

# Hydraulic trailer drive axle for retrofitting



## ***TrailerDriveSystem***

**The decidedly all-around solution for more traction in the field.**

- Greater efficiency via improved traction.  
Now it is also possible to work on uphill slopes.
- More environmentally-friendly due to lower energy consumption.  
Thanks to the driver on the trailer, a lighter towing vehicle can be used.
- More security.  
As a result of the excellent synchronisation of the trailer drive and braking function.
- Soil conservation.  
Turf and soil damage can be avoided by applying the appropriate additional driving force.

**Benefit from our experience!**

# Hydraulic trailer drive axle

with high-torque wheel hub motors and drum brakes

Heavy loads can experience problems with traction on impassable fields, wet soils, and slopes. The solution is a drive axle. "Trailer Drive System TDS", the hydrostatic wheel drive system for trailers developed by Paul Forrer AG with these problems in mind, has been met by the public with rave reviews for many years and knows how to perform under the toughest of conditions.

Choose the right hydraulic drive axle control option for each use: the TDS-ECO is suitable as a short-term or emergency auxiliary drive, while the TDS-DRIVE is a partly synchronised drive control for prolonged use. The TDS-SYNCHRO patented system solution offers the highest level of comfort. It adjusts all the operating modes for the auxiliary drive independently thanks to its intelligent sensor technology.

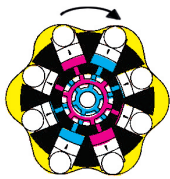
## Wheel hub motor functionality

The hydraulic system is usually powered by "Power Beyond" connections from the hauler or by its own on-board hydraulic system. Special radial piston motors provide the required thrust when working in the field, and can be switched to "freewheeling" mode on the road.

