Automatic Trailer Coupling

RINGFEDER® Type 4040-A / B-msd

for connection with hinged drawbar trailers and centre axle trailers with drawbar eyes 40 acc. to DIN 74054 or 40 mm acc. to ISO 8755 and equal drawbar eyes of class S in accordance with the directive 94/20 EC or ECE 55-01

- Rotating coupling bolt
- Ease of operation
- Low-maintenance, cost saving
- Minimised wear
Technical data

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Design A:
- c ➞ G150: 23
- l1 ➞ G150: 150
- t ➞ G150: 35 min
- d1 ➞ G150: ø 94
- l2 ➞ G150: 175
- e1 x e2 ➞ G150: 160 x 100
- d2 ➞ G150: ø 21
- l3 ➞ G150: 300
- f x g ➞ G150: 200 x 140

Design B-msd:
- c ➞ G150: 23
- l1 ➞ G150: 150
- t ➞ G150: 35 min
- d1 ➞ G150: ø 94
- l2 ➞ G150: 175
- e1 x e2 ➞ G150: 160 x 100
- d2 ➞ G150: ø 21
- l3 ➞ G150: 300
- f x g ➞ G150: 200 x 140

Repair kit
### Technical Data

**D-value for towing vehicle and full-trailer:**

\[
D (kN) = g \cdot \frac{T \cdot R}{T + R}
\]

The calculated D-value may be less or equal to the D-value of the coupling.

- **T:** max. mass in tonnes of the towing vehicle
- **R:** max. mass in tonnes of the semi-trailer
- **g:** acceleration due to gravity 9.81 m/s\(^2\)

**Important Instruction:** When fitting (or replacing) the trailer coupling the relevant legal regulations and the instructions from the car manufacturers have to be observed.

**Dc-value for towing vehicle and centre axle trailer:**

(only applicable in connection with the V-value)

\[
Dc (kN) = g \cdot \frac{T \cdot C}{T + C}
\]

The calculated Dc-value may be less or equal to the Dc-value of the coupling.

- **T:** max. mass in tonnes of the towing vehicle
- **C:** sum of the axle loads of the centre axle trailer carrying maximum permissible load, in tonnes
- **g:** acceleration due to gravity 9.81 m/s\(^2\)

**V-value for the centre axle trailer**

(only applicable in connection with the Dc-value)

\[
V (kN) = a \cdot \frac{X^2}{l^2} \cdot C
\]

The calculated V-value may be less or equal to the V-value of the coupling.

- **a:** equivalent vertical acceleration in the coupling point in m/s\(^2\)
- **a = 1.8 for vehicles with air suspension**
- **a = 2.4 for vehicles with other suspension**
- **l:** theoretical drawbar length in metres
- **X:** length of the loading area of the trailer in metres
- **C:** sum of the axle loads of the centre axle trailer carrying maximum permissible load, in tonnes

**EEC Type Approval:** The mounting of the trailer coupling has to be checked in accordance with the regulations contained in appendix I, no. 5.10 and in compliance with the requirements laid down in appendix VII of the EC regulation 94/20.
Type 4040 design A / B-msd

**Operation Type 4040, design A**

The trailer coupling is closed and secured, resp. coupled, that is to say the towing eye is inserted, the coupling bolt in its lower position, the safety device is engaged, the indicator pin in this secured position of the safety device is fitting flush to the safety cap in the coupling body.

**Releasing and opening of the trailer coupling:**

To open the coupling the handle is moved to its upper end position and then released. This will cause the coupling bolt to lift up and the towing eye may be extended. Due to the extension of the towing eye the coupling mechanism is again released and thus, the coupling repeatedly closed and secured.

**Opening of the trailer coupling and engaging the towing eye:**

To open the trailer coupling proceed as described above. The coupling lever is in its upper end position, the coupling is set ready for its next engagement. When inserting the towing eye, the coupling mechanism is released by lifting the coupling bolt. The coupling closes automatically, which means that the coupling bolt is inserted through the towing eye bush in its lower position in the bottom guide bush.

Check that after each coupling process the safety device is fully engaged. If the indicator pin is not fitting flush to the safety cap in the coupling body the trailer coupling is unsecured and the whole procedure must be repeated.

**Operation Type 4040, design B-msd**

**Trailer coupling coupled**

The trailer coupling is closed and secured, respectively coupled, that is to say the towing eye is inserted, the coupling bolt in its lower position, the safety device is engaged: the safety bar/bolt locates over the coupling bolt, the security knob is in the internal engaged position.

**Opening the trailer coupling**

The trailer coupling can only be opened if the coupling jaw is in the central position or in the lateral end positions. To release the trailer coupling the securing knob is to be pulled out and turned ahead until it has reached its external engaged position. The trailer coupling now is released. To open the trailer coupling the handle is moved to its upper end position and then released. (The handle engages in the upper end position.) This will cause the coupling bolt to lift up and the towing eye may be extended. Due to the extension of the towing eye the coupling mechanism is again released and thus the coupling repeatedly closed and secured.

**Opening the trailer coupling to couple the towing eye**

To open the trailer coupling proceed as described above. The coupling lever is engaged in its upper end position, the coupling is set ready for its next engagement. When inserting the towing eye the coupling mechanism is released by lifting the coupling bolt. The coupling closes automatically which means that the coupling bolt is inserted in its lower position through the towing eye bush in the lower guide bush. The safety device is engaged that is to say the safety bar / bolt locates over the coupling bolt, the securing knob is in its engaged position, the coupling is closed and secured, the towing eye is engaged.

Check that after each coupling process the safety device is fully engaged. If the securing knob is not in its internal engaged position, the trailer coupling is unsecured and the whole coupling procedure must be repeated.