Title (en)

Continuous casting machine and method

Title (de)

Stranggiessanlage sowie ein Verfahren zum Stranggiessen

Title (fr)

Installation et procédé de coulée continue

Publication

EP 1897636 B2 20140910 (DE)

Application

EP 06405379 A 20060904

Priority

EP 06405379 A 20060904

Abstract (en)

[origin: EP1897636A1] The casting plant for long steel products, comprises ingot mold (1), from which a cast strand (2) is continuously poured off that forms along a guide way by sequentially arranged guide rollers and is led in a cooling chamber with spraying organs (4) in quasi-manner, and a hydraulic cylinder and/or an actuator on the cast strand. The guide rollers and/or the spraying organs are contained in sequentially arranged centering modules (10) and/or spraying modules (3) and are adjustably driven for defined axis of the cast strand in concentric manner. The casting plant for long steel products, comprises ingot mold (1), from which a cast strand (2) is continuously poured off that forms along a guide way by sequentially arranged guide rollers and is led in a cooling chamber with spraying organs (4) in quasi-manner, and a hydraulic cylinder and/or an actuator on the cast strand. The guide rollers and/or the spraying organs are contained in sequentially arranged centering modules (10) and/or spraying modules (3) and are adjustably driven for defined axis of the cast strand in concentric manner. The respective centering module has a firmly mounted roller defined the set cycle of the guide way for a strand side and further guide rollers for the other strand side. The guide rollers are adjustable by operating bodies in vertical direction to the corresponding strand sides up to the constant contact with the cast strand and concentrically to the defined axis of the cast strand. The contact pressing force of the respective roller is adjustable on the cast strand. The adjustment of the spraying organs is coupled with the adjustment of the guide rollers. One of the further guide rollers of the respective centering module is adjusted relative to the firmly mounted roller and the other remaining guide rollers are concentrically adjustable to the defined axis. The upper guide roller of the centering module adjustable relative to the mounted roller is carried by a bow-shaped holder of the operating bodies lockably held at a frame of the centering module. The hydraulic cylinder and/or the actuator are present on the cast strand for pivoting the holder and/or for pressing the guide roller. The remaining edgewise guide rollers are carried by a hollow-shaped part of the operating bodies pivotable around a fixed frame axis. The hollow-shaped parts are rotatably connected together over an interlocking tooth segment and one of the parts is operated by a further hydraulic cylinder, for the purpose of symmetrical locking of the parts and/or for concentric pressing of the guide roller in reference to the cast strand running in its defined position. A control or a regulator provides pressing force of the guide rollers at the cast strand. The respective hydraulic cylinders of the operating bodies are fixable by a prefixed position of the guide rollers up to a very high adjustable defining force. The cylinders operatively connected with a control device are jointly arranged with the control device in a water-cooled box above the guide rollers. The centering modules are installable and/or upgradeable with a manipulator positioned outside of the respective cooling chamber. The centering module has connector units defined at the connection point for casting plant. The cooling- and controlling media and measuring- and controlling signal are automatically connected by the connector units during module installation. The spraying modules are arranged as spraying nozzles or similarly formed spraying organs with the spraying slats. The spraying slats and the spraying organs are adjustable in vertical direction to the corresponding strand sides by the operating bodies. An independent claim is included for a process for strand casting of long steel products.

IPC 8 full level

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CPC (source: EP)

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Cited by

CN110935855A; JP2022502266A; US11660665B2; WO2009089843A1; WO2020064448A1

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