CLAIMS

1. A method of deploying a drillstring for subsea well installations, wherein the steps comprise:

configuring a drilling riser pipe section, wherein the steps comprise:

attaching a male drilling riser assembly section to a section of pipe, thereby configuring at least a portion of the drilling riser pipe section, the male drilling riser assembly section comprising:

an internal stab type male main drilling riser connector,

a main drilling riser flange having a helically threaded ring on the outer edge of the flange, and

a box connector having an inner helically threaded ring configured to mate with the helically threaded ring on the outer edge of the flange and having a set of inward facing inter-engageable annular projections and grooves; and

attaching a female drilling riser assembly section to a section of pipe, thereby configuring at least a portion of the drilling riser pipe section, the female drilling riser assembly section comprising:

an internal stab type female main drilling riser connector,

a main drilling riser flange having a helically threaded ring on the outer edge of the flange, and

a pin connector having an inner helically threaded ring configured to mate with the helically threaded ring on the outer edge of the flange and having a set of outward facing inter-engageable annular projections and grooves configured to engage with the inward facing inter-engageable annular projections and grooves of the male drilling riser assembly section box connector,

mating a configured drilling riser pipe section to an uppermost portion of a drillstring at an offshore wellsite.

2. The method of claim 1, wherein the drilling riser pipe section additionally comprises a section of pipe having a helically threaded ring on each end to facilitate the connection with a male drilling riser assembly section and a female drilling riser assembly section respectively.

3. The method of claim 2, wherein the main drilling riser flange extends outwardly from the central axis and the helically threaded ring on the outer edge of the main drilling riser flange is axially spaced apart from the internal stab type connector.

4. The method of claim 3, wherein the portion of the main drilling riser flange that extends outwardly additionally comprises one or more axial passages to accommodate a multiple riser assembly.

5. The method of claim 4, wherein the steps further comprise:

configuring one or more pipe sections that are a part of the one or more multiple riser assembly strings in the one or more axial passages of the configured drilling riser pipe section.

6. The method of claim 3, wherein the steps further comprise: applying sufficient axial force to the drilling riser pipe section such that an abutment interface between the drilling riser pipe section and the uppermost portion of the drillstring substantially closes.

7. A drilling riser assembly for subsea well installations, the drilling riser assembly comprising:

a male drilling riser assembly section, comprising:

an internal stab type male main drilling riser connector,

a main drilling riser flange having a helically threaded ring on the outer edge of the flange, and

a box connector having an inner helically threaded ring configured to mate with the helically threaded ring on the outer edge of the flange and having a set of inward facing inter-engageable annular projections and grooves; and

a female drilling riser assembly section, comprising:

an internal stab type female main drilling riser connector,

a main drilling riser flange having a helically threaded ring on the outer edge of the flange, and

a pin connector having an inner helically threaded ring configured to mate with the helically threaded ring on the outer edge of the flange and having a set of outward facing inter-engageable annular projections and grooves configured to engage with the inward facing inter-engageable annular projections and grooves of the male drilling riser assembly section box connector;

a first abutment interface between said internal stab type male main drilling riser connector and said internal stab type female main drilling riser connector;

a second abutment interface between said pin connector and said box connector; and

said male drilling riser assembly section and said female drilling riser assembly section being configured such that, during assembly, said first abutment interface engages prior to said second abutment interface.

8. The drilling riser assembly of claim 7 further configured such that said inward facing inter-engageable annular projections and grooves and said outward facing inter-engageable annular projections and grooves will not fully engage until final assembly of the drilling riser assembly.

9. The drilling riser assembly of claim 7 further configured such that, after engagement of said first abutment interface, said second abutment interface also engages prior to final assembly of the drilling riser assembly.

10. A drilling riser assembly for subsea well installations, the drilling riser assembly comprising:

a male drilling riser assembly section, comprising:

an internal stab type male main drilling riser connector configured with an outward facing helically threaded ring, and

a box connector having an inner helically threaded ring configured to mate with the helically threaded ring on the internal stab type male main drilling rising connector and having a set of inward facing inter-engageable annular projections and grooves; and

a female drilling riser assembly section, comprising:

an internal stab type female main drilling riser connector configured with an outward facing helically threaded ring, and

a pin connector having an inner helically threaded ring configured to mate with the helically threaded ring on the internal stab type female main drilling riser connector and having a set of outward facing inter-engageable annular projections and grooves configured to engage with the inward facing inter-engageable annular projections and grooves of the male drilling riser assembly section box connector.

