISSOR LIFT 4M-5M

X2 - VE002 WHEEL DRIVE + M09 CARTRIDGE MOTOR
X3 - N28M1 INVERTER (MCU)
X2 - WN SPINDLE
X1 - M15 - EPTO + GEARPUMP

COMPLETE **SOLUTIONS**

AWP RANGE - SCISSOR LIFT 6M-10M

X2 - VE01 WHEEL DRIVE + M11 CARTRIDGE MOTOR
X3 - N38M1 INVERTER (MCU)
X2 - WN SPINDLE
X1 - M15 - EPTO + GEARPUMP

COMPLETE **SOLUTIONS**

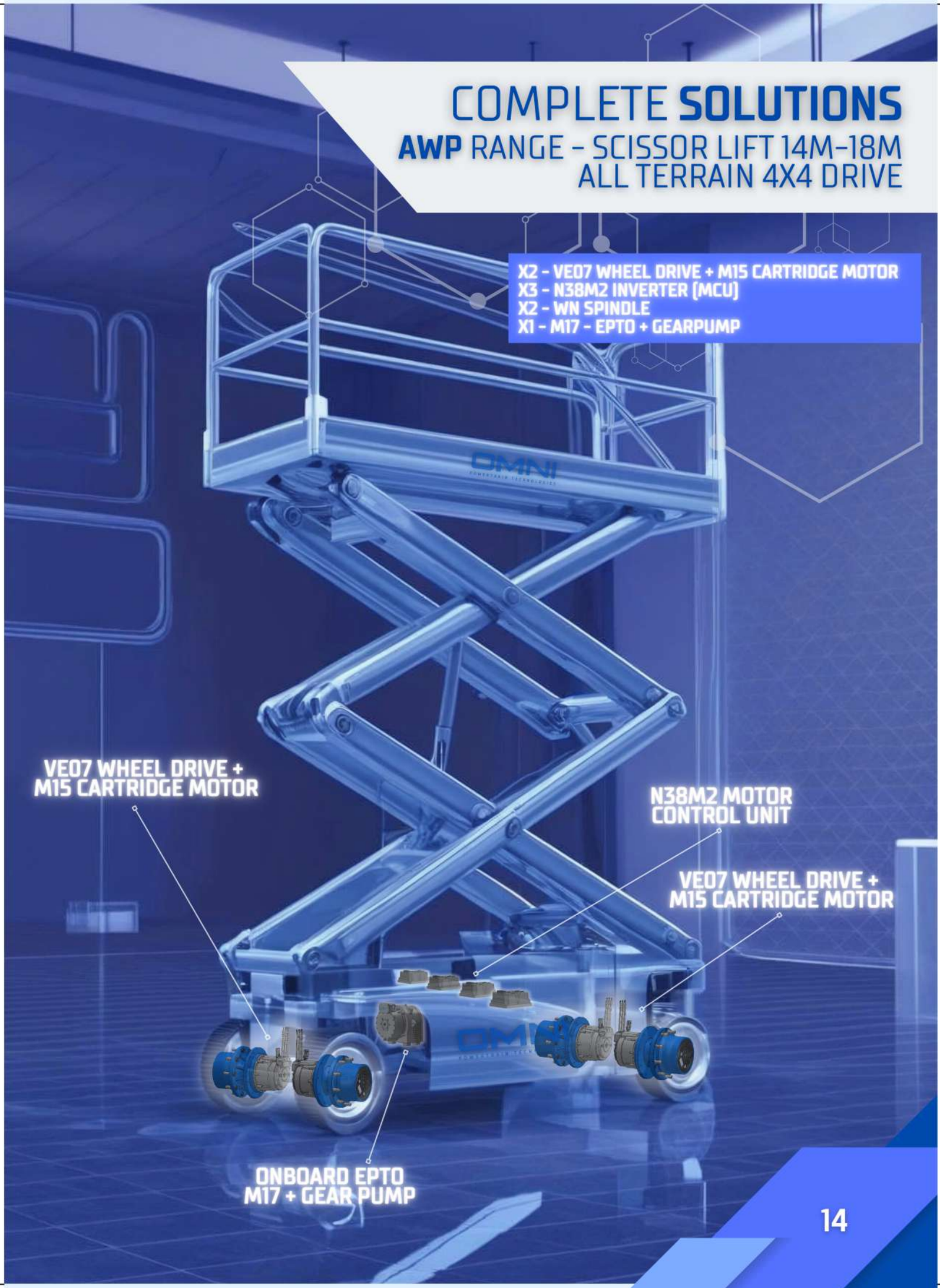
