

**MONTAGE- UND BETRIEBSANLEITUNG
INSTALLATION AND OPERATING INSTRUCTIONS
INSTRUCTIONS DE MONTAGE ET D'UTILISATION**

23.02.2022

KUGELKUPPLUNG 80 - KUGELBALKEN KBa

BALL COUPLING 80 – BALL DRAWBAR KBa

ACCOUPLEMENT À BOULE 80 – BARRE DE BOULE KBa

WICHTIGE HINWEISE:

siehe separates Dokument BA_TASC_400002, www.walterscheid.com/downloads/

IMPORTATANT NOTES:

see separate document BA_TASC_400002, www.walterscheid.com/downloads/

NOTES IMPORTANTES:

voir document séparé BA_TASC_400002, www.walterscheid.com/downloads/

BALL COUPLING 80 – BALL DRAWBAR KBa

1. DESIGNATIONS, TYPE APPROVALS OR INDIVIDUAL CERTIFICATES, CHARACTERISTIC VALUES, DIMENSIONS AND ASSOCIATED TOWING FRAMES:

See type plate on the ball drawbar or product data sheet www.walterscheid.com/downloads

OPERATING RANGE:

For use on agricultural or forestry vehicles.



NOTE:

If the valid national approval regulations of the respective country of use require additional official approvals for using these parameters, such approvals must be applied for.

DESCRIPTION:

The ball coupling 80 dimensions and field of application complying with ISO 24347, VO (EU) 2015/208 and regulation UN ECE R147, class a80.

In its normal state, the device is in coupled and locked position.

Suitable for connection to coupling heads 80 according to ISO 24347, respectively UN ECE R147, class b80.

The ball drawbars are mounted like a drawbar in the drawbar support and drawbar bearing provided for this purpose. The support can also be provided in a suitable hitch frame, if necessary in conjunction with other support devices.



IMPORTANT:

The D-value and the permissible drawbar load of the towing frame must be observed in conjunction. The lower value is valid in each case!

SUPPORT DISTANCE:

(see figure 1)

The max. support distance S from the centre of ball 80 to the support point (drawbar support or towing frame, see product data sheet or type plate) must be checked; if necessary, the characteristic values must be adjusted during the acceptance test.



IMPORTANT:

To avoid injury, protective gloves, safety glasses and safety shoes must be worn during all dismantling/ assembly actions described in this chapter.



Environment:

Lubricants can enter the environment. Environmental pollution: Collect, store and correctly dispose of lubricants in suitable containers.

2. INSTALLATION OF BALL DRAWBAR:



NOTE:

The pertinent regulations (e.g. Accident Prevention Regulations for Vehicles) and the attachment guidelines of the vehicle manufacturers must be observed when installing the coupling!

The attachment of the coupling to the vehicle must be carried out in accordance with the requirements of regulation (EU) 2015/208, Appendix 34.

**NOTE:**

Official national regulations must be observed. For example: in Germany the obligations §13 FZV regarding the data in the car license concerning the permissible trailer weight as well as the permissible vertical load must be considered.

INSTALLATION:

(See also the installation and operating instructions for the drawbar):

- > If there is a drawbar, it must be dismantled. To do this, first loosen the bearing bolt under the gearbox and, if present, the lateral pins. The bolts are included in the scope of delivery of the drawbar.
- > Slide the ball drawbar into the drawbar bearing and support.
- > Fix the ball drawbar underneath the transmission with the drawbar bearing bolt (usually supplied with the drawbar) and secure it with the enclosed safety element (cotter pin, linch pin, sheet metal or similar).
- > Fix by means of the lateral pins. This can be omitted if the width of the ball drawbar does not allow any lateral movement in the towing frame. Secure the pins with the appropriate safety device (cotter pin, linch pin, bolt or similar).

3. OPERATING:

(see figure 2)

**WARNING:**

The pertinent safety regulations must be observed when coupling and uncoupling. No one may stand between the vehicles. The coupling may only be operated in locked and secured condition.

When coupling and uncoupling, the hitch drawbar must be as horizontal as possible to the hitch.

