

TOW BAR O-112
OPEL Astra II
 (03/1998 - 03/2004)
FITTING AND OPERATION MANUAL.

Cat. No.O-112

DESTINATION

Tow bar **O-112** for a **Opel Astra II (4/5D)** 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 **O-112** 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 **O-112** has a rating plate describing correct and safe loads of the hook:

Typ: O-112 A50-X e20 0054-00 D = 8,1 kN S = 75 kg R = 1500 kg	The tow bar for Opel Astra II (4/5D) Tow bar class (compressing device) Tow bar certification of approval number Theoretical related force working on a ball hook Max permissible vertical load of the hook ball Max permissible load of towing trailer
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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 **O-112** for **Opel Astra II (4/5D)** is made up of the following elements :

- | | | | |
|----------------------------------|------------|-----------------------|------------|
| 1. Tow bar's body | - 1 piece | 7. Bolt M12x70 | - 2 pieces |
| 2. Hook ball | - 1 piece | 8. Bolt M12x90 | - 2 pieces |
| 3. Socket holder | - 1 piece | 9. Bolt M12x100 | - 2 pieces |
| 4. Flat | - 2 pieces | 10.Spring washer 12,2 | - 6 pieces |
| 5. Distance sleeve 17,3/ 12,5x55 | - 2 pieces | 11.Simple washer 13,0 | - 2 pieces |
| 6. Distance sleeve 17,3/ 12,5x66 | - 2 pieces | 12.Nut M12 | - 6 pieces |

In order to mount the ball hook **O-112** you have to obey the instruction below:

- 1.Mounting ball hook do not require cutting rear bumper of the car.
- 2.Dismantle ball hook into mounting elements and dismantle rear bumper. After dismantling the bumper remove polystyrene stiffing from it (there is no space for it after mounting the hook).
- 3.To get easier to already marked points in the truck-dismantle the sheathing of back belt.
- 4.In factory marked points, inside of the boot drill 4 12,5 openings vertically through the one stinger wall.
- 5.From the inside of the boot expand existing 12,5 openings to 17,5 diameter openings but only in lower side of the longitudinal.
- 6.Put the 17,3/ 12,5x66 distance sleeves (6) together with M12x100 bolts (9) and with flat bar (4) into the expanded openings from the right side. Put 17,3/ 12,5x55 (5) distance sleeves together with M12x90 bolts (8) and with flat bar (4). Next screw it together with hook body (1) using M12 nuts (12) and 12,2 spring washers (10).
- 7.Mount rear bumper to the car.
- 8.Screw down the hook ball (2) with M12x70 bolts (7), with 12,2 spring washers (10) and 13,0 simple washers (11) and nuts M12 (12). At the same time, from the left side of hook ball (2), screw down the socket contact holder (3).
- 9.Check if all bolts are screwed hard enough.

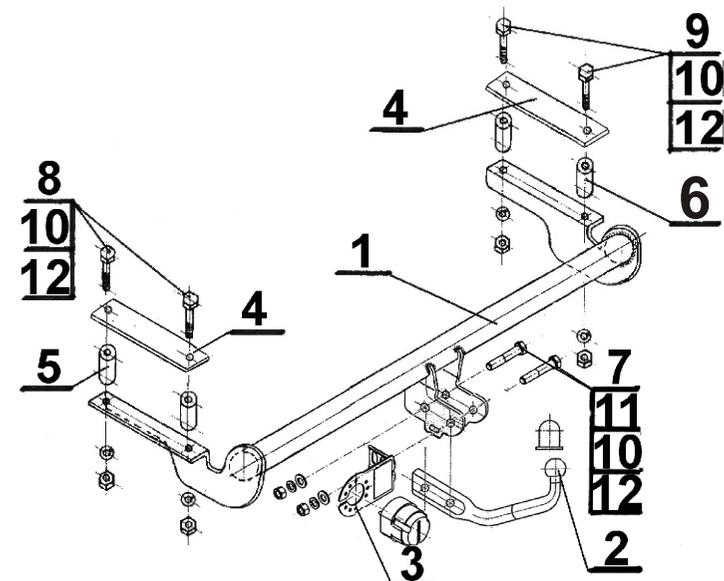
Obeying this instruction assures correct montage and the tow bar operating in a Opel Astra II (4/5D)

After assembling of the tow bar **O-112** you have to get entry in cars **registration book** in a quality control station .

CAUTION :

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).