



# PRODUCT CATALOGUE

ORIGINAL SPARE PARTS

Edition 2020

Order no. 8 018 1020 00

Failsafe, true to size, and perfectly adjusted to the relevant component or the complete system, so that you can rely 100 % on **SAF-HOLLAND ORIGINAL PARTS** – whatever the application, whatever the circumstances, and all over the world. This means you can be certain of always being able to carry out your transportation orders reliably and highly efficiently, because in addition to their uncompromising quality, **SAF-HOLLAND ORIGINAL PARTS** have the following advantages to offer:

### 1. WE DELIVER FAST – OFTEN EVEN WITHIN 24 HOURS

Time is money, and machine downtime costs you money, so we maintain a sophisticated logistics system for parts and can thus react quickly if required. You can obtain **SAF-HOLLAND ORIGINAL PARTS** either through our dense global network of more than 9000 competent dealerships and service partners, or directly from one of our own central backup warehouses. So that you can get back on the move again as quickly as possible — often within 24 hours.

### 2. YOU WILL GET PRACTICALLY EVERYTHING – EX WAREHOUSE

If servicing or repairs are needed, we are at your immediate disposal: Because we have been dealing with the demands of spare part dealers, garages and fleet customers for decades, we are well-placed to be able to cater for them in day-to-day operations. The solid basis for this is the unusually wide and extensive range of **SAF-HOLLAND ORIGINAL PARTS** we offer – and our country organizations throughout Europe always keep stocks of the most important parts. Efficiency from A-Z — on standby ex warehouse.

### 3. CONTINUOUSLY AVAILABLE – FOR YEARS

Longevity and ease of servicing are just two of the outstanding performance features of our components and systems. They are thus often in use in trucks and trailers for many years without any problems, not least because of the key contribution made by **SAF-HOLLAND ORIGINAL PARTS** towards ensuring their reliability and maintaining their value. This contribution alone is reason enough for us to ensure that you can obtain exactly the part you need at any time — for years.

### 4. YOU CAN BE CERTAIN THAT YOU ARE GETTING EXACTLY THE PART THAT YOU NEED

It is not only in the development and production of our products that we have always seen ourselves as pioneers. In supplying spare parts, too, we always look for our own, even better solution. Consequently, you will already find a QR-code on many of our components and systems – your electronic key to an immediate overview of all the relevant **SAF-HOLLAND ORIGINAL PARTS**. With it you can unequivocally establish at any time exactly which part you really need. This is not only particularly convenient and practical, but above all 100 % certain.

### 5. COMPETENCE AND SERVICE – HAND IN HAND

We see ourselves not only as a supplier of highly efficient parts and systems: more than anything else, we are also your guarantee of a continuous and certain supply of spare parts. Accordingly, we are constantly monitoring our standards, and we maintain direct contact with our trade and workshop partners and with our fleet customers. This allows us to put our production quality and the speed and reliability of our logistics to the test again and again, enabling us to improve the **SAF-HOLLAND ORIGINAL PARTS** service systematically — hand in hand with our customers and suppliers.

### 6. WE ARE THERE FOR YOU – WITH ADVICE AND ASSISTANCE AT THE READY

“The whole is more than the sum of all the parts”, as they say – and that is why for us, supplying spare parts means far more than simply providing them. For us, it also means service and commitment, and we offer practical support as a matter of course – whether it’s a question of giving you personal advice or the practical solution to a problem. Whenever you need **SAF-HOLLAND ORIGINAL PARTS**, we are the crucial “part”, because we will always be there for you – committed, professional and reliable, with advice and assistance at the ready.

**WITH THE QUALITY OF THE ORIGINAL:  
SAVE TIME AND MONEY – AND GAIN CERTAINTY FOR  
PLANNING AND IMPLEMENTATION!**

# FIFTH WHEEL SECTION GUIDE



6 t

- light distribution traffic
- mid-sized carrier class
- recreational vehicles up to 7.5 t



14/15 t

- Flexible distribution traffic
- Volume carrier
- Two-axle tractor



20 t

- Standard long-distance haulage
- Silo/tank/volume transport
- Two- and three-axle tractors



36 t

- HGV traffic
- Traffic in difficult terrain

## GC 6



Imposed load: 6000 kg  
D-value: 49 kN  
Overall height: 120 mm

Page 24

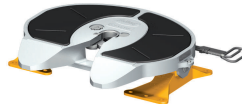
## FW3214-W



Imposed load: 14000 kg  
D-value: 104 kN  
Overall heights: 165, 190, 225 mm

Page 28

## FWAL-E



Imposed load: 20000 kg  
D-value: 150 kN  
Overall heights: 167, 197, 219 mm

Page 69

## SK-HD 38.36



Lock size: 2"/3,5"  
Imposed load: 23000 kg (2")  
Load: 36000 kg (3,5")  
D-value: 162/260 kN  
Overall heights: 150, 190 mm

Page 88

## SK-S 36.20 H



Imposed load: 15000 kg  
D-value: 110 kN  
Overall heights: 167 mm  
Lift heights: 100, 150, 200 mm

Page 81

## SK-S 36.20



Imposed load: 20000 kg  
D-value: 152 kN  
Overall heights: 128, 150, 185, 225, 250 mm

Page 32

## SK-HD 38.36 G



Fifth wheel for off-road use with gimbal mounting  
Lock size: 2"/3,5"  
Imposed load: 23000 kg (2")  
Load: 36000 kg (3,5")  
D-value: 162/260 kN  
Overall heights: 290 mm

Page 92

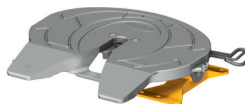
## SK-S 36.20W



Imposed load: 20000 kg  
D-value: 152 kN  
Overall heights: 128, 150, 185, 225, 250 mm

Page 38

## FW3510



Imposed load: 23000 kg  
D-value: 175 kN  
Overall heights: 150, 180, 200 mm

Page 64

# FIFTH WHEEL SECTION GUIDE



45 – 75 t

- Extremely heavy goods transports and special transports



Terminal

- For transport with terminal tractor units



Harbour

- Special model for harbor applications

## FW0100



Imposed load: 45000 kg  
 D-value: 165/170 kN (2")  
 240 kN (3,5")  
 Overall heights: 230, 270 mm

Page 96

## FW3510-TR



Imposed load: 36000 kg  
 23000 kg\*  
 D-value: 175 kN  
 \* (when used in highway traffic)

Page 104

## FW0E70-T



Imposed load: 45000 kg  
 D-value: 165 kN (2")  
 250 kN (3,5")

Page 108

## FW0165



Imposed load: 74000 kg  
 D-value: 165/170 kN (2")  
 240 kN (3,5")  
 Overall heights: 230, 270 mm

Page 100

## Kingpin



D-value 2"	50S15	165 kN
D-value 2"	50S18	165 kN
D-value 3,5"	90S15	165 kN
D-value 3,5"	90S18	320 kN

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### Technical Data

The load data specified only applies to operation on paved roads and to transport conditions usual in Central Europe. Please contact us regarding operating conditions which deviate from these. We reserve the right to modify dimensions or design if required. No responsibility is taken for the correctness of the details provided, these are solely intended for technical information.

