Setting up Dean-Stark apparatus
Whilst the pictures below show the use of adapters for connecting round bottomed flasks to condensers, it applies to any pieces of Quickfit glassware, including Dean-Stark. When connecting the Dean-Stark to the round-bottomed flask you may need to use an adapter.

**Always** use an appropriate size flask and make sure it is no more than half-full.

The condenser can not be inserted straight into the round-bottomed flask as the joints are different sizes.
This is a Dean-Stark head. A toluene/water azeotrope will reflux and condense into the portion above the stopcock, forming two separate layers. The water can then be removed via the stopcock.

This is one specific Dean-Stark head. There are numerous variations so don’t be worried if the type you are using looks slightly different. However, the principle is the same.
There are two types of condensers which attach to the rubber tube in different ways.

Condenser with glass inlet and outlet pipes with a ‘knuckle’
Slide the rubber tube onto the pipe and past the ‘knuckle’

Condenser with screw thread on the glass inlet and outlet pipes
Attach the plastic adapter to the rubber tubing and then screw the adapter onto the pipe
When setting up the condenser it is very important that you have the water flow in the correct direction.
When adding a heat source to the reflux set up, an oil bath may be used instead of the heating blocks.

*Remember* to add either anti-bumping granules or a magnetic stirring bar to the reflux flask.