35T Swing Thru Power Take Off (PTO) Requirements.

PTO Drive Gearbox

- A PTO Drive Adapter needs to be fitted on the truck gearbox. This requires around the 55 to 60 HP – check that the trucks gearbox and PTO Adapter can deliver this output
- The PTO Drive Adapter can be cable operated, or if the truck has compressed air available, air operated. For air operation, you will have to fit an air PTO engage/ disengage switch in the drivers cab, plus air lines supplying the air pressure for the actuating of the PTO Adapter

Hydraulic Pumps, Filters and Oil Tank

- The requirement is for (2) hydraulic pumps mounted in tandem, each having a minimum output of 9.68 US gallons (36.64 liters) per minute at 3600 PSI. (Total for (2) pumps 19.36 US gallons (73.29 liters) per minute) **The pumps are fitted with flanged mounted relief valves set at 3800 PSI**
- The Hydraulic Pumps are either mounted directly to the rear of the PTO Drive Adapter, or on the truck chassis with a specially made bracket to suit. The pumps are driven by way of a drive shaft from the PTO on the gearbox. The correct universal drive angles will determine the pump mount location, and final driveshaft length
- We recommend the use of high pressure filters for each pump when operating in harsh environments. These filters must be able to pass the pumps volume of 9.68 US gallons (36.64 liters) per minute from a cold start situation, without activating the filter's bypass
- The tank return filter must be able to pass a minimum of 35 US gallons (132.5 liters) per minute, from a cold start situation
- Filters are normally mounted between the chassis members of the truck, with the high pressure on one side of the driveshaft and the tank return filter on the other side, or they can be mounted directly to the chassis side
- Hydraulic tank capacity required is approximately 53 US gallons (200 liters) and is mounted on the side of the truck chassis, normally on the opposite side from the fuel tank. **Important:** Where required, the valve or case drain must go directly to the tank with its own line, and not pass through the tank top filter

If the Swing Thru is Trailer Mounted

- **Important:** Fitting the oil tank or filters to the trailer is not recommended. The main reason for this is the suction line for the required flow would have to be too large in diameter
- All hydraulic lines: pressure, return, load-sense and valve drains should go under the center of the 5th wheel plate and connect to the trailer approximately 4 to 5' behind the center of the 5th wheel plate

Governor Control

- The management of the engine RPM depends on the type of governor control on the vehicle
- If the engine is electronically governed, we suggest you use an output from the Swing Thru's electrical control box to the fast idle of the engines management computer
- If the engine is mechanically governed, you can fit an air cylinder to the diesel injection pump governor control, so when actuated, it brings the engine RPM up to approximately 1100 RPM , or whatever the required RPM is to obtain the required 9.68 US gallons per minute flow per pump. The air cylinder is actuated from an output from the Swing Thru's electrical control box, via an electrically operated air valve attached to the cylinder. Alternatively an electrical actuator can be used
- **Important:** The governor control cylinder must be set up so that it does not inhibit the operation of the engine during normal driving. This can be achieved by slotting the cylinder attachment plate where it connects to the governor control
- **Important:** Some vehicles have a governor that when the RPM's are increased by overriding the governor the RPM's will runaway. This type of governor or diesel injection pump needs to be modified to a type that holds it's RPM to prevent damage

Hydraulic Supply for Operation of Swing Thru

- **Our Recommendations are:**
- (2) - 3/4" pressure lines (one from each pump) to terminate at the rear of the vehicle chassis
- (1) - 3/4" tank return line to terminate at the rear of the vehicle chassis
- (1) - 3/8" valve or case drain to terminate at the rear of the vehicle chassis

The 35T Auxiliary Power Unit (APU)

- A self contained hydraulic system meeting all of Swing Thru's hydraulic requirements
- The power is provided by a liquid cooled diesel engine
- Can run on either an over-the-road diesel or JP-8 for military use