

Application

HF-E for heavy duty and special transport



HF-E Hydraulic Steering System

The HF-E steering arrangement is a hydraulic system which is used primarily for heavy duty or special transports.

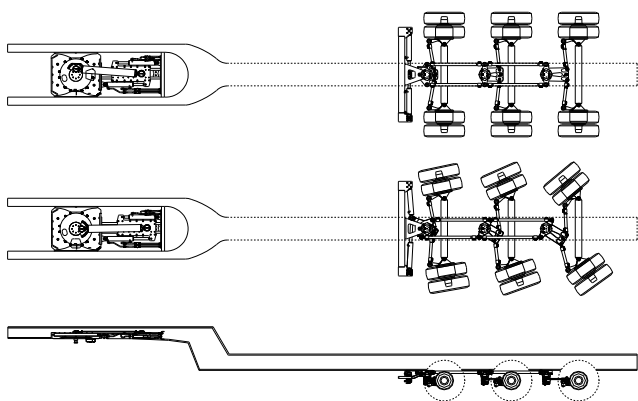
Common applications of the HF-E steering system are (semi) low loaders, where the loading deck height is critical and the trailers can be extended. The HF-E steering system steers 1 up to 7 steered axles with the option to counter steer the first axle(s).

Besides the fact that the HF-E 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 HF-E system with TRITRONIC manual steering.

Savings on

- 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 axles of the trailer. These cylinders steer, using steering rods, the individual axle units, which are connected with track rods to the steering lever of the axles.

Technical Specification

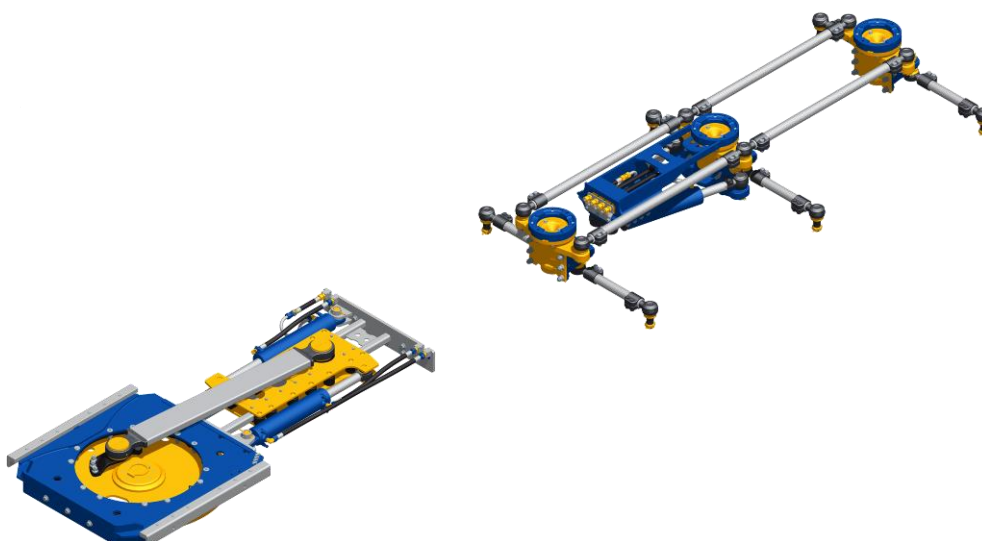
HF- E for heavy duty and special transport

General

- A HF-E system enables you to steer 1-7 axles on a trailer
- Suitable for most forced steered axles. Axles with a shock absorber behind the axle are easiest to apply. Also a wide track and the widest possible spring centre facilitate easier application of the HF-E system
- RDW test report according EEC guideline (70/311) for most common (max. 5 steered axles) HF-E configurations available at request (no. 56210054 and 56210125)
- Special TRIDEC spline bolts used for most bolt connections. No loosening of bolts and re-tightening not necessary
- Gross weight: 585kg (1 axle steered), 700kg (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
- Possible steering angles: up to 45°. Axles are the limiting factor
- Components: fifth wheel unit (linear/progressive), steering- and track rods, axle units, hydraulic control box

