



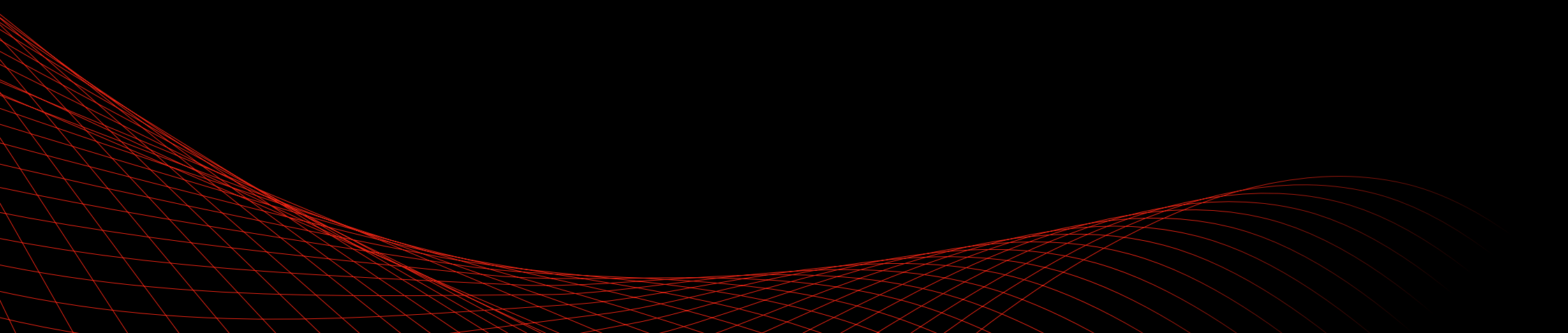
Carraro Solutions for Construction Equipment

The Carraro Spirit

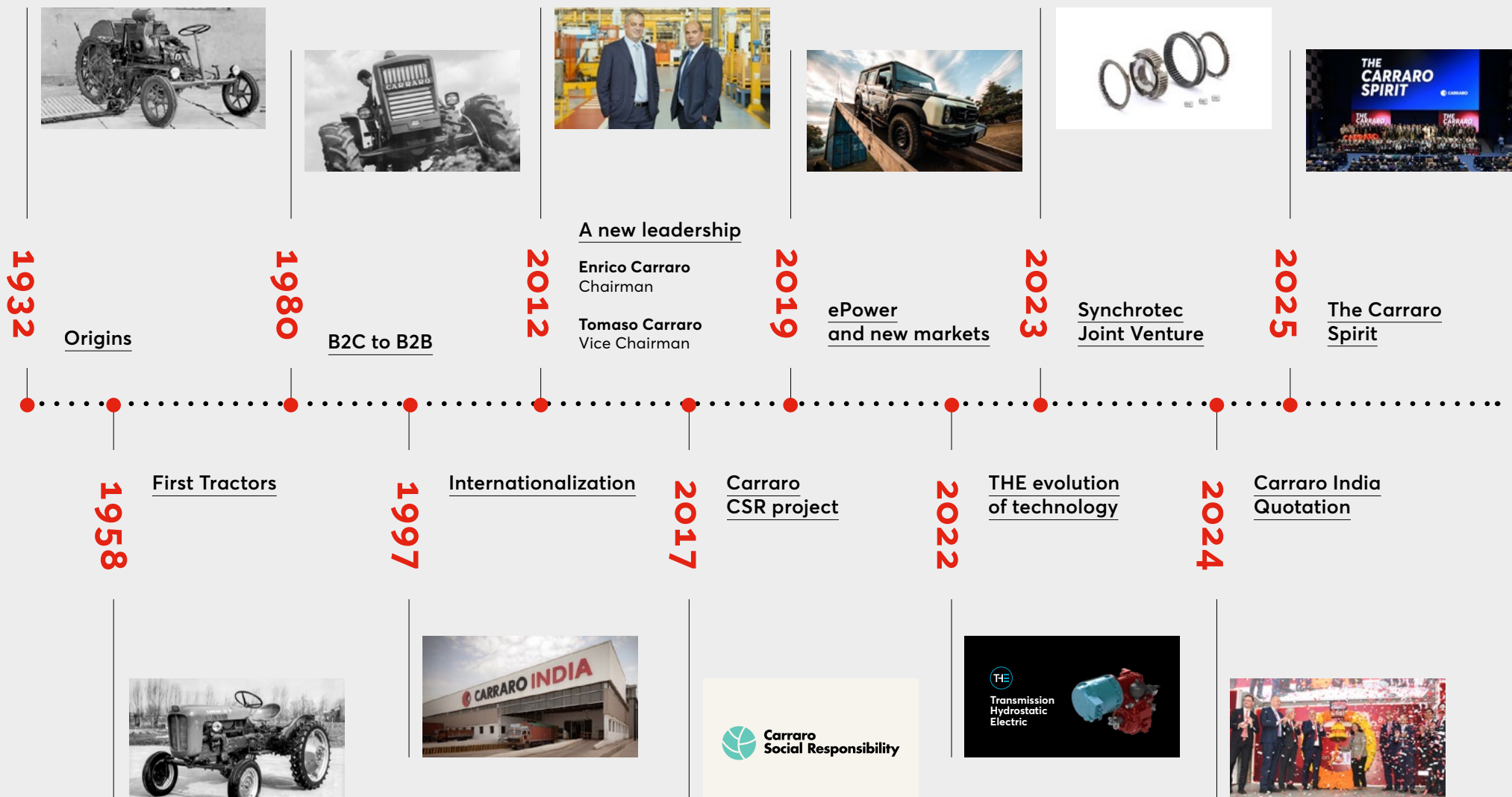
We Drive Market-Focused Innovation
We Take the Lead
We Empower Sustainable Solutions
We Embrace Perspectives
We Embody Passion for Performance

Since our origins, our corporate culture has been grounded within some fundamental key reference Values that enable us to work alongside all our stakeholders in full mutual respect in the logic of a shared path of growth.

Today these Values have been codified - and written down - and are a part of the identity of each Carraro person, at every latitude. This allows us to be present in each geographical area of reference while respecting and valuing the different local cultures and contexts.



History



Carraro Global Footprint

Acting Local for Local we understand market's needs



Plant
Drivelines



Plant
Tractors



Plant
Gears



Engineering
Centres



Spare Parts
Centres



Sales
Offices

United States



Luxembourg



Italy



China



India





Carraro Social Responsibility

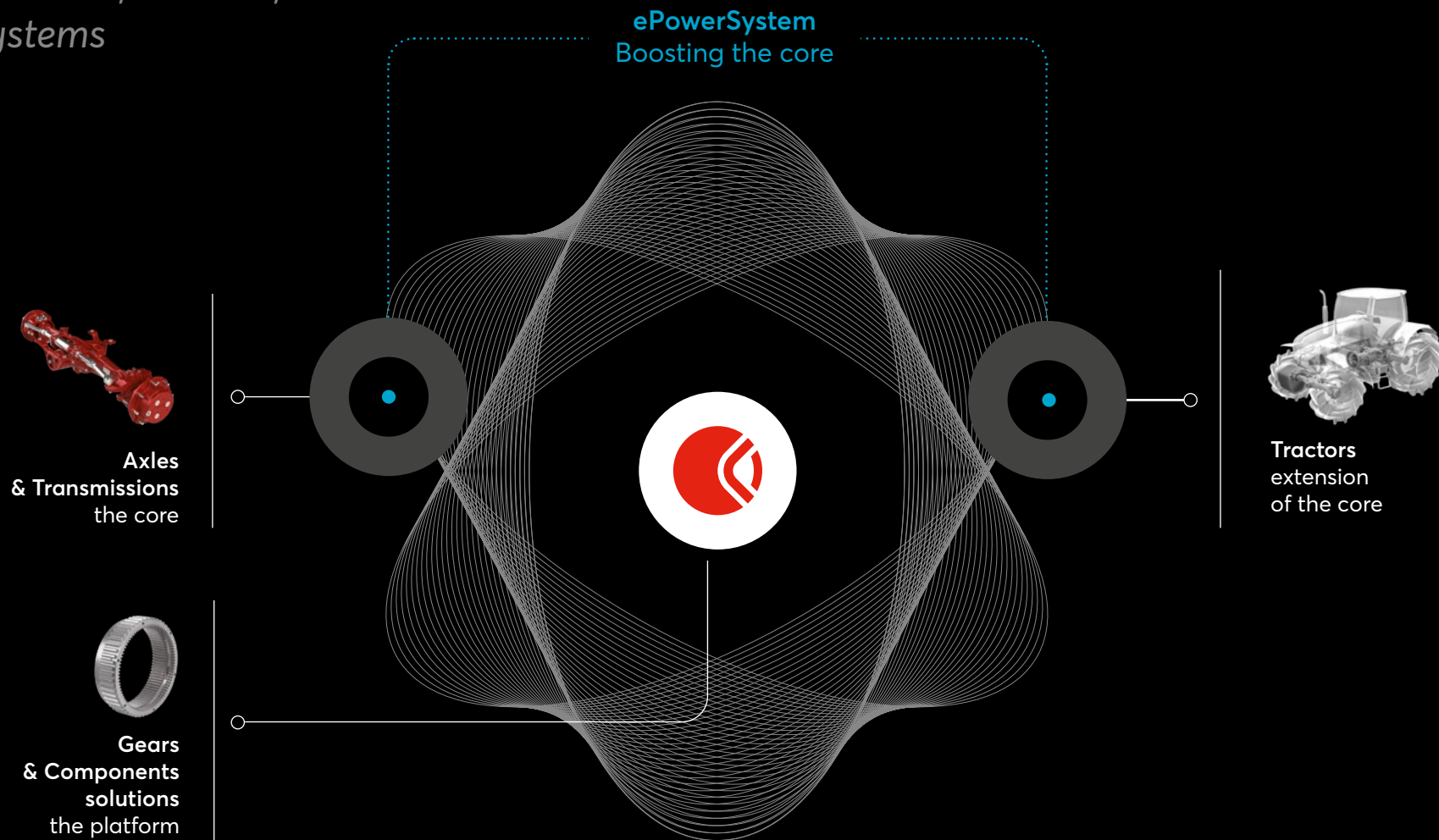
We develop effective, reliable and innovative products and services designed to turn energy into work, optimizing efficiency to increase performance, through digitized solutions, minimizing waste of resources and impact on the environment.

The sustainable management of relations with our customers and suppliers enables us to set up business responsibly, thanks to our employees who create and guard the company's know-how.

Every transformation is environmentally, socially and Governance relevant, for a value-oriented growth in sustainability of the whole system.

