

Carraro Solutions for Agriculture

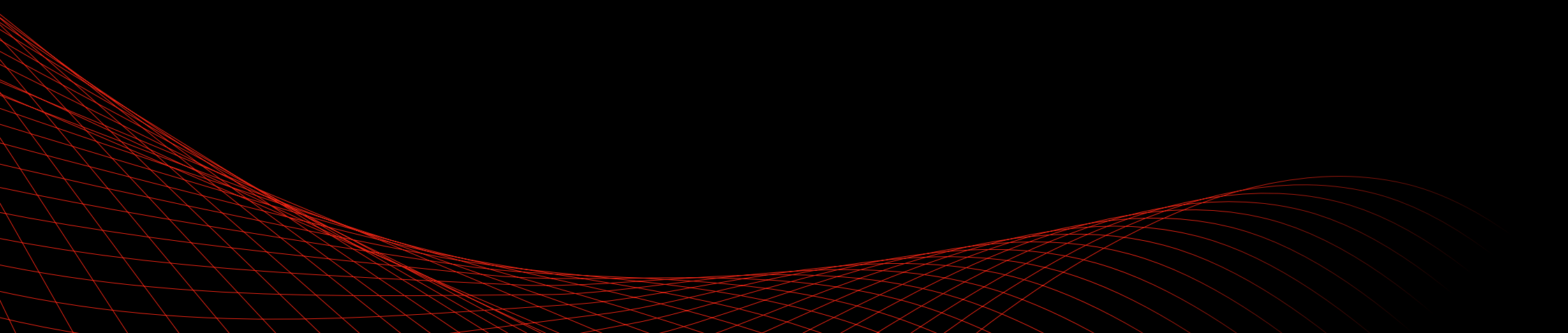


The Carraro Spirit

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

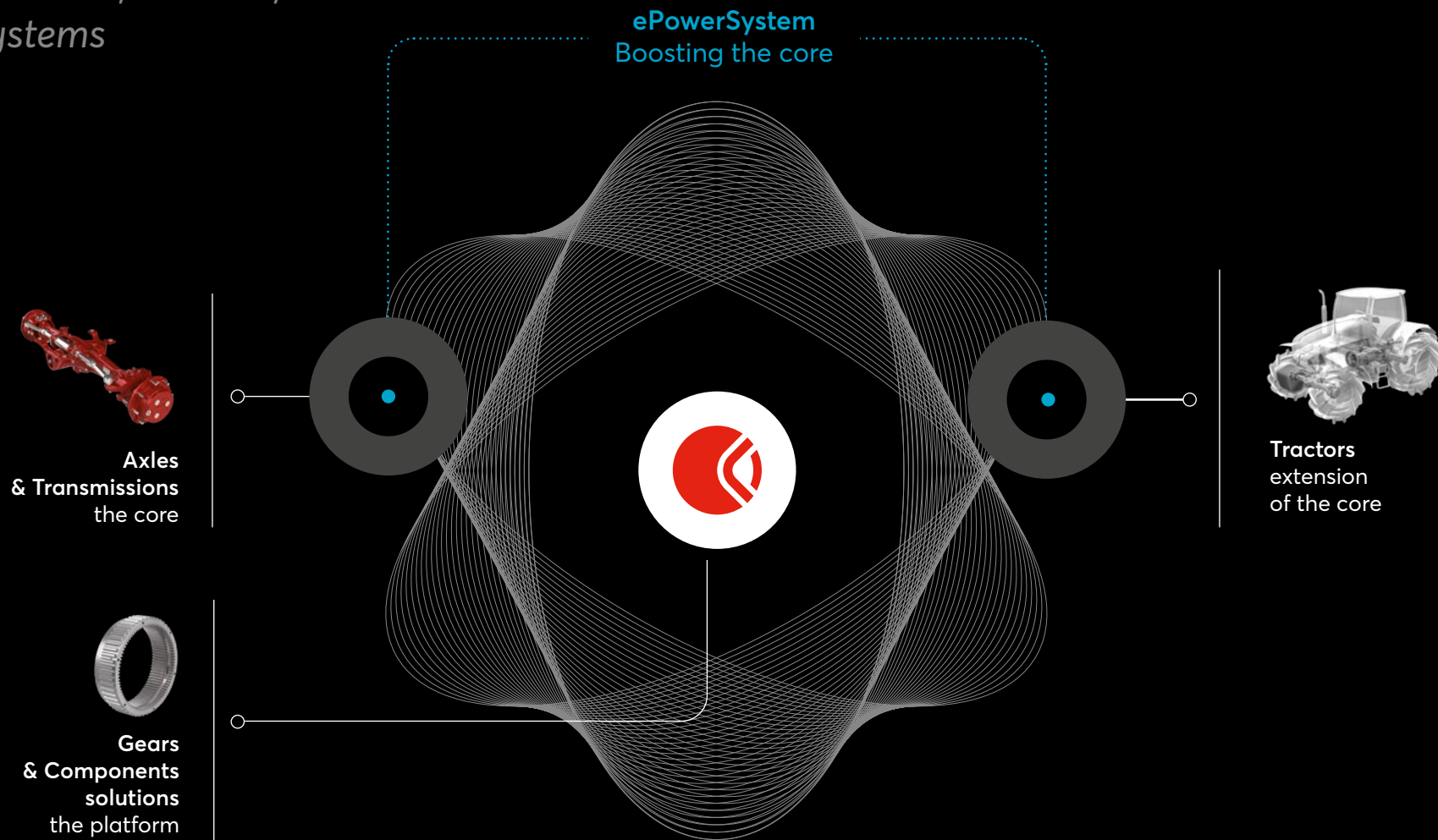
We develop effective, reliable and innovative products and services designed to turn energy into work, optimizing efficiency to increase performance, through digitized solutions, minimizing waste of resources and impact on the environment.

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

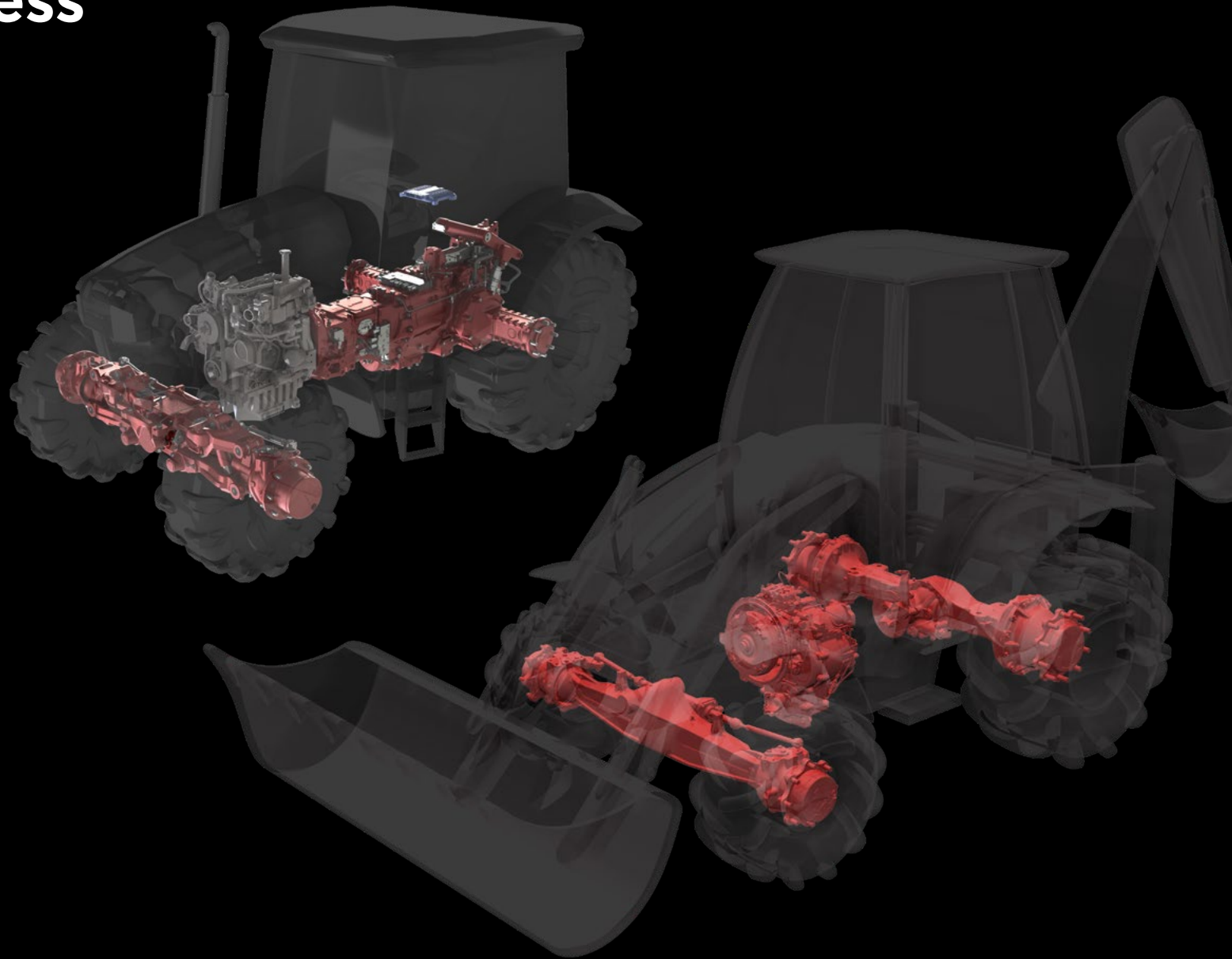
*Gears, Drivelines, Tractors,
ePowerSystems*



