cylinders the drill drive carriage is here displaceably supported along a vertical mast or a rig that can be adjusted about several axes in space. In particular, on the drill drive carriage the rotary drive arrangement with the base plate can be arranged together with the rotary drives.

Brief Description of the Drawings

The invention is explained in greater detail hereinafter by way of a preferred exemplary embodiment illustrated in the accompanying drawing, in which:

Fig. 1 shows a schematic cross-sectional view through a rotary drive arrangement according to the invention.

The illustrated rotary drive arrangement 10 serves to drive a non-depicted double drill rod about a drilling axis 5, with only a part of the inner rod 12 being illustrated. On the inner rod 12 further inner rod elements can be releasably mounted via a connecting section 14 towards a drilling tool side. On a connecting element 56 of the rotary drive arrangement 10 a non-depicted outer pipe can be releasably attached in a manner coaxial with respect to the drilling axis 5.

The rotary drive arrangement 10 comprises a gearbox housing 20 with a center support 22 which is designed along a center plane 21 located orthogonally to the drilling axis 5. The center support 22 is firmly connected to a base plate 26, with which the rotary drive arrangement 10 can be fixed e.g. on a non-depicted drill drive carriage of a drilling apparatus.

On the center support 22 a circumferential wall section 24 running on both sides is designed, on which, towards a rear side facing away from the drilling tool, a first side cover 25 is attached, whereby a first gearbox compartment 31 with a first gearbox 40 for driving the inner rod 12 is encased. On the opposite side of the center support 22 a second side cover 28 is mounted on the circumferential wall section 24, by which second side cover a second gearbox compartment 32 with a second gearbox 50 for driving the outer pipe is encased. The center support 22 has a centrally arranged passage 30, through which the inner rod 12 protrudes from the drilling tool side through the center support 22 towards a rear side.

To drive the inner rod 12 a non-depicted first rotary drive with a first drive shaft 48 is arranged on the base plate 26, the said first drive shaft protruding through a first inlet opening 35 into the gearbox housing 20. On the first drive shaft 48 a first pinion 49 is designed which is in meshing connection with a first externally toothed spur gearwheel 42 of the first gearbox 40. On a side of the first spur gearwheel 42 facing away from the center support 22 a sleeve-shaped first output element 44 is mounted. On its internal side the sleeve-shaped first output element 44 has an internal toothing 45 which engages with an external toothing 16 on the inner rod 12. The external toothing 16 is of greater axial length than the internal toothing 45, thereby providing a torque-proof connection concomitant with axial displaceability of the inner rod 12 with respect to the first gearbox 40.

For axial displacement of the inner rod 12 a displacement means 60 is arranged on a sleeve-like housing shoulder 27 which follows the first side cover 25 and is fixed thereon. The said displacement means has a fixing element 62 which is firmly mounted on the external side of the housing shoulder 27. In addition, a sleeve-shaped carriage 64 is provided which is connected via a rotary bearing 66 in an axially fixed but rotatable manner to the inner rod 12. Via a non-depicted lifting cylinder the carriage 64, and therefore the inner rod 12, can be adjusted relatively axially with respect to the fixing element 62 and therefore with respect to the gearbox housing 20, in which case a bar-shaped linear guide 68 is arranged as anti-twist protection.

Moreover, the inner rod 12 can be of pipe-shaped design, wherein via a generally known rotary feedthrough at the rear end of the inner rod 12 a fluid, in particular concrete slurry, can be fed to the drilling tool side.

On the opposite side of the center support 22 the second gearbox 50 for driving the non-depicted outer pipe is arranged. For this a non-depicted second rotary drive with a second drive shaft 58 is arranged on the base plate 26. The second drive shaft 58 protrudes through a second inlet opening 36 into the gearbox housing 20. Via a second pinion 59 on the second drive shaft 58 a torque can be transmitted to a second spur gearwheel 52 of the second gearbox 50. On a side of the second spur gearwheel 52 facing away from the center support 22 a sleeve-shaped second output element 54 is mounted, on which, for the purpose of mounting the outer pipe of the double drill rod,

a Cardanic connecting element 56 is mounted in a torque-proof manner via a transfer ring 55.

The inner rod 12 protrudes through the second output element 54. The respective ring-shaped gaps on the housing passages are sealed off by appropriate ring sealings in order to close the gearbox housing 20 in an oil-tight manner.

By way of the invention two from one another separate gearboxes 40, 50 are arranged in one gearbox housing 20 and are encased by the same in an oil-tight manner. As a result, an altogether compact rotary drive arrangement 10 is achieved.