



CHEMCO DETENTION SLAKER

Chemco Systems, L.P.



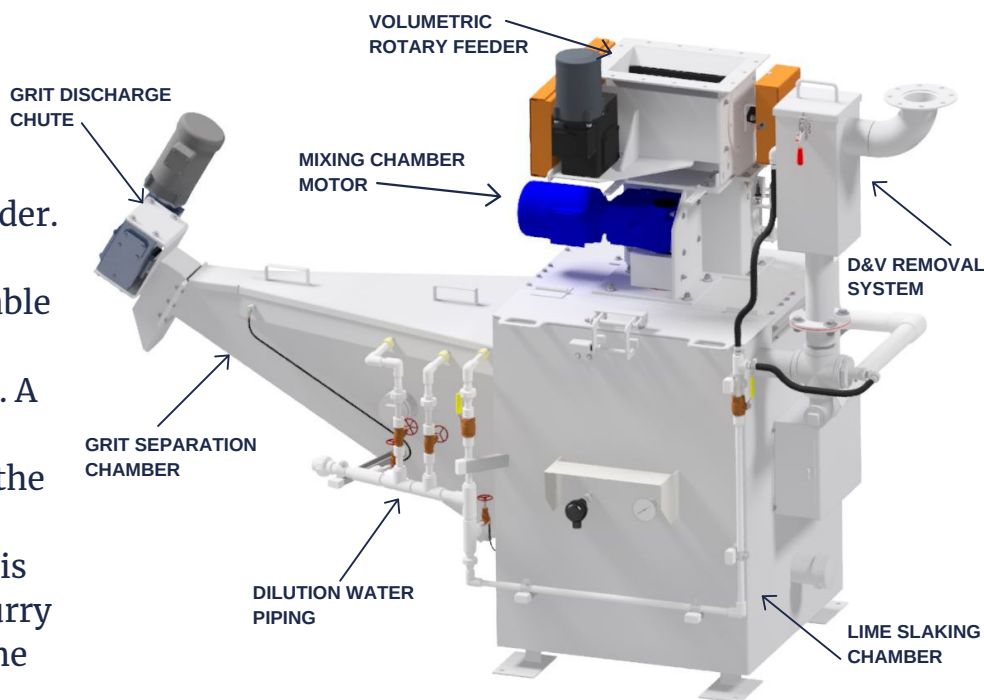
**QUALITY HYDRATED LIME FROM
COMMERCIAL GRADES OF QUICKLIME**

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THE SLAKING PROCESS

Quicklime is delivered to the slaker reaction chamber in continuous, volumetric quantities by the rotary feeder. The required amount of water is controlled by the system's programmable logic controller (PLC) and is preheated prior to entering the reaction chamber. A custom agitator vigorously mixes the quicklime and slurry, which catalyzes the reaction to produce the desired, small hydrated lime particles. As lime slurry is continuously produced, the reacted slurry will overflow across a weir plate into the integrated grit separation chamber.

The dense grit settles to the bottom of the chamber where an inclined screw, in continuous operation, captures the non-reactive material. The inert grit is then carried upward on the screw and disposed of at the grit discharge. The clean slurry is then transferred by gravity to a slurry feed tank or a slurry storage tank where it is gravity fed to process, direct pumped to process, or pumped on a re-circulation loop for precision dosing.



| 250 to 50,000 PPH Capacity | | | | | | |
|----------------------------|------------------|-----------------------------------------------------------|-------------|-----------------|-------------------------------|------------------------------|
| Model No. | Capacity (lb/hr) | Maximum Water Consumption (GPM) @ 10% Final Concentration | Agitator HP | Grit Remover HP | Chemco Rotary Feeder Drive HP | Estimated Full Weight (lbs.) |
| DSS250 | 250 | 5.5 | 1.5 | 1/3 | 1/2 | 1,200 |
| DSS500 | 500 | 11.0 | 1.5 | 1/3 | 1/2 | 2,300 |
| DSS1000 | 1,000 | 22.0 | 1.5 | 1/3 | 1/2 | 3,200 |
| DSS1500 | 1,500 | 33.0 | 1.5 | 1/3 | 1/2 | 4,700 |
| DSS2000 | 2,000 | 44.0 | 5.5 | 1/3 | 1/2 | 5,500 |
| DSS3000 | 3,000 | 56.0 | 5.5 | 1/3 | 1/2 | 7,100 |
| DSS4000 | 4,000 | 88.0 | 5.5 | 1/3 | 1/2 | 9,100 |
| DSS5000 | 5,000 | 110.0 | 5.5 | 1/3 | 1/2 | 10,900 |
| DSS6000 | 6,000 | 132.0 | 7.5 | 1/3 | 1/2 | 12,100 |
| DSS8000 | 8,000 | 176.0 | 7.5 | 1/3 | 1/2 | 14,200 |
| DSS12000 | 12,000 | 220.0 | 10.0/7.5 | 1/2 | 1 1/2 | 23,000 |
| DSS16000 | 16,000 | 290.0 | 12.5/7.5 | 1 | 1 1/2 | 32,000 |
| DSS24000 | 24,000 | 430.0 | 20/12.5 | 5 | 2 | 54,500 |
| DSS30000 | 30,000 | 540.0 | 20/12.5 | 5 | 2 | 77,000 |
| DSS50000 | 50,000 | 900.0 | 20/12.5 | 10 | 4 | 112,700 |



