

"Installation kit"

The invention relates to an installation kit, and especially to such a kit for insertion into installation openings of motor vehicles.

5 Installation openings into which, for example, a car radio can be installed in conjunction with an installation kit, are provided in motor vehicles. The known installation kits have a frontplate which covers the edge of the installation opening on the visible
10 side, while resilient clamping elements engage the wall of the dashboard forming the boundary of the installation opening. The clamping elements fix the installation kit in the area of the installation opening. Frequently, however, additional fixing points
15 which lie inside the installation space, away from the installation opening, are necessary where conventional installation kits are involved. The wall thicknesses of the walls forming the boundary of the installation
20 opening can vary widely, depending on the make or model of car or on the car manufacturer, and the clamping elements of conventional installation kits have to be especially adapted to the particular wall thickness. The known installation kits do not therefore have a universal application.

25 The invention is based on the problem of producing an installation kit which can be used as widely as possible and can be fixed securely in installation

openings.

The invention provides an installation kit for insertion into an opening in a wall, comprising a frontplate that is arranged to span such an opening and to overlie adjacent portions of such a wall and has means for receiving a thing that is to be installed in the opening, and clamping elements each having a clamping face that projects from a slotted sleeve extending from the rear of the frontplate and is displaceable along the sleeve towards the frontplate by turning a screw.

By tightening the screw, the screw head of which is accessible from the front side of the frontplate, to a suitable degree, the clamping face can be pressed with considerable force against the wall adjoining the installation opening. As a result, the wall is firmly clamped between the clamping face and the frontplate. An extremely stable fixing for the installation kit can be obtained when using one clamping element at each corner of the front plate of the installation kit. Because the clamping face is displaceable along the sleeve by the screw towards the rear of the frontplate, it is possible to use the same installation kit for a wide range of wall thicknesses.

It is especially advantageous to construct the clamping element in such a manner that its clamping face is formed by a projection which projects through the slot of the sleeve enclosing the screw. In the region of a cut-out provided on the sleeve, this projection can be swivelled through, for example

45°, so that as the installation kit is inserted the projection can be swivelled into a position in which the projection is set back with respect to the edge of the installation opening. Only when the installation kit has been inserted is the projection then swivelled, by turning the screw, into a different position in which the projection projects beyond the edge of the installation opening. The cut-out provided for swivelling the projection is preferably provided at the distal end of the sleeve. The cut-out may comprise a substantially widened part of the slot which may extend through an angular range of 45°.

So that there is sufficient friction between the clamping element and the screw for swivelling of the projection, it is especially advantageous for the screw to be constructed as a self-tapping screw, and for the clamping element to be of plastics and to have a bore in which the self-tapping screw engages.

One form of installation kit constructed in accordance with the invention will now be described by way of example only with reference to the accompanying drawings, in which:

Figure 1 shows an installation kit with cassette containers;

Figure 2 shows the rear of the installation kit illustrated in Figure 1, with the cassette containers

cut away; and

Figure 3 is a fragmentary longitudinal section through a clamping element of the installation kit shown in Figure 1, to a larger scale than Figure 1.

5 Referring to the drawings, one form of installation kit consists of a frontplate 1, at the rear of which four fixing elements indicated generally by the reference numeral 2 project, and of four
containers 3 which are suitable for holding cassettes.
10 Each of the four fixing elements 2 is located in a respective corner region of the front plate 1.

Each of the fixing elements 2 consists of a slotted sleeve 4 projecting from the rear of the frontplate 1, a screw 5 having its head exposed at the
15 front side of the frontplate 1 and extending through the frontplate and along the interior of the sleeve, and a clamping element 6 received within the sleeve and engaging the screw.

The construction of the fixing elements 2 is
20 apparent from Figure 2 and from the longitudinal section of Figure 3. Each of the sleeves 4 has a longitudinal slot 7 through which a projection 8 of the clamping element 6 projects. The slots 7 are along the tops of the upper sleeves 4, and along the bottoms of
25 the lower sleeves 4. Each of the projections 8 defines a clamping face 9 which is substantially parallel to, and faces towards, the rear face of, the front plate 1. By turning the screw 5, the clamping element 6 can

be drawn towards the frontplate 1 until the clamping face 9 lies against a wall 10 forming the boundary of the installation opening; in Figure 3 this wall is indicated by chain lines.

5 The screw 5 has a thread 11, which is a self-tapping thread which cuts into a bore 12 of the clamping element 6. There is thus sufficient friction between the screw 5 and the clamping element 6 that if the screw 5 is turned the projection 8 tends to swivel,
10 provided that it is located in the region of a cut-out 13 which is arranged at the distal end of the sleeve 4, on the clockwise side of the slot 7 as seen in Figure 2. The cut-out 13 is formed by a substantially widened part of the slot 7 within which, in the clamping
15 element shown in the drawings, the projection 8 can be swivelled through an angle of 45 degrees. When the installation kit is inserted, the clamping elements 6 are located at the distal end portion 14 of the screws 5, and the projections 6 are swivelled into the cut-
20 outs 13. After insertion of the installation kit into the installation opening, the screws 5 are turned so that each of the projections 8 swivels into the vertical position shown in the drawings and, as the screw 5 is turned further, is drawn along the screw and
25 into and along the slot 7 in the longitudinal direction towards the frontplate 1 until the clamping face 9 engages the wall 10.

claims

1. An installation kit for insertion into an opening in a wall, comprising a frontplate that is arranged to span such an opening and to overlie adjacent portions of such a wall and has means for receiving a thing that is to be installed in the opening, and clamping elements each having a clamping face that projects from a slotted sleeve extending from the rear of the frontplate and is displaceable along the sleeve towards the frontplate by turning a screw.
2. An installation kit as claimed in claim 1, wherein each clamping element is engaged by the thread of the screw and has a projection that forms the clamping face.
3. An installation kit as claimed in claim 1 or claim 2, wherein each said sleeve has a cut-out adjoining its slot, into which the clamping face can be swivelled by turning the screw.
4. An installation kit as claimed in claim 3, wherein each said cut-out is arranged at the end of the sleeve remote from the front plate.
5. An installation kit as claimed in any of claims 1 to 4, wherein the clamping element is of plastics and, has a bore in which the screw engages by means of a self-tapping thread.
6. An installation kit as claimed in any one of claims 1 to 5, wherein there is a fixing element comprising a said clamping element at each corner of the frontplate.



7. An installation kit as claimed in any one of claims 1 to 6, for insertion into an installation opening of a motor vehicle.

8. An installation kit for insertion into installation openings of motor vehicles, which can be clamped by means of clamping elements arranged on a frontplate of the installation kit to the wall forming the boundary of the installation opening, wherein each of the clamping elements has a clamping face projecting from a slotted sleeve projecting at the rear of the frontplate, which clamping face is displaceable longitudinally in the direction of the frontplate by turning a screw, and wherein the frontplate has means for receiving a thing that is to be installed in such an opening.

9. An installation kit as claimed in any one of claims 1 to 8 including a thing that is to be installed in such an opening by means of the kit.

10. An installation kit substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

