

housing of the blowout preventer whereby a force is generated therebetween, the ram wedge engageable with the tubular. The ram seat may be positionable in the housing about the passage. The ram seat has a hole therethrough for receiving the tubular. The ram seat is engageable with the ram wedge and the housing of the blowout preventer when the ram shuttle and the ram wedge are moved to the extended position whereby a seal is formed therebetween. The blowout preventer may also include at least one controller.

Finally, in another aspect, the present disclosure relates to a method for sealing a wellbore. The wellbore has a tubular extending therefrom for passing therethrough. The method involves providing a blowout preventer comprising: a housing having a passage and a ram channel therethrough; and at least one ram assembly, comprising: a ram shuttle slidably positionable in the ram channel between a retracted and extended position, the ram shuttle and having a wedge cavity extending therethrough and an inclined surface thereon; a ram wedge having a tubular cavity therethrough for receiving the tubular, the ram wedge slidably positionable in the wedge cavity between a retracted and an extended position, the ram wedge having a corresponding inclined surface engageable with the inclined surface of the ram shuttle to wedge between the ram shuttle and the housing of the blowout preventer whereby a force is generated therebetween, the ram wedge engageable with the tubular; and a ram seat positionable in the housing about the passage, the ram seat having a hole therethrough for receiving the tubular, the ram seat engageable with the ram wedge and the housing of the blowout preventer when the ram shuttle and the ram wedge are moved to the extended position whereby a seal is formed therebetween; positioning a tubular through the passage, a tubular cavity of the ram wedge and a hole through the ram seat, and forming a seal between the ram seat and the ram wedge by moving the ram shuttle along the ram wedge to an extended position and interlockingly engaging the ram wedge with the ram seat.

The forming may involve moving the ram wedge and the ram shuttle together, moving the ram wedge to a partially engaged position and then moving the ram wedge to fully engaged position by moving the ram shuttle to the engaged position, forming a fluid barrier between the channel and fluid in the wellbore, and/or generating a force by wedging the ram wedge between the ram shuttle and the housing.

BRIEF DESCRIPTION OF THE DRAWINGS

So that the above recited features and advantages of the present disclosure can be understood in detail, a more particular description of the invention, briefly summarized above, may be had by reference to the embodiments thereof that are illustrated in the appended drawings. It is to be noted, however, that the appended drawings illustrate example embodiments and are, therefore, not to be considered limiting of its scope. The figures are not necessarily to scale and certain features, and certain views of the figures may be shown exaggerated in scale or in schematic in the interest of clarity and conciseness.

FIG. 1 depicts a schematic view of an offshore wellsite having a blowout preventer (BOP) with a wedge ram assembly.

FIG. 2 is a partial cross-sectional view of a BOP with a wedge ram assembly.

FIGS. 3 A and 3B are horizontal and longitudinal cross-sectional views, respectively of

between the ram shuttle and the housing of the blowout preventer whereby a force is generated therebetween, the ram wedge engageable with the tubular; and

a ram seat positionable in the housing about the passage, the ram seat having a hole therethrough for receiving the tubular, the ram seat engageable with the ram wedge and the housing of the blowout preventer when the ram shuttle and the ram wedge are moved to the extended position whereby a seal is formed therebetween.

16. The blowout preventer of Claim 15, further comprising at least one controller.

17. A method for sealing a wellbore, the wellbore having a tubular extending therefrom for passing therethrough, comprising:

providing a blowout preventer comprising:

a housing having a passage and a ram channel therethrough; and

at least one ram assembly, comprising:

a ram shuttle slidably positionable in the ram channel between a retracted and extended position, the ram shuttle and having a wedge cavity extending therethrough and an inclined surface thereon;

a ram wedge having a tubular cavity therethrough for receiving the tubular, the ram wedge slidably positionable in the wedge cavity between a retracted and an extended position, the ram wedge having a corresponding inclined surface engageable with the inclined surface of the ram shuttle to wedge between the ram shuttle and the housing of the blowout preventer whereby a force is generated therebetween, the ram wedge engageable with the tubular; and

a ram seat positionable in the housing about the passage, the ram seat having a hole therethrough for receiving the tubular, the ram seat engageable with the ram wedge and the housing of the blowout preventer when the ram shuttle and the ram wedge are moved to the extended position whereby a seal is formed therebetween; and