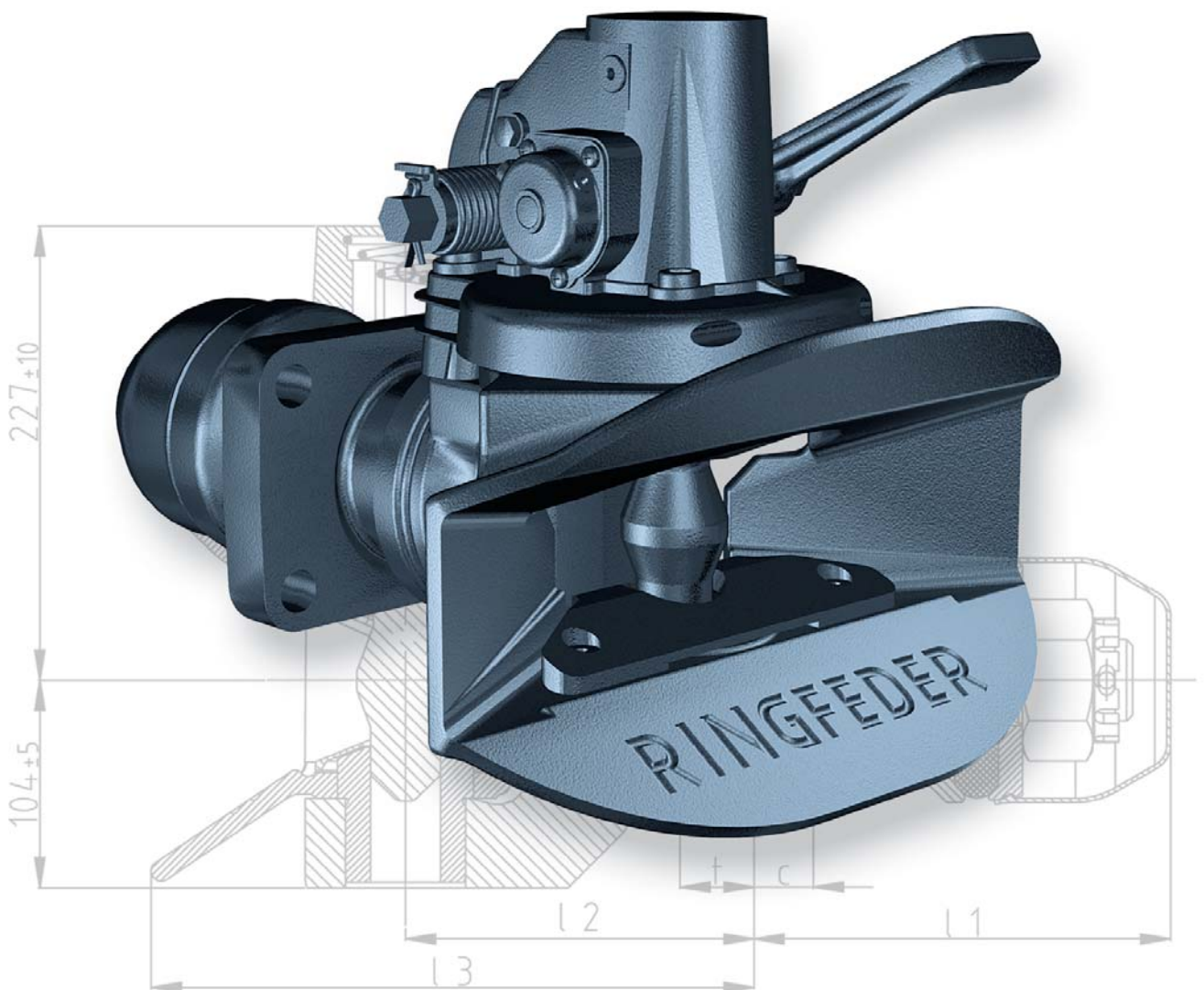


# RINGFEDER®

## Automatic Trailer Coupling also with distance control and remote indicator

### Type 2050 AUS Model A / AW / AP / AM



# Type 2050 AUS



- **Modular system**
- **Servo assisted distance control**
- **Rotating coupling bolt**
- **Minimized wear**
- **Low weight**
- **Compatible and safe handling**
- **Easy to service**



