

TOWBAR O-116 **FOR OPEL ASTRA III (3/5D)** **(03/2004 - r.) FITTING** **AND OPERATION MANUAL.**

Nr kat. O-116

DESTINATION

Towbar **O-116** for a **Opel Astra III (3/5D)** is designed for towing a trailer. This ball hook has a current certification of approval authorizing the product with **e4** certification sign.

FITTING CONDITIONS

Towbar **O-116** 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 towbar **O-116** has a rating plate describing correct and safe loads of the hook:

Typ: O-116 A50-X e4 00-3044 D = 9,0 kN S = 75 kg R = 1650 kg	The tow bar for Opel Astra III (3/5D) Tow bar class (compressing device) Tow bar certification of approval number Teoretical 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 towbar **O-116** for **Opel Astra III (3/5D)** is made up of the following elements:

- | | | | |
|----------------------------------|------------|----------------------------------|------------|
| 1. Tow bar mainframe | - 1 piece | 7. Distance sleeve 17,3/ 12,5x60 | - 2 pieces |
| 2. Tow ball | - 1 piece | 8. Bolt M12x65 | - 2 pieces |
| 3. Electrical plate | - 1 piece | 9. Bolt M12x100 | - 4 pieces |
| 4. Right welt | - 1 piece | 10.Flat washer 13,0 | -10pieces |
| 5. Left welt | - 1 piece | 11.Spring washer 12,2 | - 8 pieces |
| 6. Distance sleeve 17,3/ 12,5x56 | - 2 pieces | 12.Nut M12 | - 6 pieces |

In order to mount the ball hook **Opel Astra III (3/5D)** you have to obey the instruction below.

- 1.Rear bumper cutting or removing **is not required**.
- 2.Dismantle the tow bar into kit-form elements.

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- 3.Remove the exhaust silencer from the hangers.
- 4.In the factory marked points, inside the trunk, drill 4 pcs. of holes 18,0 (vertically) down through one wall of the chassis side member.
- 5.In the previously drilled holes insert (6) (the holes farther the tow ball), and (7) (the holes nearer the tow ball), next put (1).
- 6.Attach using (9) inserted from the inside of the trunk with (4), (5), (10), (11), (12) like showed on figure.
- 7.Attach the previously disassembled silencer.
- 8.Attach (2) to (1) using (8), (10), (11), (12); at the same time. attach (3) from left side of (2).
- 9.Check if all fixing bolts and nuts are screwed hard enough.

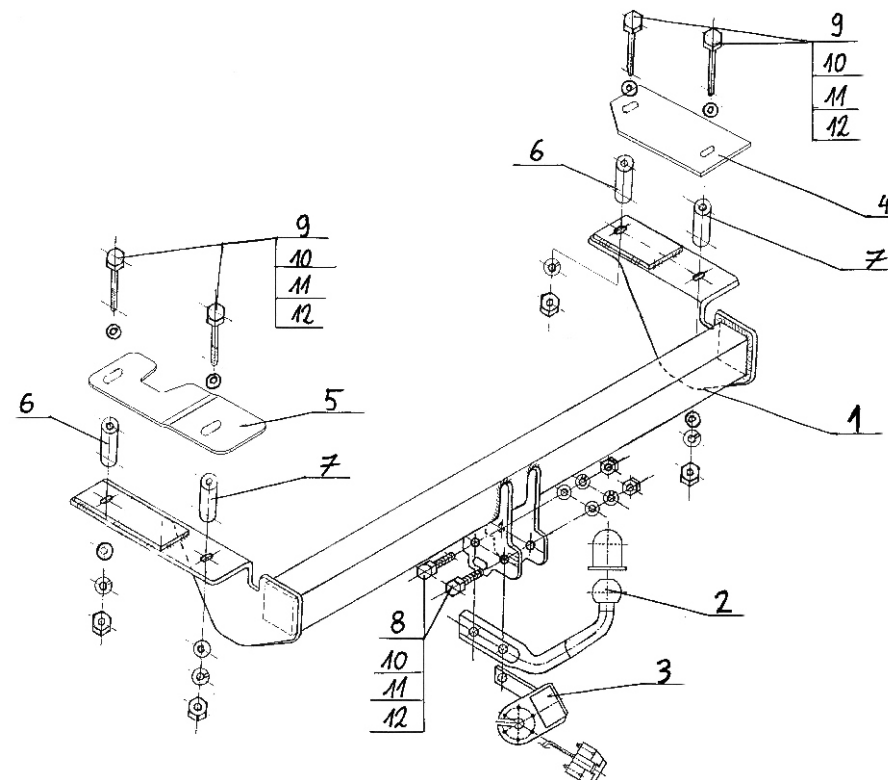
Obeying this instruction assures correct montage and the tow bar operating in a Opel Astra III (3/5D).

After assembling of the tow bar **O-116** 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).

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