

## Application

### HS for heavy and special transport



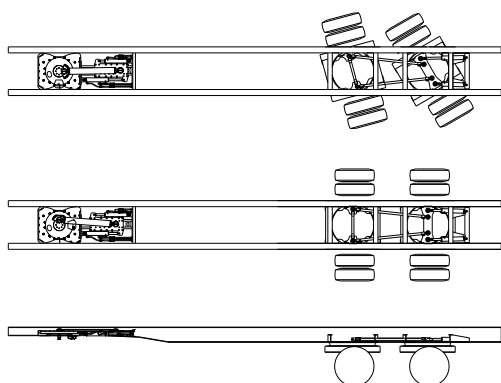
#### HS Hydraulic Steering System

The HS steering arrangement is a hydraulic system which is used primarily in heavy and special transport. This system steers one until maximum four rigid axles by using turntables. Optionally in combination with non-steered rigid axles. A HS steering system can also be used at extendable trailers and self-tracking dollies.

Besides the fact that the HS steering system allows the trailer to meet the turning circle requirements, it provides better manoeuvrability and reduction of tyre wear. The manoeuvrability of the trailer can be enlarged by extending the HS system with TRITRONIC manual steering.

#### Savings on

- Time, through better manoeuvrability
- Fuel consumption
- Tyre wear
- Vehicle maintenance
- Vehicle damage



#### Steering principle

While making a turn, the movement between the truck and trailer is transmitted by the fifth wheel plate, locked into the fifth wheel coupling by the steering wedge.

The movement of the fifth wheel plate activates 2 cylinders in the fifth wheel unit which are connected to 2 cylinders at the axle mounting frame.

In case more than 1 axle is steered the steering motion from the rear axle is transmitted to the other axle(s) with steering rods.

## Technical Specification

### HS for heavy and special transport

#### General

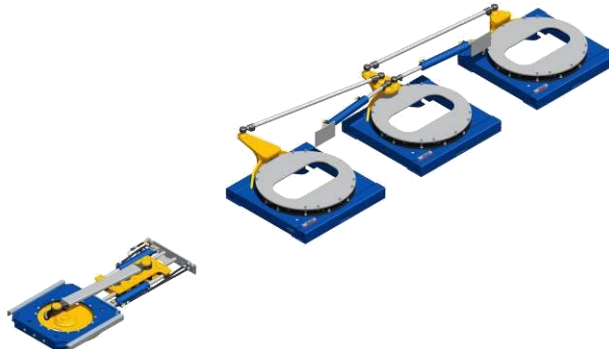
- A HS system enables you to steer 1 to 4 axles on a trailer
- 2 versions available; for 2 beam chassis and for central beam chassis
- RDW test report according EEC guideline (70/311) for most common HS configurations available at request (no. 56210053)
- Special TRIDEC spline bolts used for most bolt connections. No loosening of bolts and re-tightening not necessary
- Gross weight: 760kg (1 axle steered), 1075kg (2 axles steered). Net weight of steering system is reduced due to the replacement of a conventional rubbing plate with the TRIDEC fifth wheel unit and modifications to rear of chassis to accommodate the turntable
- Possible steering angles: up to 45°
- Components: fifth wheel unit, steering rods, axle mounting frame(s), hydraulic control box

#### Technical Specification

Feature	Value
Number of steered axles	1-4
Fifth wheel load	15/20/26.5/30/45t
Axle load	10t
Spring centres	980/1100/1200/1300mm
Chassis centres	980/1200mm (15 en 20t) or 1060mm (26.5t)
Gross weight	Upon 760kg
Steering angles	Up to 45°



