

## Application

### TP-O hydraulic swivel-axle suspension



#### TP-O hydraulic swivel-axle suspension

The TRIDEC swivel-axle suspension TP-O is an hydraulic-pneumatic suspension, to be fitted with swivel axles. The system is used in special and heavy trailers, mostly fitted with many axle-lines. Extreme loads ask for extra high capacity per axle-line, large suspension strokes and advanced vehicle-stability. Several versions are available, fit for 20t, 14t or 12t capacity per axle-line. At low speeds up to 100% overload is technically permitted (depending on version).

With the TRIDEC TP-O suspension it is possible to obtain a long-term permit for 12t per axle-line. Unlike common competitor-constructions TRIDEC's suspension does not have a single greasing-nipple. All bearing-constructions are sealed for life and do not need any periodical greasing, beneficial for maintenance-cost and life-time. TRIDEC does not use turntables, but smart pin-bearings for the main pivot-point, obtaining the lowest floor height. The selected ride-height does not influence the alignment of the legs, resulting in minimal tire-wear in all situations. The suspension is combined with TRIDEC Compact semi-automatic ride-height control, or the unique Tritronic system, with automatic alignment and automatic ride-height control, among many other advantages.

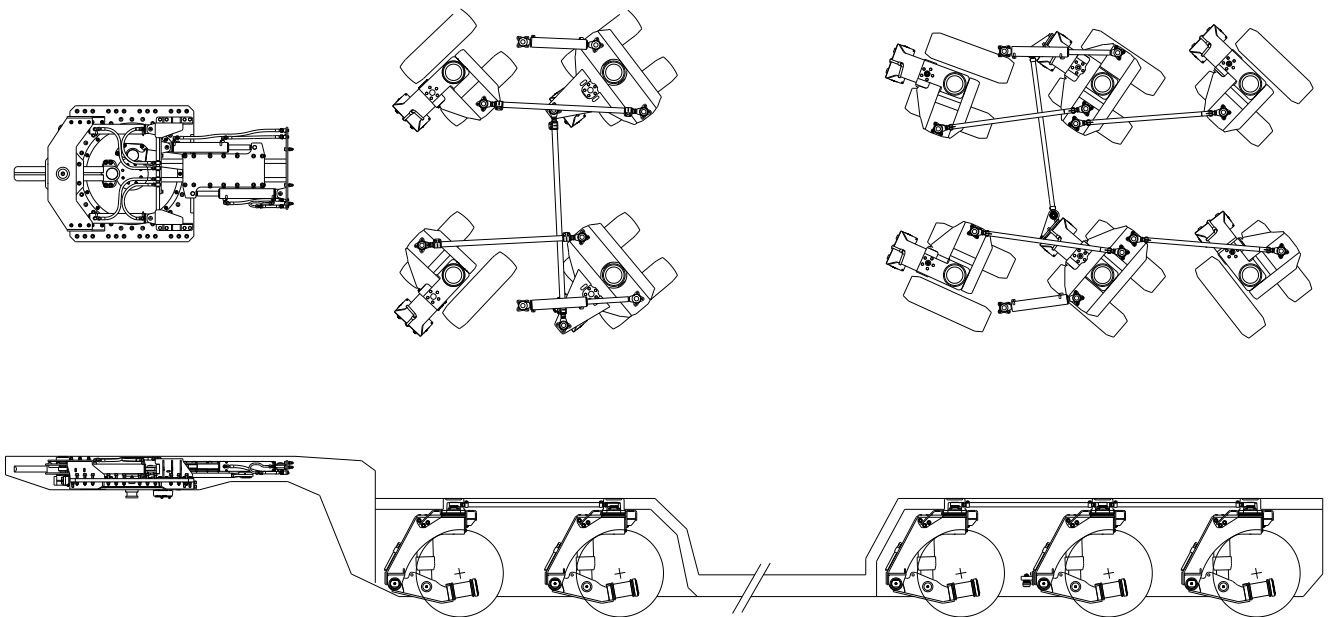
#### Noticeable savings

- high capacity per axle-line
- long-term permit for 12t per axle-line possible
- large suspension travel
- advanced vehicle stability
- minimal tire-wear
- swift deck raising and lowering
- low-maintenance
- heavy-duty design
- unique ease-of-control in combination with Tritronic
- optimal maneuverability in combination with TRIDEC steering system



