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DESIGN AND DEVELOPMENT OF HYDRAULIC HOSE CLEANING MACHINE

Abstract

It is inevitable that the oil in a hydraulic system will contain contamination in particle form. The sources and types of oil-borne contaminants are well known. Commonly contamination will include particles of silica's, metals flakes, elastomers and fibers of hydraulic hose material. Sizes and concentration of particulate contaminants are indicated. There is considerable interest among manufacturers and users of hydraulic systems in establishing acceptable limits of contaminations in which particular systems will operate satisfactorily. Such information would be used to specify the degree of filtration required in the system. Specify the contamination sensitivity of the system. Define the contamination tolerance level of the system.

Photographs

Fig. Actual Model

Aims/ Objective

1. To replace the convergent nozzle with divergent nozzle to accommodate varying hose diameters so that no needs to change the setup.
2. To develop the machine or setup with low cost and high efficiency to clean he hydraulic hoses to improve system performance and smoothness.
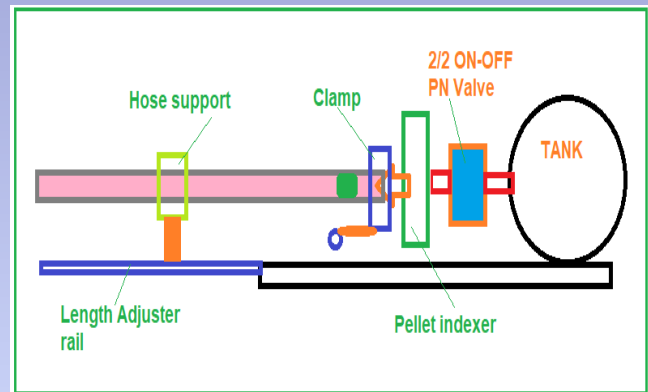
Block Diagram

Fig. Block diagram of hose cleaning system

Conclusion

- Broad variety of projectiles and types and sizes to match application needs.
- Minimal setup, works off shop air (80 to 171 psi).
- Capability: 1/8" to 3/4" ID hose, tube or pipe.

Future Scope

The precise design and development of nozzle and pellet indexer will lead to increase the efficiency of the system. Hence there is a scope to develop the nozzle and pellet indexer with a good research and study. The hose feeding system have a scope to be automated and increase efficiency with low cost. The different types of valves can be added in pneumatic circuit to achieve the required air pressure and flow for smooth cleaning of hose.

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