Carraro Consistent Solutions

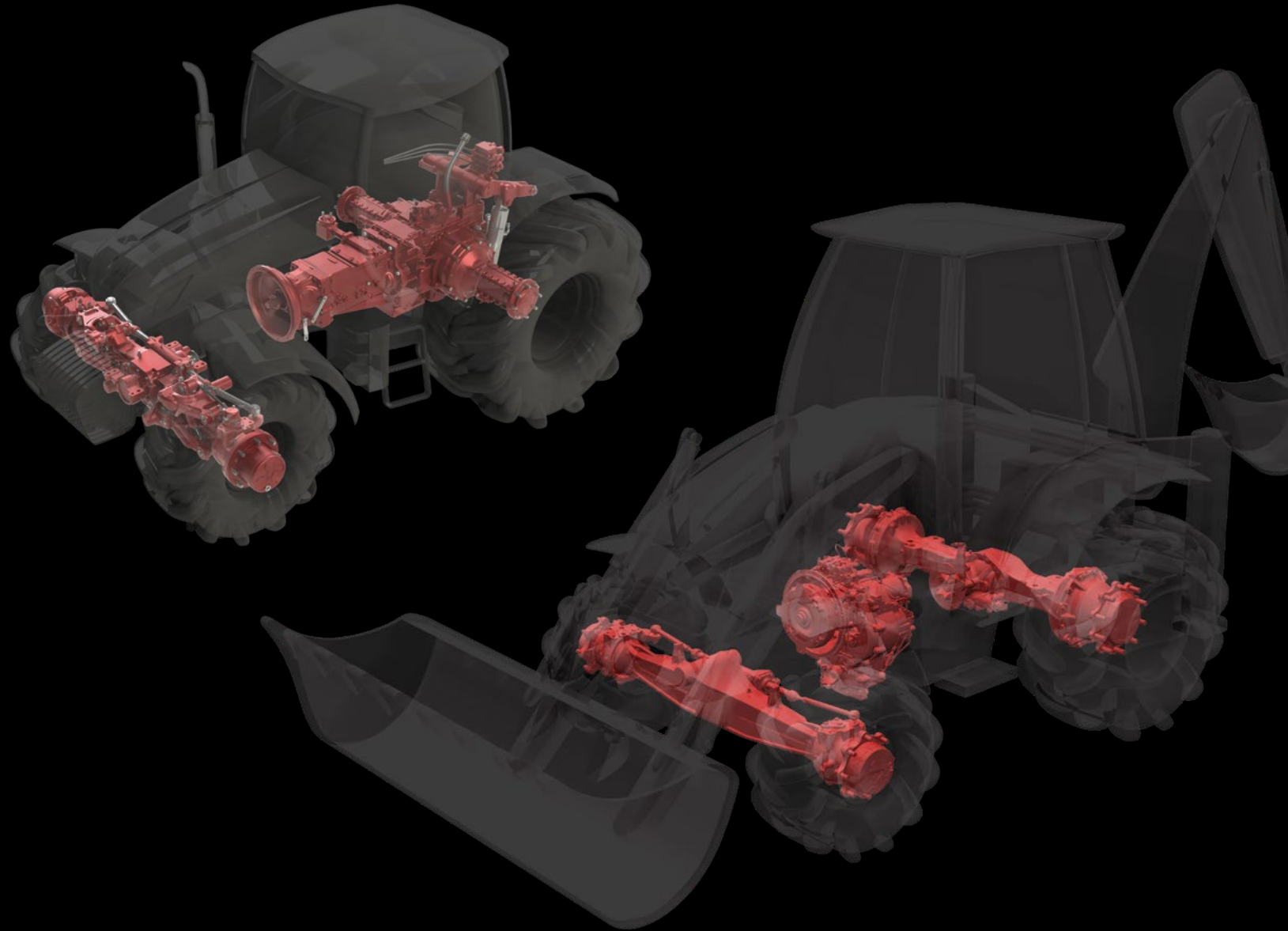
*Gears, Drivelines, Tractors,
ePowerSystems*



Carraro Drivelines: the core business

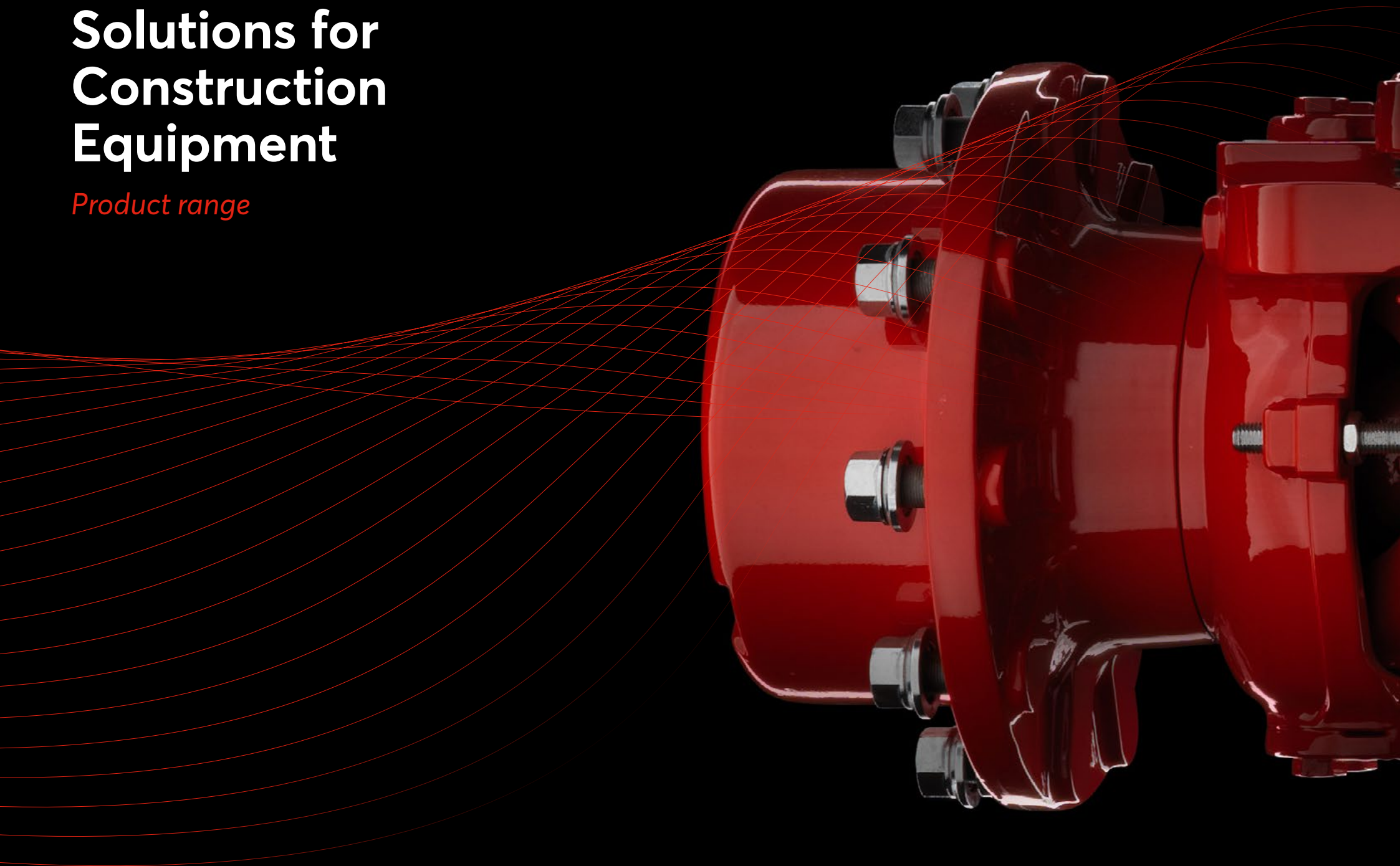
We design, manufacture & market transmission solutions for off-highway vehicles for agriculture, construction equipment and other high value markets such as trucks and 4x4 cars.

In each application, we are able to offer complete driveline systems comprising axles and transmissions with electrohydraulic controls, which are tailored and optimised per each performance target.



Carraro Solutions for Construction Equipment

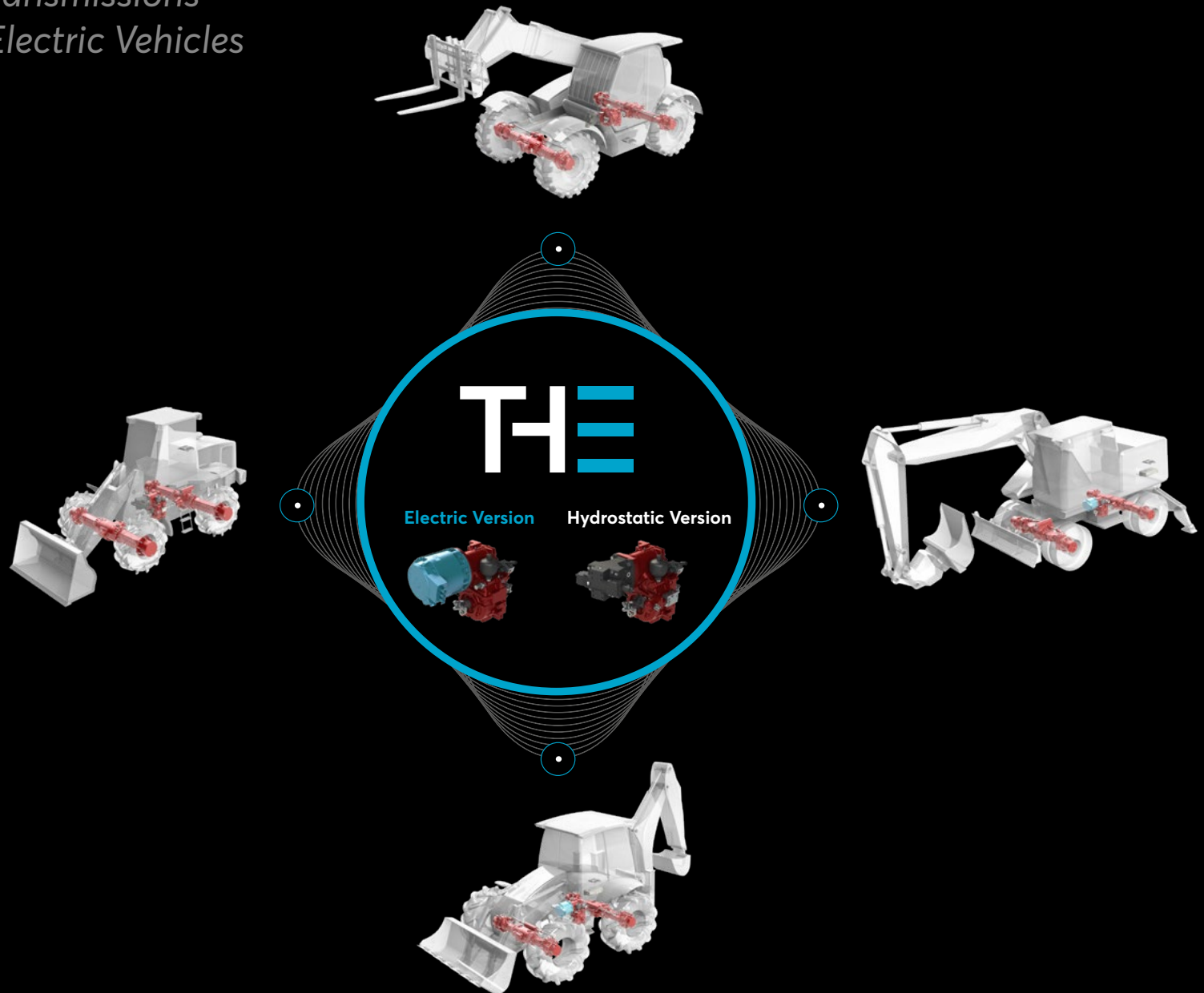
Product range



THE Solution

*The new Carraro CE range Transmissions
fittable for Hydrostatic and Electric Vehicles*

THE interchangeable, versatile,
highly suitable Transmissions
for different light construction
equipment applications





