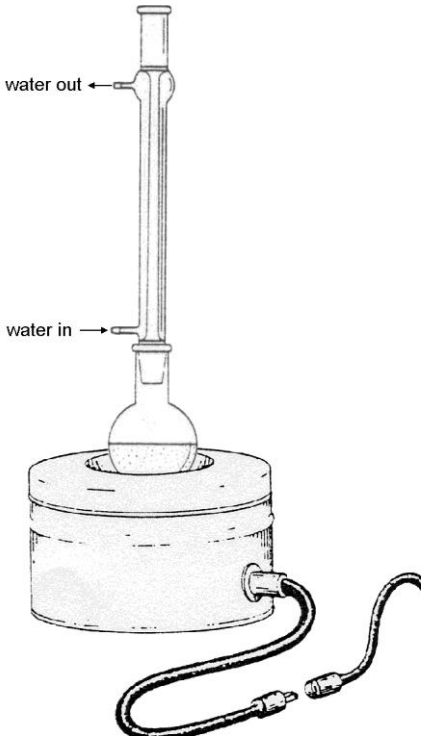
- **REFLUX and the REFLUX CONDENSER**

ALWAYS makes sure the hoses are securely attached to the condenser.
A gentle flow of cooling water is all that is needed.
Check for leaks !

Organic chemists often need to heat a mixture for a long time and to be able to leave it relatively untended. For example, this type of apparatus will be needed for several experiments in Chem 353. The "reflux apparatus" shown allows such heating; it allows the reaction to be carried out at the boiling point of the solvent and yet it prevents loss of solvent or reagent due to evaporation. A condenser is attached to the boiling flask and is clamped in an upright postion, the "reflux position", and cooling water is circulated to cause the vapours to condense as they rise up the condenser and thus prevent them from escaping. The upper level of the vapours in the condenser can often be seen as a reflux line. The direction of flow of the water should be such that the condenser will fill with the cooling water; water should enter the condenser at the bottom and leave from the top.



NOTE: In the equipment set up shown here, a heating mantle with a heating controller is being used to heat the round bottom flask. In your equipment set up, the heating mantle and heating controller will be replaced by an engineered (shaped) aluminium block sitting on the top of a stirrer hot plate. This is a more modern version of a heating mantle with some distinct benefits.

The photograph below shows the equipment needed and a typical set-up. It is usually a good idea to ensure that the heating source can easily be removed either by raising the set up and using a laboratory jack or ensuring that the assembly can be lifted out of the heating apparatus.

This YouTube video illustrates the importance of the reflux set-up.