# ORDER INFORMATION FOR PRODUCTS AND SPARE PARTS

## GENERAL REMARKS

As per the following catalogue you will find the types of fifth wheels available:

1. Choose the type of fifth wheel to fit your requirements and conditions of use.
2. Depending on the model various versions and additional options are available. They can be combined.
3. The required overall height is defined by the height of the mounting brackets and the mounting plates.
4. The fifth wheel can be mounted with a mounting plate on the vehicle frame. Undrilled or already to OEM specific wish predrilled mounting plates are available. Please indicate the type of vehicle when ordering.
5. Alternative solutions are either the weight saving direct mounting or the flexible assembly on a slider.
6. Pre-assembled mounting kits contain all necessary mounting accessories.

Please take note of the ordering information on the product and spare part pages.

## ASSEMBLY AND MOUNTING

When mounting the fifth wheels the SAF-HOLLAND instructions, the assembly instructions of the vehicle manufacturers as well as the respective valid legal regulations are to be followed.

- Please take note of the required locking torque for bolts.
- Self-locking micro-encapsulated bolts are to be exchanged after use.

## OPERATING AND MAINTENANC

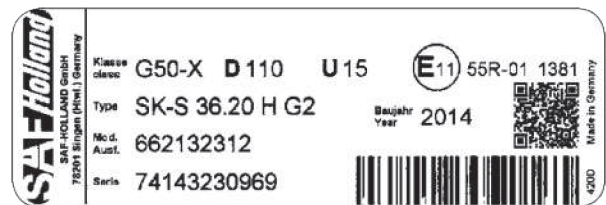
The correct operating, maintenance and care prolong the life span of the fifth wheel significantly. Please take note of the operating and maintenance information in your operating manual. Mounting, operating and maintenance instructions are available in PDF format on our homepage [www.safholland.com](http://www.safholland.com).

## SPARE PARTS IN ORIGINAL QUALITY

Products from HOLLAND and SAF stand out due to their high maintainability. The few moving wearing parts can easily and quickly be exchanged. We recommend the use of original SAF-HOLLAND spare parts which are available in pre-assembled repair kits for wear ring, locking mechanism and bearings. The suitable spare parts for your model are to be found directly after the product page. The spare parts for the phased out range is in a separate chapter. The exploded drawing will help you to locate quickly the part to be exchanged. In the column Disp. indicates the shopping cart icon whether this part can be ordered separately. Repair kits for the standard version SK-S 36.20 are compatible to the versions direct mounting D and mounting angles V as well as the phased out models SK-S 36.20. Repair kits for low maintenance models are also compatible to each other.

## TYPE PLATE

Please always indicate the serial number of your fifth wheel when placing your spare part order, it is located on the manufacturer's plate and laterally engraved at the platemark.



## ENQUIRIES AND ORDERS

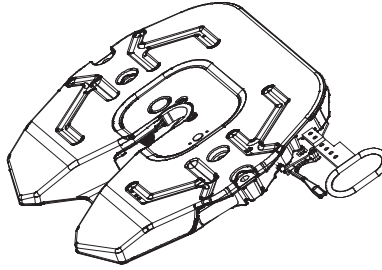
SAF-HOLLAND with its worldwide distribution network will supply you reliably and quickly with products and spare parts. Please contact your nearest SAF-HOLLAND retailer for commercial vehicles, representatives or subsidiary. A list of our international representatives and foreign distributors can be found under:

[www.safholland.com](http://www.safholland.com).

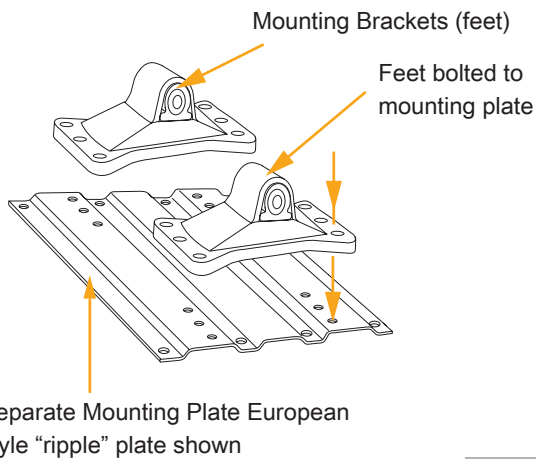
# FIXED FIFTH WHEELS AND MOUNTING

## Top Plate Assembly

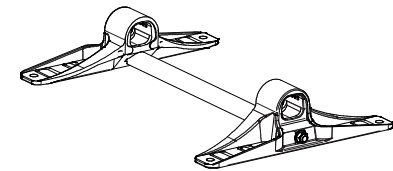
SK-S 36.20  
SK-HD 38.36  
etc.



### Conventional ISO Mounting



### Alternative ISO Direct Mounting

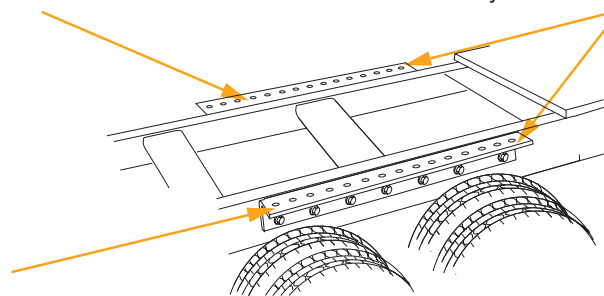


Bracket is bolted directly to L-profile eliminating mounting plate

## Truck Chassis

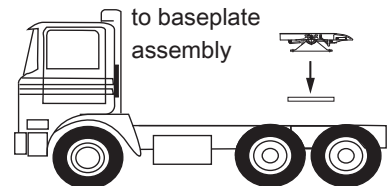
Mounting plate sits directly onto flitch plates and is bolted to them

Standard "L" profile mounting angles (flitch plates) normally fitted on the truck by the truck manufacturer



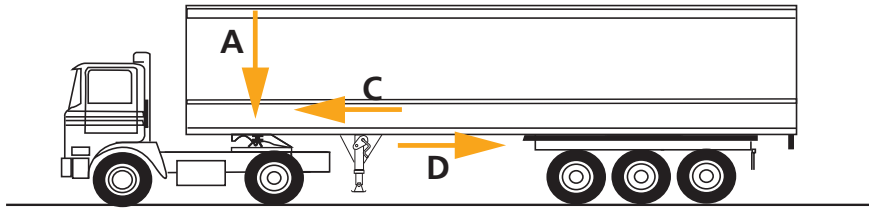
It is common for the holes used for attachment of the baseplate to be pre-drilled in the mounting angles by the truck manufacturer but hole sizes and pitch centres vary with different manufacturers

Fifth wheel bolted to baseplate assembly



## WHAT DOES IT DO?

In conjunction with the kingpin fitted to the trailer its main function is to connect the truck (tractor unit) with the semi-trailer.

