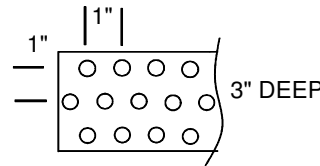
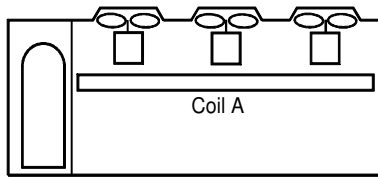


DEEP Coil & Small Foot Print

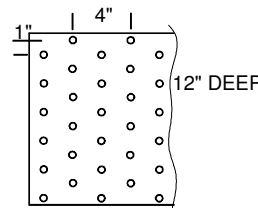
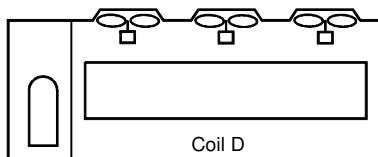


Hemant D Kale, PE

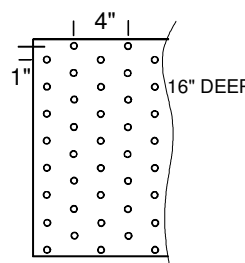
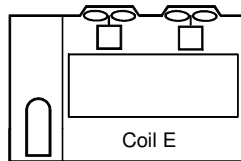
In the Performance Comparison paper, we saw how a slab shape thin coil can be converted to DEEP coil of different proportions and achieve proportional savings in compressor hp, fan hp, operating cost and OEM cost. The following chart illustrates how a conventional slab shape thin coil can be converted to DEEP coil with the objective of reducing the overall foot print and, concurrently, achieve cost and energy savings. This is a projection off of actual comparison test data between 1 x 1" to 2 x 1" tube pattern. It may not exactly translate as projected, but will come very close.



No. of Fans - 6
Fan HP - 0.5/ea
Compressor HP - 5
Total HP - 8



No. of Fans - 6
Fan HP - 0.25/ea
Compressor HP - 2.56
Total HP - 4



No. of Fans - 4
Fan HP - 0.54/ea
Compressor HP - 3.2
Total HP - 5.36

	Coil A	Coil D	Coil E
Tube Spacing, inches	1 x 1	4 x 1	4 x 1
Fin Density, fpi	16	4	4
Tube Rows	3	12	16
Coil Thickness, Inches	3	12	16
Coil Surface Area, sq ft	4 x 8, 32	same	4 x 6, 24
Total Tube length, ft.	1152	same	same
Total Fin Surface, sq. ft.	1536	same	same
No. of Fans	6	6	4
Total CFM, FPM	same	same	Same, x 1.33
Dwell Time	x 1	x 4	x 4
Air resistance, 500 fpm, in. of water	0.32	0.03	0.05
H.P./Fan	0.5	0.25	0.54
Total Fan H.P.	3	1.5	2.16
No. of Compressors	1	1	1
Fluid Resistance (Inside Tube)	x 1	x 0.5	x 0.64
Compressor H.P.	5	2.56	3.2
Total H.P. (fan+compressor)	8	4	5.36
Total Energy Savings Relative to coil A	--	50%	33%
Total Heat Transfer Capacity	same	same	same