Carraro Drivelines: the core business

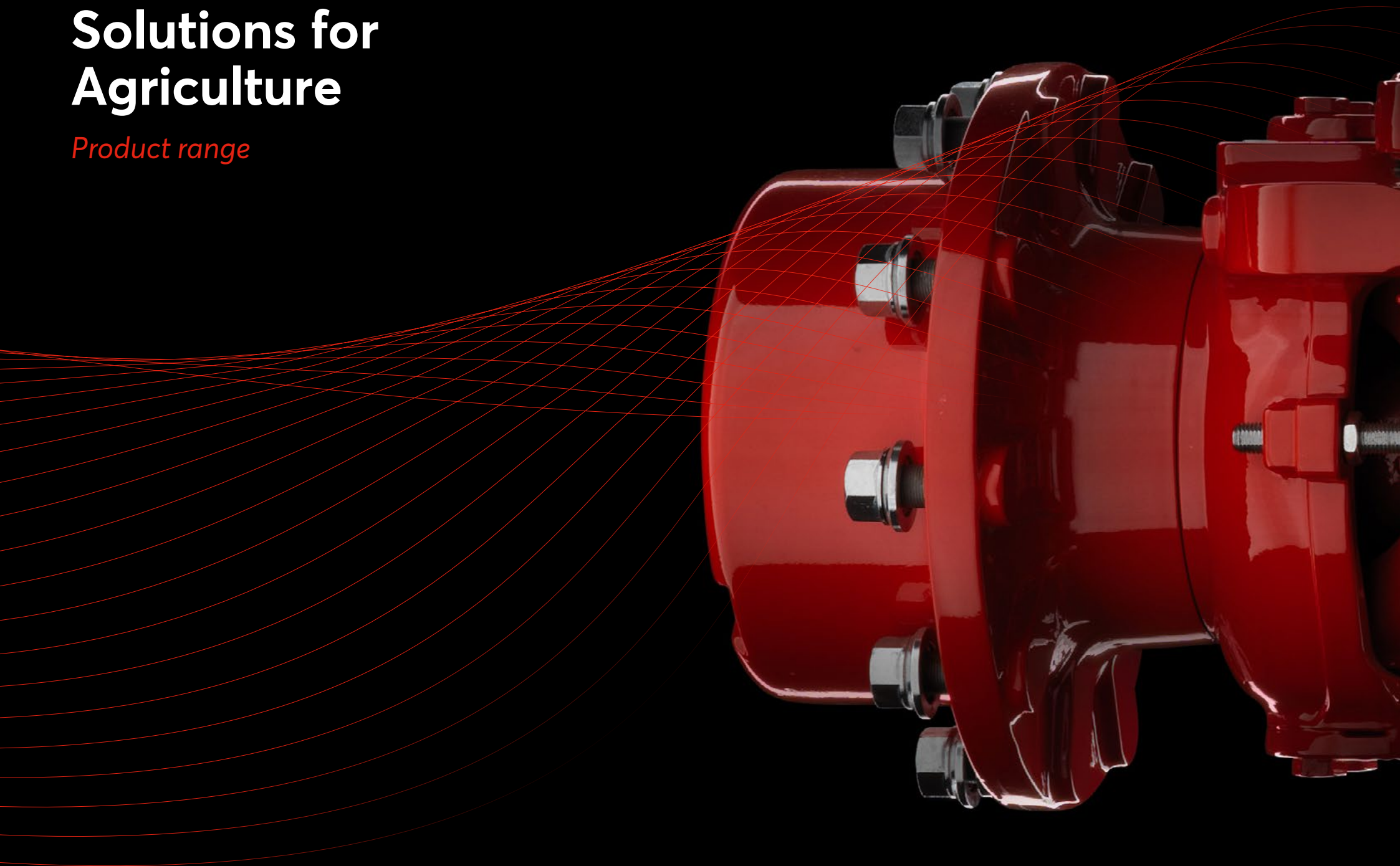
We design, manufacture & market transmission solutions for off-highway vehicles for agriculture, construction equipment and other high value markets such as trucks and 4x4 cars.

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.



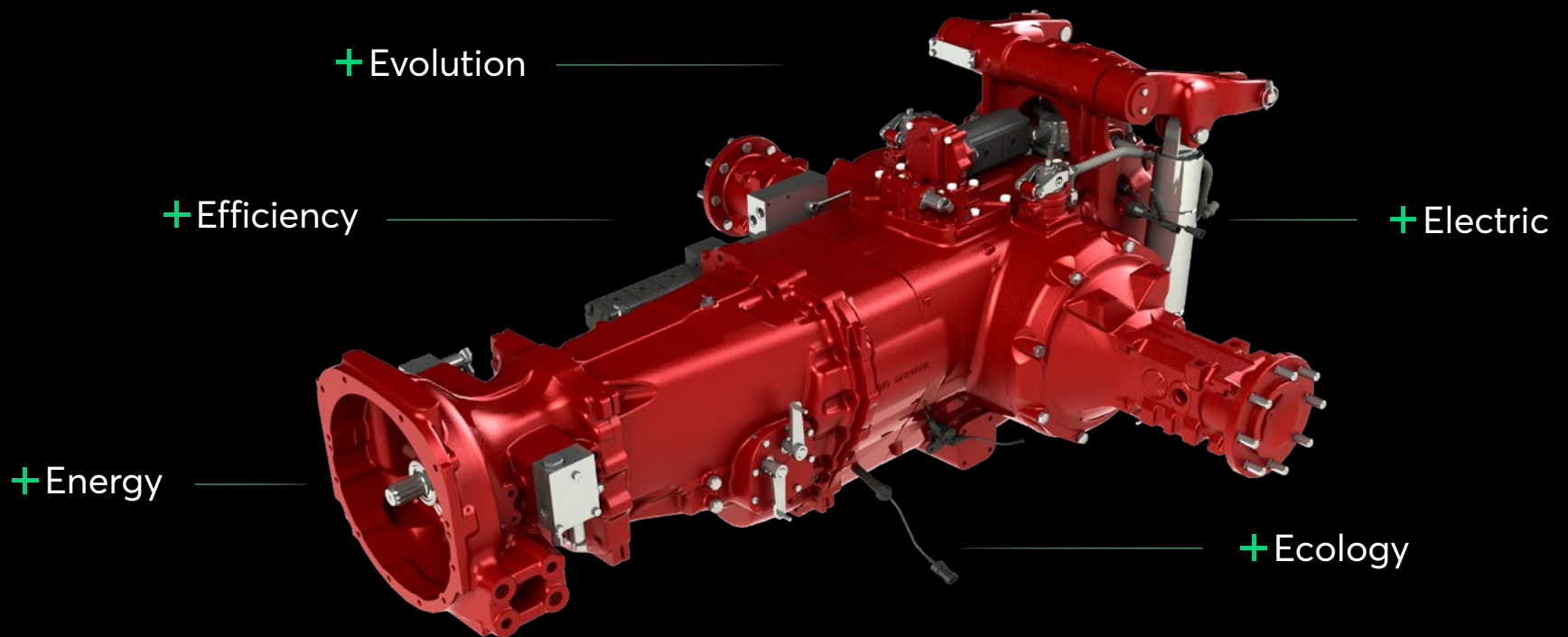
Carraro Solutions for Agriculture

Product range



Technological Solutions for Agriculture

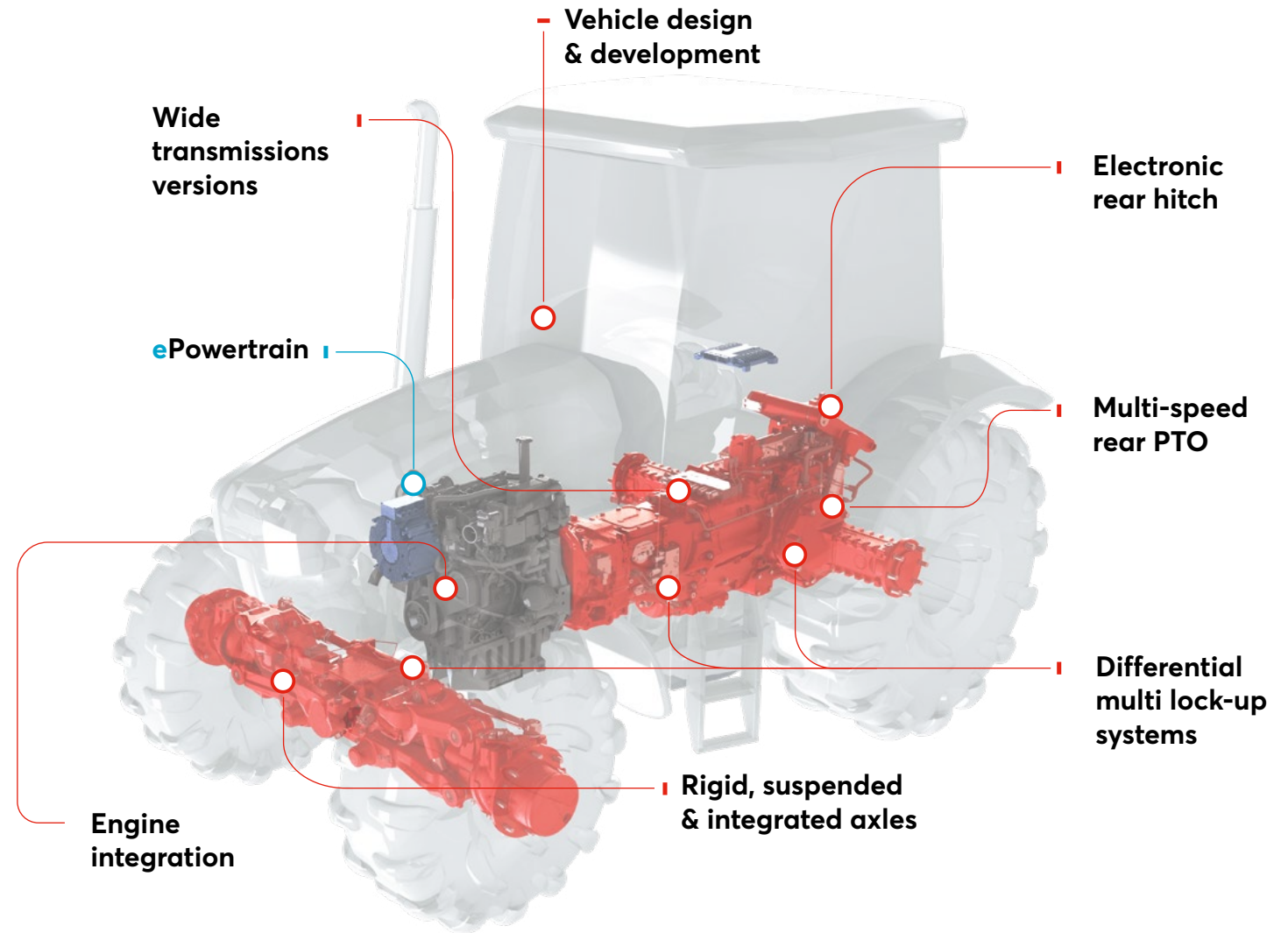
*Mechanical, Powershift, EVOShift, CVT.
A wide range to satisfy any need.*