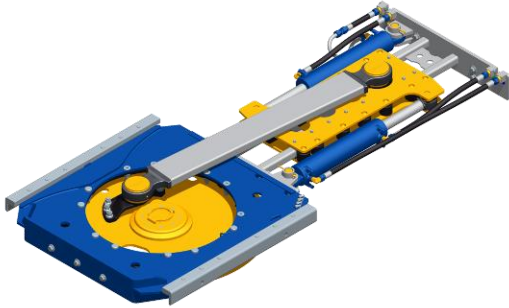
Technical Specification

Feature	Value
Number of steered axles	1/2/3/4/5/6/7
Fifth wheel load	15/20/26.5/30/45t
Axle load	12t
Axle spread	upon 1310 (depending on steering angle)
Chassis centres in the neck	980/1200mm (15 and 20t), 1060mm (26.5t), 1300mm (30 en 45t)
Gross weight	upon 585kg
Steering angles	up to 45°

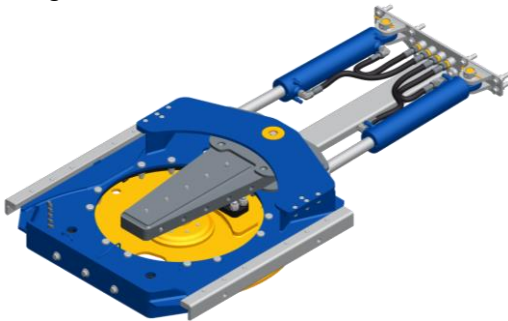


Components

Linear:



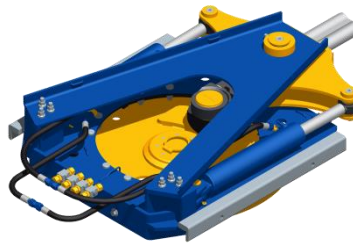
Progressive:



Fifth wheel unit

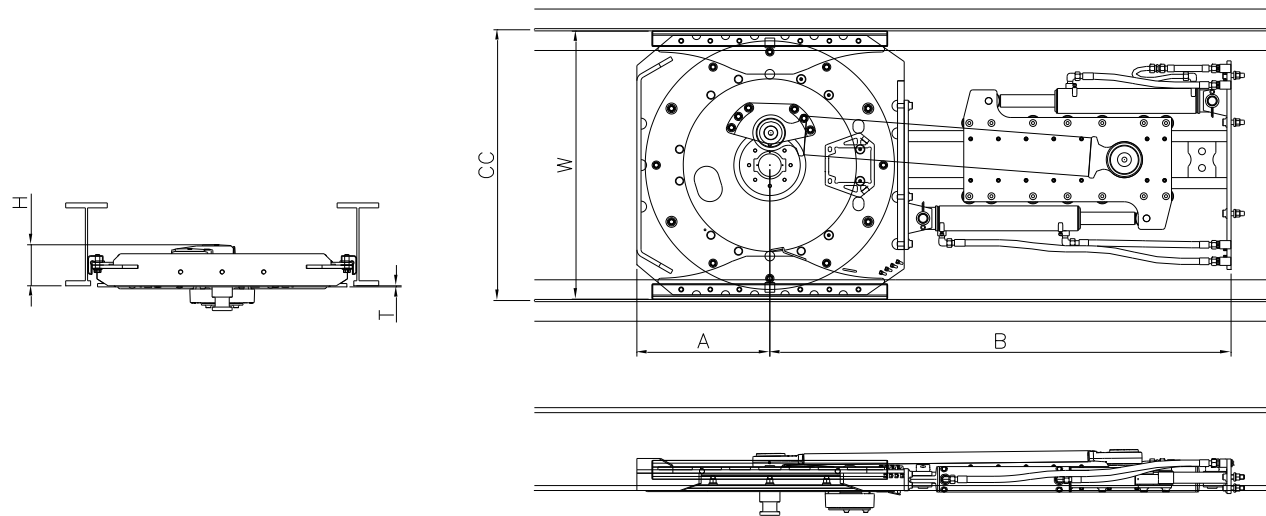
- Bolted into the chassis by supplied mounting profiles, which are welded into the chassis resulting in simple and quick installation (15, 20 and 26.5t). The 30 and 45t versions are mounted directly into the chassis
- Easy maintenance and possible repairs.
- Equipped with JOST turntable, 2" king pin (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:



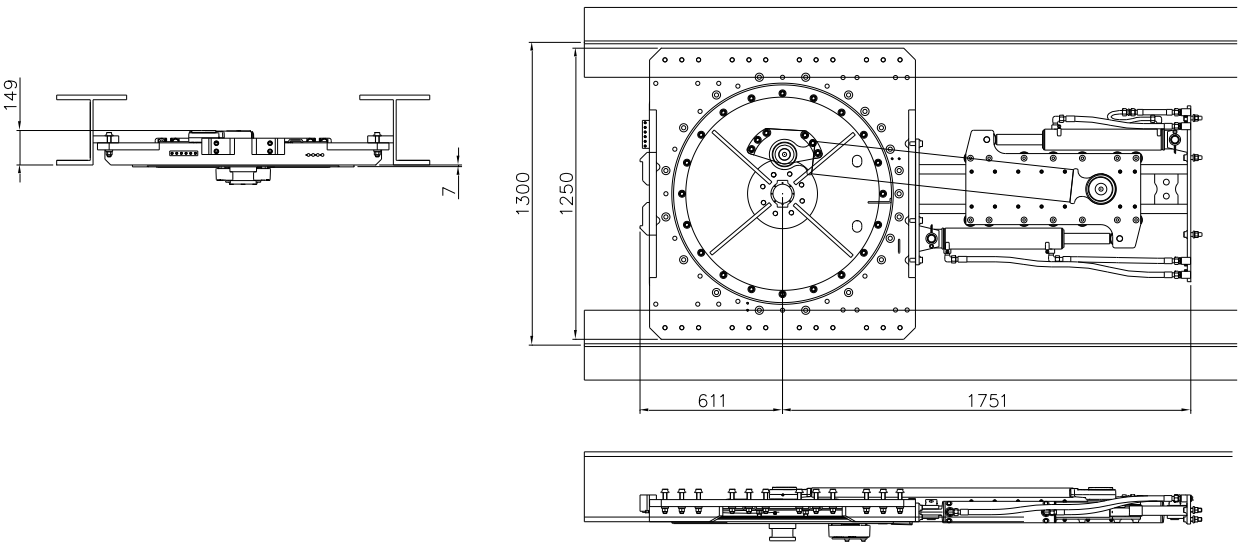
Option 0934 adjustable steering wedge

Fifth wheel unit **Linear**



1017

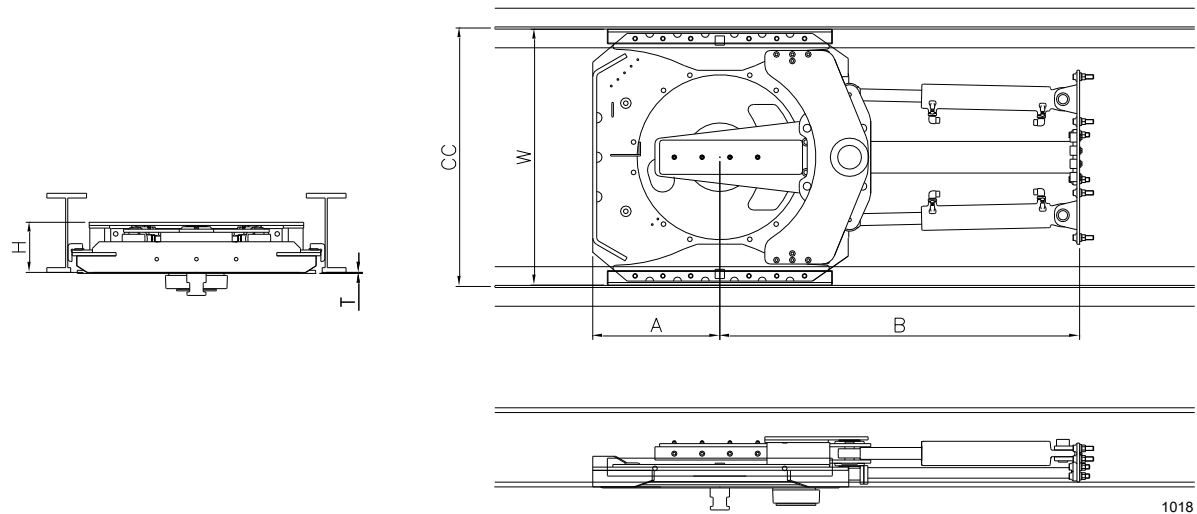
Max. load (t)	CC (mm)	W (mm)	A (mm)	B (mm)	H(mm)	T(mm)	Weight (kg)
15	980	970	480	1665	148	4	366
20	980	970	480	1665	148	4	378
15	1200	1190	480	1665	148	4	424
20	1200	1190	480	1665	148	4	440
26.5	1060	1050	520	1710	166	6	434



