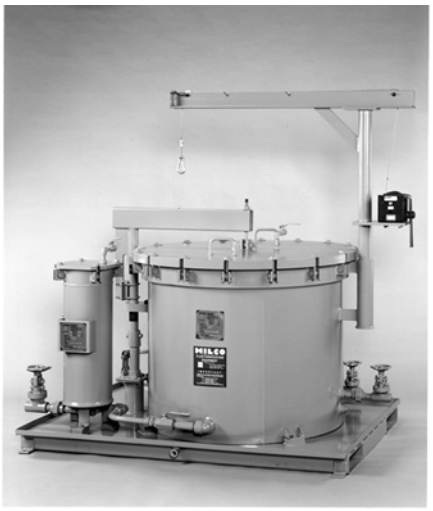
Conditioning of Synthetic Lube Oils

Acid Reduction of Synthetic Lubrication Fluids

Phosphate ester synthetic lubricants are gaining popularity among rotating equipment manufacturers and their customers. These lubricants have a distinct advantage over mineral oils in that they have better fire resistance and high-temperature stability. These traits make them safer. Accordingly, the use of the lubricants in place of mineral-based oils can substantially reduce insurance costs.

While the phosphate ester synthetic fluids are in many ways superior to mineral oils, they are not without their drawbacks. These lubricants hydrolyze and form acids. An increase in the acid number (also called Total Acid Number, or TAN) of the lubricant will result if it is not monitored carefully and treated. Lubricants with a high TAN (over 1.0) can damage pumps and bearings.



This system is designed to house six 11x19 ion exchange cartridges for a total of about six cubic feet of media. The post-filter (second stage) contains a HILCO PH718-12-CN cartridge for particulate removal.

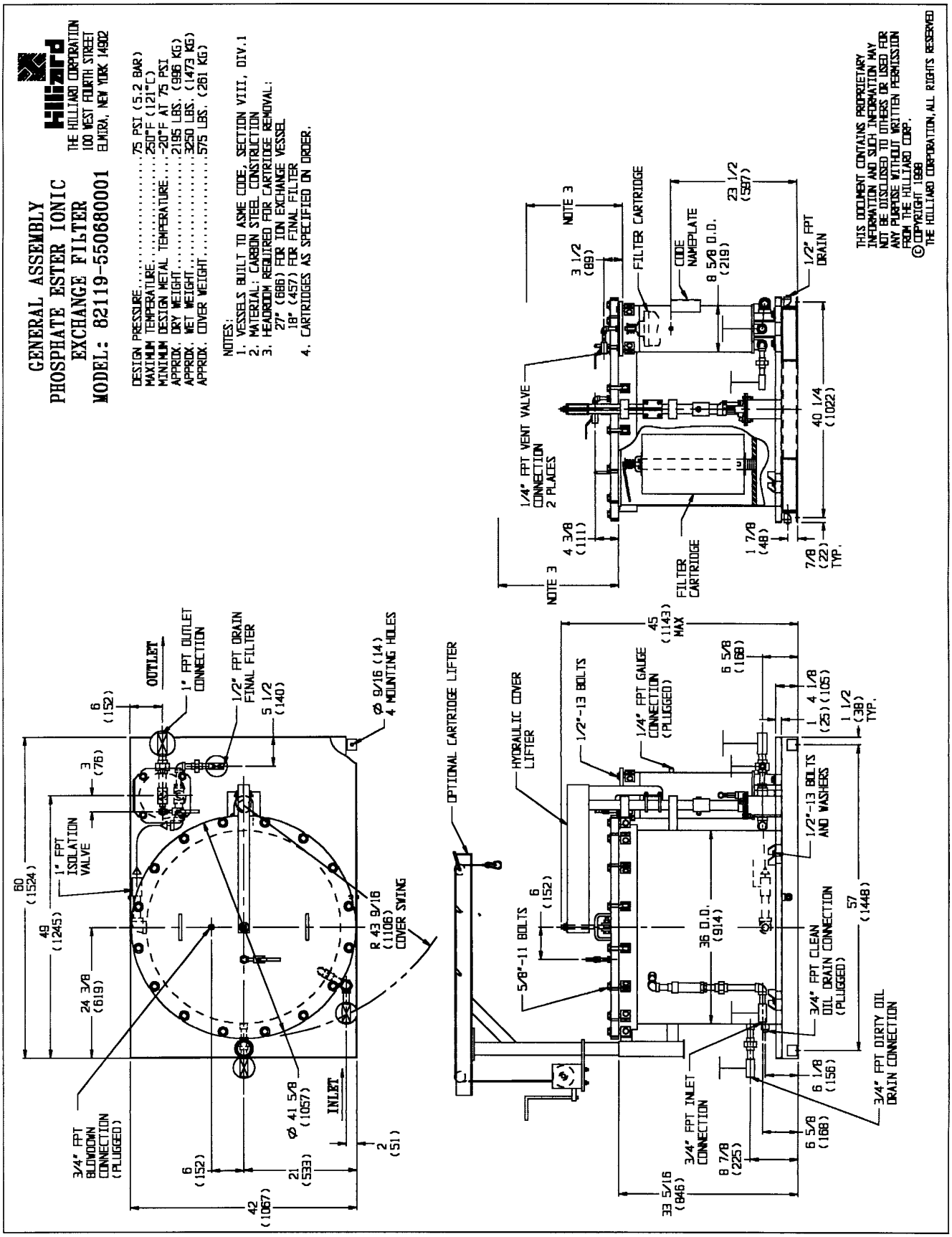
Because fire-resistant phosphate ester lubricants have been used for many years for lube, hydraulic, and EHC systems, there has been an evolution of products used to control the acid number. Historically, fuller's earth (Hilite) and activated alumina (Hilite-A) have been and continue to be specified to neutralize the acid. The latest developments include the use of Selexsorb media for conditioning Akzo's Fyrquel phosphate ester fluids. Also, ion exchange technology is being used for fluids with additives. The advantages of ion exchange are that it has a relatively long life, contributes no mineral salts to the system, and does not remove additives (see HLE-1).

Treatment of large lube oil reservoirs requires a system big enough to house large quantities of media. In some cases, fluid manufacturers recommend up to 1% by weight of media to treat the reservoir. A 2500-gallon reservoir, for instance, will need about 170 pounds of media to maintain the acid number. The system requires six or seven 11 x 19 cartridges (about 40 pounds of media per cartridge) to condition and maintain the fluid.

HILCO has been manufacturing systems for synthetic fluids for several decades. No matter which type of cartridge you decide to use or how large the system, HILCO has the experience to design to the application.

Typical Features

- Hydraulic cover lifter
- Drip-pan base with channels for easy movement by fork truck
- Epoxy paint system compatible with phosphate ester fluids
- Flow meter
- Optional cartridge hoist



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