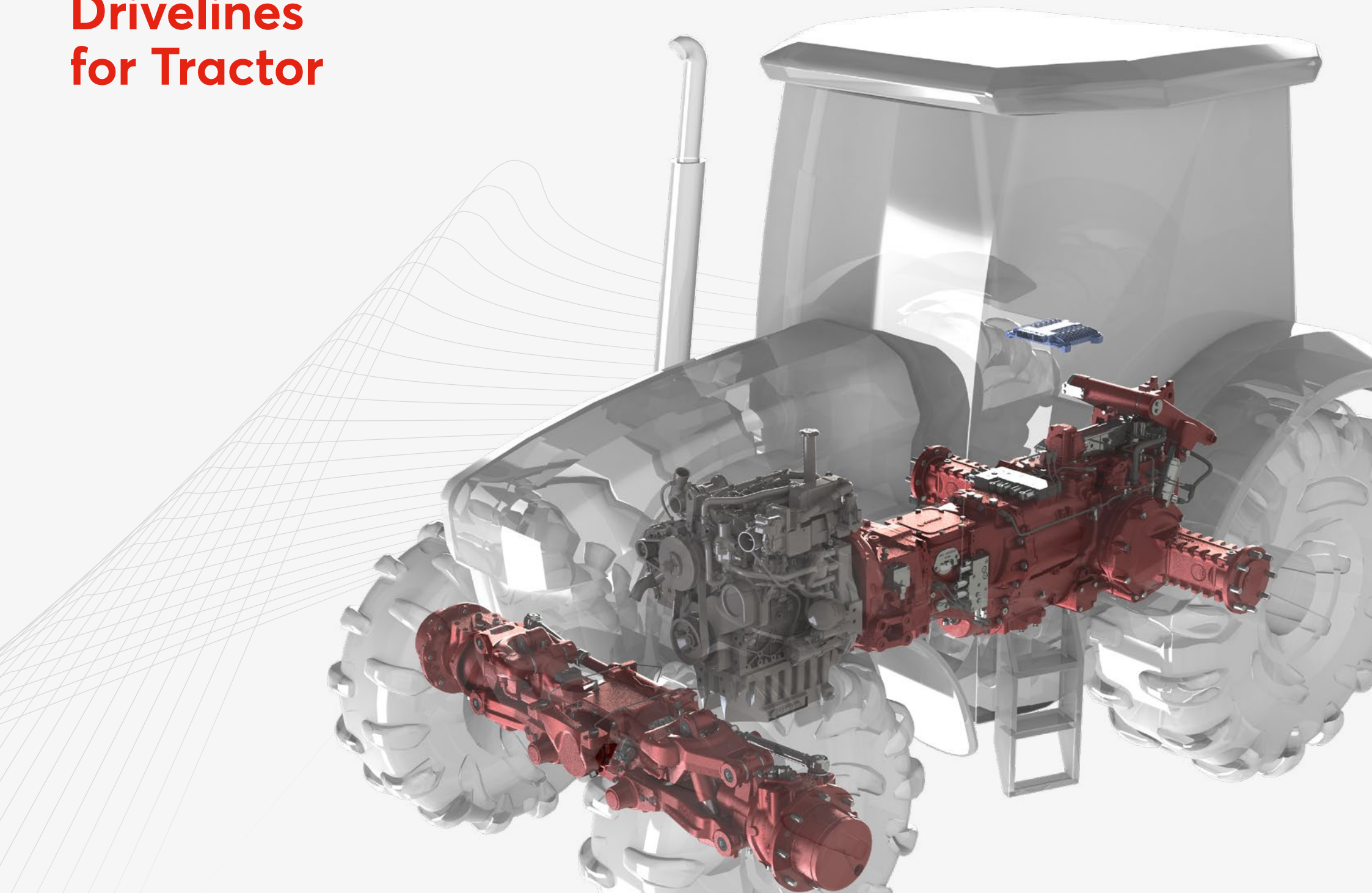
Carraro Drives Energy

Engineering Motion. Empowering Progress.

Our products lay at the very heart of energy. They do more than ensure motion—they transform it. Through advanced driveline systems, electric and hydrostatic solutions, and an unwavering commitment to innovation, we empower the machines that shape our world. That's why, from the agricultural field to the construction site, Carraro Drives Energy.

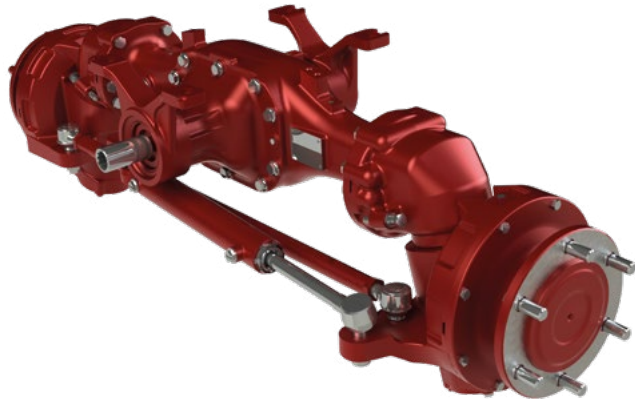


Drivelines for Tractor



Portal Axles

The Carraro portal axles extended range which integrates its traditional range of planetary axles. Carraro portal axles are designed for tractors from 30 to 80 hp for dry and paddy field applications. Different ratios and multiple configurations are available to allow each type of use.



All models are available with various sealing systems to be used in different types of field, till the very heavy paddling operations by using metal face seals Configurations with adjustable steering stop, up to 60 degrees and different drop sizes, for the optimal ground clearance, are available.

Options

- › Limited Slip differential
- › Fender pre-set
- › Various input flanges
- › Various wheels flanges

Planetary Axles

Taking advantage of its vast experience with tractors, Carraro has engineered a complete range of steering drive axles for tractors from 40 to 400 hp. Each axle model is available with several reduction ratios, in multiple widths and vehicle mounting interfaces. Combined with a large number of available options, they allow for virtually any application.



To satisfy the most demanding applications, Carraro has engineered anew enhanced axle range:40-Series. The new design and configuration entail for improved fuel efficiency through power losses reduction; high reliability and serviceability and increased performances.

Options

- › Differentials: self-locking (Limited Slip) or 100% Lock Electro-hydraulically operated
- › Brakes: wet oil or dry caliper
- › Integrated steering sensor
- › Speed sensor
- › Waterproof seals
- › Central Tire Inflation System (CTIS)

Independent Front Axle Suspension - IFAS

The proven benefits of suspended front axles on the field and on the road is now available also for Specialty and Compact tractors, with an integrated solution, IFAS. The complete axle suspension system with hydraulic damper & leverage with vehicle frame can be electronically controlled by a proprietary ECU and software.



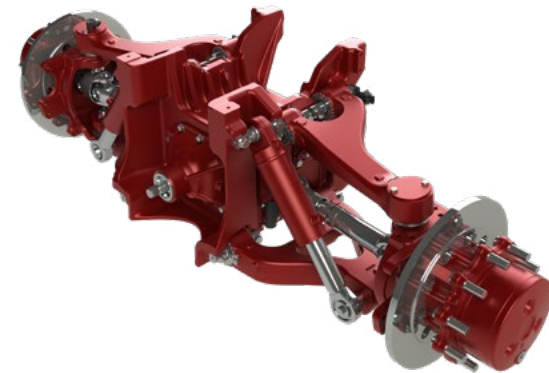
- › Optimal comfort when travelling and working on the fields
- › Passive roll stabilisation when turning thanks to two slanted, outwards-facing suspension cylinders
- › Safer travelling with heavy implements or trailer towing.

Options

- › Customized design for better integration on the vehicle
- › Differentials: self-locking (Limited Slip) or 100% Lock Electro-hydraulically operated
- › Brakes: wet oil or dry caliper
- › Integrated steering sensor
- › Speed sensor

Independent Front Unit Suspension System - IFU

The Integrated Front Unit (IFU) sets a new benchmark in front suspension technology for agricultural tractors up to 500 hp. The newly developed Carraro 40.37 is optimized for 250 hp applications, yet fully scalable across the entire range of open-field tractors. With an impressive 300 mm of vertical travel, the axle guarantees consistent ground contact across all terrain conditions, enhancing traction and stability. Thanks to advanced hydraulic architecture and intelligent electronic control, the system delivers superior operator comfort, safety, and handling performance, ensuring precise maneuverability even in the most demanding environments.



