

Heat Exchanger

Item #	Part	Part Description	Unit Cost	Quantity	Total Cost	Weight (lb)	Cost/Weight (\$/lb)	Unit Cost (\$)	Total Cost (\$)
1	Screw	4-40 screw	\$0.0098	76	\$0.74	0.000625	1.2295	\$ 0.0008	\$ 0.001
2	Washer	4-40 washer	\$0.0149	380	\$5.66	0.000625	1.2295	\$ 0.0008	\$ 0.29
3	Nut	4-40 nut	\$0.0277	76	\$2.11	0.000625	1.2295	\$ 0.0008	\$ 0.06
4	O-ring	#6 o-rings	\$0.1270	56	\$7.11	0.0003125	4.0865	\$ 0.0013	\$ 0.07
5	Al 1.5" OD stock, 18" length	flanged piece	\$15.0000	0.25	\$3.75	1.495	1.13475	\$ 1.70	\$ 1.70
6	Silicone sealant	GE sealant	\$5.3900	0.25	\$1.35	n/a	n/a	\$ 5.39	\$ 1.35
7	Selective coating	SOLKOTE™	\$0.9200	0.5	\$0.46	0.5	n/a	\$0.9200	\$ 0.46
8	Al coupling, 8"	1/4" NPT double threaded nipple	\$6.0800	2	\$12.16	1	1.13475	\$ 1.13	\$ 2.27
9	Al coupling, 3"	valve housing tubing	\$1.4400	1	\$1.44	0.5	1.13475	\$ 0.57	\$ 1.13
10	Al sheet, 32" x 9"	18 gauge (1mm) thick	\$0.0300	288	\$8.64	3.276	1.125	\$ 3.69	\$ 3.69
TOTAL COST					\$43.42				\$ 11.02

Valve Housing / Heat Exchanger Tubing

Item #	Part	Part Description	Unit Cost	Quantity	Total Cost	Weight (lb)	Cost/Weight (\$/lb)	Unit Cost (\$)	Total Cost (\$)
1	Al 2.0" OD stock, 6" length	valve housing	\$8.0000	0.5	\$4.00	0.744	1.13475	\$ 0.84	\$ 0.84
2	Thermostat valve	160 deg. F. Stant. Mod. 13006	\$3.9700	1	\$3.97	n/a	n/a	\$ 3.97	\$ 3.97
3	Air vent, 1/8" NPT	air release valve, brass	\$11.0100	1	\$11.01	n/a	n/a	\$ 11.01	\$ 11.01
4	Elbow, 1/4" NPT, male/female	90 deg. Elbow	\$3.2000	3	\$9.60	0.0625	1.13475	\$ 0.07	\$ 0.21
5	Rubber gasket	high temp	donated	1	\$0.00				
6	6-32 socket head bolts, 3/4" long	valve housing bolt	fouad	4	\$0.00				
7	Al coupling, 3"	valve housing tubing	\$1.4400	3	\$4.32	0.5	1.13475	\$ 0.57	\$ 1.70
8	Hose Clamp	hose clamp	\$0.6600	4	\$2.64	0.04375	1.2295	\$ 0.05	\$ 0.22
TOTAL COST					\$35.54				\$ 17.95

Enclosure

Item #	Part	Part Description	Unit Cost	Quantity	Total Cost	Weight (lb)	Cost/Weight (\$/lb)	Unit Cost (\$)	Total Cost (\$)
1	Plywood, 1/2" thick	Enclosure material	\$0.7647	10.87	\$8.31	n/a	n/a	\$ 0.76	\$ 8.31
2	2x4 support studs, 8' length	Enclosure legs / support	\$0.2838	10	\$2.84	n/a	n/a	\$ 0.28	\$ 2.84
3	1/4" x 3" Hex bolt	hex bolt	\$0.1700	12	\$2.04	0.04375	1.2295	\$ 0.05	\$ 0.65
4	1/4" hex nut	hex nut	\$0.0400	12	\$0.48	0.00625	1.2295	\$ 0.01	\$ 0.09
5	1/4" washer	washer	\$0.0700	12	\$0.84	0.01323	1.2295	\$ 0.02	\$ 0.20
6	door hinge	compartment hinge	\$2.5800	2	\$5.16	0.175	1.13475	\$ 0.20	\$ 0.40
7	fiber glass, 40ft ²	housing insulation	\$0.2700	4	\$1.08	2.0625	n/a	\$ 0.27	\$ 1.08
8	wood stain	enclosure coating	\$11.9800	?	?	n/a	n/a	\$ 0.06	\$ 0.06
TOTAL COST					\$20.75				\$ 13.62

Feed Water (Inlet Water Table / Buckets / Hosing)

Item #	Part	Part Description	Unit Cost	Quantity	Total Cost	Weight (lb)	Cost/Weight (\$/lb)	Unit Cost (\$)	Total Cost (\$)
1	hose clamps	hose clamps	\$0.6600	4	\$2.64	0.04375	1.2295	\$ 0.05	\$ 0.22
2	buckets	inlet / outlet buckets	\$5.6900	2	\$11.38	2.794	0.8184	\$ 2.29	\$ 4.57
3	3/4" x 10' hose	clear hose	\$11.4900	2	\$22.98	11	0.8618	\$ 9.48	\$ 9.48
5	Funnel + Filter	inlet funnel+ sediment filter	?	1	?	0.33125	0.8184	\$ 0.27	\$ 0.27
6	plywood, 1/2" thick	inlet table	\$0.7647	8	\$6.12	n/a	n/a	\$ 0.76	\$ 6.12
7	2x4 support	inlet table legs	\$0.2838	31	\$8.80			\$ 0.28	\$ 8.80
TOTAL COST					\$51.91				\$ 29.45

Miscellaneous

Item #	Part	Part Description	Unit Cost	Quantity	Total Cost	Weight (lb)	Cost/Weight (\$/lb)	Unit Cost (\$)	Total Cost (\$)
1	JT compound	liquid teflon gasket	\$1.9400	1	\$1.94	n/a	n/a	\$1.9400	\$ 1.94
TOTAL COST					\$1.94				\$ 1.94

Grand Totals

Heat Exchanger + Valve Housing / Heat Exchanger Tubing + Enclosure =	\$99.71	*based on material costs
HX + Valve Housing / Exchanger Tubing + Enclosure + Feed Water =	\$151.62	*based on material costs

New Grand Totals

Heat Exchanger + Valve Housing / Heat Exchanger Tubing + Enclosure =	\$ 42.59	*based on costs on a weight basis
HX + Valve Housing / Exchanger Tubing + Enclosure + Feed Water =	\$ 73.98	*based on costs on a weight basis

Assumptions:

- Processing cost reduced since processing time has been reduced (welding not needed)
- Metal components are average raw material prices
- The rest of the components follow the commercialized prices