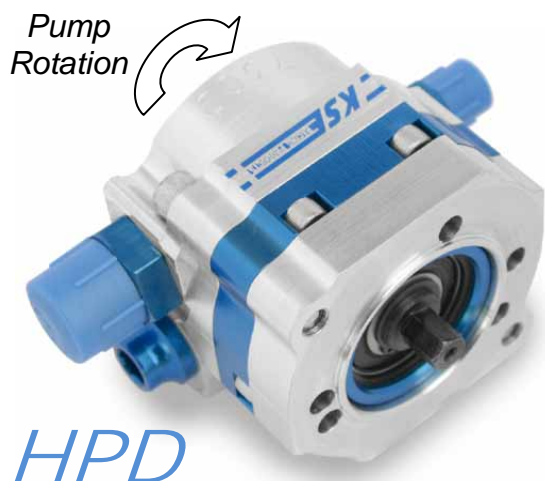




INSTALLATION & START-UP GUIDE  
HPD Power Steering Pump



**KSE's High Power Density Power Steering Pump** is a gerotor-style positive displacement pump with a 3/8" Hex drive. This is a single direction pump and is designed to operate in a CCW rotation when viewed from the back of the pump. This pump contains an internal pressure relief which has been pre-set at the factory and is designed to protect the power steering gear and pump from over-pressurization. In order to avoid system damage, this relief setpoint should only be adjusted by the factory. This pump is shipped "ready-to-install" with a positive piloted mounting adaptor for a rear motorplate installation.

**REAR MOTORPLATE INSTALLATION**

**NOTE:** Methods of mounting pumps to motorplates vary based on chassis make, motorplate design, and/or personal preference.

**IMPORTANT:** Regardless of the method of mounting, the shaft engagement and alignment is critical to proper pump operation. The pump shaft should engage the drive spud a minimum of 3/8" and must not bottom-out on the spud. It is recommended that grease is applied between all mating drive components to minimize metal-to-metal contact. The pump should be within 0.005 TIR (Total Indicated Runout) alignment with the drive spud. Some motorplates and pump mounting adaptors do not have a positive piloting device for proper alignment. The most successful method of aligning this type is to fully plumb the pump and then mount the pump with the bolts snug. Start the motor and while running, fully tighten the mounting bolts.

