



Figure 13.18 Schematic of the process sequence of the AWL Continuous Carousel Filter Dryer.

manage the wash contact times and solvent exchanges. The optimisation process can be paused to allow the wash liquid to be sampled offline during each step significantly reducing the overall quantity of material required to optimise a process. Convection drying is used to de-humidify the cake before being discharged. These optimisation parameters can be saved and recalled for use in 'production mode'. Production mode automatically isolates, washes, dries and discharges product in a fully automatic sequential process.

The carousel pressure filter operates at a pressure of up to 2 bar (g) generally within a temperature range of 0° to 100° Celsius. The filtration driving force can be vacuum or pressure. The effectiveness of convection drying is limited to products which allow gas flow through the cake and the process solvent choice. When moderate gas flow cannot be achieved or a solvent with a relatively high boiling point is being used an additional drying step will be required. A summary of the operating parameters and statistics of the AWL continuous carousel filter dryer is shown in Table 13.4.

The AWL carousel filter was invented by Mr A. Barton in 2012. The AWL development team, Strathclyde University and several end users have contributed greatly to improving and expanding the uses of the equipment over recent years. The development of this technology is summarised in the patent by A. Barton⁷ and in the paper by Ottoboni *et al.*⁸