

CLIF MOCK™

True Cut™ Mixing & Circulation Systems

*Laboratory Mixing System, Stationary Circulation Systems
and Portable Receptacles*



The M20-3 Mixing Laboratory System thoroughly reblends crude oil or other low-vapor fluid samples from a portable receptacle to provide a representative sample for analysis.



CMC Circulation Systems allow operators to collect, store, and mix crude oil and other low-pressure sampled product in a single receptacle, minimizing the loss of light ends.



NuFlo Measurement Systems offers portable sample receptacles in a variety of sizes and materials. Product can be collected, transported, and mixed in a single receptacle, minimizing light ends and basic sediment and water content.

True Cut™ M20-3 Laboratory Mixing System

Crude oil samples separate during transport from the field to the laboratory and must be reblended to provide a representative sample for analysis. The M20-3 Mixing System is designed to thoroughly mix crude oil or other low-vapor fluid samples from a portable receptacle.

The M20-3 Mixing System consists of an explosion-proof motor, gear pump, and inline static mixer, mounted inside a 24-in. x 24-in. carbon steel drain table. The drain table has a baked-on epoxy finish for exceptional durability and corrosion resistance. Flexible suction and discharge hoses with quick-disconnect couplings allow for quick and easy connections to portable receptacles.

The M20-3 Mixing System is ideal for use with True Cut portable receptacles, and is easily adapted for use with other industrial portable receptacles.

Specifications

Explosion-Proof Motor

- 0.5 hp (other hp available)
- 115/230 VAC (other voltages available)
- 7.4 amps at full load of 115V;
3.9 to 3.7 amps at full load of 230V
- single phase, 60 Hz
- 1725 rpm
- 56 frame size
- rated for 40°C (104°F) at ambient conditions

Static Mixer

- 1/2-in., stainless steel

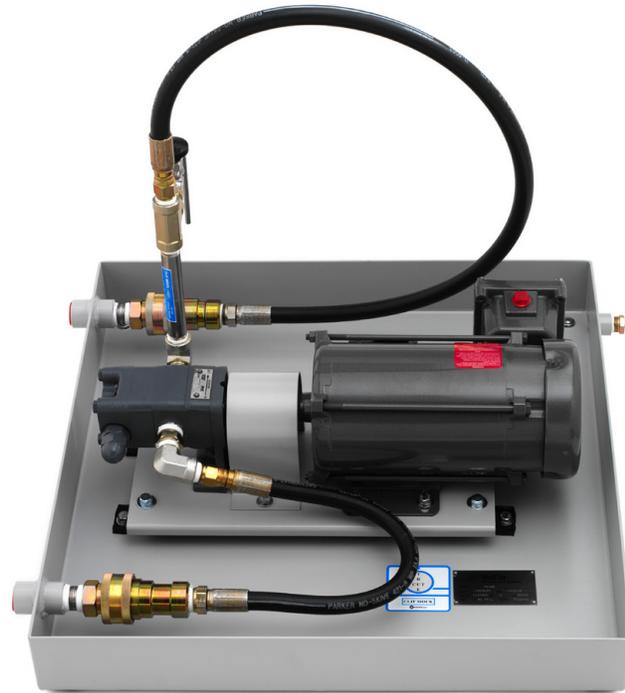
Gear Pump

- 3/4-in. port, standard
- 5 gal/min capacity at 0 psig backpressure
- 100 SUS fluid viscosity
- 1750 gal/min maximum speed
- 350 psi maximum output
(internal pressure relief valve set at 100 psi)
- UL-approved

Sample Draw-Off Valve with Spigot

On/Off Switch for Motor Control

- per customer specification



*M20-3 Mixing System and portable receptacle
custom-packaged in an enclosure*

True Cut™ CMC Circulation Systems

True Cut CMC Circulation Systems allow operators to collect, store, and mix crude oil and other low-pressure sampled product in a single receptacle, minimizing the loss of light ends. Designed for use with a True Cut “C” Series Sampler, the circulation systems consist of a stationary sample receptacle, an integrated, skid-mounted gear pump and a motorized circulating and mixing system.

The circulation systems are well suited for supporting LACT units, pipeline sampling, truckloading/discharge, refinery sampling, shiploading/discharge, and production platform sampling.

The CMC systems’ large-capacity receptacles are ideal for long sampling periods.

Two models—the CMC-500 and the CMC-250—offer the operator a selection of receptacle designs.