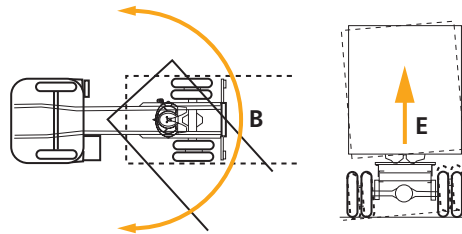


In doing so it must:

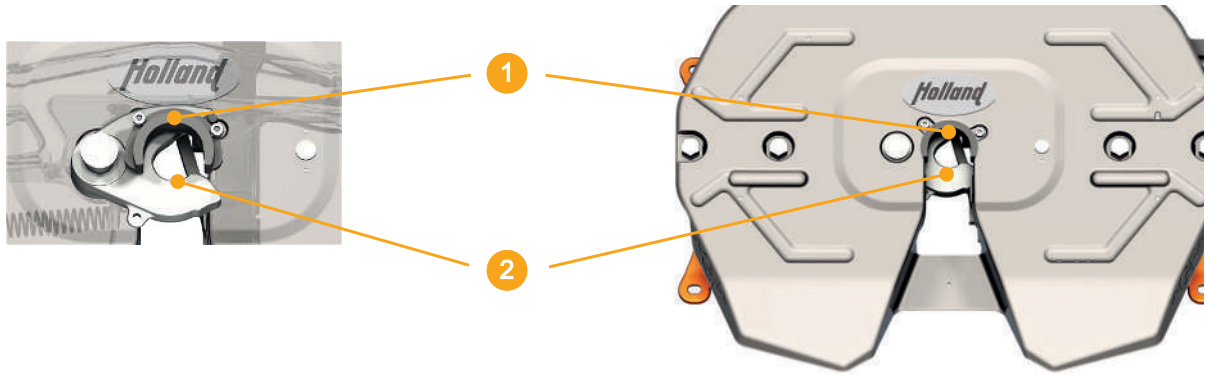
- Support the weight of the trailer imposed on it (A)
- Allow the trailer to articulate (trailer pivots relative to tractor on inclines)

Resist the forces of:

- the trailer pushing forward e.g. under braking (C)
- the trailer “pulling back” on it e.g. starting off / accelerating (D)
- the trailer trying to lift off e.g. when cornering due to roll (E)

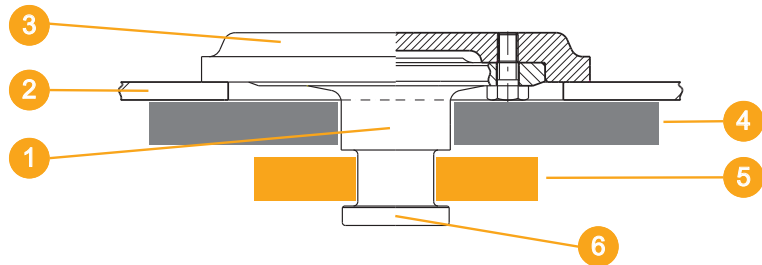


Large flat surface spreads load, supports weight and allows rotation of trailer through contact with trailer skidplate A) and (B)



- 1 Wear Ring Contact Area Resists "Push" (C)
- 2 Coupler Jaw Contact Area Resists "Pull" (D)

To allow free and easy rotation and reduce wear, lubrication is required on the top surface. This is normally grease, note the grease grooves in the top plate to help to retain and distribute the grease.



- |                          |  |
|--------------------------|--|
| 1 Kingpin                | 4 Fifth Wheel Top Plate                |
| 2 Kingpin Mounting Plate | 5 Fifth Wheel Locks Around Kingpin     |
| 3 Trailer Skidplate      | 6 Flange On Kingpin Resists "Lift" (E) |



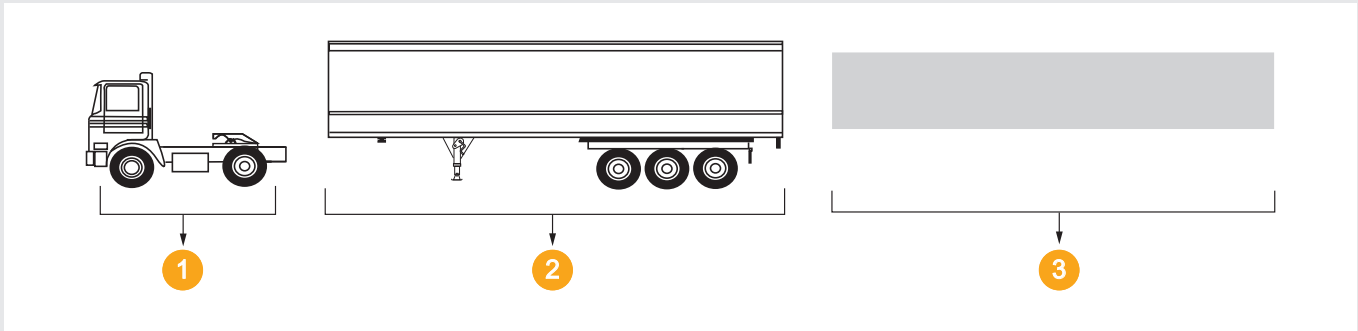
## FIFTH WHEEL RATINGS AND CAPACITIES

All Fifth Wheel couplings will have ratings and capacities which are normally given as:

**Vertical (or Imposed) Load** acting directly on the fifth wheel through the trailer skidplate. There is no vertical load applied through the kingpin.

**D-value** which is defined as the theoretical reference force for the horizontal force between the towing vehicle and trailer.

