D-Value Calculator Fifth Wheel and King pin

Calculation of D-Value for Tractor - Trailer Combinations

DEFINITION

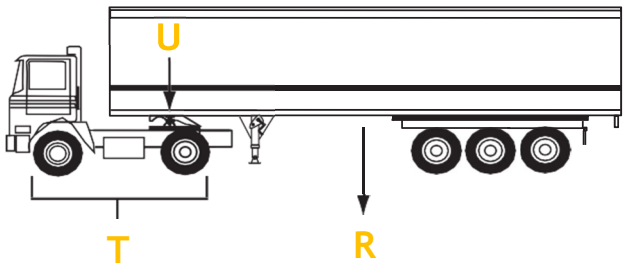
The 'D-value' is defined as the theoretical measurement for horizontal forces between truck and trailer and is the reference for horizontal test loads in dynamic testings for automatic coupling devices

FORMULA

The formula to calculate the D-value for a tractor - trailer combination is as follows:

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

T (t): please enter a value
R (t): please enter a value
U (t): please enter a value



$$D = 9{,}81\text{m/s}^2 \times \frac{0{,}6 \times \quad \times}{+ \quad -}\ kN$$

Your calculated value is:

D = _____ **kN**

T = Weight of tractor including the vertical load on the fifth wheel

R = Total weight of the trailer

U = Vertical load on the fifth wheel

g = Acceleration due to gravity (assumed to be 9.81 m/s ^{2})

GENERAL NOTES

- A D-value has been determined for all our type-approved connecting devices, which serves as a reference value and describes the maximum horizontal force permitted between tractor and trailer.
- In order to determine the correct and suitable fifth wheel or king pin for your tractor-trailer combination you have to calculate the D-value.
- For safe operations the calculated D-value must not exceed the determined D-value of the fifth wheel and/or king pin.
- In order to attain the maximum load limit described by the D-value, mounting must be carried out according to our mounting / installation instructions.