Transmission Hydrostatic Electric

Electric Version

E-MOTOR

- Up to 870 Nm
- Up to 10500 RPM
- Up to $\varnothing_{ext_max} = 335$ mm

Vehicle Interfaces and Mounting

- Flanged to Axle
- Remote
- Vertical/Horizontal

Parking brake Module

- Optional

Output Interfaces

- DIN1410
- END YOKE 1410/1480

4WD Disconnect SAHR Module

- Optional

Two gear shifting

- Synchro + E-Motor
- Powershift

Hydrostatic Version

MOTOR

- From 80 to 210 cc

Vehicle Interfaces and Mounting

- Flanged to Axle
- Remote
- Vertical/Horizontal

Parking brake Module

- Optional

Output Interfaces

- DIN1410
- END YOKE 1410/1480

4WD Disconnect SAHR Module

- Optional

Two gear shifting

- Synchro
- Powershift

CE Solution Provider Approach

Transmission

- › Mechanical
- › Servo Power Synchro
- › Power Shuttle
- › Hydrostatic
- › Electrified

ePowertrain

- › Mild Hybrid
- › Hybrid
- › Full Electric
- › THE 

Differentials lock-up and 4WD

- › Manual Mode
- › Automatic Mode
- › Actuation Monitor

Vehicle

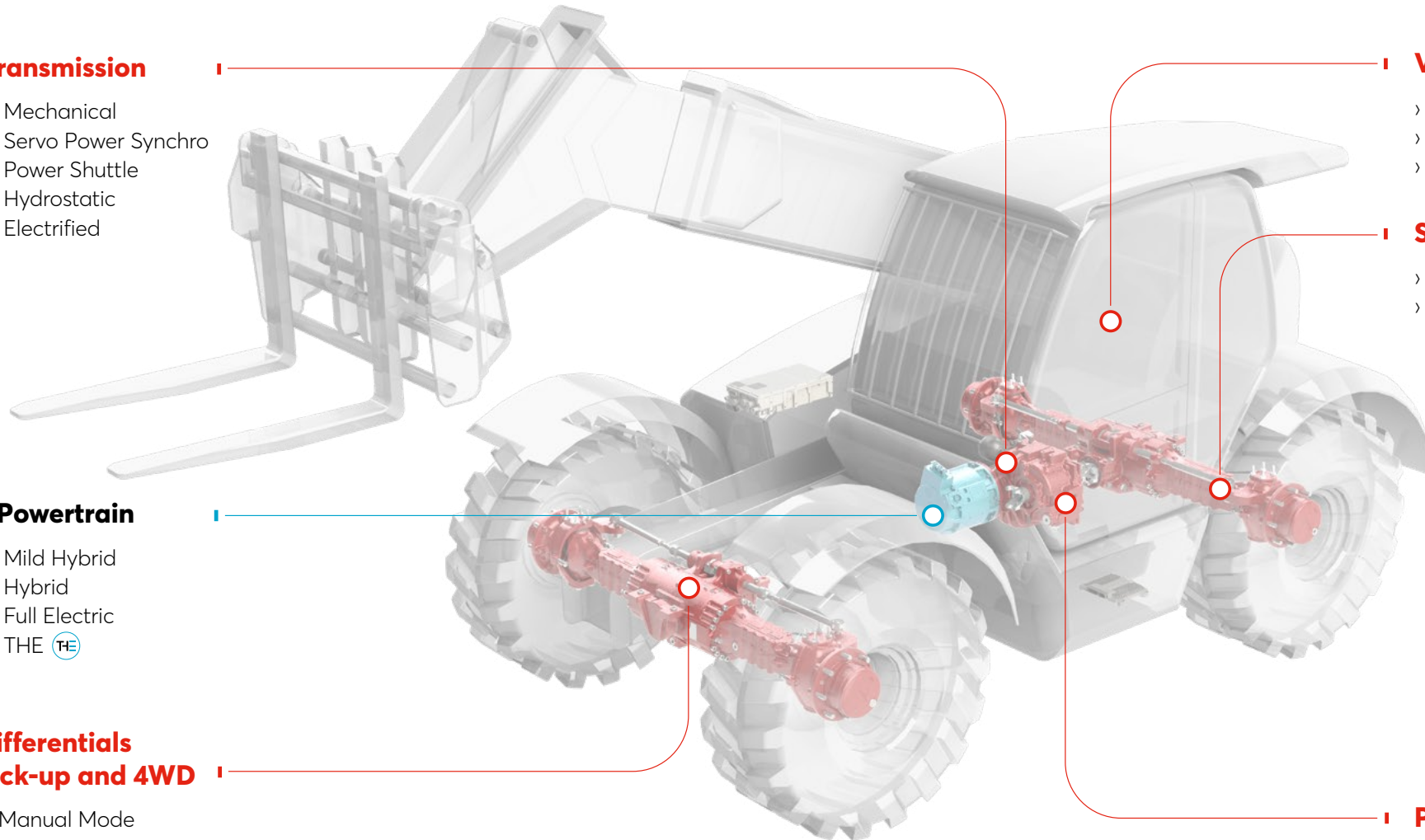
- › Instrument cluster
- › Telemetry
- › HMI

Steering

- › 4 Wheel Steering
- › Steering Mode

Powertrain

- › Direct Drive
- › Ecology Mode
- › Engine Integration

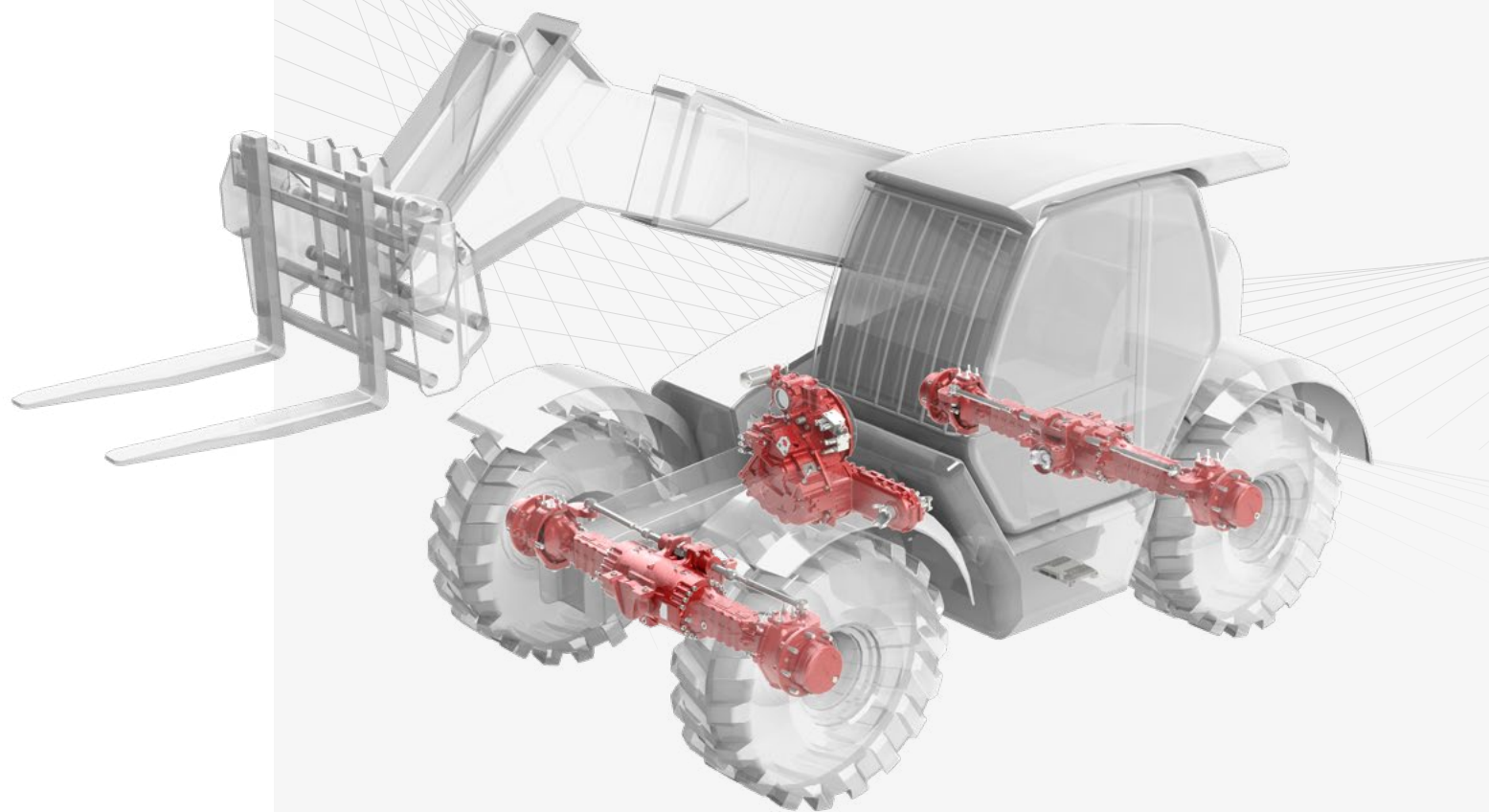


Telescopic Boom Handler

Torque Converter

Hydrostatic

Electrified



Lift capacity kg / lb	Front axle	Rear axle	Torque Converter Transmissions	ECU
From 2750 / 6k to 4500 / 10k	46.20M 46.24M 46.28M* 46.32M*	46.20M 46.24M 46.28M* 46.32M*	TCH80 TCH90 PS Center Drive TCH90 PS Side Drive	Yes Yes
From 4500 / 10k to 5500 / 12k	46.37M 46.44M	46.37M 46.44M	TCH80 TCH90 PS Center Drive TCH90 PS Side Drive	Yes Yes

* also available HY version



Axles key features and benefits

- › The 46-Series Axles generation provides increased efficiency
- › Tested for low power losses
- › Designed and tested for use under any condition
- › Improved serviceability reducing greasing points