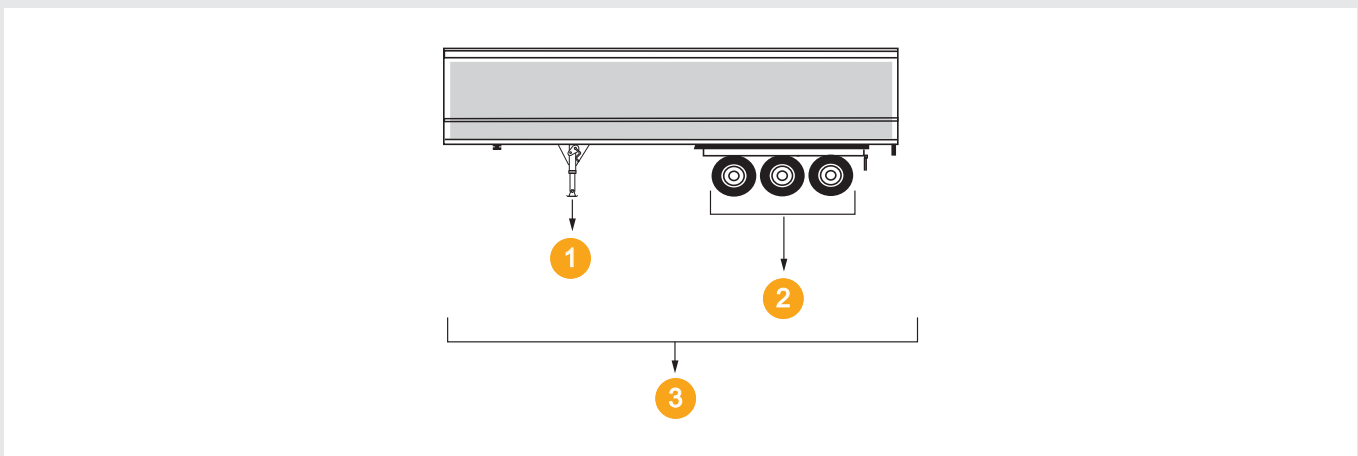
**Gross Combination Weight (GCW)** is the total weight of the tractor unit, trailer and load added together – used only in certain countries as reference. The longitudinal force exerted between the fifth wheel locks and the kingpin. For this reason kingpins also have a D-value rating.



- 1 Weight of tractor 7 tonnes
- 2 Trailer Weight 7 tonnes
- 3 Weight of Load 24 tonnes

With the trailer loaded and supported on its landing legs the load (weight) is distributed between the axle-bogie and the landing legs.

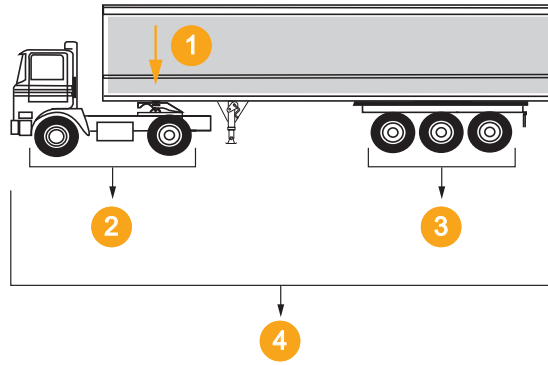
When the trailer is coupled to the tractor unit the load (weight) is distributed between the axles and the fifth wheel.



- 1 Landing Legs 15 tonnes
- 2 Axle-Bogie 16 tonnes
- 3 Total Weight of Trailer and Load 31 tonnes

The weight distribution is different because of the relative positions of the landing legs and kingpin.

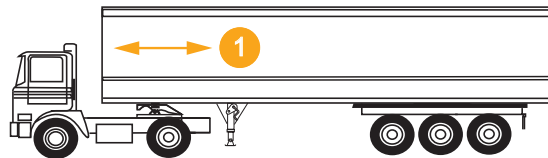
\* The tractor unit weight now includes the 9 tonnes vertical load.



- 1 Vertical Load 9 tonnes
- 2 Tractor\* 16 tonnes

- 3 Bogie 22 tonnes
- 4 Gross Combination Weight 38 tonnes

D-value – a calculation of the forces between the fifth wheel and kingpin when pulling the trailer which are higher during acceleration and braking.



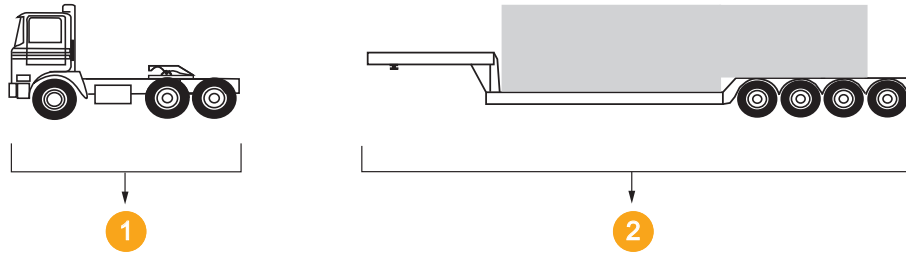
- 1 D-value

To be correct for the application a fifth wheel must have the appropriate Vertical Load and D-value.

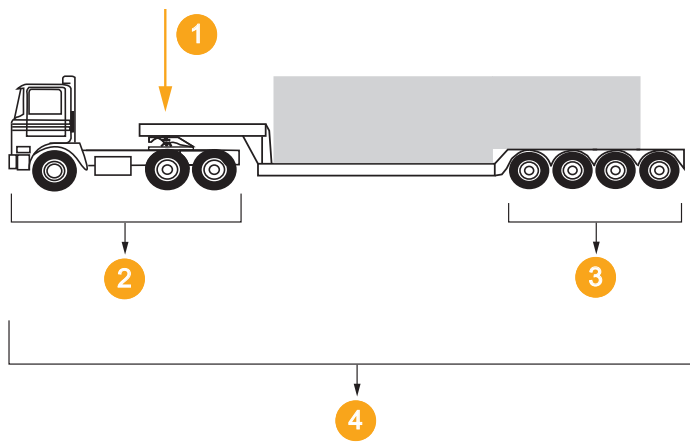
**Vertical Load imposed by fully loaded trailer must be at or below fifth wheel rating. D-value of fully laden combination must be at or below fifth wheel rating.**

It is not possible to balance one figure against another.

