

Claims

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1. System for introducing a radially compressible part (1.1) of a catheter device (1) into a sleeve (4), comprising
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- a sleeve (4),
a catheter device (1) comprising a radially compressible part (1.1),
the radially compressible part (1.1) being configured to be transferred at least in part into the sleeve (4);
a compression pipe (2) which comprises movable fins (2.2) for receiving the radially compressible part (1.1), the movable fins (2.2) having an open state and a closed state.
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2. System according to claim 1, wherein the radially compressible part (1.1) comprises a radially compressible rotor (1.1.1) and a radially compressible housing (1.1.2).
3. System according to one of the preceding claims, wherein the sleeve (4) is a peel-away sheath or the sleeve (4) is a cannula.
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4. System according to claim 3, wherein the cannula pertains to the catheter device (1) itself.
5. System according to one of the preceding claims, wherein the catheter device (1) comprises a pigtail (1.2.2) and/or a distal bearing (1.2), the distal bearing or the pigtail (1.2.2) comprising an elongated portion
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- (1.2.1).
6. System according to one of the preceding claims, wherein the compression pipe (2) comprises a tube (2.1) for receiving the elongated portion (1.2.1) or a portion of the catheter device lying proximally or distally of the radially compressible part (1.1).
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7. System according to one of the preceding claims, wherein the tube (2.1) of the compression pipe (2) comprises a recess (2.1.1) for receiving

ing the pigtail (1.2.2).

8. System according to one of the preceding claims, wherein the compression pipe (2) comprises between two and ten movable fins (2.2).
- 5 9. System according to one of the preceding claims, wherein the compression pipe (2) comprises three or four movable fins (2.2).
- 10 10. System according to one of the preceding claims, wherein gaps (2.2.2) extending between neighboring movable fins (2.2) extend axially or spirally.
11. System according to claim 10, wherein slits (2.4) are provided in the compression pipe (2), the slits (2.4) extending axially or spirally, as continuations of the gaps (2.2.2) or in between the gaps (2.2.2).
12. System according to claim 11, wherein ends of radially displaced slits (2.7) overlap axially with ends of gaps (2.2.2) and/or axially designed slits (2.4)
- 15 13. System according to one of the preceding claims, wherein a gap remains between neighboring movable fins (2.2) in the closed state.
14. System according to one of the preceding claims, wherein neighboring fins (2.2) are connected by a membrane or skin.
- 20 15. System according to one of the preceding claims, further comprising a reducer (3) for radially compressing the movable fins (2.2) of the compression pipe (2) and the radially compressible part (1.1) received between the movable fins (2.2).
- 25 16. System according to claim 15, wherein the reducer (3) is designed as a pipe with a distal (3.2.1) and a proximal opening (3.1.1) and configured to receive the sleeve (4) and the compression pipe (2), and wherein the sleeve (4) comprises a stop (4.1) configured to abut against an end of the reducer (3) when the sleeve (4) is introduced into the proximal opening (3.1.1) of the reducer (3) and/or wherein the compression pipe (2) comprises a stop (2.3) configured to abut against an end of the

reducer when the compression pipe (2) is introduced into the distal opening (3.1.2) of the reducer (3), such that a gap (2.5) remains between the sleeve (4) and the compression pipe (2) when the compression pipe (2) and the sleeve (4) are introduced into the reducer.

