

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  
**F25B 9/10** (2006.01); **F25B 9/14** (2006.01); **F25D 19/00** (2006.01)

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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

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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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