CLAIMS

What is claimed is:

1. A shunt tube assembly comprising:

a plurality of shunt tubes;

a jumper tube; and

a coupling member configured to provide fluid communication between the jumper tube and the plurality of shunt tubes.

2. The shunt tube assembly of claim 1, wherein the coupling member comprises a first end and a second end, wherein the coupling member is configured to provide a sealing engagement between the coupling member and the jumper tube at the first end, and wherein the coupling member is configured to provide a sealing engagement between the coupling member and the plurality of jumper tubes at the second end.

3. The shunt tube assembly of claim 1, wherein the coupling member comprises at least one chamber, wherein the chamber is in fluid communication with the jumper tube and the plurality of shunt tubes.

4. The shunt tube assembly of claim 1, wherein the plurality of shunt tubes comprises a transport tube.

5. The shunt tube assembly of claim 4, wherein the plurality of shunt tubes comprises a packing tube.

6. The shunt tube assembly of claim 1, further comprising a second shunt tube coupled to the jumper tube, wherein the second shunt tube is in fluid communication with the plurality of shunt tubes through the jumper tube and the coupling member.

7. The shunt tube assembly of claim 1, wherein the plurality of shunt tubes comprises a first cross-sectional shape, and wherein the jumper tubes comprise a second cross-sectional shape.

8. The shunt tube assembly of claim 7, wherein the coupling member is further configured to sealingly engage the first cross-sectional shape and the second cross-sectional shape.

9. The shunt tube assembly of claim 1, wherein the coupling member comprises an alignment ring.

10. A coupling member for use with a shunt tube assembly comprising:

a body member comprising a first side and a second side, wherein the body member is configured to be disposed about a wellbore tubular;

a first opening disposed through the first side, wherein the first opening is configured to engage a shunt tube; and

a second opening disposed through the second side, wherein the second opening is configured to engage a jumper tube, wherein the first opening is in fluid communication with the second opening.

11. The coupling member of claim 10, further comprising a chamber disposed within the body member, wherein the chamber is in fluid communication with the first opening and the second opening.

12. The coupling member of claim 11, further comprising a third opening disposed through the first side, wherein the third opening is configured to engage a second shunt tube.

13. The coupling member of claim 12, wherein the third opening is in fluid communication with the chamber.

14. The coupling member of claim 12, further comprising a divider disposed within the chamber, wherein the divider is configured to separate the chamber into a first portion and a second portion, and wherein the first portion is in fluid communication with the first opening and the second opening, and wherein the second portion is in fluid communication with the third opening.

15. The coupling member of claim 10, wherein the body member is further configured to retain the shunt tube in position relative to the wellbore tubular.

16. A coupling member for use with a shunt tube assembly comprising:

a first body member, wherein the first body member is configured to be rotatably

disposed about a wellbore tubular, and wherein the first body member comprises a first opening configured to receive a jumper tube;

a second body member, wherein the second body member is configured to be disposed about a wellbore tubular, and wherein the second body member comprises one or more second openings configured to receive one or more shunt tubes; and a chamber defined between the first body member and the second body member, wherein the first opening is in fluid communication with the one or more second openings through the chamber.

17. The coupling member of claim 16, wherein the second body member is configured to be rotatably disposed about the wellbore tubular.

18. The coupling member of claim 16, further comprising a cover sealingly engaged with the first body member and the second body member, wherein the chamber is further defined by the cover.

19. The coupling member of claim 16, wherein the first body member sealingly engages the second body member.

20. The coupling member of claim 16, wherein the one or more shunt tubes comprise a

transport tube and a packing tube.

21. The coupling member of claim 16, wherein the first opening is axially misaligned relative to the one or more second openings.

22. The coupling member of claim 16, wherein the first body member is configured to be axially translatable about the wellbore tubular.

23. A method of forming a shunt tube coupling comprising:

rotating a first ring about a wellbore tubular;

engaging a jumper tube with the first ring;

rotating a second ring about the wellbore tubular;

engaging one or more shunt tubes with the second ring; and

forming a sealing engagement between the first ring and the second ring.

24. The method of claim 23, wherein forming the sealing engagement comprises forming a chamber between the first ring and the second ring.

25. The method of claim 23, wherein forming the sealing engagement comprises: engaging a cover with the first ring and the second ring.