Transmission key features and benefits

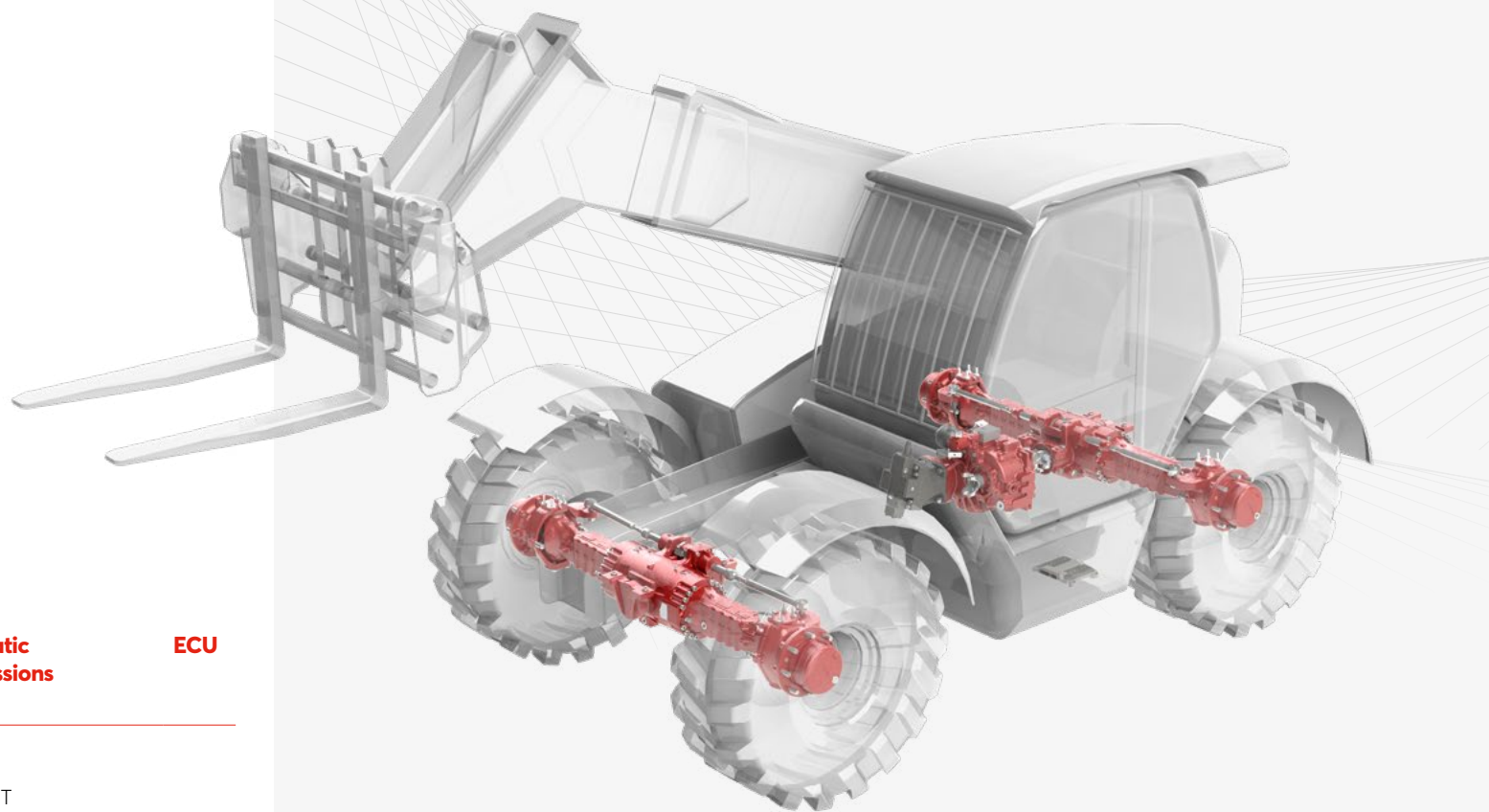
- › Power Shuttle and 4 or 6-speed Powershift
- › Central and side drive configurations
- › Full electronic or electro-hydraulic control
- › Smooth, precise, and reliable response even under severe working conditions granted

Telescopic Boom Handler

Torque Converter

Hydrostatic

Electrified



Lift capacity kg / lb	Front axle	Rear axle	Hydrostatic Transmissions	ECU
Up to 2750 / 6k	46.08M	46.08M	TB135C	
	46.12M	46.12M	TB172C	
	46.14M	46.14M	TB172HVT	
	46.16M	46.16M	TB172/2C Stop&Go	
	46.18M	46.18M		
From 2750 / 6k to 4500 / 10k	46.20M	46.20M	TB172C	
	46.24M	46.24M	TB172HVT	
	46.28M*	46.28M*	TB172/2C Stop&Go	
	46.32M*	46.32M*	TB172/2C Shift on Fly	Yes
			THE260/2 Synchro	Yes
			THE260/2 PS	Yes
From 4500 / 10k to 5500 / 12k	46.37M	46.37M	TB172HVT	
	46.44M	46.44M	TB172/2C Stop&Go	
			TB172/2C Shift on Fly	Yes
			THE260/2 Synchro	Yes
			THE260/2 PS	Yes

* also available HY version



Axles key features and benefits

- › The 46-Series Axles generation provides increased efficiency
- › Tested for low power losses
- › Designed and tested for use under any condition
- › Improved serviceability reducing greasing points



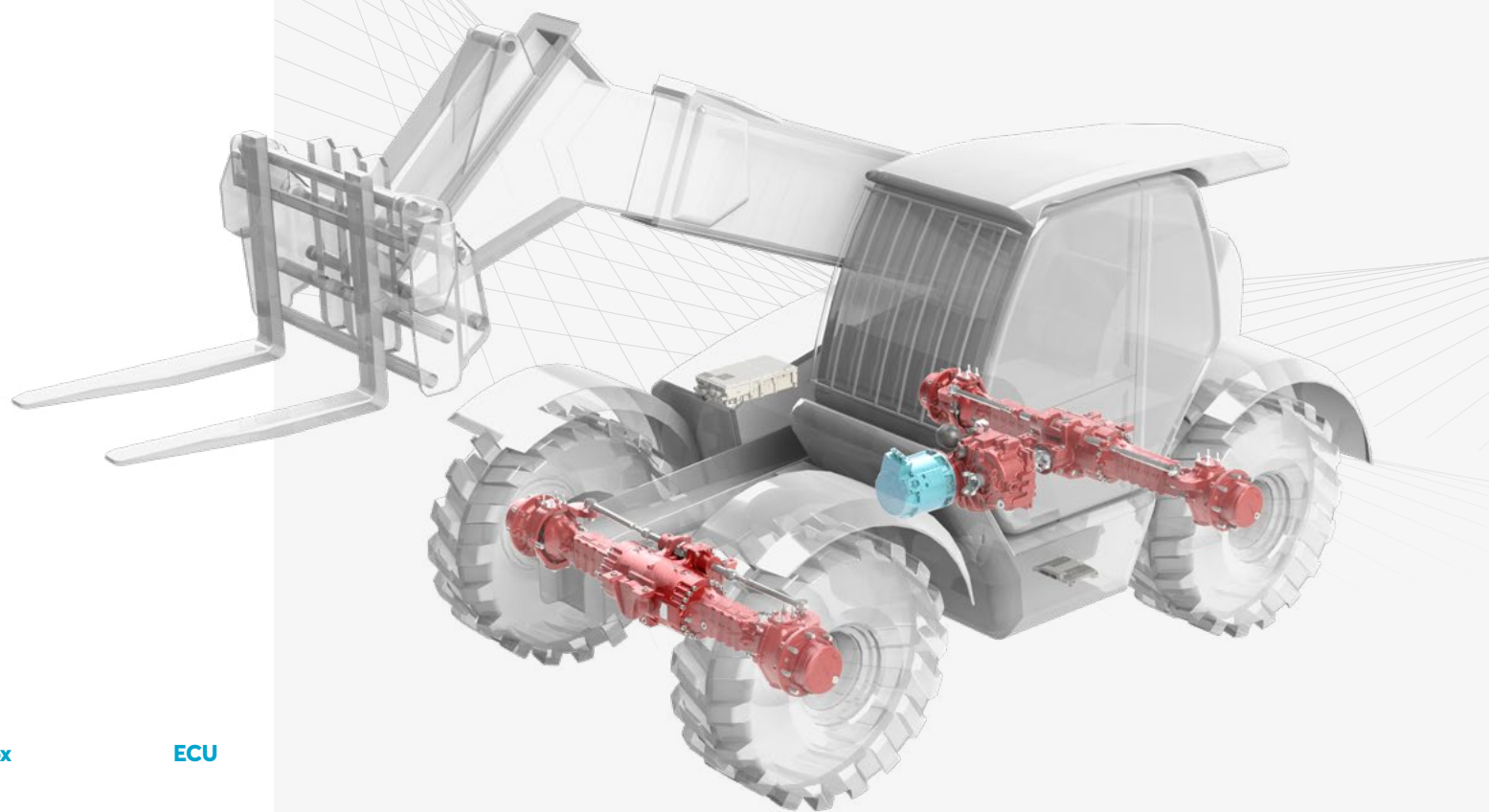
Transmission key features and benefits

- › Complete range from compact dropbox to fully electronically controlled solutions
- › Suitable for hydromotor up to 255cc/rev
- › THE Solution. New range of interchangeable Transmissions for Hydrostatic & Electric applications 
- › THE Solution. Proprietary synchronized and Powershift architecture 

Telescopic Boom Handler

Torque Converter

Hydrostatic

Electrified

Lift capacity kg / lb	Front axle	Rear axle	eGearbox	ECU
Up to 2750 / 6k	46.08M	46.08M	TB172C	Yes
	46.12M	46.12M	TB220	Yes
	46.14M	46.14M	THE260/2 Synchro	Yes
	46.16M	46.16M		Yes
	46.18M	46.18M		Yes
From 2750 / 6k to 4500 / 10k	46.20M	46.20M	TB220	Yes
	46.24M	46.24M	THE260/2 Synchro	Yes
	46.28M*	46.28M*	THE260/2 PS	Yes
	46.32M*	46.32M*		
From 4500 / 10k to 5500 / 12k	46.37M	46.37M	THE260/2 Synchro	Yes
	46.44M	46.44M	THE260/2 PS	Yes

* also available HY version



Axles key features and benefits

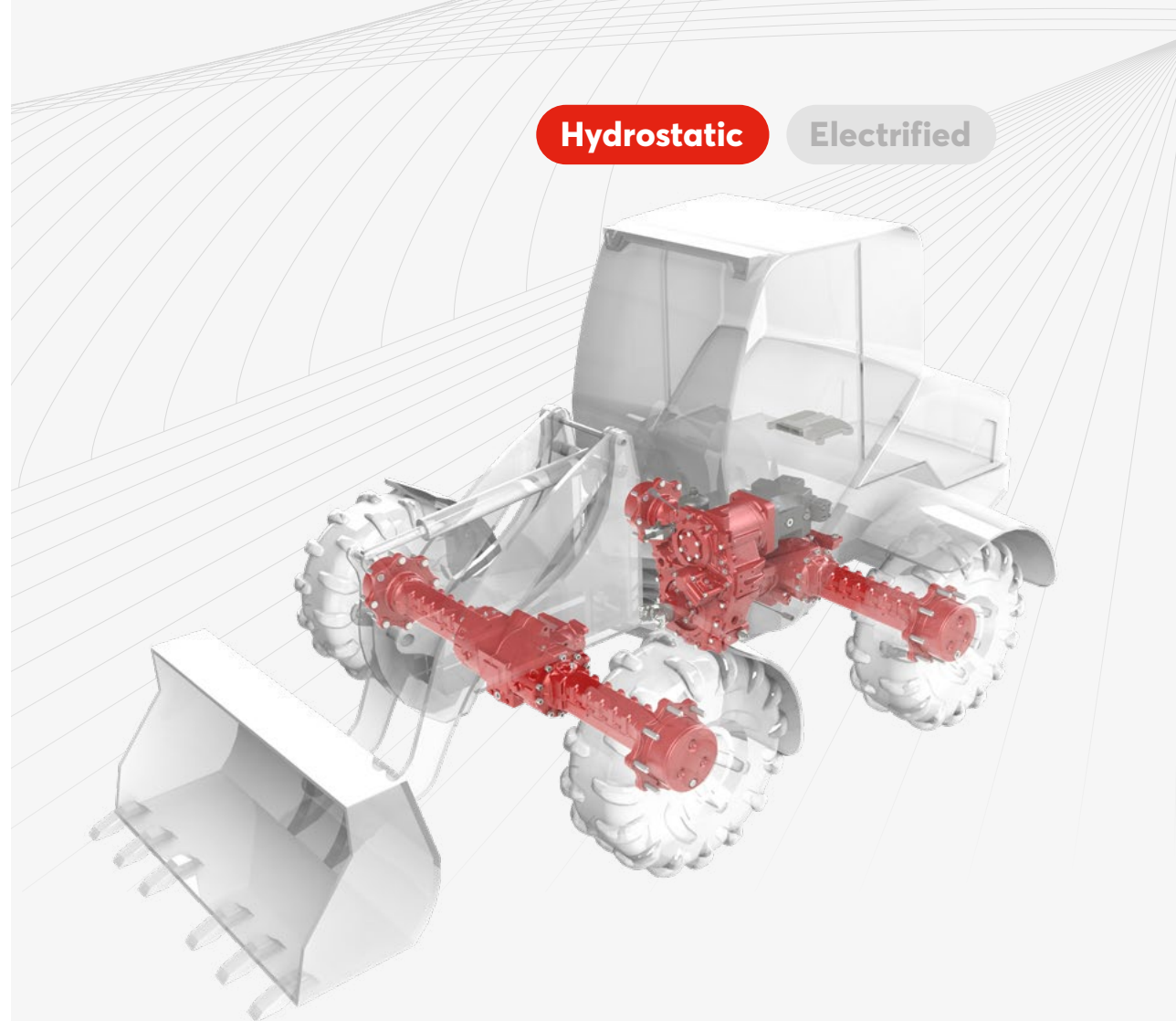
- › The 46-Series Axles generation provides increased efficiency
- › E-Axles range with input flanged e-Motor suitable for compact Telehandlers
- › P3 and P4 solutions for HEV and BEV vehicles



