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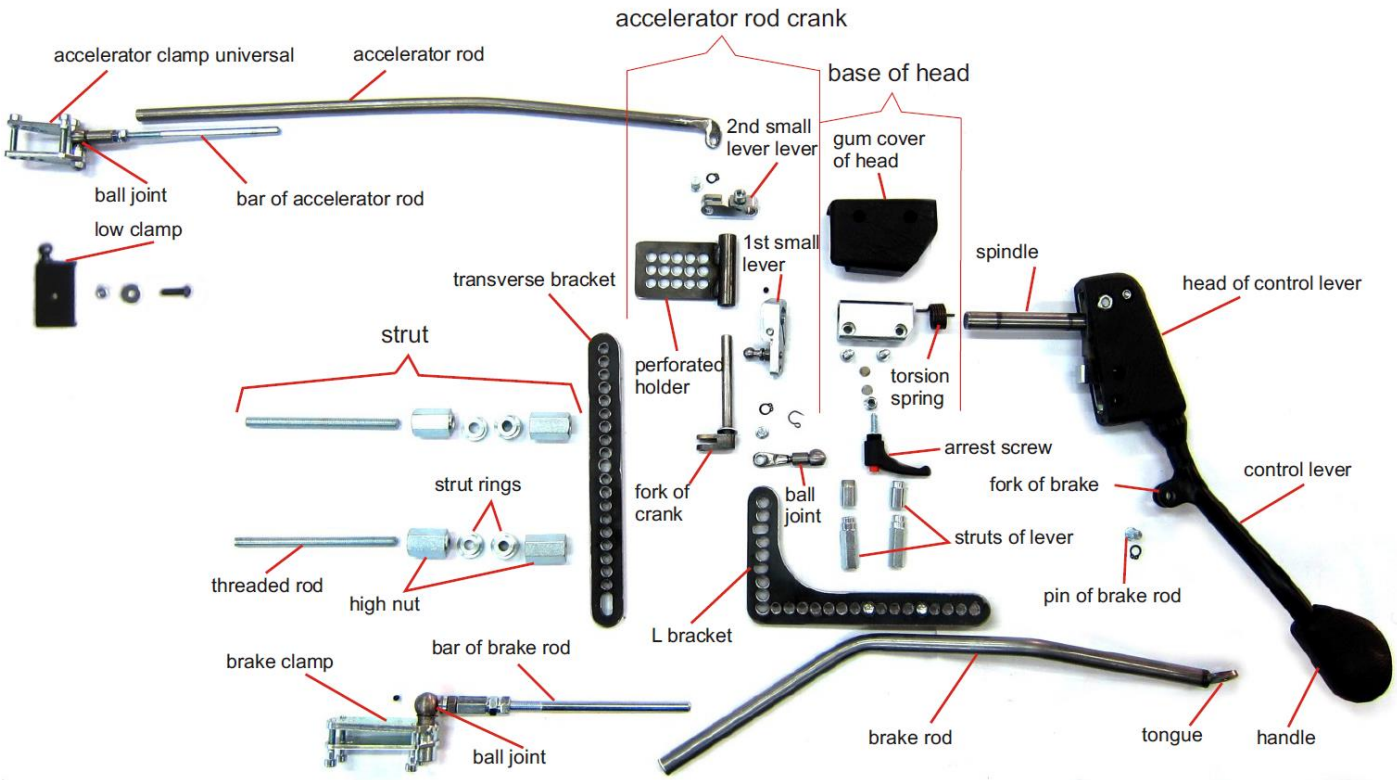
MERO 2a

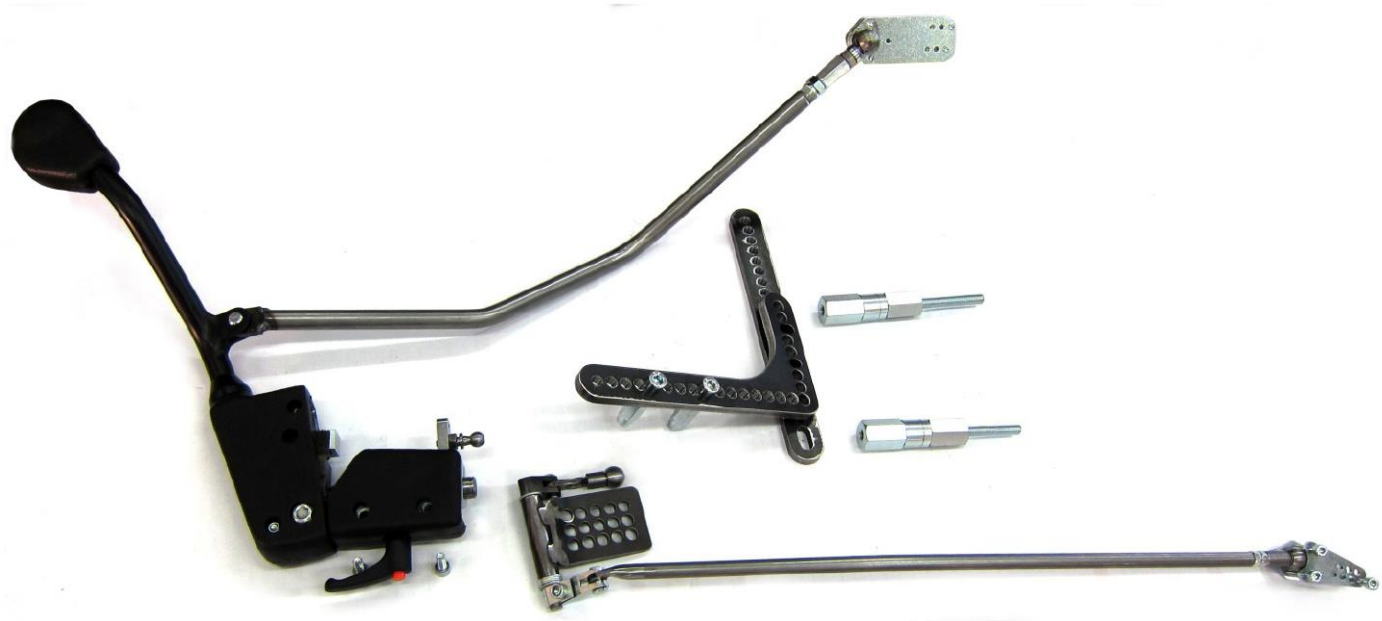
Brake and Accelerator Hand Control

Assembly Instructions

Scheme of MERO 2 Universal Kit



Kit Partly Assembled



Assembly Principles

We assemble MERO 2 hand control under the steering wheel from the right or left side. The side where the device will be mounted is chosen according to customer´s handicap. There are two ways of assembly:

a) Assembly with a sleeve and L-shaped holder on top of the steering column.
b) Installation using distance columns and L shape bracket.