### Advantages:

- Compact design
- Powerful
- Certified brakes
- Long life

### Mechanical freewheel:

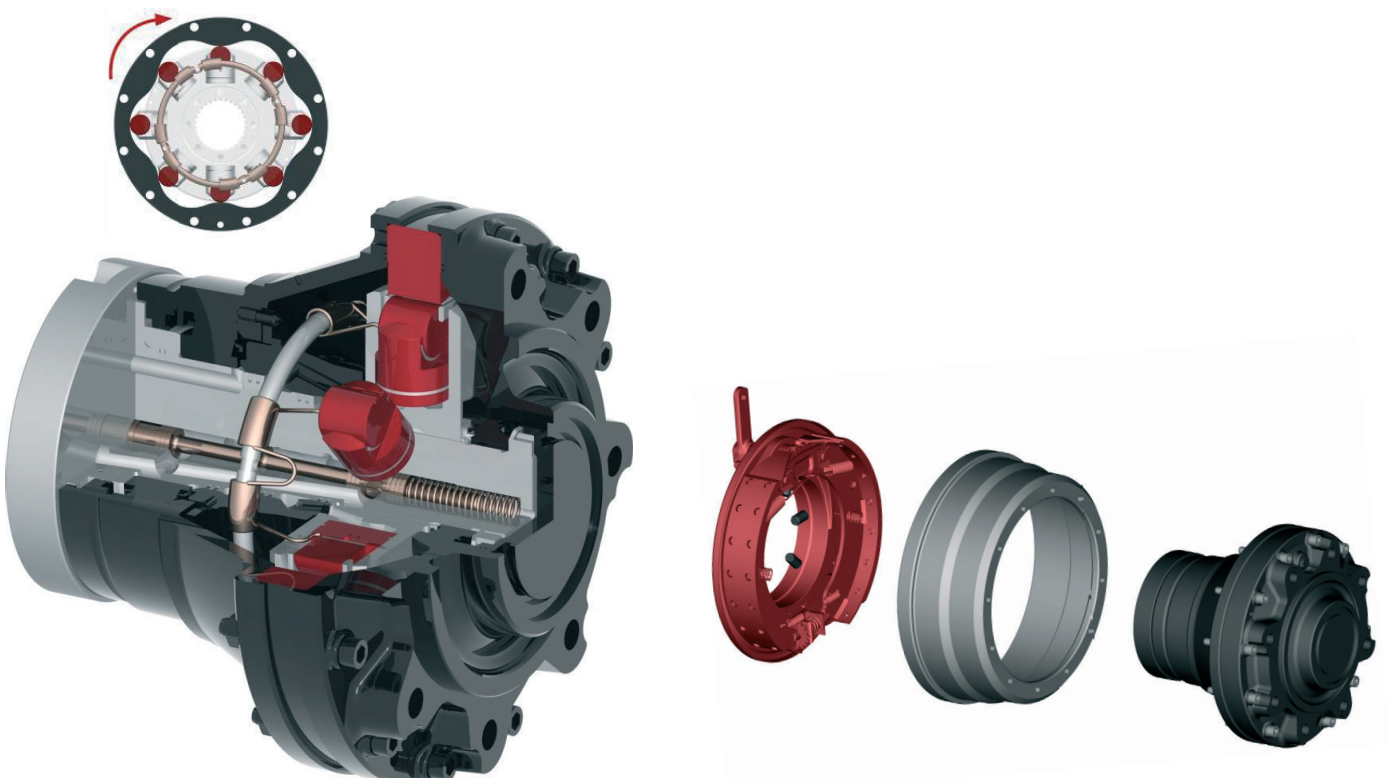


- Casing pressure
- Operating pressure
- Return pressure



- Freewheel
- no pressure

### Hydraulic motor with drum brake



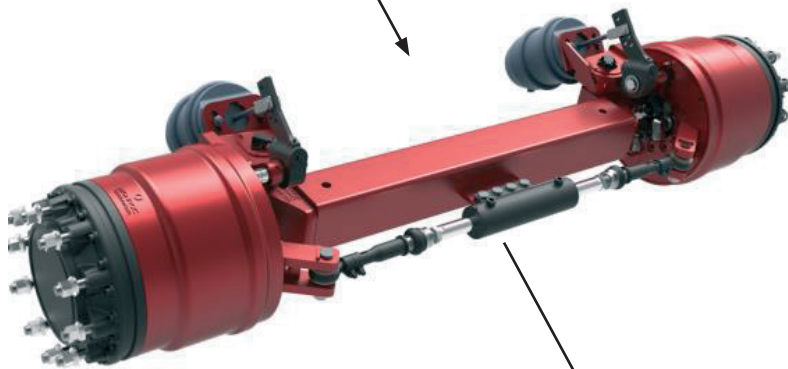
# A system providing thrust at the push of a button (torque on demand)

The system is composed of the following elements:

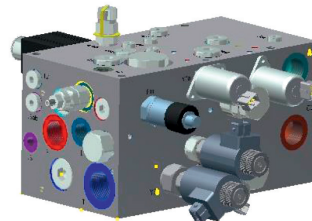
Radial piston motors



Complete drive axles



Hydraulic control valve unit



Control unit and technology



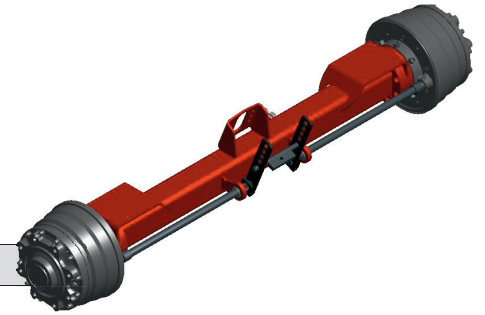
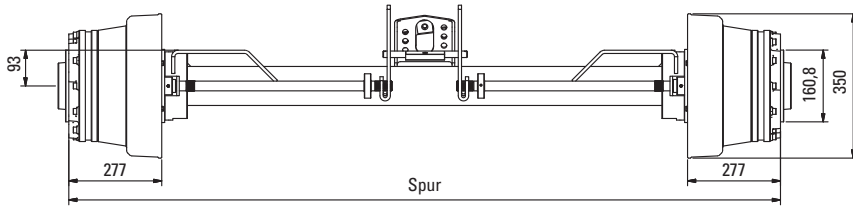
Customised application



