

CLAIMS

What is claimed is:

1. A system for introducing a medical device through a valve, comprising:
a valve including a first valve member defining a first proximal surface and a first valve face, and a second valve member defining a second proximal surface and a second valve face, the valve configured to transition between a closed configuration and an open configuration; and
a valve divider extending from a proximal end to a distal tip and defining a lumen, the distal tip configured to engage the valve and transition the valve from the closed configuration to the open configuration to allow the medical device to pass between the first valve face and the second valve face in a spaced apart relationship.
2. The system according to claim 1, wherein the first valve face contacts the second valve face when the valve is in the closed configuration and the first valve face is in a spaced apart relationship from the second valve face when the valve is in the open configuration.
3. The system according to either claim 1 or claim 2, wherein one of the first proximal surface and the second proximal surface includes a protrusion that extends proximally and is configured to engage the distal tip of the valve divider.
4. The system according to any of claims 1-3, wherein the first proximal surface includes a first cavity and the second proximal surface includes a second cavity, the first cavity and the second cavity co-operate to define a recess in a proximal surface of the valve.
5. The system according to claim 4, wherein a minimum diameter of the recess is larger than an outer diameter of the distal tip, the recess is configured to align the distal tip with a diametric center point of the proximal surface of the valve.
6. The system according to claim 4, wherein a maximum diameter of the recess is smaller than an outer diameter of the distal tip, and a rim portion of the recess is configured to engage the distal tip.

7. The system according to any of claims 1-6, wherein the distal tip of the valve divider remains proximal of the first valve face and the second valve face.

8. The system according to any of claims 1-7, wherein the valve is disposed within a connector and the valve divider further includes a shoulder portion and a nose portion, the shoulder portion is configured to engage an opening of the connector and the nose portion is configured to extend into the connector a predetermined distance.

9. The system according to claim 8, wherein the connector is disposed at a proximal end of a catheter.

10. The system according to claim 8, wherein the nose portion defines a bi-convex cross sectional shape and is configured to extend between the first valve face and the second valve face.

11. The system according to any of claims 1-10, wherein the first valve face and the second valve face are aligned with a central longitudinal axis when in the closed configuration, and an axis of the divider lumen is offset from the central longitudinal axis.

12. The system according to any of claims 1-11, wherein the first valve face and the second valve face are offset from a central longitudinal axis when in the closed configuration and an axis of the divider lumen is aligned with the central longitudinal axis.

13. The system according to any of claims 1-12, wherein one of the first valve member and the second valve member is formed of a needle penetrable material.

14. A valved connector, comprising:
- a connector defining a lumen and including a valve including a valve member, the valve configured to control a fluid flow through the lumen of the connector and biased towards to a closed configuration; and
 - a hold-open tab comprising:
 - a body configured to engage a proximal end of the connector; and
 - an arm extending distally from the body into the connector lumen, a distal tip of the arm releasably attached to the valve member to maintain the valve in an open configuration.

15. The valved connector according to claim 14, wherein the hold-open tab is configured to be detached from the valve member to transition the valve to the closed configuration.

16. The valved connector according to either claim 14 or claim 15, wherein the body of the hold-open tab defines a lumen that aligns with the connector lumen.

17. The valved connector according to any of claims 14-16, further including an elongate medical device extending through the connector lumen to a point distal of the valve, the medical device disposed in a spaced apart relationship from the valve member.

18. The valved connector according to claim 17, wherein the elongate medical device includes one of a stylet, a trocar, a catheter, or an introducer.

19. A method of inserting a medical device through a valve, comprising:
providing a valve, comprising:
a first valve member defining a first proximal surface and a first valve face;
and
a second valve member defining a second proximal surface and a second valve face;
advancing a valve divider until a distal tip thereof contacts one of the first proximal surface and the second proximal surface;
transitioning the valve from a closed configuration to an open configuration;
and
advancing an elongate medical device between the first valve member and the second valve member in a spaced apart relationship from both the first valve face and the second valve face.

20. The method according to claim 19, wherein the slit valve is disposed within a connector portion of a catheter.

21. The method according to either claim 19 or claim 20, wherein the valve is biased towards a closed configuration.

22. The method according to any of claims 19-21, wherein the first valve face contacts the second valve face in the closed configuration to create a seal therebetween, and the first valve face is in a spaced apart relationship from the second valve face in the open configuration to allow a fluid flow therebetween.