**Model A**



**Model AW**



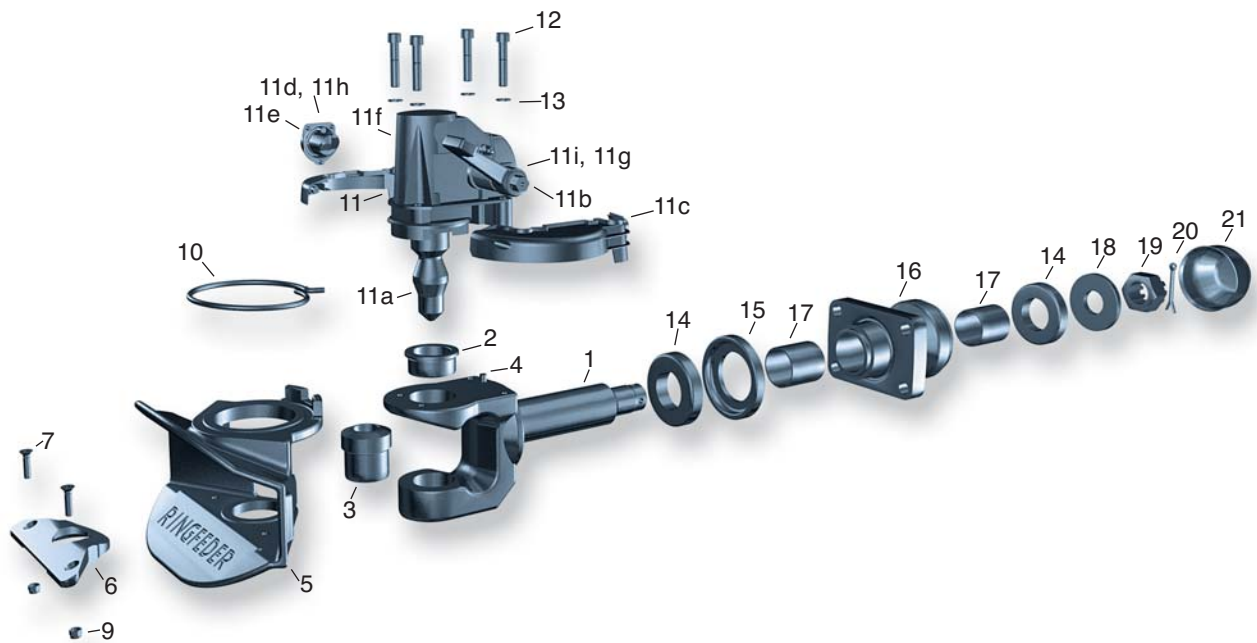
**Model AP**



**Model AM**

# Trailer Coupling without distance control

## Type 2050 AUS Model A



### Parts list for replacement and maintenance

| Type 2050 AUS Model A |                        |  |        |
|-----------------------|------------------------|--|--------|
| Item                  | Order No.              | Description  | Qty.   |
| 1                     |                        | Drawbar incl. items 2, 3, 4, 19, 20  | 1      |
| 2                     | 14 995 463             | Top Guide Bush   | 1      |
| 3                     | 14 994 530             | Bottom Guide Bush  | 1      |
| 4                     |                        | Cylindrical Pin  | 1      |
| 5                     | 14 994 521             | Coupling Body  | 1      |
| 6                     | 6 998 321<br>9 996 770 | Plastic Plate, incl. 2 of items 7 and 9<br>Wear Plate, (cast iron)<br>incl. 2 of items 7 and 9 | 1<br>1 |
| 7                     |                        | Countersunk Screw<br>M8 x 40, DIN 7991   | 2      |
| 9                     |                        | Hexagonal Nut, VM 8, DIN 980   | 2      |
| 10                    | 14 994 529             | Return Spring  | 1      |
| 11                    | 14 994 448             | Mechanism Model A AUS<br>complete, without sensor<br>incl. item 2 and 3                        | 1      |
| 11                    | 14 994 456             | Mechanism Model A AUS<br>complete, with sensor,<br>incl. item 2 and 3                          | 1      |
| 11a                   | 14 994 522             | Coupling Bolt<br>incl. Top and Bottom<br>Guide Bush (item 2 and 3)                             | 1      |
| 11b                   | 14 994 467             | Handle Model A   | 1      |
| 11c                   | 14 994 483             | Plastic Cover right and left<br>for mechanism  | 1      |

| Type 2050 AUS Model A |            |  |      |
|-----------------------|------------|--|------|
| Item                  | Order No.  | Description  | Qty. |
| 11d                   | 14 994 523 | Safety Device, complete<br>(without sensor)  | 1    |
| 11e                   | 14 994 458 | Plug for Safety Device   | 2    |
| 11f                   | 14 994 475 | Plug 1/8" for mechanism  | 1    |
| 11g                   | 14 994 402 | Locking Spring Type 2050   | 1    |
| (11h)                 | 14 994 466 | Sensor Type 2050   | 1    |
| 11i                   | 14 994 404 | Plastic Bush for hexagonal shaft   | 4    |
| 11t                   | 14 995 997 | Hexagonal shaft version A, AW, AP  | 1    |
| 12                    |            | Cylindrical Screw M 12 x 60, DIN 912, 8.8  | 4    |
| 13                    |            | Washer 13, St, 200 HV, DIN 433   | 4    |
| 14                    | 14 994 568 | Rubber Spring  | 2    |
| 15                    | 14 994 472 | Thrust Washer  | 1    |
| 16                    | 14 994 463 | Drawbar Guide incl. 2 pcs. item 17   | 1    |
| 17                    | 14 994 876 | Bearing Bush   | 2    |
| 18                    | 14 994 496 | Tension Washer   | 1    |
| 19                    | 6 997 732  | Castellated Nut M 45 x 3 incl. item 20   | 1    |
| 20                    | 12 991 533 | Cotter Pin 8 x 80, A3C, DIN 94   | 1    |
| 21                    | 14 994 455 | Protecting Cap   | 1    |
|                       | 14 994 418 | Conversion Kit for Model AP<br>incl. item 11j, Power Actuator<br>and 4 pcs. hexagonal screw M 8 x 25<br>item 11l, bracket kit<br>item 11h, sensor and item 22, valve box complete<br>with brackets |      |



Type 2050 AUS Model A

### 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 closely to the safety cap the trailer coupling is unsecured and the whole procedure must be repeated.

The trailer coupling type 2050 may also be equipped with a remote indicator. In such a case a sensor on the safety device which is connected with the green indicator lamp in the cab indicates to the driver by lighting up that the trailer coupling is closed and secured. If this green indicator lamp does not light up the whole procedure must be repeated. Check after each coupling process.

### Operation:

#### Type 2050 AUS without distance control, Model A

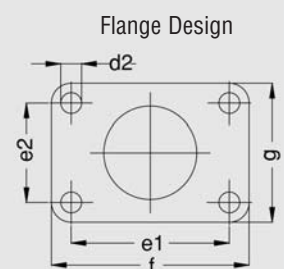
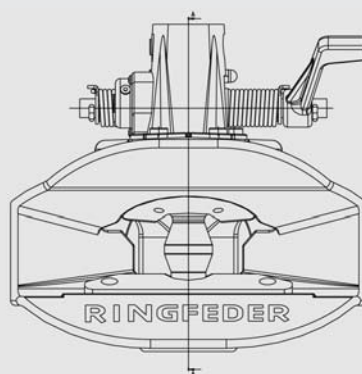
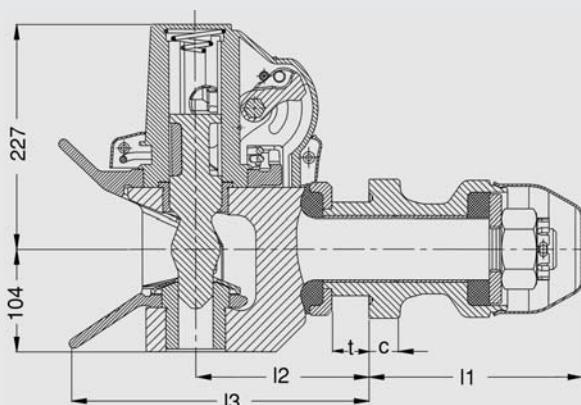
The trailer coupling is closed and secured, resp. coupled, that is to say the towing eye is inserted, the coupling bolt in its lower position, the safety device is engaged, the indicator pin in this secured position of the safety device is fitting flush to the safety cap.