Youtube-Video

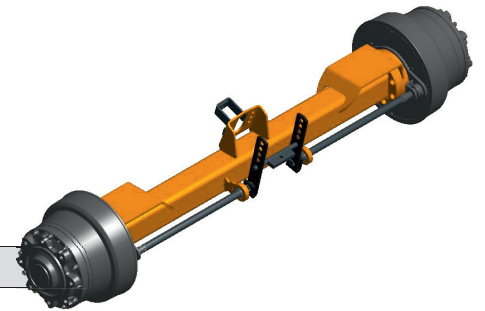
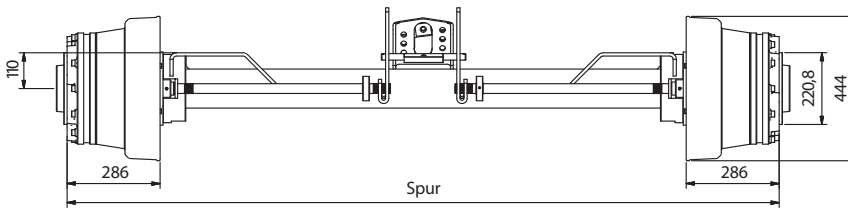
# Modular drive axles

## TA5-KA complete axle



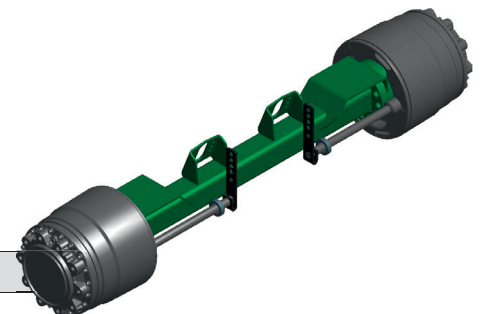
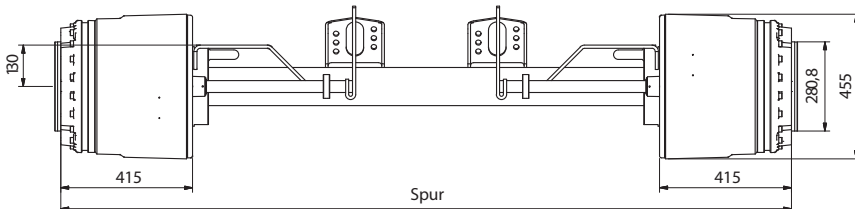
Type	TA5-KA
Max. nominal load	4–6 t
Track:	1800–2200 mm
Rim flange diameter:	6 x M18x1.5 mm / Ø bc: 205 mm / Ø Centring: 160,8 mm
Drum brake:	320 x 75 (TüV-approved up to 40 km/h)
Wheel hub motors:	≤ 2 x 800 cm <sup>3</sup> / max. 300 bar, 30 kW, 2x ≤ 3590 Nm

## TA8-KA complete axle



Type	TA8-KA
Max. nominal load	6–9 t
Track:	1800–2200 mm
Rim flange diameter:	8 x M20x1.5 mm / Ø bc: 275 mm / Ø Centring: 220,8 mm
Drum brake:	400 x 80 (TüV-approved up to 40 km/h)
Wheel hub motors:	≤ 2 x 1600 cm <sup>3</sup> / max. 300 bar, 45 kW, 2x ≤ 7180 Nm

## TA10-KA complete axle



Type	TA10-KA
Max. nominal load	9–13 t
Track:	2000–2400 mm
Rim flange diameter:	10 x M22x1.5 mm / Ø bc: 335 mm / Ø Centring: 280,8 mm
Drum brake:	420 x 220 (TüV-approved up to 80 km/h)
Wheel hub motors:	≤ 2 x 3150 cm <sup>3</sup> / max. 400 bar, 70 kW, 2x ≤ 18820 Nm