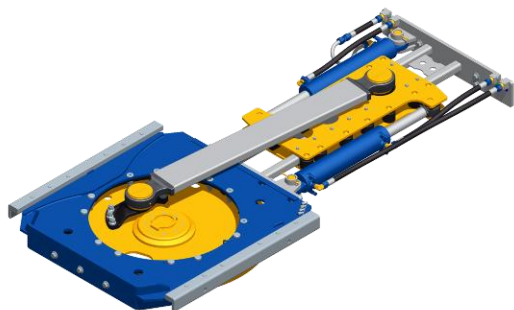
HS 2-beam chassis



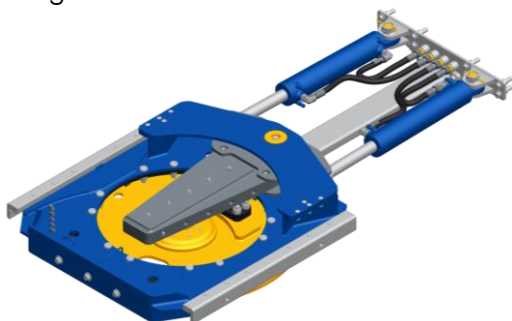
HS central beam chassis

## Components

Linear:



Progressive:



### Fifth wheel unit

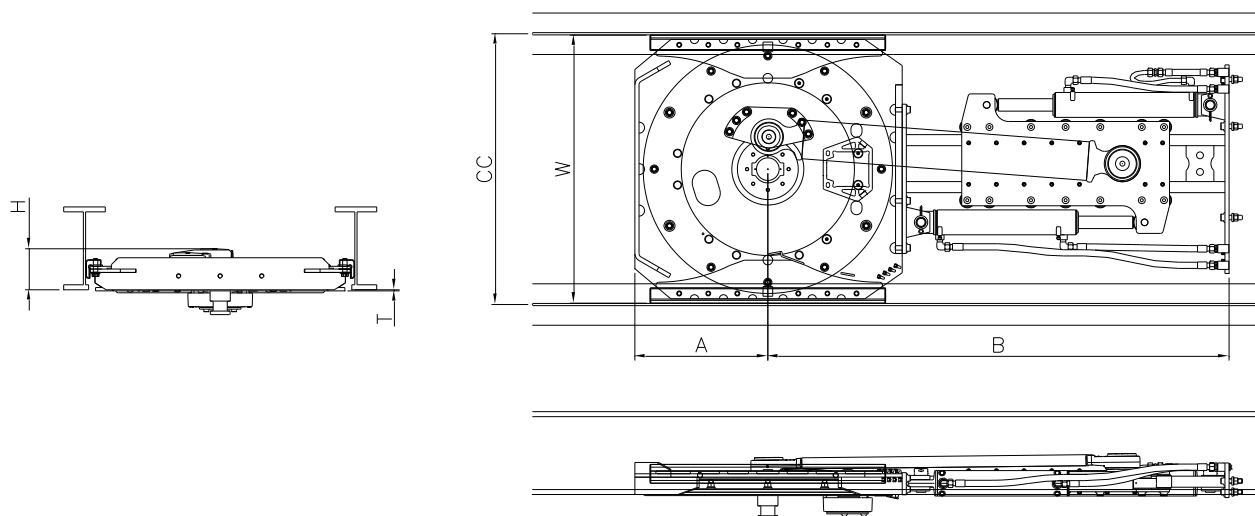
- Bolted into the chassis by supplied mounting profiles, which are welded into the chassis resulting in simple and quick installation (15, 18 and 26.5t). The 30 and 45t versions are mounted directly into the chassis
- Easy maintenance and possible repairs
- Equipped with JOST turntable, 2" king pin (3,5" at 26.5t and more), TRIDEC steering wedge.
- Adjustable steering wedge for non-DIN normed fifth wheels optional available
- Treatment: KTL, piston-rods do have a Nikrom treatment
- Two steering principles possible: linear and progressive
- The progressive version is also available in a special short version

Progressive short:



