

TOW BAR M-237 FOR MERCEDES VITO / VIANO (2005 -) (chassis number higher than ... 132 225) FITTING AND OPERATION MANUAL.

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 (Mo). 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.

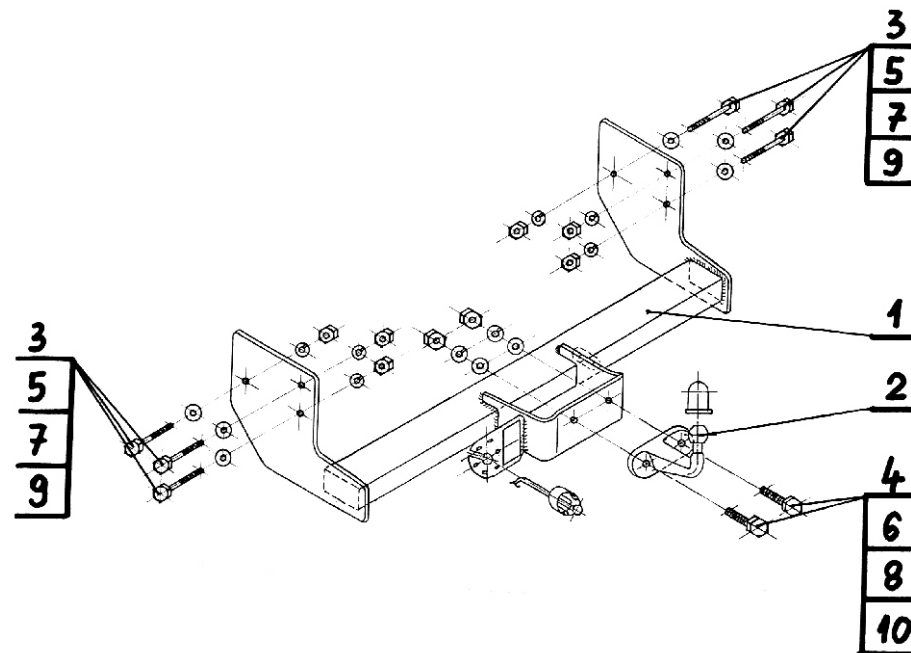
Obeying this instruction assures correct montage and the tow bar operating in a Mercedes Vito / Viano.

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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