#### 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.

### Technical Data:

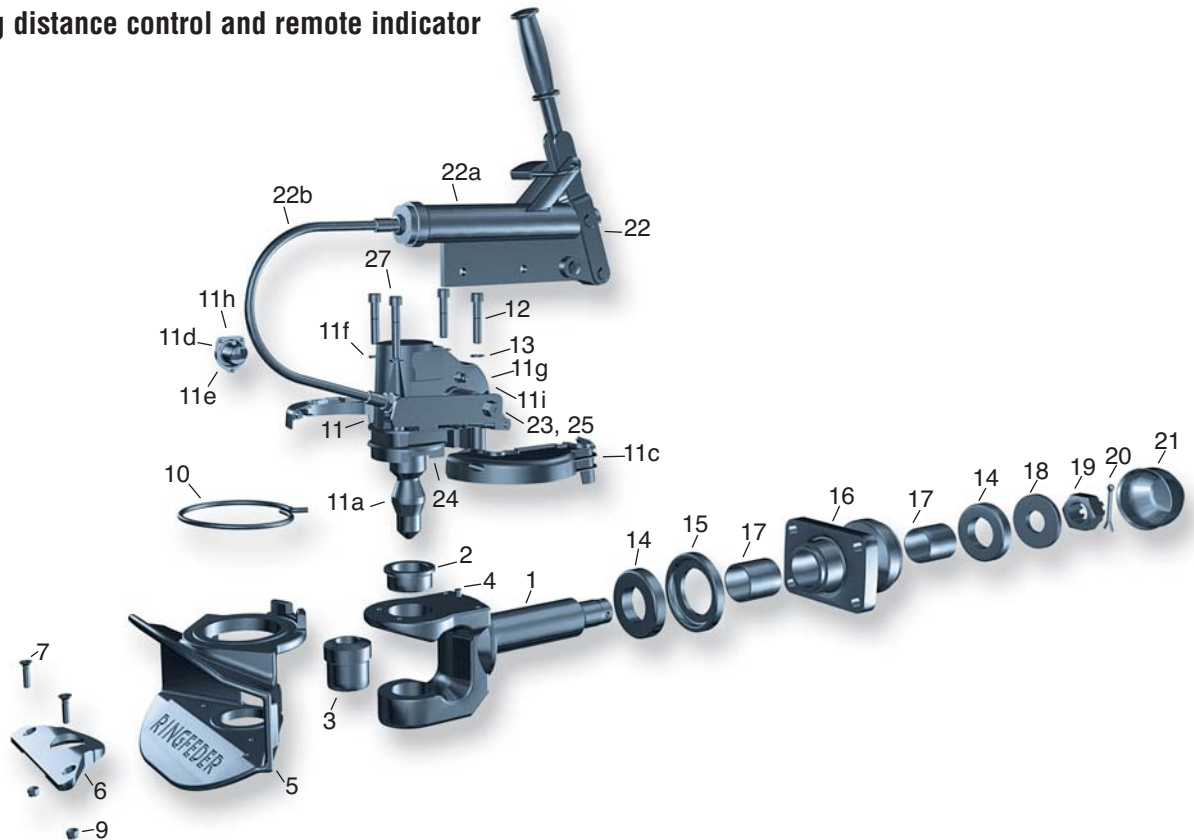
| Model         | Order No.  | Type     | D-Value<br>kN | Dc-Value<br>kN | V-Value<br>kN | Admiss. Static Supporting Load kg | Admiss. Trailer Load of Centre Axle Trailers kg | c <sub>1</sub> | d <sub>1</sub> | d <sub>2</sub> | e <sub>1</sub> x e <sub>2</sub> | f   | g   | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | t  |
|---------------|------------|----------|---------------|----------------|---------------|-----------------------------------|---|----------------|----------------|----------------|---------------------------------|-----|-----|----------------|----------------|----------------|----|
| A             | 14 994 471 | 2050 AUS | 285           | 130            | 75            | 1000                              | acc. to Dc- and V-Value                         | 30             | ø94            | ø21            | 160 x 100                       | 200 | 140 | 220            | 175            | 300            | 35 |
| A with sensor | 14 994 560 | 2050 AUS | 285           | 130            | 75            | 1000                              | acc. to Dc- and V-Value                         | 30             | ø94            | ø21            | 160 x 100                       | 200 | 140 | 220            | 175            | 300            | 35 |



# Automatic Trailer Coupling

## Type 2050 AUS Model AW

including distance control and remote indicator



### Parts list for replacement and maintenance

#### Type 2050 AUS Model AW

| Item | Order No.              | Description  | Qty.   |
|------|------------------------|--|--------|
| 1    |                        | Drawbar incl. items 2, 3, 4, 19, 20  | 1      |
| 2    | 14 995 463             | Top Guide Bush   | 1      |
| 3    | 14 994 530             | Bottom Guide Bush  | 1      |
| 4    |                        | Cylindrical Pin  | 1      |
| 5    | 14 994 521             | Coupling Body  | 1      |
| 6    | 6 998 321<br>9 996 770 | Plastic Plate, incl. 2 of items 7 and 9<br>Wear Plate, (cast iron)<br>incl. 2 of items 7 and 9 | 1<br>1 |
| 7    |                        | Countersunk Screw M8 x 40, DIN 7991  | 2      |
| 9    |                        | Hexagonal Nut VM 8, DIN 980  | 2      |
| 10   | 14 994 529             | Return Spring  | 1      |
| 11   | 14 994 456             | Mechanism Model A AUS complete, with sensor<br>incl. item 2 and 3                              | 1      |
| 11a  | 14 994 522             | Coupling Bolt incl. Top and Bottom Guide Bush (item 2 and 3)                                   | 1      |
| 11c  | 14 994 483             | Plastic Cover right and left for mechanism   | 1      |
| 11d  | 14 994 523             | Safety Device, complete (without sensor)   | 1      |
| 11e  | 14 994 458             | Plug for Safety Device   | 2      |
| 11f  | 14 994 475             | Plug 1/8" for mechanism  | 1      |
| 11g  | 14 994 402             | Locking Spring Type 2050   | 1      |
| 11h  | 14 994 466             | Sensor Type 2050   | 1      |

#### Type 2050 AUS Model AW

| Item | Order No.  | Description   | Qty. |
|------|------------|---|------|
| 11i  | 14 994 404 | Plastic Bush for hexagonal shaft  | 4    |
| 11t  | 14 995 997 | Hexagonal shaft version A, AW, AP   | 1    |
| 12   |            | Cylindrical Screw M 12 x 60, DIN 912, 8.8   | 3    |
| 13   |            | Washer 13, St. 200 HV, DIN 433  | 4    |
| 14   | 14 994 568 | Rubber Spring   | 2    |
| 15   | 14 994 472 | Thrust Washer   | 1    |
| 16   | 14 994 463 | Drawbar Guide incl. 2 pcs. item 17  | 1    |
| 17   | 14 994 876 | Bearing Bush  | 2    |
| 18   | 14 994 496 | Tension Washer  | 1    |
| 19   | 6 997 732  | Castellated Nut M 45 x 3 incl. item 20  | 1    |
| 20   | 12 991 533 | Cotter Pin 8 x 80, A3C, DIN 94  | 1    |
| 21   | 14 994 455 | Protecting Cap  | 1    |
| 22   | 14 994 499 | Cable Pull with spring accumulator cpl. (mounting kit) incl. items 22a, 22b, 23, 24, 25, 26, 27 | 1    |
| 22a  | 14 994 505 | Gas Spring  | 1    |
| 22b  | 14 994 491 | Cable Pull  | 1    |
| 23   |            | Dog   | 1    |
| 24   |            | Bracket   | 1    |
| 25   |            | Lever   | 1    |
| (26) |            | Washer 22 DIN 126   | 1    |
| 27   |            | Cylindrical Screw M 12 x 80, DIN 912, 8.8   | 1    |
|      | 14 994 484 | Bracket Kit incl. item 27   |      |
|      | 14 994 492 | Lever Kit incl. item 25, 26   |      |



Type 2050 AUS Model AW

operating mechanism the coupling bolt is further admitted with a tensile force allowing it, once being released, to lift and thus the coupling to open so that the towing eye can be extended. After disengaging, the lever has to be released again from its dead-center position and be moved in its „zero“ position. Attend to locking it up again.