AWP RANGE - SCISSOR LIFT 10M-14M

X2 - VE01 WHEEL DRIVE + M13 CARTRIDGE MOTOR
X3 - N38M2 INVERTER (MCU)
X2 - WN SPINDLE
X1 - M15 - EPTO + GEARPUMP

COMPLETE **SOLUTIONS**

AWP RANGE - SCISSOR LIFT 14M-18M
ALL TERRAIN 4X4 DRIVE

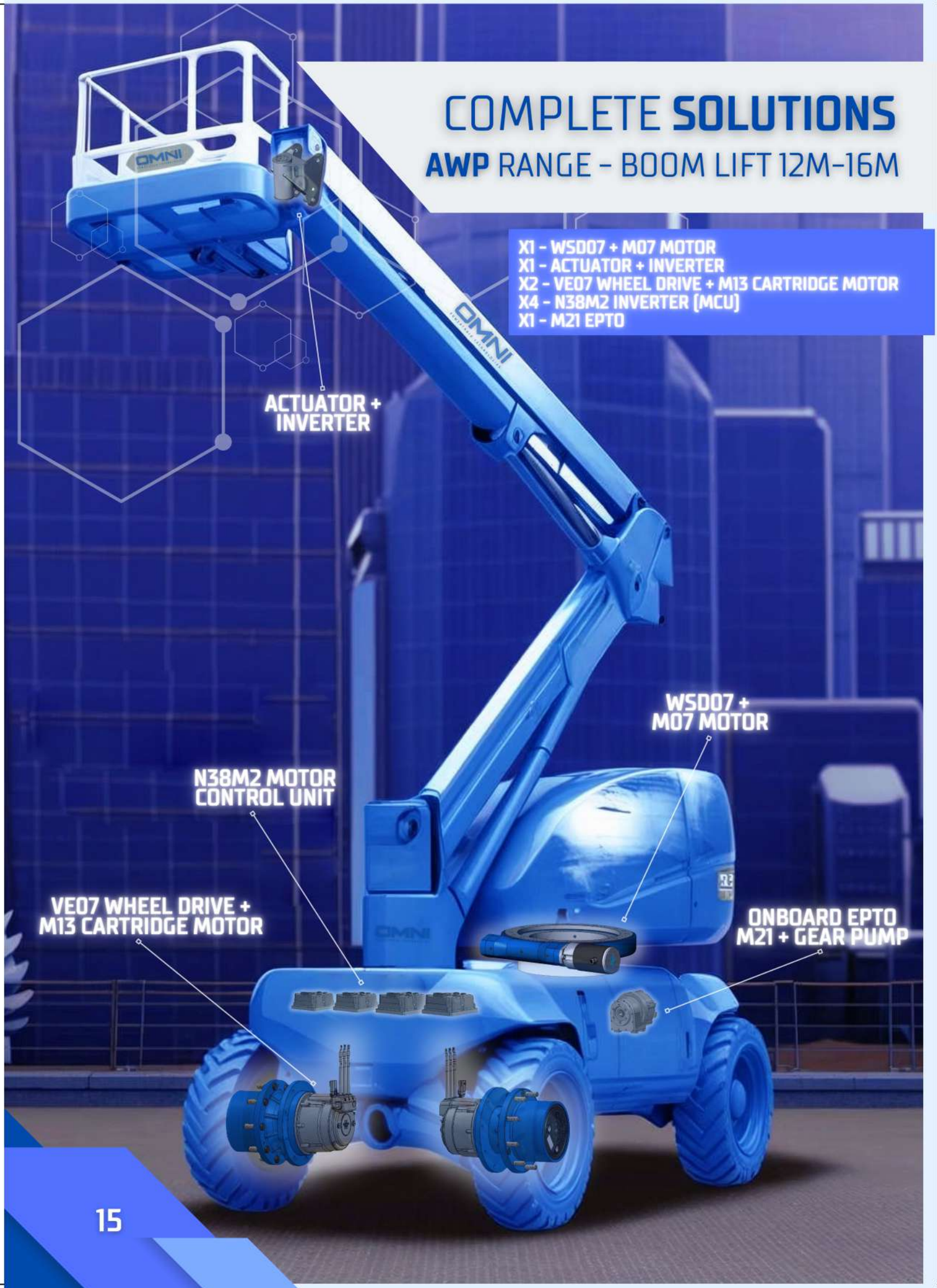
X2 - VE07 WHEEL DRIVE + M15 CARTRIDGE MOTOR
X3 - N38M2 INVERTER (MCU)
X2 - WN SPINDLE
X1 - M17 - EPTO + GEARPUMP



