

Notes:

ASSEMBLY AND OPERATING INSTRUCTIONS FOR AL-KO AKS 2700 STABILISER & AL-KO SAFETY DEVICE



PLEASE ENSURE YOU READ THESE INSTRUCTIONS CAREFULLY, BEFORE COMMENCING TO OPERATE THIS PRODUCT.

REGULATIONS:

- 1) The AKS 2700 must be used in conjunction with 50 mm dia. towballs which conform to EC Directive 94/20 (DIN 74058 or local equivalent).
- 2) Suitable for attachment to drawbars or approved overrun braking equipment for single axle (and tandem axle) trailers, with a minimum weight of 200 Kg and a maximum permissible weight of 2700 Kg.
- 3) EC design approval has been given to the AL-KO AKS 2700 coupling under permit No. e1*94/20*0030*00.
- 4) This design approval has been recognised by all EC member states and must be implemented with effect from 01.12.95.
- 5) The AL-KO Safety (Hitch Lock) Anti-Theft Device is effective against the following unauthorized operations:
 - a) Uncoupling from the towing vehicle
 - b) Coupling onto another towing vehicle
 - c) Theft of the Stabiliser from the trailer/caravan.

RESTRICTIONS OF USE:

Spare wheels fitted to rear door of vehicle, or vehicle with platforms etc:

- 1) the AKS 2700 Stabiliser is based on the latest regulations. This means the new DIN 74070 (dimensions of couplings) are also adhered to.
- 2) The trailer coupling may only be connected to towing vehicles where the clearance for the stabiliser can be observed, in accordance with Directive 94/20 EC (DIN 74058). If these clearances are infringed by special attachments, then the use must be checked separately.
- 3) Not suitable for use with overrun devices which revolve above 25°.
- 4) For Swan Neck towbars (fixed or detachable), refer to clearances on separate towball sheet.
- 5) This product is not suitable for use where the overrun has a reverse lock fitted, on the side (Fig. 1).
- 6) AL-KO recommends the use of the AL-KO Safety Ball to complement the AL-KO Safety. The Safety ball is inserted into the coupling area of the Stabiliser, before the AL-KO Safety is locked into position (Fig. 2). This prevents your caravan from being coupled to any other tow hook or smaller towball and being towed away.

APPROVAL:

- 1) This product holds full TUV approval and is also Sold Secure Approved.

WARRANTY:

- 1) Product warranty is given in accordance with S10, Clause 1-7 of the General Terms of Business and is usually 12 months from date of purchase.

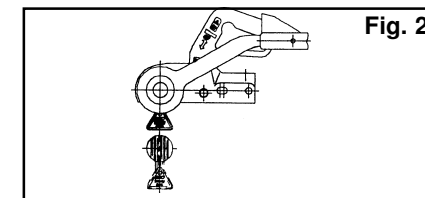
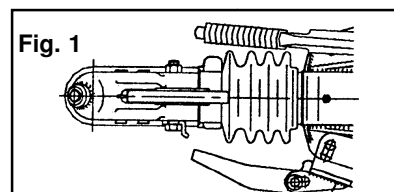
WARNINGS:

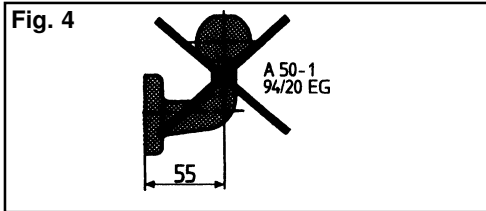
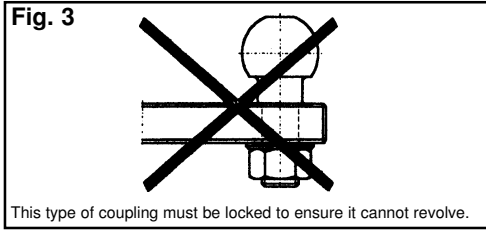
- 1) In accordance with EC Directive 94/20, couplings type A 50-1 cannot be used (see Fig. 4).
- 2) A bolted-in type ball coupling (Fig. 3) is only permissible if the thread is locked.



