It is claimed:

1. A downhole tool assembly for use in a wellbore, the assembly comprising:

a mandrel assembly for substantially bearing the tensile and rotational loads placed on the tool assembly during run-in to the wellbore;

a displacement assembly for substantially bearing displacement loads and for providing relative movement to the mandrel assembly, the displacement assembly for actuating a actuatable tool attached to the mandrel assembly; and

wherein the mandrel assembly has an upper mandrel positioned radially outward of the displacement assembly, the lower mandrel positioned radially inward of the displacement assembly, and a load cross-over mandrel interconnected between the upper and lower mandrels and operable to transfer tensile and rotational load between the upper and lower mandrels.

2. The downhole tool assembly as in claim 1, wherein the displacement assembly has an upper displacement assembly positioned longitudinally upward of the load cross-over mandrel, a lower displacement assembly positioned longitudinally downward of the load cross-over mandrel, and a pass-through displacement assembly positioned between and operable to transfer displacement load between the upper and lower displacement assemblies.

3. The downhole tool assembly as in claim 2, wherein the load cross-over mandrel includes a plurality of passageways extending longitudinally therethrough, and wherein the pass-through displacement assembly includes a corresponding plurality of displacement load transfer members extending through the corresponding plurality of passageways.

4. The downhole tool assembly as in claim 3, wherein the plurality of displacement load transfer members are longitudinally extending rods.

5. The downhole tool assembly as in claim 1, wherein the displacement assembly includes at least one piston assembly, the piston assembly operable to move the displacement assembly in relation to the mandrel assembly.

6. The downhole tool assembly as in claim 5, wherein the piston assembly is operable in response to a change in a wellbore fluid.

7. The downhole tool assembly as in claim 1, wherein the displacement assembly includes at least one piston assembly having a piston rod and a piston, the at least one piston assembly operable in response to increased wellbore fluid pressure.

8. The downhole tool assembly as in claim 7, wherein the mandrel assembly and displacement assembly define a tool bore extending longitudinally therethrough and operable to convey changes in wellbore fluid from the surface to a location downhole.

9. The downhole tool assembly as in claim 2, wherein the upper and lower displacement assemblies are sleeves.

10. The downhole tool assembly as in claim 2, wherein the upper, lower and pass-through displacement assemblies are of a substantially uniform outer diameter.

11. The downhole tool assembly as in claim 1, wherein the cross-over mandrel defines an inner annular ring, an outer annular ring, and a plurality of longitudinal passageways extending through the cross-over mandrel for cooperating with corresponding displacement assembly load transfer members.

12. The downhole tool assembly of claim 1, wherein the downhole tool assembly is connected to an expandable liner hanger tool string, the displacement assembly is operable to expand the liner hanger, and the mandrel assembly supports a release tool for releasing the string from the liner hanger.

13. The downhole assembly of claim 2, wherein the downhole tool assembly is capable of being assembled on a rig floor.

14. The downhole tool assembly of claim 13, wherein the upper displacement assembly includes a tool joint.

15. The downhole tool assembly of claim 14, wherein assembly of the tool assembly does not require a pressure test.

16. The downhole tool assembly of claim 14, wherein at least one piston assembly is positioned above the tool joint and wherein at least one piston assembly is positioned below the tool joint, the piston assemblies operable to move the displacement assembly in relation to the mandrel assembly.

17. A method of performing an oilfield operation in a subterranean wellbore extending through a hydrocarbon-bearing zone, the method comprising the steps of:

positioning a downhole tool assembly on a work string, the downhole tool assembly having a mandrel assembly for bearing the tensile and rotational load on the assembly, and a displacement assembly for movement in relation to the mandrel assembly;

bearing the tensile and rotational load on the downhole tool assembly along a load path positioned radially outward from an upper portion of the displacement assembly;

bearing the tensile and torsional load on the downhole tool assembly along a load path positioned radially inward from a lower portion of the displacement assembly; and

moving the displacement assembly in relation to the mandrel assembly.

18. The method as in claim 17, further comprising the step of bearing the tensile and torsional load on the tool assembly along a load path that radially crosses the displacement assembly.

19. The method as in claim 18, further comprising the step of longitudinally moving a portion of the displacement assembly through cooperating passages in the mandrel assembly.

20. The method as in claim 19, further comprising the step of moving a plurality of displacement load transfer rods longitudinally through a corresponding plurality of passages through a radially extending portion of the mandrel assembly.

CLAIMS

1. A downhole tool assembly for use in a wellbore, the assembly comprising:

a mandrel assembly for substantially bearing the tensile and rotational loads placed on the tool assembly during run-in to the wellbore; and

a displacement assembly for substantially bearing displacement loads and for providing relative movement to the mandrel assembly, the displacement assembly for actuating a actuatable tool attached to the mandrel assembly;

wherein the mandrel assembly has an upper mandrel positioned radially outward of the displacement assembly, a lower mandrel positioned radially inward of the displacement assembly, and a load cross-over mandrel interconnected between the upper and lower mandrels and operable to transfer tensile and rotational load between the upper and lower mandrels; and

wherein the displacement assembly has an upper displacement assembly positioned longitudinally upward of the load cross-over mandrel, a lower displacement assembly positioned longitudinally downward of the load cross-over mandrel, and a pass-through displacement assembly positioned between, and operable to transfer the displacement loads between, the upper and lower displacement assemblies.

