CLAIMS

1. A connector assembly for connecting a hose to a tubular element, the connector assembly comprising a tubular housing which encloses a main passage extending generally parallel to a longitudinal axis of the housing and which is provided with a side passage extending through the housing from the exterior of the housing into the main passage, the side passage further extending through a connector tube which is mounted on the exterior of the housing, the connector further being provided with a hose connector adapted to be secured to an end of the hose and to engage with the connector tube for connecting the hose to the tubular element, the hose connector comprising a pipe portion which is adapted to mate with the connector tube so that the interior of the hose is connected to the side passage, wherein the assembly is further provided with a latch which is operable to urge the connector tube and pipe portion into engagement and to prevent separation of the connector tube and pipe portion when the two are mated to connect the interior of the hose with the side passage.

2. A connector assembly according to claim 1 wherein the latch is hydraulically operated.

3. A connector assembly according to claim 1 or 2 wherein the latch is movable between an open position in which the connector tube and pipe portion may be separated, and a closed position in which it prevents separation of the connector tube and pipe portion, and configured such that, on movement of the latch from the closed position to the open position, the latch pushes the connector tube and pipe portion apart.

4. A connector assembly according to any one of claims 1 to 3 wherein the pipe portion is adapted to be placed over the connector tube so that the connector tube extends into the pipe portion when the two parts mate to connect the interior of the hose with the side passage.

~~5. A connector assembly according to claim 4 wherein the pipe portion is provided with a radially outwardly extending flange at its free end, and the latch is provided with a lowermost catch and an uppermost catch and is configured such that when the latch is in the closed position the uppermost catch bears down on the flange thus preventing the pipe portion of being lifted off the connector tube, and as the latch is moved to the open position, the lowermost catch pushes the flange up to commence lifting the pipe portion off the connector tube.~~

~~6. A connector assembly according to any one of claims 1 to 5 wherein the tubular housing is adapted to be secured to a drilling riser.~~

~~7. A connector assembly according to any preceding claim wherein the latch is pivotally mounted relative to the connector tube.~~

~~8. A connector assembly according to any preceding claim wherein the latch includes a pair of generally parallel arms, each having an aperture therethrough.~~

~~9. A connector assembly according to claim 8 wherein the latch is secured to a piston by means of a pin or bolt which extends through the aperture in the first arm, through a corresponding aperture in the free end of the piston and through the aperture in the second arm, so that the latch part may pivot relative to the piston about the pin/bolt.~~

~~10. A connector assembly according to claim 9 wherein the piston is mounted in a cylinder which extends generally parallel to a longitudinal axis of the connector tube in such a way that limited pivoting movement of the piston and cylinder towards and away from the connector tube is permitted.~~

~~11. A connector assembly according to claim 5 or any one of claims 6 to 10 where dependent on claim 5, wherein the latch also includes a guide pin which extends generally perpendicular to the two catches.~~

~~12. A connector assembly according to claim 9, 10 or 11 where dependant on claim 9 further comprising a guide plate mounted on the connector tube, the guide plate including a guide slot into which an end of the pin/bolt extends.~~

~~13. A connector assembly according to claims 11 and 12 wherein the guide plate further includes a generally L-shaped guide recess which is located in the face of the guide plate adjacent the latch part, the guide pine extending into the guide recess so that the edges of the recess confine the guide pin to movement within the guide recess only.~~

~~14. A connector assembly according to claims 11 and 12 or 13 wherein the connector assembly includes two guide plates, and the latch part includes two guide pins each of which extends generally perpendicular to the catches in opposite directions, the latch part being mounted between the guide plates such that the each end of the pin/bolt extends into the guide slot of one of the guide plates, and each guide pin extends into an L-shaped recess of one of the guide plates.~~

~~15. A connector for connecting a hose to a tubular element, the connector comprising two generally parallel pipe portions connected by a intermediate pipe portion, the connector being provided with a mounting part on which are located a first suspension part and a second suspension part to each of which a flexible elongate element may, in use, be secured for lowering the connector into engagement with the tubular element, the two suspension parts being spaced relative to one another, wherein one or both of the suspension parts is movable relative to the mounting part so that the separation of the suspension parts generally perpendicular to the two generally parallel pipe portions may be varied.~~

~~16. A connector according to claim 15 wherein only one of the suspension parts is movable relative to the mounting part so that the separation of the~~

~~suspension parts generally perpendicular to the two generally parallel pipe portions may be varied.~~

~~17. A connector according to claim 15 or 16 wherein the intermediate portion is curved.~~

~~18. A connector according to claim 17 wherein the intermediate portion is generally semicircular.~~

~~19. A connector according to any preceding claim wherein one or both of the suspension parts comprise a loop which is pivotally mounted on the mounting part of the connector.~~

~~20. A connector according to any preceding claim wherein the or each movable suspension part is mounted on a slider which can slide along a slot provided in the mounting part, each suspension part also including a fastener which is operable to releasably lock the slider in a desired location relative to the slot.~~

~~21. A connector according to any preceding claim wherein the or each movable suspension part is provided with a ratchet mechanism which is operable to assist in retaining the or each suspension part in the desired position relative to the mounting part.~~

~~22. A drilling riser and hose assembly, the hose being connected to the riser using a connector or connector assembly according to any preceding claim.~~

~~23. A drilling riser and hose assembly according to claim 22 wherein the tubular element is part of a flow spool mounted on the riser.~~

~~24. A connector assembly for connecting a hose to a tubular element, the connector assembly comprising a tubular housing which encloses a main passage extending generally parallel to a longitudinal axis of the housing and~~

