

Title (en)
METHOD FOR DETERMINING OPERATING PROPERTIES OF A DRILL-ROD BOREHOLE PUMP, AND PUMP SYSTEM FOR SAME

Title (de)
VERFAHREN ZUR BESTIMMUNG VON BETRIEBSEIGENSCHAFTEN EINER GESTÄNGE-TIEFPUMPE SOWIE PUMPSYSTEM HIERFÜR

Title (fr)
PROCÉDÉ PERMETTANT DE DÉTERMINER DES PROPRIÉTÉS DE FONCTIONNEMENT D'UNE POMPE DE FORAGE À TIGE DE FORAGE ET SYSTÈME DE POMPE ASSOCIÉ

Publication
EP 4025788 A1 20220713 (DE)

Application
EP 20804455 A 20201028

Priority
• EP 19206209 A 20191030
• EP 2020080274 W 20201028

Abstract (en)
[origin: CA3159532A1] The invention relates to a method for determining operating properties of a drill-rod borehole pump (1), comprising a pump head (110), which is connected to a kinematics converter (120) via a drill rod (5, 10), and the kinematics converter (120) is driven by an electric motor (3), and furthermore a measuring means (130) is provided for measuring the power consumption of the motor (3) during operation of same, said method comprising the steps of: a) measuring the current consumption and the operating voltage of the motor (3) over at least one pump cycle, with which four operating phases of the borehole pump (1) can be associated in each case, and determining the power consumption of the motor (3) therefrom; b) determining, for one pump cycle, a period and a maximum of the power consumption that corresponds to the torque maximum of the borehole pump (1); c) determining a reference phase angle for the kinematics converter (120) with the aid of the properties of the kinematics converter (120) and the power consumption of the motor (3); d) ascertaining a torque curve from the power consumption of the motor (3) with the aid of the properties of the kinematics converter (120); e) determining the operating properties of the delivery pump (1) from the torque curve using the period and the reference phase angle.

IPC 8 full level
F04B 47/02 (2006.01); **F04B 17/03** (2006.01); **F04B 49/06** (2006.01); **F04B 51/00** (2006.01)

CPC (source: EP US)
E21B 47/009 (2020.05 - US); **F04B 17/03** (2013.01 - US); **F04B 47/022** (2013.01 - EP US); **F04B 51/00** (2013.01 - EP US); **F04B 17/03** (2013.01 - EP); **F04B 49/065** (2013.01 - EP); **F04B 2201/121** (2013.01 - EP US); **F04B 2201/1211** (2013.01 - EP US); **F04B 2203/0201** (2013.01 - EP US); **F04B 2203/0202** (2013.01 - EP US); **F04B 2203/0207** (2013.01 - US); **F04B 2203/0208** (2013.01 - EP US)

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3816444 A1 20210505; CA 3159532 A1 20210506; EP 4025788 A1 20220713; US 2024125316 A1 20240418; WO 2021083953 A1 20210506; WO 2021083953 A8 20211104

DOCDB simple family (application)
EP 19206209 A 20191030; CA 3159532 A 20201028; EP 2020080274 W 20201028; EP 20804455 A 20201028; US 202017769421 A 20201028