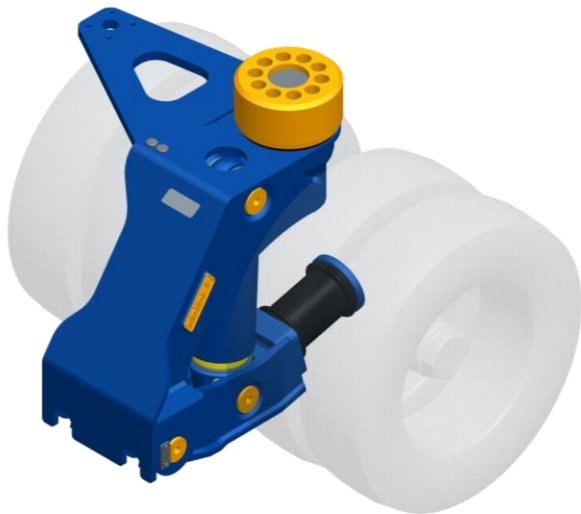
### Steering Principle

Equipping the TP-O suspension with a TRIDEC hydraulic steering system, allows the trailer to benefit from optimal maneuverability. Both semi-trailers and drawbar-trailers can be installed with an HF-E steering system. Double steering-systems such as e.g. installed on inter-dollies are also possible. A steered TP-O suspension leg can turn as much as 70 degrees. The steering system is custom-made to optimally fit the trailer's design and consists of a redundant displacement-system. Movement between truck and trailer is transmitted by the fifth wheel-unit, or drawbar, to a set of cylinders. These cylinders are hydraulically connected to cylinders at one of axle-lines, consequently making the legs steer. The remaining suspension-legs are interconnected by mechanical rods, transferring the steering motion. For more information: please refer to chapter [0900] HF-E steering system.



