

Worldwide on your side



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Miven Mayfran

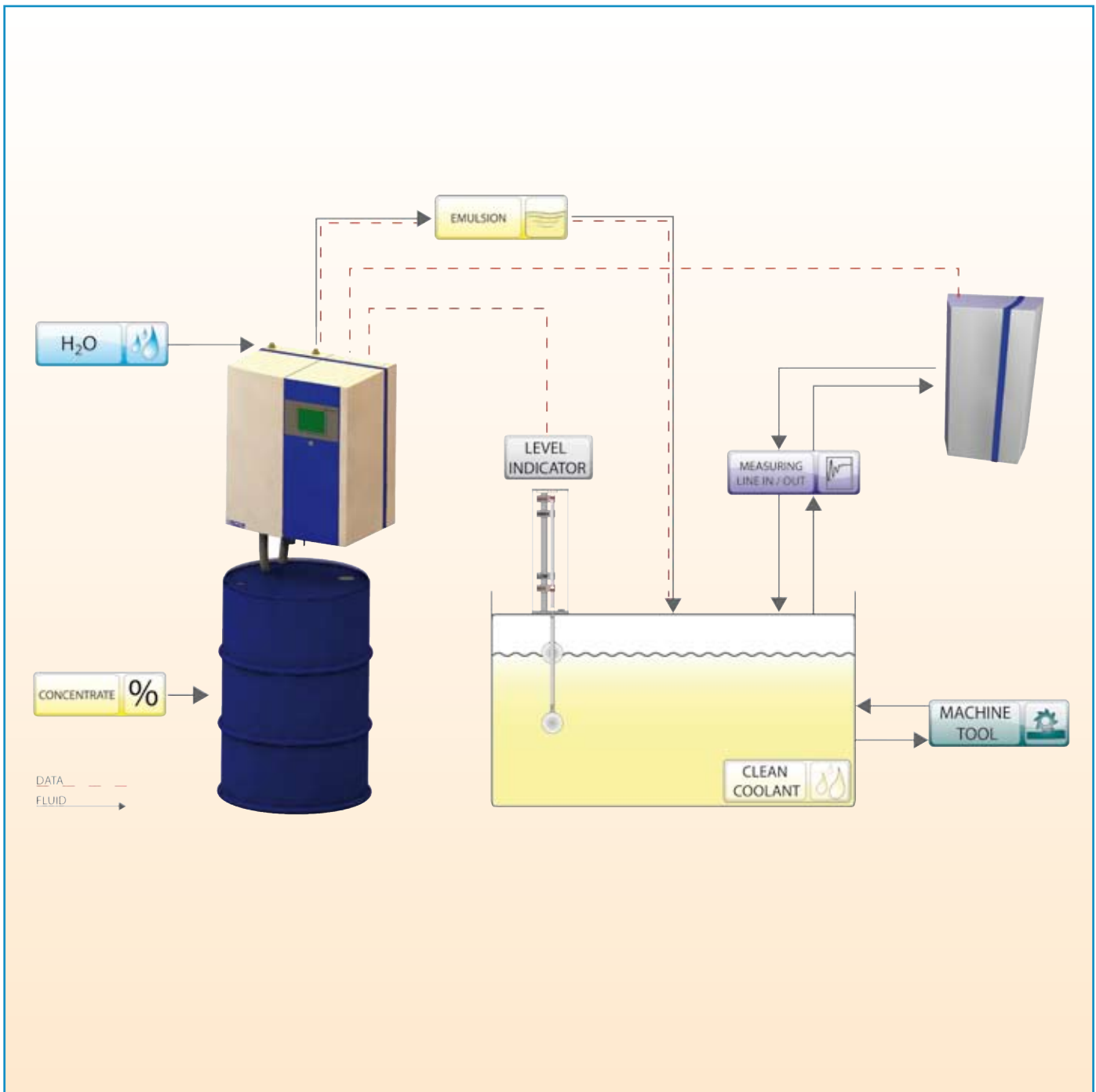
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Mayfran RefillMatic® System

