PACKAGED CIRCULATING SYSTEMS

SYSTEM SELECTION WORKSHEET

STEP 1

Determine the system use and the gallon per minute requirements (gpm) from tables 1A, 1B, and 1C below.

TABLE 1A – CHILLED WATER

Chilled Water (Tons)	GPM @ 10FΔT	GPM @ 12FΔT	GPM @ 14FΔT
20	48	40	34
40	96	80	68
60	144	120	102
80	192	160	136
100	240	200	170
125	300	250	213
150	360	300	255
175	420	350	298
200	480	400	340
250	600	500	425
300	720	600	510
350	840	700	595
400	960	800	680

TABLE 1B – CONDENSER WATER

Condenser Water (Tons)	GPM @ 10FΔT	GPM @ 15FΔT
20	60	40
40	120	80
60	180	120
80	240	160
100	300	200
125	375	250
150	450	300
175	525	350
200	600	400
250	750	500
300	900	600
350	1050	700
400	1200	800

TABLE 1C – HEATING HOT WATER

Capacity MBH	GPM @ 20FΔT	GPM @ 30FΔT	GPM @ 40FΔT
300	30	20	15
400	40	27	20
500	50	34	25
600	60	40	30
700	70	47	35
800	80	54	40
900	90	60	45
1000	100	67	50
1500	150	100	75
2000	200	134	100
2500	250	167	125
3000	300	200	150
3500	350	234	175
4000	400	267	200
4500	450	300	225
5000	500	334	250

STEP 2

Calculate the system pressure loss requirements and select the corresponding system model from Tables 2A and 2B.

TABLE 2A – Selection 1750 RPM

	Total Head in Feet						
GPM	30	40	50	60	70	80	**GPM**
20	1070-.50-2	1070-.75-2	1070-.75-2	1595-1.5-2	1595-1.5-2	1595-2-2	20
40	1070-.75-2	1070-.75-2	1270-1-2	1595-2-2	1595-2-2	1595-3-2	40
50	1070-.75-2	1070-1-2	1270-1.5-2	1595-3-2	1595-3-2	1595-3-2	50
60	1270-1-2	1270-1.5-2	1270-1.5-2	1595-3-2	1595-3-2	1595-3-2	60
70	1270-1-2	1270-1.5-2	1270-1.5-2	1595-3-2	1595-3-2	1595-3-2	70
80	1270-1-2	1270-1.5-2	1270-2-2	1595-3-2	1595-3-2	1595-5-2	80
90	1570-1.5-3	1570-1.5-3	1595-3-3	1595-3-3	1595-3-3	1595-5-3	90
100	1570-1.5-3	1570-2-3	1595-3-3	1595-3-3	1595-5-3	1595-5-3	100
125	2070-1.5-3	2070-2-3	1595-5-3	1595-5-3	1595-5-3	1595-5-3	125
150	2070-2-4	2070-3-4	1595-5-4	1595-5-4	1595-5-4	1595-7.5-4	150
175	2070-2-4	2070-3-4	2095-5-4	2095-5-4	2095-5-4	1595-7.5-4	175
200	2570-3-4	2570-3-4	2095-5-4	2095-5-4	2095-7.5-4	2595-7.5-4	200
225	2570-3-4	3070-5-4	2095-5-4	2095-7.5-4	2595-7.5-4	2595-7.5-4	225
250	2570-3-4	3070-5-4	2095-5-4	2595-7.5-4	2595-7.5-4	2595-7.5-4	250
300	3070-3-4	3070-5-4	2595-7.5-4	2595-7.5-4	2595-10-4	3095-10-4	300
350	3070-5-6	3070-5-6	3095-7.5-6	3095-10-6	3095-10-6	4095-15-6	350
400	4070-5-6	3095-7.5-6	3095-7.5-6	3095-10-6	3095-10-6	4095-15-6	400
450	4070-5-6	3095-7.5-6	3095-10-6	3095-10-6	3095-15-6	4095-15-6	450
500	4070-7.5-6	4095-10-6	4095-10-6	4095-15-6	4095-15-6	4095-15-6	500
550	4070-7.5-6	4095-10-6	4095-10-6	4095-15-6	4095-15-6	3012-20-6	550
600	4070-7.5-6	4095-10-6	4095-15-6	4095-15-6	4095-15-6	3012-20-6	600
650	4095-10-6	4095-10-6	4095-15-6	4095-15-6	4095-20-6	4012-20-6	650
700	4095-10-8	4095-15-8	4095-15-8	4095-15-8	4095-20-8	4012-20-8	700
750	4095-10-8	4095-15-8	4095-15-8	4095-15-8	4095-20-8	4012-25-8	750
800	4095-10-8	4095-15-8	4095-15-8	4095-20-8	5095-25-8	4012-25-8	800
850	5095-15-8	4095-15-8	4095-15-8	4095-20-8	5095-25-8	4012-25-8	850
900	5095-15-8	5095-15-8	5095-20-8	5095-20-8	5095-25-8	4012-25-8	900
950	5095-15-8	5095-15-8	5095-20-8	5095-20-8	5095-25-8	4012-30-8	950
1000	5095-15-8	5095-15-8	5095-20-8	5095-20-8	5095-25-8	4012-30-8	1000
1050	5095-15-8	5095-15-8	5095-20-8	5095-20-8	5095-25-8	4012-30-8	1050
1100	5095-15-8	5095-15-8	5095-20-8	5095-25-8	5095-25-8	4012-30-8	1100
1150	5095-15-8	5095-15-8	5095-20-8	5095-25-8	5095-30-8	5012-30-8	1150
1200	5095-15-8	5095-20-8	5095-20-8	5095-25-8	5095-30-8	5012-40-8	1200