## Technical specifications

### 20t TP-O hydraulic swivel-axle suspension



#### General

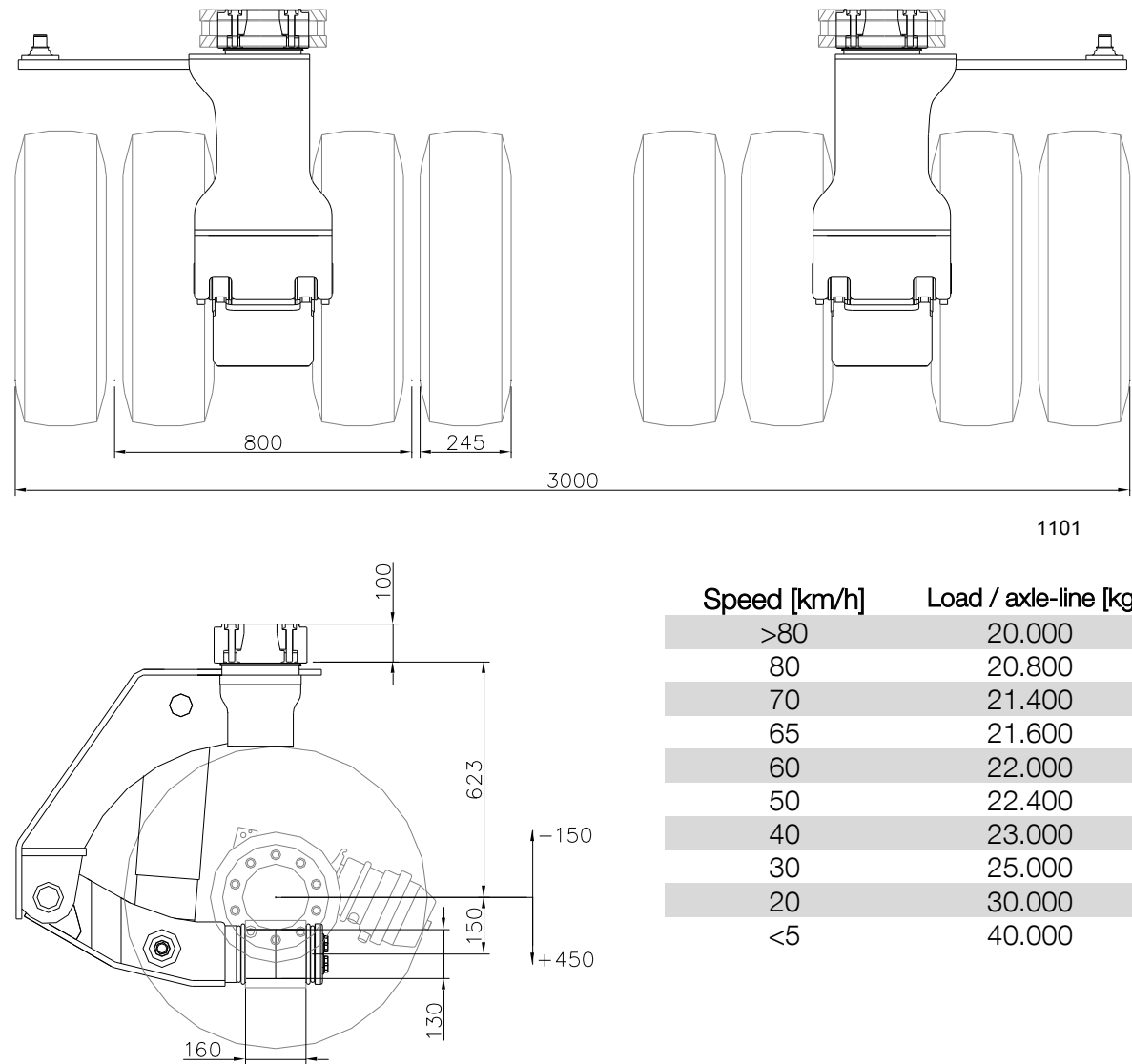
- Capacity 20t per axle-line, 40t at reduced speed <5km/h
- Twin-tire mounting 17.5"
- Double acting cylinder allows for hydraulic lift-axle and traction-help
- Suitable for most common axle types and makes
- Excellent axle compensation, due to large suspension travel of 600mm
- Compact and low-maintenance sealed bearing constructions
- No periodical greasing required
- Rubber bearing for swivel axle mounting
- Bolt-on steering lever
- KTL-treatment
- Cylinder with Nikrom piston-rod with protection cover

TRIDEC kindly advises in the optimal configuration for your application

#### Technical specification

Feature	Value
Capacity per axle-line	20t, 40t at speed <5km/h
Cylinder	double acting, 140/100mm
Suspension travel	600mm
Typical tire mounting	235/75R17.5, 245/70R17.5, 215/75R17.5
Typical track	Upon 735mm at 215 tires Upon 800mm at 245 tires
Minimal vehicle width	2750mm at 215 tires, 3000mm at 245 tires
Weight per axle-line	690kg
Floor height (fully dropped)	940mm (245/70R17.5 tires)