If we know the type of car in advance and we have it worked out, we send complete set given to the assembly. If the vehicle is not worked out we deliver our universal set that needs to be adapted to the specified type of vehicle. This assembly requires well-equipped assembly workshops because some parts must be individually adapted to the contours of the dashboard, pedals and components which may significantly differ from commonly used parts for most vehicles.

During installation, we must observe basic rules that determine correct functionality of the whole device. These rules are very important for safety and customers´ satisfaction. In processed types of vehicles, the assembly is given by supplied parts which are ready for the type of vehicle. Therefore, it is not necessary to deal with these rules. That´s why we concentrate in assembly for unprocessed vehicles in this assembly instructions.

First working steps are always the same:

Dismounting Lower Plastic Cover of the Steering Wheel

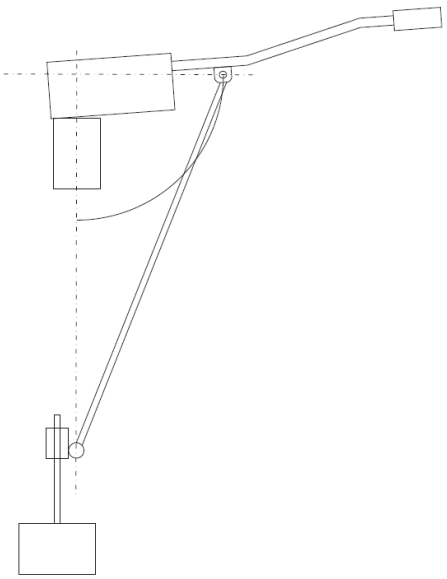
Dismount the plastic covers under the steering wheel of the vehicle to see the design of individual components and attaching the top of the steering column.

Assembly of Complete Holder

1. Steering column is usually attached to the vehicle body with M8 screws (Fig. 1). Unscrew one screw and replace it with a strut composed of high nuts, threaded rod and strut rings of different heights. Instead of the removed screw, screw the threaded rod and a nut facing it´s flat surface up and stepped down; tighten the threaded rod to the chassis. Set up strut rings to fit into locks. Determine height of the column so that the subsequent transverse bracket was placed as high as possible and tighten the nut with opposite lock. Shorten the threaded rod as needed. Make the same procedure on the other side of holder (Fig. 2).

2. Attach the transverse bracket of universal holder among mounted struts to provide the possibility of L bracket mounting which is attached depending on which side will the throttle and brake be controlled. L bracket is mounted always on the opposite side to the direction of main lever (Fig. 3). Try to set such a location of L bracket so that imaginary axis, by later assembled base of head, went to the joint on the brake clump, see the drawing (Fig. 4). At the same time the angle between the lever and base of head should be rather opened (more than 90 degrees) to have sufficient space for the inner part of the lever when braking. Stop of the lever tune later after its overall setting.

Fig. 4



3. Mount complete control lever on the L bracket over struts of lever and fasten the whole set to the transverse bracket (Fig. 5). Make sure that the whole L bracket and other supporting parts were hidden under plastic cover of the steering column. If the L bracket fits under the plastic cover, cut out holes for the struts of lever to the plastic cover to catch the base of head (Fig. 6). If there is no space under the plastic cover, mount the L bracket in the transverse bracket just below this plastic part (Fig. 7).

Accelerator Crank Assembly

4. Now we are ready to install the accelerator rod crank. Select one of perforated holders and according to size and suitability attach it to the transverse bracket. The small lever must be directed into free space so that there were no large accelerator rod deflection and facing the accelerator pedal. On the spindle of the lever fix the 1st small lever and connect it with fork of crank and the 2nd small lever. Adjust the ratio of forces by exchanging small levers of different lengths so that control force was optimal according to handicap of your customer. Ispire by photos of holders in Fig. 11- 17.

5. Fix the accelerator clamp on the accelerator pedal. We deliver a universal clamp for pedal suspended from above (Fig. 8) and a low clamp for pedal which is anchored to the floor (Fig. 9). Both methods usually require more individual adaptation. The final phase is the connection of accelerator rod with accelerator clamp and accelerator crank by ball joint and fork of crank. Our photos cannot provide all possible solutions and therefore it depends on inventions and skilfulness of workers.

Plastic Cover Adjustment

6. If we have the control lever placed and the complete holder and accelerator crank with its rod assembled, drill holes in the plastic cover under the steering wheel. Screw spikes to the struts, put the cover and spikes will indicate holes in the plastic cover. Drill the holes on marked locations by a herringbone drill. Clean the holes and screw the cover.

Main Lever Mounting

7. Attach the control lever. Slide torsion spring onto spindle of the lever and place the end of spring into a single opening on the lever. Slide the base of head on spindle and insert the second end of spring into centre hole. When it is necessary to change the return strength of lever you can use another hole. Screw the lever with base of head to the struts of lever. Set the stop of lever to allow sufficient gap between lever and steering wheel to stretch your hand while turning the steering wheel. Setting is done by loosening the M5 screw on the top of head lever.