# Customised constructions for drive axle solutions

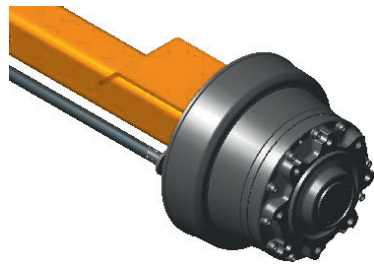
Axes made to fit customer specifications



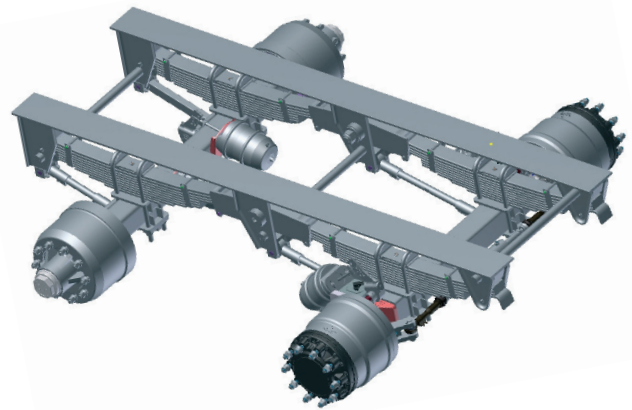
Steering axles



Half axles for Boogie power units



Complete axle power units



# Control options for hydraulic drive axles

## TDS-ECO

**Best suited as a short-term or emergency auxiliary trailer drive.**

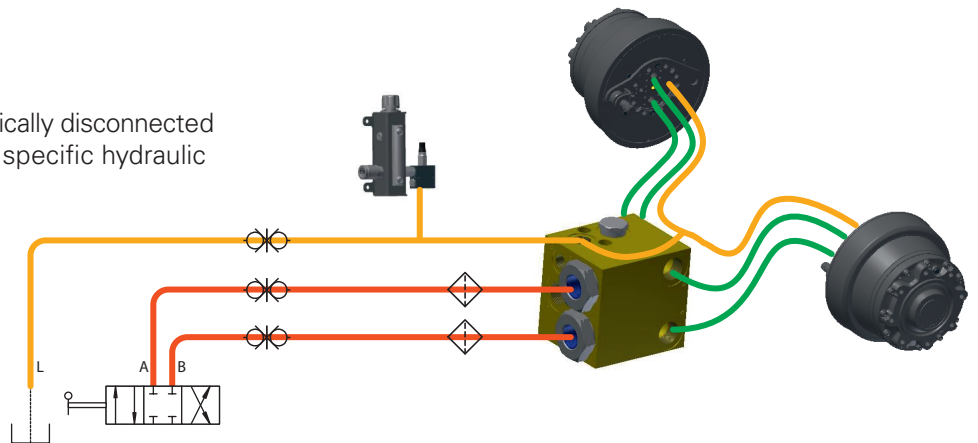
- no electronics, purely hydraulic, powered from existing hauler valves
- not designed for long-term use, pressure oil supply is not regulated.

**Functions:**

- Forward driving / traction
- Reverse driving / traction
- Freewheeling / radial pistons mechanically disconnected driving at road without the need for specific hydraulic leads

**System requirements:**

- Pressure oil supply from hydraulic valves already servicing the hauler or trailer
- Minimum requirements:  
Q = 40 to 120 l/min p = 180 to 350 bar
- Connections:  
A+B = Double action (forward/reverse)  
L = Drain, pressure-free return to tank



Kit / description	Order No.	Guiding price
Full kit, consisting of: Valve block, oil spillage container	TDS-ECOV-KIT	Is included in the price of the modular drive axle.
Not included: Hoses, fittings, couplers, installation material, installation, etc.		