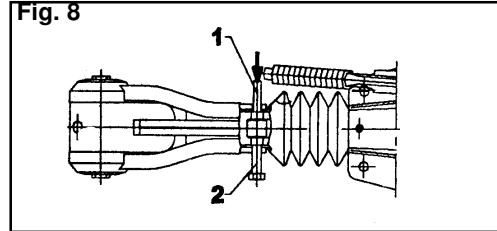
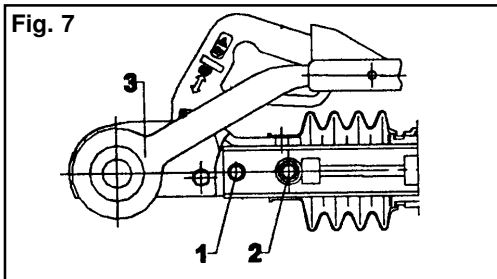
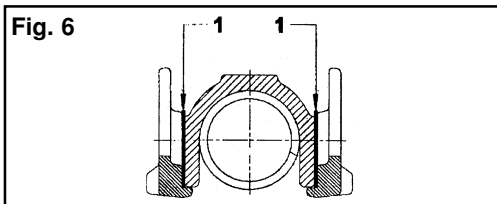
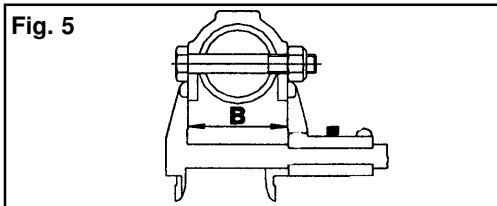
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Part No. 1385180 Iss. 1 - 04/01





Removal of existing fixing bolts:
Before you start to remove the existing fixing bolts, please note the following: On most overrun assemblies, the shock absorber is secured by the fixing bolt (Fig. 7/Item 2).



Warning:
The shock absorber (damper) extends independently. Enclosed with this box is a retaining pin (Fig. 8) to aid assembly.

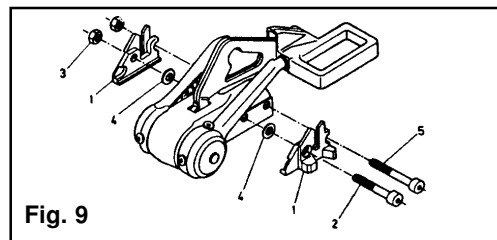
- a) Remove gaiter
- b) Loosen self-locking nut from hexagon cap bolt (Figs. 9/10, Items 1/2)
- c) Push or knock out hex. cap bolt (Fig. 7/Item 1)
- d) Knock through hex. cap bolt (Fig. 8/2) with (Fig. 8/Item 1) and leave the pin in the shaft for centring the shock absorber (damper).
- e) Any spacers originally fitted must be re-used.

Fitting of AL-KO Safety:
Horizontal Bolt Fitting: (for AL-KO Overruns)

Parts configuration as Fig. 9

- Item**
- 1 Locking plates left/right
 - 2 Allen Bolt M12x90 10.9 DIN 912
 - 3 Self locking nut M12
 - 4 Spacer
 - 5 Allen Bolt M12x80 10.9 DIN 912

Cross-type Bolt Fitting: (for other overruns)

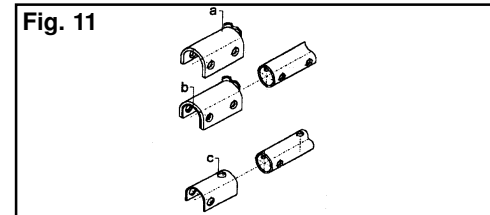
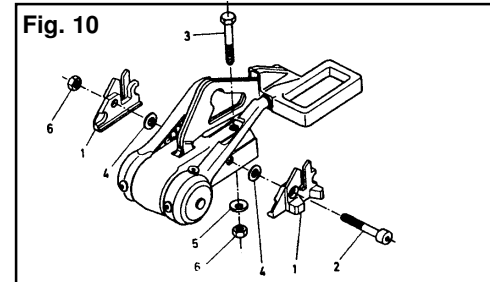


Notes:

Notes:

Parts configuration as Fig. 10

- Item**
- 1 Locking plates left/right
 - 2 Allen Bolt M12x90 10.9 DIN 912
 - 3 Reuse M12x75/80 from original coupling
 - 4 Spacer
 - 5 Section washer (not included in this kit)
- please use original washer from coupling head you are removing
 - 6 Self locking nut M12



Procedure:

Push gaiter and AKS 2700 onto the draw shaft, with spacers (Fig. 11) if necessary, so that the fixing holes line up. If present, position the spacer sleeve in the draw shaft.

