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ECO Cognitive Pump Technology PROPEL

GRUNDFOS
MAGNA3

1 YEAR PAYBACK

- **Electrical Savings**
  - Traditional single speed pumps (on/off) are sized for desired delta T (△T) at high fire only and run at one speed, maximum, at all times.
  - Ironically, most commercial systems require maximum boiler input just 15% of the heating season, meaning 85% of the time, systems are over-pumping and can benefit from this technology that lower pump speeds and reduce electrical consumption (up to 89%).

Electrical Cost Savings

Used APEX 825C, 30°F Delta For Comparison

			Yearly Operation Cost			
			Boiler Firing Sequence*		Average Savings ($$)	
Region	Avg Run Hours	Avg KWH (cents)	Single Speed KWH ($)	Eco-Propel KWH ($)		
Northeast	2500	16.34	$274.51	$29.84	$244.67	89.13%
Mid-Atlantic	1875	9.60	$120.96	$13.15	$107.81	
Midwest	2200	10.80	$159.67	$17.36	$142.31	
N.Midwest	2640	12.45	$220.87	$24.01	$196.86	
Northwest	1643	10.30	$113.72	$12.36	$101.36	
Southwest	1100	11.90	$87.96	$9.56	$78.40	

*15% High Fire, 15% Mid Fire and 70% Low Fire

  - But electrical savings is back page news, Eco Propel delivers added fuel savings which is the true catalyst for return on investment (ROI) and the **REAL** story behind our control and justification for use on all Apex models.

- **Eco Propel Delivers Fuel Savings**
  - Eco Propel returns the desired △T across all firing rates (not just at high fire).
  - Our study shows Eco Propel systems average a return temperature 20°F lower than other systems with on/off pumps. Lower return temperatures increase boiler efficiency up to 3% and prolong the conditions required for condensing to occur.

- Simply put, we condense more and consume less fuel. If you are in the Northeast region of the United States, that's over $600 a year savings and over $400 in the Midwest and Mid-Atlantic regions.

Fuel Cost Savings

Used APEX 825C, 30°F Delta For Comparison

			Yearly Operation Cost					
			Single Speed Pump		Eco-Propel VSP		Average Savings ($$)	
Region	Avg Run Hours	Avg Natural Gas Cost $/therm	Avg input Btu/Year	Avg Cost $/Year	Avg Input Btu/Year	Avg Cost $/Year		
Northeast	2500	1.05	2,062,500,000	$21,656.25	2,005,270,059	$21,055.34	$600.91	
Mid-Atlantic	1875	0.94	1,546,875,000	$14,540.63	1,503,952,545	$14,137.15	$403.47	
Midwest	2200	0.81	1,815,000,000	$14,701.50	1,764,637,652	$14,293.56	$407.94	2.77%
N.Midwest	2640	0.68	2,178,000,000	$14,810.40	2,117,565,183	$14,399.44	$410.96	
Northwest	1643	0.83	1,355,475,000	$11,250.44	1,317,863,483	$10,938.27	$312.18	
Southwest	1100	0.89	907,500,000	$8,076.75	882,318,826	$7,852.64	$224.11	

- **<u>Eco Propel Pays for Itself and Recommended for All Apex Condensing Boilers</u>**
  - When you add the obvious electrical savings with fuel reduction; Eco Propel delivers 1 year payback in the Northeast region and 1.5 to 2 years everywhere else.

ROI Analysis

Region	Electrical Savings	Fuel Savings	Total Savings	Payback in Years
Northeast	$244.67	$600.91	$845.59	1 Year
Mid-Atlantic	$107.81	$403.47	$511.28	1 Year & 7 Months
Midwest	$142.31	$407.94	$550.25	1 Year & 6 Months
N.Midwest	$196.86	$410.96	$607.82	1 Year & 5 Months
Northwest	$101.36	$312.18	$413.54	2 Years
Southwest	$78.40	$224.11	$302.52	2 Year & 10 Months

  - As a boiler company, we pride ourselves on optimizing total system efficiency and look at the impact of components on the overall system. Uniquely designed to enrich condensing conditions, only Eco Propel can link fuel reduction with electrical savings ensuring peak level performance in all conditions and ultimate return on investment.

- **<u>Eco Propel for Apex – 1 Pump for All Models, All △T's (20°F – 35°F)</u>**

  P/N 107068-01 - Grundfos Magna3 Pump

  - Fast and easy setup on boiler control display
  - No complex programming on the pump