Brake Rod Assembly

8. Bend the brake rod so it does not hinder driver's feet and most favourably copied the shape of dashboard. At the same time, you must count with the fact that while braking and draining one of braking circuits when the pedal track is further extended, the control lever and brake rod mustn´t touch any plastic cover either dashboard. This test is executed for all unprocessed vehicles. It is described in section 9. If the lever or rod collided with a cover or dashboard it is required to reshape the brake rod or move the brake clamp on the brake pedal upwards. With these acts at the cost of greater force you will shorten the track of lever and any collision should be avoided. In extreme case, it is necessary to move the fork of brake on control lever. When everything is correctly set, weld the tongue to the brake rod and shorten the bottom part of rod in needed length. Degrease the rod and airbrush with black matte colour. Check securing of all pins, joints and nuts and make a test drive. Check strength of holders' interconnection, all assembled parts and functionality of hole device while driving. Make final adjustment if necessary.

Brake Test – Draining of Brake Circuit

9. On the accelerator and brake rod there must be at least 2 mm will between telescopic part and rod. Make the brake test when engine is running to operate the brake booster. Two people are needed. Apply brake with MERO 2 control lever. To increase force, you can help with your feet and drain brake fluid from one brake circuit of the vehicle. Usually drain liquid from left wheel cylinder so that the one who drains the liquid well communicated with the one who controls the brake. When the brake circuit is drained, handle of lever should never touch the dashboard or other part of interior. Distance between handle and opposite part of interior should be 20 mm at least.

