

DESTINATION

Tow bar **S-381** 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 **S-381** 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 **S-381** has a rating plate describing correct and safe loads of the hook:

Typ: S-381	Tow bar catalogue number.
A50-X	Tow bar class (compressing device)
E20 55R-01 4399	Tow bar certification of approval number
D = 3,25 kN	Theoretical related force working on a ball hook
S = 40 kg	Max permissible vertical load of the hook ball
R = 450 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 **S-381** is made up of the following elements:

1. Towbar mainframe	- 1 piece	9. Bolt M10x40	- 8 pieces
2. Tow ball (ACS-2036)	- 1 piece	10. Bolt M12x25	- 4 pieces
3. Tow ball socket (ACS)	- 1 piece	11. Spring washer Ø10,2	- 8 pieces
4. Electrical socket plate	- 1 piece	12. Spring washer Ø12,2	- 4 pieces
5. Right flat bar	- 1 piece	13. Round washer Ø10,5	- 8 pieces
6. Left flat bar	- 1 piece	14. Round washer Ø13,0	- 4 pieces
7. Right support	- 1 piece	15. Nut M10	- 4 pieces
8. Left support	- 1 piece		

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

1. Installation **require removing and cutting of the rear bumper** of the car.
2. Remove the rear bumper of the car with its strengthening (it will not be re-used).
3. Slide the right (5) and left (6) flat bars into the internal side of stringer and screw it loosely in A points using bolts M10x40 (9) with spring washers Ø10,2 (11) and round washers Ø10,5 (13).
4. Put the right (7) and left (8) supports into the back belt of the car on the protruding pins and screw it loosely in B points using factory nuts M6.
5. Slide the towbar mainframe (1) between installed flat bars (5, 6) and screw it in points C and D using bolts M10x40 (9) with round washers Ø10,5 (13), spring washers Ø10,2 (11) and nuts M10 (15).
6. Tighten all bolts.
7. Make a cut in the bumper according to the figure 1.
8. Install the rear bumper.
9. Attach the tow ball socket (3) and electrical socket plate (4) to the towbar mainframe (1) using bolts M12x25 (10) with spring washers Ø12,2 (12) and round washers Ø13,0 (14).
10. Plug the tow ball (2) into the socket (3) following the attached instructions.

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.

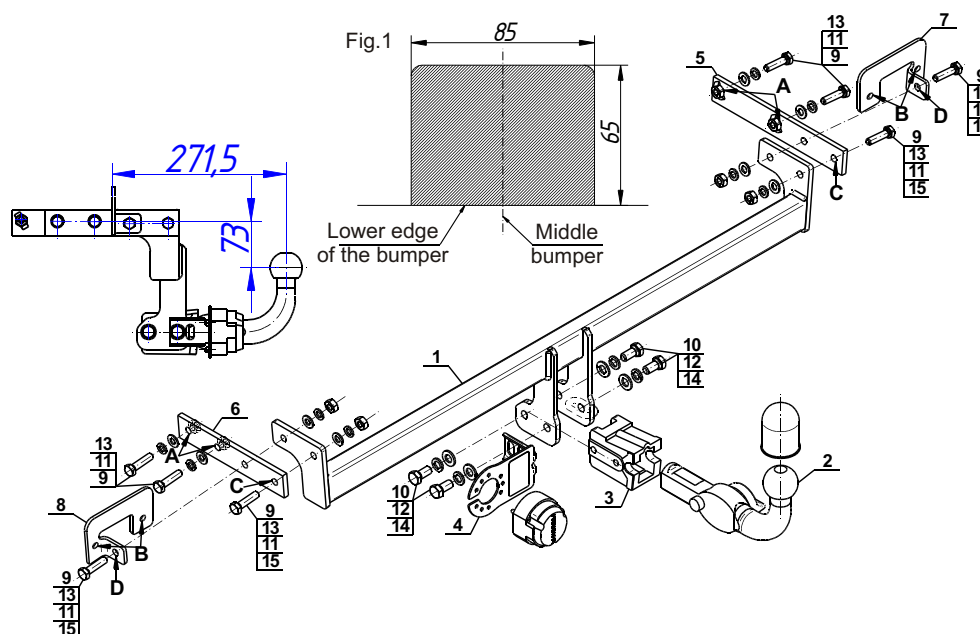
Obeying this instruction assures correct montage and the S-381 tow bar operating.

After assembling of the tow bar **S-381** 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 unproper usage manufacturer **do not take responsibility** for arised damages.

MONTAGE DIAGRAM :



NOTE :

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