

LAST CHANCE FILTER CLEANING SYSTEM



CLEANLINESS

All elements manufactured by Pall conform to NAS 1638 class 7 but some applications require cleanliness up to class 00.

Pall Last Chance Filters (LCF's) are manufactured in strictly controlled conditions, designed to produce the cleanest possible product obtainable. The filtration meshes are already chemically clean due to the sintering process which vaporises surface contaminants. The elements are then manufactured in clean areas to minimise in-built contamination.

In order to help meet the required cleanliness levels of the Aerospace industry, Pall have designed and built a special flushing rig which achieves cleanliness levels hitherto unobtainable. Once the desired cleanliness level has been achieved, the LCF is carefully removed and vacuum packed to immobilise the element during transportation.

Although cleanliness levels of NAS 1638 class 00 or better are achievable with LCF's as packed, it should be realised that suitable handling precautions must be taken on opening the package to ensure that the minimum of contaminant is introduced during handling and insertion of the LCF into the final system.

APPLICATIONS

Applications which require the cleanliness level of NAS 1638 class 00 and rely on the Pall Aerospace Flushing Rig to achieve this standard currently include:

- Ariane 5 Satellite Launcher
- Alpha Jet
- Mirage Combat Aircraft



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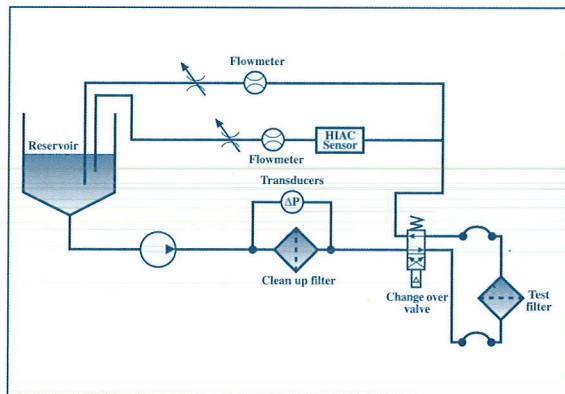


FIGURE 1: FLOW DIAGRAM

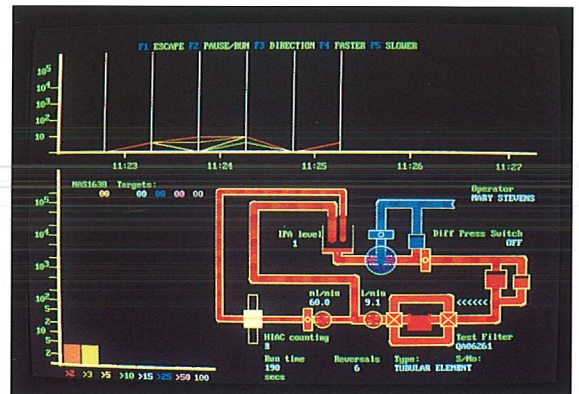


FIGURE 2: MONITOR SHOWING LCF CLEANLINESS AND FLOW SCHEMATIC

PRINCIPLE OF OPERATION

The filter element to be cleaned is placed in a housing and this is connected to the cleaning system. The flushing rig uses filtered IPA (iso-propyl alcohol) as a flushing medium to remove any residual contaminants from the LCF's being cleaned. The cleaning rig is driven by a PC which is fully programmed to provide automatic bi-directional flushing and continuous cleanliness monitoring of the effluent from the filter being flushed.

When the effluent reaches the pre-determined cleanliness level (NAS 1638, ISO 4406 etc) the rig reverses the fluid flow to remove any contaminants on the opposite side of the LCF. The number of reversals is pre-programmed to ensure that adequate flushing is achieved. The LCF cleanliness level is displayed on the PC monitor (see figure 2).

The effluent is continually monitored using a HIAC 8000 series automatic particle counter which is integrated with the PC to give fully operator-independent flushing.

The flushing rig minimises the introduction of extraneous contaminants, both by design of the element locator and couplings, and by the operation of the element housing and vacuum packaging station in clean room conditions.



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