

SmartPuller

DENT PULLER ON CASTOR WHEELS

Autorobot Finland has developed a new dent pulling system called SmartPuller. The new innovation makes the straightening of vehicle panels and box structures faster and more economical. The special features of Autorobot SmartPuller are easy and quick to use. The equipment is suitable for almost all kind of car body straightening.

An easy use of the equipment has been achieved with the movable stand with the wheels and the adjustable counter supports. Both counter supports can be set to the strong areas of the body which allows the best support for each area to be straightened. Autorobot SmartPuller needs a resistance welder for fixing the washers or welding wire to the area to be pulled.

The specialty of SmartPuller is its ability to straighten areas almost all over the body in all needed directions.

According to the information from the insurance companies, approximately 80 % of all damages are surface panel ones. The surface damage often appears on the box structures which cannot be pulled from inside of the car. An exterior straightening with the use of SmartPuller means remarkable saving to working time because the doors and other body structures will not need to be disassembled and re-assembled. The advantages of SmartPuller can

be best noticed in the repair of the large dents on the welded sides of the car and the roof. This is why SmartPuller is one of the most important equipment in the modern body shops.

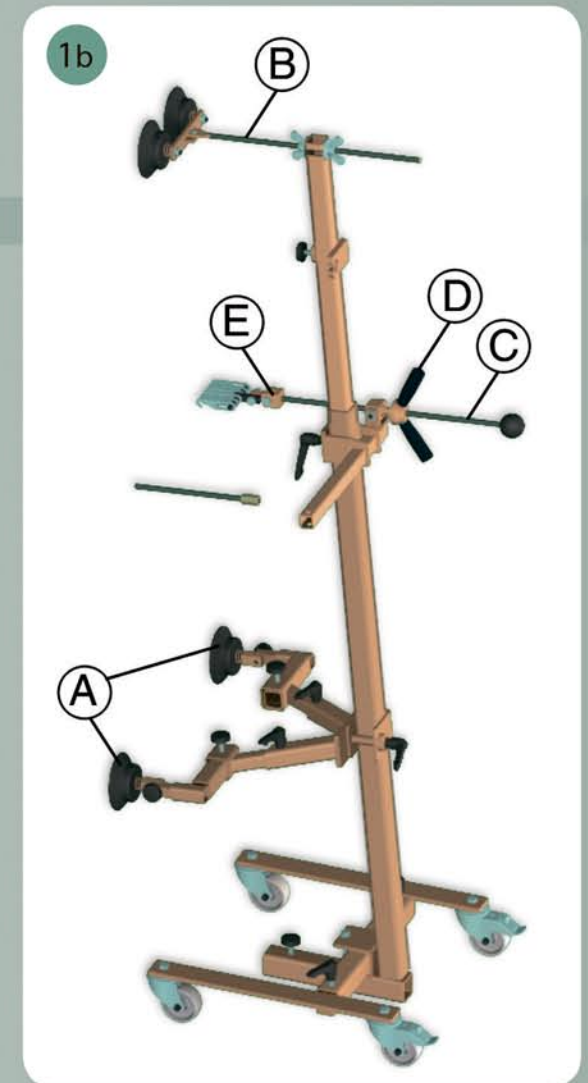
Development of SmartPuller began with feedback from customers who said most collision repair was done on minor damage. This damage is located on various box-type structures around the vehicle body and can only be straightened by pulling on welded or glued adhesions. The limitation of previously known Puller devices has been getting the counter support brackets to settle and stay inside a side panel structures or in the front and rear corner panels in a way that enables pulling from the proper direction. Additionally, when using previously known devices to repair damage to a car's side, the dent puller had to be held with one hand while simultaneously placing the pulling mechanism on the target that was being pulled. This stage of the work is difficult, especially in high commercial vehicles.

In the development of SmartPuller, these limitations have been solved by placing the mechanisms that are needed for support and pulling on a vertical beam where they can be adjusted easily vertically and horizontally to the desired place. The actual pulling is also effortless.

There is a patent pending for the device.