## WEIGHT DISTRIBUTION FOR A TYPICAL HEAVY DUTY COMBINATION



- 1 Weight of Tractor 9 tonnes
- 2 Total Weight of Trailer and Load 71 tonnes



- |                                |                                      |
|--------------------------------|--------------------------------------|
| 1 Vertical Load 21 tonnes      | 3 Weight on Bogie 50 tonnes          |
| 2 Weight of tractor* 30 tonnes | 4 Gross Combination Weight 80 tonnes |

\* The tractor unit weight now includes the 21 tonnes vertical load

### NOTES SPECIFIC TO HEAVY DUTY FIFTH WHEELS:

80 tonnes GCW is the maximum GCW at which a 2" kingpin should be used, generally the D-value limitation will take care of this (see above example), however, we should always work to this limitation — **max. GCW on a 2" kingpin is 80 tonnes** — even if the D-value calculation would allow a higher GCW.

## D-VALUE CALCULATION

### GENERAL INFORMATION

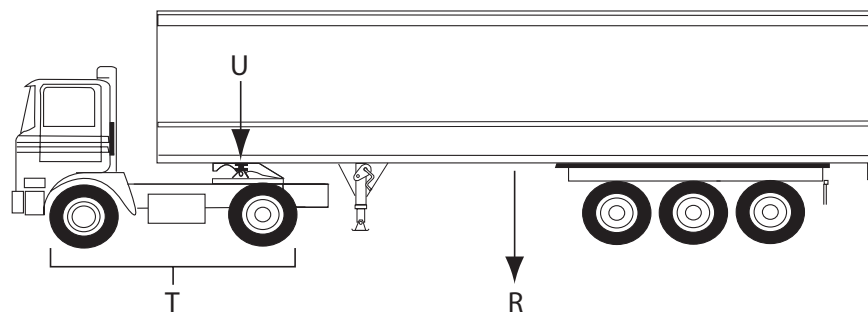
All fifth wheels and kingpins, tested and approved under 94/20/EG and ECE-R55 regulations are given a D-value rating as an indication of the maximum horizontal force permitted between the towing vehicle and trailer.

In order to confirm the suitability of a particular fifth wheel or kingpin for a given tractor/trailer combination it is necessary to carry out a D-value calculation.

### FORMULA

The D-value formula for a tractor and semi-trailer combination is as follows:

$$D = g \times \frac{0,6 \times T \times R}{T + R - U} \text{ (kN)}$$



U Vertical load on the fifth wheel

T Weight of towing vehicle including the vertical load on the fifth wheel

R Total weight of the loaded semi-trailer

g Acceleration due to gravity (assumed to be 9.81 m/s<sup>2</sup>)

### DEFINITION

The “D-value” is defined as the theoretical reference force for the horizontal force between towing vehicle and trailer.

The D-value is taken as the basis for horizontal loads in the dynamic tests for all automatic coupling devices between a towing vehicle and trailer.

### EXAMPLE CALCULATION

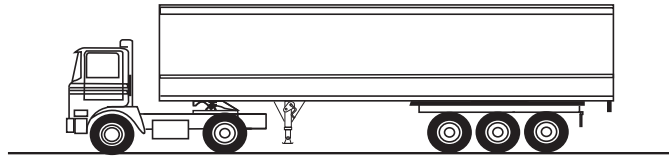
T = 17 (Tractor weight 7 t plus vertical load 10 t), g = 9.81

$$D = 9,81 \times \frac{0,6 \times 17 \times 33}{17 + 33 - 10} \text{ (kN)}$$

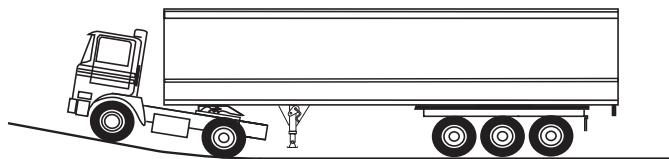
R = 33 (10 t imposed on fifth wheel and 23 t on rear bogie), U = 10

# THE EFFECT OF GRADIENTS

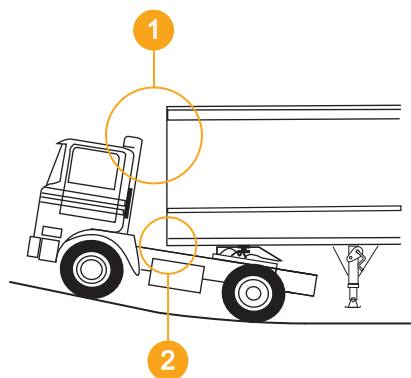
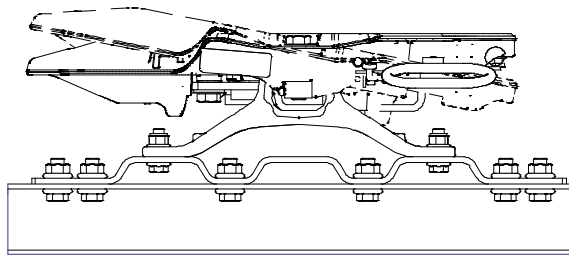
On a level road



Starting to go uphill



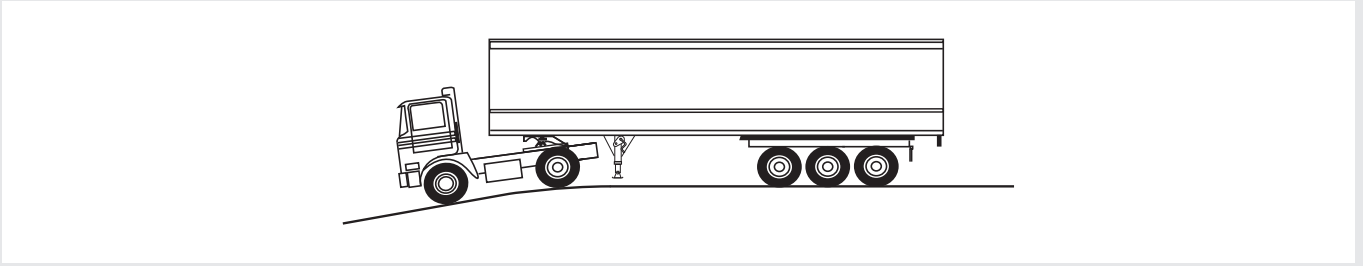
Fifth wheel articulates (or oscillates) forward.



