Cooling Coils

Serpentine Cooling Coil 1000 mL

Spiral Cooling Coil 1000 mL

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" 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.

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.

Liners

Removable, open top, cylindrical liners made either of borosilicate glass or PTFE can be furnished to fit most Parr reactors and general purpose vessels. These liners slide into the cylinder and require no additional fittings, but they may not coordinate with some alternate accessories and stirrers. Although they will not keep corrosive vapors from reaching the surfaces of the cylinder and head, they make it much easier to add and remove liquid reactants, and they give some protection to the cylinder when working with corrosive solutions. It must be noted, however, that adding a PTFE liner will slow the heat transfer rate into and out of the vessel, and it may be necessary to adjust the temperature control method to prevent overheating.

Liners

Fits ID, in.	Fits Cylinder Size, mL	Glass Liner Part No.	PTFE Liner Part No.
1.3	50	1431HC	1431HCHA
1.3	100	1431HC2	1431HC2HA
1.5	125	2920HC2	2920HC4HA
1.5	200	2920HC3	2920HC3HA
1.5	75	2920HC	2920HC2HA
2-1/2	250	762HC10	N/A
2-1/2	500	762HC2	762HCHHA
2-1/2	300	762HC	762HC4HA
2-1/2	450	762HC2	762HC5HA
2-1/2	600	762HC3	762HC6HA
2	100	762HC7	762HC7HA
2-1/2	160	762HC8	762HC8HA
3-1/4	600	2312HC	2312HC3HA
3-1/4	1200	2312HC2	2312HC4HA
3-3/4	1000	1441HC	1441HCHA
3-3/4	1800	1442HC	1442HCHA
4	1000	398HC	398HCHA
4	2000	399HC	399HCHA
6	1 Gallon	894HC	894HC4HA
6	2 Gallon	894HC2	894HC5HA

Glass Liners 2000 and 1000 mL Sizes
Temperature Limit: 565 ˚C

PTFE Liners 2000 and 1000 mL Sizes
Temperature Limit: 225–250 ˚C