Dimensions





## Technical specifications

### 14t TP-O hydraulic swivel-axle suspension



#### General

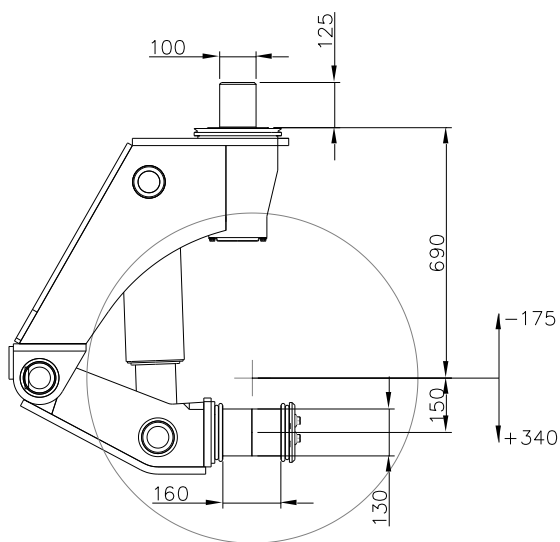
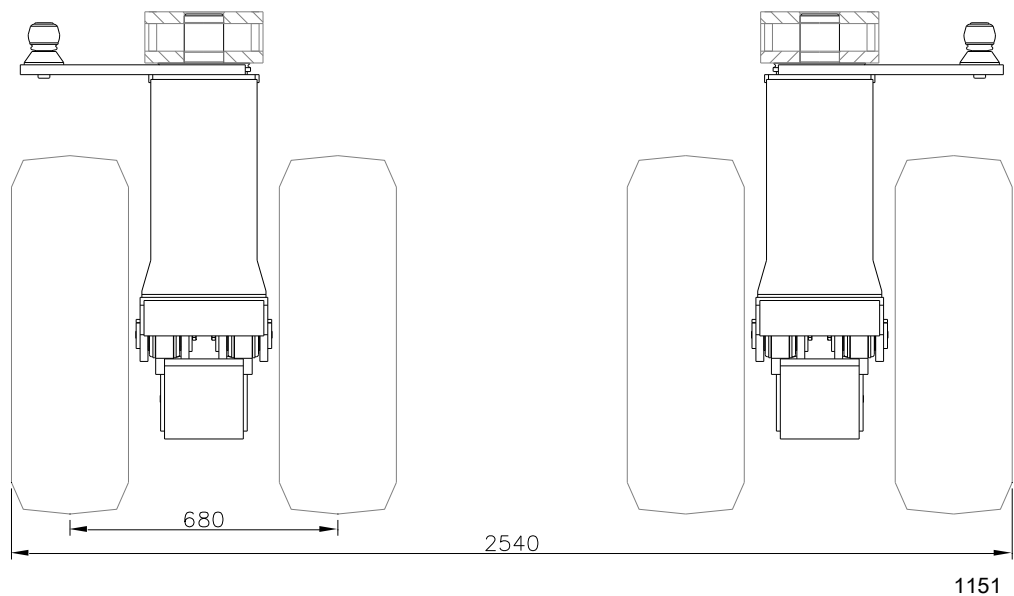
- Capacity 14t per axle-line, 21t at reduced speed <20km/h
- Single-tire mounting (e.g. 285/70R19.5, track 680mm)
- Double acting cylinder allows for hydraulic lift-axle and traction-help
- Suitable for most common axle types and makes
- Excellent axle compensation, due to large suspension travel of 515mm
- Compact and low-maintenance sealed bearing constructions
- No periodical greasing required
- Rubber bearing for swivel axle mounting
- Bolt-on steering lever possible
- KTL-treatment
- Cylinder with Nikrom piston-rod

TRIDEC kindly advises in the optimal configuration for your application

#### Technical specification

Feature	Value
Capacity per axle-line	14t, 21t at speed <20km/h
Cylinder	double acting, 140/110mm
Suspension travel	515mm
Typical tire mounting	285/70R19,5
Typical track	680mm
Minimal vehicle width	2540mm
Weight per axle-line	808kg
Floor height (fully dropped)	1050mm (285/70R19.5 tires)

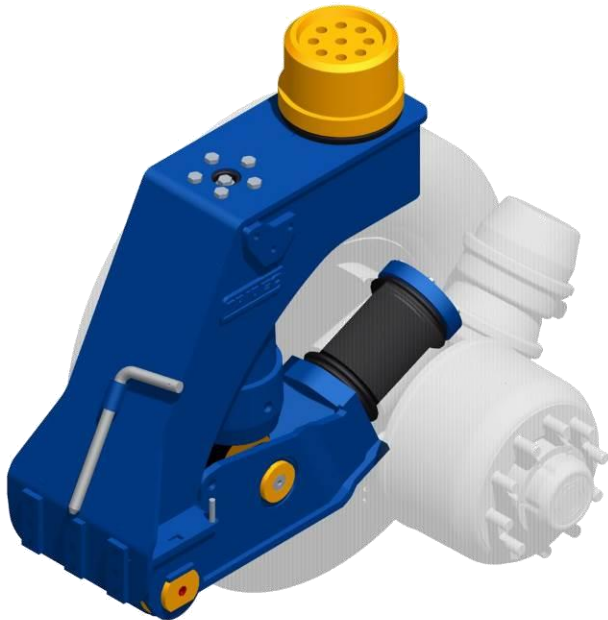
Dimensions



Speed [km/h]	Load / axle-line [kg]
>80	14.000
80	14.000
70	14.700
65	14.900
60	15.400
50	15.600
40	16.100
30	17.500
<20	21.000

