

## TOW BAR TECHNICAL AND OPERATING MANUALS : RENAULT Kangoo (4x4) (10/2001 - r.)

Cat. No.R-072

### DESTINATION

Tow bar **R-072** for a **Renault Kangoo (4x4)** 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 **R-072** 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 **R-072** has a rating plate describing correct and safe loads of the hook :

Typ: <b>R-072</b> <b>A50-X</b> <b>e20</b> <b>0044-00</b> <b>D = 7,8 kN</b> <b>S = 75 kg</b> <b>R = 1400 kg</b>	The tow bar for <b>Renault Kangoo (4x4)</b> 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/s<sup>2</sup>)

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 **R-072** for **Renault Kangoo (4x4)** is made up of the following elements :

- |                                    |            |                        |            |
|------------------------------------|------------|------------------------|------------|
| 1. Tow bar's body                  | - 1 piece  | 8. Special washer      | - 2 pieces |
| 2. Ball hook with support          | - 1 piece  | 40/ 10,5x2,5           |            |
| 3. Electrical socket's holder      | - 1 piece  | 9. Bolt M10x80         | - 2 pieces |
| 4. Simple washer with bolt M12x35- | 2 pieces   | 10. Bolt M12x30        | - 4 pieces |
| 5. Simple washer with nut M12      | - 1 piece  | 11. Bolt M12x35        | - 1 piece  |
| 6. Distance sleeve                 |            | 12. Bolt M12x90        | - 1 piece  |
| 17,3/ 12,5x50                      | - 3 pieces | 13. Spring washer 10,2 | - 2 pieces |
| 7. Special washer                  |            | 14. Spring washer 12.2 | - 8 pieces |
| 40/ 12,5x2,5                       | - 1 piece  | 15. Nut M10            | - 2 pieces |
|                                    |            | 16. Nut M12            | - 3 pieces |

In order to mount the ball hook **R-072** you have to obey the instruction below:

- Rear bumper cutting is not required.
- Dismantle a tow bar into kit form elements, unscrew a rear bumper.
- Take the plastic plug out from external side of the left part of longitudinal car's frame element, then put the bolt M10x80 (9) with special washer 40/ 10,5x2,5 (8) instead, next put the a distance sleeve 17,3/ 12,5x50 (6) from internal side of this longitudinal car's frame element.
- Take the plastic plug out from internal side of right longitudinal car's frame element then put a distance. sleeve 17,3/ 12,5x50 (6) with bolt M10x80 (9) and special washer 40/ 10,5x2,5 (8) into opening
- Find two elliptical openings on the rear belt, then put washer M12x35 (4) into openings on the (make the very endings of the bolts visible from 2 existing openings 12,5 located in rear belt.
- Put the tow bar's body (1) against the longitudinal frame elements then screw it down with: nuts M10 (15), spring washers 10,2 (13). Screw both elements down with nuts M12 (16) which go with spring washers 12,2 (14) to the rear belt.
- Route the openings located in the frames through the left openings in side supports. Unscrew the tow bar's body before routing.
- Drill the opening 12,5 through one side wall of left longitudinal frame element, then drill the openings with the drill 12,5 through two side walls from internal side of right longitudinal frame element.
- Ream the opening to 17,5 diameter only through one side wall from internal side of right longitudinal frame element.
- Put the distance sleeve 17,3/ 12,5x50 (6) into reamed opening then screw tow bar's body (1) down (follow 6<sup>th</sup> point of this instruction).
- Take the plug out from the bottom of right longitudinal frame element, then put flat bar with bolted nut M12 (5) there, next screw it down with tow bar's body (1) using bolt M12x35 (11) and spring washer 12,2(14).
- Install rear bumper, screw it down.
- Install ball hook with support (2) using: bolts M12x30 (10), spring washer 12,2(12) to tow bar's body (screw electrical socket's support holder to the left side in the meantime).
- Check if all bolted joints are screw hard enough.

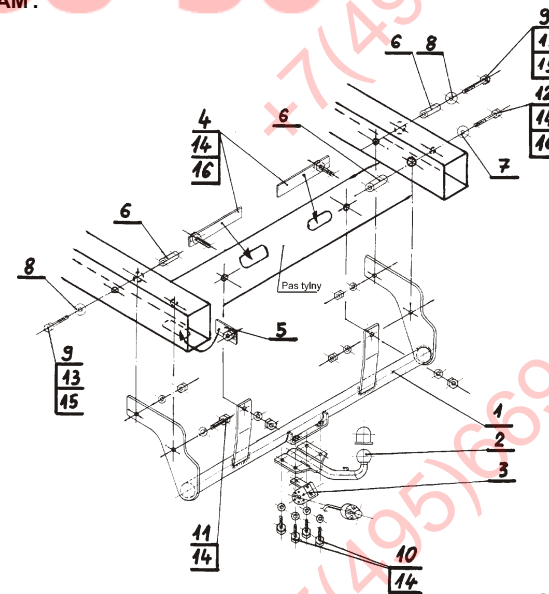
**Obeying this instruction assures correct montage and the tow bar operating in a Renault Kangoo (4x4)**

After assembling of the tow bar **R-072** 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 improper usage manufacturer **do not take responsibility** for arised damages .

### MONTAGE DIAGRAM :



### NOTE :

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