

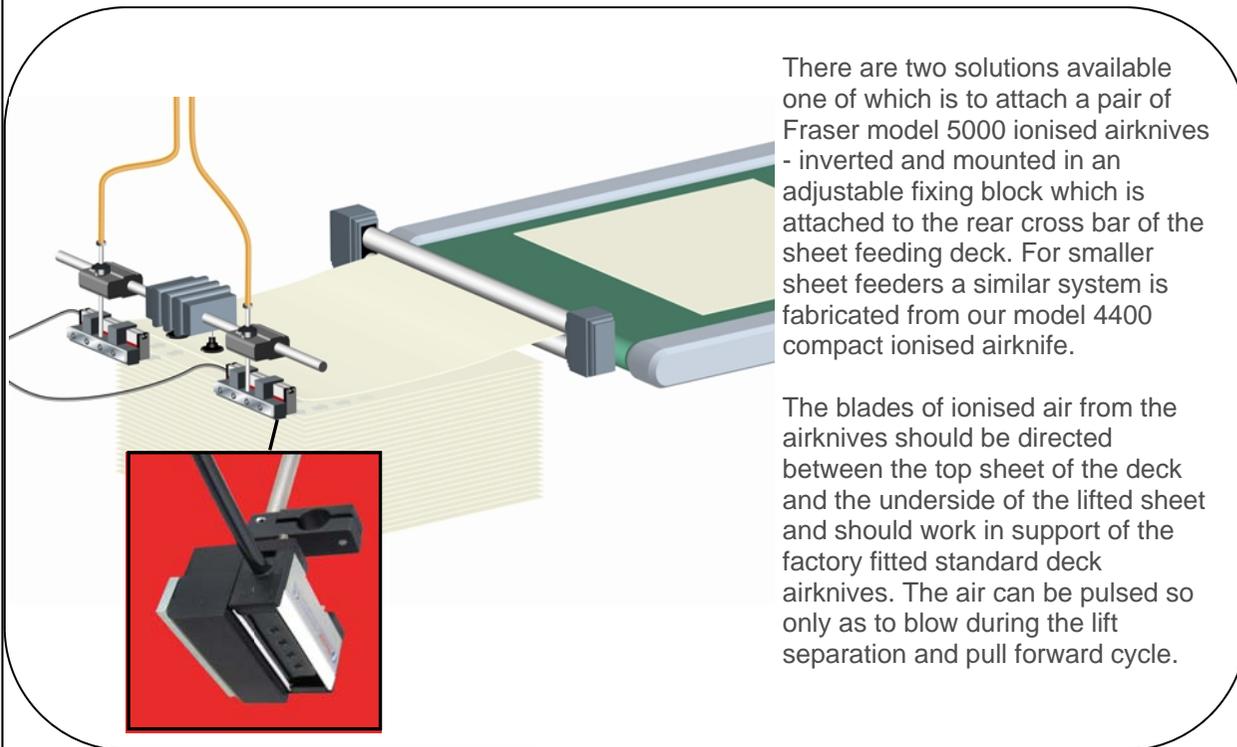
When sheets usually of plastic, paper or card are presented for next stage processing to usually a converting or printing machine, they will arrive in the form of a block or stack of sheets placed one upon another.

As the sheets are fed into the process line it is essential that each sheet be individually removed one at a time from the top of the stack

It is most common that the top sheet is lifted from the rear edge slightly from the stack by vacuum cups. As the back edge is lifted a cushion of air is driven between the underside of the now lifted top sheet and the top side of the second sheet below.

This cushion of air is designed to allow the top sheet to float reducing friction and allowing the vacuum cups to now push the sheet forward enabling the leading front edge of the sheet to be picked up and pulled forward by the converting machines own drive rollers.

The air cushion is generally provided by airknives set on the rear bar of the sheet feeding deck, sometimes where larger sheets are processed airknives can also be found also on the sides of the sheet feeding deck.



There are two solutions available one of which is to attach a pair of Fraser model 5000 ionised airknives - inverted and mounted in an adjustable fixing block which is attached to the rear cross bar of the sheet feeding deck. For smaller sheet feeders a similar system is fabricated from our model 4400 compact ionised airknife.

The blades of ionised air from the airknives should be directed between the top sheet of the deck and the underside of the lifted sheet and should work in support of the factory fitted standard deck airknives. The air can be pulsed so only as to blow during the lift separation and pull forward cycle.

Where some coated cardboard and paper sheets are processed and especially plastic sheets, the action of intimate contact and separation between the underside of the top sheet and the top of the stack generates substantial static charges.

As the stack reduces in height as the sheets are continuously removed the voltage of the static charge continually increases from one sheet being removed to the next.

Eventually the static voltage reaches a level at which attraction between the sheets occurs resulting in adhesion between sheets and potential multiple sheet pick up or issues of sheet clinging to the feeder board on the converting machine.

Even the conventional airknives are unable to overcome the forces of attraction caused by the static charge, in fact the contact and separation of the airflow will undoubtedly contribute to the overall increase in voltage.

The mail edge of the sheet is lifted and pushed forward by vacuum cup system.

The top sheet when lifted floats forward on an air cushion provided by Air Nozzles.

Our second solution is to use a 4300 Inline Nozzle as shown in the in the sketch to convert the existing air nozzles into ionised air nozzles.

The inline nozzles should be fitted as close to the existing airknives as possible and not a distance down the air line. They should be fitted at one per airknife.

Where possible the airknives should not be made from metal, if they are replacing with plastic alternatives will enhance significantly the performance of the Fraser 4300's.