## Technical specifications

### 12t TP-O hydraulic swivel-axle suspension



#### General

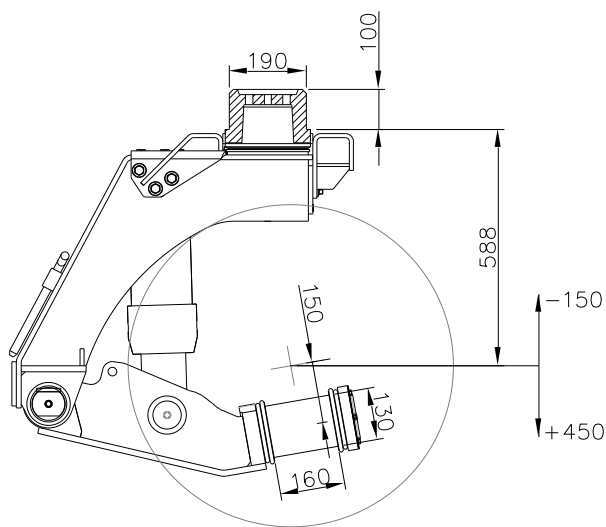
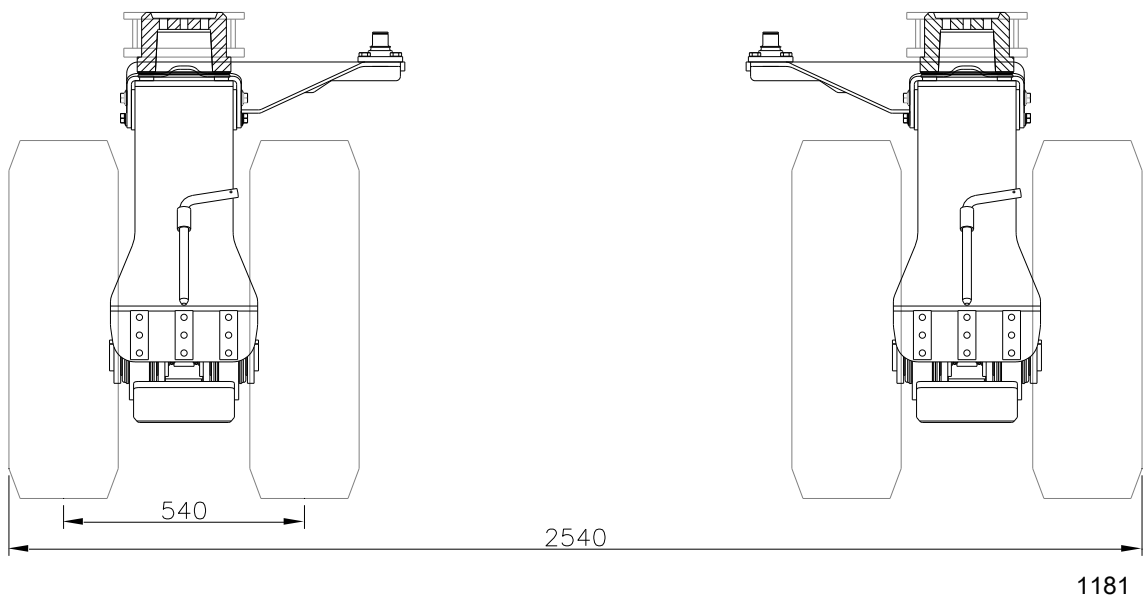
- Capacity 12t per axle-line, 18t at reduced speed <20km/h
- Single-tire mounting (e.g. 245/70R17,5 track 540mm)
- Bolt-on mounting to chassis by included adapter cone
- Excellent axle compensation, due to large suspension travel of 600mm
- Compact and low-maintenance sealed bearing constructions
- No periodical greasing required
- Rubber bearing for swivel axle mounting
- Bolt-on steering lever
- Lift axle possibility by mechanically locking the suspension in the lowest position
- Suitable for most common axle types and makes
- KTL-treatment
- Single acting cylinder with Nikrom piston-rod

