

DESTINATION

Tow bar **O-232** for a **Opel Zafira II** is designed for towing a trailer. This ball hook has a current certification of approval authorizing the product with **e4** certification sign.

FITTING CONDITIONS

Tow bar **O-232** 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 :

| Screw thread | M8 | M10 | M12 | M14 | M16 |
|--------------|-------|-------|--------|--------|--------|
| Class 8,8 | 25 Nm | 50 Nm | 85 Nm | 130 Nm | 200 Nm |
| Class 10,9 | 35 Nm | 65 Nm | 115 Nm | 185 Nm | 285 Nm |

OPERATION CONDITIONS

The tow bar **O-232** has a rating plate describing correct and safe loads of the hook :

| | |
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| Typ: O-232 A50-X e4 00 - 3980 D = 9,6 kN S = 75 kg R = 1650 kg | The tow bar for Opel Zafira II 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 vehicale (also towing tractors) including, if neccessary, 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-232** for **Opel Zafira II** is made up of elements as follows :

- | | | | |
|----------------------------------|------------|-----------------------------|------------|
| 1. Towbar mainframe | - 1 piece | 13. Bolt M10x170 | - 2 pieces |
| 2. Tow ball | - 1 piece | 14. Bolt M12x65 | - 2 pieces |
| 3. Electrical plate | - 1 piece | 15. Spring washer Ø8,2 | - 4 pieces |
| 4. Right arm | - 1 piece | 16. Spring washer Ø10,2 | - 4 pieces |
| 5. Left arm | - 1 piece | 17. Spring washer Ø12,2 | - 2 pieces |
| 6. Distance sleeve Ø22/Ø10,5x118 | - 2 pieces | 18. Flat washer Ø10,5 | - 4 pieces |
| 7. Special washer Ø30/Ø10,5x3 | - 6 pieces | 19. Flat washer Ø13,0 | - 2 pieces |
| 8. Special washer Ø25/Ø13x4 | - 2 pieces | 20. Nut M10 | - 4 pieces |
| 9. Special washer Ø35/Ø10,5x5 | - 4 pieces | 21. Nut M12 | - 2 pieces |
| 10.Special washer Ø24/Ø8,5x2,5 | - 4 pieces | 22. Cage nut M8 (CH-004.01) | - 2 pieces |
| 11.Bolt M8x40 | - 2 pieces | | - 2 pieces |

Follow the general directions in order to fit **O-232** towbar properly:

- 1.Rear bumper cutting and removing is required.
- 2.Remove rear bumper and its metal-strengthening (the strengthening with polystyrene plate would be refited again).
3. In factory-marked cavities on the car rear panel drill holes with size ~Ø 22mm only through the one side. From the inside of rear panel remove existing rubber dummies.
4. From the bottom of chassis side members attach (22) and(23) to the factory-made holes.
- 5.Attach 4, 5 with (9) to the car chassis side members from the bottom, then tight loosely using (11), (15), (10).
- 6.Attach (1) with (6) to the rear paneland tight with (4, 5), using:
-(13), (7), (18), (16), (20) and
-(12), (7), (18), (16), (20).
- Warning:Attach (8) between (1) supports and rear panel, instead attach (7) between (4, 5) and rear panel.**
- 7.Tighten all nuts and bolts.
- 8.Refit the strengthening with polystyrene plate.
- 9.Make the cutting of the rear bumper regarding to the template.
- 10.Refit rear bumper.
- 11.Tight (2) and (3) to the (1), using (14), (19), (17), (21).

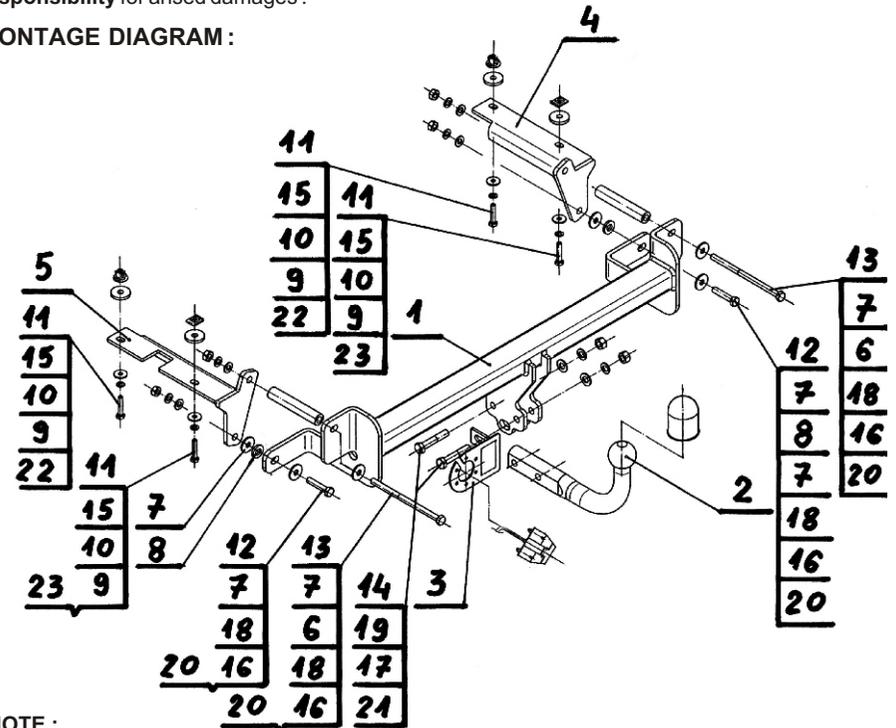
Obeying this instruction assures correct montage and the towbar operating in a Opel Zafira II.

After assembling of the tow bar **O-232** 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).