



## Reflex® Quick Drip™ System

### A solution to speed the extractor dripping process and insure minimum retention of miscella passing to desolventising

As a leading engineering company in the field of edible oil processes, Desmet Ballestra presents an innovative new feature that improves the performance of its Reflex® Extractor.

Inside the Extractor, the material is extracted with countercurrent miscella washes, followed by a fresh solvent wash. The extracted material immediately after the fresh solvent wash contains a high level of residual miscella (approx. 99.7% solvent and 0.3% oil). After the fresh solvent wash, most of the residual miscella drains down through the material in a couple minutes time. However, the remaining surface miscella takes time to form drips, which slowly drop down through the material layer, the supporting screen and into the miscella collection hopper below.

Desmet Ballestra's patent pending Reflex® Quick Drip™ System speeds the dripping process to insure minimum retention of miscella in the material passing to the Desolventiser Toaster. Any residual miscella retained with the material exiting the extractor requires energy in the Desolventiser Toaster to evaporate and also carries with it slight oil which contributes to the residual oil content in the meal.

#### Amongst the advantages offered by the Desmet Ballestra Reflex® Quick Drip™ System:

##### Reduced DT Steam Consumption

- Approximately 1% less miscella retention to the DT
- 2-5 kg/ton reduction in DT live steam consumption

##### Reduced DC Steam Consumption

- 0.1-0.4% lower meal moisture from the DT to the DC
- 1-4 kg/ton reduced DC air heater steam consumption

##### Increased Oil Yield

- Approximately 1% less miscella retention to the DT, containing 0.3% oil
- 0.005- 0.010% reduction in residual oil in meal
- 0.04-0.08 kg extra oil yield per ton of seed

##### Low Energy Demand

- Approximately 0.03 kwh extra electrical demand per ton of seed

##### Low Maintenance

- One simple fan

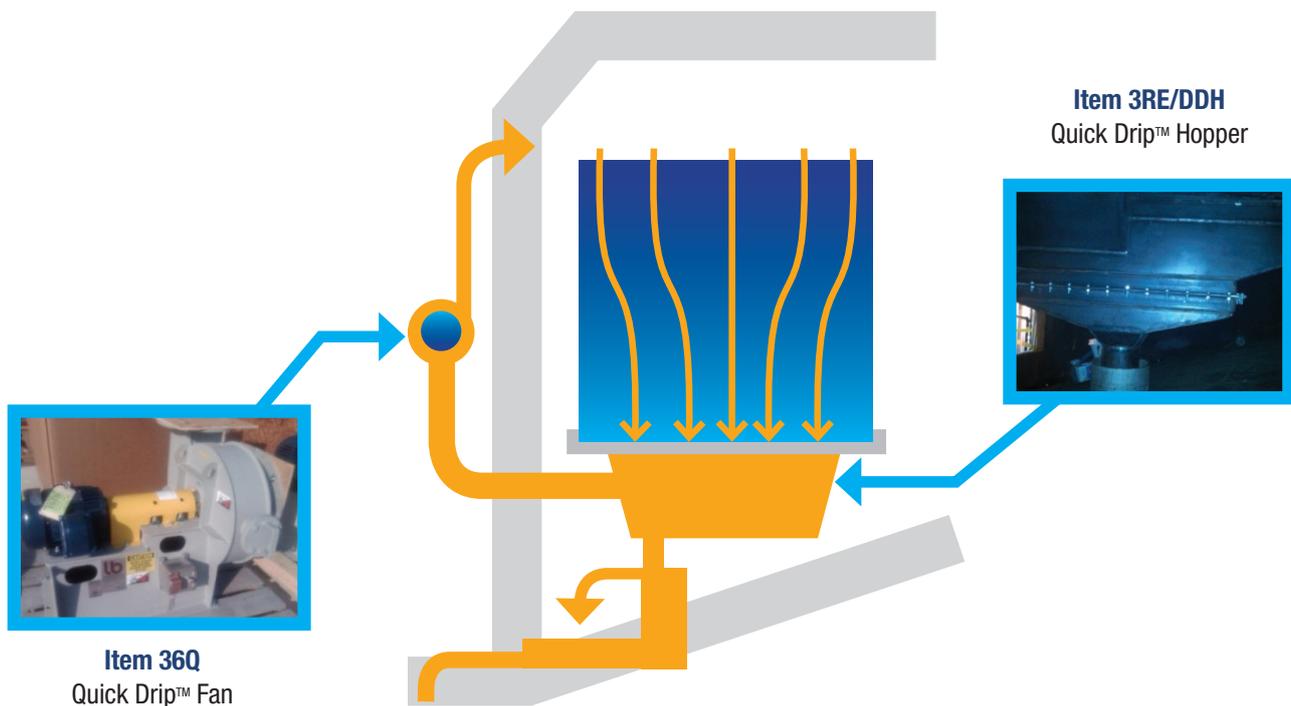
Oils & Fats

desmet ballestra

## Process description

The material rotates through the dripping zone of the Reflex® Extractor (3RE), contained in individual baskets. When a given basket of material rotates over the Quick Drip™ segment of screen floor, solvent vapours are pulled from the headspace of the extractor, down through the basket of material, through the supporting screen, and into the vapour tight miscella hopper below. The downward velocity of these solvent vapours speeds the rate of droplet formation and the dripping rate of the surface miscella down through the layer of material. In approximately 2 minutes of time passing over the Quick Drip™ section, the dripping accomplished is equivalent to over 5 minutes of gravity dripping time.

The solvent vapour is pulled down through the Quick Drip™ section into a vapour tight miscella hopper under the screen floor. A vacuum of approximately 20 mbarg is maintained in this vapour tight miscella hopper to be the driving force for the downward vapour flow. A duct connects the vapour tight miscella hopper under the screen floor to the external Quick Drip™ Fan (36Q). The external Quick Drip™ Fan (36Q) then blows the solvent vapour back into the headspace of the extractor.



Miscella droplets drip through the screen floor into the vapour tight miscella hopper. These miscella droplets drain to a central pipe under the vapour tight miscella hopper, and a liquid seal in this pipe allows the miscella collected to continuously overflow into the weakest miscella hopper of the Reflex® Extractor (3RE), to be combined with the other gravity dripping miscella passing to the existing Extractor Circulating Pump (P3).