Cooling Coils

Optional Fittings

Internal cooling coils are available for all but the smallest Parr reactors. These coils provide an extremely effective means of removing heat from the vessel to control an exothermic reaction or for cooling the reactor at the end of a test. Since heat is transferred through the relatively thin wall of the coil instead of the thick wall of the vessel, cooling rates are generally much faster than heating rates; particularly at temperatures above 80 °C. Water is normally used as the cooling medium although compressed air can be used for modest cooling loads. Cooling coils are offered in three standard configurations:

Single Loop - Single loop coils consist of a vertical run of tubing formed into a "hairpin" shape. These are normally installed on small reactors where there is minimum space available.

Serpentine Coils - Serpentine coils consist of six to eight vertical runs of tubing uniformly spaced around the circumference of the vessel. These coils provide reasonable surface area, minimum interference with stirring patterns, a reasonable amount of baffling, and ease of cleaning and maintenance.

Spiral Coils - Spiral coils consist of multiple loops wound just inside the inside diameter of the vessel. They are normally available only for the 4 and 6 inch ID vessels although other sizes have been built on special order. They do maximize the cooling area available, but sometimes at the expense of uniform stirring and ease of cleaning.

The individual reactor specifications will dictate the style of coil or coils available for each reactor. On some reactors the coils are included as standard while on some reactors they are optional.

Cooling coils are available in the same choice of materials as the reactor bodies themselves. All cooling coils are removable. Plugs are available to close the openings in the head and in most cases these openings can be converted to alternate inlets/outlets if cooling is not required.

Head for 2000 mL Reactor with Spiral Cooling Coil

Head for 2000 mL Reactor with Serpentine Cooling Coil