0901

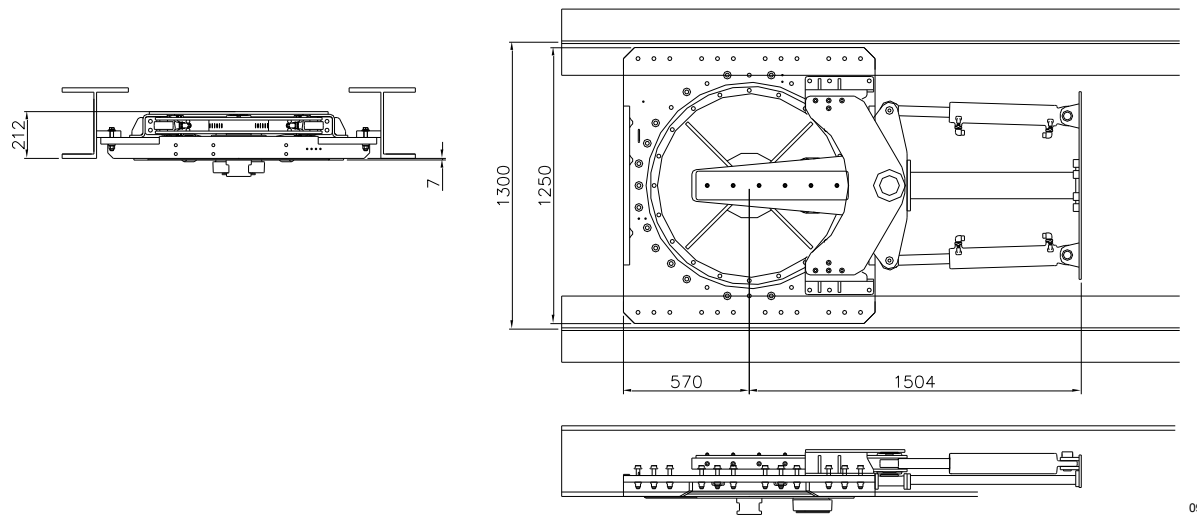
Max. load (t)	Chassis Centre (mm)	Weight (kg)
30	1300	569
45	1300	607

Fifth wheel unit **Progressive**



1018

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



0902

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

Longitudinal placed cylinders:



Cross placed cylinders:



Axle- and cylinder-units

- Available in 2 versions:
 - standard
 - heavy duty
- Application of heavy-duty version:
 - higher axle loads
 - in extreme circumstances
- Axle- and cylinder-units are attached in or under the chassis with supplied mounting rings and brackets
- Bolt connection ensures quick and easy installation
- 2 types available:
 - Longitudinal placed cylinder unit for steering, 1, 2 or 3 axles. Cross placed cylinder unit for steering 4 axles or more
- Lubricating not necessary by usage of sealed joints (at standard version) and maintenance free ball joints
- Easy alignment, length of the steering rods easily adjustable
- Treatment:
 - steering rods are galvanised
 - axle units, cylinder unit and ball joints are KTL treated
 - piston rods have a Nikrom treatment

Option 0982

extra axle-unit and steering rods in case it is not possible to steer the axle from the cylinder-unit



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:

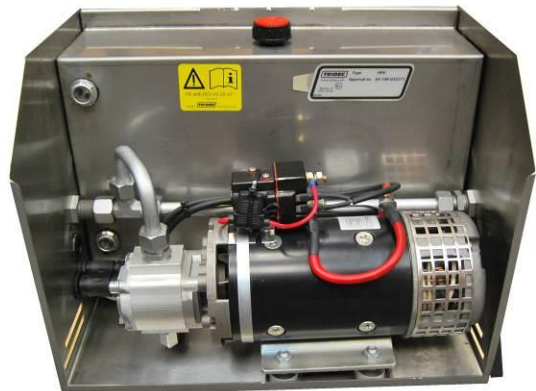


Compact manual steering (option 0832)

