

Dispensing Appliance For A Double Syringe

Generally, double syringes or double cartridges with a static mixer are used for mixing and dispensing two-
5 component materials. A double syringe system generally consists of two parallelly arranged storage cylinders, two pistons, a common closure, and a double plunger. To dispense the content, the pistons are pushed forward by means of the double plunger.

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Particularly in smaller double syringes for single use, the conventional dispensing by means of the dual plungers may result in handling problems because of the small dimensions, and it is therefore the object of the present invention to
15 provide a dispensing appliance that allows a comfortable dispensing also of small double syringes. This object is attained by the dispensing appliance according to claim 1.

EP-A2-0 315 222 discloses a dispensing device, wherein two
20 syringes are held together at its outlet end by a connecting part with common outlet and at the inlet end by a bridge connecting the two plungers. This device does not solve the problem of small syringes, which is not adressed therein.

25 The invention will be explained in more detail hereinafter with reference to drawings of exemplary embodiments.

Fig. 1 shows a perspective view of a double syringe with a mixer and of a dispensing appliance
30 according to the invention,

Fig. 2 shows the double syringe of Fig. 1 inserted in the dispensing appliance of Fig. 1,

35 Fig. 3 shows the dispensing appliance of Fig. 2,

- Fig. 4 shows a partly sectioned view according to arrow IV in Fig. 3,
- 5 Fig. 5 shows a section according to line V - V in Fig. 4,
- Fig. 6 shows an enlarged detail of the plunger end according to Fig. 4,
- 10 Fig. 7 shows a double syringe in an embodiment variant of a dispensing appliance, and
- Fig. 8 shows the dispensing appliance of Fig. 7 in a perspective view and individually.
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Fig. 1 shows double syringe 1 with a mixer 2 as well as a first embodiment of the dispensing appliance 3 of the invention with double plunger 4, connected by thrust plate 5, as well as a flange holder 6 having a finger rest grip 7 with finger rests 7F and a guiding slot 8 for receiving retaining flange 9 of double syringe 1. On the syringe side of the flange holder, a collar 7A is provided that serves for guiding the syringe and comprises a syringe snap-in

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25 retainer for the container that is inserted first, which is in the case of container volumes that are different from 1:1 the larger container. Furthermore, in Fig. 1, pistons 10 in the syringe are shown.

30 Fig. 1 shows how the filled and operational syringe 1 can be introduced with its retaining flange 9 into guiding slot 8 of the flange holder of the dispensing appliance. The internal contour of guiding slot 8 is adapted to the coded external contour of retaining flange 9, thereby allowing to

35 prevent that non-system syringes may be used and to ensure,

in syringes having containers whose volumetric ratio respectively diameter ratio is different from 1:1, that the syringe is inserted into the guiding slot in the correct position.

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In Fig. 2, the syringe is in place on the dispensing appliance and a part of the content of the double syringe has already been dispensed, as follows from the position of the pistons and plungers.

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In Fig. 3 it is apparent that the forward ends 11 of double plungers 4 have an incision 12 to provide a certain elasticity of these ends. In the enlarged illustration of Fig. 6 of a plunger end it is visible that the end spreads
15 out slightly resiliently and has a circumferential bulge 13 such that the plunger ends have a slightly larger diameter than the remainder of the plungers. This enlargement of the circumference by the circumferential bulge 13 and the slight spreading at ends 11 of double plungers 4 have the effect
20 that when the double plunger is pulled back, it is first held back and can only be withdrawn from plunger guide 14 by applying an increased force. When a normal force is applied, the circumferential bulge provides a sufficient safety against a complete withdrawal of the plunger from the flange
25 holder.

In Fig. 4 it is shown that the double plungers are guided by a sufficiently long plunger guide 14 that is arranged on the finger rest grip and extends toward the thrust plate. This
30 allows a precise application, which is important especially in smaller double syringes.

Fig. 5 illustrates flange holder 6 with finger rest grip 7 and its finger rests 7A as well as guiding slot 8, the

latter guiding slot being shaped for receiving the coded and curved retaining flange of the double syringe.

Figs. 7 and 8 illustrate an embodiment variant where flange holder 16 of dispensing appliance 15 has a second finger rest grip 17 with finger rests 17F that is arranged on plunger guide 18 at some distance from the first finger rest grip 7. By this second finger rest grip, the distance to the thrust plate is reduced, thereby allowing a comfortable operation of the syringe also by people having smaller hands, especially in the case of longer syringes. The remaining parts of the dispensing appliance are the same as in the preceding exemplary embodiment.

The term double syringe is also meant to include a double cartridge. Moreover, instead of a mixer, any other accessory such as a spray nozzle or another accessory part may be connected to the double syringe.

Claims

1. Dispensing appliance for a double syringe or
cartridge, including double plungers (4) connected by a
5 thrust plate (5) as well as a flange holder (6, 16) having a
guiding slot (8) for receiving the retaining flange (9) of
the double syringe (1) or double cartridge and at least one
finger rest grip (7, 17).
- 10 2. Dispensing appliance according to claim 1,
characterised in that the flange holder (6, 16) has a
plunger guide (14, 18) on its side facing away from the
double syringe or double cartridge.
- 15 3. Dispensing appliance according to claim 1 or 2,
characterised in that the ends (11) of the plungers (4),
which open out elastically, have an incision (12) and a
circumferential bulge (13).
- 20 4. Dispensing appliance according to any one of claims 1
to 3, characterised in that the flange holder (16) has a
second finger rest grip (17) that is arranged at a distance
from the first finger rest grip (7) on the thrust plate side
thereof.
- 25 5. Dispensing appliance according to claim 4,
characterised in that the second finger rest grip (17) is
arranged on the plunger guide (18).
- 30 6. Dispensing appliance according to any one of claims 1
to 5, characterised in that the guiding slot (8) in the
flange holder (6, 16) has a coded internal contour for
receiving the coded contour of the retaining flange (9) of
the double syringe or double cartridge in an unequivocal
35 position.