Automatic control of volume and conditions

of water-soluble cooling lubricants



Mayfran RefillMatic® System

The Mayfran RefillMatic® System

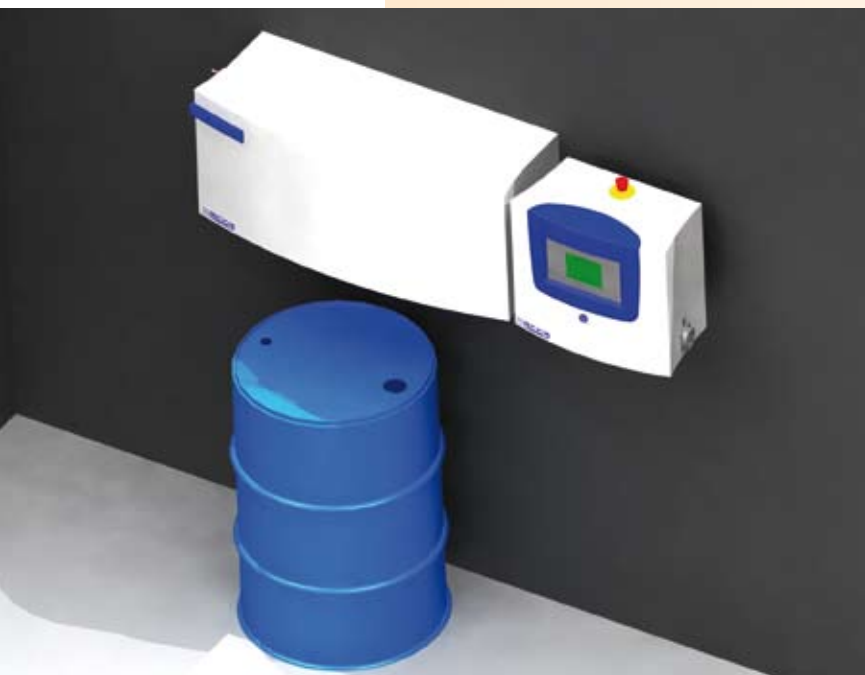
is a modular expandable system for refilling, monitoring and controlling the quality of water-soluble cooling lubricants in metal removal machines.

The Mayfran RefillMatic®, System can be adapted to suite various process conditions in machining facilities.

Because of its sophisticated technology the Refill Control Center (RCC) is able to refill fully automatically a coolant tank. For each refill cycle the integrated mix and dosing system mixes homogenously fresh emulsion to refill the coolant tank.



Adjust the right concentration value only by entering the value on the color touch screen of the controller.



The level control unit, that is to be installed on the coolant tank, is able to start the refill process as soon as a little loss of coolant is detected.

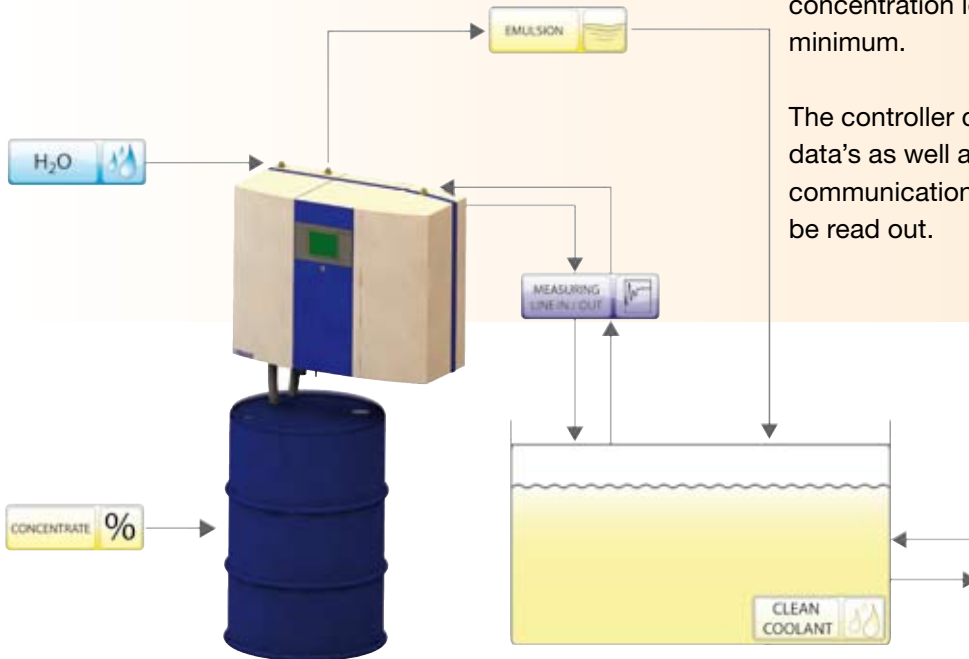
Thus the coolant level is kept constant and the quality of the emulsion is stable during long-term utilization time.

The measuring cell unit contains different measuring sensors and monitors the physical properties of the coolant.



The combination of the modules RCC, MCU and LCU enables a self-regulating fully automated refill process. Fluctuations in volume and concentration level can be reduced to a minimum.

The controller collects and stores consumption data's as well as the measuring data's. Via communication interface the data's easily can be read out.



