

Title (en)
Hydrocyclone

Title (de)
Hydrozyklon

Title (fr)
Hydrocyclone

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Application
EP 01117184 A 20010716

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DE 10038282 A 20000804

Abstract (en)
[origin: DE10038282A1] The hydrocyclone is structured to separate a suspension into three fractions, preferably two light fractions (3,5) and one heavy fraction (11) at the same axial side of the hydrocyclone. The light fractions are taken out by an inner (6) pipe within an outer (4) pipe. The outer pipe has an inner wall with a conical taper in the flow direction, at the entry opening (7) of the inner pipe. The hydrocyclone to process a suspension has an outer pipe for the light fraction with a conical taper which transits into a conical expansion, downstream of the entry opening of the inner pipe. The axial gap (a) between the inner pipe entry opening and the narrowest point (8) of the conical taper is a maximum of 50 mm. The entry opening of the inner pipe is axially within the volume taken from the hydrocyclone, or with an axial gap of maximum 50 mm outside the volume taken from the hydrocyclone. The tapered inner wall of the outer pipe is pitched at a cone angle (α) of 10-45 deg to the center line. The axial length of the conical taper is 20-150 mm and preferably 30-80 mm. The inner pipe for the light fraction has an axial adjustment, to position its entry opening within the outer pipe. The inflow pipe (2), to carry the suspension into the hydrocyclone, is at the same axial side of the assembly as the double pipe structure for the light fraction, or it is at the opposite side. The outflow for the heavy fraction is at the opposite axial side of the hydrocyclone to the inflow, where a separator has a cone to direct the heavy fraction to the outflow. Spiral grooves can be at the tapered section, to accelerate the flow by deflection into a twisting path.

Abstract (de)
Mit dem Hydrozyklon können mindestens drei Fraktionen, z.B. zwei Leichtfraktionen (3, 5) und eine Schwerfraktion (11) gebildet werden. Mindestens zwei Leichtfraktionen (3,5) werden auf derselben Axialseite des Hydrozyklons abgeführt. Dazu wird ein äußeres Leichtstoffrohr (4) mit einer konisch sich verjüngenden Innenwand und ein innerhalb des äußeren Leichtstoffrohres (4) stehendes inneres Leichtstoffrohr (6) verwendet. Die Einlauföffnung (7) des inneren Leichtstoffrohres (6) befindet sich im Bereich der konischen Verjüngung. <IMAGE>

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Citation (search report)
• [XA] WO 9106374 A1 19910516 - KOLMAN MILAN [SE]
• [X] US 5028318 A 19910702 - ASLIN DAVID J [US]
• [A] US 4259180 A 19810331 - SURAKKA JORMA, et al
• [A] GB 2177950 A 19870204 - VOITH GMBH J M
• [A] US 3399770 A 19680903 - SALOMON SALOMON M

Cited by
DE102010047760A1; RU191344U1; US9238888B2; WO2017191242A1; WO03089148A1; US9233326B2

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