Fit parts as shown on figs. 9 or 10. If a spacer sleeve is in the draw shaft, thread this on as well. Push retaining pin (Fig. 6/Item 1) through (with the bolt behind - horizontal or vertical). Shock absorber (damper), is threaded on.

For your own safety, please check:

To make sure the shock absorber (damper) is threaded on, push the draw shaft in and out. If you can feel resistance, then it is correctly positioned.

Always insert horizontal bolts from right hand side (when facing stabiliser), as this allows correct clearances.

Always insert vertical bolt from top to bottom and re-use original shim used on the overrun. (Fig. 10/Item 5).

The locking plates (Figs 9/10/Item1) must be aligned vertically and parallel to each other, especially for AKS 2700 with the cross type screw fitting.

For horizontal bolts, tighten with Allen Key size 10 Using the M12 Full nuts provided.

Torque 100 Nm

For vertical bolt: tighten bolt, torque 100 Nm.

ASSEMBLY INSTRUCTIONS

To determine No. and position of compensating washers required, measure housing width B (between the two bolts) when attached and bolts are tightened (Fig. 5). Number and position of the washers (left/right seen in direction of travel) to be inserted when assembling the side locking plates.

Measurement B (mm)	No. Req. (Fig. 6/Item 1)	
	Left	Right
61, 61.5	2	2
62, 62.5	2	1
63, 63.5	1	1
64, 64.5	1	0
65, 65.5	0	0

When the quantity and position of compensating washers has been decided, release full nuts and withdraw front bolt (Fig. 9/Item 2). Replace bolt taking up compensating washer and spacer, re-tighten using 12 mm Nyloc Nuts - Torque to 100 Nm. Secure gaiter with tie wrap.

Put safety cover on and lock. If the cover is difficult to put on or lock/unlock then you need to reposition the locking plates. Loosen front bolts and the plates can now move laterally.

Re-tighten bolts to correct torque and check if safety cover now fits.

OPERATING INSTRUCTIONS (AL-KO SAFETY):

IMPORTANT: With an AKS of more recent manufacture, the safety cover can be left on whilst towing.

Differentiation: AKS manufactured up to 1992 can easily be identified as the stabilising levers are made of curved steel tube.

NOTE: The safety cover CANNOT remain on whilst driving as the stabiliser handle cannot be closed.

AKS made after 1992, are identified by having ribbed cast aluminium handles and the safety cover can remain on whilst driving.

Insert left and right lugs of safety cover into cutaway portion of the attached locking plates (Fig.12).

Push safety cover firmly down until it can go no further (Fig. 13).

Hold safety cover in place, turn key to the right and press the lock cylinder in, until it clicks into place (Fig. 14). Turn the key to the left into the locked position. The strain bolt then moves out and locks.

Swing the dust cap over the lock cylinder to protect from dirt (Fig. 14).

Removing Safety Cover (reverse order to fitting cover):

Open dust cap.

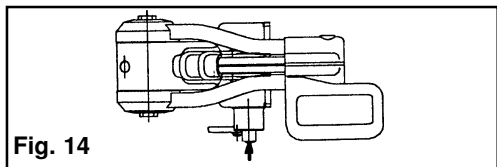


Fig. 14

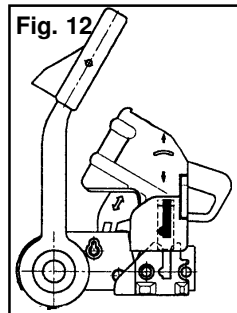


Fig. 12

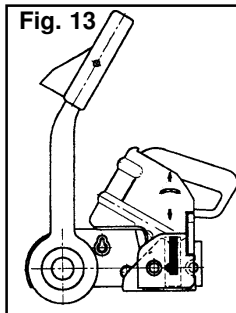


Fig. 13

Insert key and turn to the right, as far as it will go (about 60°). As a result the lock cylinder will slide up automatically. If necessary, press the safety cover forward and pull out the lock cylinder with the key (turned about 60°).

