

JISKOOT Laboratory Workstation LabPC and Mixer

Introduction

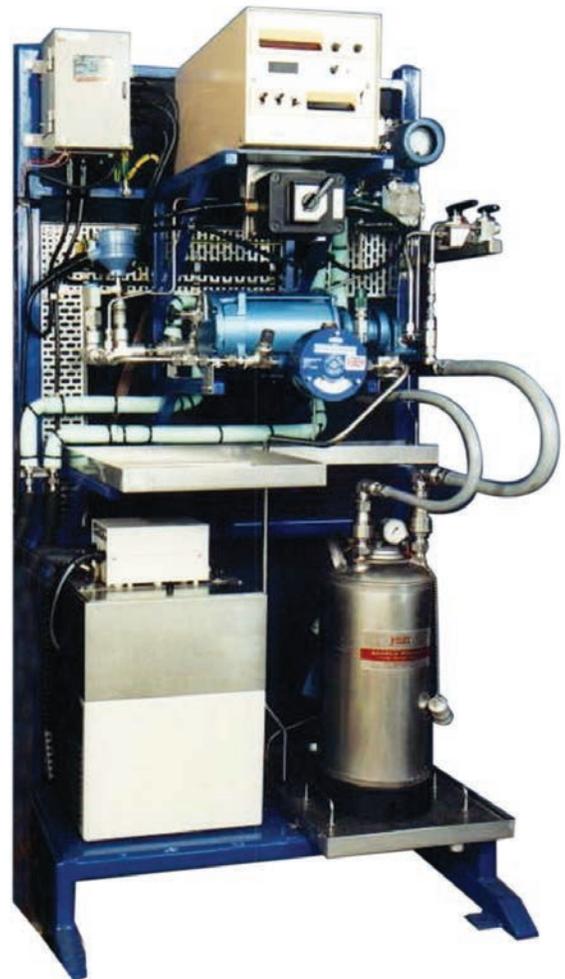
International sampling standards ISO 3171, API 8.2, and IP 6.2 specify four steps that must be undertaken to assure fiscal quality sampling accuracy. Two of these key steps involve the collected sample in a receiver and are performed in the laboratory: sample handling and mixing and laboratory analysis. The laboratory workstation comprising Cameron's JISKOOT™ laboratory mixer and LabPC is designed to standardize and record the sample handling and mixing process through the withdrawal of samples from the receivers for analysis. Use of this equipment provides quality-assured accountability that is beyond dispute.

MS53 Laboratory Mixer

The mixer is designed to process samples in JISKOOT model PR23 and PR53 receivers but is also compatible with other designs. The role of the mixer is to mix the sample in the receiver prior to laboratory analysis; the period of time that lapses between the sample being collected into the receiver and the analysis of that sample can result in the heavier components separating. Therefore to ensure the sample withdrawn from the receiver is representative, the contents must be thoroughly mixed. The MS53 provides an electrically or pneumatically driven pumped loop to perform this vital function.

LabPC

The LabPC is a Windows®-based workstation that provides a database of mixing information and integrates both manual and instrument inputs to permit the generation of mixing cycle reports. These reports are stored locally and can be uploaded through a data link to a plant-wide movement system to allow integration to bills of loading and receipt. Further management information can be derived as the LabPC logs times against the sample receipt and storage, and the uploading of reports. The LabPC can be enhanced with a barcode printer and reader, so that receiver labels can be issued for duty and on return, can immediately be tied into the operation. This eliminates the requirement for manual logging of samples.