*Option 1014 adjustable steering wedge*

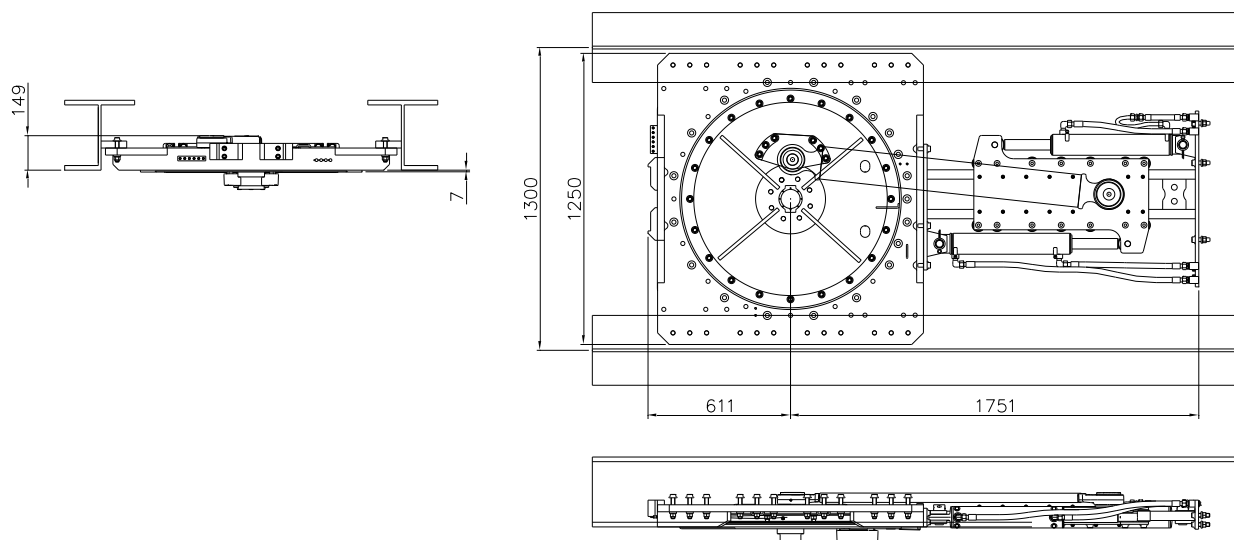
## Fifth wheel unit **Linear**



1017

Max. load (t)	CC (mm)	W (mm)	A (mm)	B (mm)*	H(mm)	T(mm)	Weight (kg)
15	980	970	480	1665	148	4	366
20	980	970	480	1665	148	4	378
15	1200	1190	480	1665	148	4	424
20	1200	1190	480	1665	148	4	440
26.5	1060	1050	520	1710	166	6	434

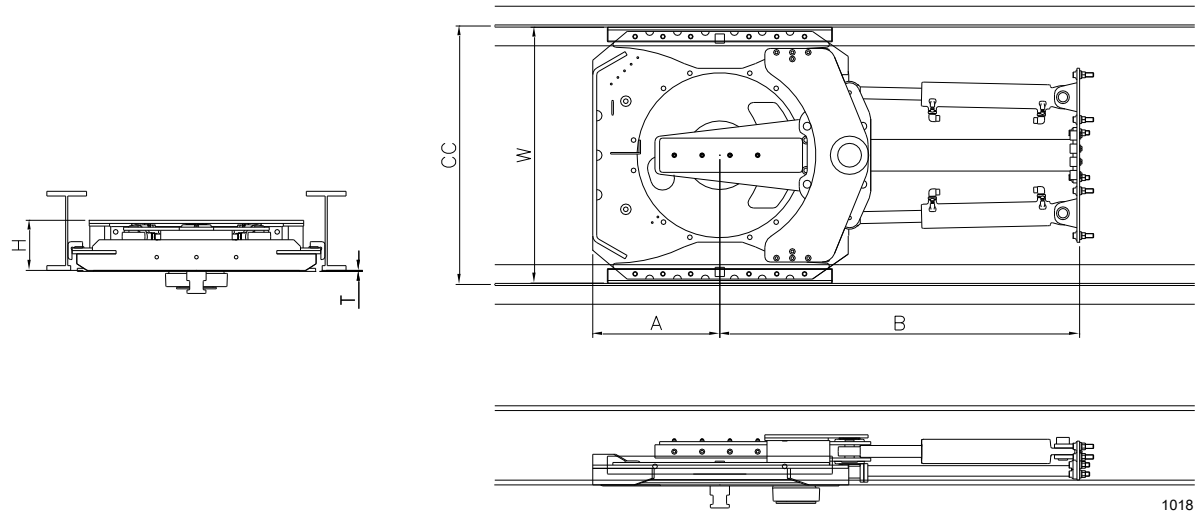
\* HS central beam steering systems are commonly equipped with extra-long cylinders, dimension B becomes 2085mm for 15 and 20t fifth wheel units and 2130mm for 26.5t units.