Independent front suspension system

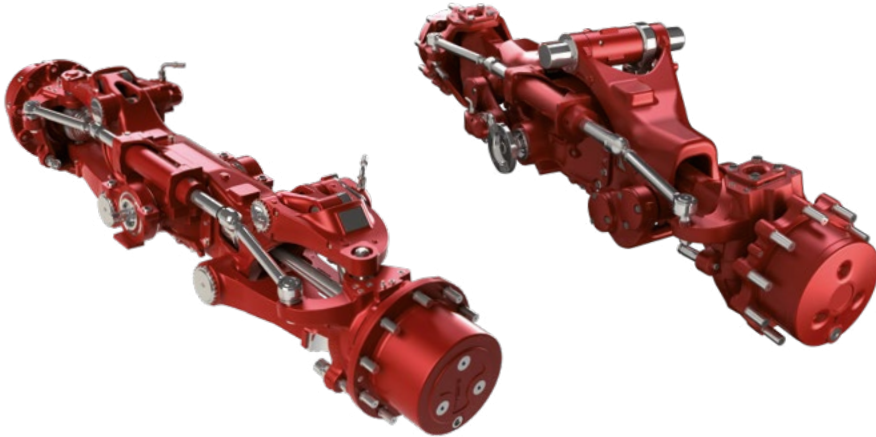
- › Easier Integration into vehicle architecture
- › Superior traction performance under the most demanding working and travel conditions
- › Highest safety and comfort level for the best productivity

Features

- › Tailored design to match the vehicle architecture
- › Brakes: service caliper dry discs or wet discs
- › Steering sensor/Speed sensor/ Suspension sensor
- › Differential lock: limited slip/wet clutch
- › CTIS optional

Axles with suspensions

In addition to the comprehensive range of steering drive axles, an equivalent and interchangeable version with integrated suspension is available. The suspension is designed to improve traction and comfort, increase tractor' speed and control with an integrated hydraulic module electronically controlled by a proprietary ECU and software. The suspended axle range is available for tractors from 100 to 310 hp.



› **Independent Suspended Axle:**

this system has been recognised as the highest performance system for shock adsorption, tractor handling, and productivity. Carraro patent

› **Single Suspended Axle:**

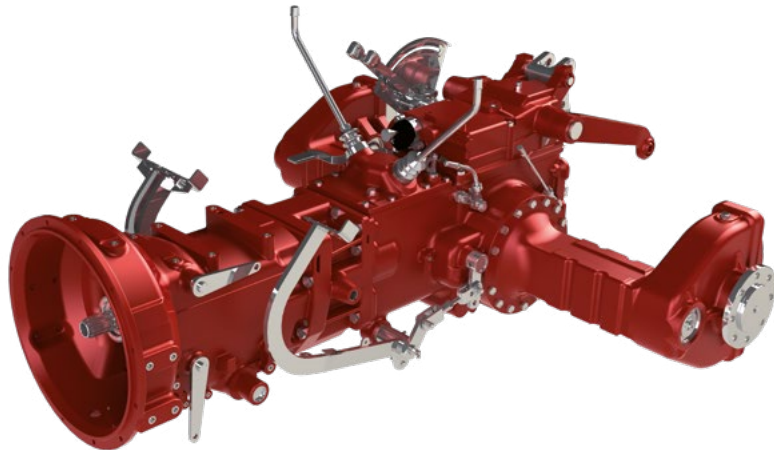
a simpler yet highly effective solution

Options

- › Differentials: self-locking (Limited Slip) or 100% Lock Electro-hydraulically operated
- › Brakes: wet oil or dry caliper
- › Integrated steering sensor
- › Speed sensor
- › Waterproof seals
- › Central Tire Inflation System (CTIS)

T40 Transaxle

This lightweight and reliable unit developed for tractors up to 40 HP is also ideal for paddy field use, with a speed distribution that allows optimal use of implements. Equipped with independent PTO control, it's ideal for applications with balers, rotary cultivators and more.

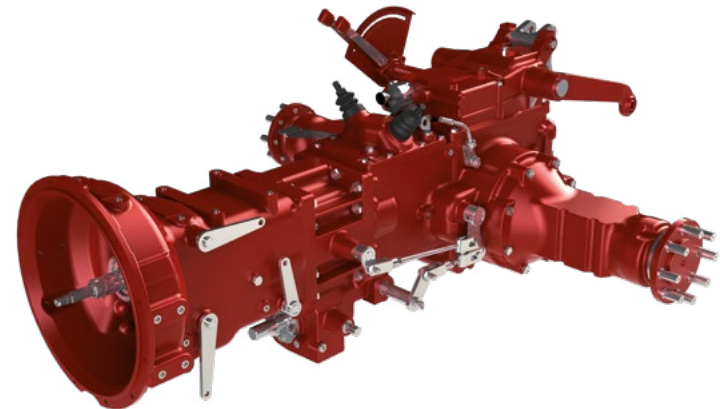


Main Features

- › Available in 2 configurations, Mechanical:
 - 8F + 2R speeds
 - 8F + 8R speeds
- › Waterproof sealing for "rice puddling" application
- › 11kN capacity hydraulic rear lift
- › 540 and 540/540E PTO speed

T50 Transaxle

This lightweight unit for Utility and Standard Tractors up to 50 HP is also ideal for paddy field use, and is available in several versions from the basic collar shift to the fully synchronized version, with multiple speed configurations and an independent PTO control to ensure maximum productivity using a wide range of implements.

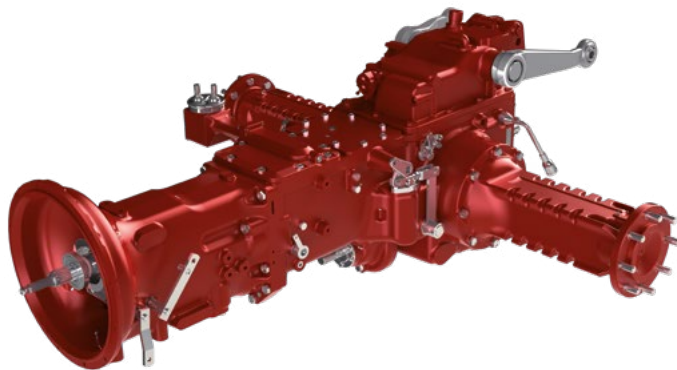


Main Features

- › Available in 3 configurations, Mechanical:
 - 8F + 2R speeds
 - 8F + 8R speeds
 - 16F + 16R speeds
- › Waterproof sealing for "rice puddling" application
- › 11kN capacity hydraulic rear lift
- › Front 4WD Axle output

T75 Transaxle

This compact and versatile unit, designed for Specialty (Vineyard – Orchard), Utility and Standard Tractors from 75 and 100 HP, is available in several versions, multiple speed configurations, from the basic synchronized version to the Powershift version controlled by TEQ2 Carraro ECU.

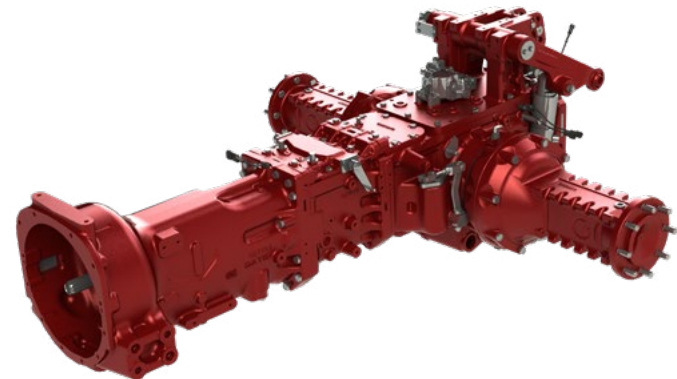


Main Features

- › Available in 3 versions:
 - Mechanical:
 - up to 24F+ 24R speeds
 - Basic Power Shift (PHL):
 - up to 24F+ 12F speeds
 - Power Shift (PHL-PR):
 - up to 24F+ 12R speeds
- › Versions available: Extra Narrow (Vineyard), Narrow (Orchard), Standard (Utility/Standard)
- › 26 kN capacity hydraulic rear lift
- › Diagnostics coverage and advanced electronic management strategy

T100 EVO Transaxle

This compact and versatile unit is developed for Specialty (Vineyard – Orchard), Utility and Standard Tractors, up to 120 HP. It is available in several versions, from the synchronized version to the CVT controlled by TEQ2 Carraro ECU. The stepped versions have an improved number of speeds up to 30 Fwd + 30 Rev to ensure optimal productivity and reduced fuel efficiency.

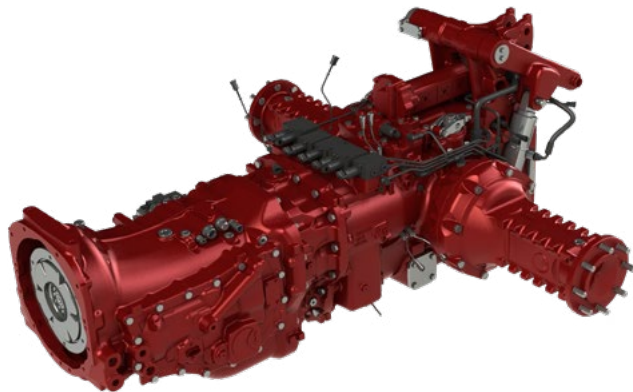


Main Features

- › Available in 2 versions:
 - Mechanical:
 - up to 30R + 30R speeds
 - Powershift (PHL-PR):
 - up to 30R + 15R speeds
- › 30 kN to 35 kN hydraulic capacity rear lift
- › Command cable and 4WD diagnostics and advanced electronic management strategy among the options

T100 CVT Transaxle

The newly developed CVT family aims to increase productivity and it's interchangeable with other Carraro Transaxles with the same power rating, up to 118 HP. The Carraro CVT is a powersplit module integrated in a proper mechanical architecture. 3 CVT Ranges and High / Low reduction stage allow continuously variable speed and torque variation with the lowest power losses. All the functions are managed by the proprietary Carraro ECU.

