

3.5 Hydraulic Cart Purge Procedure

3.5 Hydraulic Cart Purge Procedure

This procedure covers the purging the fluid volumes of the hydraulic cart as would be necessary if someone had foolishly filled the cart without first cleaning the major components (hydraulic cylinders, diaphragm tank) to remove residual oil. It is also useful if someone, having believed that dynalene¹ was appropriate for use in a COUPP bubble chamber, had filled the cart with that vile substance prior to being disabused² of its virtues.

- 1) Drain the Hydraulic Cart as per procedure 3.4 [Glycol Draining](#).
- 2) Draw the main hydraulic cylinder to near its upper stop.
- 3) Pump down and backfill the cart with clean, fresh polypropylene glycol drawing the fluid in from an appropriate reservoir. Follow procedure 3.1 [Glycol Filling without Inner Vessel](#).
- 4) Bleed the diaphragm tank pressure down to a modest value. Of order 50 psig is fine. This should depend on the pressure capability of the drain line.
- 5) Purge the diaphragm tank: Use the hydraulic piston to drive fluid into the diaphragm tank. Open the drain valve so that the air pressure can drive that fluid back out. Repeat.
- 6) Restore the pressure on the diaphragm tank. Its nominal value is 250 psig.
- 7) Apply a modest hydraulic pressure to the system (20-30 psig) via the pneumatic cylinder. Remember that the air pressure from air supply regulator is multiplier by four (4) in the pneumatic to hydraulic conversion.
- 8) Purge the fast piston: Drive the hydraulic piston down to drive the pneumatic piston up to its limit. Open the drain valve and allow the pneumatic pressure to drive the pneumatic piston back down, purging the cylinder. Repeat.
- 9) With the drain valve open, push the remaining fluid out of the main hydraulic cylinder by driving it down to its lower stop.

¹ dynalene is polypropylene glycol with a proprietary anti-corrosion additive.

² dynalene apparently facilitates electrolysis of glycol/water/copper resulting in the production of conductive copper salts which are deleterious to the health of LED's and other electrical items submerged in the fluid.