

BIOPHARMA INSIGHT

Minimising human factors in gasket change-out

It is essential to ensure each and every seal is changed out to avoid potential cross contamination, as well as ensure good sealing. In a system with numerous gaskets, all looking identical, some changes may be missed. In this article, the methods to minimise this risk are explored.

In any maintenance regime when changing out hygienic clamp seals, a very methodical approach must be adopted to ensure each and every seal is changed out. The consequences of missing a gasket change-out can be serious and extremely costly, ranging from product cross contamination to a system leakage, and batch quarantine. The costs of such incidents can be very high, alongside the investigative costs for a non-compliance.

The gaskets being changed out will be the same material as the old ones, so used and new seals can be easily mixed up, increasing the chances of missed gasket change-out. Even with strict change-out protocols, there is still the human element to consider; errors can still occur. The question remains - how do we eliminate the human factor?

Fortunately, James Walker provide several options and these are available to minimise the potential for error; colour-coded gaskets, coloured clamps and colour-coded fasteners. In all cases, the intention is for one colour to be used for a campaign, then on the next gasket change-out the colour is changed to something different. This gives a positive indication that a given gasket has been changed.

COLOUR-CODED GASKETS

The picture below shows our Elast-O-Pure Sil-70 colour-coded silicone seals, with the colour only present on the outer edge. This has two advantages; first and foremost the colour is visible even when the gasket is installed in the clamp, making checking on gasket replacement very easy. Secondly, the coloured material is not in contact with the process flow, only the very clean, platinum-cured silicone material.



Fully coloured EPDM gaskets are available, however, simply being coloured means no carbon black is present in the EPDM. Carbon black is essential to EPDM to give good mechanical properties, therefore removing carbon black from the material will compromise the properties, and hence performance, leading to problems with intrusion and the need to re-torque at regular intervals.

COLOURED-CODED CLAMPS

Should coloured gaskets not be a viable option, colour-coded clamps should be considered. Again these are available to use with a different colour being employed after the gasket has been changed out.

FASTENER COLOUR CODING

For wing nut fasteners, different coloured wing nuts are available. Simply changing these as the gasket is changed gives a very visible indication the seal has been changed.

All three examples result in a very visible, easy to monitor, indication that the gasket has been changed out at the particular location, and help minimise the potential for human error.

Contact john.byrne@jameswalker.biz for more information.