COMPLETE **SOLUTIONS**

AWP RANGE - BOOM LIFT 12M-16M

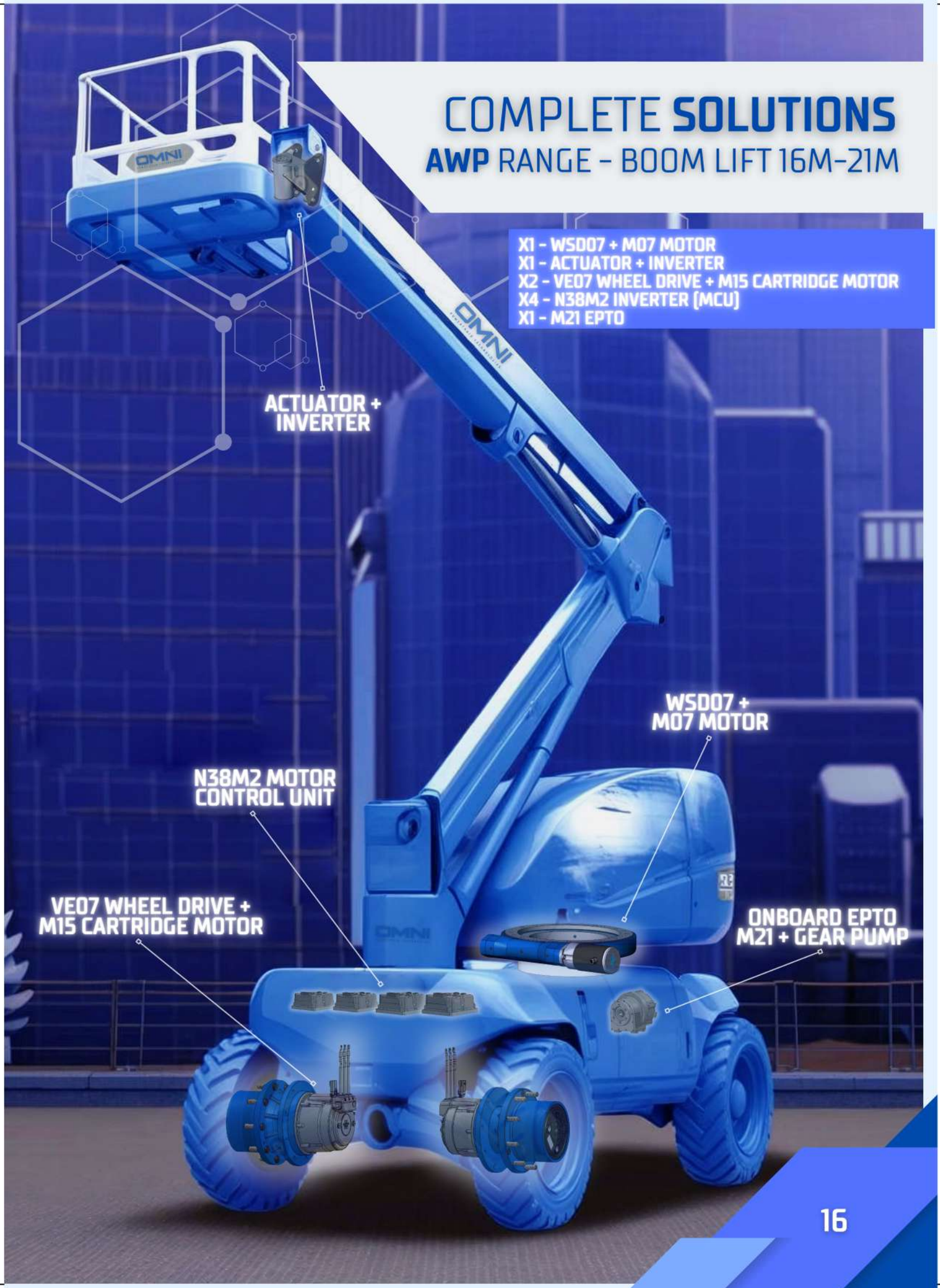
X1 - WSD07 + M07 MOTOR
X1 - ACTUATOR + INVERTER
X2 - VE07 WHEEL DRIVE + M13 CARTRIDGE MOTOR
X4 - N38M2 INVERTER (MCU)
X1 - M21 EPTO