## TDS-DRIVE

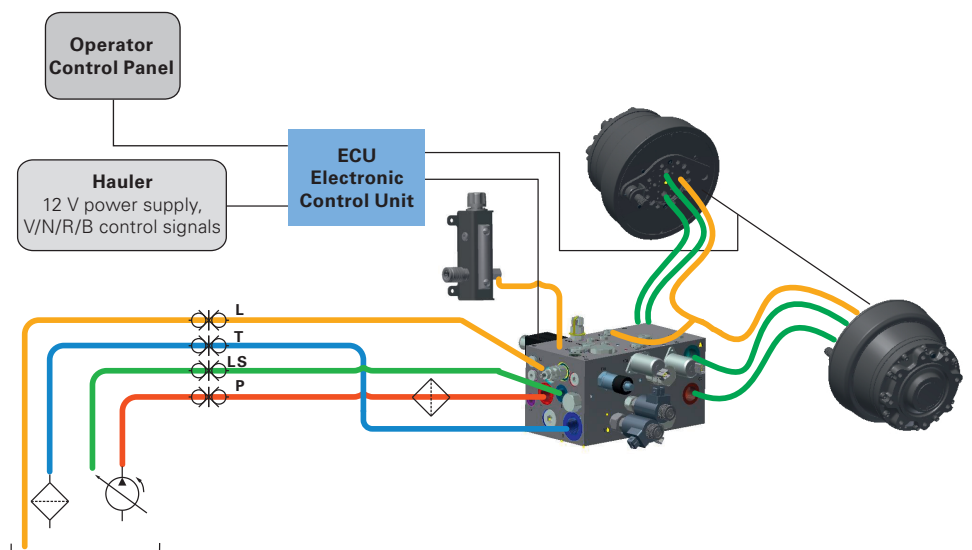
**The partly synchronised control option for prolonged trailer use.**

**Functions:**

- Driving in forward and reverse, controlled traction
- Neutral circulation / stand-by
- Freewheeling / radial pistons mechanically disconnected driving at road without the need for specific hydraulic leads

**System requirements:**

see TDS-SYNCHRO



Kit / description	Order No.
Full valve block kit in nominal sizes 120 / 150 l/min comprised of: Valve block, pressure line filter, oil spillage container	TDS-DRV-120-VB14
Comprehensive control kit, consisting of: Operation box, distributor box, sensors, and harnesses	TDS-DriveBasic (3083426) TDS DrivePlusSP2V (3083249)
Not included: Hoses, fittings, couplers, installation material, installation, etc.	

# TDS-Synchro

**The comfortable, fully synchronised, electronic control option for long-term use. Perfectly suitable as a permanent auxiliary trailer drive. A Paul Forrer AG patent.**

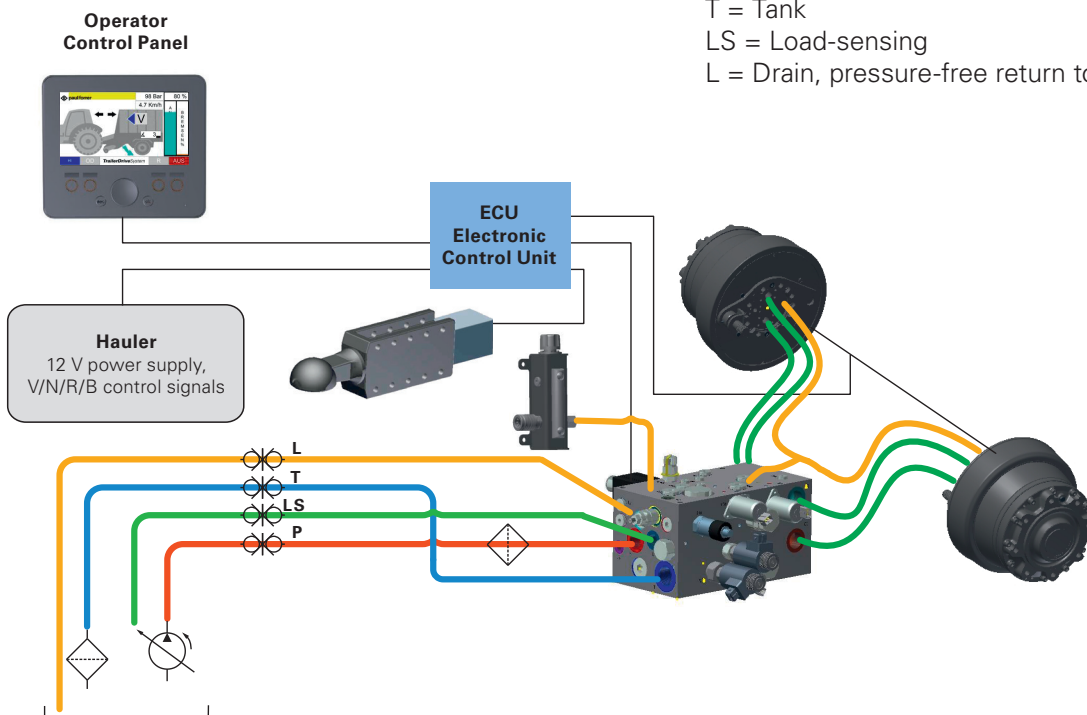
- Maximum security and comfort in any conditions, both uphill and downhill
- The sensors built into the drawbar control the “drive – neutral – brake” operating modes all by themselves. The driver can concentrate fully on the work at hand.
- A straightforward display screen constantly informs the driver of every relevant setting.
- The system enables maximum traction with 100% soil protection.