#### Opening of the coupling and engaging the towing eye:

The trailer coupling is opened as described above. When the coupling bolt is engaged in its upper end position the operating lever is again moved in its „zero“ position. The trailer coupling is now ready for engagement and the towing eye can be inserted. By inserting the towing eye the coupling mechanism is released by lifting the coupling bolt. After engaging the coupling the driver has to check by lighting up of the green indicator lamp for the trailer coupling in the cab or by the position of the indicator pin whether the coupling is closed and secured. If this is not the case the whole procedure must be repeated. Upon that attend to locking up the operating lever to protect against unintended opening (also during driving). In case of failure of the Bowden cable the coupling can be opened by means of a pertaining emergency opening lever which always has to be available in the tool kit, by putting it against the hexagon shaft.

#### Operation:

**Type 2050 AUS Model AW including distance control via Bowden cable with spring accumulator and remote indicator**

#### Opening of the trailer coupling:

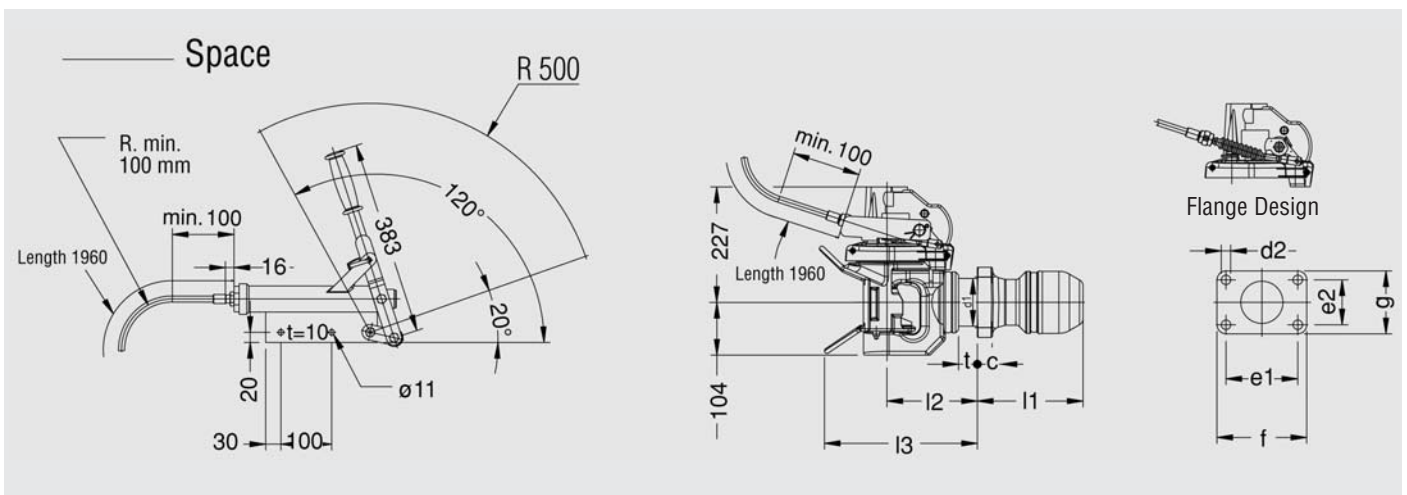
Release opening lever by unlocking the padlock. Turn operating lever on the operating mechanism until the lever over the joint is situated in its dead-center position. By this the

lever is locked. If the coupling bolt was not jammed with the towing eye it is lifted up by moving the lever, and thus, the trailer coupling opens. Now the towing eye can be extended. Upon that the lever has to be released from its dead-center position and be moved to its „zero“ position. Secure by locking it up.

If the coupling does not open after turning the lever in its dead-center position, the coupling bolt is jammed with the towing eye. In such a case the driver can try to release the coupling bolt by slightly jerking on the towing vehicle. By the spring accumulator incorporated in the

#### Technical Data:

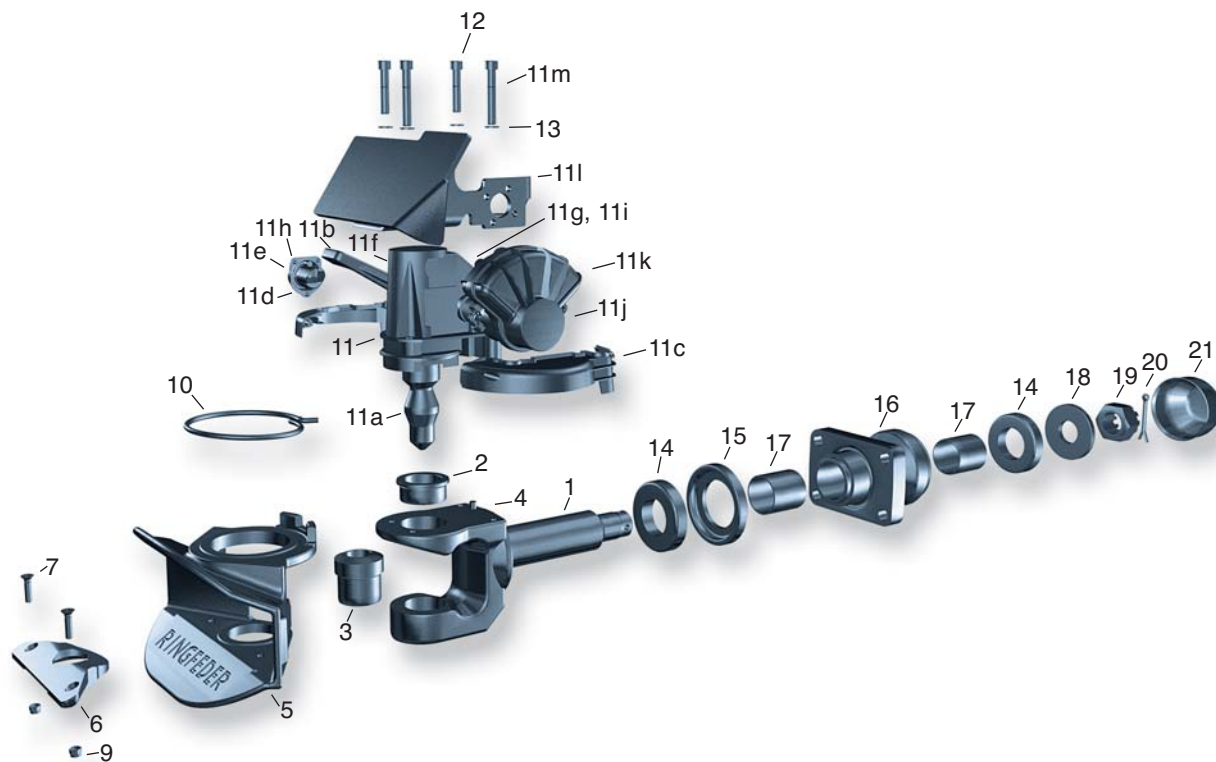
| Model | Order No.  | Type     | D-Value<br>kN | Dc-Value<br>kN | V-Value<br>kN | Admiss. Static Supporting Load kg | Admiss. Trailer Load of Centre Axle Trailers kg | c <sub>1</sub> | d <sub>1</sub> | d <sub>2</sub> | e <sub>1</sub> x e <sub>2</sub> | f   | g   | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | t  |
|-------|------------|----------|---------------|----------------|---------------|-----------------------------------|---|----------------|----------------|----------------|---------------------------------|-----|-----|----------------|----------------|----------------|----|
| AW    | 14 994 479 | 2050 AUS | 285           | 130            | 75            | 1000                              | acc. to Dc- and V-Value                         | 30             | ø94            | ø21            | 160 x 100                       | 200 | 140 | 220            | 175            | 300            | 35 |



