

Title (en)

ROTARY VANE COMPRESSOR WITH HYDROFLUOROOLEFIN REFRIGERANT GAS AND HIGH SPEED TOOL STEEL VANE.

Title (de)

DREHSCHIEBENVERDICHTER MIT HYDROFLUOROLEFIN-KÜHLGAS UND HOCHGESCHWINDIGKEITSSCHAUFEL AUS WERKZEUGSTAHL

Title (fr)

COMPRESSEUR ROTATIF À PALETTES AVEC GAZ RÉFRIGÉRANT HYDROFLUOROOLEFIN ET PALETTES D'ACIER RAPIDE.

Publication

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Application

EP 10752201 A 20100818

Priority

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- JP 2010064321 W 20100818

Abstract (en)

[origin: WO2011024826A2] It was found that a refrigerant mainly containing a carbon-carbon double bond-containing hydrofluoroolefin has a function to suppress abrasive wear, compared to conventional HFC-based refrigerants, because the hydrofluoroolefin generates iron fluoride especially on the surface of the vane and piston, where sliding force is severe, from hydrogen fluoride, even if it is generated in reaction with water and oxygen. It is possible to reduce abrasive wear, by using a refrigerant containing as the base component a hydrofluoroolefin as operating refrigerant and a refrigeration oil 3 miscible with the refrigerant and a vane 10 made of a high-speed tool steel and sintered and quenched, because hydrogen fluoride generated by decomposition of the refrigerant in the region of a vane tip region 10a and a piston 9 peripheral surface, where sliding force is severe is converted to iron fluoride. It is also possible to obtain a hardened structure containing carbides of W, Mo, Cr and V dispersed in a fine martensite matrix and produces the rotary compressor more cost-effectively by quenching and sintering the vane 10.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

See references of WO 2011024826A2

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