

Title (en)  
Drilling tool for directional drilling

Title (de)  
Bohrwerkzeug zum Richtbohren

Title (fr)  
Outil de forage pour forage dirigé

Publication  
**EP 0459008 B1 19960522 (DE)**

Application  
**EP 90115963 A 19900821**

Priority  
DE 4017761 A 19900601

Abstract (en)  
[origin: EP0459008A2] The drilling tool for sinking boreholes in underground rock formations while predetermining a selectable directional progress for the borehole comprises a tubular outer housing (1) which can be connected to a drill-pipe string via top connection means, a bit drive shaft (3) revolving in the outer housing (1) and carrying a rotary drill bit (2) on its end projecting from the outer housing (1), a number of hydraulically operable force transmitters (6, 7, 8, 9; 106, 107, 108, 109; 206, 207, 208, 209) arranged so as to be distributed over the periphery in the outer housing (1) and intended for producing directional forces with radially orientated force components for the orientation of the drilling tool, and a control device for the force transmitters, which is provided with an electrically operable control valve (10, 12, 110, 112) per force transmitter for hydraulically loading the latter, measurement transducers (20, 21, 22) for positional data of the drilling tool, and a signal transmitter (18, 19) producing electric control signals for the control valve drives (14, 16, 114, 116). In this arrangement, drilling fluid of higher pressure or drilling fluid of lower pressure can alternatively be admitted to each hydraulic pressure space (32, 33, 34, 35; 132, 133, 134, 135; 232, 233, 234, 235; 306, 308; 406, 407, 408, 409) of a force transmitter via at least one connecting passage (36, 37, 38, 39; 136, 137, 138, 139; 326, 237, 238, 239) and the control valve (10, 12, 110, 112) allocated to the latter.

IPC 1-7  
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IPC 8 full level  
**E21B 7/06** (2006.01); **E21B 7/08** (2006.01); **E21B 23/04** (2006.01)

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**E21B 7/062** (2013.01 - EP US); **E21B 7/068** (2013.01 - EP US); **E21B 23/0412** (2020.05 - EP US); **E21B 23/042** (2020.05 - EP US); **E21B 23/0422** (2020.05 - EP)

Cited by  
EA013913B1; US5553678A; EP0530045A1; US6962214B2; WO9744564A1; WO9958807A1; EP0524042B1

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