# Automatic Trailer Coupling

## Type 2050 AUS Model AP

including distance control and remote indicator



### Parts list for replacement and maintenance

| Type 2050 AUS Model AP |                        |  |        |
|------------------------|------------------------|--|--------|
| Item                   | Order No.              | Description  | Qty.   |
| 1                      |                        | Drawbar incl. items 2, 3, 4, 19, 20  | 1      |
| 2                      | 14 995 463             | Top Guide Bush   | 1      |
| 3                      | 14 994 530             | Bottom Guide Bush  | 1      |
| 4                      |                        | Cylindrical Pin  | 1      |
| 5                      | 14 994 521             | Coupling Body  | 1      |
| 6                      | 6 998 321<br>9 996 770 | Plastic Plate, incl. 2 of items 7 and 9<br>Wear Plate, (cast iron)<br>incl. 2 of items 7 and 9 | 1<br>1 |
| 7                      |                        | Countersunk Screw<br>M8 x 40, DIN 7991   | 2      |
| 9                      |                        | Hexagonal Nut, VM 8, DIN 980   | 2      |
| 10                     | 14 994 529             | Return Spring  | 1      |
| 11                     | 14 994 456             | Mechanism Model A AUS complete, with sensor, incl. item 2 and 3                                | 1      |
| 11a                    | 14 994 522             | Coupling Bolt incl. Top and Bottom Guide Bush (item 2 and 3)                                   | 1      |
| 11b                    | 14 994 467             | Handle model A   | 1      |
| 11c                    | 14 994 483             | Plastic Cover right and left for mechanism   | 1      |
| 11d                    | 14 994 523             | Safety Device, complete (without sensor)   | 1      |
| 11e                    | 14 994 458             | Plug for Safety Device   | 2      |
| 11f                    | 14 994 475             | Plug 1/8" for mechanism  | 1      |
| 11g                    | 14 994 402             | Locking Spring Type 2050   | 1      |

| Type 2050 AUS Model AP |            |   |      |
|------------------------|------------|---|------|
| Item                   | Order No.  | Description                                 | Qty. |
| 11h                    | 14 994 466 | Sensor Type 2050                            | 1    |
| 11i                    | 14 994 404 | Plastic Bush for hexagonal shaft            | 4    |
| 11j                    | 14 994 516 | Power Actuator incl. connectors, item 11k   | 1    |
| 11k                    | 14 994 474 | Snap-on Connector for Power Actuator        | 2    |
| 11l                    | 14 994 508 | Bracket-Kit Type 2050 AP                    | 1    |
| 11m                    |            | Cylindrical Screw M 12 x 80, DIN 912, 8.8   | 2    |
| 11t                    | 14 995 997 | Hexagonal shaft version A, AW, AP           | 1    |
| 12                     |            | Cylindrical Screw M 12 x 60, DIN 912, 8.8   | 2    |
| 13                     |            | Washer 13, St, 200 HV, DIN 433              | 4    |
| 14                     | 14 994 568 | Rubber Spring                               | 2    |
| 15                     | 14 994 472 | Thrust Washer                               | 1    |
| 16                     | 14 994 463 | Drawbar Guide incl. 2 pcs. item 17          | 1    |
| 17                     | 14 994 876 | Bearing Bush                                | 2    |
| 18                     | 14 994 496 | Tension Washer                              | 1    |
| 19                     | 6 997 732  | Castellated Nut M 45 x 3 incl. item 20      | 1    |
| 20                     | 12 991 533 | Cotter Pin 8 x 80, A3C, DIN 94              | 1    |
| 21                     | 14 994 455 | Protecting Cap                              | 1    |
| 22                     | 14 996 039 | Valve Box complete with valves              | 1    |
|                        | 14 996 047 | Valve Box without valves                    | 1    |
|                        | 14 996 031 | Valve Box, compl. incl. valves and brackets | 1    |





Type 2050 AUS Model AP

### Operation:

#### Type 2050 AUS Model AP including distance control via power actuator and remote indicator

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, the green indicator lamp for the trailer coupling in the cab lights up.

#### Opening of the trailer coupling and uncoupling:

Unlock and open the valve box door. Turn the red handle clockwise to "ON" and fold out the yellow handle. Simultaneously press on the yellow handle where it says "Press" and turn the yellow handle anti-clockwise to "OPEN".

The mechanism is hereby admitted with compressed air and the coupling bolt lifted up via shaft and locking lever. (In case the coupling bolt gets jammed with the towing eye, the driver can attend to releasing the coupling bolt by slightly jerking on the towing vehicle and thus, causing the trailer coupling to open.) Then turn the yellow handle back to "CLOSE" and fold them in. Uncouple the trailer. The coupling clo-

ses, when the trailer is disconnected. Turn the red handle anti-clockwise to "OFF". Close and lock up the valve box door. (The valve box door can only be closed when both handles are in the closed position.)