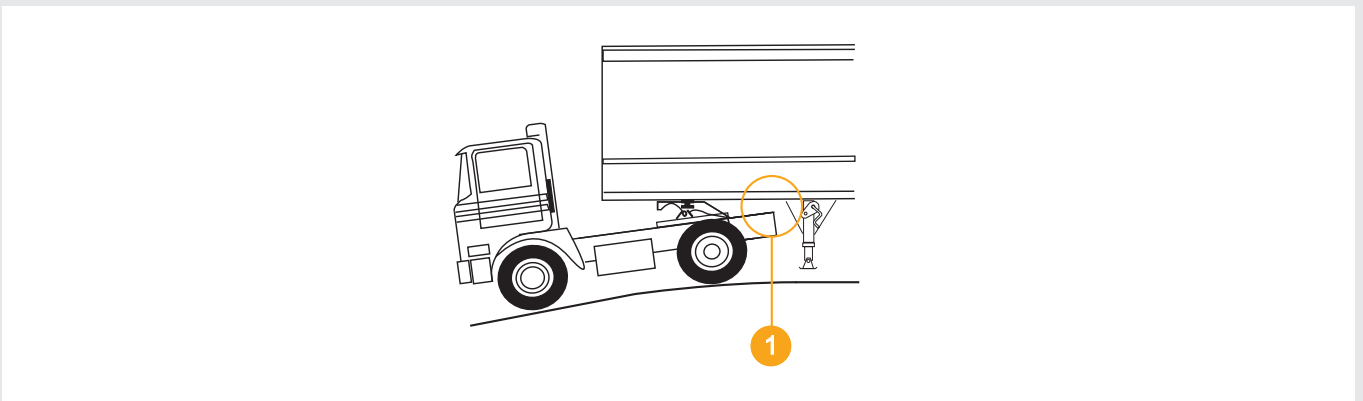
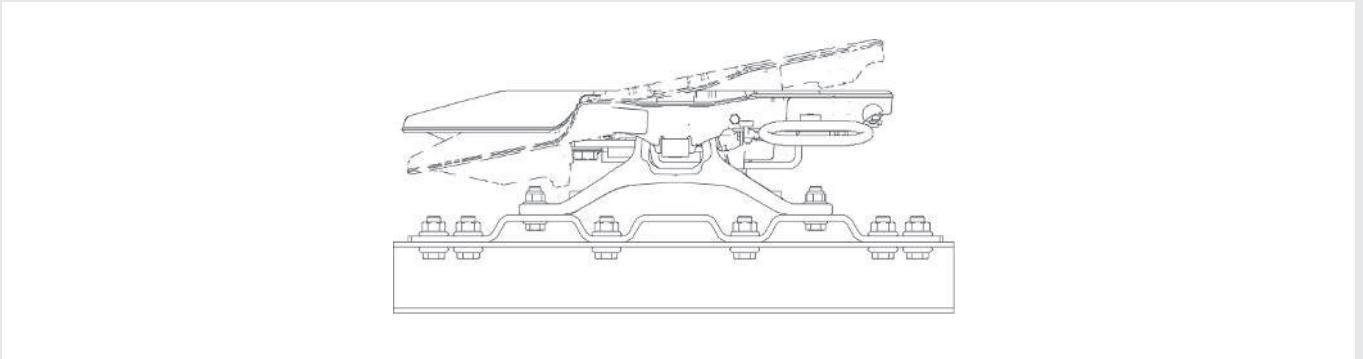
- 1 Reduced clearance between Tractor Cab and Trailer
- 2 Reduced clearance between top of Chassis and Trailer

There must be a minimum of 6° free articulation when the tractor and trailer are coupled.

## Downhill



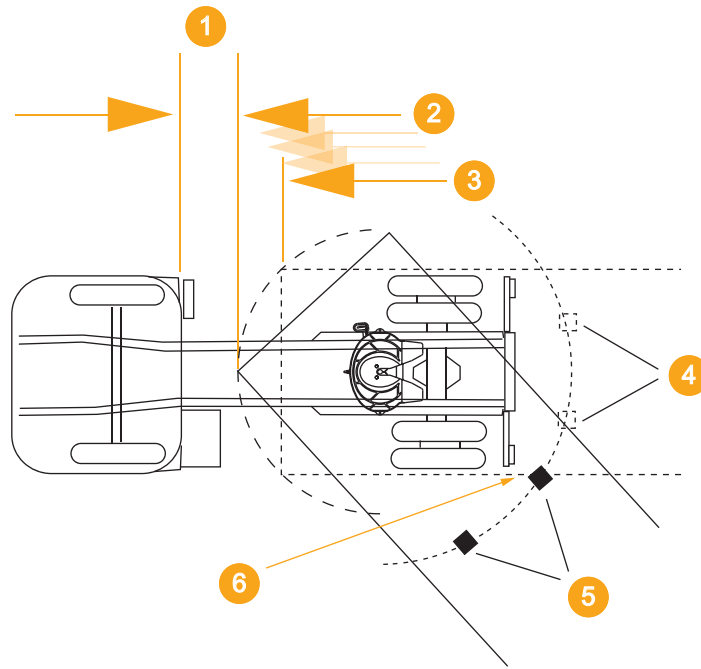
Fifth wheel articulates (or oscillates) to the rear.



1 Reduced clearance between rear of Chassis and Trailer

There must be a minimum of 7° free articulation when the tractor and trailer are coupled.

## EFFECTS OF TURNING

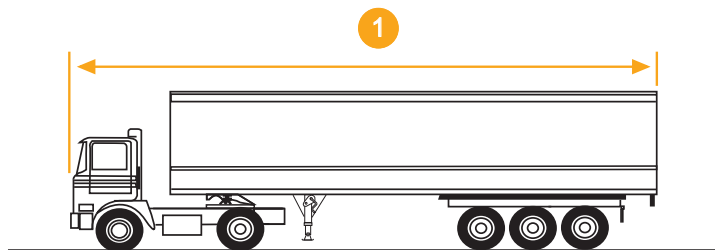


- |                      |   |
|----------------------|---|
| 1 Cab clearance      | 4 Landing Gear by travelling in line                    |
| 2 Cornering          | 5 Landing Gear during cornering                         |
| 3 Travelling in line | 6 Reduced clearance at rear of chassis during cornering |

Clearance at rear of chassis also reduced during cornering

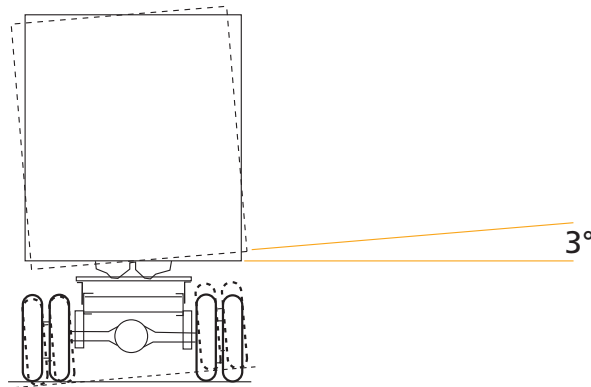
Imagine then the effect of turning and beginning to climb a hill at the same time – the combined effect of turning and climbing will reduce cab clearance even more.

