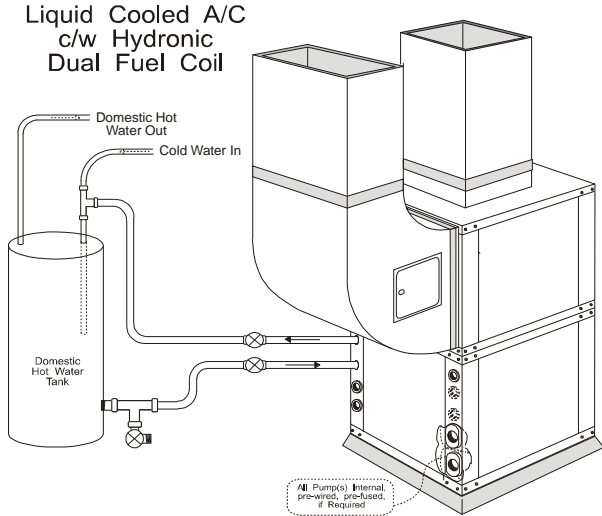


The Geoflex Hybrid / Dual Fuel Option

Commonly used in conjunction with a Geoflex Geothermal Heat Pump, Liquid Cooled A/C or Chiller System

Description

The Geoflex Dual Fuel option or system uses the same technology as with all Geoflex heat pump systems. The dual fuel option can be built into any Geoflex, Forced Air Heat Pump or Liquid Cooled Air Conditioning System and will operate as a forced air hydronic back-up, emergency or can be configured as a dual fuel system. The Dual Fuel System/Option allows the homeowner to take heated water from any hot water source and circulate it through the Dual Fuel Hydronic Coil, allowing the heat to be circulated throughout the space via the existing forced air system.



Operational

When the dual fuel or hydronic back-up option is chosen, the room thermostat will energize a small internal or external circulating pump and will circulate hot water from any hot water source but commonly from a hot water tank, to the dual fuel hydronic coil within the system. The blower fan forces cooler return air over the dual fuel heat transfer coil and the heat from the water will transfer to the cooler incoming air and the heated air will transfer and be circulated throughout the homes ducting system.



Advantages

As fuel commodity prices are constantly changing, a "Geoflex Dual Fuel System" offer the building owner the opportunity to choose which source they want to use, based on best commodity pricing, at any given time.

As an option to a Geothermal or Liquid Cooled Air Conditioning System or as a stand alone, the Dual Fuel Hydronic Coil can be sized to match virtually any load even when exceeding cooling loads.

In many cases, utilities offer incentives for specified, dual fuel systems.

Highest efficiency, water cooled air conditioning combined with Geothermal Loop or even a Swimming Pool.

Simultaneous air conditioning and pool heating. When a Liquid Cooled Air Conditioner is combined with a Swimming Pool, the homeowner will automatically heat the pool with the normally wasted rejection process heat from air conditioning the space. This essentially doubles the efficiency.

Geoflex Hydronic, Dual Fuel or Passive Optional "Coil" Output Specifications

CFM	Air Press. Drop, In H ₂ O	Heating *										Chilling **									
		Capacity in BTU's, based on Entering Water Temperature, as listed below.										Capacity in BTU's, based on Entering Water Temperature, as listed below.									
		90 °F	100 °F	110 °F	120 °F	125 °F	130 °F	140 °F	160 °F	180 °F	180 °F	40°F TC	40°F SC	45°F TC	45°F SC	50°F TC	50°F SC	55°F TC	55°F SC	60°F TC	60°F SC
800	0.05	13,827	21,509	29,190	36,872	40,713	44,554	52,235	67,598	82,962	0.08	37,801	25,912	30,942	22,899	24,084	20,083	17,226	17,226	10,367	10,367
900	0.06	15,216	23,670	32,124	40,577	44,804	49,031	57,484	74,391	91,298	0.09	40,790	28,244	33,389	25,038	25,988	22,032	18,587	18,587	11,187	11,187
1000	0.07	16,562	25,763	34,963	44,164	48,765	53,365	62,566	80,968	99,370	0.11	43,723	30,538	35,790	27,140	27,857	23,946	19,924	19,924	11,991	11,991
1100	0.09	17,862	27,786	37,709	47,633	52,595	57,556	67,480	87,327	107,174	0.13	46,485	32,741	38,051	29,166	29,617	25,798	21,183	21,183	12,749	12,749
1200	0.10	19,106	29,720	40,334	50,949	56,256	61,563	72,177	93,406	114,634	0.15	48,771	34,724	39,922	31,016	31,073	27,513	22,224	22,224	13,376	13,376
1300	0.12	20,071	31,222	42,373	53,524	59,099	64,674	75,825	98,127	120,428	0.17	50,643	36,520	41,455	32,715	32,266	29,110	23,078	23,078	13,889	13,889
1400	0.13	20,988	32,648	44,308	55,968	61,798	67,629	79,289	102,609	125,929	0.20	52,408	38,261	42,899	34,365	33,390	30,665	23,882	23,882	14,373	14,373
1500	0.15	21,850	33,989	46,129	58,268	64,337	70,407	82,546	106,824	131,102	0.22	54,063	39,948	44,254	35,967	34,445	32,179	24,636	24,636	14,827	14,827
1600	0.16	22,652	35,237	47,821	60,406	66,698	72,990	85,575	110,744	135,913	0.25	55,610	41,581	45,520	37,522	35,431	33,652	25,341	25,341	15,251	15,251
1700	0.18	23,529	36,601	49,673	62,745	69,281	75,816	88,888	115,032	141,176	0.27	57,055	43,163	46,703	39,033	36,351	35,087	25,999	25,999	15,648	15,648
1800	0.20	24,361	37,895	51,429	64,963	71,730	78,497	92,031	119,099	146,167	0.30	58,433	44,710	47,831	40,512	37,229	36,493	26,627	26,627	16,026	16,026
1900	0.22	25,144	39,112	53,081	67,050	74,034	81,018	94,987	122,924	150,862	0.33	59,741	46,220	48,901	41,957	38,062	37,870	27,223	27,223	16,384	16,384
2000	0.24	25,873	40,247	54,621	68,994	76,181	83,368	97,742	126,490	155,237	0.36	60,970	47,691	49,908	43,368	38,846	38,846	27,783	27,783	16,721	16,721
Water Press Drop ***		9.72	9.55	9.38	9.22	9.13	9.05	8.88	8.55	8.21		8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12

* Entering Air Temperature for heating = 72 db ° F

** Entering Air Temperature for Cooling = 80.6°F db/66.2°F wb

*** Water Flow based on 8 gpm

NOTE: As capacities are based on coil only, fan & internal pump watts must be added to heated capacities and taken away from cooling.

NOTE: In Cooling TC = Total Coil Capacity & SC = Sensible Capacity