CLAIMS

1. An intravascular blood pump, comprising:

a motor unit comprising a motor, the motor unit being configured to be inserted into vasculature of a patient;

a pump unit comprising an impeller, the impeller being configured to pump blood when driven in rotation within the patient;

a flexible intermediate section arranged between the motor unit and the pump unit, the flexible intermediate section comprising a flexible drive shaft; and

a cannula with at least one blood outflow aperture, the cannula being configured to carry blood from the pump unit to the at least one blood outflow aperture when the impeller is driven in rotation within a patient,

wherein the flexible drive shaft is configured to be driven in rotation by the motor, and to thereby drive the impeller in rotation,

wherein the motor unit and the flexible intermediate section are arranged within the cannula.

2. The intravascular blood pump of claim 1, wherein the motor unit comprises a motor housing, the pump unit comprises a pump housing, and the flexible intermediate section connects the motor housing and the pump housing.

3. The intravascular blood pump of claim 1, wherein the pump unit is configured to be compressible.

4. The intravascular blood pump of any of claims 1 to 3, further comprising a compression sleeve or compression catheter configured to maintain at least a portion of the pump unit in a compressed state.

5. The intravascular blood pump of any of claims 1 to 4, wherein the cannula is configured to be compressible.

6. The intravascular blood pump of any of claims 1 to 5, wherein the impeller is configured to be compressible.

7. The intravascular blood pump of claim 6, wherein the impeller is further configured to have a compressed state and a relaxed state, and to expand when it is brought from the compressed state into the relaxed state.

8. The intravascular blood pump of any of the preceding claims, wherein the flexible intermediate section further comprises a sheath surrounding at least a portion of the flexible drive shaft.

9. The intravascular blood pump of claim 8, wherein the sheath comprises multiple layers.

10. The intravascular blood pump of any of claims 8 to 9, wherein the flexible intermediate section further comprises a helical wire bearing arranged within the sheath and wound around the flexible drive shaft.

11. The intravascular blood pump of any of the preceding claims, wherein the motor unit comprises a housing formed at least in part of a magnetically conductive iron-chromium-aluminum alloy.

12. The intravascular blood pump of any of the preceding claims, wherein the motor unit comprises a housing formed at least in part of a magnetically conductive cobalt-iron alloy.

13. The intravascular blood pump of any of the preceding claims, wherein the motor unit has a maximum outer diameter of 10 Fr.

14. The intravascular blood pump of any of the preceding claims, wherein the motor unit has a total length of between 14 and 16 mm.

15. The intravascular blood pump of any of the preceding claims, wherein the motor unit has a maximum external diameter and a total length, the maximum external diameter of the motor unit being between 0.20 and 0.24 of the total length of the motor unit.

16. The intravascular blood pump of any of the preceding claims, wherein the intravascular blood pump is an intravascular blood pump configured for use in a left heart.

17. The intravascular blood pump of any of the preceding claims, wherein the intravascular blood pump is an intravascular blood pump configured for use in a right heart.

18. An intravascular blood pump, comprising:

a motor unit comprising a motor, the motor unit being configured to be inserted into vasculature of a patient;

a pump unit comprising an impeller, the impeller being configured to pump blood when driven in rotation within the patient;

a flexible intermediate section arranged between the motor unit and the pump unit, the flexible intermediate section comprising a flexible drive shaft, wherein the flexible drive shaft is configured to be driven in rotation by the motor, and to thereby drive the impeller in rotation;

wherein the motor unit comprises a motor housing, the pump unit comprises a pump housing, and the flexible intermediate section connects the motor housing and the pump housing;

wherein the pump unit is configured to be compressible; and

further comprising a compression sleeve or compression catheter configured to maintain at least a portion of the pump unit in a compressed state.

19. An intravascular blood pump, comprising:

a motor unit comprising a motor, the motor unit being configured to be inserted into vasculature of a patient;

a pump unit comprising an impeller, the impeller being configured to pump blood when driven in rotation within the patient;

a flexible intermediate section arranged between the motor unit and the pump unit, the flexible intermediate section comprising a flexible drive shaft, wherein the flexible drive shaft is configured to be driven in rotation by the motor, and to thereby drive the impeller in rotation;

wherein the motor unit comprises a motor housing, the pump unit comprises a pump housing, and the flexible intermediate section connects the motor housing and the pump housing;

wherein the pump unit is configured to be compressible; and

wherein one of the cannula or the impeller, or both, is configured to be compressible.

20. The intravascular blood pump of claim 19, wherein the impeller is compressible and is further configured to have a compressed state and a relaxed state, and to expand when it is brought from the compressed state into the relaxed state.