Fifth wheel position is therefore critical for several reasons including the overall length of the combination which is limited by legislation



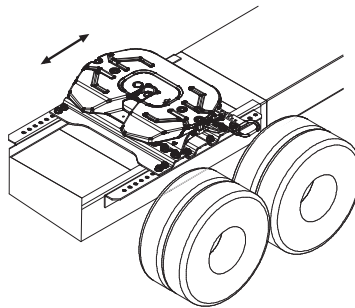
- |                  |
|------------------|
| 1 Overall length |
|------------------|

## ROLL BETWEEN THE TRACTOR AND TRAILER



Rotation about the longitudinal axis of up to 3° of movement between the tractor and trailer is permitted. On a standard fifth wheel this occurs as a result of clearance in the fifth wheel to bracket fit, compression of the rubber bushes and also vertical movement between the kingpin and locks may allow some lift of the trailer one side.

## SLIDING FIFTH WHEELS AND MOUNTING

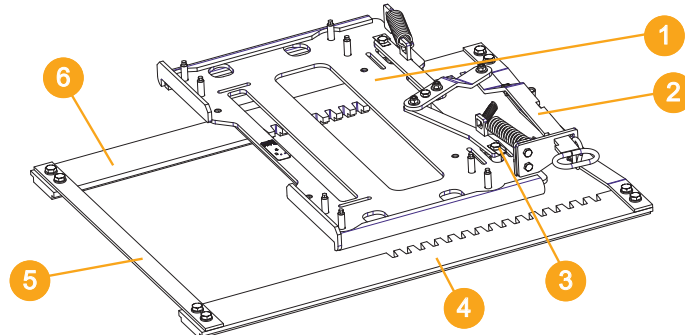


The fifth wheel can be moved forwards or backwards to accommodate different trailer lengths and/or alter weight distribution on the tractor unit.



## SLIDING FIFTH WHEELS – MOUNTING STYLES

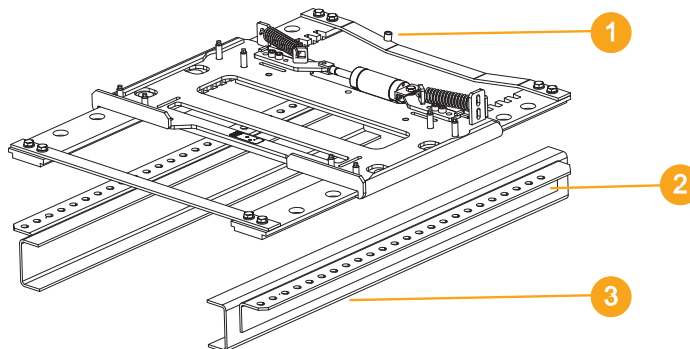
### SLIDER SK-V 20



- |                   |                                    |
|-------------------|------------------------------------|
| 1 Carriage        | 4 Rack                             |
| 2 Cross member    | 5 Base Frame with racks and levers |
| 3 Locking Plunger | 6 Rack                             |

The fifth wheel SK-S 36.20 cpl. is mounted on a carriage which can be moved forward and backward along a base frame. The carriage is locked in position by plungers which lock into of the racks of the base frame.

### SLIDER MOUNTED TO CHASSIS ANGLES



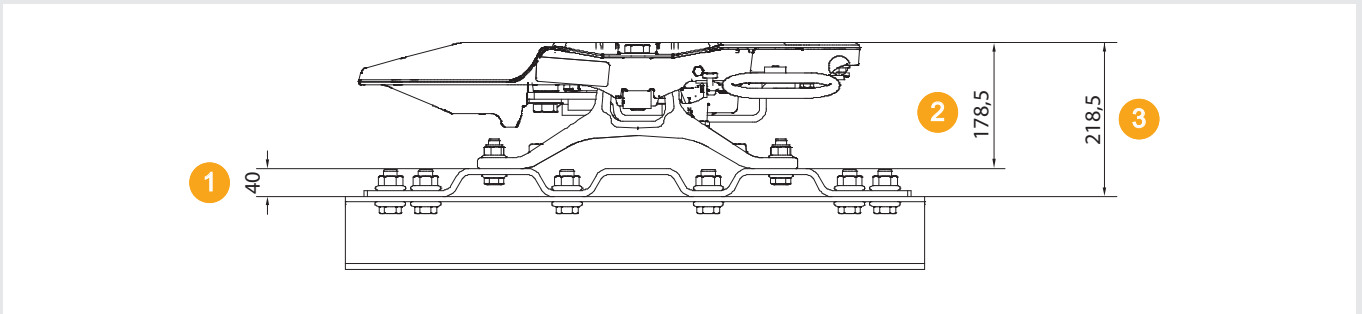
- |                  |
|------------------|
| 1 Sliders        |
| 2 Chassis Angles |
| 3 Truck Chassis  |

Our standard slider for normal roadgoing operations, rated up to 44 tonnes GCW and 18 tonnes vertical load.

The base frame racks are predrilled with holes so that the slider can be bolted directly to the manufacturers mounting angles without the need for a separate subframe.

# FIXED FIFTH WHEELS – HEIGHT

## CONVENTIONAL ISO MOUNTING

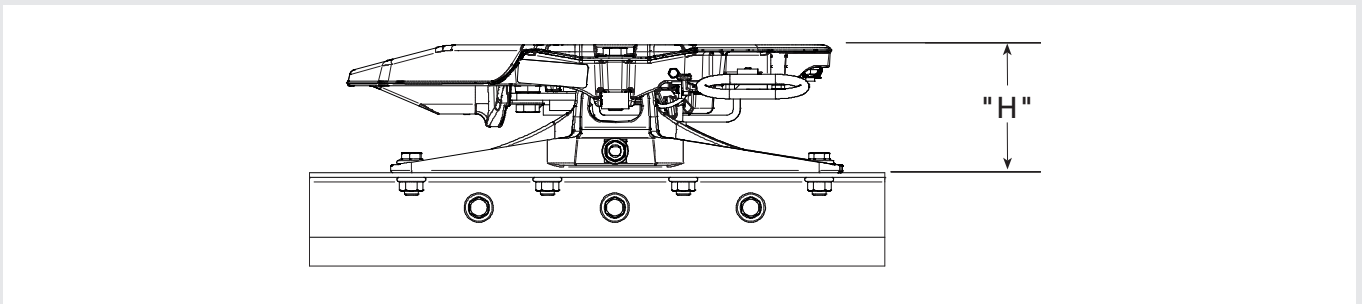


- 1 Height of Baseplate
- 2 "H"
- 3 Installation Height

The fifth wheel height is from the bottom of the mounting bracket to the top surface of the fifth wheel. It does not include the height of the baseplate which needs to be added to the fifth wheel height "H" to give the installation height.