COMPLETE **SOLUTIONS**

AWP RANGE - BOOM LIFT 16M-21M

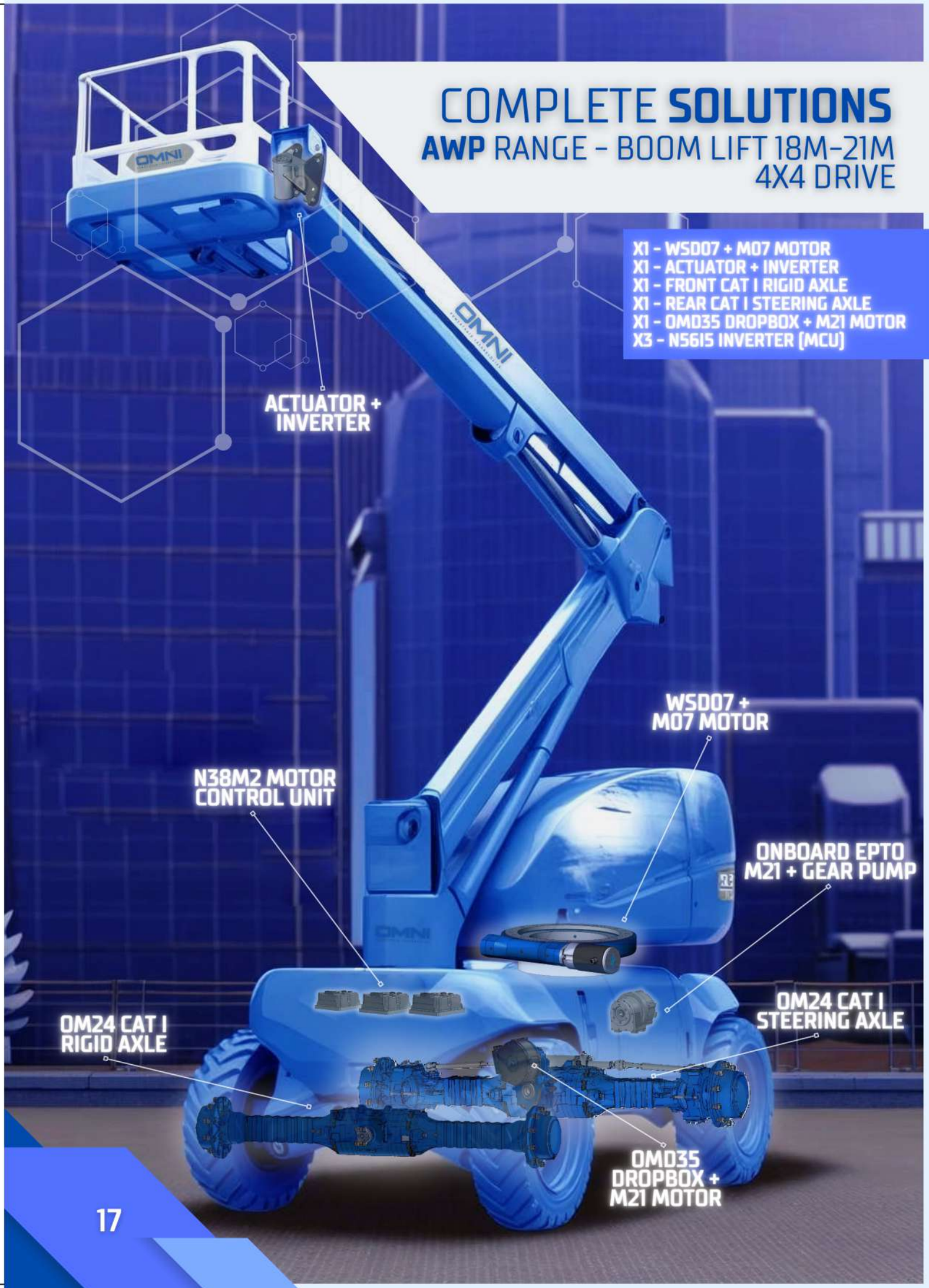
X1 - WSD07 + M07 MOTOR
X1 - ACTUATOR + INVERTER
X2 - VE07 WHEEL DRIVE + M15 CARTRIDGE MOTOR
X4 - N38M2 INVERTER (MCU)
X1 - M21 EPTO