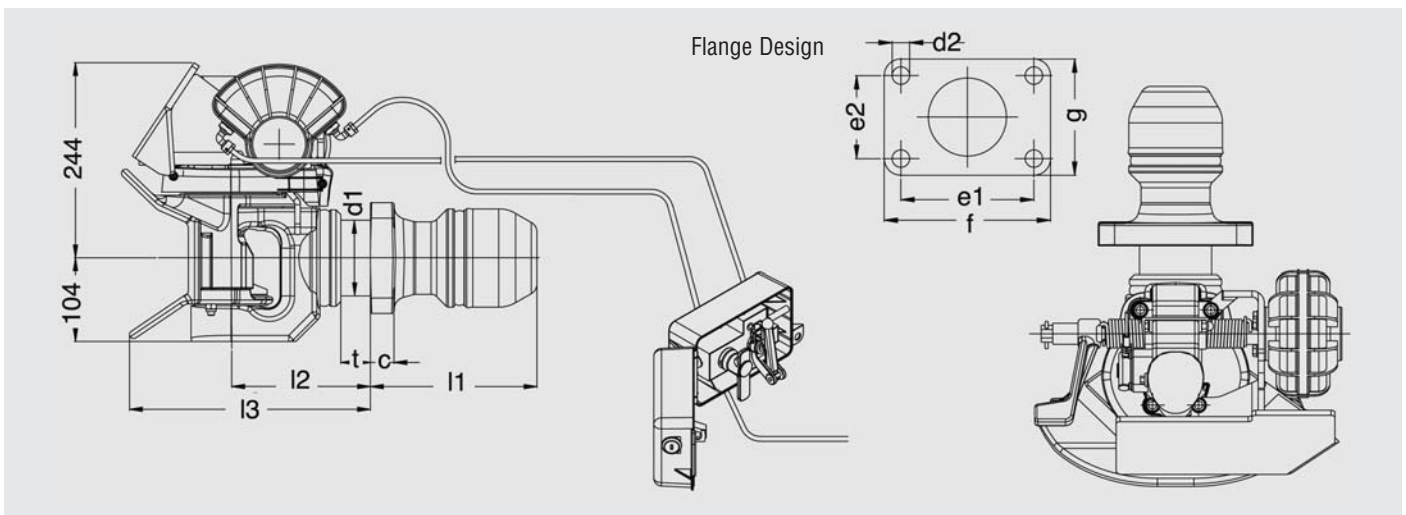
#### Opening of the trailer coupling and coupling:

Unlock and open the valve box door. Turn the red handle clockwise to "ON" and fold out the yellow handle. Simultaneously press on the yellow handle where it says "Press" and turn the yellow handle anti-clockwise to "OPEN". The mechanism is hereby admitted with compressed air and the coupling bolt lifted up via shaft and locking lever. Then turn the yellow handle back to "CLOSE" and fold them in. Couple to the trailer. The coupling will close when the towing eye pushes up the coupling bolt and this releases the mechanism.

Check, that the green light in the cabin for the coupling lights up. Check, that the indicator pin is completely in. (Indicator pin flush with the safety cap) If the indicator pin is not completely in and the green light in the cabin for the coupling does not light up, the coupling procedure must be repeated. Only when the indicator pin is completely in and the green light in the cabin for the coupling lights up the coupling is closed and secured correctly. When the trailer is coupled correctly turn back the red handle anti-clockwise into "OFF" then close and lock up the valve box door. (The valve box door can only be closed when both handles are in the closed position.) Now the trailer is secured and driving may begin. In case of failure of the compressed air supply the coupling can be opened by the hand-lever.

### Technical Data:

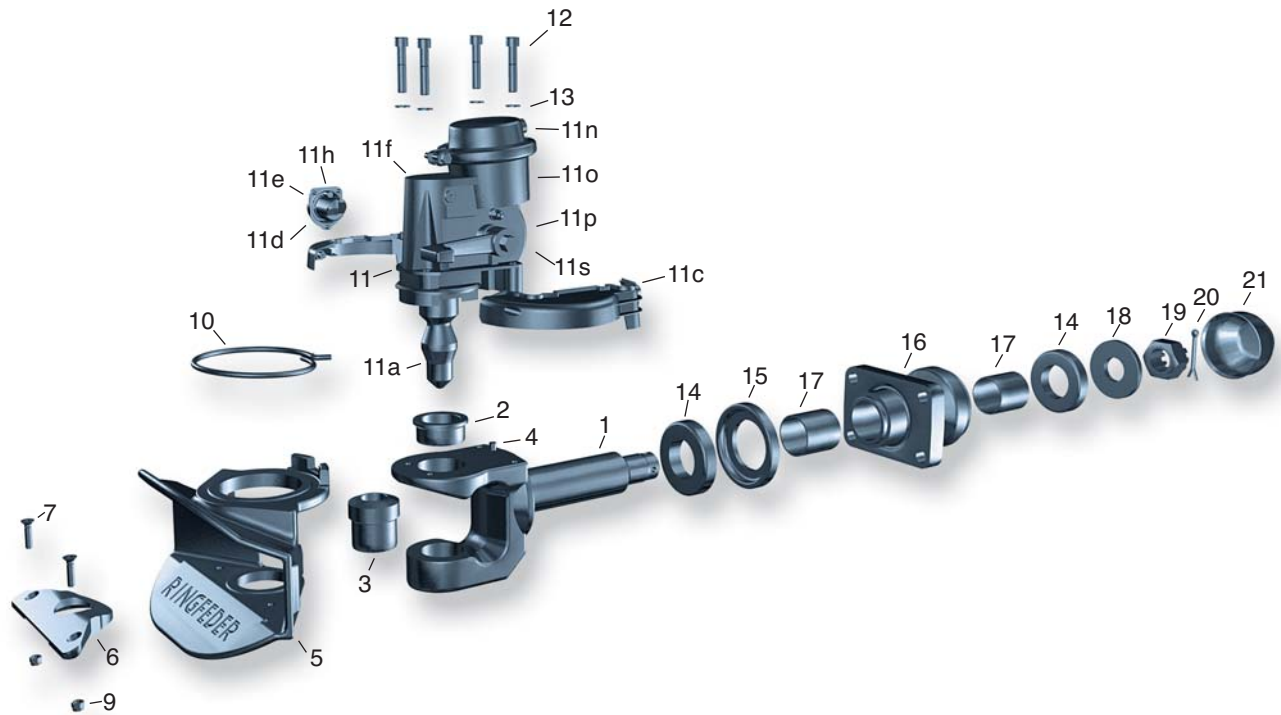
| Model | Order No.  | Type     | D-Value<br>kN | Dc-Value<br>kN | V-Value<br>kN | Admiss. Static Supporting Load kg | Admiss. Trailer Load of Centre Axle Trailers kg | c <sub>1</sub> | d <sub>1</sub> | d <sub>2</sub> | e <sub>1</sub> x e <sub>2</sub> | f   | g   | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | t  |
|-------|------------|----------|---------------|----------------|---------------|-----------------------------------|---|----------------|----------------|----------------|---------------------------------|-----|-----|----------------|----------------|----------------|----|
| AP    | 14 994 454 | 2050 AUS | 285           | 130            | 75            | 1000                              | acc. to Dc- and V-Value                         | 30             | ø94            | ø21            | 160 x 100                       | 200 | 140 | 220            | 175            | 300            | 35 |



