



ENVIRONMENTAL SOLUTIONS

IPCO Power is an international company specialized in environmental solutions for the petrochemical-, shipping- and power industry. IPCO Power started its activities in 1997. The main activities of IPCO Power are Fuel Improvement and Vapour Recovery.

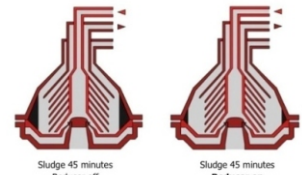
At the moment the shipping industry is facing several challenges. Most of them are related to fuel and emissions. The fuel quality is not improving. Based on emission legislation fuel blends are becoming common. As most of the new compliant fuels are a blend of HFO and various percentages of 'cutter stock' it is difficult to know what the exact blend ratio or composition is, which can lead to instability (stratification, excessive sludge) and incompatibility issues. The ISO fuel specifications do not regulate this.

Homogenizers using fluid shearing technology will reduce the fuel into a homogenous mixture, with a fuel droplet size of <3 microns. The small droplet size will promote a far more complete combustion process, improve compatibility, reduce sludge formation. Better and more complete combustion also results in reduced emissions, improve fuel economy, extend engine overhaul intervals and lower overall operating costs.



SLUDGE REDUCTION

IPCO Power's FID Reducer is installed directly before the centrifuge. As a result of the reduction in fuel droplet size, centrifuges and filters will be able to more effectively remove in-organic contaminants and stay clean much longer. Consequently, sludge generation will be reduced, and centrifuge flushing intervals will be significantly extended. The efficiency depends on the size of the Asphaltenes. The larger the size of the asphaltenes, the more efficiency is reached. Approximately 10% of the asphaltenes is transformed to usable fuel.

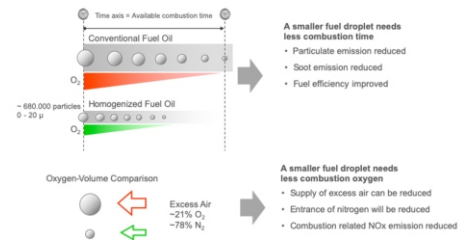


COMBUSTION IMPROVEMENT

The fuel homogenizer reduces fuel droplet size to 3 micron and smaller. Smaller fuel droplets enhance combustion, lower emissions and improve fuel economy.

A better combustion is a cleaner combustion (less PM and soot emissions). Ships with scrubber systems will have cleaner wash water.

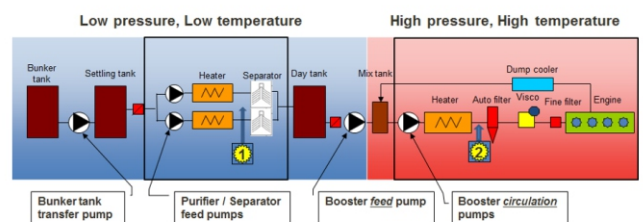
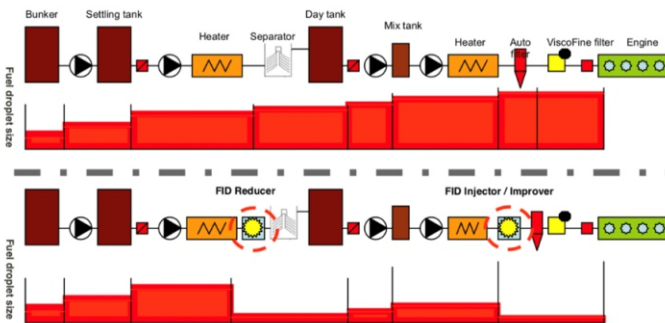
2 stroke engines will have a 2,4% and 4 stroke engines a 1,2% fuel saving.



APPLICATIONS

To effectively improve the fuel quality, lower centrifuge maintenance, sludge production & disposal, enhance combustion, reduce undesirable emissions & soot, while lowering fuel consumption in engine and turbine installations, we recommend installing a combination of an FID Reducer and an FID Improver.

The FID Reducer will reduce the droplet size in the fuel system just before the separator and will assure that all useful fuel will pass the separator. Because of the heaters and pumps further in the system the fuel passes through piping towards the engine will normally re-agglomerates. To reverse this effect immediately before the engine an FID Improver is recommend. The FID Improver will reduce the droplet size again to a 3 micron for an improved combustion.



1 = FID Reducer 2 = FID Improver

The two-step fuel quality optimization process is environmentally supportive and will lower overall operating cost.

Water Fuel Emulsion

IPCO Power's FID Injector is a combustion improvement system designed to create a stable "water in fuel" emulsion. The use of the IPCO Power WFE system (FID Injector) will result in more effective combustion, lower fuel consumption and a reduction of NOx, Soot and PM pollutants, while the engine's combustion chambers, pistons, exhaust system and lube oil will stay much cleaner.