COMPLETE **SOLUTIONS**

AWP RANGE - BOOM LIFT 18M-21M 4X4 DRIVE

X1 - WSD07 + M07 MOTOR
X1 - ACTUATOR + INVERTER
X1 - FRONT CAT I RIGID AXLE
X1 - REAR CAT I STEERING AXLE
X1 - OMD35 DROPBOX + M21 MOTOR
X3 - N56I5 INVERTER (MCU)



COMPLETE **SOLUTIONS**

AWP RANGE - BOOM LIFT 22M-24M 4X4 DRIVE

GLOBAL CAPACITY, LOCAL EXPERTISE

OMNI Powertrain Technologies operates on a truly global scale, delivering advanced powertrain solutions to industries across all continents.

With three main facilities strategically located in Houston (USA), Reggio Emilia (Italy), and Shanghai (China), we combine world-class engineering and manufacturing expertise with localized support to meet the needs of our partners wherever they operate.

Our fully integrated global network enables seamless collaboration, ensuring the highest standards of quality, innovation, and efficiency.

Whether working with startups or major OEMs, we have the capacity, flexibility, and technical expertise to support projects of any scale—from prototype development to full-scale production in the thousands. Wherever you are, OMNI is ready to power your success.

OUR PHILOSOPHY

At OMNI Powertrain Technologies, we provide comprehensive powertrain architectures designed to equip Customer's machine with precision-engineered components that maximize efficiency and performance. Our modular approach allows us to offer highly adaptable solutions, ensuring compatibility across diverse applications.

To achieve optimal system integration, a detailed analysis of the customer's specific requirements is essential. By closely examining operational data, load cycles, and performance needs, we fine-tune each solution—ensuring seamless powertrain compatibility that enhances productivity and reliability.

Beyond supplying industry-leading components, OMNI Powertrain Technologies offers dedicated engineering support packages, providing customers with expert guidance throughout the integration process. Our team collaborates directly with OEMs, offering:

- **System modelling and validation to optimize drivetrain performance.**
- **Calibration and tuning services to achieve peak efficiency.**
- **On-site and remote engineering support to facilitate seamless implementation.**

By combining advanced hardware, software, and engineering expertise, OMNI ensures that every powertrain solution is not only high-performing but also perfectly aligned with the specific demands of the application.

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