



DIN EN ISO 9001
Zertifikat Nr. 71 100 D 366

Nr kat. M-237

DESTINATION

Tow bar **M-237** for a **Mercedes Vito / Viano** 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 **M-237** 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 (M_o). Torque values are given below:

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

OPERATION CONDITIONS

The tow bar **M-237** has a rating plate describing correct and safe loads of the hook:

Typ: M-237 A50-X 00-3140 D = 13,3 kN S = 100 kg R = 2500 kg	The tow bar for Mercedes Vito / Viano 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 **M-237** for **Mercedes Vito / Viano** is made up of the following elements :

1. Towbar mainframe	- 1 piece	6. Flat washer 17,0	- 2 pieces
2. Forged towball	- 1 piece	7. Spring washer 12,2	- 6 pieces
3. Bolt M12x90	- 6 pieces	8. Spring washer 16,3	- 2 pieces
4. Bolt M16x50	- 2 pieces	9. Nut M12	- 6 pieces
5. Flat washer 13,0	- 6 pieces	10. Nut M16	- 2 pieces

In order to mount the ball hook **M-237** you have to obey the instruction below:

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

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3. Remove lashing eye (right side of the car).
4. Put (1) to the chassis frame members and attach using (3), (5), (7) and (9) from the external side.
5. Attach (2) to (1) using (4), (6), (8), and (10).
6. Check if all fixing bolts and nuts are screwed hard enough.

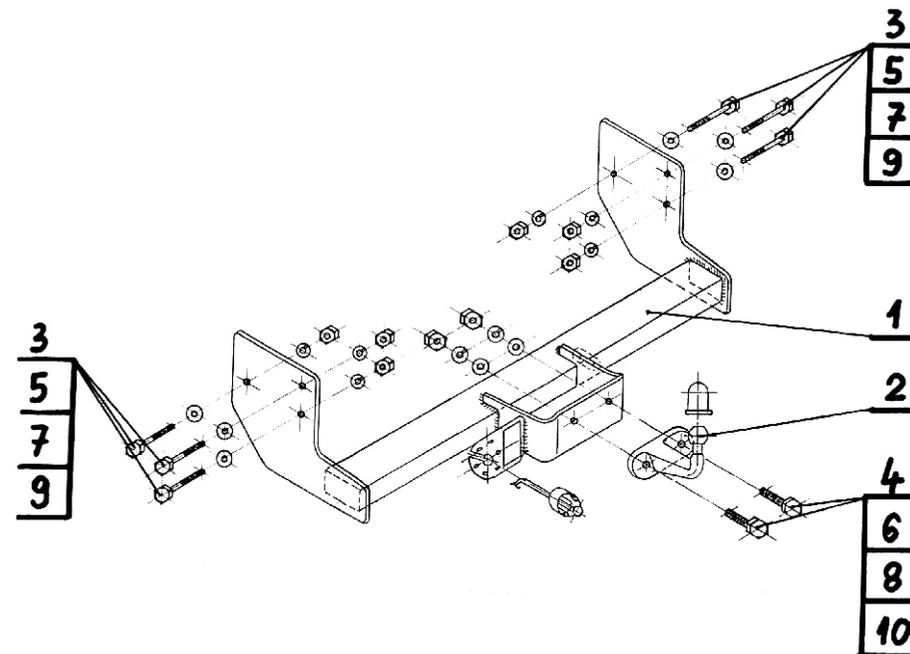
Obeying this instruction assures correct montage and the tow bar operating in a Mercedes Vito / Viano.

After assembling of the tow bar **M-237** 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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