

CLAIMS

1. A catheter system, comprising:

a catheter assembly comprising a catheter adapter and a catheter extending distally from the catheter adapter;

a needle assembly coupled to the catheter assembly, the needle assembly comprising a needle hub and an introducer needle, wherein the needle hub is coupled to a proximal end of the catheter adapter and wherein a proximal end of the introducer needle is secured within the needle hub; and

a housing retained within a lumen of the catheter adapter, the housing comprising:

a first resilient element, comprising a proximal end, a distal end, a first central bore, and a coupling element;

a second resilient element proximal to the first resilient element, wherein the second resilient element comprises a proximal end, a distal end, a second central bore, and another coupling element, wherein the coupling element and the other coupling element are coupled together,

wherein the first central bore and the second central bore form a central passageway configured to receive a longitudinal shaft of the introducer needle therethrough, wherein the first and second resilient elements are configured to form a V-shape in response proximal retraction of the introducer needle proximal to a distal wall of the first resilient element.

2. The catheter system of claim 1, wherein the housing further comprises a first exterior covering coupled to an outer surface of the first resilient element and a second exterior covering coupled to an outer surface of the second resilient element.
3. The catheter system of claim 2, wherein the first exterior covering and the second exterior covering comprise an aperture to receive the introducer needle therethrough.
4. The catheter system of claim 3, wherein the distal end of the first resilient element is configured to contact or couple to a septum disposed within the lumen.
5. The catheter system of claim 4, wherein in response to the introducer needle extending through the central passageway into the septum, the V-shape straightens along the longitudinal shaft.
6. The catheter system of claim 5, wherein in response to withdrawing the introducer needle from the septum, the first resilient element disengages from the septum to facilitate removal of the housing from the catheter adapter.
7. The catheter system of claim 5, wherein in response to formation of the V-shape, a sharp distal tip of the introducer needle contacts a wall of the central passageway.
8. The catheter system of claim 7, wherein in response to formation of the V-shape, a notch of the introducer needle is secured within the central passageway.

9. The catheter system of claim 1, wherein at least one of the first central bore and the second central bore is formed by the introducer needle.
10. The catheter system of claim 1, wherein the first coupling element comprises a protrusion and an aperture, wherein the second coupling element comprises another protrusion and another aperture.