

SPECIFICATION

DT-BLMCP-2150



DenimoTech

DT LABORATORY COLLIOD MILL

BENCH CUBIC MODEL
FOR PREPERATION OF BITUMEN EMULSION AND
POLYMER MODIFIED BITUMEN
Sample size 500 – 3500 ml.

Manufacturer:

*DENIMOTECH A/S
Haandvaerkervangen 12
DK-5792 Aarslev
Denmark*



**Shown model can be including options.*

PROCESS DESCRIPTION

The DENIMOTECH laboratory colloid mill – bench cubic model is especially designed for production of regular road grade bitumen emulsions that do not require production above boiling point for the Emulsion. Polymer modified bitumen can be prepared with this heated and insulated version of the unit.

The unit is one integrated unit consisting of the following parts:

- Colloid mill with specially designed high-speed AC motor.
- Thermostatically controlled electrical heating of colloid mill (DT-PMBCP and funnel).
- Pipe system with funnel to receive the bitumen and other ingredients, re-circulation pipe system and sample valve.
- Electrical box with: Main power switch - Mill start/stop, speed control and frequency inverter – Heating start/stop and thermostat.
- Closed cabinet with easy operation handles.
- 4 litres funnel with heating and insulation. (DT-PMBCP with heating and insulation)

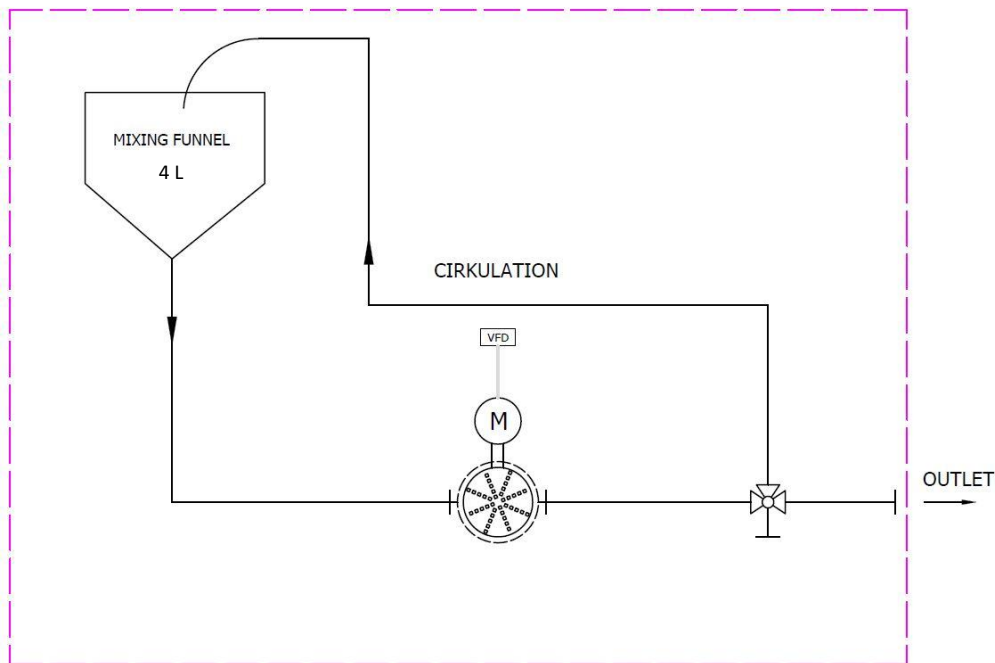


Figure 1: Ex. on a laboratory (bench model) plant flow-diagram / flow-process.

GENERAL FEATURES

Easy operation

The compact design of this unit including mill and motor, frequency controller and pipe system allows placement in a small cabinet, that can be placed on a table, with all controls on one side for easy operation.

One person is enough to operate this unit.