Transmission key features and benefits

- › Single speed and dual speed eGearboxes specifically designed for electric vehicles
- › THE Solution. New range of interchangeable Transmissions for Hydrostatic & Electric applications 
- › THE Solution. Proprietary synchronized and Powershift architecture 
- › eMotors range suitable for low and high voltage

Compact / Small Wheel Loader



Operative Weight Ton	Front axle	Rear axle	Hydrostatic Transmissions	ECU
From 1 to 4	28.09 48.16M	28.09 48.16M	TB135C/TB172C TB172HVT TB172/2C Stop&Go	
From 4 to 9,5	48.18M 28.20 28.25 28.32	48.18M 28.20 28.25 28.32	TB172C TB172HVT TB172/2C Stop&Go TB172/2C Shift on Fly THE260/2 Synchro	Yes Yes
From 9,5 to 13	28.43M 48.47 48.57M	28.43M 48.47 48.57M	TB172/2C Stop&Go TB172/2C Shift on Fly THE260/2 Synchro THE260/2 PS	Yes Yes Yes



Axles key features and benefits

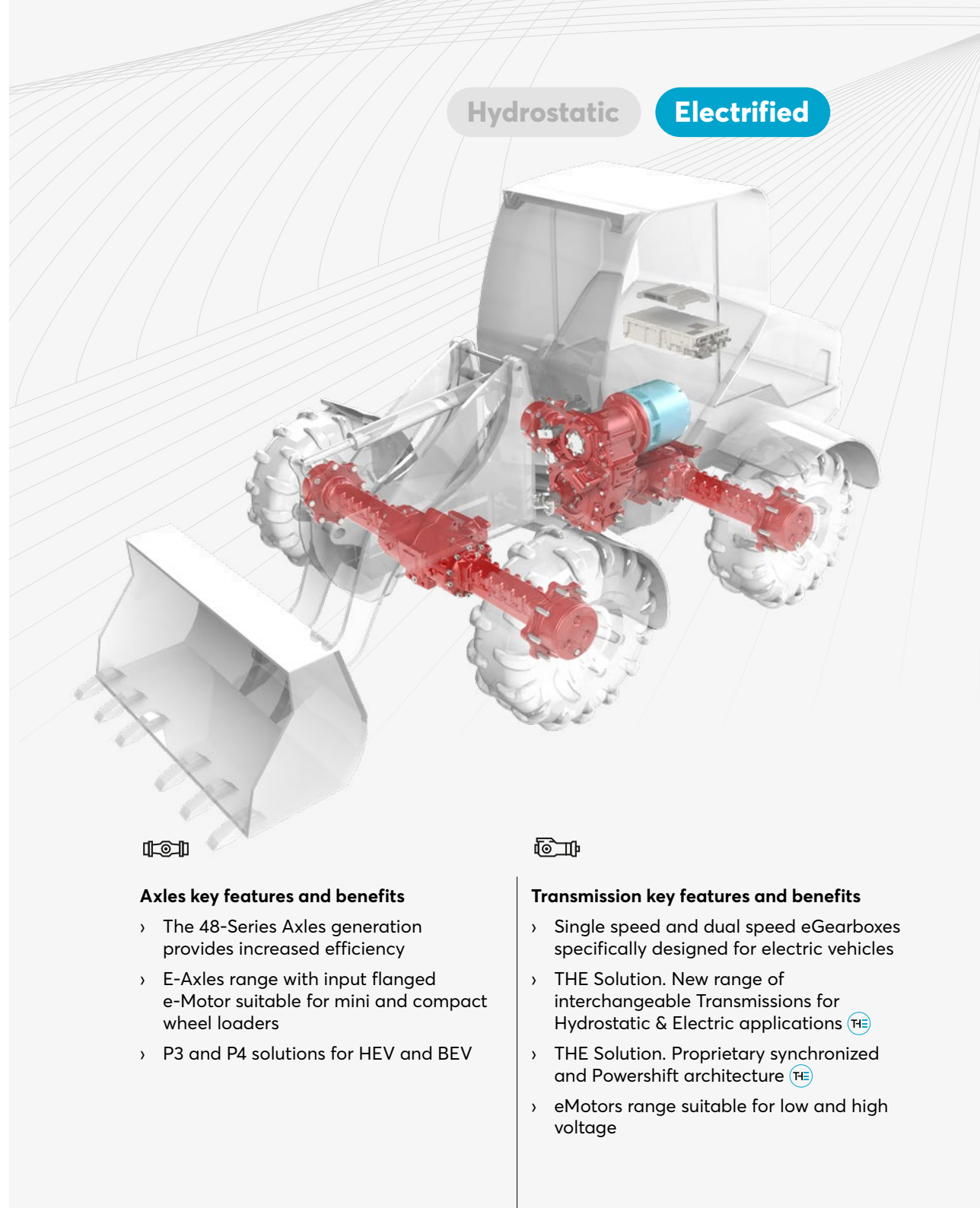
- › The 48-Series Axles generation provides increased efficiency
- › Tested for low power losses
- › Improved serviceability reducing greasing points
- › Modular and monolithic design for any need



Transmission key features and benefits

- › Complete range from compact dropbox to fully electronically controlled solutions
- › Suitable for hydromotor up to 255cc/rev
- › THE Solution. New range of interchangeable Transmissions for Hydrostatic & Electric applications 
- › THE Solution. Proprietary synchronized and Powershift architecture 

Compact / Small Wheel Loader



Operative Weight Ton	Front axle	Rear axle	eGearbox	ECU
From 1 to 4	28.09 48.16M	28.09 48.16M	TB220	Yes
From 4 to 9,5	48.18M 28.20 28.25 28.32	48.18M 28.20 28.25 28.32	TB172C TB220 THE260/2 Synchro	Yes Yes Yes
From 9,5 to 13	28.43M 48.47 48.57M	28.43M 48.47 48.57M	THE260/2 Synchro THE260/2 PS	Yes Yes



Axles key features and benefits

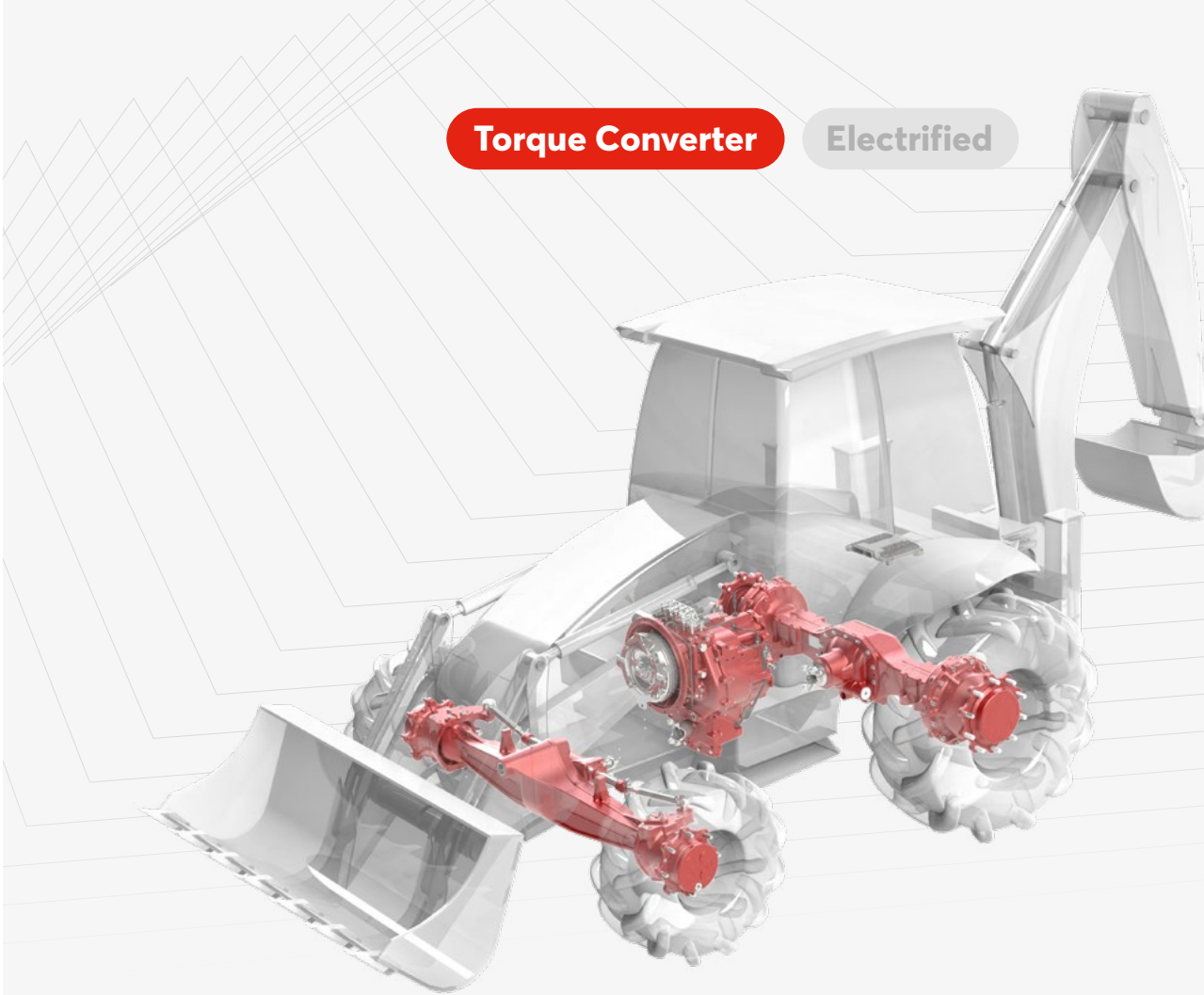
- › The 48-Series Axles generation provides increased efficiency
- › E-Axles range with input flanged e-Motor suitable for mini and compact wheel loaders
- › P3 and P4 solutions for HEV and BEV



Transmission key features and benefits

- › Single speed and dual speed eGearboxes specifically designed for electric vehicles
- › THE Solution. New range of interchangeable Transmissions for Hydrostatic & Electric applications 
- › THE Solution. Proprietary synchronized and Powershift architecture 
- › eMotors range suitable for low and high voltage