TRIDEC kindly advises in the optimal configuration for your application

#### Technical specification

Feature	Value
Capacity per axle-line	12t, 18t at speed <20km/h
Cylinder	single acting, 110mm
Suspension travel	600mm
Typical tire mounting	245/70R17,5
Typical track	540mm
Minimal vehicle width	2540mm
Weight per axle-line	582kg
Floor height (fully dropped)	900mm (245/70R17.5 tires)

Dimensions



Speed [km/h]	Load / axle-line [kg]
>80	12.000
80	12.000
70	12.600
65	12.800
60	13.200
50	13.400
40	13.800
30	15.000
<20	18.000



### TP-O Options



TRIDEC TP-O swivel-suspension is to be combined with a TRIDEC HF-E steering system and a TRIDEC ride-height control system.

The required ride-height control system uses the control and power-pack from the steering system's manual steering. Two options are available:

- 'Tritronic' wireless remote with automatic ride-height control, among many other advantages. Please refer to chapter [1700] for additional information. For 1,2,3 and 4 point-suspension setups
- 'Compact' cable-control with semi-automatic ride-height control system. For 2 point-suspension setup

Code	Description
1149	Semi-automatic ride-height control system in combination with compact manual steering (0932)



#### Compact semi-automatic height control

- On demand ride-height control
- Left and Right suspension control separately
- 24V system

#### Additional remote for ride-height control

- Remote with 5m cable
- Large robust buttons
- LED ride-height indication

#### Control-box

The steering system's (with manual steering) stainless steel control-box is expanded with additional hydraulics and connectors for the height-sensors and height-remote to control the ride-height-system:

- electric control-box
- over-pressure valves
- electric valves
- flow control valves

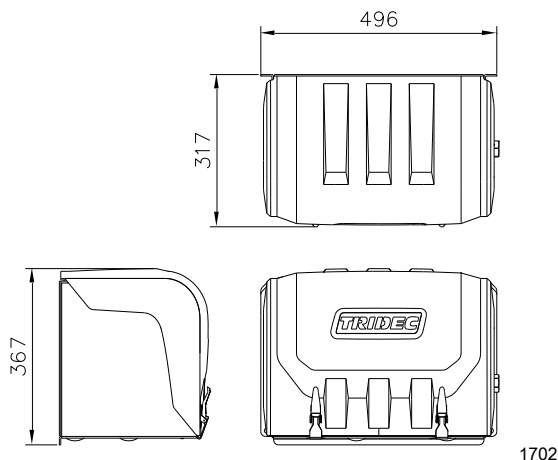
TRIDEC also supplies the required hydraulic pipes and oil.

#### Sensor sets

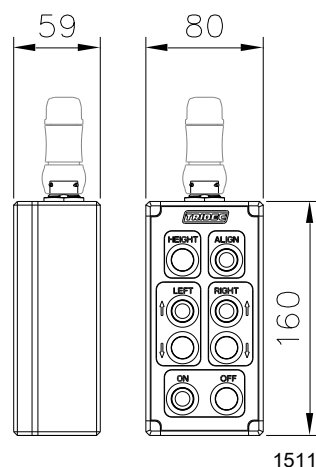
- Two ride-height sensor sets for Left and Right suspension
- Both with twin approximation switches with LED indication
- Required cables, available in several lengths



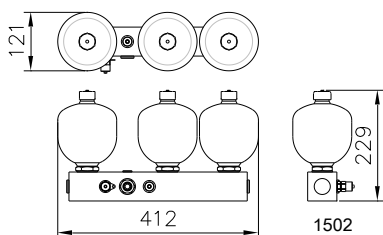
### Control box



### Remote



Code	Description
1143	Accumulator-set (1x Left, 1x Right)

