

Title (en)
METHOD FOR OPERATING A TURBO-MACHINE, WHEREIN AN EFFICIENCY CHARACTERISTIC VALUE OF A STAGE IS DETERMINED, AND TURBO-MACHINE HAVING A DEVICE FOR CARRYING OUT THE METHOD

Title (de)
VERFAHREN ZUM BETREIBEN EINER STRÖMUNGSMASCHINE, BEI DEM EIN WIRKUNGSGRAD-KENNWERT EINER STUFE ERMITTELT WIRD, UND STRÖMUNGSMASCHINE MIT EINER VORRICHTUNG ZUR DURCHFÜHRUNG DES VERFAHRENS

Title (fr)
PROCÉDÉ D'EXPLOITATION D'UNE TURBOMACHINE, COMPRENANT LA DÉTERMINATION D'UN PARAMÈTRE DE RENDEMENT D'UN ÉTAGE, ET TURBOMACHINE ÉQUIPÉE D'UN DISPOSITIF PERMETTANT LA MISE EN UVRE DE CE PROCÉDÉ

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Abstract (en)
[origin: WO2015043916A1] The invention relates to a turbo-machine, which can be operated in an optimized driving range. To this end, a method for operating a turbo-machine having at least one turbo-machine stage, which has at least one rotary shaft is disclosed. According to the method, the following method steps are carried out: a) determining a desired efficiency characteristic value η_{soll} of the turbo-machine stage; b) determining an actual efficiency characteristic value η_{ist} of the turbo-machine-stage; c) determining a comparison efficiency characteristic value of the turbo-machine stage by comparing the actual efficiency characteristic value η_{ist} and the desired efficiency characteristic value η_{soll} to one another; and d) changing at least one operating parameter of the turbo-machine stage subject to the comparison efficiency characteristic value η_{vgl} , wherein in order to determine the actual efficiency characteristic value η_{ist} , a measuring of a torque of the rotary shaft of the turbo-machine-stage is carried out. The torque applied to the rotary shaft during the operation of the turbo-machine is measured. Preferably, the torque is measured in a magneto-elastic manner. The invention further relates to a turbo-machine comprising at least one turbo-machine stage, which is has at least one rotary shaft, wherein the turbo-machine has a device for carrying out the method. The turbo-machine is a turbo compressor, for example, which comprises a plurality of compressor stages (turbo-machine stages). Each of the compressor stages can be controlled separately.

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