3.1 COUPLING:

- > Remove the linch pin (6) of the top retainer pin (5) and pull out the pin.
- > Pivot the retainer (2) through 90° into the lateral position.
- > Move the ball-type trailer shank over the ball (1).
- > Lower the drawbar by means of the drawbar support or a similar device.
- > Pivot the retainer (2) back into the direction of travel so that it is above the coupling head (ball-type trailer shank).
- > Secure with the retainer pin (5) and the linch pin (6). Check the correct fit of the linch pin.

3.2 UNCOUPLING:

- > Use supporting jacks or similar to stop the trailer rolling away.
- > Remove the linch pin (6) of the retainer pin (5) and pull out the retainer pin.
- > Pivot the retainer (2) through 90° into the lateral position.
- > Raise the drawbar by means of the drawbar support.
- > Move the tractor forwards.
- > Pivot the retainer (2) into the direction of travel and secure it with the retainer pin (5) and the linch pin (6). Check the correct fit of the linch pin.

3.3 ADJUSTABLE RETAINER:

(see figure 3)

The adjustable retainer serves to compensate for wear on the ball-type trailer shank and/or the retainer. The maximum adjustment path is 10 mm, and the retainer is set at the factory in such a way that it can be adjusted 3 mm in the upward direction and 7 mm in the downward direction.

- > Remove the retainer pin (4+5).
- > Pull the retainer (2) out of the hole in the ball-type coupling (7).
- > By turning the set screw (8), which is screwed into the bottom of the retainer, the height of the retainer can be adjusted.
- > Replace the retainer in the ball carrier.
- > Swing the retainer (2) into the direction of travel and secure it with the retainer pins (4+5) and the linch pins (6). Check the correct fit of the linch pins.



IMPORTANT:

Setting the retainer too tightly can damage the ball-type coupling, the ball-type trailer shank and the equipment to be connected. Always ensure that the retainer has min. 0.5 mm, max. 1 mm clearance relative to the surface of the ball-type trailer shank.

4. MAINTENANCE:

(see figure 2)

4.1 CARE:

- > The coupling ball must be lubricated at regular intervals, especially after cleaning with a pressure washer. If a lubrication fitting is on the ball-type trailer shank, the ball can be supplied with grease via the central lubrication.
- > The retainer (2) should be pulled out completely at regular intervals, depending on the frequency of use, and any dirt in the bearing has to be eliminated. Both retainer pins must be removed beforehand for this purpose. Subsequently re-grease the bearing.
- > The coupling must be lubricated with water-resistant, multi-purpose grease (Grease type: lithium saponified, consistency class: NL-GI2).

4.2 CHECKS:

- > Coupling ball (1):
The ball diameter must not be smaller than 78.5 mm at any point in the diameter. If the dimension is below the limit, the ball must be replaced or, if this has already happened twice, the coupling ball must be replaced. A separately available Walterscheid test gauge can be used to comfortably control the wear limit.
- > Retainer (2):
There is a wear mark on the retainer. If the marking can no longer be fully recognized, the permissible wear is reached and the retainer must be replaced. When replacing the retainer, the compression and torsion spring of the adjusting screw must always be replaced.
- > Height play:
If the height play of the coupling ball exceeds 5 mm in closed state, the appropriate parts such as retainer, ball or coupling head (ball-type trailer shank) must be replaced.

4.3 REPLACING THE BALL:

The ball (1) can be replaced twice at most. Replacement is necessary when the ball diameter has become less than 78.5 mm at any point. Wear limits can be checked conveniently by means of a separately available Walterscheid test gauge. A tool for the locknut is also available. The replacement of the ball 80 may only be carried out by authorised and certified specialist workshops. For more information on ball replacement, visit www.walterscheid.com.

4.4 REPLACING THE RETAINER HOUSING:

(see figure 2)

- > Loosen the two hexagon socket screws M16x90 - ISO 4014 (10).
- > Fix the new hold-down bearing using the M16x90 screws. Tightening torque: 335 Nm.



WARNING:
SAFETY NOTES:

- > The user is obliged to always operate the coupling in perfect condition and to forbid its use by unauthorised persons.
- > The loads indicated on the type plate may not be exceeded.
- > Unauthorised conversion or modification of the coupling is not permitted.

