What’s the Difference Between a Single-Stage and a Two-Stage Air Cleaner?

Air cleaners are defined into two types based on the stages the air and contaminant flow through the assembly. These types of air cleaners are considered single-stage and two-stage.

**Single-Stage Air Cleaners**

A single-stage air cleaner filters contaminant from the air through a primary filter without the use of a pre-cleaner. The contaminated air enters the air cleaner through the inlet side and flows directly to the primary filter. At this point, the contaminant is filtered out by the media and the filtration is completed. Single-stage air cleaners are typically used in light dust environments such as on-highway applications.
Two-Stage Air Cleaners

A two-stage air cleaner uses both a pre-cleaner and a primary filter to remove dust from intake air. The contaminated air is first sent through a pre-cleaner, which is considered the first stage. The pre-cleaner will remove 75-98% of the contaminant from the air. Pre-cleaners can be a separate add-on accessory or built into the air cleaner. Once the air is pre-cleaned, it is sent to the primary filter where the contaminant is filtered out by the media, completing the second stage. Two-stage air cleaners are typically used in medium- to heavy-dust environments such as construction and mining.

**Donaldson Engine Air Cleaners & Pre-Cleaners**

**Single-Stage Air Cleaners**
- **Light Dust - E Series**
  - DuraLite™ ECB, ECC
  - ECD, EPG, ERA, EBB
  - EBA Konepac™
  - ECG Konepac™

**Pre-Cleaners**
- TopSpin™
- Full-View

**Two-Stage Air Cleaners**
- **PowerCore® PSD Series**
  - (Light to Medium Dust)
- **Medium Dust - F Series**
  - FKB (Light to Medium Dust)
  - XRB, FPG, FRG, FVG Cycloflow™

**Heavy Dust - S Series**
- SSG Donaclone™, STG Donaclone™
- SRG Donaclone™, STB Strata™

More information on engine air cleaners is available online at [www.donaldson.com/aircleaners](http://www.donaldson.com/aircleaners)