Backhoe Loader



2WS machine

Engine Power kW	Front axle	Rear axle	Torque Converter Transmissions	ECU
From 50 to 82	26.00 26.16 26.17	28.32M 28.40M	TCB80 2WD TCB80	
From 70 to 82	26.17 26.22 26.22M	28.43M 28.44M	TCB80 TCB80 SPS	Yes
From 75 to 90	26.24M	28.50M	TCB90 PS	Yes



Axles key features and benefits

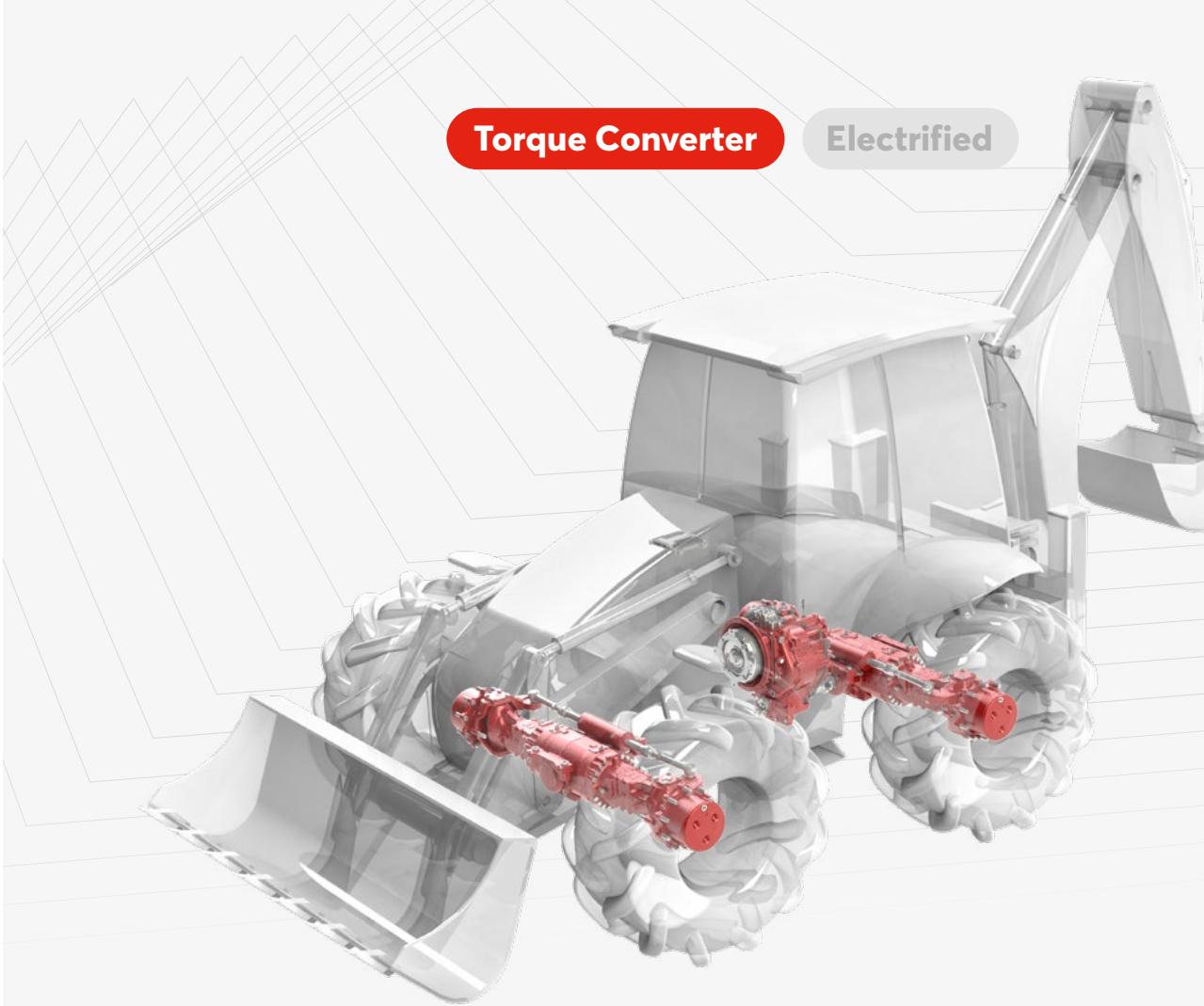
- › The most complete range in the market, suitable for the compact up to the heavy and premium architectures
- › Each axle model is available with several reduction ratios, multiple widths, and various vehicle mounting interfaces.
- › High load capacity and robust gear design ensure extended durability



Transmission key features and benefits

- › Power Shuttle, SPS, and 4 or 6-speed Powershift
- › Central and side drive configurations
- › Full electronic or electro-hydraulic control
- › Smooth, precise, and reliable response even under severe working conditions granted

Backhoe Loader



4WS machine

Engine Power kW	Front axle	Rear axle	Torque Converter Transmissions	ECU
From 70 to 82	26.28M 26.32M 26.38M	26.32M 26.38M	TCB80 TCB80 SPS	Yes
From 75 to 90	26.43M 26.48M	26.43M 26.48M	TCB90 PS	Yes



Axles key features and benefits

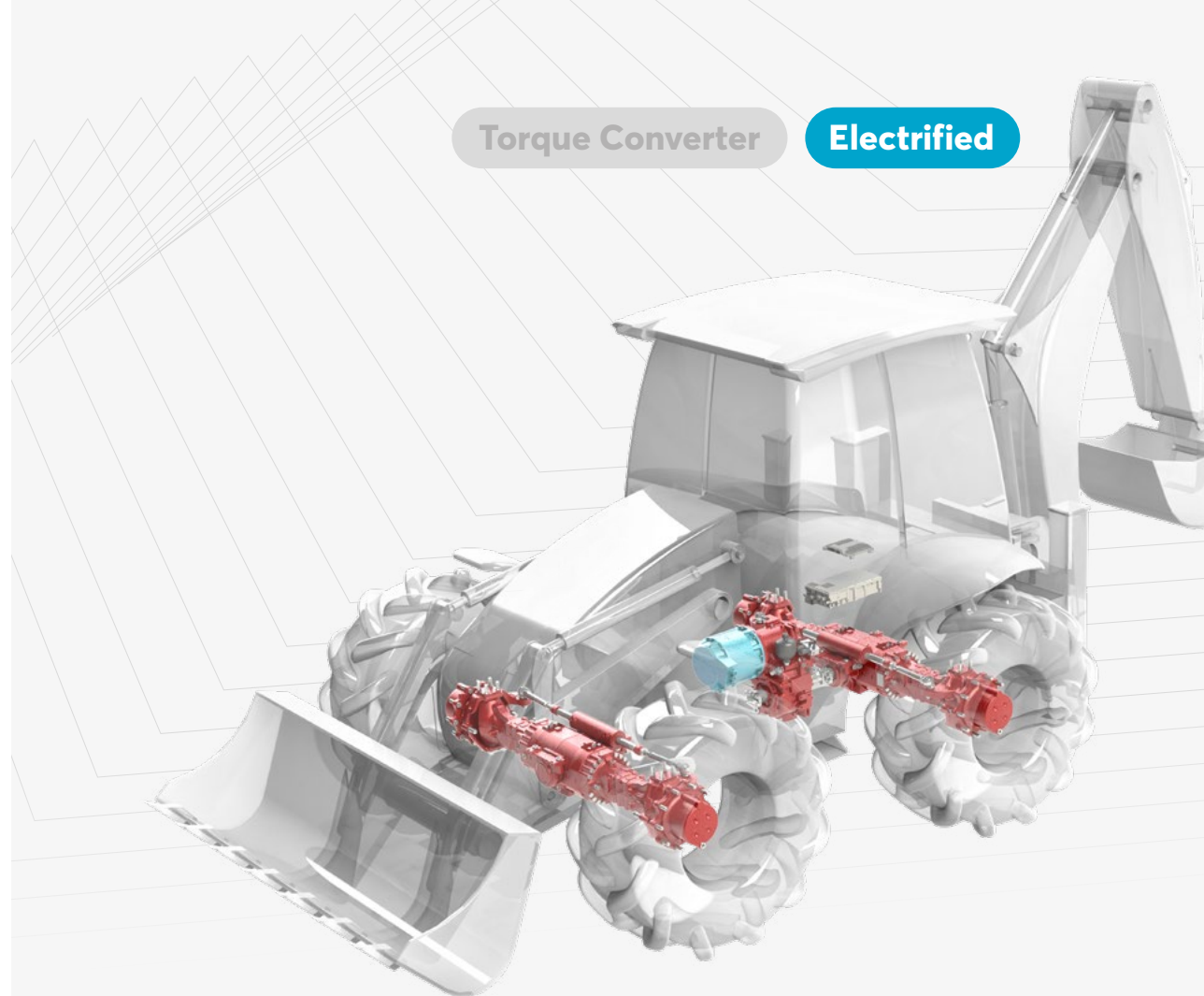
- › The most complete range in the market, suitable for all machine size
- › All steering axles enable a tight steering radius, while ensuring precise handling, high maneuverability, and minimum tyre wear.



Transmission key features and benefits

- › Power Shuttle, SPS, and 4 or 6-speed Powershift
- › Central and side drive configurations
- › Full electronic or electro-hydraulic control
- › Smooth, precise, and reliable response even under severe working conditions granted

Backhoe Loader



Engine Power kW	Front axle	Rear axle	eGearbox	ECU
From 50 to 82	26.00 26.16 26.17	28.32M 28.40M	TB220 THE260/2 Synchro THE260/2 PS	Yes Yes Yes
From 70 to 82	26.17 26.22 26.22M	28.43M 28.44M	TB220 THE260/2 Synchro THE260/2 PS	Yes Yes Yes
From 75 to 90	26.24M	28.50M	THE260/2 Synchro THE260/2 PS	Yes Yes



Axles key features and benefits

- › The most complete range in the market, suitable for all machine size
- › All steering axles enable a tight steering radius, while ensuring precise handling, high maneuverability, and minimum tyre wear.
- › P3 solutions for HEV and BEV vehicles