5. CALCULATION OF CHARACTERISTIC VALUES FOR CORRECT OPERATION OF THE COUPLING HEAD ON AGRICULTURAL AND FORESTRY TRAILERS

See attachment or separate document BA_TASC_400029, www.walterscheid.com/downloads

6. MOUNTING OF FORCED STEERING PARTS

The ball bars can be used to hold forced steering (ZWL) components of type ZWL50 (8).



WARNING:

The ball 50 of the ZWL50 is not suitable for connection with class B50 coupling heads according to ECE-R 55.

The steering forces that are introduced into the ball bar via the ZWL components must not exceed a total of 20 kN.

There are two different mounting options:

6.1 ATTACHMENT OF ZWL COMPONENTS TO THE DOWNHOLDER OF THE VERSIONS KBA83XXZWL50

(see figure 3)

The suitable ball drawbars are min. 290 mm wide at the mounting point and have 4 threaded holes M20 with a hole pattern of 250 x 40 mm. A special hold-down device (9) is required for the assembly of ZWL components. This is screwed to the ball bar with the two hexagon socket screws M16x90 (10 according to picture 2) as well as four additional cheese head screws M20x80 - ISO 4014 (10), two on each side. Tightening torque M20: 660 Nm. The countersunk holes are then sealed watertight with 4 plugs (11). The ZWL50 can be mounted on both sides of the hold-down. The distance conditions according to ISO 26402 are fulfilled.

See attachment or separate document BA_TASC_400013, www.walterscheid.com/downloads

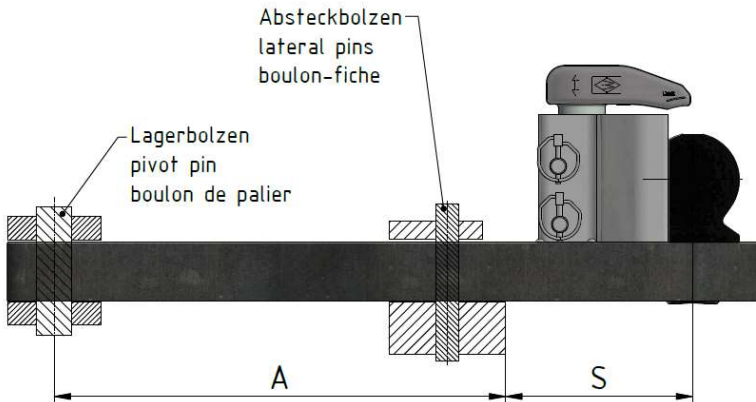
6.2 MOUNTING OF ZWL COMPONENTS BY MEANS OF ADAPTER TYPE 525 TO THE VERSIONS KBA83XXZ (see figures 4, 5, 6 and 7)

To mount the ZWL 50 on ball drawbars of version Z, the adapters 525 have to be mounted first. For this purpose it may be necessary, if not available, to drill two Ø 16 H11 through holes per adapter. In most version Z ball bars, countersinks indicating the centre of the 16 holes serve as a positioning aid for the drill. Alternatively, a drilling sketch for each type of ball bar can be requested from Walterscheid. Two dowel pins 16x100 - ISO 8752 per side are driven completely through the adapter and the ball bar. Beforehand, it may be necessary to make a thickness adjustment for 40 or 45 mm thick beams by means of enclosed spacer plates (see figure 4). The adapter is further clamped to the ball drawbar from below by means of an M20x50 - ISO 4017 - 10.9 hexagon head screw. Tightening torque: 660 Nm. To achieve the correct horizontal distance of ball 50 from ball 80 according to ISO 26402, it is necessary to screw in a spacer.