**START-UP AND AIR PURGING**

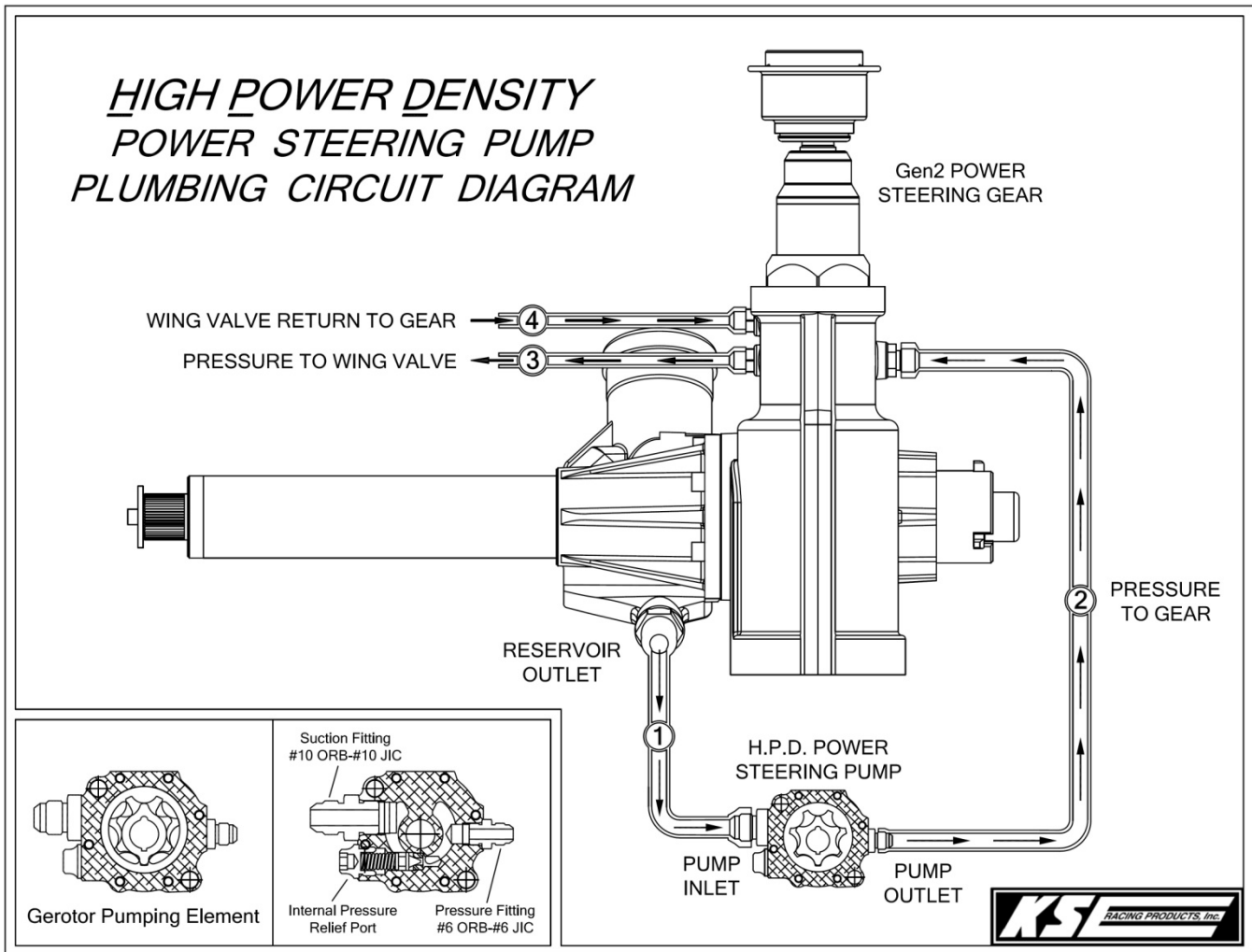
**CAUTION:** Running the P/S pump without fluid will cause damage to the pump.

**RECOMMENDED AIR PURGING METHOD**

After plumbing the pump (Plumbing Instructions on following page), unbolt P/S pump and pull it back far enough to disengage shaft from the drive spud. Fill vented P/S reservoir with KSE Elixer P/S fluid (P/N KSM1086). Loosen the pump inlet line at the inlet fitting until fluid is seen coming out around the fitting, then retighten. Using a suitable drill with a 3/8" hex socket, spin the P/S pump shaft from the back (i.e. fuel pump end) at a minimum of 500 RPM.

**IMPORTANT:** Check for proper shaft rotation (CCW). Monitor fluid level and add as required. Disconnect drag link from pitman arm. With pump running turn steering wheel full left until it stops and full right until it stops, do this a minimum of three cycles. Stop pump and let stand 30 minutes. Check P/S fluid level and add as required. Start pump and repeat above procedure. **NOTE:** If the above procedure is not used, maximum P/S performance will not be achieved until 2 or 3 racing cycles.

**POWER STEERING PUMP PLUMBING**



**IMPORTANT:** All hoses and fittings must be clean and free of all contamination. It is highly recommended that these components be flushed with clean solvent or hot soap and water and blown dry before assembly. When installing hoses, take care to assure that they will not be exposed to being pinched, cut or rubbed that would cause hose damage or failure, which could cause poor power steering performance or failure. When using push-lock fittings on a suction line, utilize hose clamps to avoid potential air leaks which could cause pump cavitation.

**STEP 1** Pump inlet line (Reservoir to Pump - Line #1) must be a minimum #10 (3/4" ID) line. This hose must be vacuum rated to 20 IN HG in order to avoid collapse. It is recommended that this line be as short as possible and that the reservoir is mounted above the pump.

**STEP 2** Pressure line (Pump to Steering Gear Pressure Port - Line #2) should be a minimum #6 (3/8" ID) line. This hose should be rated 2000 PSI working pressure 6000 PSI burst rating. Push-lock style hose fittings are not acceptable on a high pressure line.