

Towbar fitting and operating instruction Volvo XC 90 (2003 -)

Cat. No. V-302

DESTINATION

Tow bar **V-302** 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 **V-302** 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 **V-302** has a rating plate describing correct and safe loads of the hook:

Typ: V-302 A50-X E20 55R-01 3940 D = 12,2 kN S = 90 kg R = 2250 kg	Tow bar catalogue number. 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 **V-302** is made up of the following elements:

- | | | | |
|-------------------------------|------------|---------------------------------|-------------|
| 1. Towbar mainframe | - 1 piece | 8. Distance sleeve Ø22/Ø12,5x68 | - 6 pieces |
| 2. Tow ball (ACS-2039) | - 1 piece | 9. Bolt M12x25 | - 4 pieces |
| 3. Tow ball socket (ACS) | - 1 piece | 10. Bolt M12x35 | - 6 pieces |
| 4. Electrical socket plate | - 1 piece | 11. Bolt M12x100 | - 6 pieces |
| 5. Right support | - 1 piece | 12. Spring washer Ø12,2 | - 16 pieces |
| 6. Left support | - 1 piece | 13. Round washer Ø13,0 | - 10 pieces |
| 7. Special washer Ø30/Ø12,5x3 | - 6 pieces | 14. Nut M12 | - 4 pieces |

Follow the general directions in order to fit **V-302** tow bar properly:

1. Rear bumper cutting is required, without removing the bumper.
2. Empty the trunk, remove spare wheel and rear lights.
3. Lower the silencer from the hanger.
4. Make the bumper cutting from the bottom according to the attached fig. 1.
5. Find and open fixing holes to install the tow bar.
6. Put distance sleeves Ø22/Ø12,5x68 (8) into the car chassis side members.
7. From the inside of car chassis side members attach supports (5,6), using bolts M12x100 (11), spring washers Ø12,2 (12) and special washers Ø30/Ø12,5x3 (7).
8. Attach the towbar mainframe (1) between supports (5, 6), using bolts M12x35 (10), spring washers Ø12,2 (12), round washers Ø13,0 (13) and nuts M12 (14).
9. Attach the tow ball socket (3) and electrical plate (4) to the towbar mainframe (1) using bolts M12x25 (9) together with spring washers Ø12,2 (12) and round washers Ø13,0 (13).
10. Refit parts which removing was mentioned in points 2, 3.
11. 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.

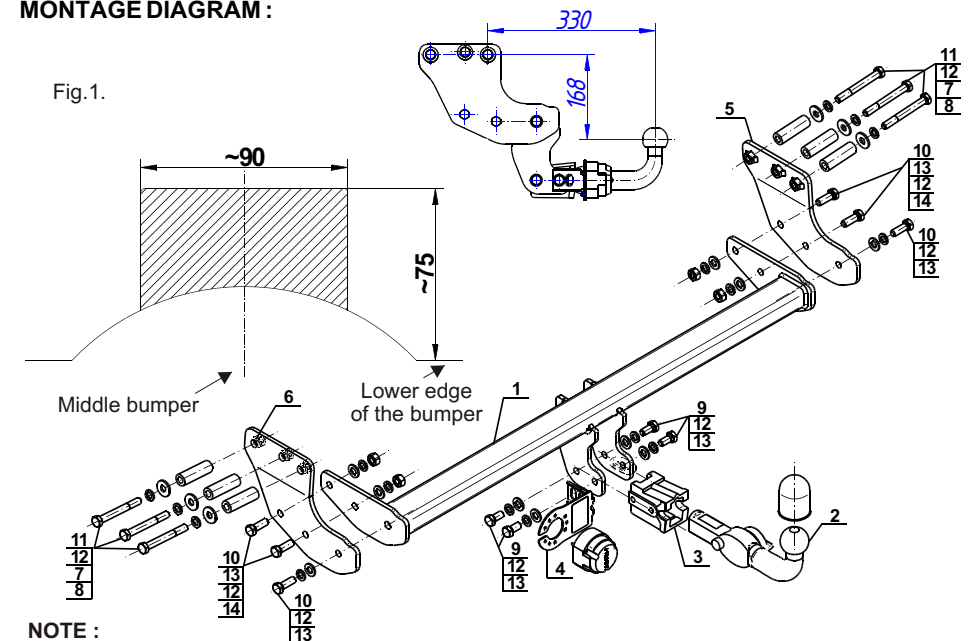
Obeying this instruction assures correct montage and the V-302 tow bar operating.

After assembling of the tow bar **V-302** 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).

