CLAIMS

WHAT IS CLAIMED IS:

1. A fluid transfer assembly, comprising:

a first fluid transfer device;

a second fluid transfer device wherein the second fluid transfer device can couple to the first fluid transfer device, wherein

the first fluid transfer device comprises an interface structure; and

the second fluid transfer device comprises an interface structure complementary to the interface structure of the first fluid transfer device,

wherein the interface structure of the first fluid transfer device comprises one or more tongues or one or more grooves and the interface structure of the second fluid transfer device comprises one or more grooves or one or more tongues slidably complementary to the one or more tongues or the one or more grooves of the second fluid transfer device, thereby allowing the second fluid transfer device to slide perpendicularly in positioning with the first fluid transfer device.

2. The fluid transfer assembly of claim 1, wherein

the first fluid transfer device further comprises a housing enclosing at least a proximal portion of the first fluid transfer device and having an opening, and a protective film covering the opening in the housing of the first fluid transfer device;

the second fluid transfer device further comprises a housing enclosing at least a distal portion of the second fluid transfer device and having an opening, and a protective film covering the opening in the housing of the second fluid transfer device;

wherein the protective films of the first and second fluid transfer devices are removable.

3. The fluid transfer assembly of claim 2, wherein

the protective film of the first fluid transfer device is removably attached to the interface structure of first fluid transfer device; and

the protective film of the second fluid transfer device is removably attached to the interface structure of the second fluid transfer device.

4. The fluid transfer assembly of claim 3, wherein the interface structures of the first and second fluid transfer devices seal the housings of the first and second fluid transfer devices once the protective films of the first and second fluid transfer devices are removed.

5. The fluid transfer assembly of claim 3, wherein the housing of the first fluid transfer device and/or the housing of the second fluid transfer device comprise a transparent or semi-transparent plastic.

6. The fluid transfer assembly of claim 3 further comprising a third fluid transfer device, the third fluid transfer device comprises a structure substantially same as a structure of the second fluid transfer device.

7. The fluid transfer assembly of claim 6 wherein the second and third fluid transfer devices comprise a syringe device.

8. The fluid transfer assembly of claim 7, wherein the syringe device comprises:

a syringe barrel having an inside surface defining a chamber and a distal end portion comprising a passageway;

a first plunger slidably movable inside the chamber, the first plunger comprising a proximal end portion, an elongate body portion, and a distal end portion, the distal end portion of the first plunger providing a circumferential seal against the inside surface of the syringe barrel; and

a second plunger slidably movable inside the chamber, the second plunger comprising a proximal end portion, an elongate body portion, and a distal end portion, the distal end portion of the second plunger providing a circumferential seal against the inside surface of the syringe barrel, wherein

the distal end portion of the first plunger is engageable with the proximal end portion of the second plunger such that when the distal end portion of the first plunger and the proximal end portion of the second plunger are engaged.

9. The fluid transfer assembly of claim 8, wherein

the elongate body portion of the first plunger comprises an internal channel and the distal end portion of the first plunger has a pass-through into the internal channel; and

the elongate body portion of the second plunger is slidably movable through the pass-through, and the proximal end portion of the second plunger is engageable with the distal end portion of the first plunger.

10. The fluid transfer assembly of claim 9, wherein the pass-through in the distal end portion of the first plunger provides a circumferential seal against the elongate body portion of the second plunger.

11. The fluid transfer assembly of claim 10, wherein a sealed first volume is defined between the distal end portion of the first plunger and the distal end portion of the second plunger when the first plunger is proximally moved relative to the second plunger, and a second volume is defined between the distal end portion of the second plunger and the distal end portion of the syringe barrel when the second plunger is proximally moved by the first plunger.

12. The fluid transfer assembly of claim 10, wherein the second plunger further comprises a check valve in the distal end portion.