Picture Documentation

Fig. 1

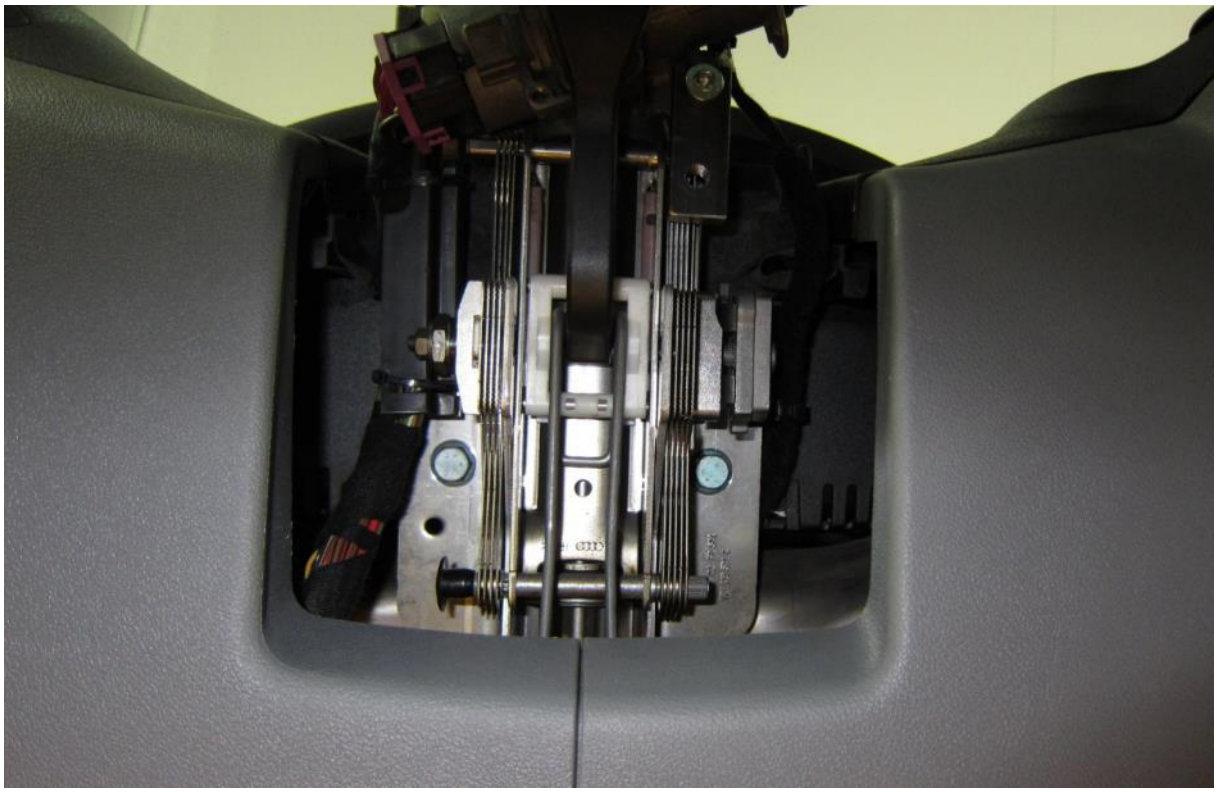


Fig. 2

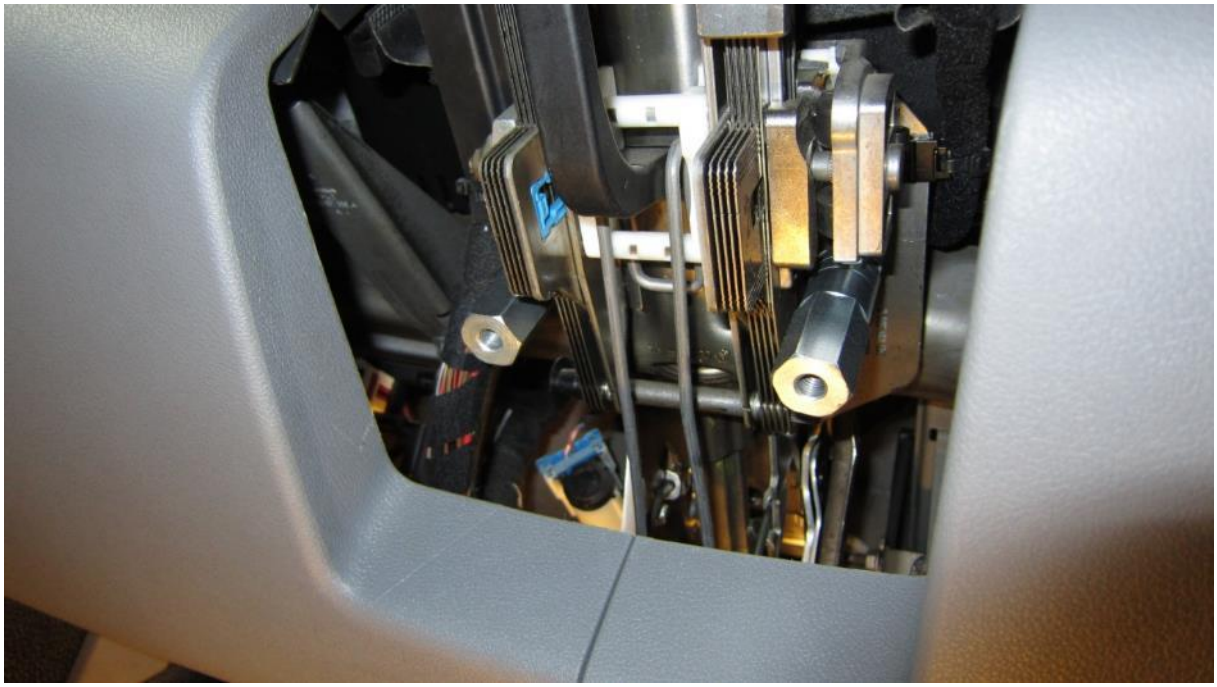


