



Figure 10.14 TRIQUENCE® single shaft mixing conche and its conching tool design (Lipp Mischtechnik GmbH).

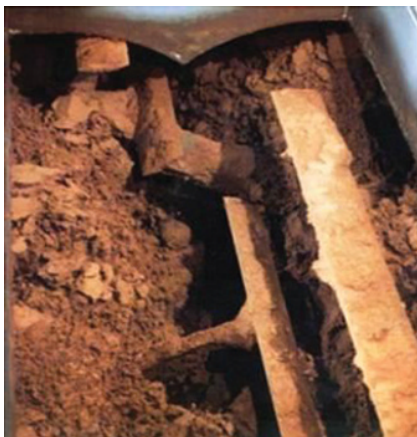


Figure 10.15 Conching paddles and mass consistency in dry and liquid phases inside HOMEGA conche. Source: Reproduced with permission of Carle and Montanari-OPM.

time approx. 2 h, (ii) actual conching approx. 5 h and (iii) discharging approx. 30 min. In this process, the power input and time taken depends upon the liquid fat and emulsifier/surfactant additions.

BSA Schneider-Industrie and Vetriebs GmbH manufacture the TNCE 99 twin-shaft conche (Figure 10.16). This has been designed to pass the chocolate mass through an intensive dry conching phase to enhance the physical and chemical properties of the end-product. The high shear paddles were designed to give shorter conching times.

Thouet (Royal Duyvis Wiener Company) manufacture the Type DRC2 two shaft conches. The Type DRC2 carries out dry conching at slow and high speeds using a powerful motor with two large conching rotors, each with six conching elements fixed firmly to the shafts (Figure 10.17). The conching elements are specially profiled and arranged on the side wall of the vessel. Scrapers are mounted on the sides of the conching rotors at a fixed distance from both front and back walls of the conche vessel. This intensive process results in a relatively short conching time of approximately 5–6 h. Furthermore, this conche is fitted with specially designed tools or paddles that make it possible to run without, or at very low levels of, pre-added fat. Consequently, a very dry consistency is formed that significantly reduces the moisture and at the same time



Figure 10.16 Conche vessel of twin-shaft TNCE 99 (BSA Schneider-Industrie and Vetriebs GmbH).