Hydraulics Trainer Setup Instructions

Refer to the following information to familiarise your self with the safety issues.

The type of hydraulic fluid your unit contains is indicated by the label fitted to the back of the unit.



The hydraulics trainer is filled with hydraulic fluid and sealed before leaving the factory. Ensure that the shipping plug is removed and replaced with the Breather plug before using the trainer.

The Hydraulics Trainer should always be kept standing in the drip tray. The hoses should be stored in the front part of the drip tray with the lever arm.



Note: The Hydraulics Trainer is fitted with an accumulator. When the pump switch is in the ON position, the electric pump will switch on and off automatically to maintain the supply pressure.

Store Parts Required for Maintaining the Hydraulics Trainer

Store the following parts away from the workstation. These items are only needed when the unit requires fluid to be added.

- Hydraulic fluid
- Container
- Funnel
- Open-ended hose (used to empty the unit)

Do not leave the open-ended hose at the workstation. It is possible that a student could spill oil out of the Hydraulics Trainer if left.

Filling the Hoses with Hydraulic Fluid

In order to operate correctly, each hose must be filled with hydraulic fluid. Each hose coupling has a valve that prevents the fluid from flowing out when it is disconnected.

- Connect a hose between a Supply Valve port and a Return port.
- Switch on the pump.
- Open the supply valve for about 10 seconds. Close the supply valve.
- Repeat the procedure to fill all the hoses.
- When all the hoses have been filled, check the hydraulic fluid level and top-up accordingly as described below.

Checking the Hydraulic Fluid Level

Connect the supply valve to the bottom valve on the flow meter. Connect the top valve on the flow meter to the return port on the supply. Open the Supply Valve and turn the pressure regulator fully clockwise. When the flow meter shows zero, the accumulator will be discharged.

Check the sight glass on the side of the unit. The fluid should be at the top of the sight glass when the unit is full. If the fluid is below half way in the sight glass, fluid should be added. This being the case, refer to the 'Topping-up the Hydraulics Trainer' section.

Topping-up the Hydraulics Trainer Unit

- 1. Use a hose to connect a Supply Valve port to a Return port, do not switch on the pump. Open the supply valve and allow the pressure to drop to a '0'.
- 2. Remove the vent plug (top of the rear panel, if fitted) and breather plug (top panel). Alternatively, fit an open ended hose to the return port of supply.
- 3. Using the funnel, carefully pour hydraulic fluid into the filler hole (previously fitted with the breather plug). Add fluid so that the level is at the top of the sight glass.
- 4. Replace the vent plug (if fitted) and breather plug.

Filling the unit from empty will require two litres of hydraulic fluid. It is recommended that the unit should be flushed through with water to remove any contaminants from the system prior to refilling.

If the unit has been filled from empty it will be <u>essential</u> to bleed the pump head. This will remove any trapped air in the pump. If this process is not carried out it could result in permanent damage to the pump.

Bleeding the Pump Head

Important procedure to avoid permanent damage to the pump

- 1. From the front of the Hydraulics Trainer, tilt the unit approximately 45 degrees, raising the left-hand side. Hold in this position for approximately 10 seconds (this allows air out of the pump head and into the filter/reservoir).
- Set the pressure regulator to fully open (fully clockwise). Switch on the pump and observe the Supply Gauge. The pump should switch off after reaching the pressure switch setting. If the pressure failed to reach 15 – 20 psi and the pump sounds erratic, switch off pump and repeat the tilting process.
- 3. Use a hose to connect a Supply Valve port to a Return port. Open the supply valve; this will allow the accumulator to discharge. It is discharged when the Supply Gauge reads zero. Close the supply valve.
- 4. From the front of the Hydraulics Trainer, tilt the unit approximately 45 degrees forward. Hold in this position for approximately 10 seconds (this allows air into the discharge pipe of the pump head).
- 5. With the supply valve closed, switch on the pump and observe the Supply Gauge. The pump will switch off after reaching the pressure switch setting. If the pressure fails to reach 15 20 psi and the

pump sounds erratic, switch off the pump and repeat steps 1-4 above. Open the supply valve and allow the accumulator to discharge as before so that the supply gauge reaches zero.

- 6. Close the supply valve. Switch on the pump. The pump will switch off after reaching the pressure switch setting (28-34psi).
- 7. Switch off the pump. Open the supply valve to discharge the Accumulator. When the gauge reads zero, close the supply valve and remove the hose.