Fig. 3

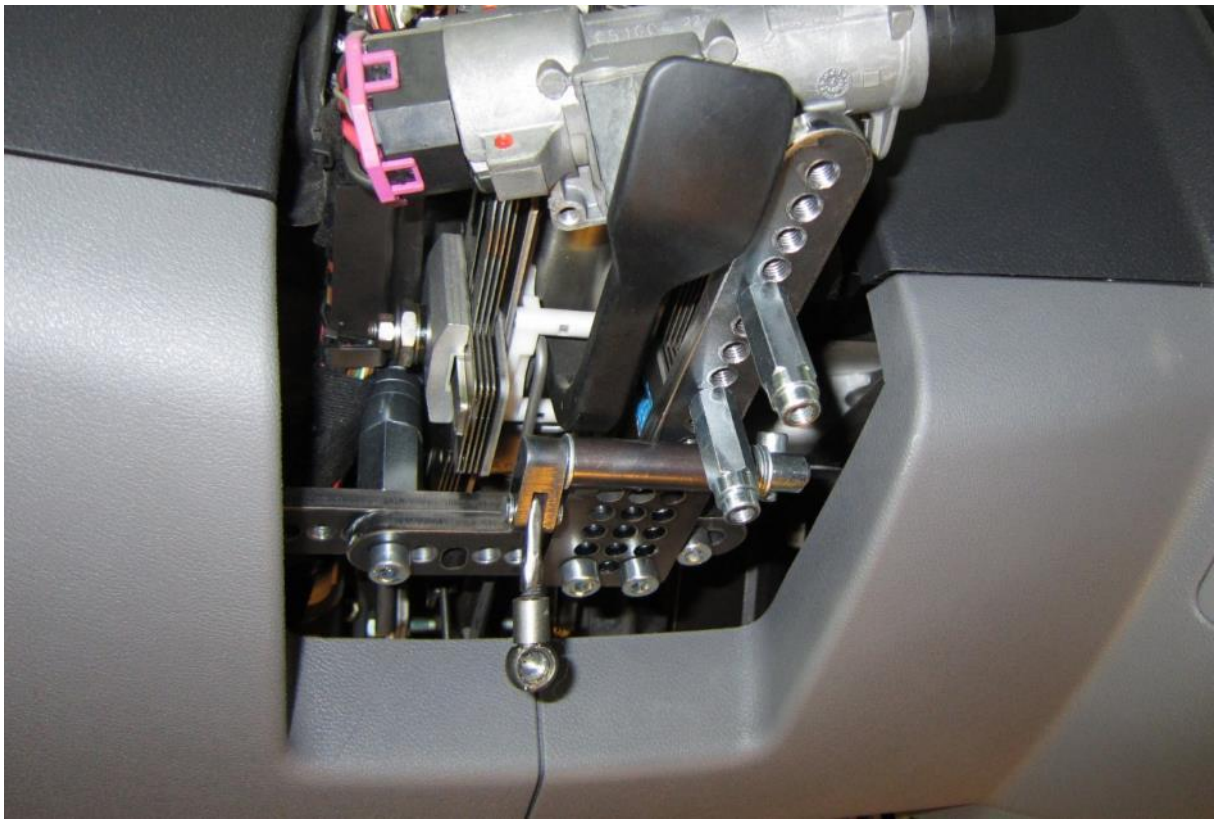


Fig. 5

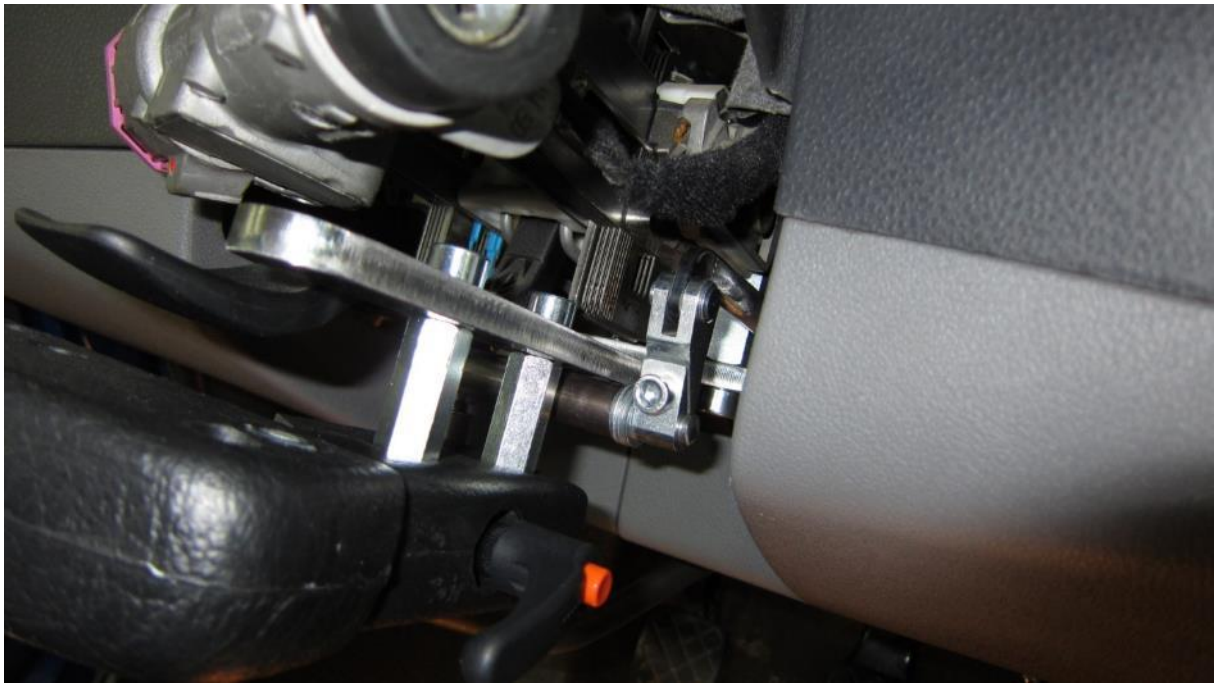