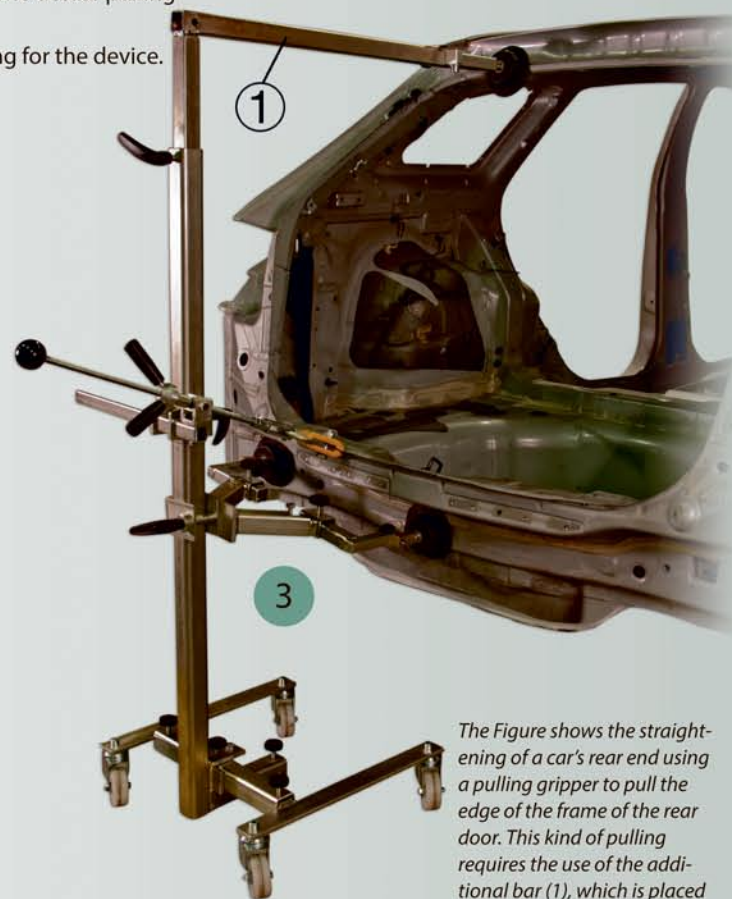
The Figure 1 and 1b. The lower counterparts (A) of SmartPuller have been adjusted to the proper width and height, after which it has been pushed to the strong point near the area to be pulled. The upper counter (B) has also been set to the roof structure of the car in the height and width direction. After this, the screw-driven pulling mechanism (C) has been adjusted to the place that is to be pulled. The actual pulling is done with the crank handle (D). A grapple such as welding wire for pulling, pulling gripper or adhesive cup holder can be attached to the holder on the end of the screw (E), based on the kind of target area to be pulled.