## Functions:

- Driving in forward and reverse, regulated traction force and velocity
- Forward braking, regulated brake force / ABS
- Reverse braking, regulated brake force / ABS
- Automatic 80% differential lock switching, 2-gear switch (optional: 3-gear)
- Neutral circulation / stand-by
- Freewheeling / radial pistons mechanically disconnected driving at road without the need for specific hydraulic leads

## System requirements:

- Pressure oil supply by “Power Beyond” from hauler or an on-board load-sensing hydraulic system
- Minimum requirements:  
Q = 70 to 150 l/min (max. 350 l/min)  
p = 200 to 350 bar (max. 420 l/min)  
Hydraulic output from LS-variable pump
- Connections:  
P = Pressure  
T = Tank  
LS = Load-sensing  
L = Drain, pressure-free return to tank



Kit / description	Order No.
Comprehensive valve block kit in nominal sizes 120 / 150 / 250 l/min comprised of: Valve block, pressure line filter, oil spillage container	
Comprehensive drawbar kit on the K80, D40, or R50 models, comprised of: Towing eye round shaft approved for up to four tons of tongue load, drawbar sensors, lateral screw-flange plates to be welded	TDS-SYN-VB14-ELSTS-K80
Comprehensive control kit, consisting of: Control Panel with display, Electronic Control Unit, sensors, and harnesses	
Not included: Hoses, fittings, couplers, installation material, installation, etc.	



## Quote-related questions (e-mail: info@paul-forrer.ch)

### Axle construction:

Further information regarding the axle construction:

- Complete axles .....
- Half axles .....
- Individual wheel hub motors .....

### Control options:

- TDS-ECO (for emergency or short-term auxiliary drive use)
- TDS-DRIVE (for freely selectable drive axle thrust power)
- TDS-SYNCHRO (for permanent, autonomous drive axle operation)

### Hydraulic supply:

- from hauler (Power Beyond)
- on-board hydraulic system  .....

### Work hydraulics:

- LS (Loadsensing)  Constant  .....

Max. operating pressure: ..... bar

Max. flow rate: ..... l/min

### Velocity:

Required drive velocity: ..... km/h

Street-legal: ..... km/h

### Trailer details:

Trailer brand and type: .....

Central-axle trailer

Tandem

Tridem

Required number of driven wheels: .....

Unladen trailer weight: .....

Permitted total weight  
(max. permitted total weight): .....

Average load weight: .....

Load on drawbar: .....

The tyres installed on the trailer: .....

Remarks: .....

Customer name: .....

Street: .....

Postcode, town: .....

E-mail, phone number: .....



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