Hydraulic trailer drive axle for retrofitting

**TrailerDrive System**

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:

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
**Module 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 cm³ / max. 300 bar, 30 kW, 2x ≤ 3590 Nm
- Suggested price (complete individual axle): € 11'850.– excl. VAT

**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 cm³ / max. 300 bar, 45 kW, 2x ≤ 7180 Nm
- Suggested price (complete individual axle): € 13'480.– excl. VAT

**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 cm³ / max. 400 bar, 70 kW, 2x ≤ 18820 Nm
- Suggested price (complete individual axle): € 18’300.– excl. VAT
Customised constructions for drive axle solutions

Axles 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

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

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**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

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<td>Full valve block kit in nominal sizes 120 / 150 l/min. comprised of: Valve block, pressure line filter, oil spillage container</td>
<td>TDS-DRV-120-VB14</td>
<td>from € 3655.–</td>
</tr>
<tr>
<td>Comprehensive control kit, consisting of: Operation box, distributor box, sensors, and harnesses</td>
<td>TDS-DriveBasic (3083426)</td>
<td>€ 480.–</td>
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<td></td>
<td>TDS DrivePlusSP2 (3083249)</td>
<td>€ 2848.–</td>
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Not included: Hoses, fittings, couplers, installation material, installation, etc.
**Kit / description**  |  **Order No.**  |  **Guiding price**  
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Comprehensive valve block kit in nominal sizes 120 / 150 / 250 l/min. comprised of: Valve block, pressure line filter, oil spillage container  |  TDS-SYN-VB14-ELSTS-K80  |  from € 8290.–  
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  |  |  
Comprehensive control kit, consisting of: Control Panel with display, Electronic Control Unit, sensors, and harnesses  |  |  
Not included: Hoses, fittings, couplers, installation material, installation, etc.

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**TDS-Syncho**

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

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**Diagram:**

- Hauler 12 V power supply, V/N/R/B control signals  
- Operator Control Panel  
- ECU Electronic Control Unit  
- Connections:  
  P = Pressure  
  T = Tank  
  LS = Load-sensing  
  L = Drain, pressure-free return to tank
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: (for emergency or short-term auxiliary drive use)

- TDS-ECO
- 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: