



These 8mm grommet seals play an important role in allowing ink to pass through the nozzle assembly without leakage.



DP Seals' prove the perfect fit for Ricoh

Ricoh is a global provider of business technology, transforming processes and information management that makes organisations more agile, productive and profitable.

From pioneering the world's first high speed office facsimile machine to developing technologies that facilitate flexible working patterns, Ricoh has a proud history of innovation.

The relationship with DP Seals began back in 2013 when Ricoh required a small red O-Ring for a toner based ink cartridge used in office photocopiers. Since then DP Seals have also gone on to manufacture an ink bag grommet for business production print machines.

The challenge

The ink bag grommet forms a key seal within a nozzle assembly and is critical to the functioning of the bag and how the ink is stored and fed into the printer. Ink is extremely sensitive to environmental conditions and any air ingress to the bag affects performance. Unfortunately previous supplier quality had been inconsistent and poor leading to problems with holes in the bags and the nozzle assembly leaking.

Ricoh's stringent selection process had reduced potential suppliers to a shortlist of 5 companies but many of these wanted to supply off-the-shelf products that weren't a precise match to their specification. DP Seals won the business by offering bespoke tooling and were also able to meet Ricoh's strict environmental and quality standards.

Natasha Witcombe, Technical Procurement Engineer at Ricoh, commented 'As someone who has been assessing suppliers for over 20 years it was quite apparent to me that DP Seals are technical experts and industry specialists. In meeting our 4M and QCDES standards it was their personal touch and attention to detail that helped set them apart.'

The solution, goal and critical factors

Ricoh strive for zero defects with a general aim to engineer quality in rather than inspect it out. With this in mind there were three critical elements to the successful solution:

- 1 The material needed to be compatible with 8 different types of ink
- 2 Dimensional stability working to a tolerance of + or - .1
- 3 Process capability working to an indices of 1.33

To meet these three challenges a specialised EPDM material was formulated and DP Seals conducted FMEA and PPAP prior to starting production. Non-contact OGP Smartscope Machines were also used to measure the components for FAIRs'.

With 117 different cavities in the mould tool and working to 20 shots for evaluation purposes, the design and material was subjected to rigorous testing over a 3 month period to achieve the required standards.

The Results

So far DP Seals have delivered almost 300,000 grommets and there have been zero failures in the field. Natasha commented further 'They are so accommodating and nothing seems like too much trouble. Ultimately they give me real confidence in their ability to deliver.'

Andrew Piper, Managing Director at DP Seals, added 'I'm so pleased that Ricoh recognise our expertise and bespoke approach as something that sets us apart because that's what we're all about. We're looking forward to continuing the great working relationship we've built with Ricoh into the future.'