

DESTINATION

Tow bar **D-181** 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-181** 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 **D-181** has a rating plate describing correct and safe loads of the hook :

Typ: D-181	Tow bar catalogue number.
A50-X	Tow bar class (compressing device)
E20 55R-01 3884	Tow bar certification of approval number
D = 8,2 kN	Teoretical related force working on a ball hook
S = 75 kg	Max permissible vertical load of the hook ball
R = 1500 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 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 **D-181** is made up of the following elements :

- | | | | |
|---------------------------------|------------|------------------------|------------|
| 1. Towbar mainframe | - 1 piece | 6. Bolt M12x25 | - 3 pieces |
| 2. Tow ball (ACS-2030) | - 1 piece | 7. Bolt M12x30 | - 1 piece |
| 3. Tow ball socket (ACS) | - 1 piece | 8. Bolt M12x35 | - 6 pieces |
| 4. Electrical socket plate | - 1 piece | 9. Spring washer Ø12,2 | -10 pieces |
| 5. Special washer 40x40x5/Ø12,5 | - 4 pieces | 10. Round washer Ø13,0 | - 6 pieces |

Please follow the installation fitting instruction below in order to ensure correct installation of the towbar:

1. Installation requires removing and cutting rear bumper.
2. Remove rear bumper and the Styrofoam contents of the bumper.
3. Make holes in the back belt according to the template.
4. Drill after one hole in the bottom right and left wall of the stringer at size Ø13,0 (holes close to back belt).

5. Slide the towbar mainframe (1) into the stringers and screw using bolts M12x35 (8) together with round washers Ø13,0 (10), washers 40x40x5/Ø12,5 (5) and spring washers Ø12,2 (9).
6. Make an undercut in the parts of the contents of the bumper according to the fig. 1.
7. Make an undercut in the bottom part of the bumper according to the fig. 2.
8. Install the bumper.
9. Attach the tow ball socket (3) and electrical plate (4) to the towbar mainframe (1) using bolts M12x30 (7)- 1 pc. and M12x25 (6)- 3 pcs. together with round washers Ø13,0 (10), spring washers Ø12,2 (9) (following to the scheme).
10. Put ball (2) to the socket (3) in accordance with attached instruction.

Caution:

Different types of (2) may be attached to the (1) only if:

1. The adapted tow has its own information label with homologation number
2. D and S values are equal or higher than (1) values.
3. Tow ball centre-point is in accordance with the drawing

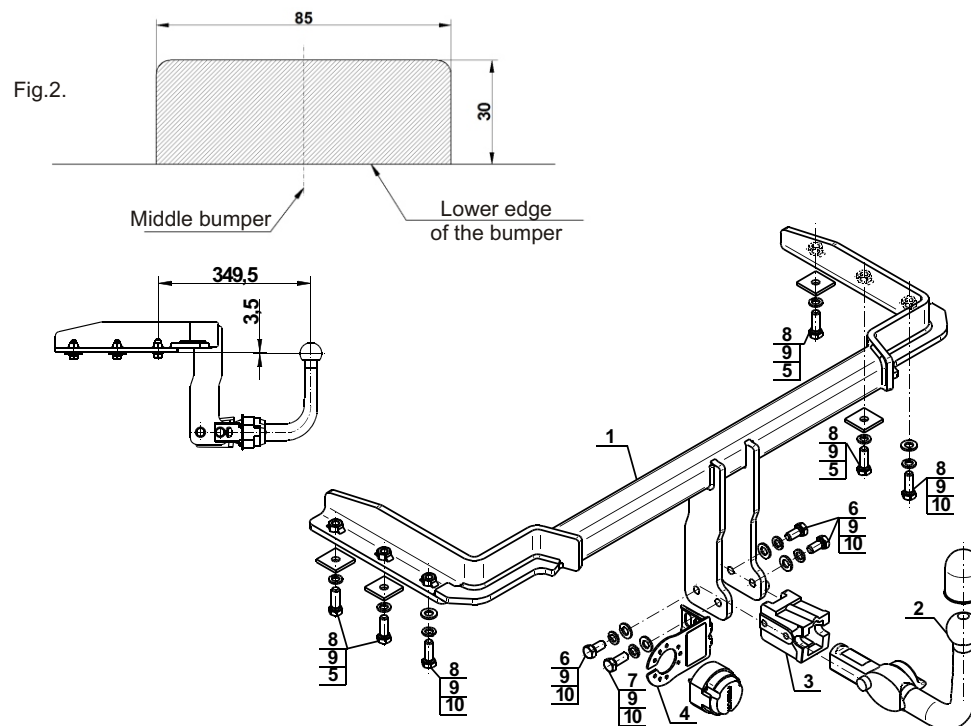
Obeying this instruction assures correct montage and the D-181 tow bar operating.

After assembling of the tow bar **D-181** you have to get entry in cars **registration book**.

CAUTION :

Check if all bolts and nuts are correctly tightened after 1000km. Keep tow ball clean, grease and cased. 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 improper usage manufacturer **do not take responsibility** for arised damages .

MONTAGE DIAGRAM :



NOTE :

Bunch of wires is not included (in total price).