Fig. 6

Fig. 7

Fig. 8

Fig. 9

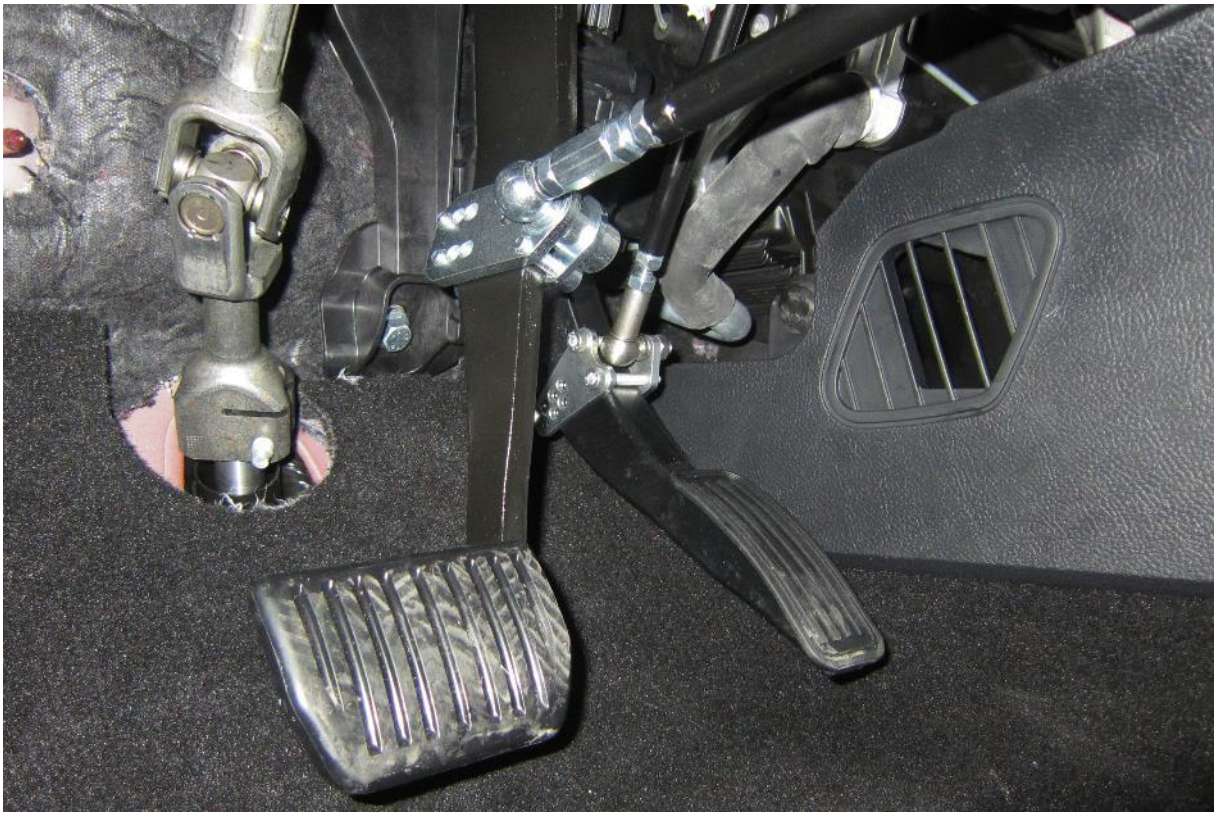
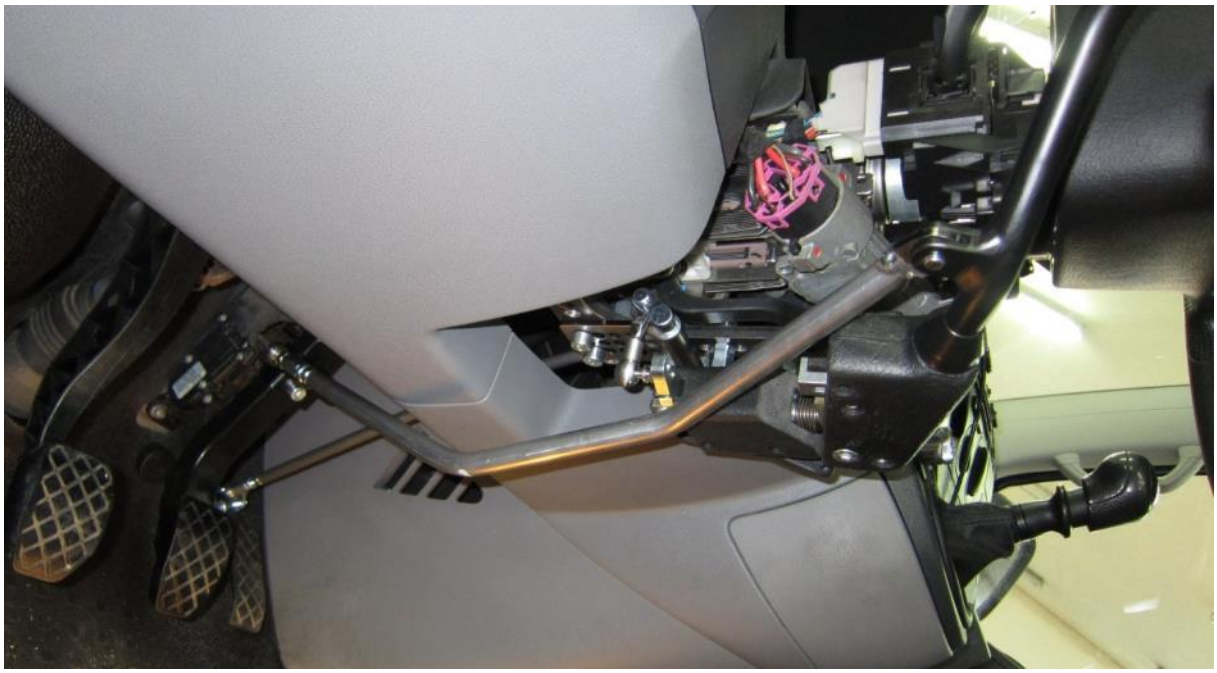