26. The method of claim 23, wherein the jumper tube and the one or more shunt tubes are radially misaligned.

CLAIMS

What is claimed is:

1. A shunt tube assembly comprising:

a plurality of shunt tubes;

a jumper tube; and

a coupling member located between the plurality of shunt tubes and the jumper tube coupling said plurality of shunt tubes to the jumper tube

said coupling member configured to provide fluid communication between the jumper tube and the plurality of shunt tubes

wherein said coupling member further comprising a retaining ring.

2. The shunt tube assembly of claim 1, wherein the coupling member comprises a first end and a second end, wherein the coupling member is configured to provide a sealing engagement between the coupling member and the jumper tube at the first end, and wherein the coupling member is configured to provide a sealing engagement between the coupling member and the plurality of jumper tubes at the second end.

3. The shunt tube assembly of claim 1, wherein the coupling member comprises at least one chamber, wherein the chamber is in fluid communication with the jumper tube and the plurality of shunt tubes.

4. The shunt tube assembly of claim 1, wherein the plurality of shunt tubes comprises a transport tube.

5. The shunt tube assembly of claim 1, wherein the plurality of shunt tubes comprises a packing tube.

6. The shunt tube assembly of claim 1, further comprising a second shunt tube coupled to the jumper tube, wherein the second shunt tube is in fluid communication with the plurality of shunt tubes through the jumper tube and the coupling member.

7. The shunt tube assembly of claim 1, wherein the plurality of shunt tubes comprises a first cross-sectional shape, and wherein the jumper tube comprises a second cross-sectional shape.

8. The shunt tube assembly of claim 7, wherein the coupling member is further configured to sealingly engage the first cross-sectional shape and the second cross-sectional shape.

9. A coupling member for use with a shunt tube assembly comprising:

a body member comprising a first side and a second side, wherein the body member is configured to be disposed about a wellbore tubular;

a first opening disposed through the first side, wherein the first opening is configured to engage a shunt tube;

a second opening disposed through the second side, wherein the second opening is configured to engage a jumper tube, wherein the first opening is in fluid communication with the second opening; and

a third opening disposed through the first side, wherein the third opening is configured to engage a second shunt tube.

10. The coupling member of claim 9, further comprising a chamber disposed within the body member, wherein the chamber is in fluid communication with the first opening and the second opening.

11. The coupling member of claim 9, wherein the third opening is in fluid communication

with the chamber.

12. The coupling member of claim 9, further comprising a divider disposed within the chamber, wherein the divider is configured to separate the chamber into a first portion and a second portion, and wherein the first portion is in fluid communication with the first opening and the second opening, and wherein the second portion is in fluid communication with the third opening.

13. The coupling member of claim 9, wherein the body member is further configured to retain the shunt tube in position relative to the wellbore tubular.

14. A coupling member for use with a shunt tube assembly comprising:

a first body member, wherein the first body member is configured to be rotatably disposed about a wellbore tubular, and wherein the first body member comprises a first opening configured to receive a jumper tube;

a second body member, wherein the second body member is configured to be disposed about a wellbore tubular, and wherein the second body member comprises one or more second openings configured to receive a plurality of shunt tubes; and a chamber defined between the first body member and the second body member, wherein the first opening is in fluid communication with the one or more second openings through the chamber

wherein the plurality of shunt tubes comprise a transport tube and a packing tube.

15. The coupling member of claim 14, wherein the second body member is configured to be rotatably disposed about the wellbore tubular.

16. The coupling member of claim 14, further comprising a cover sealingly engaged with the first body member and the second body member, wherein the chamber is further defined by the cover.

17. The coupling member of claim 14, wherein the first body member sealingly engages

the second body member.

18. The coupling member of claim 14, wherein the first opening is axially misaligned relative to the one or more second openings.

19. The coupling member of claim 14, wherein the first body member is configured to be axially translatable about the wellbore tubular.

20. A method of forming a shunt tube coupling comprising:

rotating a first ring about a wellbore tubular;

engaging a jumper tube with the first ring;

rotating a second ring about the wellbore tubular;

engaging a plurality of shunt tubes with the second ring; and

forming a sealing engagement between the first ring and the second ring

wherein the jumper tube and the plurality shunt tubes are radially misaligned.

21. The method of claim 20, wherein forming the sealing engagement comprises forming a chamber between the first ring and the second ring.

22. The method of claim 20, wherein forming the sealing engagement comprises: engaging a cover with the first ring and the second ring.