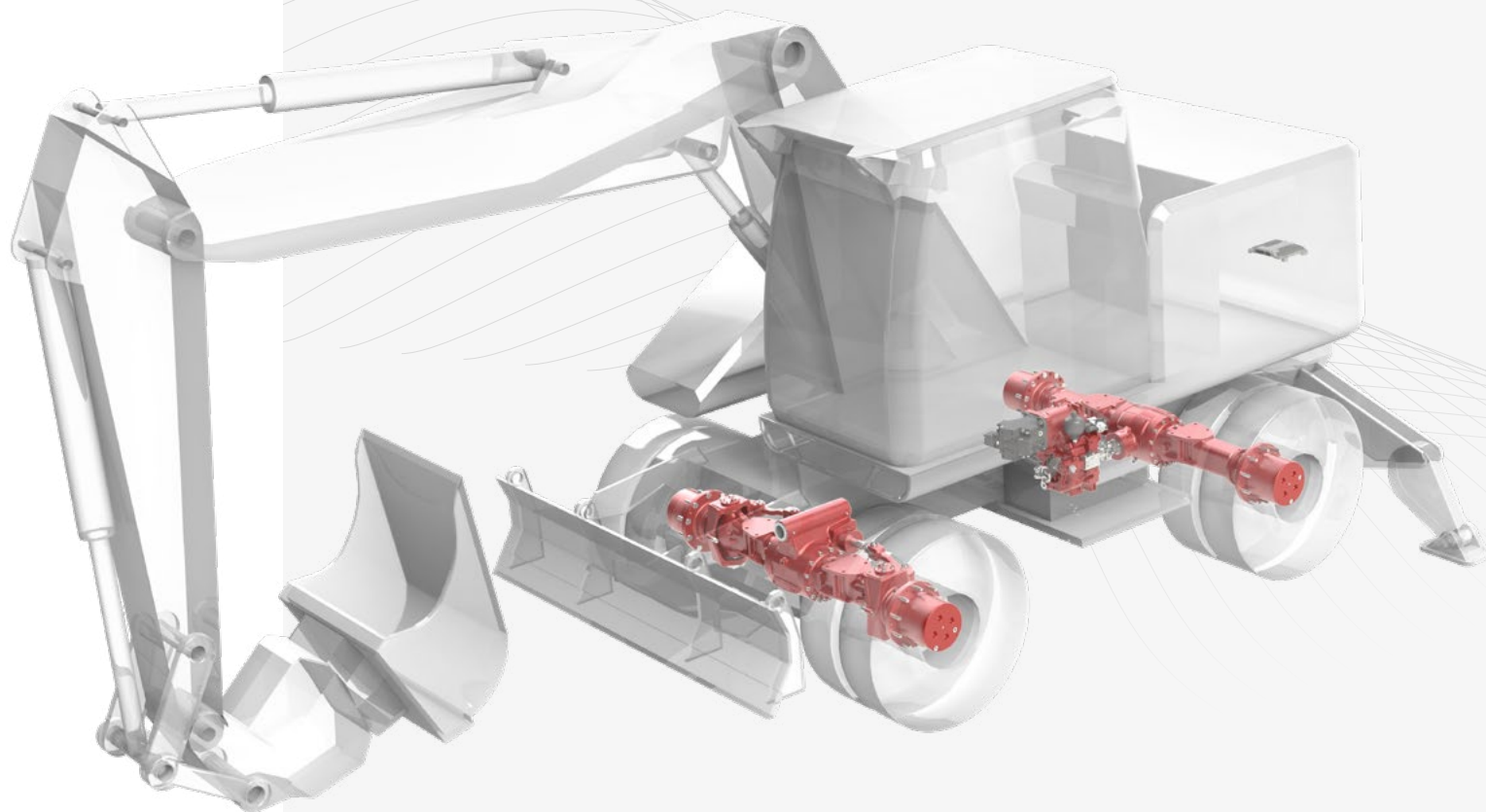
Transmission key features and benefits

- › THE Solution. New range of interchangeable dual speed Transmissions for Hydrostatic & Electric applications 
- › THE Solution. Proprietary synchronized and Powershift architecture 
- › eMotors range suitable for low and high voltage

Wheeled Excavator

Hydrostatic

Electrified



Operative Weight Ton	Front axle	Rear axle Steering / Rigid	Hydrostatic Transmissions	ECU
From 5 to 7	26.09M 26.16M	26.09M / 28.09M 26.16M / 28.16M	TB135C TB172C TB172/2C Stop&Go	
From 7 to 13	26.25M 26.27M	26.25M / 28.25M 26.27M	TB172C TB172HVT TB172/2C Stop&Go TB172/2C Shift on Fly THE260/2 Synchro	Yes Yes
From 15 to 23	26.32E 26.38E	26.32E / 28.32E 26.38E / 28.38E	TB172/2C Stop&Go THE260/2 PS	Yes Yes



Axles key features and benefits

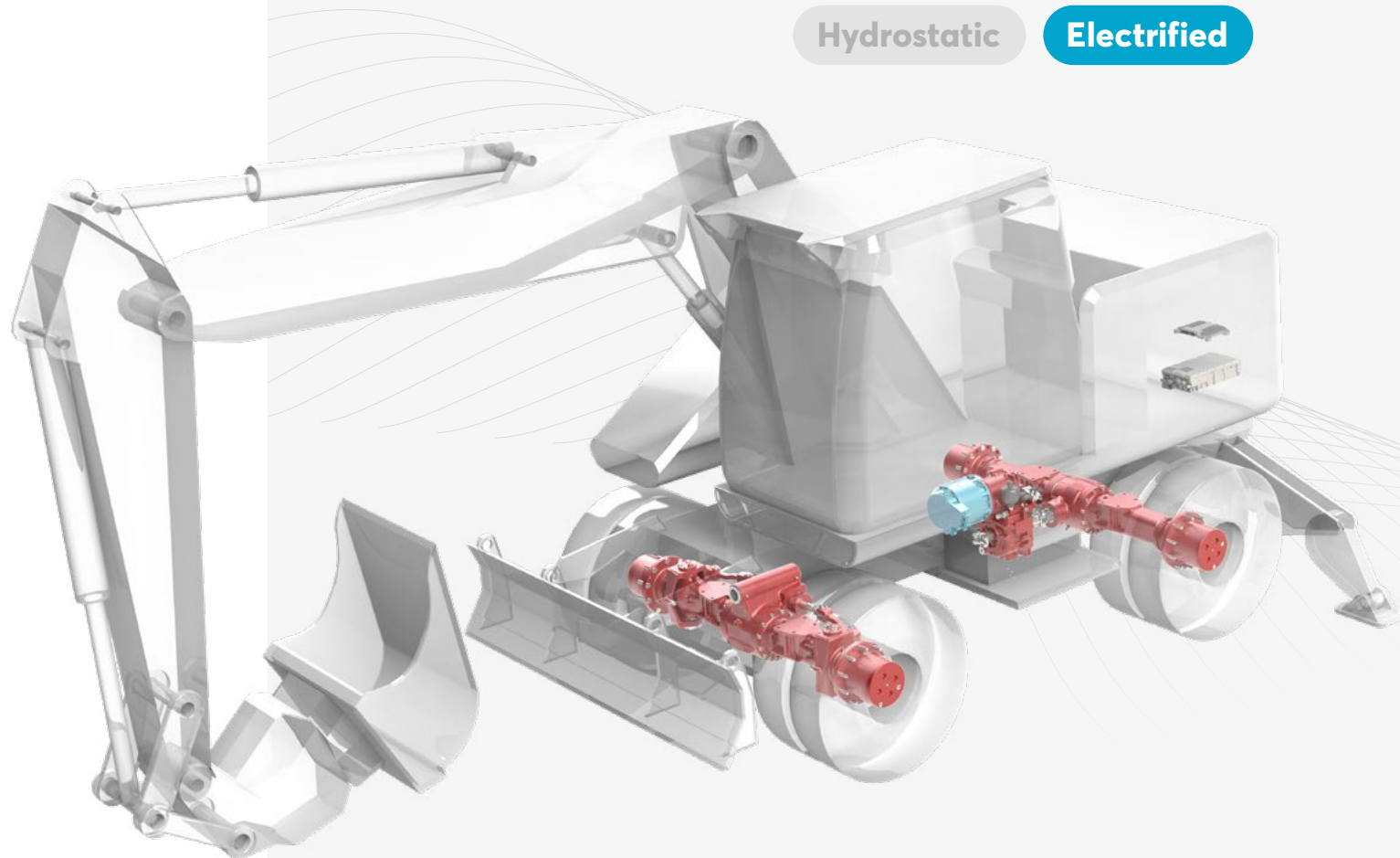
- › Full range of modular front and rear steering axles for 4WS version
- › Rear rigid axles for 2WS version
- › Wheel-end wet brakes for standard range



Transmission key features and benefits

- › Complete range from compact dropbox to fully electronically controlled solutions
- › Suitable for hydromotor up to 255cc/rev
- › THE Solution. New range of interchangeable Transmissions for Hydrostatic & Electric standard range

Wheeled Excavator



Hydrostatic

Electrified

Operative Weight Ton	Front axle	Rear axle Steering / Rigid	eGearbox	ECU
From 5 to 7	26.09M 26.16M	26.09M / 28.09M 26.16M / 28.16M	TB172C TB220	Yes Yes
From 7 to 13	26.25M 26.27M	26.25M / 28.25M 26.27M	TB220 THE260/2 Synchro	Yes Yes
From 15 to 23	26.32E 26.38E	26.32E / 28.32E 26.38E / 28.38E	TB172/2C Stop&Go THE260/2 PS	Yes Yes



Axles key features and benefits

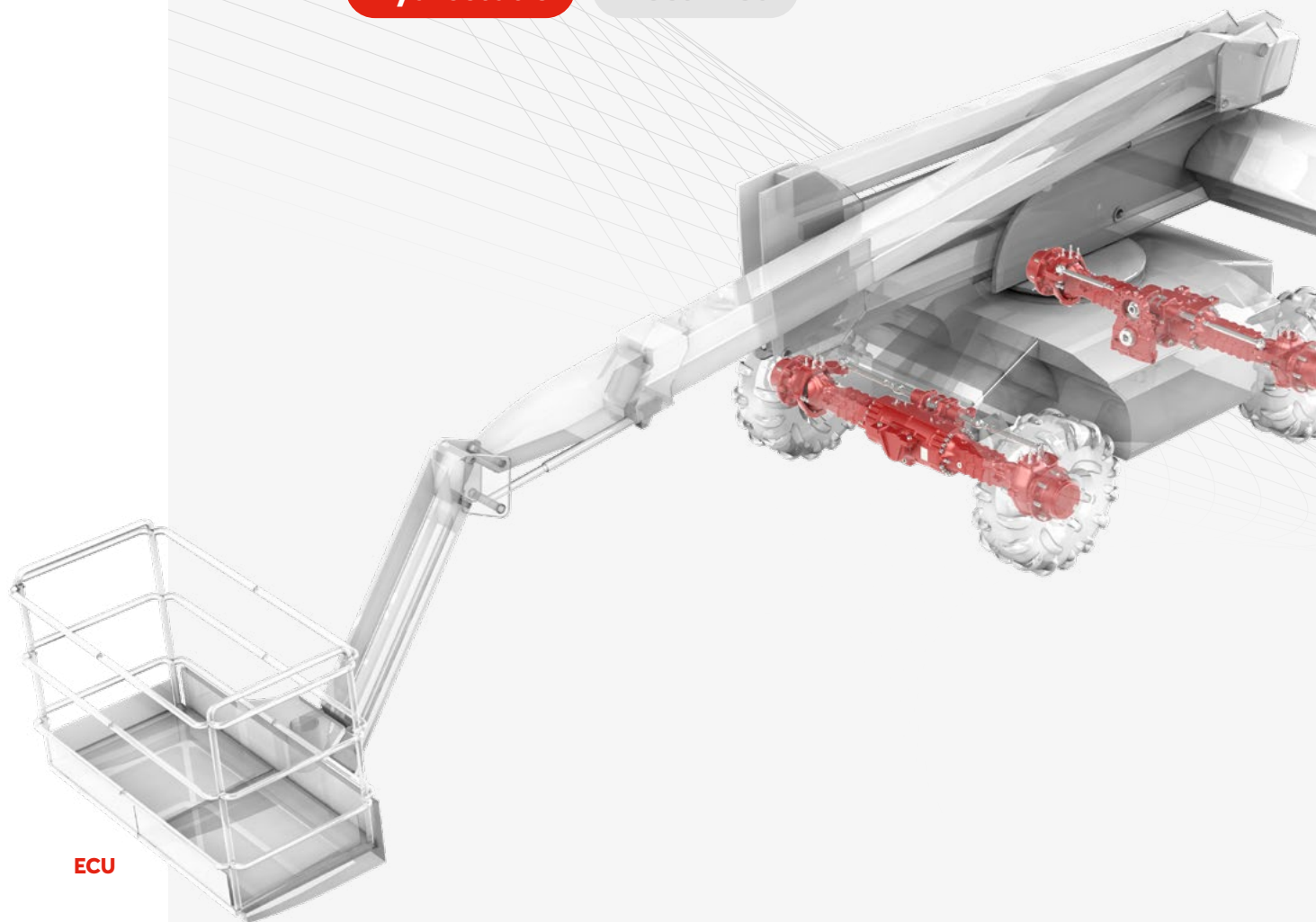
- › Full range of modular front and rear steering axles for 4WS version
- › Rear rigid axles for 2WS version
- › The 46-Series Axles generation provides increased efficiency for the compact range
- › Wheel-end wet brakes for standard range