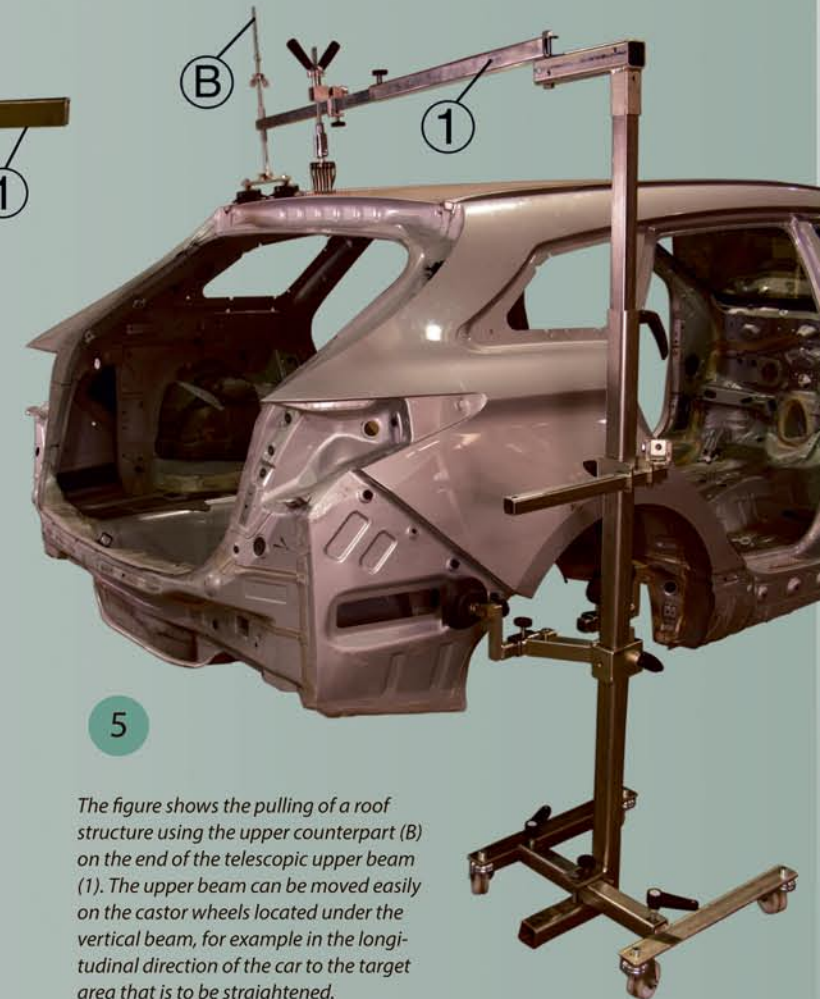
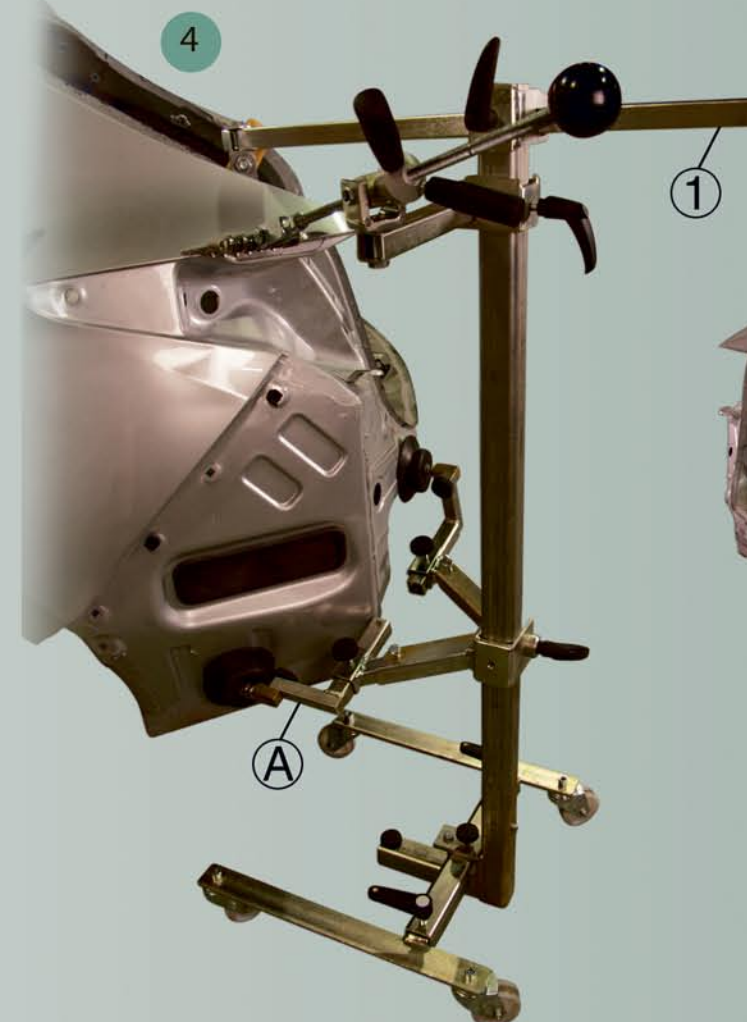
The figure 4 shows the straightening of the rear edge of a car. This is possible because the lower counterpart (A) can also be turned, which makes it possible to set the counterparts to a supporting part of the car. Furthermore the additional bar (1) is needed here and a pulling gripper is attached to the end of the bar; the gripper is attached to the edge of the frame of the car's right-hand rear door. After this, even a difficult pull like the one in the picture is possible.



The Figure shows the pulling of a rocker panel where the lower counterparts have been affixed to the ends of the rocker panel using an additional bar (1) in order to make it possible to pull the entire panel dent. The additional bar (1) is included in the SmartPuller Silver set.



The Figure shows the straightening of a car's rear end using a pulling gripper to pull the edge of the frame of the rear door. This kind of pulling requires the use of the additional bar (1), which is placed on the rear edge of the roof as shown in the figure.



The figure shows the pulling of a roof structure using the upper counterpart (B) on the end of the telescopic upper beam (1). The upper beam can be moved easily on the castor wheels located under the vertical beam, for example in the longitudinal direction of the car to the target area that is to be straightened.