Suitable to various process conditions in machining facilities:

- Stand alone machining centers
- Cell type configuration
- Centralized systems

Four modules to build your system

- **Modul 1: RCC**
Controls your refill-process and gives information about the fluid consumption
- **Modul 2: LCU – Level Control Unit**
Failsafes the filling level control of your coolant tank
- **Modul 3: MCU – Measuring Cell Unit**
Analyses your water-soluble lubricants
- **Modul 4: Mobile SysAnalyser**
records the measuring data's and prepares them for analyzing

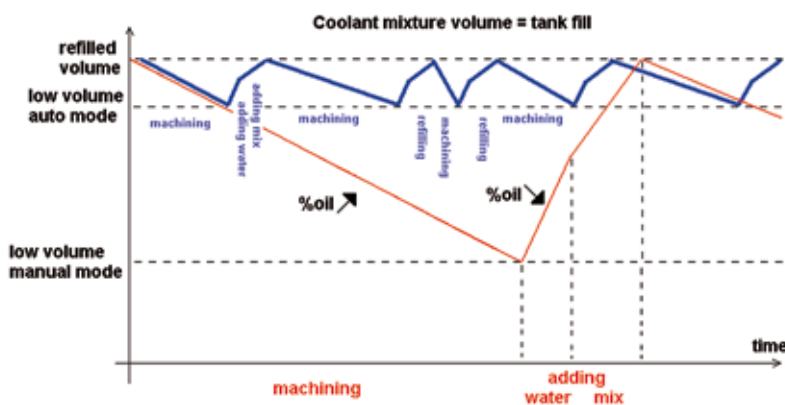
The Mayfran RefillMatic[®], is developed to make the most of your cooling lubricant, which improves the lifetime of your tools, assures the accuracy of your work piece and reduces consumption costs to a minimum.

Automatic mixing dosing system for multiple coolant tanks

System Main Features:

- Individual programmable refilling of up to 12 separate coolant tanks
- Mayfran duplex mix and dosing unit: Concentrate / water mixing ratio between 0.5% and 16% continuously available
- Integrated HPC 2 touch screen controller with consumption data logging of fluid usage
- Simple mounting both on a coolant tank and on a hub to feed several coolant tanks
- Applicable to connect up to 12 Mayfran MCU - Measuring Cell Units

Concentration fluctuation in coolant tanks occurs, if different amounts of water and oil are carried out during the machining process. These fluctuations affect the quality characteristics of the coolant. By keeping the variations as small as possible the emulsion is strongly influenced and stabilized on long-term

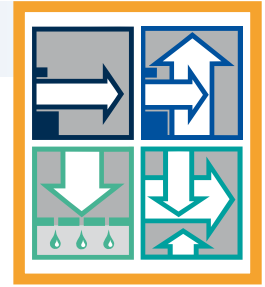


RCC 12 Module reduces the variation of properties in time through automated refilling to a pre-defined set-value

The RCC is able to reduce level fluctuation in coolant tanks down to 10%.

** depending on tank construction*

Modul 2: LCU – Level Control Unit



The re-fill control system requires a dry contact for low and high coolant levels (start/stop refilling).

These contacts may be re-used from the already available coolant system tank level sensors.

It is advised to install a third independently operating level sensor to detect max. coolant level in order to assure fail-safe operation.

Mayfran advises the Mayfran Level Control Unit Module.

Two alternatives are applicable:

Level Control Modul Typ LCU 1

Third party start-stop level control unit for already existing level detectors:

- Overflow detection
- Mayfran auto-fill manifold
- Mayfran communication module to the RCC unit

Level Control Modul Typ LCU 2

Third party start-stop level control unit (if no level control available):

- Mayfran Level Regulation Type LCD incl. Start/Stop filling Visual display of coolant level
- Overflow detection
- Mayfran auto-fill manifold
- Mayfran communication module to the RCC unit