Remove safety cover and stow in vehicle or caravan. So that the dust cap is not damaged during transit, remove key (inserting lock) and swing dust cap over the lock cylinder.

Important Information:

Never attempt to fix or remove the safety cover with the aid of a hammer - this may result in damage to the cover.

MAINTENANCE

Clean strain bolt, locking bolts and the cutaway portion in the locking plates if they become dirty. A little grease may be applied but remove excess with a cloth so that only a thin film remains.

Operate the locking cylinder periodically, if the cover has not been used for a while. If the lock only operates with difficulty, spray the cylinder with WD 40 (or similar).

PLEASE CHECK THE CONDITIONS FOR ATTACHMENT BY FOLLOWING THE STEPS LISTED ON NEXT PAGE.

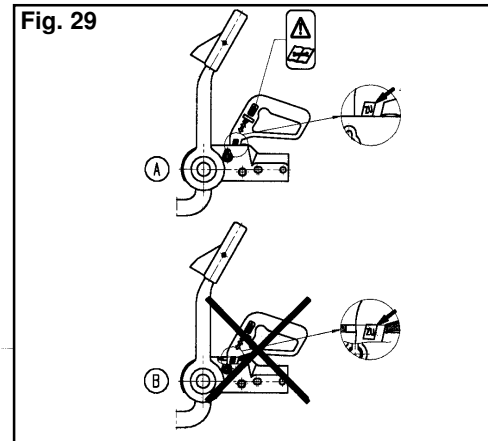


Fig. 29

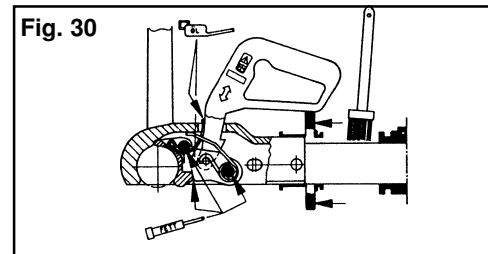


Fig. 30

Spare Parts/Attachment Parts:

Warning:

- 1) Only original AL-KO spare parts may be used.
- 2) All attachments and accessories must be approved by AL-KO.

FAILURE TO COMPLY WITH THIS DEMAND WILL RELEASE THE MANUFACTURER OF AKS 2700 FROM ALL GUARANTEE OBLIGATIONS.

GENERAL INFORMATION

The surface of the ball must be free from grooves, rust and siezing marks. Any Dacromet coating (dull silver corrosion protection coat) must be removed, otherwise there will be increasing wear and a reduction in the stabilising effect.

During winter use, spray the visual indicator button with de-icer.

Manoeuvring by hand:

Stabilising lever may not be used as a manoeuvring handle. Please use the handles on your caravan or the AL-KO manoeuvring handle which can be purchased separately to attach to your jockey wheel. Failure to comply results in danger of overloading component parts.

Manoeuvring with towing vehicle:

Pull the stabilising handle to the top position (manoeuvre position) to make the manoeuvring easier (on camp sites etc).

Storing:

To reduce the contamination of component parts of the AKS 2700, the stabilising handle should be closed if stored over a longer period. Protect the towball of the vehicle from rusting.

Noises when driving:

As a rule the friction linings DO NOT MAKE A NOISE when driving! Any clicking, creaking, or squeaking noise arising, could have the following causes:

- 1) Foreign bodies or dirt between the friction pad and towball.

Remedial action: Clean the towball and clean friction pads by lightly rubbing over the pad with sandpaper (100-200 grain).

- 2) Dry operation of the towball shaft in the sleeve of the overrun equipment.

