

~~WHAT IS CLAIMED IS:~~

1. An adjustable hanger system for connecting a hanger to a wellhead such that a tubular extending downward from the hanger is tensioned at a selected level, and the hanger system comprising:

the wellhead including a housing having a plurality of axially spaced grooves, each groove having a profile to receive a support member therein, the support member being carried in the well by the hanger, wherein each of the plurality of axially spaced grooves has a common groove configuration and each of the grooves is axially spaced from each of the adjacent grooves by a common axial spacing;

said plurality of grooves being configured to receive concurrently the support member and a lockdown member, said lockdown member being carried in the well by the hanger; the support member being received by a first subset of the grooves and the lockdown member being received by a second subset of the grooves;

the wellhead housing further including an axially elongate and generally cylindrical sealing surface spaced axially above the plurality of axially spaced grooves for sealing engagement of a seal element with the cylindrical sealing surface and the hanger; and

the hanger being axially movable relative to the plurality of grooves, the hanger supported by the support member which is radially movable into selected ones of the plurality of axially spaced grooves in the wellhead housing to interconnect the hanger to the wellhead.

2. An adjustable hanger system as defined in Claim 1, ~~further comprising~~ wherein:

~~at~~the lockdown member ~~carried in the well on the hanger and is~~ radially movable into one or more of the plurality of grooves for securing the hanger to the wellhead to prevent axially upward movement of the hanger relative to the wellhead.

3. An adjustable hanger system as defined in Claim 1, wherein the support member is biased radially inward.

4. An adjustable hanger system as defined in Claim 1, wherein the support member is movable radially outward in response to one or more fluid pressure responsive pistons supported in the well on the hanger.

5. An adjustable hanger system as defined in Claim 1, wherein an exterior stop surface on the hanger prevents the support member from moving radially inward while the support member is in the selected ones of the plurality of grooves, the exterior stop surface moving axially from an unlocked position to a locked position.

6. An adjustable hanger system as defined in Claim 1, wherein the support member is a substantially C-shaped member.

7. An adjustable hanger system as defined in Claim 1, wherein the seal element is sealed between the hanger and the wellhead housing.

~~8. An adjustable hanger system as defined in Claim 1, wherein each of the plurality of axially spaced grooves has a common groove configuration, and each~~

~~of the plurality of axially spaced grooves is axially spaced from an adjacent groove by a common axial spacing.~~

~~9. An adjustable hanger system for connecting a hanger to a wellhead such that a tubular extending downward from the hanger and secured at a lower end in the well is tensioned at a selected level, and the hanger system comprising:~~

~~the wellhead including a housing having a plurality of axially spaced grooves, each groove having a profile to receive a support member therein the support member carried in the well by the hanger;~~

~~the wellhead housing further including an axially elongate and generally cylindrical sealing surface spaced axially above the plurality of axially spaced grooves for sealing engagement of a seal element with the cylindrical sealing surface and the hanger for sealing between the wellhead housing and the hanger;~~

~~the hanger being axially movable relative to the plurality of grooves, the hanger supporting the support member which is radially movable into selected ones of the plurality of axially spaced grooves in the wellhead housing to interconnect the hanger to the wellhead; and~~

~~a lockdown member carried in the well by the hanger and radially movable into one or more of the plurality of grooves for securing the hanger to the wellhead to prevent axially upward movement of the hanger relative to the wellhead.~~

~~10. An adjustable hanger system as defined in Claim 9, wherein the support member is biased radially inward.~~

~~11. An adjustable hanger system as defined in Claim 9, wherein an exterior stop surface on the hanger prevents the support member from moving radially inward while the support member is in the selected ones of the plurality of grooves, the exterior stop surface moving axially from an unlocked position to a locked position.~~

~~12. An adjustable hanger system as defined in Claim 9, wherein each of the plurality of axially spaced grooves has a common groove configuration, and each of the plurality of axially spaced grooves is axially spaced from an adjacent groove by a common axial spacing.~~

~~13. An adjustable hanger system as defined in Claim 9, wherein the support member is movable radially outward in response to one or more fluid pressure responsive pistons supported in the well on the hanger.~~

~~14. An adjustable hanger system as defined in Claim 9, wherein the lockdown member is a substantially C-shaped member.~~

~~158.~~ A method of adjustably connecting a hanger to a wellhead with a tubular suspended in a well from the hanger and secured at its lower end in the well, the method comprising:

providing the wellhead housing with a plurality of axially spaced grooves each configured to accept a support member, wherein each of the plurality of axially spaced grooves has a common groove configuration and each of the grooves is axially spaced from each of the adjacent grooves by a common axial spacing; said plurality of grooves being configured to receive concurrently the support member and

a lockdown member, said lockdown member being carried in the well by the hanger;
the support member being received by a first subset of the grooves and the lockdown
member being received by a second subset of the grooves; the wellhead housing
having a generally cylindrical sealing surface spaced axially above the plurality of
grooves;

positioning the support member on the hanger;

positioning the support member and hanger in the well on the hanger above
selected ones of the plurality of grooves;

thereafter raising or lowering the hanger in the well to achieve a selected
tension level in the tubular;

moving the support member radially outward into the selected ones of the
plurality of grooves while the tubular is at the selected tension level, thereby
preventing axially downward movement in the hanger with respect to the wellhead;
and

sealing a seal with the generally cylindrical sealing surface while the support
member is within the selected ones of the plurality of grooves.

~~169.~~ A method as defined Claim ~~158~~, further comprising:

increasing fluid pressure to a running tool to move the support member
radially outward into the selective ones of the plurality of grooves.

~~1710.~~ A method as defined Claim ~~158~~, wherein fluid pressure acts on a
plurality of pistons supported on the hanger, such that the fluid pressure responsive
pistons move the support member radially outward.

~~18~~11. A method as defined Claim ~~15~~8, further comprising:

positioning ~~a~~the lockdown member on the hanger, the lockdown member engaging one or more of the plurality of grooves to prevent upward movement of the hanger with respect to the wellhead housing.

~~19~~12. A method as defined Claim ~~15~~8, further comprising:

lowering the seal element on a running tool into the well after the support member has expanded outward into the selected one of a plurality of support grooves; and

axially moving the sealing element to seal between the hanger and the wellhead.

~~20~~13. A method as defined Claim ~~15~~8, further comprising:

providing the support member with a generally C-shaped configuration.