CLAIMS

Claim 1. A method for coupling a single piece liner hanger body, the method comprising:

assembling an inner sub-assembly portion of a coupler assembly to form an assembled inner sub-assembly portion of the coupler assembly;

inserting the assembled inner sub-assembly portion of the coupler assembly through a bottom opening of a single piece liner hanger body until it engages within an inner diameter of the single piece liner hanger body;

inserting a collet prop mandrel into the bottom opening of the single piece liner hanger body until it engages with the assembled inner sub-assembly portion of the coupler assembly to form the coupler assembly;

inserting a running tool having a liner hanger sub-assembly installed on the bottom of the running tool into a top opening of the single piece liner hanger body until liner hanger sub-assembly engages with the coupler assembly; and

securing the liner hanger sub-assembly to the coupler assembly.

Claim 2. The method for coupling a single piece liner hanger body according to claim 1, wherein the assembled inner sub-assembly portion of the coupler assembly comprises an outer collet mandrel; a nut threaded onto the top end of the outer collet mandrel; a collet positioned over the outer collet mandrel; a locking dog positioned next to the upper end of the collet; a garter spring installed on the locking dog; a locking dog retainer threaded to the collet over the locking dog and garter spring; and a load transfer sleeve installed over the locking dog retainer and the collet.

Claim 3. The method for coupling a single piece liner hanger body according to claim 2, wherein the assembled inner sub-assembly portion of the coupler assembly is inserted through the bottom opening of the single piece liner hanger body until the collet on the assembled inner sub-assembly portion of the coupler assembly engages with matching collet profile within the inner diameter of the liner hanger.

Claim 4. The method for coupling a single piece liner hanger body according to claim 2, wherein the collet prop mandrel is inserted into the bottom opening of the single piece liner

hanger body over the outer collet mandrel and until it engages with the collet of the assembled inner sub-assembly portion of the coupler assembly to form the coupler assembly.

Claim 5. The method for coupling a single piece liner hanger body according to claim 2, further comprising securing the collet prop mandrel to the outer collet mandrel of the assembled inner sub-assembly portion of the coupler assembly using a set of threaded hollow plugs.

Claim 6. The method for coupling a single piece liner hanger body according to claim 2, wherein the running tool having the liner hanger sub-assembly installed on the bottom of the running tool is inserted into the top opening of the single piece liner hanger body until it is completely engaged with the outer collet mandrel of the assembled inner sub-assembly portion of the coupler assembly.

Claim 7. The method for coupling a single piece liner hanger body according to claim 2, wherein securing the liner hanger sub-assembly to the coupler assembly includes securing the liner hanger sub-assembly to the collet prop mandrel using a retainer nut.

Claim 8. The method for coupling a single piece liner hanger body according to claim 2, wherein the coupler assembly has a built in test port for O-ring seal hydro testing.

Claim 9. The method for coupling a single piece liner hanger body according to claim 2, wherein assembling the inner sub-assembly portion of the coupler assembly to form the assembled inner sub-assembly portion of the coupler assembly comprises:

installing the collet over the outer collet mandrel;

installing the locking dog next to the collet;

installing the garter spring onto the locking dog;

installing a locking dog retainer to the collet, the locking dog retainer positioned over the locking dog and the garter spring;

installing a load transfer sleeve to the collet, the load transfer sleeve positioned over the locking dog retainer; and

installing the nut to the outer collet mandrel.

Claim 10. The method for coupling a single piece liner hanger body according to claim 9, further comprising compressing an O-ring between the nut and the single piece liner hanger body.

Claim 11. A coupler assembly for coupling a single piece liner hanger body to a running tool, the coupler assembly comprising:

an outer collet mandrel; a nut threaded onto the top end of the outer collet mandrel; a collet positioned over the outer collet mandrel; a locking dog positioned next to the upper end of the collet; a garter spring installed on the locking dog; a locking dog retainer threaded to the collet over the locking dog and garter spring; and a load transfer sleeve installed over the locking dog retainer and the collet.

Claim 12. The coupler assembly for coupling a single piece liner hanger body to a running tool according to claim 11, wherein the nut, the load transfer sleeve, the locking dog retainer, the garter spring, the locking dog, the collet, and the outer collet mandrel are assembled together to form an inner sub-assembly portion of the coupler assembly, and optionally wherein the inner sub-assembly portion of the coupler assembly is inserted into a bottom end of the single piece liner hanger body.

Claim 13. The coupler assembly for coupling a single piece liner hanger body to a running tool according to claim 12, wherein the coupler assembly further comprises a collet prop mandrel, the collet prop mandrel having mating features for engaging the inner sub-assembly portion of the coupler assembly within the single piece liner hanger body.

Claim 14. The coupler assembly for coupling a single piece liner hanger body to a running tool according to claim 13, further comprising second mating features for engaging a liner hanger sub-assembly attached to the running tool.

Claim 15. The coupler assembly for coupling a single piece liner hanger body to a running tool according to claim 14, further comprising a retaining nut securing the coupler assembly to the liner hanger sub-assembly, and optionally further comprising a built in test port for O-ring seal hydro testing.