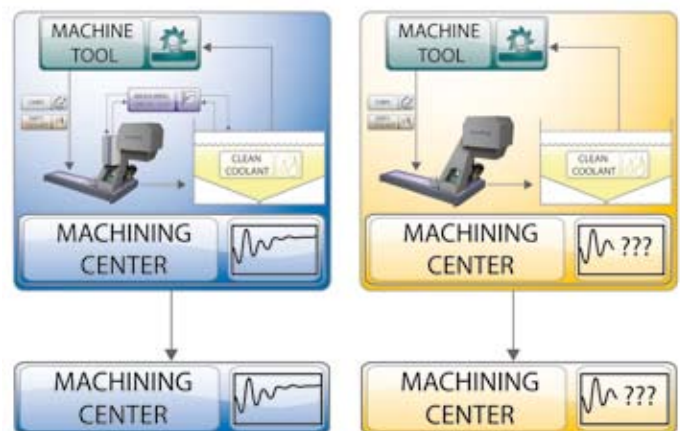


Figure 6: Example of coolant management on several machines in FMS setup

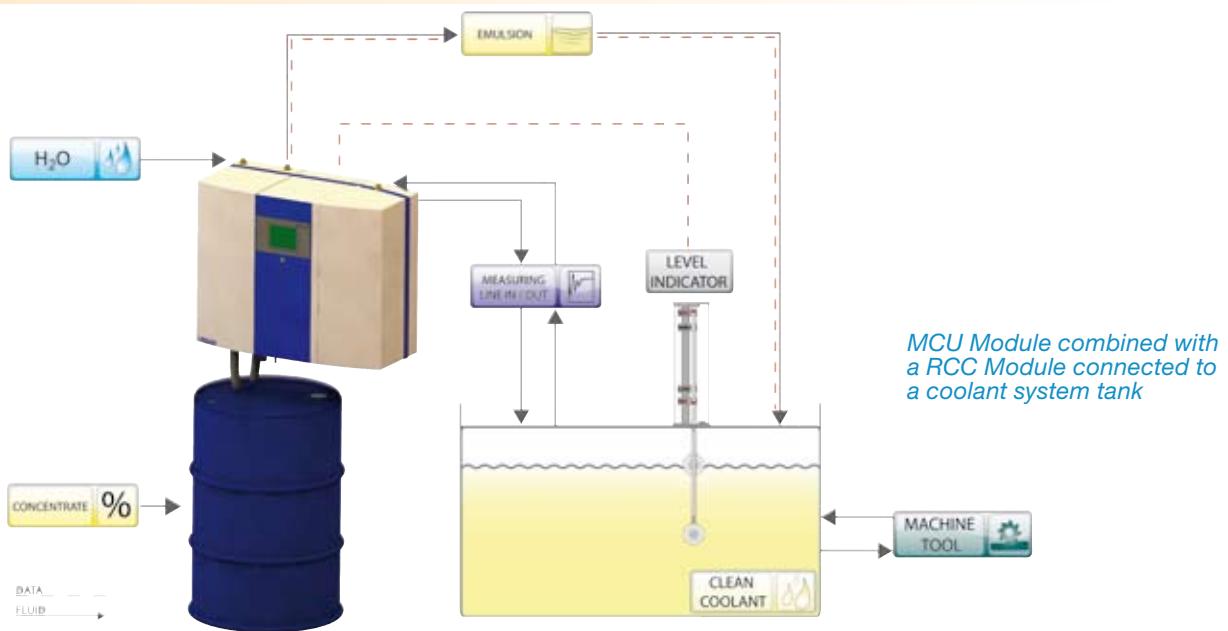
Modul 3: MCU – Measuring Cell Unit

Module 3: MCU – Measuring Cell Unit

The monitoring and control device to upgrade the Mayfran RCC – Refill Control Center to a fully developed Mayfran RefillMatic®

System Main Features:

- Use of resistant measuring instruments to guarantee a long life time and little calibration effort
- RCC – MCU communication wiring by Mod-Bus System
- Simple connection to the coolant clean tank to feed the measuring instruments
- Data export per Internet/Ethernet or modem (RS485 Port) possible



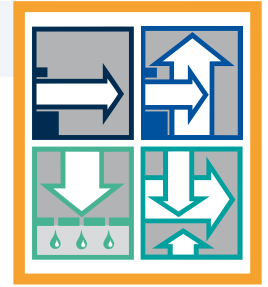
Analyzing Parameter Options:

- Concentration measurement: Measurement of the oil concentration in coolant through “in-line”-refractometer
- pH-measurement using ISFET - technology
- Conductivity measurement
- Temperature measurement

The MCU - Measuring Cell Unit allows an active process control:

- Continuous measuring and selectable storage interval of various parameters
- Alarm in case of leaving the requested parameter bandwidth
- RCC-MCU communication permits an automatically calculated refill concentration to enable a regulated refilling of the coolant tank

Modul 4: Mobile SysAnalyser



In combination with the MCU a mobile coolant analyser

In order to check the current state condition of various coolant systems in a factory, the SysAnalyser unit can be used to monitor and register coolant parameter fluctuations in time.

The SysAnalyser unit logs the measuring data's and displays them in the form of graphics. Additionally the controller processes all data's to be read out by USB-Interface. Data analysing and Interpretation can be done easily.



The SysAnalyser unit may be used to quantify investment payback time and supply process data to give insight in potential savings using the RefillMatic® technology.