

Title (en)
Actuator.

Title (de)
Kolben-Zylinder-Aggregat.

Title (fr)
Vérin.

Publication
EP 0450501 A1 19911009 (DE)

Application
EP 91104945 A 19910328

Priority
DE 4011119 A 19900406

Abstract (en)

To limit the extension of its displaceable parts, in particular the telescopic tubes (14, 15) and the piston (16), the actuator has conventional stop rings (23, 28) of round spring steel. Intermediate stop rings (35) lying between them in the stop position are provided in order to reduce the radial forces.
<IMAGE>

Abstract (de)

Das Kolben-Zylinder-Aggregat hat zur Auszugbegrenzung seiner verschiebbaren Teile, insbesondere der Teleskop-Rohre (14, 15) und des Kolbens (16) übliche Anschlagringe (23, 28) aus runder Federstahl. Zur Verringerung der Radialkräfte sind in Anschlagstellung zwischen ihnen liegende Zwischenanschlagringe (35) vorgesehen. <IMAGE>

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F15B 15/16; F15B 15/24

IPC 8 full level
F15B 15/16 (2006.01); **F15B 15/24** (2006.01)

CPC (source: EP)
F15B 15/16 (2013.01); **F15B 15/24** (2013.01)

Citation (search report)

- [A] CH 519111 A 19720215 - NEUMEISTER OTTO [DE]
- [A] WO 8103528 A1 19811210 - LERAY J, et al
- [A] DE 2004117 A1 19700903 - NUMMI OY
- [A] FR 2290613 A2 19760604 - PROTOMATIC [FR]
- [A] FR 2505943 A1 19821119 - FAUCHEUX [FR]
- [A] GB 812313 A 19590422 - BENDIX AVIAT CORP
- [A] GB 1001045 A 19650811 - HEINZ TEVES, et al

Cited by
EP2466157A1; EP1947351A1; GB2511745A; GB2511745B; CN103122890A; EP3786462A1; FR2834318A1; EP2466156A1; CN102588381A

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