Operational reliability

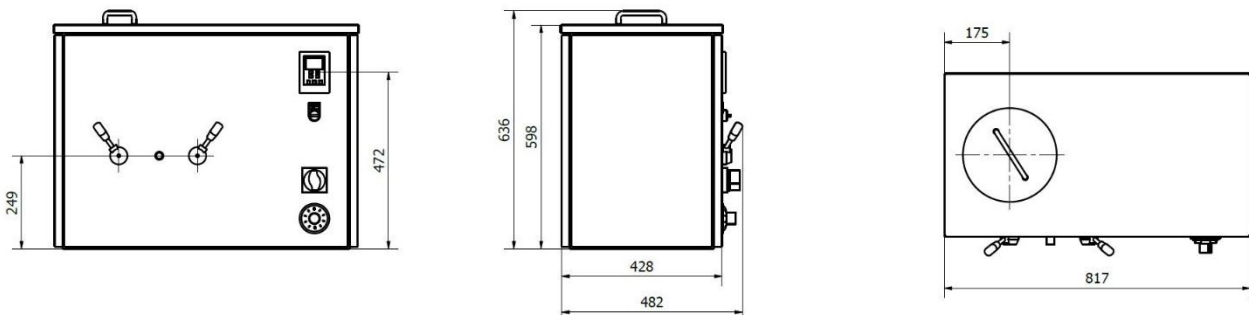
The plant is designed and built in full compliance with the latest European Standards of process machinery including mechanical and electrical design as well as documentation.

Only high-quality components and materials are used to ensure best possible operational reliability in tropical and tempered climates as well as industrial environment.

All parts are completely numbered and identifiable in manuals and part lists. Extensive manuals go with the plants and include process and electrical diagrams, maintenance and service instructions and technical data for the various components and systems. Repair readiness is achieved with a relatively small stock of spare parts.

Fast and easy installation

The DENIMOTECH bench laboratory mill unit are fully assembled with all the equipment. Calibration and testing are done at the factory prior to shipment.



EQUIPMENT SPECIFICATION

DENIMOTECH colloid laboratory mill

The colloid mill is the same as in the DENIMOTECH Research plant and is of the same design as the DENIMOTECH full-scale production mills. The rotor and stator system are designed to enable achieving a fine and narrow particle distribution and the variable speed drive with a maximum of 11.500 rpm makes it possible to:

1. Vary and optimise the particle distribution and thereby the emulsion characteristics to adapt to prevailing requirements and to achieve close correlation with different full-scale production mills.
2. Using many different bitumen that normally form too coarse particle distributions resulting in poor emulsion quality.



All wetted parts of the colloid mill are made from AISI 316L and the pipe system and other components in AISI 316 stainless steel for corrosion resistance against low pH emulsions.

The small volume of the pipe system minimises the raw material need and enables production of very small samples of 1500 ml only for normally bitumen.



Production control panel

All operating buttons are placed on the front, on the control cabinet.

There is:

1. An On/Off switch for the heating.
2. Thermostat for temperature control
3. Main switch
4. Frequency inverter display for start/stop and speed control of the Mill
5. Valves can be operated with the handles placed in front of the unit. The signs besides the handles indicate which way to turn the valves.

TECHNICAL DATA

| Plant model | DT-BLMCP (Polymer modified bitumen) | DT-BLMC (Bitumen emulsion) |
|---------------------------------------|--|-------------------------------|
| Sample size | 500-3500 ml | |
| Funnel capacity | 4000 ml | |
| Temperature, maximum | 200°C | |
| Viscosity | 100 – 500 cSt | |
| Motor power | 3.7 kW | 2.0 kW |
| Motor speed, continuously variable | 6.000 – 11.500 rpm | |
| Rotor / stator gap, variable in steps | 0.6 mm / 1.4 mm / 2.2 mm | |
| Voltage | 3 x 400 V, 50/60 Hz | |
| Electrical data | | |
| Total rated power | 4,6 kW | 2,5 kW |
| L x W x H - approx. | 820 x 490 x 640 mm | |
| Weight - approx. | Approx. 70 kg | Approx. 65 kg |