Fig. 10



Ostatní příklady držáků

Fig. 11

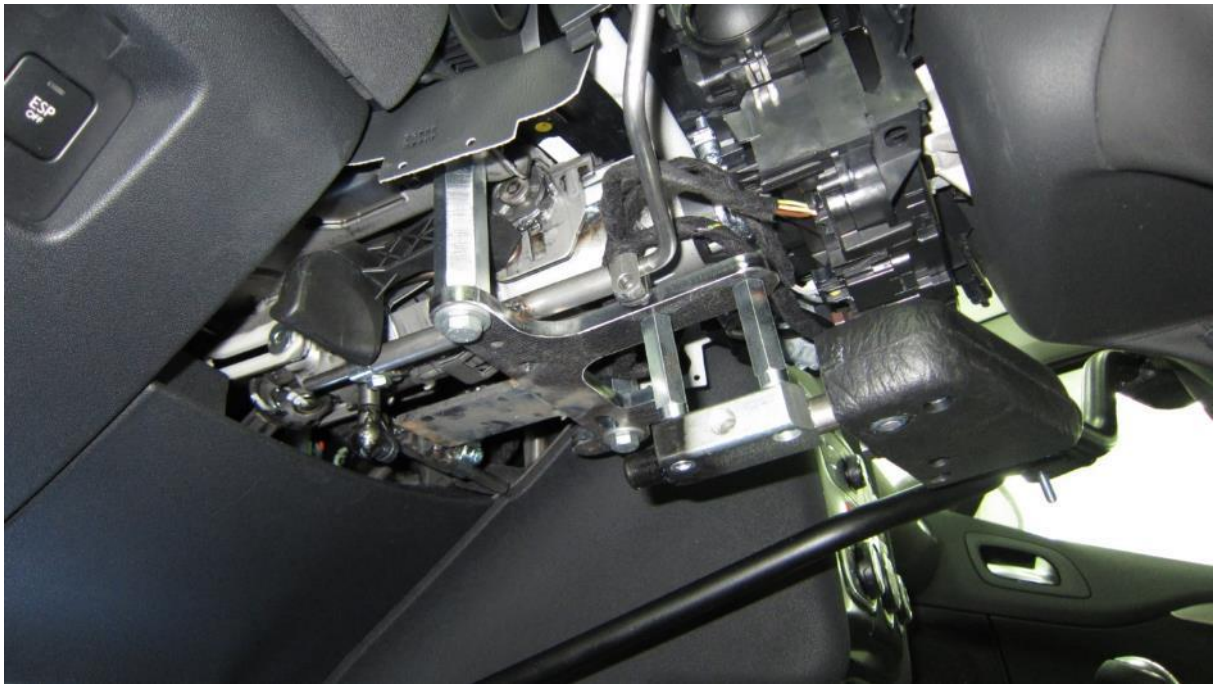


Fig. 12

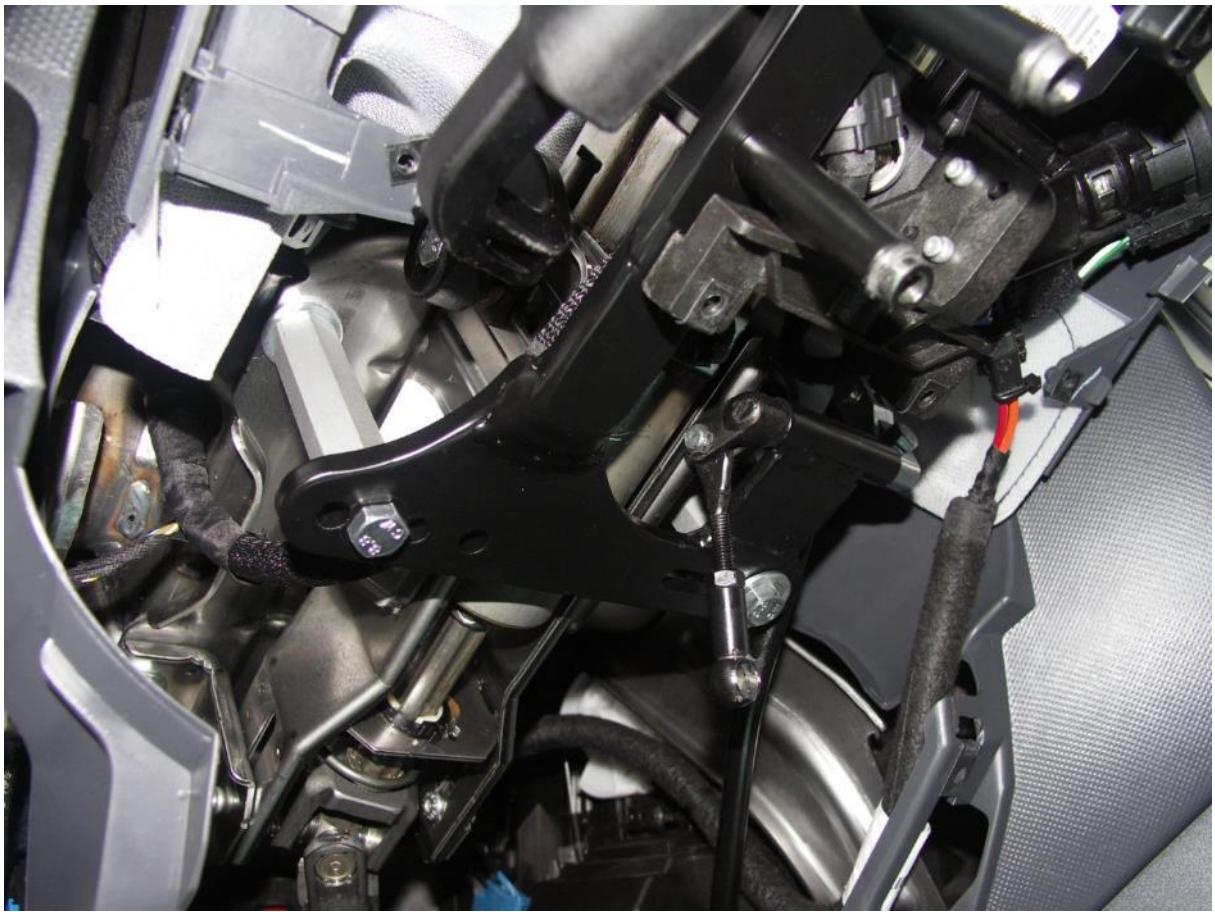


Fig. 13

Fig. 14

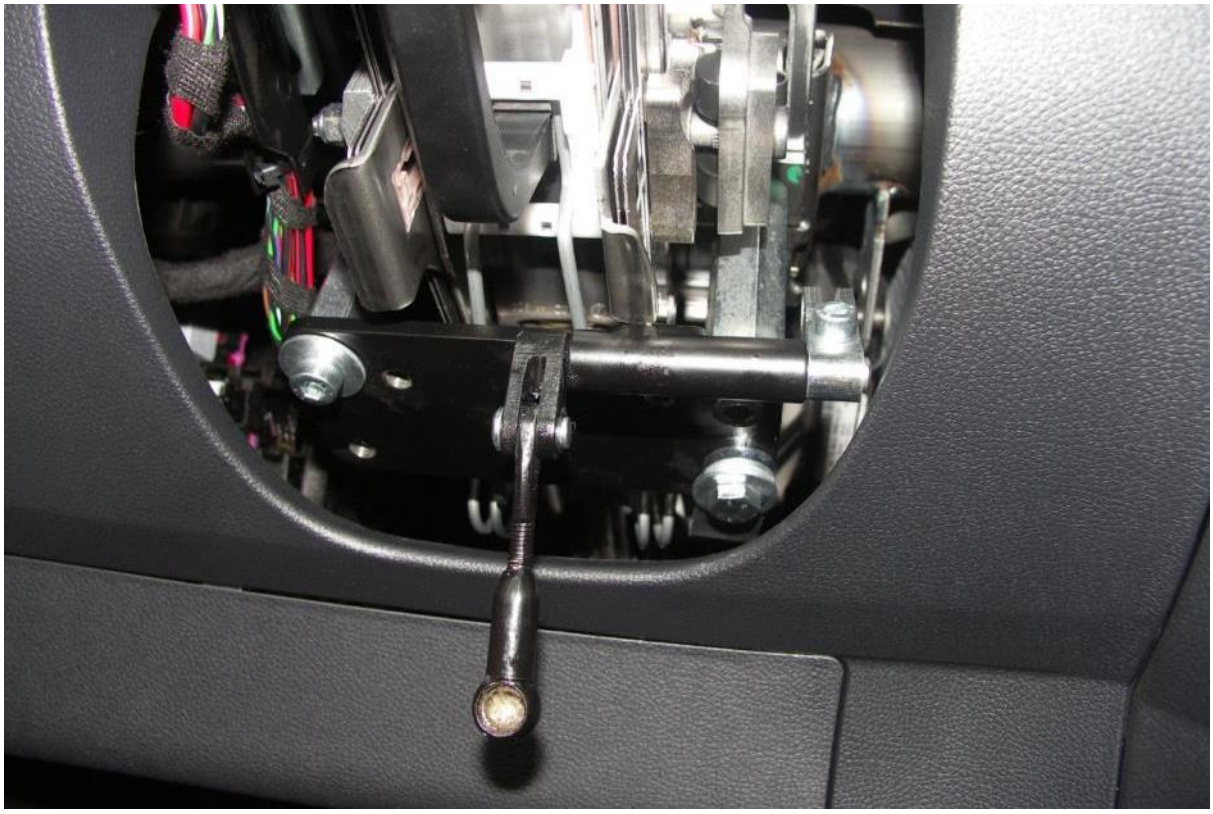


Fig. 15