- 5 17. System according to one of the preceding claims, wherein the reducer (3) is designed as a pipe with a distal (3.2.1) and a proximal opening (3.1.1), comprising a proximal cylindrical portion (3.1) of constant inner diameter and a distal conical portion (3.2), where the inner diameter increases in distal direction, the distal conical portion (3.2) configured for receiving the movable fins (2.2) and the radially compressible part (1.1) received by the movable fins (2.2).
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18. System according to one of the preceding claims, wherein the reducer (3) comprises a first stop (3.1.3) for limiting the movement of the sleeve (4) with respect to the reducer (3) in the distal direction.
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19. System according to one of the preceding claims, wherein the reducer (3) comprises a second stop (3.1.4) opposite to the first stop (3.1.3) for limiting the movement of the compression pipe (2) with respect to the reducer (3) in the proximal direction.
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20. System according to one of the preceding claims, wherein an inner diameter of the movable fins (2.2) in the closed state and an inner diameter of the sleeve (4) differ by at most 1 mm, preferably by at most 0.5 mm.
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21. System according to one of claims 15 to 20, wherein the compression pipe (2) is provided around the catheter device (1), such that the movable fins (2.2) face the compressible part (1.1) and the reducer (3) is provided on an opposite side of the compressible part (1.1), such that the conical portion (3.2) of the reducer (3) faces the compressible part (1.1), further comprising a disk device (3.4) with a hole (3.4.1), characterized in that the disk device (3.4) is provided around the catheter device (1) in a section between the cylindrical portion (3.1) of the reducer (3) and the compressible part (1.1).
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22. Method for using a system of one of claims 15 to 21 for inserting the radially compressible part (1.1) of the catheter device (1) into the sleeve (4), the method comprising the steps of:
- 5 providing the reducer (3) around the catheter device (1) proximally of the compressible part (1.1);
- providing the sleeve (4) around the catheter device (1) proximally of the reducer (3);
- 10 providing the compression pipe (2) around the catheter device (1), such that the radially compressible part (1.1) is located between the movable fins (2.2);
- and executing the following steps:
- moving the reducer (3) towards the compression pipe (2), such that the compression pipe (2) slides into the distal opening of the reducer (3);
- 15 continuing the relative movement of the compression pipe (2) and the reducer (3) such that the movable fins (2.2) slide through the distal conical portion (3.2) of the reducer (3), effecting compression of the movable fins (2.2) from the open state to the closed state, thus compressing the radially compressible part (1.1);
- 20 continuing the relative movement such that the movable fins (2.2) in the compressed state and the compressed radially compressible part (1.1) slide along the proximal cylindrical portion (3.1); and
- providing the sleeve (4) proximally against the compression pipe (2) or against a stop (3.14) pertaining to the reducer (3), the stop being
- 25 provided proximally of the compression pipe (2), and pulling the catheter tube (1.3) in a proximal direction while holding on to the sleeve (4), such that at least the portion of the catheter device (1) comprising the radially compressible part (1.1) slides out of the compression pipe (2) and into the sleeve (4).
- 30 23. Method for using the system of claim 21 for inserting the radially compressible part (1.1) of the catheter device (1) into the sleeve (4), the method comprising the steps of:
- providing the reducer (3) around the catheter device (1) proximally of the compressible part (1.1);

providing the sleeve (4) around the catheter device (1) proximally of the reducer (3);

providing the compression pipe (2) around the catheter device (1), such that the movable fins (2.2) face in the proximal direction;

5 and executing the following steps:

moving the the reducer (3) and the disk device (3.4) towards the compression pipe (2), such that the disk device (3.4) pushes the compressible part (1.1) between the movable fins (2.2) and sliding the movable fins (2.2) into the distal opening of the reducer (3) until the disk device (3.4) gives in or breaks;

10 continuing the relative movement of the compression pipe (2) and the reducer (3) such that the movable fins (2.2) slide through the distal conical portion (3.2) of the reducer (3), effecting compression of the movable fins (2.2) from the open state to the closed state, thus compressing the radially compressible part (1.1);

15 continuing the relative movement such that the movable fins (2.2) in the compressed state and the compressed radially compressible part (1.1) slide along the proximal cylindrical portion (3.1); and

20 providing the sleeve (4) proximally against the compression pipe (2) or against a stop (3.14) pertaining the reducer (3), the stop being provided proximally of the compression pipe (2), and pulling the catheter tube (1.3) in a proximal direction while holding on to the sleeve (4), such that at least the portion of the catheter device (1) comprising the radially compressible part (1.1) slides out of the compression pipe (2) and into the sleeve (4).

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