The baseplate/mounting plate height will vary according to the type of mounting. The lowest will be a simple flat plate (usually 12 mm min.) a european style ripple plate is normally 22 mm or 40 mm.

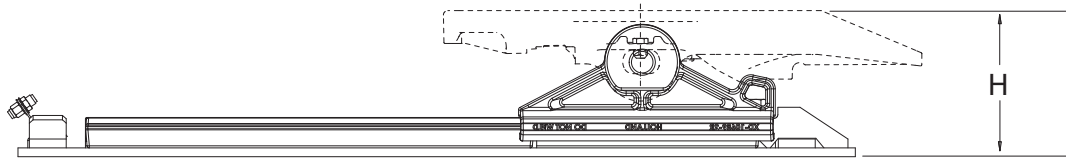
## DIRECT MOUNTING



- 1 "H"

As there is no separate baseplate with a direct-mount installation the fifth wheel height "H" is also the installation height.

## SLIDING FIFTH WHEELS – HEIGHT



H Installation height

For the standard ILS slider the slider height “H” is also the installation height.

## MOUNTING ANGLES / FLITCH PLATES



1 Truck Chassis Frame

2 Mounting Angle

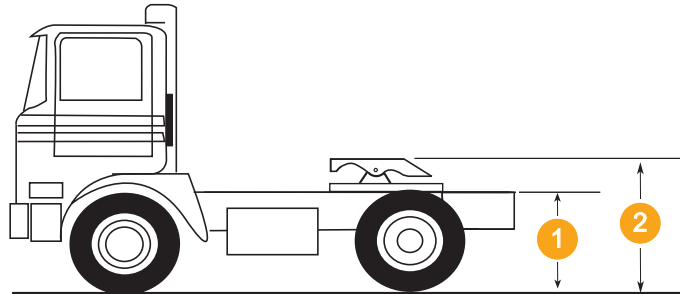
3 Flush Mounting Angle

4 Raised Mounting Angle

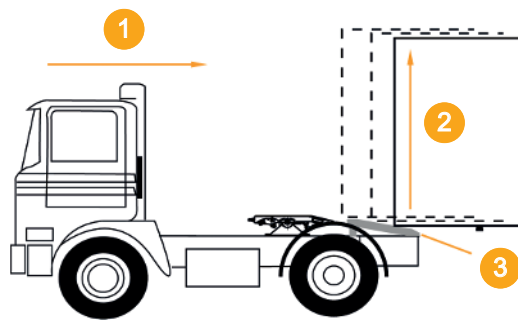
On most vehicles mounting angles are referred to as being “flush” although they are not actually flush with the top of the chassis but actually 3 or 4 mm above the chassis. Some vehicles, usually for heavy duty application, have a mounting angle which is raised by up to 60 mm. Installation height is actually from the top of the mounting angle to the top of the fifth wheel as the baseplate or slider normally sits on top of the mounting angle.

## “FIFTH WHEEL HEIGHT” AND LEAD ON RAMPS

Some customers will ask for a fifth wheel to give a “fifth wheel height” of (for example) 1250 mm. They are talking about the height of the fifth wheel from the ground when installed on the truck. The fifth wheel height will be the chassis height “CH” plus the installation height e. g. a SK-S 36.20 D installed on a tractor with a chassis height of 1060 mm will give the 1250 mm fifth wheel height.



- 1 “CH”
- 2 “FW”



- 1 Tractor reverses into Trailer
- 2 Trailer lifts to correct coupling height as it rides up the ramps
- 3 Lead on ramps

### WARNING:

Chassis height (and fifth wheel height) can be given as laden or unladen always insist on working to the unladen figures.

Lead on Ramps are required by certain (UK) customers. If the trailer is too low during coupling it may hit the rear wings or other components causing damage to the vehicle. With ramps fitted the trailer will ride up the ramps avoiding damage to the wings etc.

### NOTE:

The height of the ramps is critical, it must be high enough to protect the wings but low enough to allow the correct angle of articulation without the underside of the trailer skidplate hitting the top of the ramps. Sometimes this can be a compromise and where the fifth wheel installation height is low it may not be possible and/or practical to fit ramps.

## DEVELOPMENTS IN FIFTH WHEEL TECHNOLOGY



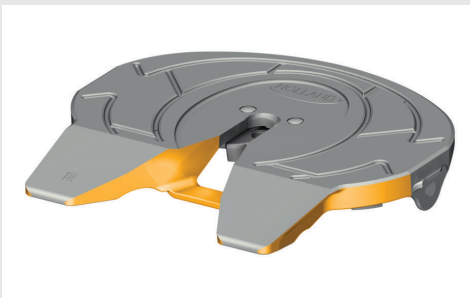
### NOLUBE FIFTH WHEELS

Fifth Wheels developed to reduce maintenance costs, replaceable lube plates on the top surface eliminate the need for grease so reducing servicing time, costs and vehicle downtime. The lock system and components do still require grease / lubrication.



### INNOVATIVE FIFTH WHEEL OF FORGED ALUMINIUM

A further development of the above where lock components, etc. are manufactured with special coatings/treatments eliminating the need for lubrication during the life of the fifth wheel. These fifth wheels can be used in a fleet where other fifth wheels/trailers are still using a greased system – the grease will not harm the NoLube components.



### TERMINAL FIFTH WHEELS E.G. FW 3510-TR

Developed specifically for use on terminal tractors cast in a specially selected extra high grade steel and tailor made for increased loads and durability in this extremely demanding environment. Available with optional manual secondary lock for movement of trailers on the public highway.



### DUAL HEIGHT FIFTH WHEEL SK-S 36.20 H

A height adjustable fifth wheel which can be used in lowered or raised position. It is designed for volume transportation with 2-axle low liner trucks and mega trailers. The dual height fifth wheel allows in uncoupling condition to elevate the lifting device by air so that trailers with different coupling heights can be coupled with the same truck. The elevating fifth wheel is available pre-drilled to fit all european vehicles.



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