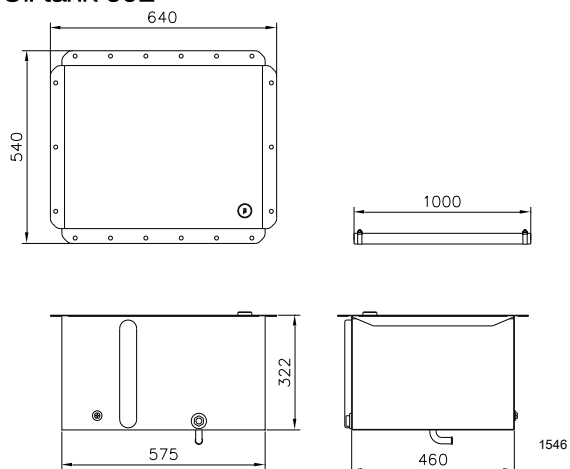


#### Accumulator-set

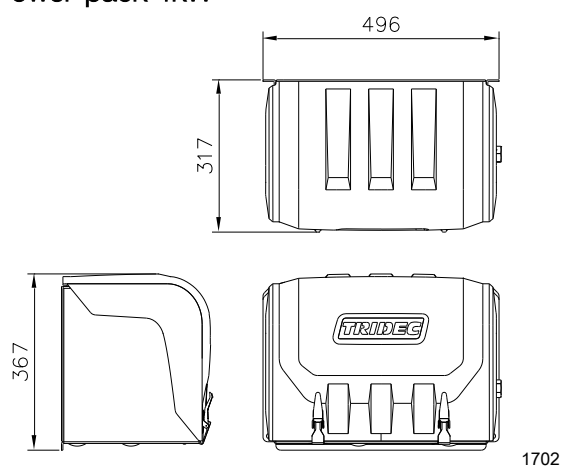
- Two accumulator blocks (Left and Right)
- State-of-the-art accumulators, KTL treatment
- Customer-specific pre-pressure
- Accumulators positioned at aluminium block with multiple (extra) connectors and mounting possibilities
- Integrated connection for pressure-sensors (for EBS brake system) at protected position

Code	Description
1146	Oil tank 60L including 1 meter inlet tube
1148	4kW power pack instead of 3kW power pack

### Oil tank 60L



### Power-pack 4kW



## Order references

### TP-O 20t hydraulic swivel-axle suspension

Code	Description
1101	1 axle line, 20 tons per axle line
1102	2 axle lines, 20 tons per axle line
1103	3 axle lines, 20 tons per axle line
1104	4 axle lines, 20 tons per axle line
1105	5 axle lines, 20 tons per axle line

### TP-O 14t hydraulic swivel-axle suspension

Code	Description
1151	1 axle line, 14 tons per axle line
1152	2 axle lines, 14 tons per axle line
1153	3 axle lines, 14 tons per axle line
1154	4 axle lines, 14 tons per axle line
1155	5 axle lines, 14 tons per axle line

### TP-O 12t hydraulic swivel-axle suspension

Code	Description
1181	1 axle line, 12 tons per axle line
1182	2 axle lines, 12 tons per axle line
1183	3 axle lines, 12 tons per axle line
1184	4 axle lines, 12 tons per axle line
1185	5 axle lines, 12 tons per axle line

### TP-O options

Code	Description
1143	Accumulator-set (1x Left, 1x Right)
1146	Oil tank 60L including 1 meter inlet tube
1148	4 kW power pack instead of 3kW power pack
1149	Semi-automatic height control system in combination with compact manual steering (0932)

The information contained in this document gives an indication of the possibilities. Not all exceptional models are included in this document. Please contact our sales department to determine whether a particular configuration of the system can be used in your trailer or that special solutions are possible.

### Sales contact

TRIDEC Transport Industry Development Centre B.V.  
Ekkersrijt 6030, 5692 GA SON – the Netherlands  
Phone: +31 499 49 10 52  
Fax: +31 499 46 00 58  
E-mail: sales@tridec.com