Remedial action: Lubrication of the sleeves through the grease nipples (use multi-purpose grease DIN 51825 KTA 3K), additionally pull the gaiter off the overrun, towards the front and grease all of the exposed drive shaft (see Fig. 27).

- 3) The towball on the towing vehicle has too much play in the locking mechanism (if detachable).

Remedial action: Go to specialist workshop. Have the towball checked for damage. If necessary change towball or if permissible re-lubricate locking mechanism.

Lubrication:

Coupling Mechanism

In order to maintain the easy action of the coupling mechanism and to achieve a longer life for the AKS 2700, the coupling mechanism must be lubricated at regular intervals (at least once a year). Type of lubricant: General purpose grease to DIN 51825 KTA 3K (or local equivalent). (Fig. 30).

Warning: When lubricating, no oil or grease should get on the friction area or the ball holding area.

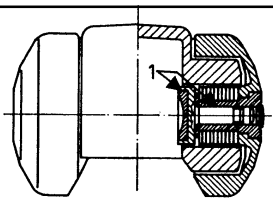
If friction pads are contaminated with grease they should not be cleaned as this will have a reduced stabilising effect. Therefore friction pads should be replaced.

Stabilising Unit:

Should lubrication of the stabiliser unit parts become necessary then the following must be observed:

- Clean all parts thoroughly.
- Areas may only be covered with a thin film of grease (Fig. 27/Item 1).
- Type of lubricant: Multi-purpose grease to DIN 51825 KTA 3K (or equivalent)

Fig. 27



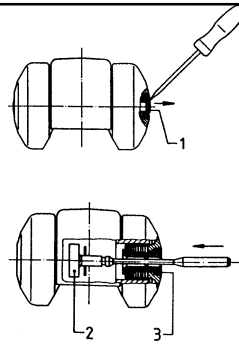
Replacing Friction Linings:

The marking on the pressure plate (Fig. 19/Item 4) has reached or passed the "replace" marking on the housing (Fig. 26/Item 3).

Uncouple the AKS 2700.

Use a screwdriver to remove plastic protective caps (fig. 28/Item 1).

Fig. 28



Press worn friction linings (Fig. 28/Item 2) inwards and remove (use punch and hammer).

Insert the new friction linings (one at a time) from below with the pin in the sleeve (Fig. 28/Item 3) and press in as far as possible (pin engages, no tools necessary). Also reinsert adjusting washers, if present on original friction pads.

Check wear on ball:

If the wear indicator (Fig. 29/Zu) is no longer visible, it is probable that the ball is worn and has developed play within the coupling housing. Proceed as follows:

- Connect ball DIN 74058 (ISO 50)
- Handle is automatically tightened
- No pushing by hand
- Check the position of the wear indicator

Warning: The AKS 2700 can disengage and the caravan could uncouple from the towing vehicle. Check AKS and towball immediately!

Warning: Exchange the worn out part immediately. The diameter of the towball should be ascertained first of all, so that conclusions may be drawn as to the wear of the coupling mechanism (minimum dia.

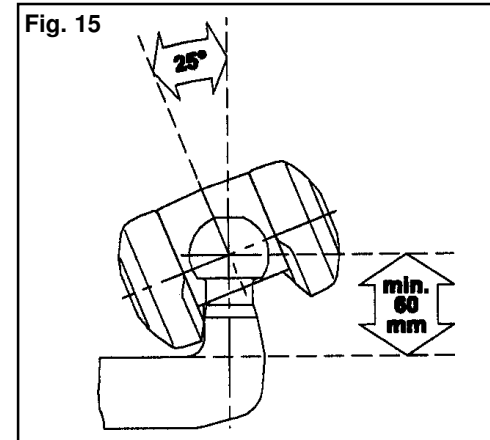
Checking the towball coupling:

Have the towball re-checked with standardised test ball at the AL-KO service station. The towball coupling/trailer ball is not worn at handle (Fig. 29/A) (Tightening only via spring force, without pushing by hand).

Towing vehicle with towball attachment:

The equipment may only be used for connecting to towballs to Directive 94/20 EC A50, where the clearance below the ball, is at least 60 mm (Fig. 5). According to British Standards the prescribed rotation of $\pm 25^\circ$ will thus be achieved. Not suitable for use with revolving shafts above 25° .

