

Title (en)  
Three-position actuating cylinder.

Title (de)  
Arbeitszylinder mit drei Stellungen.

Title (fr)  
Cylindre d'actionnement à trois positions.

Publication  
**EP 0143238 A1 19850605 (DE)**

Application  
**EP 84111140 A 19840919**

Priority  
DE 3337969 A 19831019

Abstract (en)  
1. Three-position working cylinder having the following features : a) a first piston (16) equipped with a sealing ring (13) is provided, by means of which the cylinder (4) is divided into a first pressure-medium chamber (3) and a second pressure-medium chamber (17) which is arranged on the other side of the piston (16) relative to the first pressure-medium chamber (3) ; b) there is provided a second piston (8), in the form of an annular piston, which is sealed with respect to the inner wall of the cylinder and with respect to an outer surface of the first piston (16) ; c) there is provided a stop (47) which is fixed to the housing and limits the travel of the second piston (8) ; d) on at least one of the two pistons (16, 8) there is provided a stop (12) which limits the sliding movement of the two pistons (16, 8) towards one another ; e) a space (41) located between the two pistons (16, 8), which are guided in sealed manner, can be connected to the atmosphere via a recess (45) arranged in the cylinder housing (4) ; f) the first pressure-medium chamber (3) and the second pressure-medium chamber (17) can each be charged with air and vented by means of a valve arrangement (28, 30, 23, 24) ; characterised by the following features : g) the venting outlets of the valve arrangement (28, 30, 23, 24) are connected to the space (41) bounded by the two pistons (16, 8) ; h) there is provided a third valve arrangement (42, 43) serving as a discharge valve, via which the space (41) can be connected to the atmosphere when a pressure exceeding atmospheric pressure builds up in the space (41), and which moves into the closed position when the pressure in the space (41) has fallen to such an extent that the closing force of the valve arrangement (42, 43) exceeds the force of the pressure in the space (41).

Abstract (de)  
Ein Arbeitszylinder mit drei Stellungen, weist einen ersten abgedichtet im Zylinder (4) geführten Kolben (15) und einen zweiten als Ringkolben ausgebildeten Kolben (8) auf, wobei der zweite Kolben (8) gegenüber der Zylinderinnenwand und einer äußeren Mantelfläche des ersten Kolbens (15) abgedichtet geführt ist. Die von den beiden Kolben begrenzten Druckmittelkammern (3, 17) sind über Ventileinrichtungen (23, 24, 28, 30) be- und entlüftbar. Um die Bildung von Staudruck bzw. die Bildung eines Vakuums in dem von den beiden Kolben (15, 8) begrenzten Zwischenraum (41) zu verhindern, ist dieser Zwischenraum (41) über die den beiden Druckmittelkammern (3, 17) zugeordneten Ventileinrichtungen (23, 24, 28, 30) mit den beiden Druckmittelkammern (3, 17) verbindbar. Der von den beiden Kolben (8, 15) begrenzte Zwischenraum (41) ist über eine dritte Ventileinrichtung (42, 48) zur Atmosphäre hin entlüftbar.

IPC 1-7  
**F15B 11/12**

IPC 8 full level  
**F15B 11/12** (2006.01)

CPC (source: EP)  
**F15B 11/006** (2013.01); **F15B 11/123** (2013.01)

Citation (search report)  
• [A] FR 830896 A 19380811 - BOLINDER MUNKTELL  
• [A] DD 90034 A  
• [AD] DE 1576175 B1 19711223 - BARKAS WERKE VEB  
• [A] US 2604878 A 19520729 - STEVENS ROY R

Cited by  
EP2290263A3; WO2017137321A1

Designated contracting state (EPC)  
AT DE FR GB NL SE

DOCDB simple family (publication)  
**EP 0143238 A1 19850605**; **EP 0143238 B1 19870805**; AT E28763 T1 19870815; DE 3337969 A1 19850502; DE 3337969 C2 19920716; DE 3465210 D1 19870910

DOCDB simple family (application)  
**EP 84111140 A 19840919**; AT 84111140 T 19840919; DE 3337969 A 19831019; DE 3465210 T 19840919