Transmission key features and benefits

- › Complete range from compact dropbox to fully electronically controlled solutions
- › THE Solution. New range of interchangeable Transmissions for Hydrostatic & Electric standard range
- › eMotors range suitable for low and high voltage

Aerial Working Platform

Hydrostatic
Electrified


Operative Weight Ton	Front axle	Rear axle Steering / Rigid	Hydrostatic Transmissions	ECU
Up to 8	26.09M 26.16M	26.09M / 28.09M 26.16M / 28.16M	TB135C	
From 8 to 12	26.25M 26.22M	26.25M / 28.20M 26.22M / 28.22M	TB172C	
From 12 to 19	26.27M 26.28M	26.27M / 28.27M 26.28M	TB172C	
From 19 to 24	26.32M 26.43M	26.32M 26.43M	TB172C	



Axles key features and benefits

- › Full range of modular front and rear steering axles for 4WS version
- › Rear rigid axles for 2WS version
- › Heavy duty axles for solid tires
- › Covering all sizes of telescopic, articulating boom, and scissors lifts.



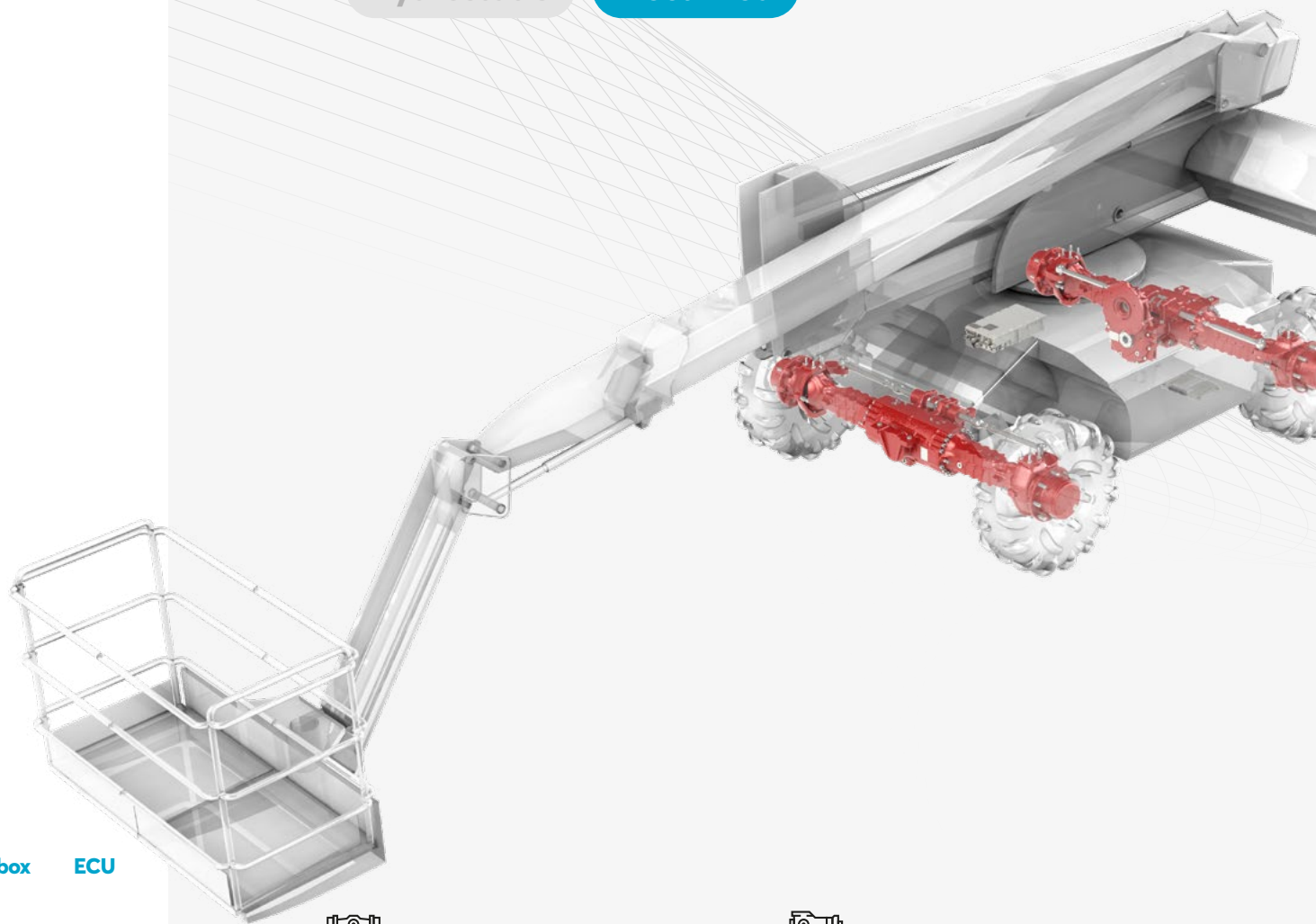
Transmission key features and benefits

- › Range of single speed compact dropbox available
- › Several reduction ratios available
- › Remote mounting or input axle mounting
- › Vertical or horizontal orientation

Aerial Working Platform

Hydrostatic

Electrified



Operative Weight Ton	Front axle	Rear axle Steering / Rigid	eGearbox	ECU
Up to 8	26.09M 26.16M	26.09M / 28.09M 26.16M / 28.16M	TB172C TB220	Yes Yes
From 8 to 12	26.22M 26.25M	26.22M / 28.22M 26.25M / 28.25M	TB172C TB220	Yes Yes
From 12 to 19	26.27M 26.28M	26.27M / 28.27M 26.28M	TB172C TB220	Yes Yes
From 19 to 24	26.32M 26.43M	26.32M 26.43M	TB172C TB220	Yes



Axles key features and benefits

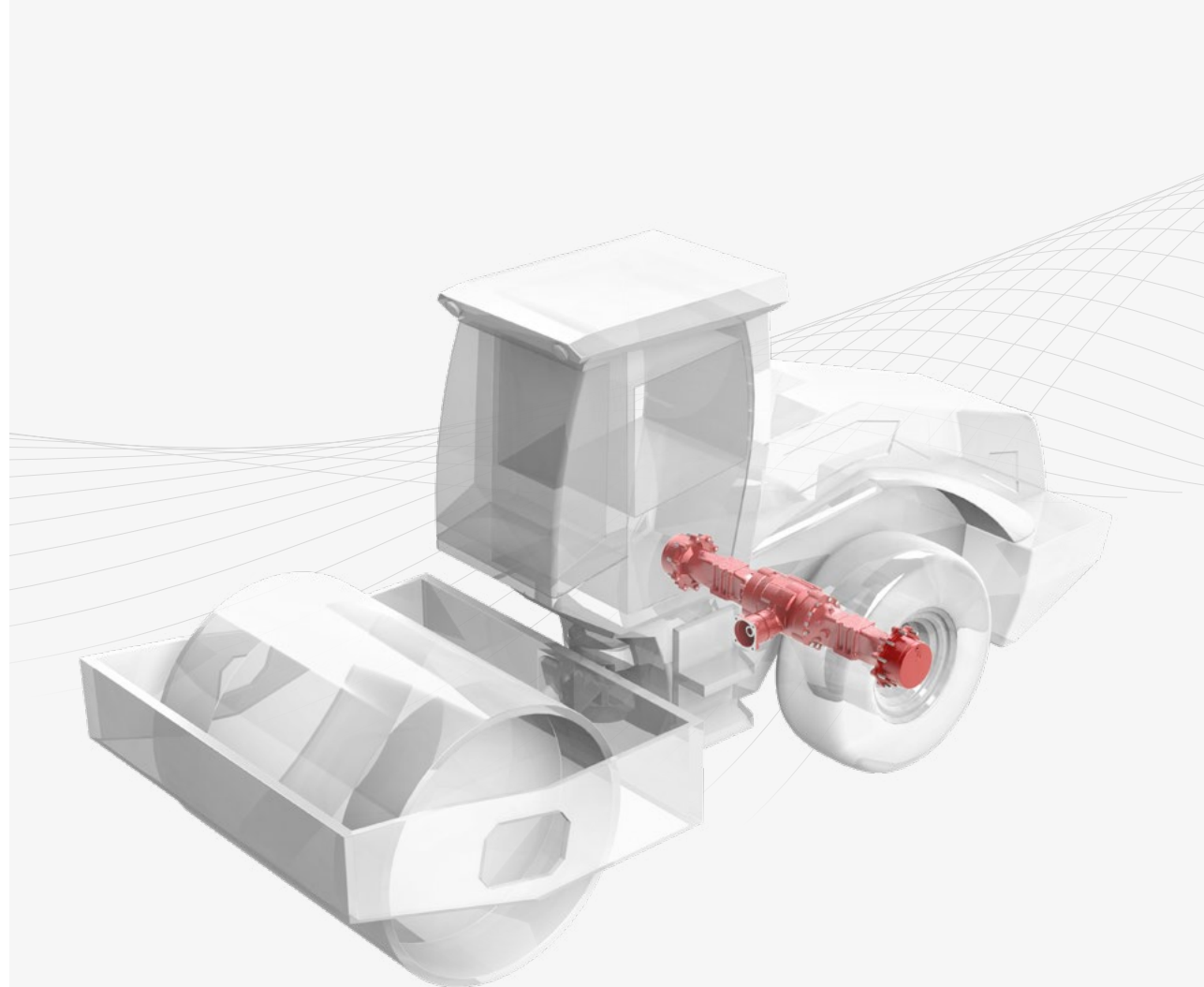
- › Full range of modular front and rear steering axles for 4WS version
- › Rear rigid axles for 2WS version
- › Heavy duty axles for solid tires
- › Covering all sizes of telescopic, articulating boom, and scissors lifts.



Transmission key features and benefits

- › Single speed eGearboxes specifically designed for electric vehicles, for standard and high input speed
- › Several reduction ratios available
- › Remote mounting or input axle mounting
- › eMotors range suitable for low and high voltage

Soil Compactor



**Operative
Weight**
Ton

**Rear
axle**

From 5 to 9 28.16M

From 9 to 11 28.25M

From 11 to 17 28.32M
28.43M

From 17 to 23 28.48M
28.60M



Axles key features and benefits

- › Complete range of rear-drive axles
- › Modular structure integrating specific features for this application
- › Direct mounting for the hydrostatic motor
- › High reduction ratio, obtained through either a hypoid gear set or an input dropbox

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