Fig. 15



Handbrake lever on right:

The AKS 2700 can be used only on overrun devices where the handbrake is mounted on the right, viewed by someone facing the direction in which the vehicle is moving. For handbrake levers on the left, please order the special handles, Part No. 581158 & 581158.

Clearances for AKS 2700 (Fig. 16)

- The area above the towing ball of the vehicle must be free from vehicle components (eg. spare wheels).
- Clearing for stabiliser handle = 340 (B) + stroke (D) (85-100 mm) = 440 mm with AL-KO overrun devices.
- Max. 50 mm (C) clearance for coupling handle (at initial operation).
- Min. 45 mm clearance (E) to rear of towing vehicle.

Fig. 16

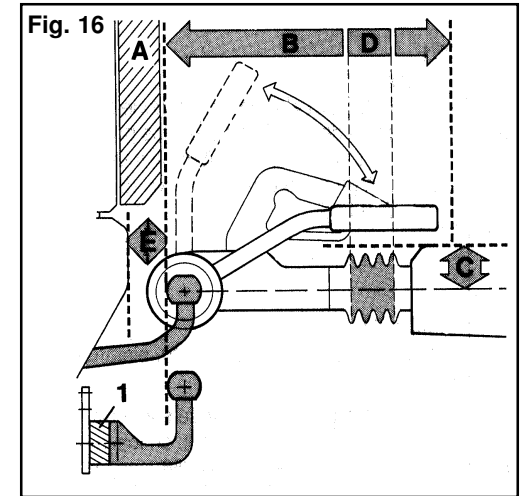
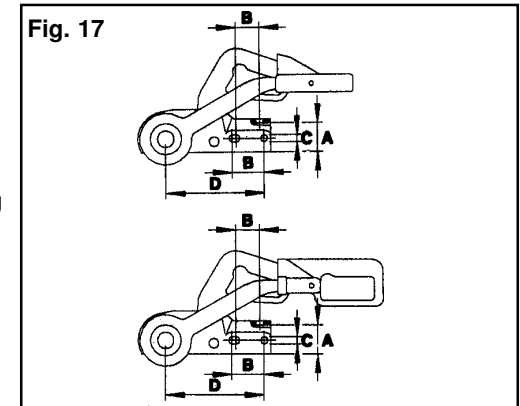


Table 1

Min Mass Kg	Total Permissible Weight Kg	Nose Weight Kg	Weight Kg	
200	2700	100	5	
Hole Type	Shaft Dia. (mm)	Distance Between Holes		Length D (Fig. 5)
Horiz	50	B	C	177
	35&40	54	12	177
Cross	45&50	40	18	177

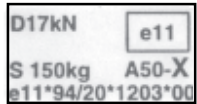
Fig. 17



All EC Countries:

The installation is to be examined in conformity to the stipulations in Appendix 1, No.5.10, according to the demands of Appendix VII of Directive EC 94/20. These installation and operating instructions are to be included with the caravan/trailer papers.

GB - Installation only possible with special tow ball attached to towing vehicle. Towball label will appear as follows:



(see regulations and restrictions of use on page 1).

OPERATING INSTRUCTIONS (AKS 2700)

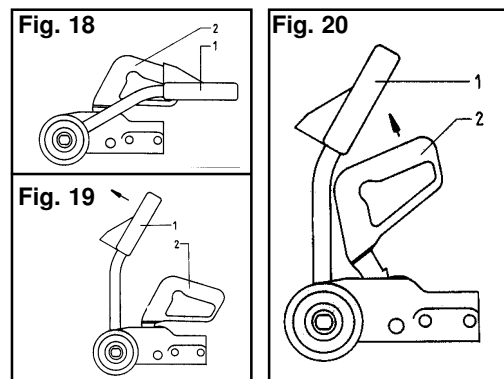
AKS 2700 Delivery Specifications:

Fig. 18/Item 1: Stabilising Lever
Fig. 18/Item 2: Coupling Handle

Coupling/Uncoupling:

Please Note: When coupling or uncoupling, the stabiliser lever must be in the top position (open).