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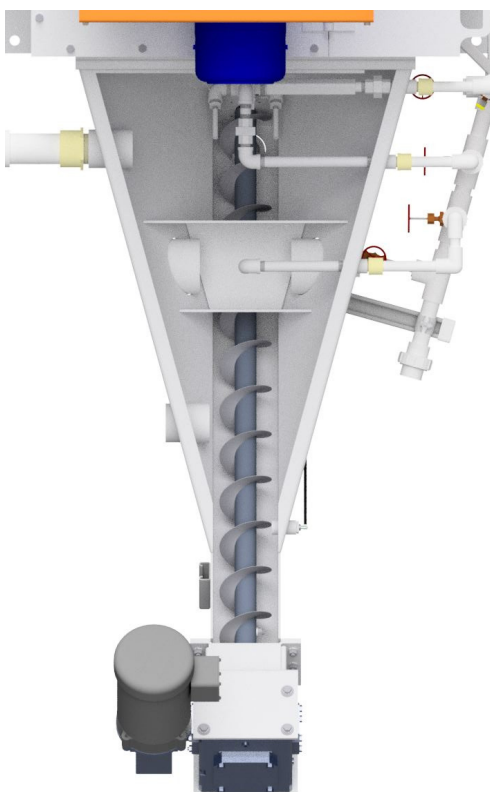
SPECIAL SLAKER FEATURES

Slaking Water – The slaking water flow rate at start-up (when slaker temperature is low) is 3.3 parts water to 1 part lime. Once the slaking temperature reaches a pre-set point, the water feed is controlled by temperature, which assures a constant slaking temperature and a consistent hydrated lime particle size.

Torque or Consistency Water – The viscosity of the slurry in the slaker varies based on slaking temperature and quality of lime. To maintain a thick but flowable slurry, water is added when the slurry viscosity begins to impede mixing and outflow from the slaker. This is done automatically by monitoring the power draw of the slaker mixer. The Torque Water Valve is also used for adding emergency cooling water, if temperature rises above a set point to the slaker.

Dilution Water – Dilution water is added to the slaker for steam removal, weir sprays, and grit separator dilution water.

INTEGRAL STANDARD GRIT SEPARATOR



This standard Grit Separator is used on slaker models DSS250 to DSS8000.

INTEGRAL AUXILIARY WATER HEATERS

The bottom of the slaker incorporates integral auxiliary electric heaters. Any time the slaking temperature is below the desired set point, these heaters automatically heat the incoming slaking water, accelerating the cold start-up.

ROTARY FEEDERS

Chemco rotary feeders are positive displacement feeders specially designed to be used with Chemco slakers to prevent flooding of lime into the slaking chamber. The flexible rotor tips prevent rotor lock due to impurities in the quick-lime. The feeder can deliver chemical at operator specified rates with an accuracy of $\pm 2\%$ of the overall feed range.

ACCESS DOOR SAFETY LATCHES

Self locking access door latches will initiate an alarm and shut down the feeder and slaker agitator if any access door is opened during the operation.

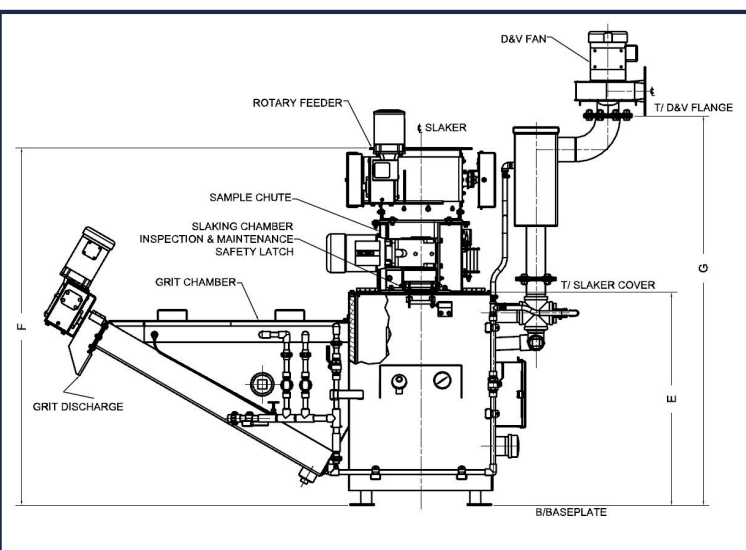
DUAL WALL CONSTRUCTION

To conserve the heat of reaction, Chemco slakers have dual walls with insulation packed between the walls.