11. The drilling riser assembly of claim 10, further comprising:

a first abutment interface between said internal stab type male main drilling riser connector and said internal stab type female main drilling riser connector;

a second abutment interface between said pin connector and said box connector; and

said male drilling riser assembly section and said female drilling riser assembly section being configured such that, during assembly, said first abutment interface engages prior to said second abutment interface.

12. The drilling riser assembly of claim 10 further configured such that said inward facing inter-engageable annular projections and grooves and said outward facing inter-engageable annular projections and grooves will not fully engage until final assembly of the drilling riser assembly.

13. The drilling riser assembly of claim 10 further configured such that, after engagement of said first abutment interface, said second abutment interface also engages prior to final assembly of the drilling riser assembly.

14. A method of deploying a drillstring for subsea well installations, wherein the steps comprise:

configuring a drilling riser pipe section, wherein the steps comprise:

attaching a male drilling riser assembly section to a section of pipe, thereby configuring at least a portion of the drilling riser pipe section, the male drilling riser assembly section comprising:

an internal stab type male main drilling riser connector,

a main drilling riser flange having a helically threaded ring on the outer edge of the flange, and

a box connector having an inner helically threaded ring configured to mate with the helically threaded ring on the outer edge of the flange and having a set of inward facing inter-engageable annular projections and grooves; and

attaching a female drilling riser assembly section to a section of pipe, thereby configuring at least a portion of the drilling riser pipe section, the female drilling riser assembly section comprising:

an internal stab type female main drilling riser connector,

a main drilling riser flange having a helically threaded ring on the outer edge of the flange, and

a pin connector having an inner helically threaded ring configured to mate with the helically threaded ring on the outer edge of the flange and having a set of outward facing inter-engageable annular projections and grooves configured to engage with the inward facing inter-engageable annular projections and grooves of the male drilling riser assembly section box connector,

assembling said male drilling riser assembly section and said female drilling riser assembly section such that a first abutment interface between said internal stab type male main drilling riser connector and said internal stab type female main drilling riser connector engages prior to the engagement of a second abutment interface between said pin connector and said box connector.

15. The method of claim 14, wherein said inward facing inter-engageable annular projections and said outward facing inter-engageable annular projections will not fully engage until

completion of the step of assembling said male drilling riser assembly section and said female drilling riser assembly section.

16. The method of claim 14, wherein the step of assembling said male drilling riser assembly section and said female drilling riser assembly section also results in engagement of the second abutment interface between said pin connector and said box connector.

17. A method of deploying a drillstring for subsea well installations, wherein the steps comprise:

configuring a drilling riser pipe section, wherein the steps comprise:

attaching a male drilling riser assembly section to a section of pipe, thereby configuring at least a portion of the drilling riser pipe section, the male drilling riser assembly section comprising:

an internal stab type male main drilling riser connector configured with an outward facing helically threaded ring, and

a box connector having an inner helically threaded ring configured to mate with the helically threaded ring on the internal stab type male main drilling riser connector and having a set of inward facing inter-engageable annular projections and grooves; and

attaching a female drilling riser assembly section to a section of pipe, thereby configuring at least a portion of the drilling riser pipe section, the female drilling riser assembly section comprising:

an internal stab type female main drilling riser connector configured with an outward facing helically threaded ring, and

a pin connector having an inner helically threaded ring configured to mate with the helically threaded ring on the internal stab type female main drilling riser connector and having a set of outward facing inter-engageable annular projections and grooves configured to engage with the inward facing inter-engageable annular projections and grooves of the male drilling riser assembly section box connector, and

mating a configured drilling riser pipe section to an uppermost portion of a drillstring at an offshore wellsite.

18. The method of claim 17, wherein the steps further comprise:

assembling said male drilling riser assembly section and said female drilling riser assembly section such that a first abutment interface between said internal stab type male main drilling riser

connector and said internal stab type female main drilling riser connector engages prior to the engagement of a second abutment interface between said pin connector and said box connector.

19. The method of claim 18, wherein said inward facing inter-engageable annular projections and said outward facing inter-engageable annular projections will not fully engage until completion of the step of assembling said male drilling riser assembly section and said female drilling riser assembly section.

20. The method of claim 18, wherein the step of assembling said male drilling riser assembly section and said female drilling riser assembly section also results in engagement of the second abutment interface between said pin connector and said box connector.