

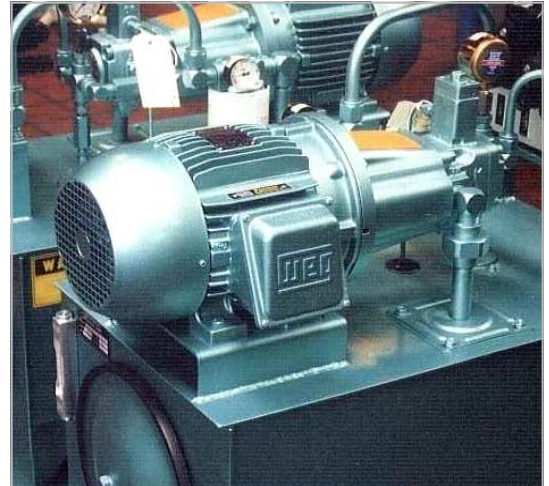
EXPERIENCE WORKS.



TDI is pleased to be able to offer custom built Hydraulic Power Units as a compliment to the equipment and engineering services we currently provide. Early in 2008, TDI joined forces with The Frank T. Donnelly Company, known experts in the hydraulics and fluid power industry. By combining the 30 years of hydraulic-fluid power expertise with our already established in-house design services, full service shop, certified welders and large crane lifting capacity, TDI is fully equipped to design, fabricate and test hydraulic power systems meeting the highest standards in the hydraulics industry.

NFPA (National Fluid Power Association)

NFPA is an organization committed to advancing fluid power technology and strengthening the fluid power industry. NFPA coordinates standardization work in a variety of areas of activity including: accumulators, connectors and conduits, cylinders, contaminants, fluids, hydraulic valves, hydraulic systems, pneumatic valves, pumps and motors.



What is a Hydraulic Power Unit?

A Hydraulic Power Unit (HPU) is basically a self-contained power package consisting of a pump and motor mounted to a reservoir which has been sized to achieve a specific flow and pressure. The hydraulic power unit will provide pressurized flow to hydraulic motors, cylinders and other hydraulic components.

There are many industries that use hydraulic power units in their daily operations. A few examples of those industries would include: Steel Mills, Transportation, Mining, Food & Drug, Agricultural, Waste Water Treatment Plants, Water Municipalities and Offshore Oil Processing. Hydraulic power units are used on everyday applications such as Conveyor Systems, Compactors, Injection Molding Equipment, Die Casting Machinery and Hydraulic Presses to name a few.

A typical hydraulic power unit would consist of an electric motor/pump, tank, relief valve, pressure gauge, return filter and a power unit controller. Optional components such as accumulators, hydraulic motors, temperature controls and motor starters can be added.

TDI's Hydraulics / Fluid Engineer will go through the following steps to determine what type of unit you will need for your application:

1. Determine the system pressure and flow required.
2. Select an appropriate pump size and style.
3. Select an appropriate electric motor horsepower based on pump performance curves and the flow and pressure required.
4. Select the reservoir size and style.
5. Determine the requirement for any additional components.

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Once these sizes are determined, TDI will draw a hydraulic schematic (see Figure 1) to include all items to be mounted on the power unit along with a bill of materials detailing the components. After customer approval, TDI's team of fluid power experts along with certified welders and assemblers, will build the power unit according to NFPA Standards using only quality, recognized brand name components. Every unit is then fully tested prior to packing and preparation for shipment.

When purchasing a hydraulic power unit, or any other equipment for that matter, it is important to select a reputable organization that stands behind its products and services. TDI stands out from their competitors not just in quality and expertise in the fluids power industry, but because of the additional services and skills we have to offer. TDI can offer engineering and design services, packaging and transportation, equipment assembly and refurbishment, CAD capability, quality control and a shop equipped with heavy duty crane services for the handling of large pieces of equipment.

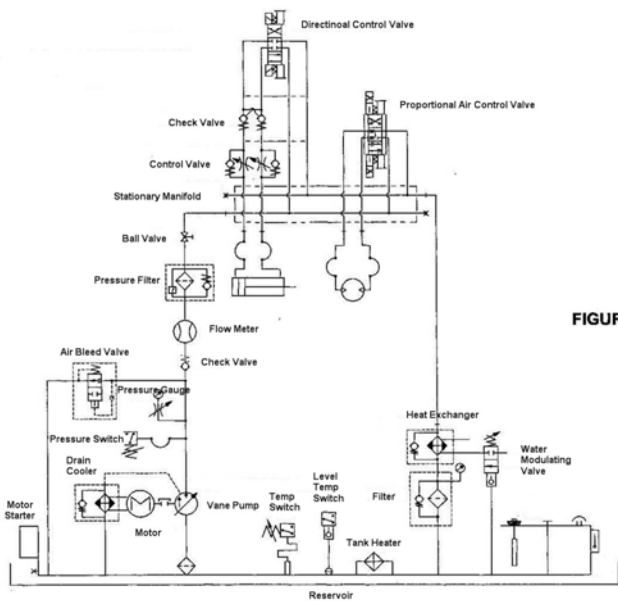


FIGURE 1

Maintenance

TDI understands the importance of regularly scheduled equipment maintenance to keep your operation running and eliminating costly downtime caused by failed machinery. That is why we promote the use of Donaldson Triboguard™ filters in all of the hydraulic power units we supply.



Compleat Protection

Every hydraulic system has suspended particles in its fluid. Contaminants grind and wear at the surface of moving parts, introducing even more particles into the system. **These contaminants cause more than 70% of all hydraulic system downtime.** The new and improved Donaldson® Triboguard™ filters offer you better protection from the particles and contaminants that reduce the effectiveness of lubricant and hydraulic fluid.

Motor Pumps

A power unit can be equipped with either a single motor pump or multiple devices with only one pump operating at a time.

Tanks

A storage unit designed with enough volume for the fluid in the pipes to drain into.

Filters

Typically installed along the top of the tank and self-contained with its own motor, pump and filtering apparatus.

Coolers & Heaters

An air cooler can be installed near or behind the filter to prevent temperatures from rising above operation parameters or a heating system can be used to elevate temperatures when necessary.

Power Unit Controllers

The hydraulic controller unit contains power switches, displays and monitoring features.

TDI uses only quality, recognized name brand components to build a power unit

YUKEN

Damán

ThermaSys CORPORATION

VESCOR®

FORMULAS TO CALCULATE POWER UNIT SIZE

Horsepower to drive a pump:

$$HP = \text{PSI} \times \text{GPM} \div 1714$$

Pump size:

$$\text{Displacement (IN}^3\text{/REV)} \times \text{Motor RPM} \div 231$$

$$\text{GPM} = \text{IN}^3\text{/REV} \times \text{RPM} \div 231$$

Reservoir size:

$$4 \text{ times GPM}$$