

Title (en)
CRYOGENIC SYSTEM

Title (de)
KRYOGENES SYSTEM

Title (fr)
SYSTÈME CRYOGÉNIQUE

Publication
EP 3477225 A1 20190501 (EN)

Application
EP 18201006 A 20181017

Priority
JP 2017206101 A 20171025

Abstract (en)
The efficiency of a cryogenic system is improved. A cryogenic system (10) includes a single-stage precooler (12) that includes a first-stage cooling stage (32a), and a two-stage precooler (14) that includes a first-stage cooling stage and a second-stage cooling stage (38b), and a JT cryocooler (16) that includes a first-stage precooling unit (50) to be cooled by the first-stage cooling stage (32a) of the single-stage precooler (12) and a second-stage precooling unit (52) to be cooled by the second-stage cooling stage (38b). The single-stage precooler (12) is a single-stage Stirling cryocooler or a single-stage Stirling type pulse tube cryocooler and is operated at a first operating frequency. The two-stage precooler (14) is a two-stage Stirling cryocooler or a two-stage Stirling type pulse tube cryocooler and is operated at a second operating frequency lower than the first operating frequency. The first-stage precooling unit (50) is thermally coupled to the first-stage cooling stage (32a) of the single-stage precooler (12) and is thermally isolated from the first-stage cooling stage (38a) of the two-stage precooler (14).

IPC 8 full level
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CPC (source: EP)
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Citation (applicant)
JP H0444202 A 19920214 - HITACHI LTD

Citation (search report)
• [I] JP 2003194428 A 20030709 - SUMITOMO HEAVY INDUSTRIES
• [I] US 2004187519 A1 20040930 - ZHU SHAOWEI [JP], et al
• [I] JP 2000074518 A 20000314 - AISIN SEIKI

Cited by
EP3865789A1; FR3129198A1; WO2023088608A1; WO2023156801A1

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

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EP 3477225 A1 20190501; **EP 3477225 B1 20220302**; JP 2019078481 A 20190523; JP 6975015 B2 20211201

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