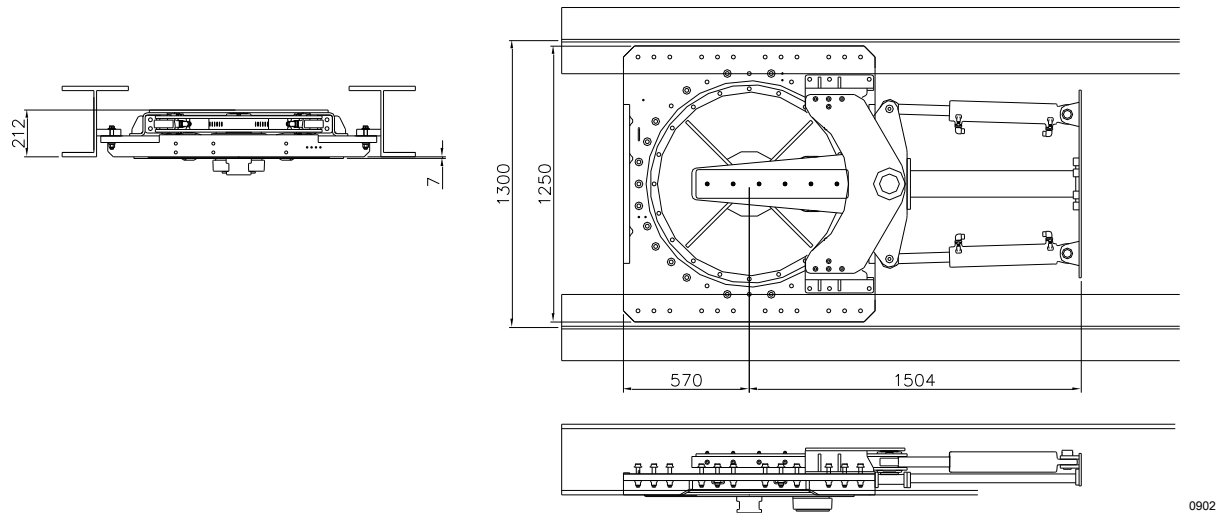
0901

Max. load (t)	Chassis Centre (mm)	Weight (kg)
30	1300	569
45	1300	607

Fifth wheel unit **Progressive**



Max. load (t)	CC (mm)	W (mm)	A (mm)	B (mm)	H(mm)	T(mm)	Weight (kg)
15	980	970	480	1359	190	4	410
20	980	970	480	1359	190	4	422
15	1200	1190	480	1359	190	4	467
20	1200	1190	480	1359	190	4	484
26.5	1060	1050	520	1405	191	6	457



