

DESTINATION

Tow bar **D-300** for a **Dodge Caravan / Grand Caravan / Chrysler Voyager / Grand Voyager** 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 **D-300** 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 (M₀) . Torque values are given below :

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

OPERATION CONDITIONS

The tow bar **D-300** has a rating plate describing correct and safe loads of the hook :

Typ: D-300	The tow bar for Dodge Caravan / Grand Caravan / Chrysler Voyager / Grand Voyager
A50-X	Tow bar class (compressing device)
e20 0487-00	Tow bar certification of approval number
D = 10,0 kN	Teoretical related force working on a ball hook
S = 80 kg	Max permissible vertical load of the hook ball
R = 1600 kg	Max permissible load of towing trailer

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 **D-300** for **Dodge Caravan / Grand Caravan / Chrysler Voyager / Grand Voyager** is made up of the following elements :

- | | | | |
|-------------------------|------------|-----------------------|------------|
| 1. Towbar mainframe | - 1 piece | 5. Bolt M12x40 | - 4 pieces |
| 2. Towball with support | - 1 piece | 6. Spring washer 12,2 | - 8 pieces |
| 3. Flat bar | - 2 pieces | 7. Flat washer 13,0 | - 4 pieces |
| 4. Bolt M12x30 | - 4 pieces | | |

Follow the general directions in order to fit **D-300** tow bar properly:

- 1.Rear bumper cutting is not required.
- 2.Remove and take off the rear bumper.
- 3.Dismantle the towbar into kit-form elements.
- 4.Remove the factory-made supports fixing the rear bumper.
- 5.Put (1), the angle bar of (1) should be placed from the inside of the chassis frame members, next attach (1) to the chassis frame members through the existing factory-made holes using (5) with (6), (7), (3).
- 6.Put the rear bumper and fit to the body line, next attach the rear bumper using existing nuts M8 (8 pcs.).
- 7.Attach (2) to (1) using (4) with (6).
- 8.Check if all fixing bolts and nuts are correctly tightened.

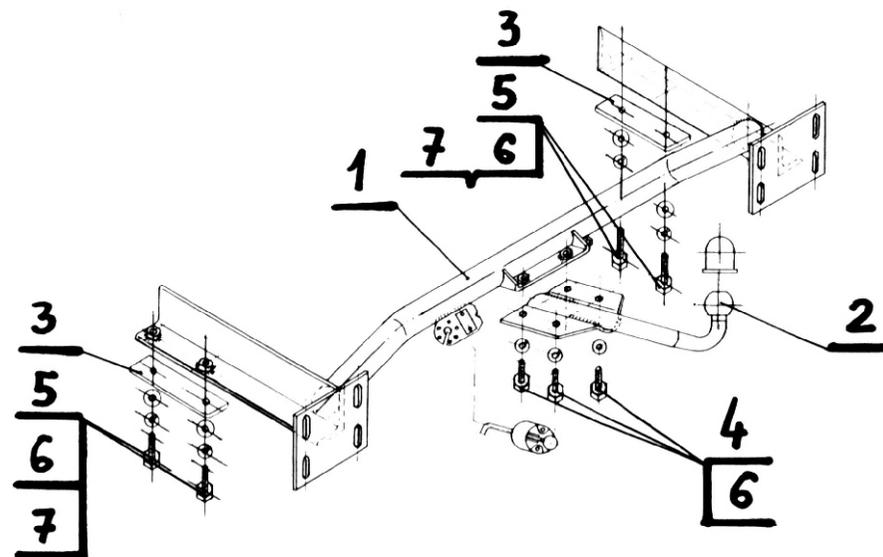
Obeying this instruction assures correct montage and the tow bar operating in a Dodge Caravan / Grand Caravan / Chrysler Voyager / Grand Voyager.

After assembling of the tow bar **D-300** 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).