

HYDRAULIC CONDITIONING UNIT (HCU)

Wet Kits (or wet line kits) are kits put into trucks or agriculture equipment that have a PTO (Power Take Off). These conditioning and cooling units are used in a variety of applications. They are designed to be quiet, light weight, and compact to meet the demanding needs of today's market. There are many applications that use these coolers including Chemical Transports, Crude Oil Transports, CO2 Delivery Trucks, Food Transports, LP Gas Transports/Bobtails, Maintenance Trucks, Water Trucks, Utility & Agriculture Equipment, Bulk Feed Trucks, and Vacuum Trucks. A PTO receives power from a power source, such as a running engine and transmits it to an application such as an attached implement or perhaps towards separate machines.

Typically, reservoir volume is equal 1-1/2 to 2 times the total pump flow. If you have a 25gpm (gallons per minute) pump, the reservoir size will typically be 38 to 50 gallons. Hydraulic oil weighs 7.3lbs per gallon, a 50-gallon steel reservoir weighs 157lbs dry plus 365lbs of oil can total wet weight is 522lbs. Reservoirs have natural heat radiating capability. In real life, limited mounting areas, exposure to direct sun and poor air circulation result to poor heat dissipation. Exposure to direct sun can actually cause the reservoir to absorb heat causing the oil temperature to rise above a safe working temperature.

Many different accessories are installed on trucks; like booms or cranes, and the wet kits' hydraulic pump is activated by the truck's PTO. As the work is being performed heat begins to generate in the hydraulic system requiring a large reservoir or some type of cooling package. Without adding an auxiliary heat exchanger, the heat in a reservoir system will continually rise with use. A long idle period may be necessary for the oil to cool.

The HCU was designed to fit in very tight spaces conveniently mounted on the frame rail. The narrow profile is designed to condition and cooler for a wide array of applications such as:



Figure 1. AKG's HCU

- Chemicals
- Compressed gasses
- Food grade
- Crude oil
- Vacuum pumps
- Combo drive
- Bulk feed trucks
- Liquid transports

One of the more beneficial advantages of a wet kits is a considerable weight savings on your vehicle, allowing you to haul more product. Not only does this unit cool hydraulic oil, it also stores and filters the oil as well, eliminating the need for huge tanks housing large quantities of oil.

- The HCU unit provides low fouling cooler with non-louvered fin design provides the best heat transfer per given cooler size in the industry.
- New rugged series cooler offer a lower aeration value offering preservation of oil and hydraulic system.
- AKG's HCU rugged series cooler have proprietary R & D designed, engineered and tested internal as well externally.
- Noise reduction automotive approved foam
- Corrosion resistant-Stainless steel / Aluminum construction with premium coating.
- Vibration tested to MIL 810G - PSD standards
- Easy Installation
- 85 d(B)A Sound Level
- Our HCU unit offers competitive pricing and deliveries from stock offered through exclusive distribution network.

The Hydraulic fan motor option can be outfitted with a fixed pressure compensated flow control that automatically cycles the fan "ON" and will spin the fan blade to the required RPM in order to maintain a consistent oil temperature. This option comes pre-set and plumbed from the factory.

The Electric fan motor option has a 12VDC cooling fan, operated with a temperature control switch. This switch gets wired into keyed power. When the key is turned on, the switch will be ready to activate the fan when the oil temperature gets to a specific temperature setting.

When the oil temperature falls below the set temperature the fan will turn off.

The more innovative 12VDC brushed fan drives have much longer life spans. There are two options for fan control:

- A fan controller which has the ability to regulate the fan speed (airflow to cooler) to control the oil temperature; similar to a hydraulic fan control. When the oil temperature is below the desired set point the fan will not operate.
- A temperature switch to cycle on/off the fan, when the oil temperature is below the desired set point the fan will not operate.

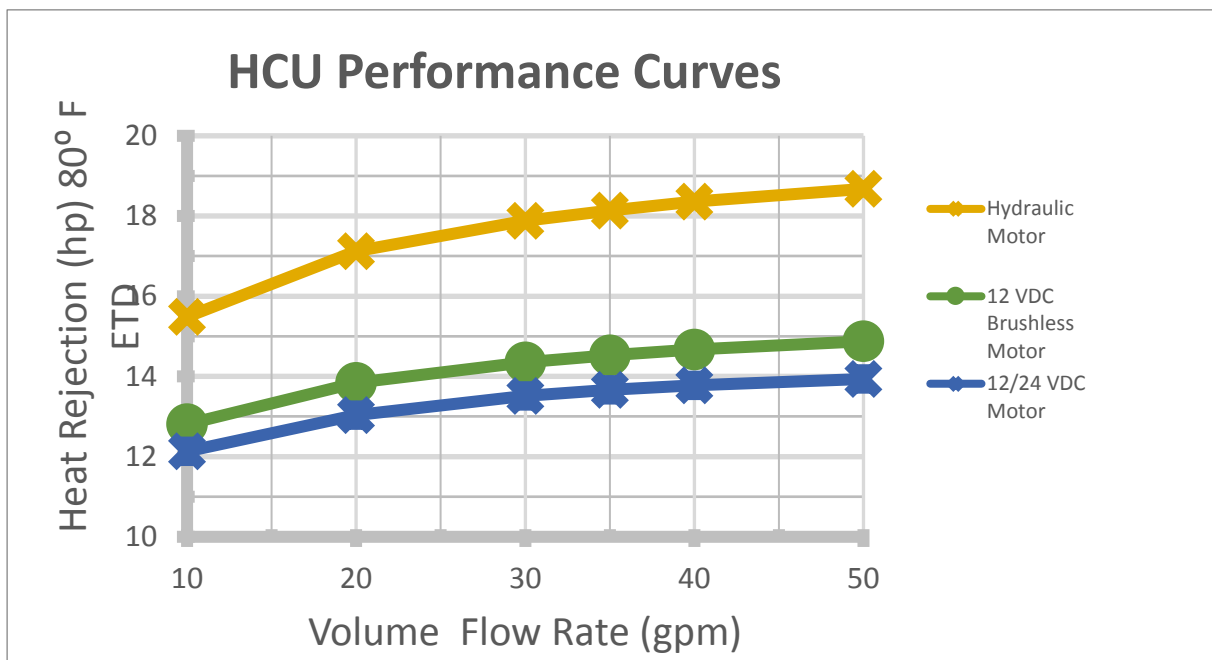


Figure 2. Performance for AKG's HCU Series oil coolers

Listed performance curves are based on ISO VG 32 oil @ 80F ETD

Figure 2 summarizes the performance of each fan drive offered. The HCU Series can handle applications at maximum temperatures and pressures of 250 °F and 250 psi, respectively.

The product release date for AKG Thermal Systems' HCU is September 2019.

Please visit our website <https://www.akgts.com/> to review our offering for the auxiliary hydraulic conditioning and cooling product offering.

PATENT PENDING