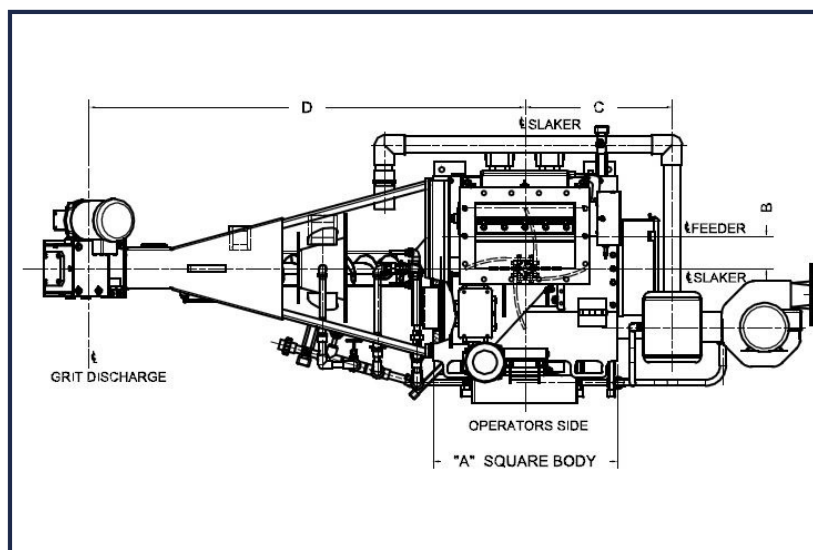
OTHER FEATURES

- Min. retention time 10 mins.
- Fully automated control panel with PLC control.
- Water supply rotameter panel with modulating valves and/or solenoid valves, shut-off valves.
- Minimum water pressure 40 PSIG.

SLAKER SIZES & DIMENSIONS



**SIDE ELEVATION OF
SLAKER DSS250-DSS8000**



**PLAN VIEW OF SLAKER
DSS250-DSS8000**

| Slaker Model No. | SLAKER DIMENSIONS (Inches) | | | | | |
|---------------------|-------------------------------|-------|-------|--------|-------|--------|
| | A | B | C | D | E | F |
| DSS250 | 26.75 | 4.50 | 18.75 | 64.00 | 39.75 | 66.50 |
| DSS500 | 26.75 | 4.50 | 18.75 | 64.00 | 39.75 | 66.50 |
| DSS1000 | 32.75 | 4.00 | 22.00 | 67.00 | 45.50 | 72.25 |
| DSS1500 | 38.75 | 4.00 | 25.00 | 70.00 | 47.01 | 73.00 |
| DSS2000 | 40.75 | 10.25 | 27.00 | 91.00 | 55.75 | 90.25 |
| DSS3000 | 40.75 | 10.25 | 29.00 | 93.00 | 60.00 | 94.50 |
| DSS4000 | 50.75 | 10.25 | 33.00 | 108.00 | 59.50 | 94.50 |
| DSS5000 | 50.75 | 10.25 | 40.50 | 108.00 | 74.00 | 108.50 |
| DSS6000 | 56.75 | 10.25 | 45.00 | 114.00 | 69.00 | 96.50 |
| DSS8000 | 62.75 | 12.00 | 45.00 | - | 73.50 | 112.00 |

| Slaker Model No. | SLAKER DIMENSIONS (Inches) | | |
|---------------------|-------------------------------|--------|-------------------|
| | Width | Length | Overall Height |
| DSS12000 | 5'-11" | 5'-11" | 10'-11" |
| DSS16000 | 6'-5" | 9'-3" | 11'-4" |
| DSS24000 | 6'-5" | 12'-8" | 11'-5" |
| DSS30000 | 7'-3" | 14'-5" | 12'-1" |
| DSS50000 | 8'-0" | 16'-0" | 13'-6" |
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NOTE: Information in the above tables is subject to change without notice. Consult a *Chemco* representative regarding specific applications.

SLAKER CONTROL PANEL

The slaker control panel provides all controls and PLC programming required for proper operation of the lime slaking system and requires a 480-volt, 3-phase, 60 Hz power supply. The panel is equipped with a graphical operator interface screen that provides all selectors and displays required for normal operation. The graphical operator interface screen incorporates several layers of graphical interface where the operator can adjust set points, observe operating parameters, determine alarm conditions, etc.