

Title (en)  
Probe for cooling by the Joule-Thomson effect.

Title (de)  
Sonde zum Kühlen nach dem Joule-Thomson-Effekt.

Title (fr)  
Sonde de refroidissement par effet Joule-Thomson.

Publication  
**EP 0173599 A1 19860305 (FR)**

Application  
**EP 85401389 A 19850709**

Priority  
FR 8411774 A 19840725

Abstract (en)  
1. Probe for cooling by Joule-Thomson expansion of the type comprising two concentric tubular jackets (1, 2) each provided with an outlet orifice (11, 13) and with an end wall (12, 14); a mandrel (3) situated within the inner jacket (1); a first heat exchanger coil (4) wound on the mandrel, intended to be connected to a source (8) of a first gas under high pressure and terminating in a first expansion orifice (16) situated within the inner jacket; and a second coil (5) intended to be connected to a source (9) of a second gas under high pressure and terminating in a second expansion orifice (18) situated in the space separating the two jackets (1, 2), characterized in that the said space is practically free of any obstacle to the flow of the second gas up to the outflow orifice (13) of the outer jacket (2), and in that the two coils (4, 5) are wound together on the mandrel, the second coil (5) being terminated by a section (17) which passes through the end wall of the inner jacket (1) and at its extremity has the said second expansion orifice (18).

Abstract (fr)  
Deux serpentins (4, 5), bobinés sur un même mandrin (3) dans une enveloppe intérieure (1) de la sonde, débouchent par des orifices de détente (16, 18) l'un dans cette enveloppe intérieure (1), l'autre entre celle-ci et l'enveloppe extérieure coaxiale (2). L'espace annulaire séparant les deux enveloppes est libre de tout obstacle jusqu'à l'orifice d'échappement correspondant (13). Application au refroidissement des détecteurs à infrarouge.

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Citation (search report)  
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