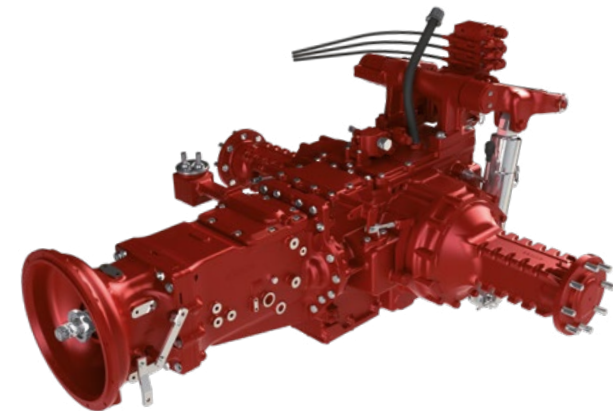


Main Features

- › CVT Powersplit fully electronic controlled, with speed from 0.25 (with Creeper) to 50 km/h (40 km/h eco speed)
- › Versions available: Extra Narrow (Vineyard), Narrow (Orchard), Standard (Utility/Standard)
- › 30 kN hydraulic capacity rear lift electronically controlled
- › Diagnostics coverage and advanced electronic management strategy

T120 Transaxle

This compact unit, designed for Utility and Standard Tractors up to 120 HP, is available in several versions, from the synchronized to the Power High-Low controlled by Carraro ECU. The rear PTO independently controlled and ground Drive PTO are available for driven implements, for optimal traction and productivity.

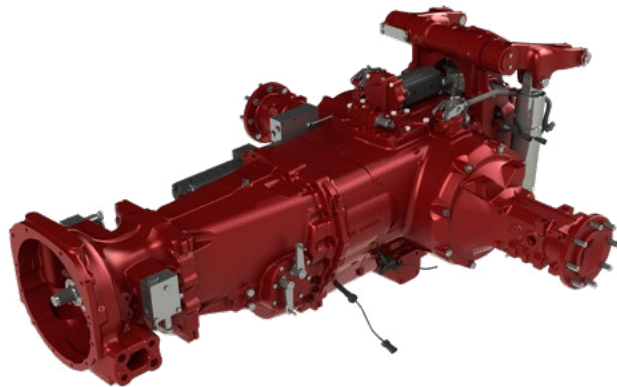


Main Features

- › Available in 2 versions:
 - Mechanical: up to 24R + 24R speeds
 - Basic Powershift (PHL): up to 24F + 24R speeds
- › Speed distribution from 1.5 to 40 km/h
- › Integrated 45 kN hydraulic rear lift capacity, electronically controlled
- › Rear PTO electronic management

T135 Transaxle

This New-born unit has been designed for Open Field Tractors up to 135 hp. Available in two versions, synchronized and Powershift controlled by TEQ2 Carraro ECU, it raises the standards of productivity in this class. 36 forward + 36 reverse speeds allow to achieve the best performances and efficiency, with more than twelve speeds in the main working range (4-12km/h). Eco Speed 40 km/h@1750 engine rpm also available.

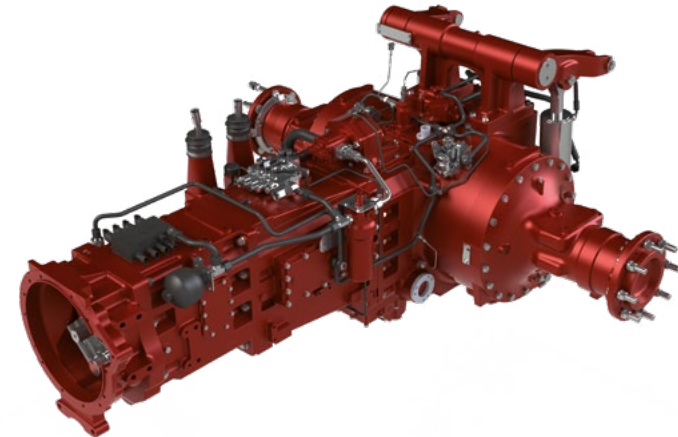


Main Features

- › Available in 2 versions:
 - Mechanical: up to 36F + 36R speeds
 - Powershift (PHL-PR): up to 36F + 18R speeds
 - EVOShift (PHL-PR): 6 speeds robotized 36F + 18R speeds
- › Integrated 45 kN hydraulic rear lift capacity, electronically controlled
- › 4WD Axle output
 - Easy-shift System
 - Multidisc Wet Clutch
- › Diagnostics coverage and advanced electronic management strategy

T230 Transaxle

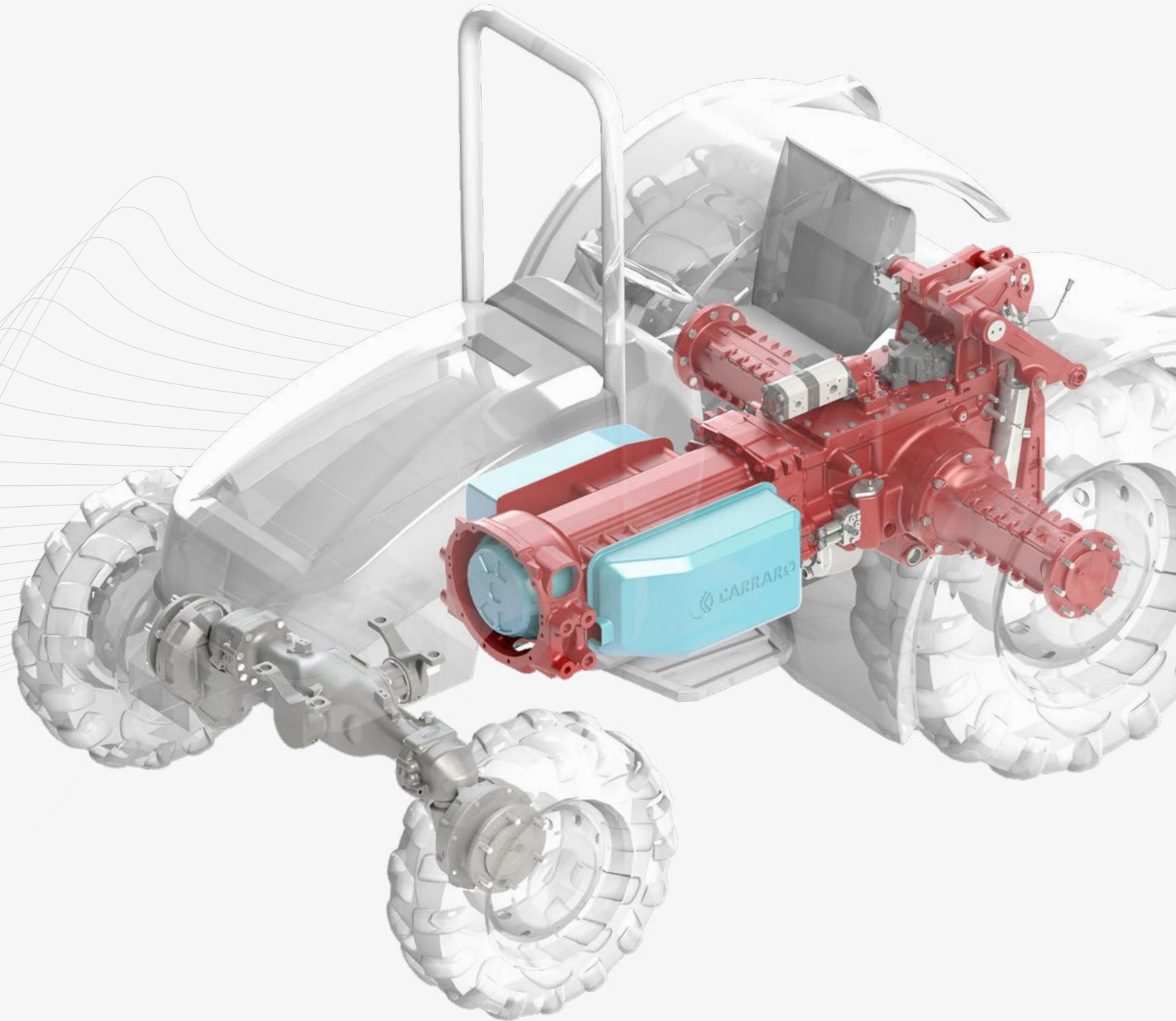
Designed for Open Field Tractors up to 250 HP in Powershift version controlled by TEQ2 Carraro ECU. This unit is ideal for heavy-duty applications and with 24 forward speeds is ideal for productivity and fuel efficiency. Even front loader work is effective and comfortable by a smooth Power Shuttle function.



Main Features

- › Available in 1 version:
 - Powershift: 24F + 8R speeds
- › Integrated 80 kN capacity hydraulic rear lift
- › Diagnostics coverage and advanced electronic management strategy
- › Rear PTO electronic management compliant with Mother Regulation requirements

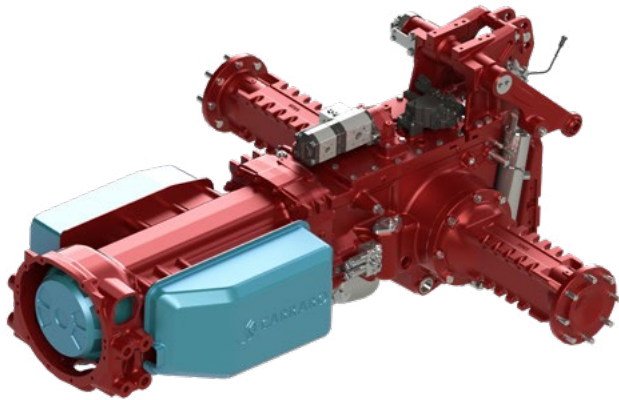
Drivelines for eTractor



eT50/eT75 Transaxle

The new full electric solution for your first environment-friendly and sustainable full electric Tractor, with zero CO2 emissions. Carraro is capable to provide a complete system from the driveline to vehicle Skid, from the power electronics to tractor workplace.