# Automatic Trailer Coupling

## Type 2050 AUS Model AM

including distance control and remote indicator



### Parts list for replacement and maintenance

#### Type 2050 AUS Model AM

| Item | Order No.  | Description  | Qty. |
|------|------------|--|------|
| 1    |            | Drawbar incl. items 2, 3, 4, 19, 20                              | 1    |
| 2    | 14 995 463 | Top Guide Bush   | 1    |
| 3    | 14 994 530 | Bottom Guide Bush  | 1    |
| 4    |            | Cylindrical Pin  | 1    |
| 5    | 14 994 521 | Coupling Body  | 1    |
| 6    | 9 998 321  | Plastic Plate, incl. 2 of items 7 and 9                          | 1    |
| 6    | 9 996 770  | Wear Plate, (cast iron) incl. 2 of items 7 and 9                 | 1    |
| 7    |            | Countersunk Screw M8 x 40, DIN 7991                              | 2    |
| 9    |            | Hexagonal Nut, VM 8, DIN 980                                     | 2    |
| 10   | 14 994 529 | Return Spring  | 1    |
| 11   | 14 994 464 | Mechanism Model AM AUS complete, with sensor, incl. item 2 and 3 | 1    |
| 11a  | 14 994 522 | Coupling Bolt incl. Top and Bottom Guide Bush (item 2 and 3)     | 1    |
| 11c  | 14 994 483 | Plastic Cover right and left for mechanism                       | 1    |
| 11d  | 14 994 523 | Safety Device, complete (without sensor)                         | 1    |
| 11e  | 14 994 458 | Plug for Safety Device   | 2    |
| 11f  | 14 994 475 | Plug 1/8" for mechanism  | 1    |

#### Type 2050 AUS Model AM

| Item | Order No.  | Description                                 | Qty. |
|------|------------|---|------|
| 11h  | 14 994 466 | Sensor Type 2050                            | 1    |
| 11n  | 14 994 457 | Cover incl. Clamp and Screw                 | 1    |
| 11o  | 14 994 506 | Membrane incl. Clamp and Screw              | 1    |
| 11p  | 14 994 403 | Push Rod complete                           | 1    |
| 11r  | 14 994 468 | Plastic Bush for hexagonal shaft AM         | 2    |
| 11s  | 14 994 476 | Handle Version AM                           | 1    |
| 12   |            | Cylindrical Screw M 12 x 60, DIN 912, 8.8   | 4    |
| 13   |            | Washer 13, St, 200 HV, DIN 433              | 4    |
| 14   | 14 994 568 | Rubber Spring                               | 2    |
| 15   | 14 994 472 | Thrust Washer                               | 1    |
| 16   | 14 994 463 | Drawbar Guide incl. 2 pcs. item 17          | 1    |
| 17   | 14 994 876 | Bearing Bush                                | 2    |
| 18   | 14 994 496 | Tension Washer                              | 1    |
| 19   | 6 997 732  | Castellated Nut, M 45 x 3 incl. item 20     | 1    |
| 20   | 12 991 533 | Cotter Pin 8 x 80, A3C, DIN 94              | 1    |
| 21   | 14 944 455 | Protecting Cap                              | 1    |
| 22   | 14 996 039 | Valve Box, complete with valves             | 1    |
|      | 14 996 047 | Valve Box without valves                    | 1    |
|      | 14 996 031 | Valve Box, compl. incl. valves and brackets | 1    |
|      | 14 994 513 | Mounting Tool, Coupling Bolt                |      |



## Operation:

### Type 2050 AUS Model AM, with distance control via Air Mechanism, including remote indicator

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 closed position of the safety device is fitting flush to the safety cap, the green indicator lamp for the trailer coupling in the cab lights up.

### Opening of the trailer coupling and uncoupling:

Unlock and open the valve box door. Turn the red handle clockwise to "ON" and fold out the yellow handle. Simultaneously press on the yellow handle where it says "Press" and turn the yellow handle anti-clockwise to "OPEN". The mechanism is hereby admitted with compressed air and the coupling bolt lifted up via shaft and locking lever. (In case the coupling bolt gets jammed with the towing eye, the driver can attend to releasing the coupling bolt by slightly jerking on the towing vehicle and thus, causing the trailer coupling to open.) Then turn the yellow handle back to "CLOSE" and fold

them in. Uncouple the trailer. The coupling closes, when the trailer is disconnected. Turn the red handle anti-clockwise to "OFF". Close and lock up the valve box door. (The valve box door can only be closed when both handles are in the closed position.)

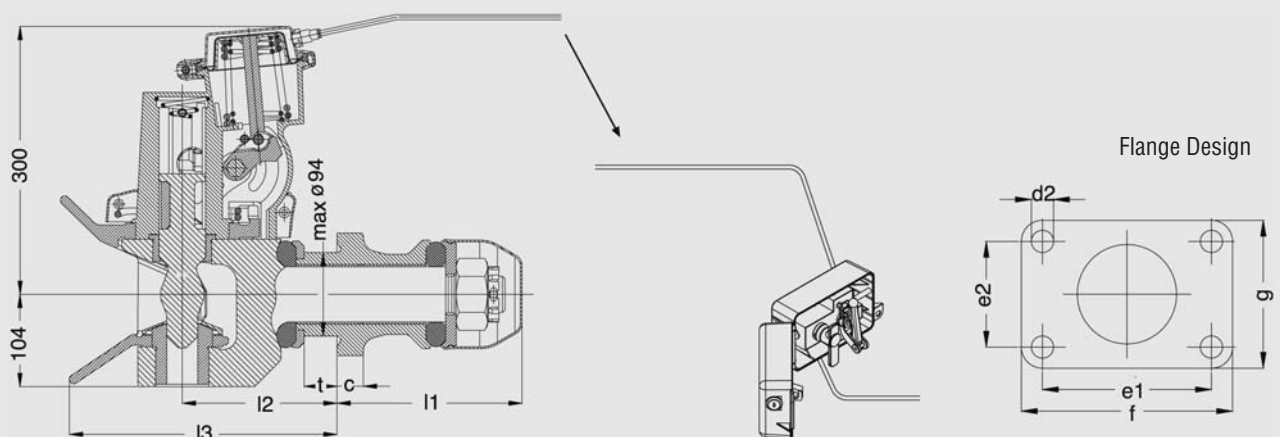
### Opening of the trailer coupling and coupling:

Unlock and open the valve box door. Turn the red handle clockwise to "ON" and fold out the yellow handle. Simultaneously press on the yellow handle where it says "Press" and turn the yellow handle anti-clockwise to "OPEN". The mechanism is hereby admitted with compressed air and the coupling bolt lifted up via shaft and locking lever. Then turn the yellow handle back to "CLOSE" and fold them in. Couple to the trailer. The coupling will close when the towing eye pushes up the coupling bolt and this releases the mechanism.