See attachment or separate document BA_TASC_400013, www.walterscheid.com/downloads

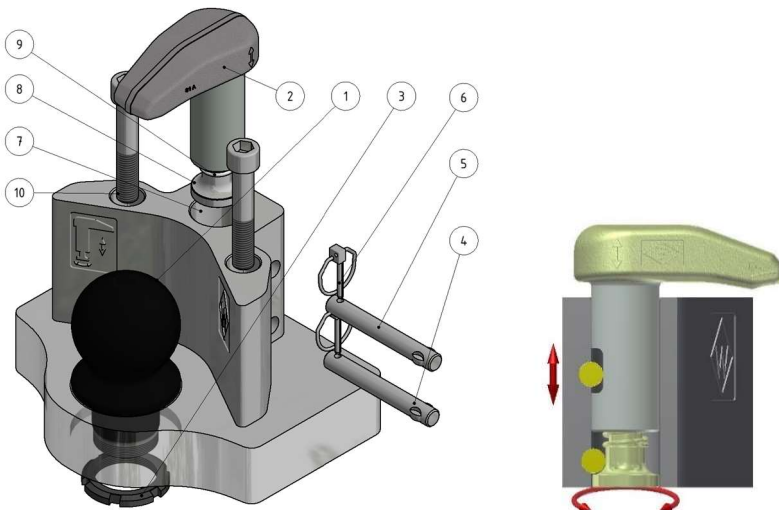
If adapters are mounted on both sides of the ball drawbar, it is necessary to replace the lower hold-down bolt (pos. 5 in Fig. 2) with the collar bolt supplied (see Fig. 7). This allows disassembly of the hold-down for adjustment with the adapters mounted. To assemble and disassemble the collar pin, the hold-down housing must be dismantled.

BILD 1
FIGURE 1



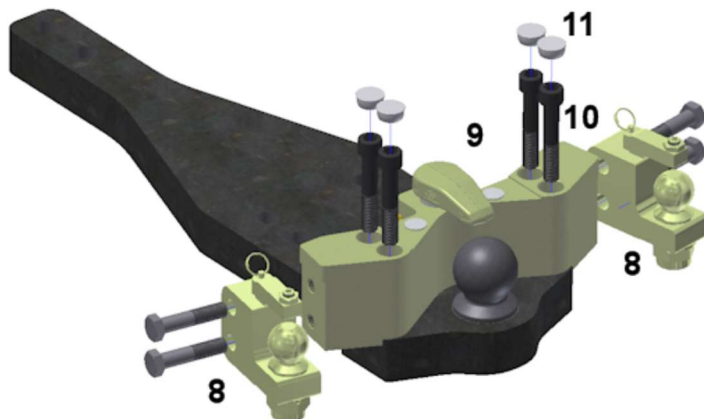
Stützabstand S
support distance S
distance de support S

BILD 2
FIGURE 2



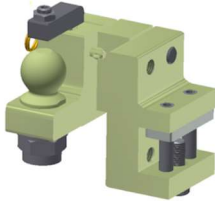
Einstellbarer Niederhalter für Kugelpkupplung
Adjustable retainer for ball-type coupling
Maintien réglable pour attelage à boule

BILD 3
FIGURE 3



KBa-ZWL50 incl. ZWL 50

BILD 4
FIGURE 4



ZWL 50 linksseitig
ZWL 50 left-hand side
ZWL 50 à gauche

BILD 5
FIGURE 5



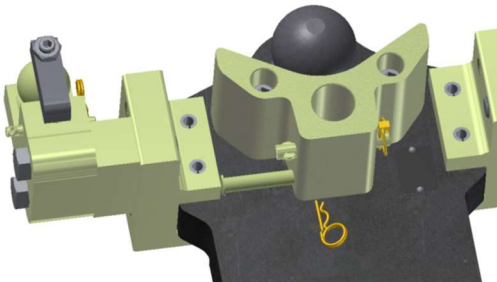
ZWL 50 rechtseitig
ZWL 50 right-hand side
ZWL 50 à droite

BILD 6
FIGURE 6



ZWL 50 linksseitig montiert
ZWL 50 mounted left-hand side
ZWL 50 monté sur la gauche

BILD 7
FIGURE 7



KBa-Z incl. ZWL 50, mit beidseitigen Adaptern 525 und Bundbolzen unten
KBa-Z incl. ZWL 50, with adapters 525 on both sides and collar bolts below
KBa-Z y compris ZWL 50, avec adaptateurs 525 des deux côtés et boulons à collet en dessous