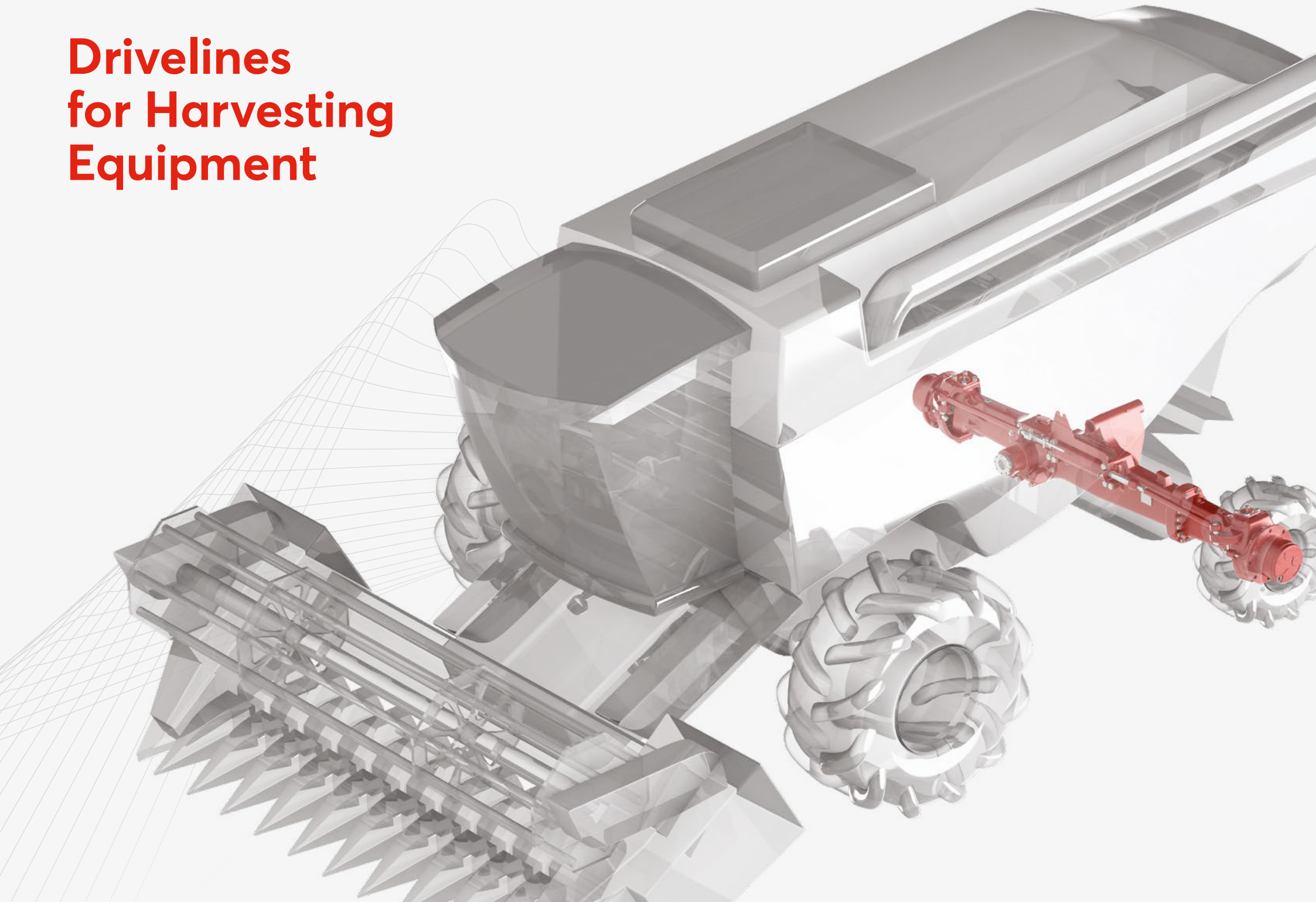
The electric motors are embedded on the Transaxle design offering compactness under bonnet. With proprietary hardware and software to maximize performances and productivity, it's designed for Specialty (Vineyard – Orchard) and Utility Tractors from 50 to 75 HP.



Main Features

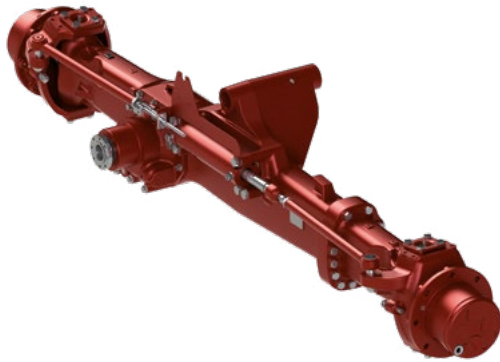
- › 2-speed transmission, low noise
- › Smart integrated hydraulics management, to maximize efficiency of the whole system and tractor autonomy
- › Traction motor and PTO & hydraulics motors embedded
- › Hydraulics differential lock
- › 4WD disconnect

Drivelines for Harvesting Equipment



Rear Steering Axles

The Applications span from Forage Harvesters to Cotton Pickers and more in general to all Harvesting equipment requiring All Wheel Drive Traction.



Being these machines pretty unique, Carraro is able to provide customized solutions to meet virtually any machine application thanks to its versatile, scalable and modular architecture.

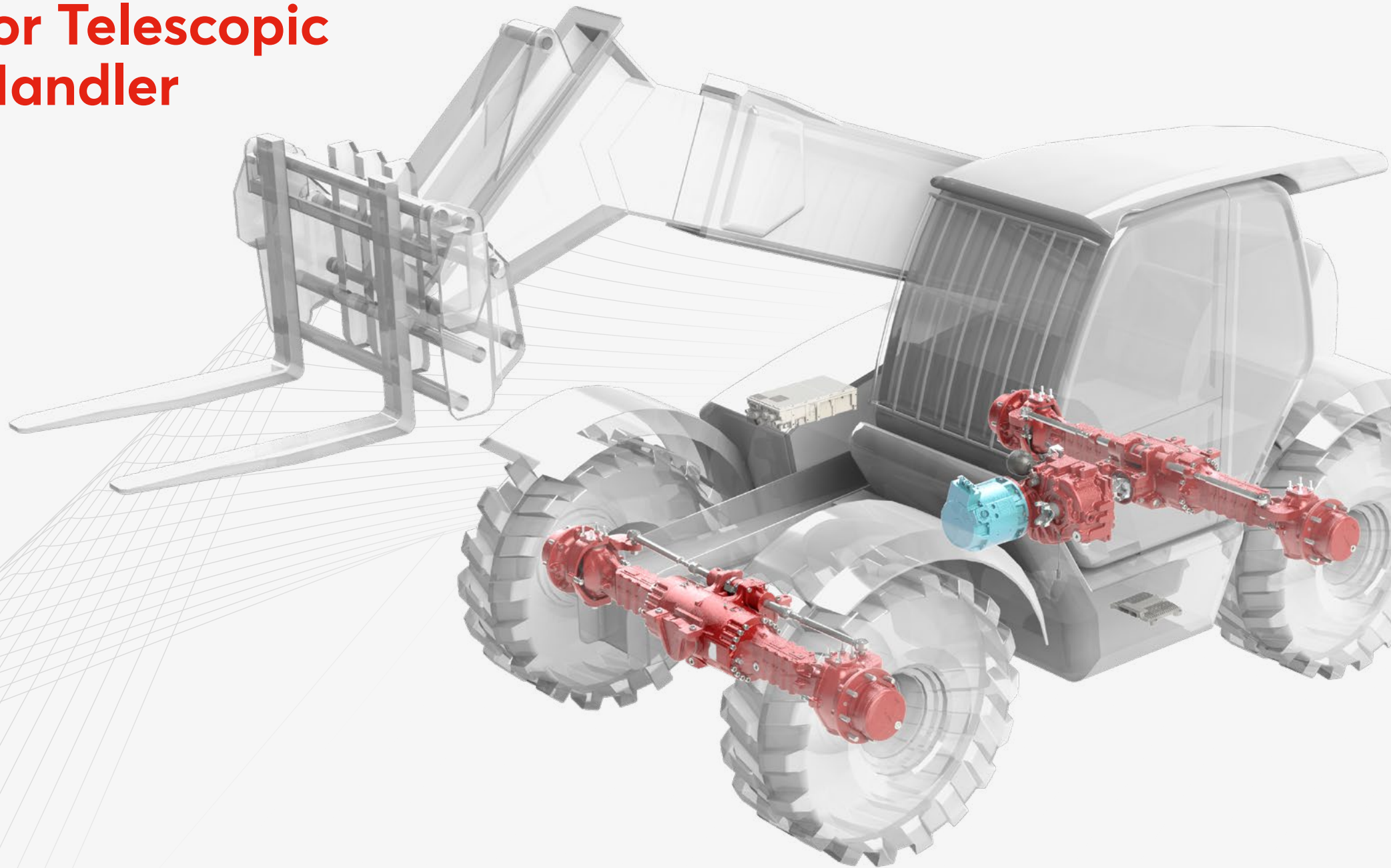
These axles have been designed for use under the most severe conditions, with a high load capacity and robust gear design, able to ensure an extended service life with improved durability. The axles allow high steering angle and optimised geometry, thus ensuring precise steering, high manoeuvrability, and minimum tyre wear. The axle design is particularly focused upon achieving Easy Field

Serviceability: all new Carraro axles offer longer oil change/lubrication intervals, the use of fewer spare parts, and the decreased need for special repair tools

Options

- › Wet Oil Brakes or Dry Caliper Disc Brakes
- › Self Locking (Limited Slip) or 100% Differential Lock, Electro-Hydraulically operated
- › Steering sensor
- › Speed Sensor
- › Long-lasting lubricated U-joints and available waterproof Seals
- › CTIS

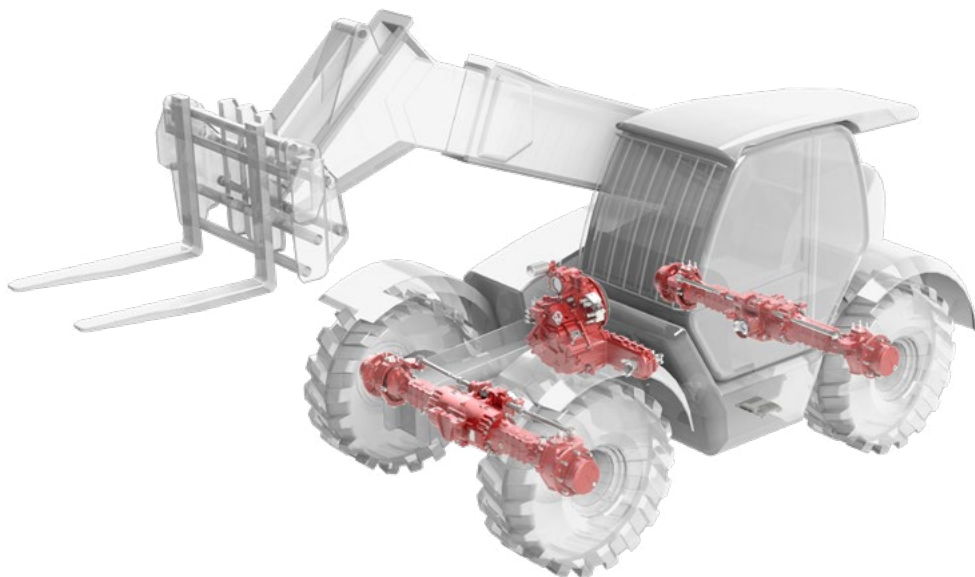
Drivelines for Telescopic Handler



Torque Converter

Carraro offers a complete range of drivelines for Telescopic Handlers and continues to add new product to face all application' needs. Besides the conventional hydrostatic gearboxes, the new THE Gearbox range for both hydrostatic and electric applications is the most innovative solution. Conventional Torque Converter transmissions side-drive and central-drive layout are a consolidated milestone of the product offering.

