EMD MAINTENANCE INSTRUCTION

IMPINGEMENT TYPE AIR FILTERS

DESCRIPTION

The diesel engine requires a large volume of air during operation for purposes of cylinder scavenging and combustion. This air should be as clean as possible to prevent excessive wear of such vital engine components as the pistons, piston rings and cylinder liners.

An efficient and widely used method of cleaning the air is by means of impingement type filters. Such filters are generally placed in an adapter, as shown in Fig. 1, which is mounted directly on the engine blowers. All air entering the blower to be forced into the engine must first pass through the filter where the harmful air-borne contaminants are removed.

Impingement type filters similar to those used for the diesel engine are often installed in the engine housing or carbody of certain products. Additional benefits are thus derived by filtering the air before it enters the engineroom and then again upon entering the engine. Carbody filters are covered in the Parts Catalog Lists bearing the 2500 series numbers.

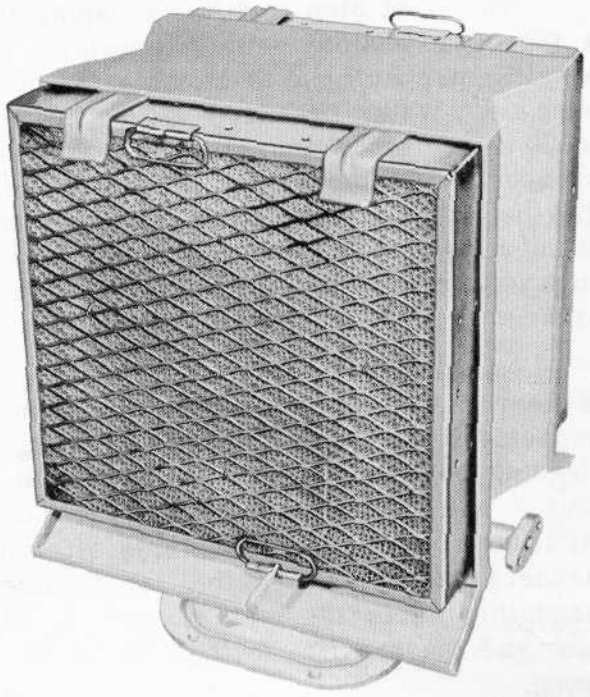

Fig. 1 - Impingement Type Air Filter

OPERATION

Impingement type filters are constructed of specially formed wire mesh that is enclosed within a steel frame and protected by a coarse screen. Air being drawn through the filter impinges on the wire mesh which causes it to change direction many times. In order to remove and hold air-borne contaminants such as dust, dirt and sand, the wire mesh is coated with a tacky adhesive substance.

In operation, as air flows through the filter, the air-borne contaminants are caused to impinge upon the coated surfaces of the wire mesh. These surfaces hold the dust and dirt particles, and permit the cleaned air to pass through the filter.

MAINTENANCE

The air cleaning effectiveness of impingement type filters is entirely dependent upon their ability to hold contaminants on the coated wire mesh surfaces. As these surfaces become "loaded" with dust and dirt, the cleaning efficiency is reduced to a point where ultimately, the dirt laden air will be permitted to pass through the filter.

To retain high filter efficiency it is thus apparent that they will have to be removed, cleaned and recoated at intervals frequent enough to prevent them from