~~which is provided with a side passage extending through the housing from the exterior of the housing into the main passage, the side passage further extending through a connector tube which is mounted on the exterior of the housing, wherein the connector assembly is further provided with an alignment structure which has a top part which extends radially outwardly relative to the tubular housing above a free end of the connector tube so that the longitudinal axis of the connector tube passes through the top part of the alignment structure.~~

~~25. A connector assembly according to claim 24 wherein the connector tube is mounted on the exterior of the housing such that a longitudinal axis of the connector tube is generally parallel to the longitudinal axis of the housing.~~

~~26. A connector assembly according to claim 24 or 25 wherein the connector tube extends from a first end of the housing and the top part of the alignment structure extends from the housing between the connector tube and a second end of the housing.~~

~~27. A connector assembly according to any one of claims 24 to 26 wherein the top part of the alignment structure is inclined relative to the housing such that the portion closest to the housing is nearest to the connector tube, and the portion furthest from the housing is further away from the connector tube.~~

~~28. A connector assembly according to any one of claims 24 to 27 wherein the alignment structure further include two side parts which extend generally parallel to the longitudinal axis of the connector tube and which are arranged either side of the connector tube so that at least part of the connector tube is located between the two side parts.~~

~~29. A connector assembly according to any one of claims 24 to 28 wherein the connector assembly further comprises a hose connector adapted to be secured to an end of the hose and engaged with the connector tube for connecting the hose to the tubular element, the hose connector comprising~~

~~two generally parallel pipe portions connected by a intermediate pipe portion, the connector being provided with a mounting part on which is located at least one suspension part to which a wire may, in use, be secured for lowering the hose connector into engagement with the connector tube, the space between the top part of the alignment structure and the connector tube being greater than the length of the hose connector generally parallel to the two generally parallel pipe portions.~~

~~30. A connector assembly according to any one of claims 1 to 14 or claim 29 wherein the hose connector has any of the features of the connector according to any one of claims 15 to 21.~~

~~31. A connector assembly according to any one of claims 24 to 30 wherein the tubular housing is configured to be mounted on a drilling riser.~~

~~32~~1. A connector assembly for connecting a hose to a tubular element, the connector assembly comprising a tubular housing which encloses a main passage extending generally parallel to a longitudinal axis of the housing and which is provided with a side passage extending through the housing from the exterior of the housing into the main passage, the side passage further extending through a connector tube which is mounted on the exterior of the housing, the connector further being provided with a hose connector adapted to be secured to an end of the hose and to engage with the connector tube for connecting the hose to the tubular element, the hose connector comprising a pipe portion which is adapted to mate with the connector tube so that the interior of the hose is connected to the side passage, wherein the connector tube and pipe portion of the hose connector are both circular in transverse cross-section and are both provided with a plurality of teeth which may be engaged to assist in retaining the connector tube and pipe portion in a desired angular orientation relative to one another.

~~33~~2. A connector assembly according to claim ~~32~~1 wherein one of the connector tube and the pipe portion is adapted to extend into the other of the pipe portion or connector tube when the two parts mate to connect the interior of the hose with the side passage.

~~34~~3. A connector assembly according to claim ~~33~~2 wherein the pipe portion is adapted to be placed over the connector tube so that the connector tube extends into the pipe portion when the two parts mate to connect the interior of the hose with the side passage.

~~35~~4. A connector assembly according to claim ~~33~~2 or ~~34~~3 wherein the one of the connector tube or pipe portion which is located outside the other when the two mate to connect the interior of the hose with the side passage is provided with a radially outwardly extending flange at its free end, the teeth being provided in a surface of the flange which, in use, extends perpendicular to the longitudinal axis of the connector tube.

~~36~~5. A connector assembly according to any one of claims ~~32~~2 to ~~35~~4 wherein the assembly is further provided with a latch which is operable to urge the teeth of the connector tube and pipe portion into engagement and to prevent separation of the connector tube and pipe portion when the two are mated to connect the interior of the hose with the side passage.

~~37~~6. A connector assembly according to claim ~~36~~5 wherein the latch is hydraulically operated.

~~38~~7. A connector assembly according to claim ~~36~~5 or ~~37~~6 wherein the latch is movable between an open position in which the connector tube and pipe portion may be separated, and a closed position in which it prevents separation of the connector tube and pipe portion, and configured such that, on movement of the latch from the closed position to the open position, the latch pushes the connector tube and pipe portion apart.

~~39~~8. A connector assembly according to any one of claims ~~32~~1 to ~~38~~7 wherein the tubular housing is adapted to be secured to a drilling riser.

~~40. A riser flow diversion assembly having a main passage, a side port connecting the main passage with the exterior of the flow spool, and mounting parts suitable for mounting the assembly on a riser so that the main passage forms a continuous passage with the riser, the assembly further including a hose connector assembly comprising a connector tube through which the side passage extends, and which is mounted on the exterior of the housing such that the a longitudinal axis of the connector tube is generally parallel to the main passage.~~

~~41. A riser flow diversion assembly according to claim 40 wherein the assembly is provided with a plurality of side ports, each of which has an associated hose connector assembly.~~

~~42. A riser flow diversion assembly according to claim 41 wherein the hose connectors are spaced around the circumference of the flow spool in a substantially regular array.~~

~~43. A riser flow diversion assembly according to any one of claims 40, 41 or 42 wherein the outer diameter of the flow spool and associated hose connector(s) does not exceed 46.5 inches.~~

~~44. A connector substantially as hereinbefore described with reference to and as shown in the accompanying drawings.~~