Max. load (t)	Chassis Centre (mm)	Weight (kg)
30	1300	621
45	1300	659



Axle mounting frame for 2-beam chassis

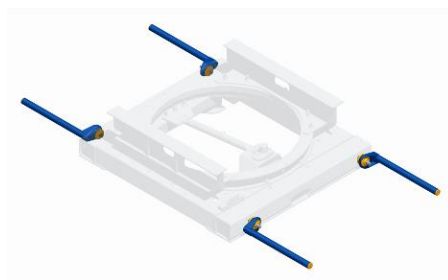


Axle mounting frame for central beam chassis

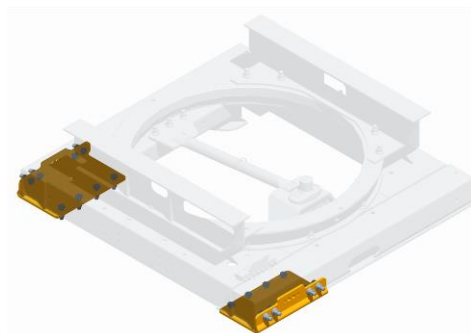
#### Axle mounting frames

- Suitable for use with most common tyre dimensions and axles with air suspension
- Axle load 10t (legally approved)
- Spring centres: 980/1100/1200/1300mm
- The standard mounting frame height is 140mm (optional 30/100mm)
- TRIDEC specific JOST turntable with a diameter of 1100 or 1200mm, 90mm height, KTL treated
- Cross members to support the turntable are included as part of the supplied kit
- Greasing points centralized on one greasing block
- Welding of thrust plates no longer required, due to use of special TRIDEC spline bolts for mounting the turntable on the chassis
- Easy alignment, length of steering rods can easily be adjusted
- Optional mudguard supports (lengths 455/575/770 mm) with vibration reducing rubbers bolted to the turntable frame
- Treatment:
  - Axle mounting frames: KTL (standard). Optional: galvanised, supplied with two hanger bracket mounting plates
  - Steering rods are galvanised, ball joints are KTL treated

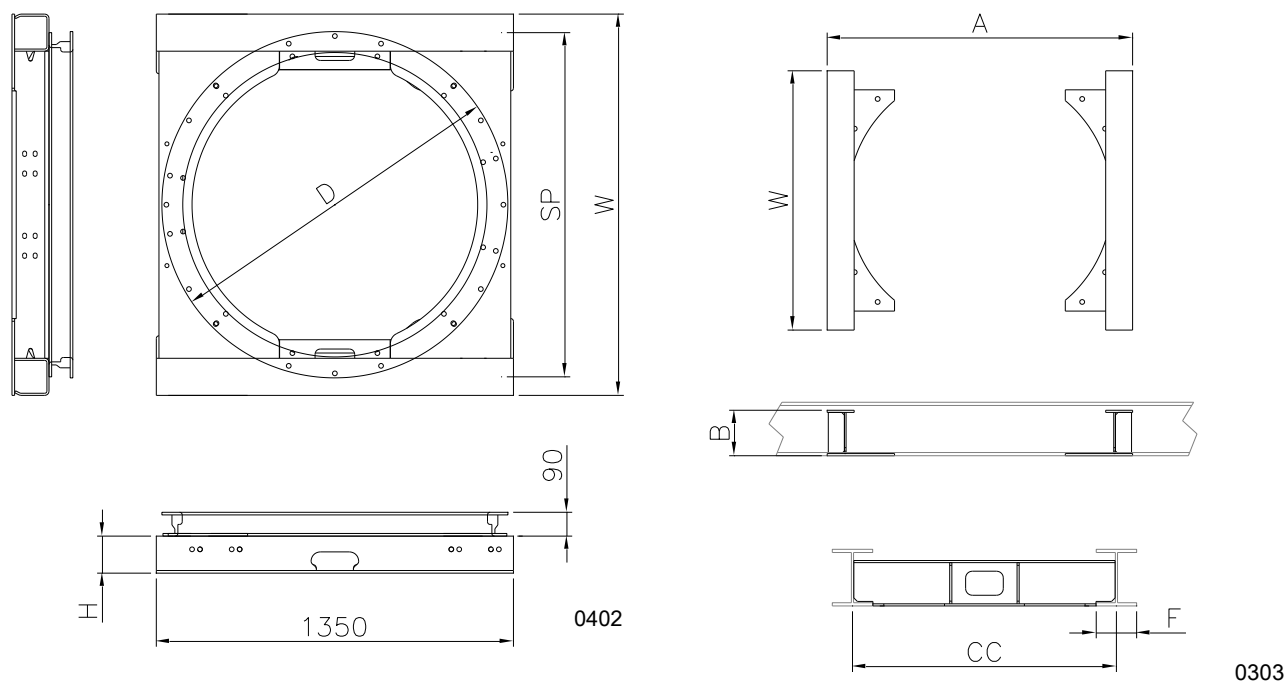
#### Mudguard supports:



#### Hanger bracket mounting plates:



### Axle mounting frame and cross members



### Axle mounting frame

Spring centre SP (mm)	Height H (mm)	Width W (mm)	Turntable D (mm)
900-980	100 /140	1100	Ø 1100
900-980	30	1170	Ø 1100
1100	100 /140	1240	Ø 1100 /1200
1100	30	1250	Ø 1100
1200	30 /100 /140	1340	Ø 1100 /1200
1300	30 /100 /140	1440	Ø 1100 /1200

### Cross members

Chassis centre CC (mm)	Width W (mm)	Height B (mm)	Turntable D (mm)	Flange F (mm)	A (mm)
980	970	140 /170 /230	Ø 1100	150a	1134
1200	1190	140 /170 /230	Ø 1200	150	1236



Control box manual:



#### Hydraulic control unit

Every hydraulic steering system has a standard stainless steel control box, where the following functions and components are combined:

- tank
- relief valves
- steering valves
- pressure sensors
- hand pump
- air bleeders
- low pressure warning light
- filters
- accumulator
- all hydraulic connections are color-coded

TRIDEC also supplies all hydraulic pipes, required oil and an accumulator block

When manual control is required, two options are available:

- TRITRONIC manual control with automatic alignment (see TRITRONIC information)
- Manual steering compact

Control box Compact:

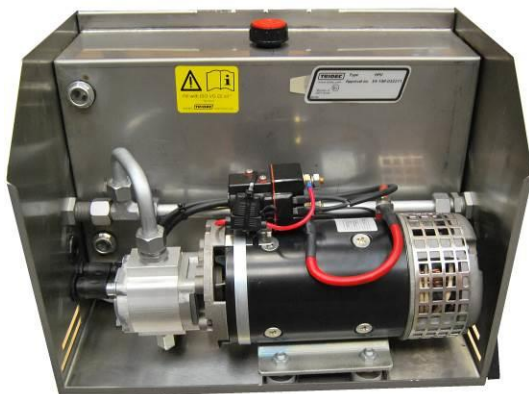


#### Compact manual steering (option 1037)

Choosing this option, the default control box with manual block is replaced by the box as shown left, with an electrically operated block. Additionally a power pack is delivered in a separate control box. The compact manual steering has these specifications:

- 2 identical remote controls with cable: one cabin remote control and one trailer remote control
- All cables are easy to connect with high quality Souriau connectors
- At both controllers alignment indication available
- For use next to the vehicle 2 connectors are available, one inside the control box, one on the outside of the control box
- Sensors for alignment indication are plug & play (delivery includes cables)
- Suitable for 24V only
- EMC and ISO7637 tested, RDW E4 certificate available (E4-R10-032275)
- All components are IP 65 (or higher) classified
- Connection for additional alignment control lights is present, corresponding plug included
- Connection for additional pressure warning light is present, corresponding plug included

