

FM-FWE FUEL WATER EMULSION SYSTEM



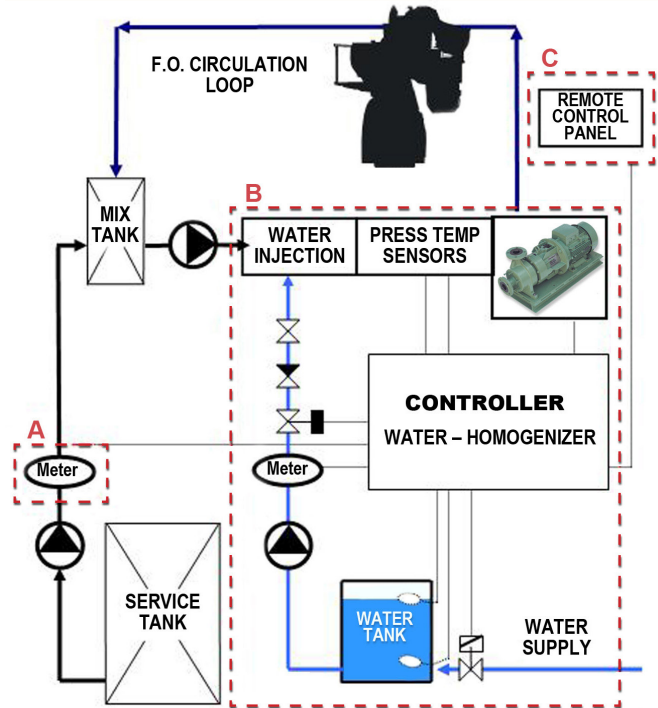
DESCRIPTION

The Fuel Mill FM-FWE Fuel Water Emulsion System combines the cooling effects of water injected into fuel oil and homogenized to create an emulsion of water-in-oil or FWE (fuel water emulsion). The combustion of this stable FWE is proven to be capable of reducing NOx emissions by 1% for every 1% of water injected into the fuel.

In addition to being a proven wet NOx reduction method, FWE also improves combustion and reduces exhaust deposits and smoke from diesel engines and boilers. Installed in the fuel oil circulation loop, the Fuel Mill FM-FWE Fuel Water Emulsion System continuously maintains the FWE and shears residual fuel oil asphaltenes to achieve optimal combustion improvement.

The Fuel Mill FM-FWE Fuel Water Emulsion System is applicable for both 2-stroke and 4-stroke engines and main boilers to reduce NOx, exhaust deposits and smoke through improved combustion. The FWE introduces a secondary atomization from the flashing of microscopic water droplets after injection to create finely atomized fuel particles significantly increasing overall surface area. These smaller fuel particles immediately oxidize and burn to achieve shorter and more complete combustion with a more uniform temperature, thereby preventing the formation of NOx, exhaust deposits and smoke.

By incorporating the Fuel Mill FM Homogenizer as the driver to create the FWE, standard installation of the Fuel Mill FM-FWE Fuel Water Emulsion System is recommended in the fuel oil circulation loop.



FEATURES

- Cost-effective wet NOx reduction method using FWE
- Adjustable water injection range 1-15% (1-30%, optional)
- Low specific water consumption compared to other wet NOx reduction methods
- Variable water injection vs. engine load
- Modular and compact design
- Fuel Mill FM homogenizer creates FWE using shear forces
- Advanced hydraulically balanced design
- LCD touch screen control panel with graphical interface
- Built-in safety system stops water injection when faults are detected

BENEFITS

- Reduced NOx emissions
- Reduced exhaust deposits and smoke emissions
- Clearer overall stack emissions
- No significant engine design changes required
- Customizable engine performance with precise water injection control
- Suitable for retrofit
- Reduced fuel consumption through improved combustion
- Handles cheaper high viscosity fuel oil grades (e.g., RMK700)
- Easy to use interface
- Reliable wet NOx reduction system



Contact your Drew Marine representative for more information

STANDARD CONFIGURATION

The standard configuration is comprised of three main modules:

- A Fuel Oil Meter**
Quantifies total amount of fuel supplied to calculate amount of water needed for injection
- B Fuel Mill FM-FWE Emulsion Unit**
Controls and injects the correct amount of water prior to Fuel Mill FM homogenizer inlet and creates a stable fuel water emulsion
- C Remote Control Panel**
Graphical interface

SPECIFICATION

Water injection volume	0 – 30%v/v
Water injection pressure, max.	12 bar
Water injection rate	60 – 2000 l/hr
FO viscosity, min. / max.	1.4 mm ² /s @40°C 700 mm ² /s @50°C
FO temperature, max. operating	160°C
FO oil flow rate (circulation loop), max.	36 m ³ /hr
FO consumption with 15%v/v water injection	5600 l/hr
FO consumption with 10%v/v water injection	9000 l/hr
Pressure rating	16 bar
Voltage/ Frequency	400/440V/50/60Hz
Power consumption	15 kW
Protection class	IP 55
Insulation class	F
Dimensions/Weight	
A Fuel Oil Meter	300x250x250/25kg
B Fuel Mill FM-FWE Emulsion Unit	1400x1750x800/550kg
C Remote Control Panel	500x290x150/15kg



Contact your Drew Marine representative for more information

Drew Marine maintains Safety Data Sheets on all of its products. These documents contain health and safety information for the development of appropriate product handling procedures to protect your employees. Safety Data Sheets should be read and understood by all of your supervisory personnel and employees before using Drew Marine products.



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