The latest generation of axles is setting new market standards in terms of performances and reliability and provides very high efficiency by reducing power losses and an easy serviceability for the end user.



Lift capacity kg	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

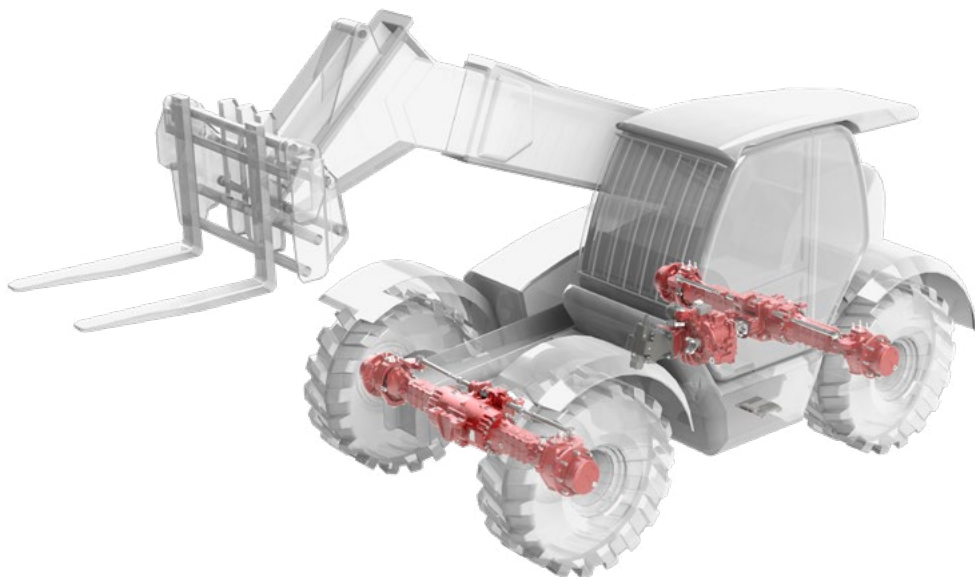


Transmission key features and benefits

- › 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

Hydrostatic

Carraro offers a complete range of drivelines for Telescopic Handlers and continues to add new product to face all application' needs. Besides the conventional hydrostatic gearboxes, the new THE Gearbox range for both hydrostatic and electric applications is the most innovative solution. Conventional Torque Converter transmissions side-drive and central-drive layout are a consolidated milestone of the product offering. The latest generation of axles is setting new market standards in terms of performances and reliability and provides very high efficiency by reducing power losses and an easy serviceability for the end user.



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

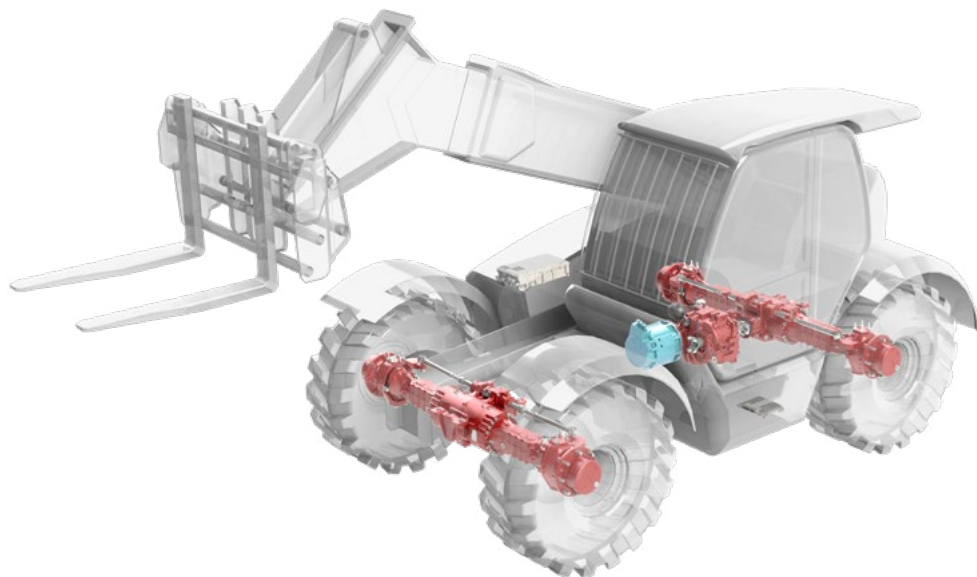


Transmission key features and benefits

- › 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 

Electrified

Carraro offers a complete range of drivelines for Telescopic Handlers and continues to add new product to face all application' needs. Besides the conventional hydrostatic gearboxes, the new THE Gearbox range for both hydrostatic and electric applications is the most innovative solution. Conventional Torque Converter transmissions side-drive and central-drive layout are a consolidated milestone of the product offering. The latest generation of axles is setting new market standards in terms of performances and reliability and provides very high efficiency by reducing power losses and an easy serviceability for the end user.



Lift capacity kg	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		
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



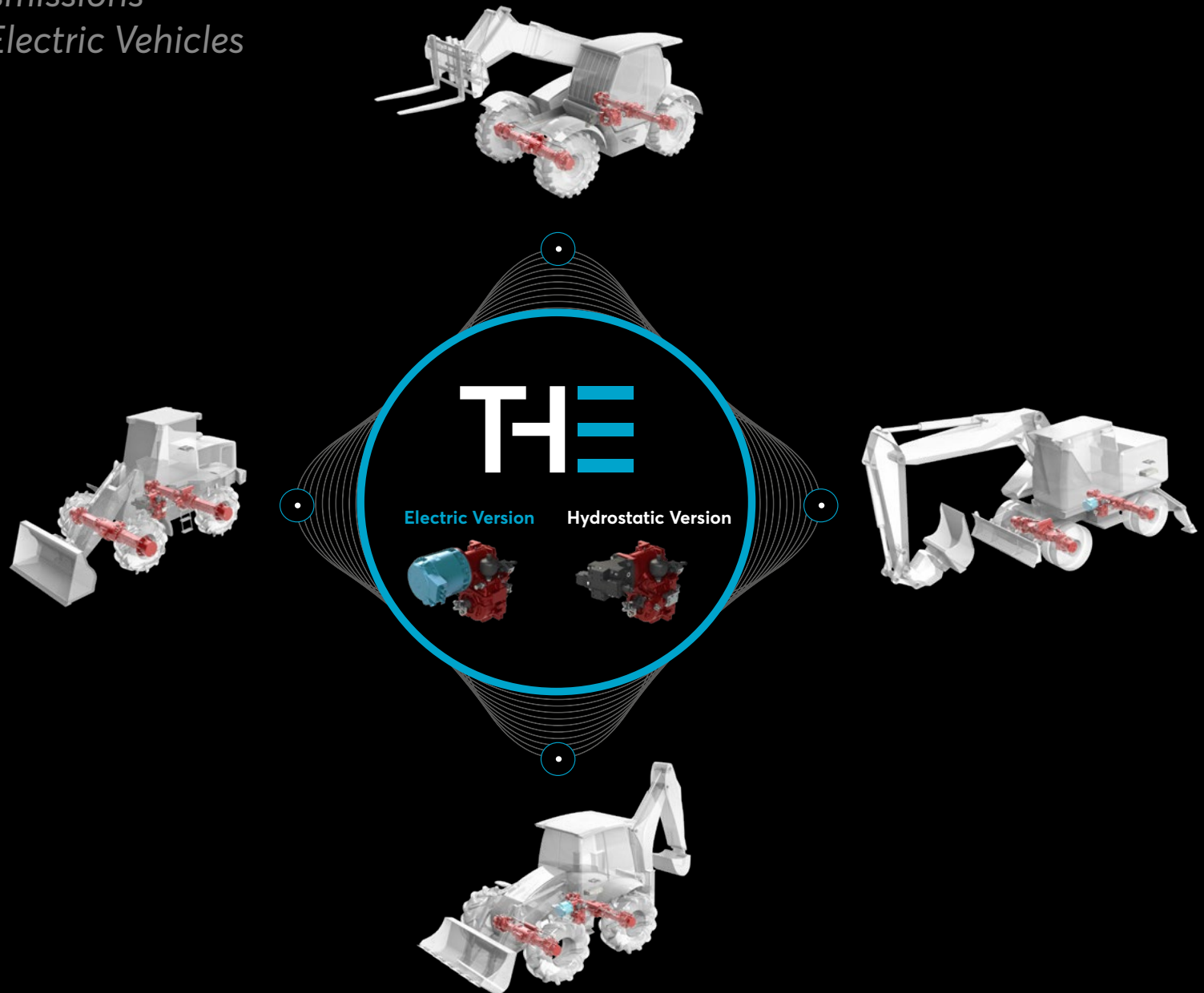
Transmission key features and benefits

- › 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

THE Solution

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

THE interchangeable, versatile,
highly suitable Transmissions
for different light agricultural
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

