

A Thermoforming Case Study

Presented by Modern Machinery of Beaverton, Inc., and Solar Products, Inc. - The Infrared Heater Company

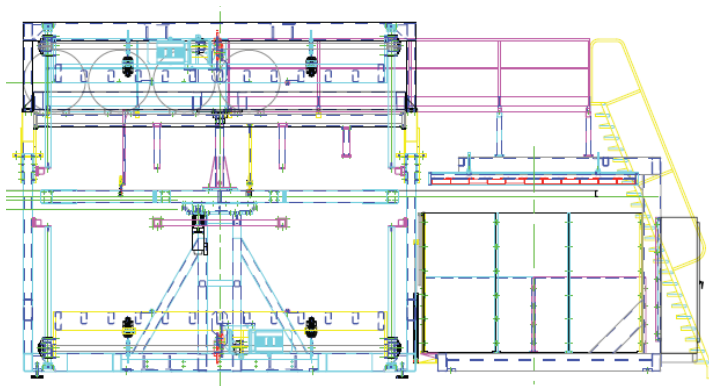
Solar/Modern

Delivers 1-2 Punch for Ray Products

CUSTOMER PROFILE

Ray Products is a heavy gauge custom thermoformer, located on the west coast.

The company had many decisions to make when purchasing their new three-station rotary. They wanted an OEM that would stand behind their machine and a heater supplier that would offer the flexibility that they demanded.



MACHINE SPECIFICATIONS

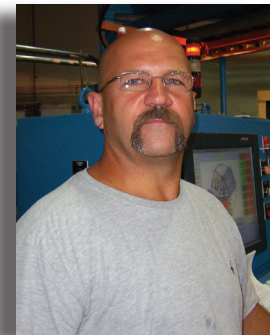
- Machine Type..... Three Station Rotary
- Heated Area..... 132” x 228”
- Maximum Sheet..... 120” x 216”
- Heater Type..... Solar Products, Inc.
- Top..... F-Series
- Bottom..... G-Series
- Top Zones..... 209
- Bottom Zones..... 209
- Controls..... Modern Machinery PC Control System

Heater zones are controlled by the Modern Machinery PC control system via a proportional output on a 2 second time-base. Features included are random firing of oven solid state relays to minimize peak current draw and current sensing for oven control diagnostics of SSRs heaters, and fuses. A multi-tasking (Windows) operating system with touch screen interface provides a scaled graphical representation of the oven and includes the sheet size for aiding in profiling the oven zones.

Dan Sweet

VP of Operations-Ray Products

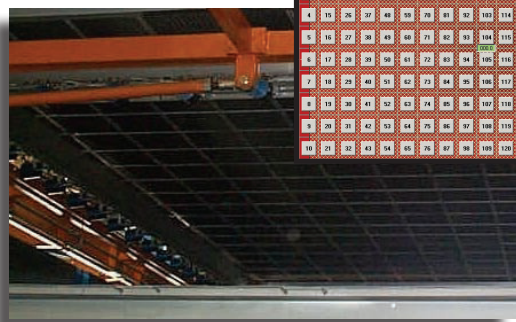
"I've never seen an oven have such immediate and positive impact on polyethylene. The ability to adjust the heat parameters in such a small area and see immediate impact is phenomenal. The Solar Oven has proven to be the best oven I have ever used; it certainly will be a future requirement on all new equipment for Ray Products."



SOLAR PRODUCTS HEATERS OFFER THE FOLLOWING BENEFITS:

- Fast heating cycle times
- Low energy consumption
- No reduction in efficiency over time
- Long life - 25,000 hour typical life expectancy
- Virtually maintenance free
- Uniformity
- Ease of installation

TOP OVEN ZONE LAYOUT



1	12	23	34	45	56	67	78	89	100	111	122	133	144	155	166	177	188	199
2	13	24	35	46	57	68	79	90	101	112	123	134	145	156	167	178	189	200
3	14	25	36	47	58	69	80	91	102	113	124	135	146	157	168	179	190	201
4	15	26	37	48	59	70	81	92	103	114	125	136	147	158	169	180	191	202
5	16	27	38	49	60	71	82	93	104	115	126	137	148	159	170	181	192	203
6	17	28	39	50	61	72	83	94	105	116	127	138	149	160	171	182	193	204
7	18	29	40	51	62	73	84	95	106	117	128	139	150	161	172	183	194	205
8	19	30	41	52	63	74	85	96	107	118	129	140	151	162	173	184	195	206
9	20	31	42	53	64	75	86	97	108	119	130	141	152	163	174	185	196	207
10	21	32	43	54	65	76	87	98	109	120	131	142	153	164	175	186	197	208

Contact us:

228 Wanaque Avenue
 Pompton Lakes, NJ 07442
 Phone (973) 248-9370
 Fax (973) 835-7856
www.solarproducts.com