

**TOW BAR K-023 FOR
Kia Sorento
(07/2006 - r.)**

FITTING AND OPERATION MANUAL

Cat. No.K-023

DESTINATION

Tow bar **K-023** for a **Kia Sorento** is designed for towing a trailer. This ball hook has a current certification of approval authorizing the product with **e20** certification sign.

FITTING CONDITIONS

Tow bar **K-023** can be used and operated in a car with proper technical conditions of body elements. Those parts cannot be mechanically damaged. The ball hook has to be installed and operated in a car according to this instruction. All bolts and nuts in ball hook have to be screwed down with proper torque (Mo). Torque values are given below:

M8	-	25 (Nm)	M12	-	85 (Nm)
M10	-	50 (Nm)	M16	-	200 (Nm)

OPERATION CONDITIONS

The tow bar **K-023** has a rating plate describing correct and safe loads of the hook:

Typ: K-023	The tow bar for Kia Sorento
A50-X	Tow bar class (compressing device)
e20 0706-00	Tow bar certification of approval number
D = 14,9 kN	Teoretical related force working on a ball hook
S = 140 kg	Max permissible vertical load of the hook ball
R = 3500 kg	Max permissible load of towing trailer

D - force is calculated using the following formula:

$$D = g \times \frac{T \times R}{T + R} \text{ kN}$$

T-technically permissible maximum mass in tonnes of the towing vehicle (also towing tractors) including, if necessary, the vertical load of a centrale axle trailer.
R-technically permissible maximum mass in tonnes of the full trailer with drawgal free to move in the vertical plane or of the semi-trailer.
g-acceleration due to gravity(assumed as 9,81 m/s²)

During operating individual elements of ball hook should be kept in a proper technical condition and protected from corrosion. The trailer must be linked with an elastic joint with proper durability (cord , chain) while towing .It is necessary to check periodically bolt joints during operating the ball hook. If screws are eased , it is necessary to screw them down .

FITTING

The tow bar **K-023** for **Kia Sorento** is made up of the following elements:

- | | | | |
|--------------------------------|------------|------------------------------|------------|
| 1. Towbar | - 1 piece | 10. Bolt M12x(1,5)x40 | - 8 pieces |
| 2. Towball | - 1 piece | 11. Bolt M12x50 (PN/M-82101) | - 4 pieces |
| 3. Electrical plate | - 1 piece | 12. Bolt M12x100 | - 2 pieces |
| 4. Right support | - 1 piece | 13. Flat washer 10,5 | - 8 pieces |
| 5. Left support | - 1 piece | 14. Flat washer 13,0 | -14 pieces |
| 6. Plate | - 2 pieces | 15. Spring washer 10,2 | - 4 pieces |
| 7. Distance sleeve 26/ 12,5x13 | - 4 pieces | 16. Spring washer 12,2 | -14 pieces |
| 8. Distance insert | - 2 pieces | 17. Nut M10 | - 4 pieces |
| 9. Bolt M10x35 | - 4 pieces | 18. Nut M12 | - 6 pieces |

Follow the general directions in order to fit **K-023** tow bar properly:

- 1.Rear bumper cutting is required.
- 2.Remove rear bumper and metal strengthening. (the strengthening will not be used anymore).
- 3.Lower spare wheel.
- 4.Attach (1) to the frame, hang it on pins (A points) and tight loosely using factory- made nuts.
- 5.Drill holes in the frame through holes in the towbar supports(1)(in B points) using bit 12,5 mm.
- 6.Attach (4,5) to the car chassis side members from inside and tight loosely too the B points using (11),(7),(14),(16),(18) and tight loosely to the car chassis side members using(10), (14),(16) and factory-made holes.
- 7.Attach (6) from the outside of the chassis side members to the factory-made holes and tight loosely using (1),(14),(16) and tight loosely with (4,5) using (9), (13),(15) and (17).
- 8.Tight all nuts with torque values given int the table.
- 9.Make the cutting of the rear bumper according to the enclosed template.
- 10.Refit rear bumper.
- 11.Attach (2) to the (1) with (8) and (3) using (12), (14),(16) and (18).

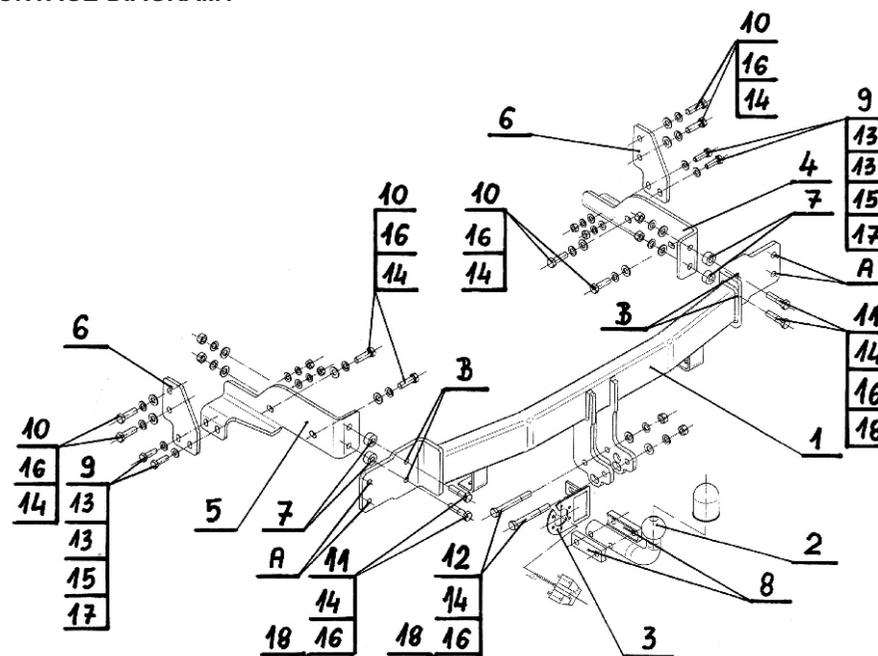
Obeying this instruction assures correct montage and the tow bar operating in a Kia Sorento.

After assembling of the tow bar **K-023** you have to get entry in cars **registration book** in a quality control station .

CAUTION :

Check if all bolts and nuts are correctly tightened after 1000km. Keep tow ball clean, grease and cased. All mechanical damages of tow bar excludes its further exploitation. Damaged ball hook **cannot be repaired**. In case of braking the rules of montage or unproper usage manufacturer **do not take responsibility** for arised damages .

MONTAGE DIAGRAM :



NOTE :

Bunch of wires is not included (in total price).