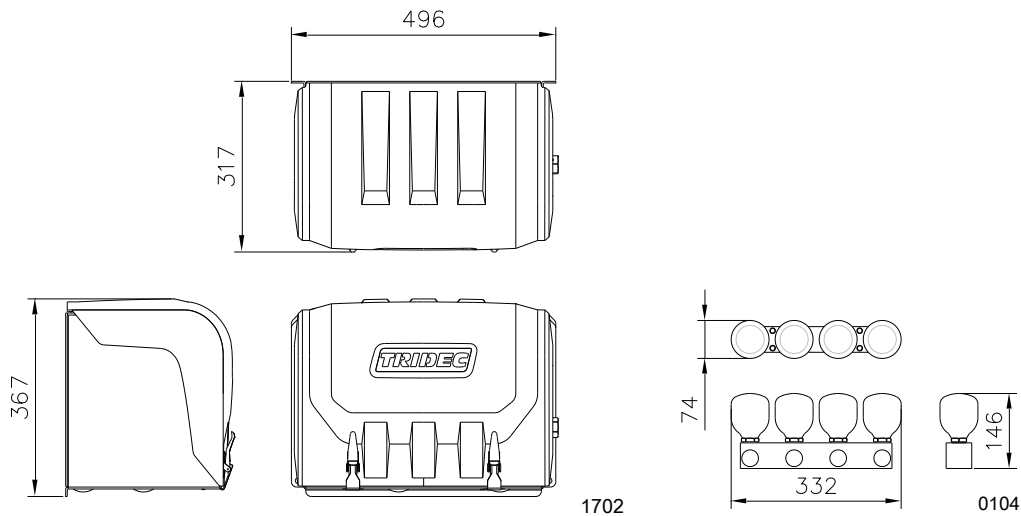
Choosing this option, the default control box with manual block is replaced by the box as shown left, with an electrically operated block. Additionally a power pack is delivered in a separate control box. The compact manual steering has these specifications:

- 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

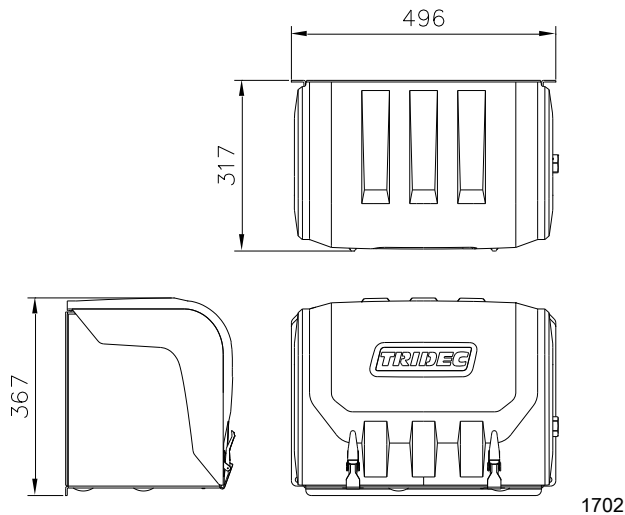
Power pack box:



Control box and accumulator block



Power pack box



Order references

HF-E Hydraulic Steering System

Code	Description
0901	HF-E steering system 1 axle steering
0902	HF-E steering system 2 axles steering
0903	HF-E steering system 3 axles steering
0904	HF-E steering system 4 axles steering
0905	HF-E steering system 5 axles steering
0906	HF-E steering system 6 axles steering
0907	HF-E steering system 7 axles steering

HF-E Options

Code	Description
0922	20 tons fifth wheel unit
0923	26.5 tons fifth wheel unit with 3.5" kingpin
0924	30 tons fifth wheel unit with 3.5" kingpin
0925	45 tons fifth wheel unit, 3.5" kingpin
0926	3.5" instead of 2" kingpin with 15 or 20 tons fifth wheel unit
0927	2" extra kingpin delivered with steering system
0928	3.5" extra kingpin delivered with steering system
0932	Compact (cable) manual steering (or TRITRONIC manual steering)
0934	Adjustable steering wedge for non-DIN normed fifth wheels
0942	Multifaster
0945	30 litre oil tank instead of standard 14 litre oil tank in power pack
0946	Energy chain width (153 mm) mounted with four hydraulic hoses, first and last meter (only complete meters)
0947	Every extra metre (only complete metres)
0948	4 kW power pack instead of 3kW power pack
0982	Extra axle unit and steering rods in case it's not possible to steer the axle from the cylinder unit.

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.

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