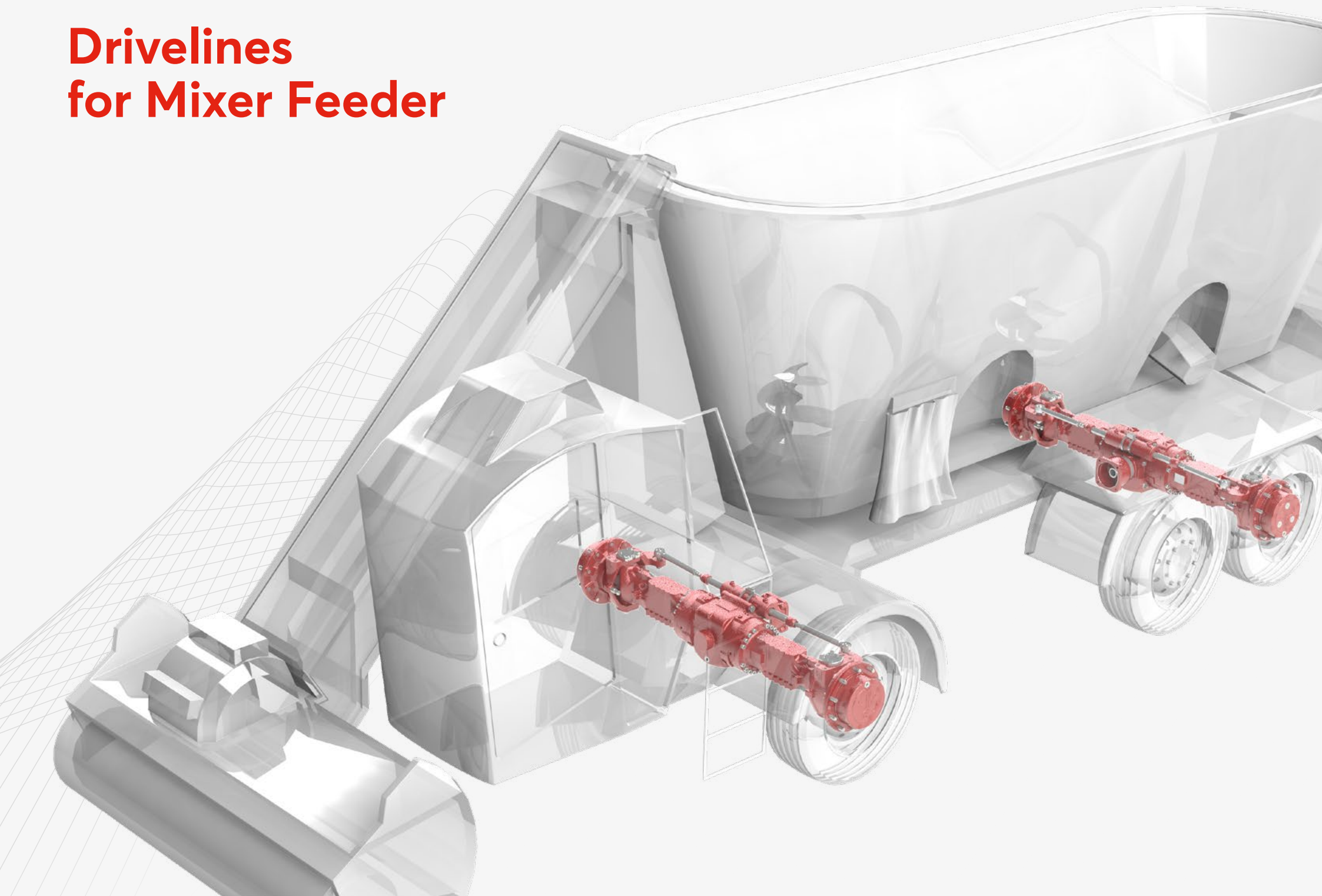
4WD Disconnect SAHR Module

- Optional

Two gear shifting

- Synchro
- Powershift

Drivelines for Mixer Feeder



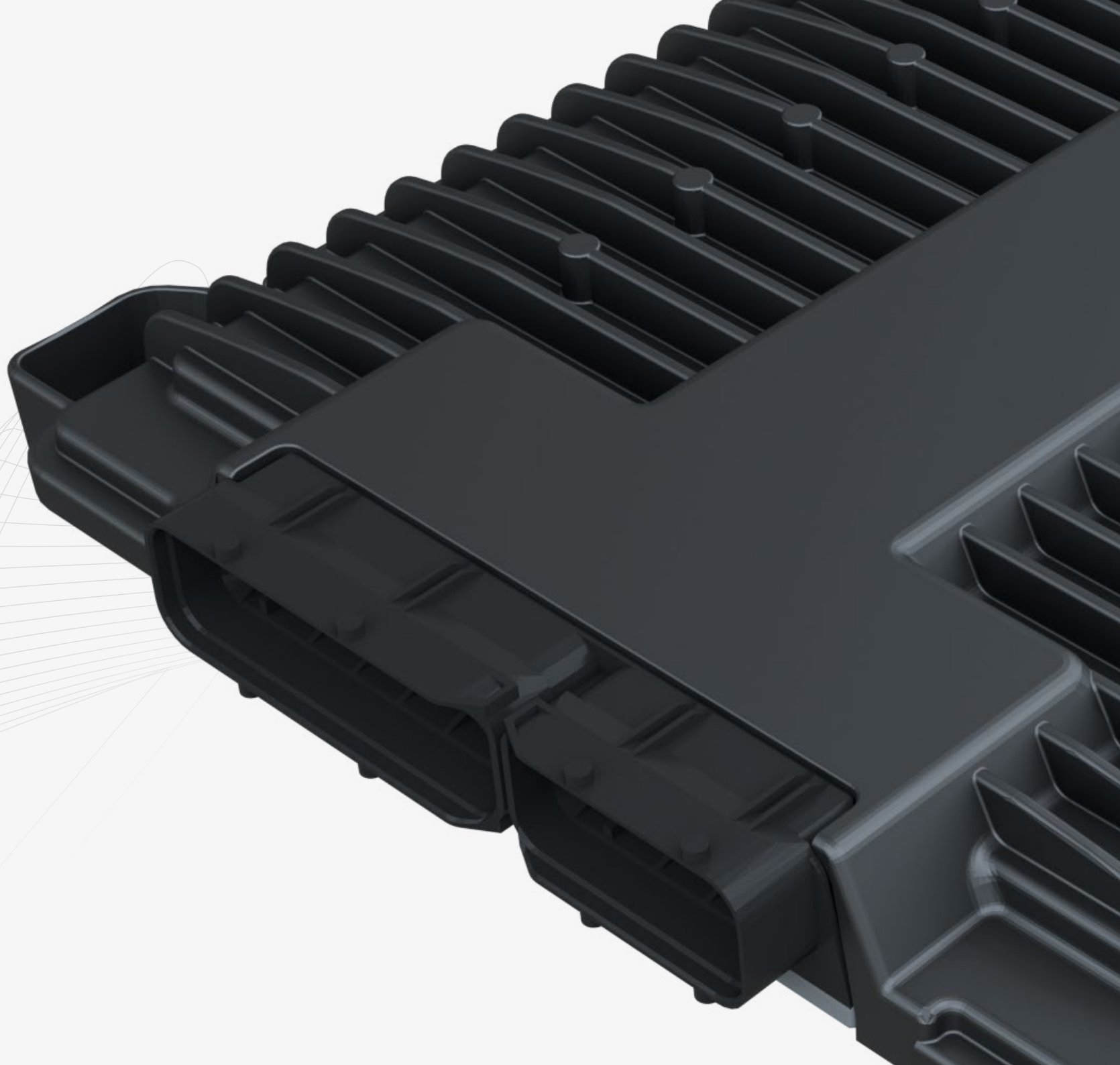
Steering and Rigid Axles

Carraro offers a complete range of drivelines for Self-Propelled Mixer Feeders, including driven and non-driven axles, steering and rigid, as well as hydrostatic and torque converter transmissions. The axle range available allows to cover all sizes of Mixer Feeder and exceptional manoeuvrability in all conditions thanks to the high steering angle.

Options

- › Wet Oil Brakes or Dry Caliper Disc Brakes
- › Self Locking (Limited Slip) or 100% Differential Lock, Electro-Hydraulically operated
- › Steering sensor
- › Speed Sensor
- › Long-lasting lubricated U-joints and available waterproof Seals

Electronic Control Unit



Electronic Control Unit

Carraro offers a complete family of proprietary ECUs that are specifically designed to manage its electronically controlled Modules and Transmissions. Thanks to its deep applicational understanding and internal software know-how, the company has developed its software entirely in-house. These ECUs are designed to optimise the overall System performance by governing the mechanical, hydraulic, and electronic modules together.

Carraro ECUs are capable enough to manage also additional vehicle's functions as well, including the Rear Lift, the Power Take Off, and other auxiliaries.

Category 2 hardware architecture and Functional Safety Compliance (ISO25119, ISO13849). Capable to support various CAN protocols, including XCP, SAE J1939, KWP2000 and UDS.



Carraro Diagnostic System

Carraro Diagnostic System is a new tool developed for all Carraro products equipped with an Electronic Control Unit. This device provides the complete access to the Carraro ECUs allowing error log management, real time diagnostic variables reading, parameters reading and ECU software application update, using Carraro proprietary RS232 protocol or application relevant CAN communication protocol (SAE J1939, KWP2000, UDS).

Carraro Diagnostic System has been studied as the tool for the serviceability of the Carraro Series products, as well as the development tool for customers during the integration of a new Carraro product in their vehicle electronic central system.



**CARRARO
DIAGNOSTIC SYSTEM**



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