The CMC-500 Circulation System offers unmatched durability and performance, featuring a carbon steel receptacle available in 5-, 10-, 20-, 30-, and 40-gallon capacities. It is rated for pressures up to 60 psig.

The CMC-250 Circulation System combines functionality and economy in a 304 stainless steel receptacle available in 5-, 10-, 20-gallon capacities. It is rated for pressures up to 140 psig.

Specifications

The following table lists standard and optional features for the CMC-500 and CMC-250 circulation systems. An “X” indicates a standard feature.

Feature	CMC-500	CMC-250
High level shutoff	X	X
Sightglass for monitoring fluid levels	X	Option
Full-opening cam-lock lid for easy cleaning	X	
Reverse bevel closure for a tight seal	X	
Inline static mixer	X	X
Level gauge	X	X
Pressure gauge	X	X
Relief valve	X	X
Sample draw-off valve with spigot	X	X
ASME code	Option	X
316 stainless receptacle	Option	
Severe duty	Option	Option
Multiple tank units	Option	Option
Armored sight glass	Option	Option
Heat tracing	Option	Option
Special coatings	Option	Option
Special paint	Option	Option

Every detail for achieving overall sampling accuracy has been addressed in the design of these systems, in accordance with API Chapter 8, Section 2, ISO 3171, ASTM and IP6.2 standards.

A 3/4-in. stainless steel inline static mixer in the circulating piping assures uniform water droplet size in the mixing process. An internal spray bar washes the wall of the tank and circulates sediment from the bottom, and the smooth surface of the receptacle’s interior and all piping helps eliminate water and sediment traps. Standard tubing is 3/4-in. pipe with carbon steel fittings; 316 stainless tubing is optional.

Custom enclosures designed to meet all certification requirements (including heat tracing) are also available.



CMC-500 Circulation System with carbon steel receptacle; (CMC-250 with stainless steel receptacle also available)

Explosion-Proof Motor

- 0.5 hp (other hp available)
- 115/230 VAC (other voltages available)
- single phase, 60 Hz
- 7.4 amps at full load of 115V; 3.9 to 3.7 amps at full load of 230V
- 1725 rpm
- 56 frame size
- rated for 40°C (104°F) at ambient conditions

Gear Pump

- 3/4-in. port, standard
- 5 gal/min capacity at 0 psig backpressure
- 100 SUS fluid viscosity
- 1750 gal/min maximum speed
- 350 psi maximum output (internal pressure relief valve set at 100 psi)
- UL-approved

True Cut™ Portable Sample Receptacles

True Cut Portable Sample Receptacles are designed to meet or exceed all API, ISO and ASTM industry standards. The receptacles help ensure proper handling of crude oil and other petroleum products. Samples are collected, transported, and mixed in one receptacle, helping to eliminate the loss of light ends and minimize basic sediment and water content.

This receptacle also features a mechanical shut-off that stops flow into the tank when the fluid level approaches full capacity. Other designs offer only an alarm.

The all-stainless-steel receptacles provide years of dependable service.



Specifications

- available in 5-gallon, 2-gallon, and 1-gallon sizes
- 304 A.S.M.E. stainless steel receptacle rated for 140-psi pressure (316 stainless steel is available on request)
- easy-open, leak-proof inspection lid
- 1/2-in. female and male quick-disconnect coupling for connection to the sample inlet
- two 3/4-in. male quick-disconnect couplings for connection to a mixing system
- 316 stainless steel relief valve (5-psi standard; other pressure ratings available upon request)
- 316 stainless steel vacuum valve (1-psi standard)
- mechanical high-level shutoff
- level gauge
- internal stainless steel mixing tube
- containers available in various materials

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MEASUREMENT SYSTEMS

Formerly: NuFlo Measurement Systems • Barton Instrument Systems • Caldon, Inc.

HOUSTON
HEAD OFFICE | 281.582.9500

NORTH
AMERICA | 1.800.654.3760
ms-us@c-a-m.com

ASIA
PACIFIC | 603.2287.1039
ms-asiapacific@c-a-m.com

EUROPE,
MIDDLE EAST
& AFRICA | 44.1243.826741
ms-uk@c-a-m.com

USA • CANADA • UK • SCOTLAND • CHINA • UAE • ALGERIA • MALAYSIA • SINGAPORE • www.c-a-m.com/flo