2. The downhole tool assembly as in claim 1, wherein the load cross-over mandrel includes a plurality of passageways extending longitudinally therethrough, and wherein the pass-through displacement assembly includes a corresponding plurality of displacement load transfer members extending through the corresponding plurality of passageways.

3. The downhole tool assembly as in claim 2, wherein the plurality of displacement load transfer members are longitudinally extending rods.

4. The downhole tool assembly as in claim 1, wherein the upper and lower displacement assemblies are sleeves.

5. The downhole tool assembly as in claim 1, wherein the upper, lower and pass-through displacement assemblies are of a substantially uniform outer diameter.

6. The downhole assembly of claim 1, wherein the downhole tool assembly is capable of being assembled on a rig floor.

7. The downhole tool assembly of claim 6, wherein the upper displacement assembly includes a tool joint.

8. The downhole tool assembly of claim 7, wherein assembly of the tool assembly does not require a pressure test.

9. The downhole tool assembly of claim 7, wherein at least one piston assembly is positioned above the tool joint and wherein at least one piston assembly is positioned below the tool joint, the piston assemblies operable to move the displacement assembly in relation to the mandrel assembly.

10. A downhole tool assembly for use in a wellbore, the assembly comprising:

a mandrel assembly for substantially bearing the tensile and rotational loads placed on the tool assembly during run-in to the wellbore; and

a displacement assembly for substantially bearing displacement loads and for providing relative movement to the mandrel assembly, the displacement assembly for actuating a actuatable tool attached to the mandrel assembly;

wherein the mandrel assembly has an upper mandrel positioned radially outward of the displacement assembly, a lower mandrel positioned radially inward of the displacement assembly, and a load cross-over mandrel interconnected between the upper and lower mandrels and operable to transfer tensile and rotational load between the upper and lower mandrels; and

wherein the displacement assembly includes at least one piston assembly, the piston assembly operable to move the displacement assembly in relation to the mandrel assembly.

11. The downhole tool assembly as in claim 10, wherein the piston assembly is operable in response to a change in a wellbore fluid.

12. A downhole tool assembly for use in a wellbore, the assembly comprising:

a mandrel assembly for substantially bearing the tensile and rotational loads placed on the tool assembly during run-in to the wellbore; and

a displacement assembly for substantially bearing displacement loads and for providing relative movement to the mandrel assembly, the displacement assembly for actuating a actuatable tool attached to the mandrel assembly;

wherein the mandrel assembly has an upper mandrel positioned radially outward of the displacement assembly, a lower mandrel positioned radially inward of the displacement assembly, and a load cross-over mandrel interconnected between the upper and lower mandrels and operable to transfer tensile and rotational load between the upper and lower mandrels; and

wherein the displacement assembly includes at least one piston assembly having a piston rod and a piston, the at least one piston assembly operable in response to increased wellbore fluid pressure.

13. The downhole tool assembly as in claim 12, wherein the mandrel assembly and displacement assembly define a tool bore extending longitudinally therethrough and operable to convey changes in wellbore fluid from the surface to a location downhole.

14. A downhole tool assembly for use in a wellbore, the assembly comprising:

a mandrel assembly for substantially bearing the tensile and rotational loads placed on the tool assembly during run-in to the wellbore; and

a displacement assembly for substantially bearing displacement loads and for providing relative movement to the mandrel assembly, the displacement assembly for actuating a actuatable tool attached to the mandrel assembly;

wherein the mandrel assembly has an upper mandrel positioned radially outward of the displacement assembly, a lower mandrel positioned radially inward of the displacement assembly, and a load cross-over mandrel interconnected between the

upper and lower mandrels and operable to transfer tensile and rotational load between the upper and lower mandrels; and

wherein the load cross-over mandrel defines an inner annular ring, an outer annular ring, and a plurality of longitudinal passageways extending through the load cross-over mandrel for cooperating with corresponding displacement assembly load transfer members.

15. A method of performing an oilfield operation in a subterranean wellbore extending through a hydrocarbon-bearing zone, the method comprising the steps of:

positioning a downhole tool assembly on a work string, the downhole tool assembly having a mandrel assembly for bearing the tensile and rotational load on the assembly, and a displacement assembly for movement in relation to the mandrel assembly;

bearing the tensile and rotational load on the downhole tool assembly along a load path positioned radially outward from an upper portion of the displacement assembly;

bearing the tensile and torsional load on the downhole tool assembly along a load path positioned radially inward from a lower portion of the displacement assembly;

moving the displacement assembly in relation to the mandrel assembly; and

moving a plurality of displacement load transfer rods longitudinally through a corresponding plurality of passages, the passages being formed through a radially extending portion of the mandrel assembly.

16. The method as in claim 15, further comprising the step of bearing the tensile and torsional load on the tool assembly along a load path that radially crosses the displacement assembly.

17. The method as in claim 16, further comprising the step of longitudinally moving a portion of the displacement assembly through cooperating passages in the mandrel assembly.