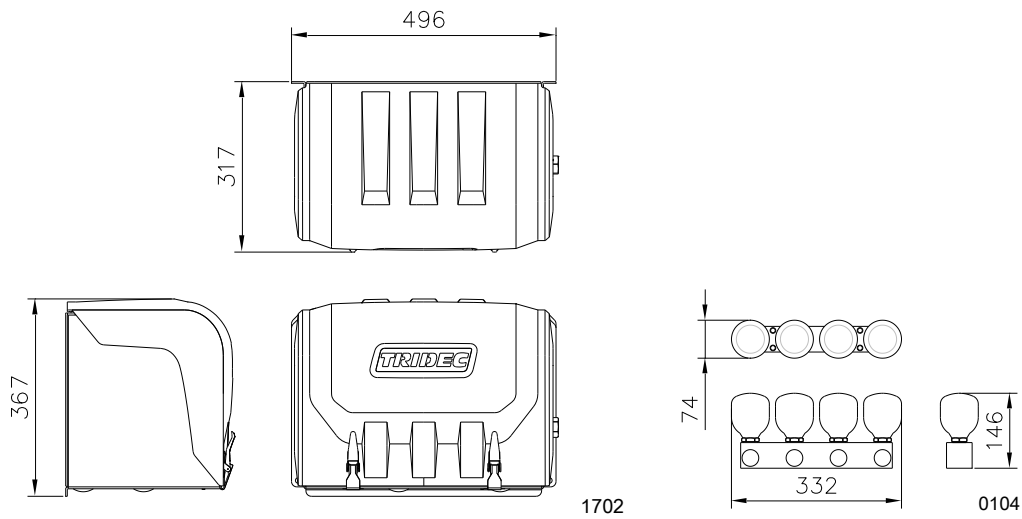
Power pack box:



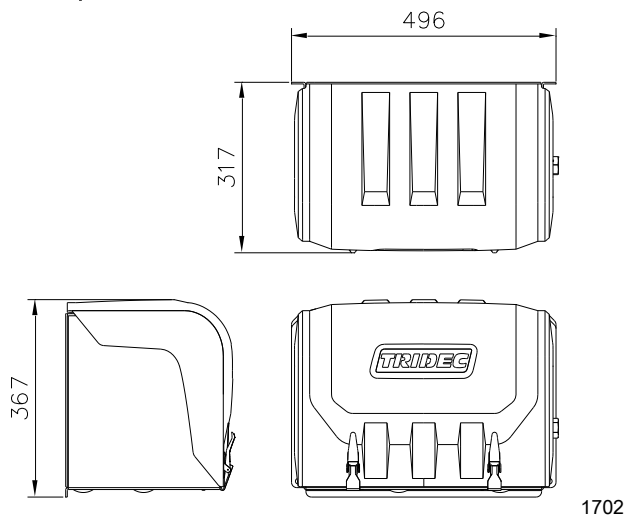




Control box and accumulator block



Power pack box



## Order references

### HS Hydraulic Steering System

Code	Description
1001	HS steering system 1 axle steering, chassis with side members
1002	HS steering system 2 axles steering, chassis with side members
1003	HS steering system 3 axles steering, chassis with side members
1004	HS steering system 4 axles steering, chassis with side members

### HS Options

Code	Description
1022	20 tons fifth wheel unit
1023	26.5 tons fifth wheel unit with 3.5" kingpin
1024	30 tons fifth wheel unit with 3.5" kingpin
1025	45 tons fifth wheel unit, 3.5" kingpin
1026	3,5" instead of 2" kingpin with 15 or 20 tons fifth wheel unit
1027	2" extra kingpin delivered with steering system
1028	3.5" extra kingpin delivered with steering system
1014	Adjustable steering wedge for non-DIN normed fifth wheels
1030	System prepared to mount manual steering in future (different cylinders) No angle sensors are mounted
1032	Axle mounting frame 30mm height instead of standard 140mm
1033	Axle mounting frame 100mm height instead of standard 140mm
1034	Axle mounting frame for 1300mm spring centre
1035	Adjustable mudguard support galvanised (set of 2, L= 455, 575 or 770mm)
1036	Hanger bracket support plate, to bolt to the axle mounting frame (set of 2)
1037	Compact (cable) manual steering (or TRITRONIC manual steering)
1038	Galvanised axle mounting frame with painted turntable and 2 hanger bracket support plates
1048	Fifth wheel unit to bolt in chassis, for tanker chassis
1049	Multifaster + pressure release
1050	30 litre oil tank instead of standard 14 litre oil tank in power pack
1051	Energy chain width (153 mm) mounted with four hydraulic hoses, first and last meter (only complete meters)
1052	Every extra metre (only complete metres)

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

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