Pull stabiliser handle fully up right to stop (open) (see Fig. 19/Item1).



Coupling Up:

Coupling Head

Open the ball coupling - to do this, pull coupling handle fully upwards in direction of arrow (Fig. 20/Item 2).

Put the opened coupling on the towball of the towing vehicle and release the coupling handle. It should now slide back into the initial position on its own. However, press down with the hand as well. Closure and fastening are automatic.

Safety Warning: If the stabiliser is correctly coupled to the towball, then the green edge of the safety indicator is visible. The coupling mechanism is correctly positioned when the hand lever can no longer be pressed down even by hand (Fig. 15/Item 2).

If the AKS 2700 is not correctly coupled to the towball, then the trailer/caravan can become disconnected from the towing vehicle!

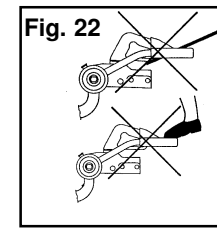
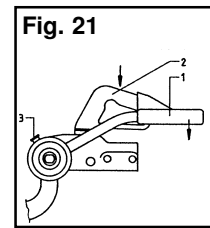
Press the stabilising handle down until it is over centre and against the end stop.

Uncoupling

Lower the jockey wheel.
Detach breakaway cable and electrical plugs.
Pull stabilising lever up, right to stop (Fig. 20/Item 1).
Pull coupling handle hard up in direction of arrow (Fig. 20/Item 2).
Lift coupling head from towball of towing vehicle. This process can be carried more easily if the towbar is set high with the jockey wheel, when the coupling handle is opened.

Safety Tips:

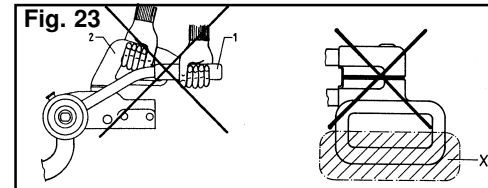
During coupling and uncoupling, the AKS 2700 must only be operated by one person.



Warning: Never operate with foot or extension bar! The components will be overloaded and damaged. (Fig. 22). Only press stabilising handle down or pull it up with one-hand only.

Warning: The stabilising lever must not be used as an aid for manoeuvring.

Caution: When opening or closing stabilising handle, do not leave hands on the coupling handle (Fig. 23).



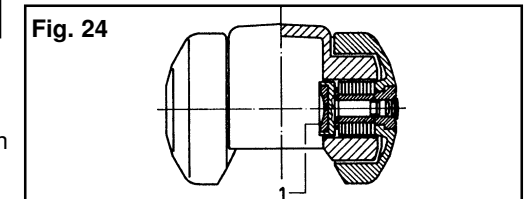
Important Operating Factors

The towball should be completely free of grease and other residue. Clean thoroughly with Thinners, White Spirit or Brake Cleaning fluid.

Hints: The surface of the towball must be free of grooving, rust and scratch marks. Otherwise increased wear and tear will occur. If pads are contaminated by paint or if they are glazed, they can be cleaned with 100-200 grain sandpaper.

Painted towballs or similar coatings: In the event of the ball being coated, this must be thoroughly removed (with 100-200 grain sandpaper). Otherwise reduced stabilising effect, increased wear and damage to AKS 2700 components may occur.

Technical Information: The friction linings are pressed against the towing ball and generate a stabilising/damping force. The friction pads are therefore subjected to wear. The linings have reserves of wear and thus have a long service life (Fig. 18).



How to check the efficiency of the AKS 2700:

- 1) Couple the AKS 2700.
- 2) Pull stabilising handle into off position (Fig. 26/Item 1).
- 3) Close stabilising handle until resistance is felt (friction linings are in contact with the towball - but not under pressure).
- 4) The mark on the pressure plate is between the two marks (Fig. 26/Item 4) on the housing (Fig. 26/Items 2&3), The friction linings are beyond permissible wear range and require adjustment when the marking on the pressure plate coincides or passes the marking on the housing (Fig. 26)
- 5)