Example: 4095-10-6
4095-Pump-Nominal Size
10-Horsepower
6-Header Connection Size (inches)

Contact FabPro systems for larger systems Selections based on water at 50°F

TABLE 2B – Selection 1750 RPM

Total Head in Feet							
GPM	90	100	110	120	130	140	**GPM**
20	1595-3-2	1595-3-2	2012-5-2	2012-5-2	2012-7.5-2	2012-7.5-2	20
40	1595-3-2	1595-5-2	2012-5-2	2012-7.5-2	2012-7.5-2	2012-7.5-2	40
50	1595-3-2	1595-5-2	2012-5-2	2012-7.5-2	2012-7.5-2	2012-7.5-2	50
60	1595-5-2	1595-5-2	2012-7.5-2	2012-7.5-2	2012-7.5-2	2012-7.5-2	60
70	1595-5-2	1595-5-2	2012-7.5-2	2012-7.5-2	2012-7.5-2	2012-7.5-2	70
80	1595-5-2	1595-5-2	2012-7.5-2	2012-7.5-2	2012-7.5-2	2012-7.5-2	80
90	1595-5-3	1595-5-3	2012-7.5-3	2012-7.5-3	2012-7.5-3	2012-10-3	90
100	1595-5-3	1595-5-3	2012-7.5-3	2012-7.5-3	2012-7.5-3	2012-10-3	100
125	1595-5-3	1595-7.5-3	2012-7.5-3	2012-7.5-3	2012-10-3	2012-10-3	125
150	1595-7.5-4	2012-7.5-4	2012-10-4	2012-10-4	2012-10-4	2512-15-4	150
175	1595-7.5-4	2012-10-4	2012-10-4	2512-10-4	2012-15-4	2512-15-4	175
200	2595-7.5-4	2012-10-4	2012-10-4	2512-15-4	2512-15-4	2512-15-4	200
225	2595-10-4	2012-10-4	2512-15-4	2512-15-4	2512-15-4	2512-15-4	225
250	2512-10-4	2512-15-4	2512-15-4	2512-15-4	2512-15-4	3012-20-4	250
300	2512-15-4	2512-15-4	2512-15-4	2512-15-4	3012-20-4	3012-20-4	300
350	2512-15-4	3012-15-4	3012-20-4	3012-20-4	3012-20-4	3012-20-4	350
400	3012-15-6	3012-15-6	3012-20-6	3012-20-6	3012-20-6	3012-20-6	400
450	3012-20-6	3012-20-6	3012-20-6	3012-20-6	3012-25-6	3012-25-6	450
500	3012-20-6	3012-20-6	3012-20-6	3012-25-6	3012-25-6	3012-25-6	500
550	3012-20-6	3012-25-6	3012-25-6	3012-25-6	3012-30-6	3012-30-6	550
600	3012-25-6	3012-25-6	3012-25-6	3012-25-6	4012-40-6	4012-40-6	600
650	4012-25-6	3012-25-6	3012-30-6	3012-25-6	4012-40-6	4012-40-6	650
700	4012-25-8	4012-30-8	4012-30-8	4012-40-8	4012-40-8	4012-40-8	700
750	4012-25-8	4012-30-8	4012-40-8	4012-40-8	4012-40-8	4012-40-8	750
800	4012-30-8	4012-30-8	4012-40-8	4012-40-8	4012-40-8	4012-50-8	800
850	4012-30-8	4012-30-8	4012-40-8	4012-40-8	4012-50-8	4012-50-8	850
900	4012-30-8	4012-40-8	4012-40-8	4012-40-8	4012-50-8	4012-50-8	900
950	4012-30-8	4012-40-8	4012-40-8	4012-50-8	4012-50-8	4012-50-8	950
1000	4012-40-8	4012-40-8	4012-40-8	4012-50-8	4012-50-8	4012-50-8	1000
1050	4012-40-8	4012-40-8	4012-40-8	4012-50-8	4012-50-8	4012-50-8	1050
1100	4012-40-8	4012-40-8	4012-40-8	4012-50-8	4012-50-8	4012-60-8	1100
1150	4012-40-8	4012-40-8	4012-50-8	4012-50-8	5015-60-8	5015-60-8	1150
1200	4012-40-8	4012-40-8	4012-50-8	4012-50-8	5015-60-8	5015-60-8	1200

Example: 4095-10-6
4095-Pump-Nominal Size
10-Horsepower
6-Header Connection Size (inches)

Contact FabPro Systems for larger systems Selections based on water at 50°F

PACKAGED CIRCULATING SYSTEMS

SELECTION OVERVIEW

STEP 3

Once the gallon per minute (gpm) capacity, pressure loss, speed, and operating voltage have been determined, it is necessary to select the number of pumps that will provide the required performance and economics for the installation. Duplex and triplex systems are most common for HVAC and process applications. Contact FabPro Systems for systems that are not cataloged in the System Selection Worksheet.

STEP 4

Record the complete model number selected below and proceed to the specifications and dimensional drawing links.

MODEL SELECTED: PCS - _____-_____

Model Number Selection Example:

PCS-4095-10-6-D-CS……..Pump 4095-10hp-6” headers-Duplex-Constant Speed
PCS-4095-10-6-T-VS……..Pump 4095-10hp-6” headers-Triplex-Variable Speed

Packaged Circulating System Options:

The above circulating systems can be modified to meet a variety of specific project requirements. Options that are easily added to any Packaged Circulating System are:

- Expansion tanks
- Air separators
- Chemical bypass feeders
- Make up water valves
- Various electrical controls
- Vibration isolators

Please contact FabPro Systems for more information on these options or any others that are required to meet the project requirements.