Fig. 16

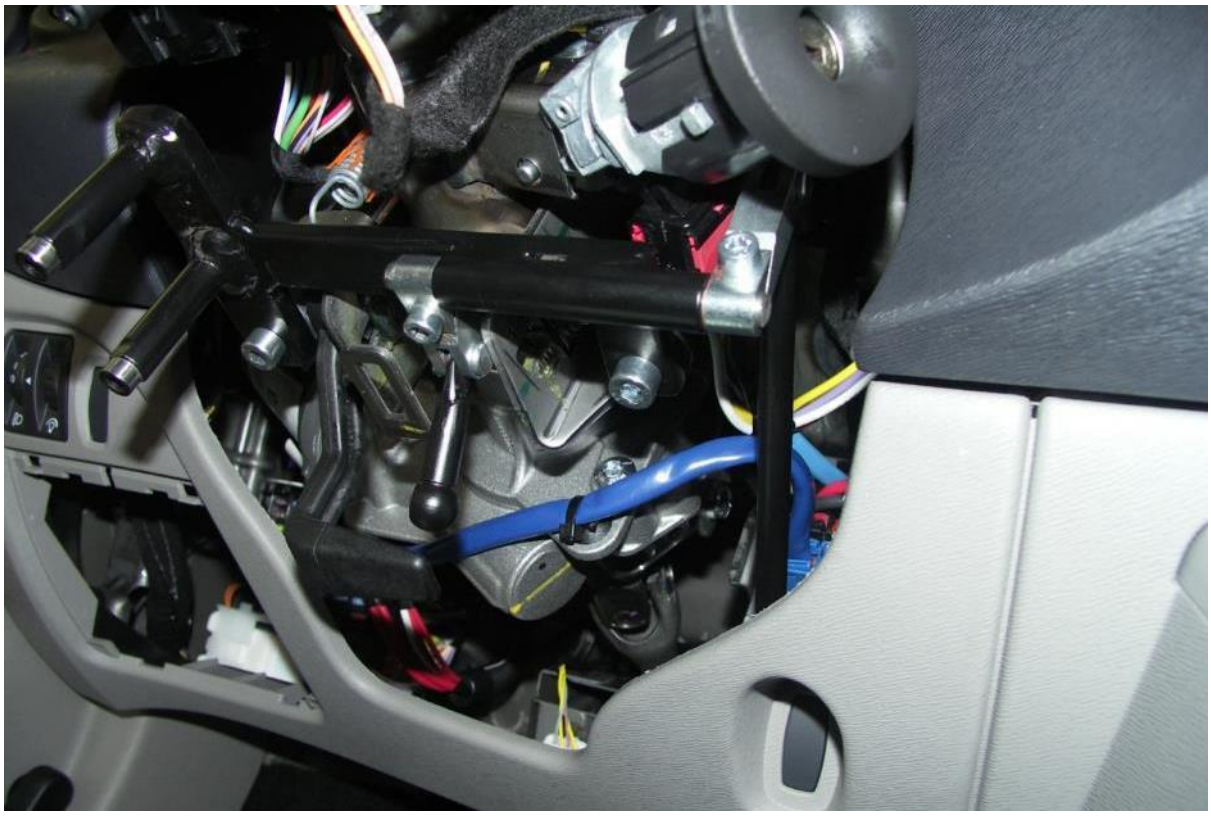
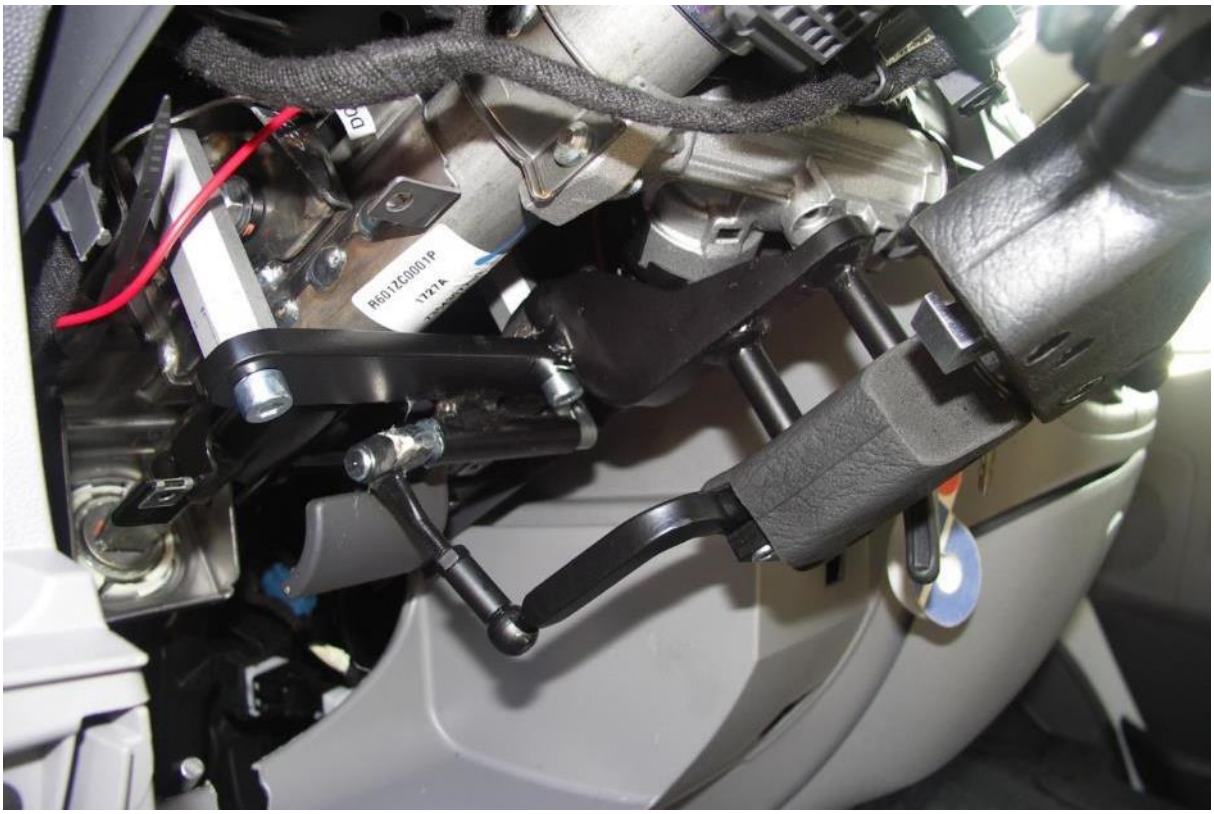


Fig. 17



Brake Test – Draining of Brake Circuit

Fig. 18

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