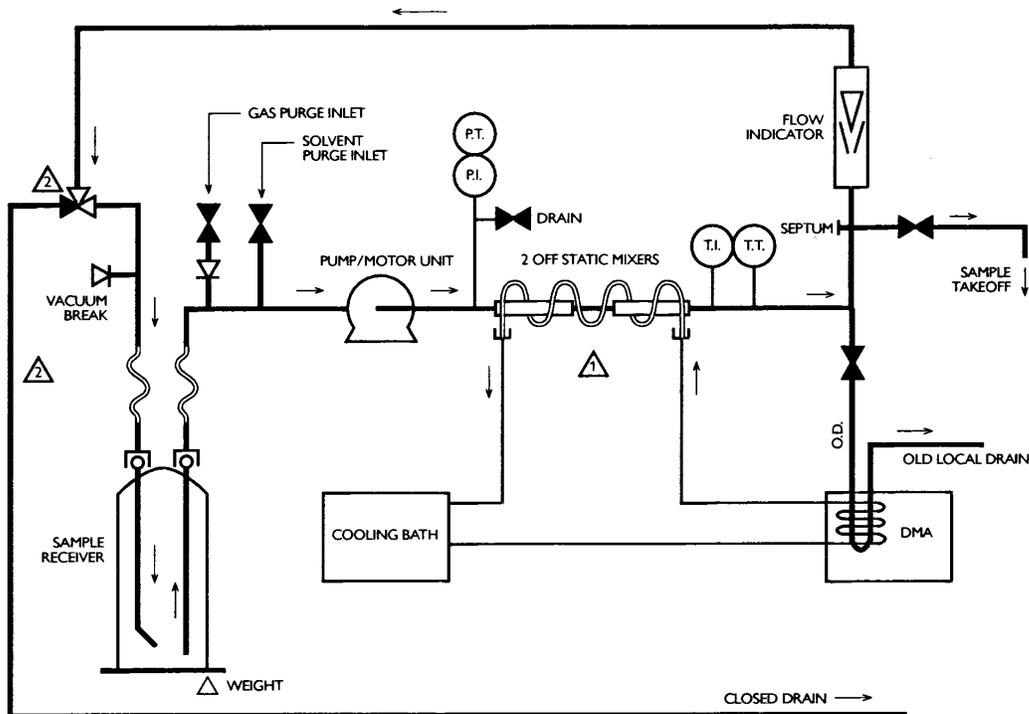


Description of Operation

Mixing times for samples are determined by both crude type and sample volume. The time to mix 5 liters of a low-viscosity crude is substantially different from the time for 15 liters of a high-viscosity crude; it is necessary to mix the sample for the minimum time required for homogenization. Too short of a time, and the water content will be undermeasured; too long, and the temperature will rise and light ends will be lost, resulting in higher density readings.

Mixing times are established historically so that they may be interpolated for new samples. Sample mixing proving tests may also be recorded.

The sequence of operation is as follows: the receiver containing a sample is brought to the laboratory, the crude type and the batch or tank identifier are keyed in, and the



receiver is placed on the mixer. The unit weighs the receiver and the sample weight is recorded. The LabPC uses the sample weight and crude type to suggest a suitable mixing time.

The operator starts the motor on the mixer and the cycle commences. The LabPC records the starting time and, after a short settling period, records the mixer temperature and pressure, which are logged through the cycle.

After the suggested mixing time has elapsed, the PC will beep continuously and flash a lamp mounted on the skid to indicate that water, density, and other required samples should be withdrawn via a septum or through a valve should larger volumes be required. A density sample is directly piped to a densitometer where the sample is cooled and measured. When all the samples have been withdrawn, the operator performs a purging and flushing cycle (using solvent and inert gas), stops the pump, and allows the mixer to drain.

The density is read directly by the LabPC; if available, the Karl Fisher titration result may also be directly input. Temperature and pressure are directly logged throughout the cycle to verify that the sample was mixed correctly and not overheated.

Sample Receiver Cleaning

After the mixing cycle, the cans must be fully cleaned and dried. This can be performed using a solvent- or water-based cleaning system available from JISKOOT. First, any residue is drained from the receiver. It is then inverted and coupled to the cleaner, which is ducted to ensure that hazardous vapors are not released. The cleaner goes through a three-stage cycle – in the first stage a solvent or detergent-water mix is recycled; in the second stage the receiver is flushed; and finally it is air dried.

LOCATIONS

North and South America

14450 JFK Blvd.
Houston, TX 77032
USA
Tel 1 281 582 9500
ms-us@c-a-m.com

Europe, Africa, Caspian, and Russia

JISKOOT Technology Centre
Longfield Road
Tunbridge Wells
Kent, TN2 3EY
United Kingdom
Tel 44 1892 518000
ms-jiskootuksales@c-a-m.com

Asia Pacific

Suite 16.02 Menara AmFirst
No. 1 Jalan 19/3
46300 Petaling Jaya
Selangor Darul Ehsan
Malaysia
Tel 603 7954 0145
ms-kl@c-a-m.com

Middle East

Level 9, Al Jazira Club Tower A
PO Box 47280, Muroor Road
Abu Dhabi
United Arab Emirates
Tel 971 2 596 8400
ms-uk@c-a-m.com