Check, that the green light in the cabin for the coupling lights up. Check, that the indicator pin is completely in. (Indicator pin flush with the safety cap) If the indicator pin is not completely in and the green light in the cabin for the coupling does not light up, the coupling procedure must be repeated. Only when the indicator pin is completely in and the green light in the cabin for the coupling lights up the coupling is closed and secured correctly. When the trailer is coupled correctly turn back the red handle anti-clockwise into "OFF" then close and lock up the valve box door. (The valve box door can only be closed when both handles are in the closed position.) Now the trailer is secured and driving may begin. In case of failure of the compressed air supply the coupling can be opened by the hand-lever.

## Technical Data:

| Model | Order No.  | Type     | D-Value<br>kN | Dc-Value<br>kN | V-Value<br>kN | Admiss. Static Supporting Load kg | Admiss. Trailer Load of Centre Axle Trailers kg | c <sub>1</sub> | d <sub>1</sub> | d <sub>2</sub> | e <sub>1</sub> x e <sub>2</sub> | f   | g   | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | t  |
|-------|------------|----------|---------------|----------------|---------------|-----------------------------------|---|----------------|----------------|----------------|---------------------------------|-----|-----|----------------|----------------|----------------|----|
| AM    | 14 994 462 | 2050 AUS | 285           | 130            | 75            | 1000                              | acc. to Dc- and V-Value                         | 30             | ø94            | ø21            | 160 x 100                       | 200 | 140 | 220            | 175            | 300            | 35 |



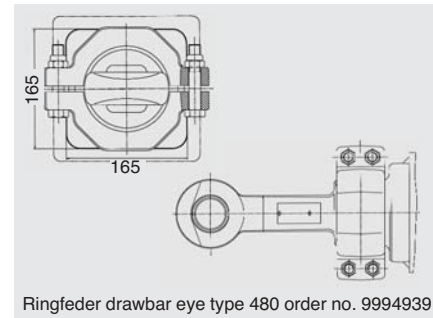
# Type 2050 AUS trailer coupling to combine with class D50 drawbar eyes in accordance with EC regulation 94/20 or ISO 1102 or to combine with 50 mm DIN 74053 drawbar eyes and heavy duty drawbar eyes.

Type 2050 AUS trailer couplings are approved up to a D-value of 260 kN. In vehicle combinations up to a D-value of 120 kN (130 kN) these trailer couplings may be operated in combination with 50 mm drawbar eyes, design A or B in accordance with DIN 74053 and D 50-A or B in compliance with EC directive 94/20. In addition, they may exclusively be employed up to a D-value of 260 kN in combination with a heavy duty drawbar eye, or with drawbar eyes according to class

D 50 in compliance with EC directive 94/20 having a correspondingly high D-value (e.g. Ringfeder type 480).

**Type 480 Ringfeder Drawbar Eye** according to class D 50-X in compliance with EC 94/20 EC type approval e1 00-0166

|  |    |         |
|--|----|---------|
| D 50-X   | D  | 260 kN  |
|  | Dc | 135 kN  |
| <span style="border: 1px solid black; padding: 0 2px;">e1</span> | S  | 1000 kg |
| 00-0166  | V  | 75 kN   |



## Technical Hints:

### D-value for towing vehicle and semi-trailer:

$$D \text{ (kN)} = g \cdot \frac{T \cdot R}{T + R}$$

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<sup>2</sup>

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

(only applicable in connection with the V-value)

$$Dc \text{ (kN)} = g \cdot \frac{T \cdot C}{T + C}$$

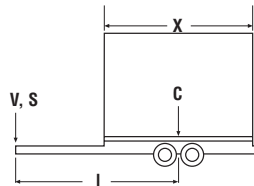
The calculated Dc-value may be **less or equal to** the Dc-value of the coupling.

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<sup>2</sup>

### V-value for the centre axle trailer

(only applicable in connection with the Dc-value)

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



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<sup>2</sup>

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

$X^2/l^2$  **at least 1.0** (for the calculation)  
C: sum of the axle loads of the centre axletrailer carrying maximum permissible load, in tonnes

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

## Technical Data:

| Model         | Order No.  | Type     | D-Value | Dc-Value | V-Value | Admiss. Static Supporting | Admiss. Trailer Load of Centre Axle Trailers | c <sub>1</sub> | d <sub>1</sub> | d <sub>2</sub> | e <sub>1</sub> x e <sub>2</sub> | f   | g   | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | t  |
|---------------|------------|----------|---------|----------|---------|---------------------------|--|----------------|----------------|----------------|---------------------------------|-----|-----|----------------|----------------|----------------|----|
|               | kN         | kN       | kN      |          | Load kg | kg                        |  |                |                |                |                                 |     |     |                |                |                |    |
| A             | 14 994 471 | 2050 AUS | 285     | 130      | 75      | 1000                      | acc. to Dc- and V-Value                      | 30             | ø94            | ø21            | 160 x 100                       | 200 | 140 | 220            | 175            | 300            | 35 |
| A with sensor | 14 994 560 | 2050 AUS | 285     | 130      | 75      | 1000                      | acc. to Dc- and V-Value                      | 30             | ø94            | ø21            | 160 x 100                       | 200 | 140 | 220            | 175            | 300            | 35 |
| AW            | 14 994 479 | 2050 AUS | 285     | 130      | 75      | 1000                      | acc. to Dc- and V-Value                      | 30             | ø94            | ø21            | 160 x 100                       | 200 | 140 | 220            | 175            | 300            | 35 |
| AP            | 14 994 454 | 2050 AUS | 285     | 130      | 75      | 1000                      | acc. to Dc- and V-Value                      | 30             | ø94            | ø21            | 160 x 100                       | 200 | 140 | 220            | 175            | 300            | 35 |
| AM            | 14 994 462 | 2050 AUS | 285     | 130      | 75      | 1000                      | acc. to Dc- and V-Value                      | 30             | ø94            | ø21            | 160 x 100                       | 200 | 140 | 220            | 175            | 300            | 35 |



Certified in accordance with DIN EN ISO 9001 and DIN EN ISO 14001 and ISO TS 16949

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