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[Continued on next page]

(54) Title: RETROFITTABLE NO FILTER NO RUN FILTRATION SYSTEM

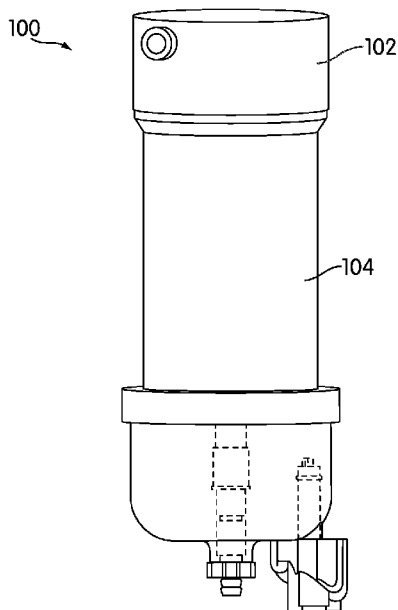


FIG. 1A

(57) Abstract: A retrofit no filter no run insert for existing filtration systems manufactured without a no filter no run engine integrity protection feature. The insert is beneficial for a manufacturer that initially does not require the benefit of a no filter no run engine integrity protection feature but later requires such a feature. The insert can be installed into the existing filtration system without any modification to the existing filtration system head. The no filter no run insert prevents the equipment supplied by the filtration system (e.g., an internal combustion engine) from being operated without a filter element. Further, the no filter no run insert prevents the equipment supplied by the filtration system from being operated with an unauthorized or non-genuine replacement filter element. The no filter no run insert safeguards against damage to downstream components of the filtration system and malfunctions of equipment in which the filtration system is used.



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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PatBase, Google Patents, Google, YouTube Search terms used: no filter no run, replace, retrofit, filter, filtration, head, ball, cage, flow actuator, flow restriction valve, convert		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2011/0073538 A1 (JIANG et al) 31 March 2011 (31.03.2011) entire document	9, 11-17
A	US 2012/0024771 A1 (ABDALLA et al) 02 February 2012 (02.02.2012) entire document	1-20
A	US 8,517,183 B2 (THOMAS et al) 27 August 2013 (27.08.2013) entire document	1-20
A	US 2008/0179236 A1 (WIECZOREK et al) 31 July 2008 (31.07.2008) entire document	1-20
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