Claims

1. A subsea line clamp assembly, comprising a body having an axis and a clamp member, the body comprising at least first and second body segments adapted to be assembled around a subsea line, the clamp member comprising at least first and second clamp member segments, the clamp member being movable relative to the body and having an outer surface adapted to engage an inner surface of the body, and an inner surface adapted to engage the subsea line within the subsea line clamp assembly, the inner surface of the body having at least one first tapered portion, and the outer surface of the clamp member having at least one second tapered portion arranged to engage the first tapered portion on the inner surface of the body, wherein the clamp member and the body are divided in a direction along the axis into the same number of segments, with each body segment having a respective clamp member segment, and wherein the clamp member and the body are divided into axial sections, with each axial body section having a respective axial clamp member section, and wherein each axial body section has a larger axial dimension than its respective axial clamp member section, and wherein at least one end face of each of the axial clamp member sections is axially spaced from at least one end face of an adjacent axial clamp member section.

2. A subsea line clamp assembly as claimed in claim 1, wherein the clamp member is radially and axially movable relative to the body, and wherein axial movement of the clamp member in a first direction relative to the body when the first and second tapered portions are engaged urges the inner surface of the clamp member radially inwards with respect to the body against the outer surface of the subsea line.

3. A subsea line clamp assembly as claimed in any preceding claim, wherein friction between the inner surface of the body and the outer surface of the clamp member is lower than the friction between the inner surface of the clamp member and the outer surface of the subsea line.

4. A subsea line clamp assembly as claimed in claim 1, wherein the clamp member is axially movable relative to the body in a first direction, and wherein the outer surface of the clamp member and the inner surface of the body incorporate a stop member restricting axial movement of the clamp member in a second direction opposite to the first direction.

5. A subsea line clamp assembly as claimed in any preceding claim, wherein the inner surface of the body has an array of first tapered portions, wherein the first tapered portions are annular, extending around at least a portion of the inner surface of the body, and wherein the outer surface of the clamp member has an array of second tapered portions, wherein the second tapered portions are annular, extending around at least a portion of the outer surface of the clamp member.

6. A subsea line clamp assembly as claimed in any preceding claim, wherein the first and second tapered portions are tapered at the same angle relative to an axis of the body.

7. A subsea line clamp assembly as claimed in any preceding claim, incorporating at least one axis parallel portion between repeating first and second tapered portions of the body and clamp member.

8. A subsea line claim assembly as claimed in claim 7, wherein the axis-parallel portions of the inner surface of the body are adjacent to a minimum inner diameter of each first tapered portion , and wherein the axis-parallel portions of the outer surface of the clamp member are adjacent to a minimum outer diameter of each second tapered portion.

9. A subsea line clamp assembly as claimed in claim 7 or claim 8, wherein the axis parallel portion is disposed on a radial minimum.

10. A subsea line clamp assembly as claimed in any preceding claim, wherein the inner surface of the body and the outer surface of the clamp member each

incorporate axis parallel portions, wherein respective axis-parallel portions on the body and clamp member overlap axially in the subsea line clamp assembly.

11. A subsea line clamp assembly as claimed in claim 10, wherein the axially overlapping axis-parallel portions on the body and the clamp member are radially spaced from one another by a radial clearance.

12. A method of clamping a subsea line, comprising assembling a subsea line clamp assembly onto an outer surface of the subsea line, the subsea line clamp assembly comprising:

a body having an axis and being divided into at least first and second body segments adapted to be assembled around the subsea line,

a clamp member comprising at least first and second clamp member segments, the clamp member having an outer surface adapted to engage an inner surface of the body extending circumferentially around the outer surface of the clamp member, and an inner surface adapted to engage the subsea line within the subsea line clamp assembly,

wherein the clamp member and the body are divided in a direction along the axis into the same number of segments, with each body segment having a respective clamp member segment,

wherein each body segment has a larger angular dimension than its respective clamp member segment,

wherein at least one segment of the clamp member is radially and axially movable relative to the body when the assembly is assembled around the subsea line,

the inner surface of the body having a plurality of first tapered portions and the outer surface of the clamp member having a plurality of second tapered portions arranged to engage the first tapered portions on the inner surface of the body during movement of the clamp member relative to the body, wherein the first and second tapered portions face opposite ends of the subsea line clamp assembly, and wherein friction between the inner surface of the body and outer surface of the clamp member is lower than the friction between the inner surface of the clamp member and the outer surface of the subsea line, and wherein:

axial movement of the clamp member in a first direction relative to the body when the first and second tapered portions are engaged urges the inner surface of the clamp member radially inwards with respect to the body against the outer surface of the subsea line, wherein the clamp member and the body are divided into axial sections, with each axial body section having a respective axial clamp member section, and wherein each axial body section has a larger axial dimension than its respective axial clamp member section, and wherein the method includes axially spacing at least one end face of each of the axial clamp member sections from at least one end face of an adjacent axial clamp member section.

13. A method as claimed in claim 12, wherein the subsea line is a marine riser conduit.

14. A method as claimed in any one of claims 12-13, wherein the clamp member slides in the first direction relative to the body to maintain consistency of the clamping force on the subsea line in the event of reduction in the outer diameter of the subsea line after assembling the subsea line clamp assembly onto the outer surface of the subsea line.

15. A method as claimed in any one of claims 12-14, wherein the method includes restricting axial movement of the clamp member in a second direction opposite to the first direction by a stop member.