

ENERGY ANALYSIS

**AND COMPARISON
FOR COMMERCIAL DISHMACHINES**

Prepared by
AMERICAN DISH SERVICE

Hot Water Single Door Dishmachines

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP DOOR MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Hobart, AM-14

Racks Washed Per Day: 200
 NSF Racks Per Hour: 53
 Machine HRS/Operation: 3.77
 Local Rate per KWH: 0.0725
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v			
Pump Motor:	3	0.75	1
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (built-in)			
Tank Heater:		5	
Tank Heater:			
KWH		5.75	

Daily Machine Cost \$1.57

Booster Heater Model: Hatco C-10

Voltage: 208 amp KWH: 10 Rise: 40°
 Daily Booster Cost \$2.73
 Daily Machine & Booster 4.30
 Cost Per Month 130.79

Electrical Cost Per Year \$1,569.48

MODEL: ADS, HT-25 (alt)

Racks Washed Per Day: 200
 NSF Racks Per Hour: 72
 Machine HRS/Operation: 2.78
 Local Rate per KWH: 0.0725
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v			
Pump Motor:	8	2.24	3
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (alternate)		13.5	
Tank Heater:			
Tank Heater:			
KWH		15.74	

Daily Machine Cost \$3.17

Booster Heater Model: ADS B-13

Voltage: 208 amp KWH: 0 Rise: 40°
 Daily Booster Cost \$0.00
 Daily Machine & Booster \$3.17
 Cost Per Month \$96.42

Electrical Cost Per Year \$1,157.02

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 63.6

Gallons of Water per Day 239.77
 Gallons of Water per Year 87,516.05
 Cost of Water **TOTAL:** \$126.90

NSF (GPH) Water Consumption: 61.2

Gallons of Water per Day 170.14
 Gallons of Water per Year 62,101.10
 Cost of Water **TOTAL:** \$90.05

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$445.46 **TOTAL**

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$245.04 **TOTAL**

YEARLY HEATING COST: \$316.09 **TOTAL**

YEARLY SEWER COST: \$173.88 **TOTAL**

Energy Total: \$2,386.88

Associated Chemical Est.: \$1,890.35

Total Cost to End User: \$4,277.23

Energy Total: \$1,737.05

Associated Chemical Est.: \$1,341.38

Total Cost to End User: \$3,078.43

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP DOOR MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Hobart, AM-14

Racks Washed Per Day:	200
NSF Racks Per Hour:	53
Machine HRS/Operation:	3.77
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v			
Pump Motor:	3	0.75	1
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (built-in)			
Tank Heater:		5	
Tank Heater:			
KWH		5.746	

Daily Machine Cost \$1.57

Booster Heater Model: Hatco C-10

Voltage: 208 amp	KWH: 10	Rise: 40°
Daily Booster Cost	\$2.73	
Daily Machine & Booster	4.30	
Cost Per Month	130.79	
Electrical Cost Per Year	\$1,569.48	

MODEL: ADS, HT-25

Racks Washed Per Day:	200
NSF Racks Per Hour:	72
Machine HRS/Operation:	2.78
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v			
Pump Motor:	8	2.24	3
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (alternate)			
Tank Heater:		8	
Tank Heater:			
KWH		10.238	

Daily Machine Cost \$2.06

Booster Heater Model: Hatco C-6

Voltage: 208 amp	KWH: 6	Rise: 40°
Daily Booster Cost	\$1.21	
Daily Machine & Booster	\$3.27	
Cost Per Month	\$99.46	
Electrical Cost Per Year	\$1,193.52	

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 63.6

Gallons of Water per Day	239.77
Gallons of Water per Year	87,516.05
Cost of Water	TOTAL: \$126.90

NSF (GPH) Water Consumption: 58.6

Gallons of Water per Day	162.91
Gallons of Water per Year	59,462.15
Cost of Water	TOTAL: \$86.22

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$445.46 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$245.04 TOTAL

YEARLY HEATING COST: \$302.66 TOTAL

YEARLY SEWER COST: \$166.49 TOTAL

Energy Total: \$2,386.88

Associated Chemical Est.: \$1,890.35

Total Cost to End User: \$4,277.23

Energy Total: \$1,748.90

Associated Chemical Est.: \$1,284.38

Total Cost to End User: \$3,033.28

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP DOOR MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Hobart, AM-14

Racks Washed Per Day: **200**
 NSF Racks Per Hour: **58**
 Machine HRS/Operation: **3.45**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v			
Pump Motor:	3	0.75	1
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (built-in)			
Tank Heater:		5	
Tank Heater:		13	
KWH		18.75	

Daily Machine Cost \$4.69

Booster Heater Model: Hatco Built-in

Voltage: 208 amp KWH: **0** Rise: 70°
 Daily Booster Cost **\$0.00**
 Daily Machine & Booster **4.69**
 Cost Per Month **142.65**

Electrical Cost Per Year \$1,711.80

MODEL: ADS, HT-25

Racks Washed Per Day: **200**
 NSF Racks Per Hour: **72**
 Machine HRS/Operation: **2.78**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v			
Pump Motor:	8	2.24	3
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (alternate)			
Tank Heater:		8	
Tank Heater:			
KWH		10.24	

Daily Machine Cost \$2.06

Booster Heater Model: Hatco B-12

Voltage: 208 amp KWH: **12** Rise: 70°
 Daily Booster Cost **\$2.42**
 Daily Machine & Booster **\$4.48**
 Cost Per Month **\$136.26**

Electrical Cost Per Year \$1,635.16

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 62.6

Gallons of Water per Day **215.97**
 Gallons of Water per Year **78,829.05**
 Cost of Water **TOTAL: \$114.30**

NSF (GPH) Water Consumption: 61.2

Gallons of Water per Day **170.14**
 Gallons of Water per Year **62,101.10**
 Cost of Water **TOTAL: \$90.05**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$401.24 TOTAL

YEARLY HEATING COST: \$316.09 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$220.72 TOTAL

YEARLY SEWER COST: \$173.88 TOTAL

Energy Total: \$2,448.06

Energy Total: \$2,215.19

Associated Chemical Est.: \$1,702.71

Associated Chemical Est.: \$1,341.38

Total Cost to End User: \$4,150.77

Total Cost to End User: \$3,556.57

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP DOOR MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Jackson Performer

Racks Washed Per Day: **200**
 NSF Racks Per Hour: **59**
 Machine HRS/Operation: **3.39**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 115v			
Pump Motor:		0.56	0.75
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (built-in)		11	
Tank Heater:			
Tank Heater:			
KWH		11.5595	

Daily Machine Cost \$2.84

Booster Heater Model: Built-in

Voltage: 208 amp KWH: **0** Rise: **40°**
 Daily Booster Cost **\$0.00**
 Daily Machine & Booster **2.84**
 Cost Per Month **86.38**

Electrical Cost Per Year \$1,036.56

MODEL: ADS, HT-25 (Alt)

Racks Washed Per Day: **200**
 NSF Racks Per Hour: **72**
 Machine HRS/Operation: **2.78**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v			
Pump Motor:	8	2.24	3
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (alternate)	25	13.5	
Tank Heater:	21/8kw		
Tank Heater:			
KWH		15.738	

Daily Machine Cost \$3.17

Booster Heater Model: ADS B-13 Built-on

Voltage: 208 amp KWH: **0** Rise: **40°**
 Daily Booster Cost **\$0.00**
 Daily Machine & Booster **\$3.17**
 Cost Per Month **\$96.42**

Electrical Cost Per Year \$1,157.02

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 70.8

Gallons of Water per Day **240.01**
 Gallons of Water per Year **87,603.65**
 Cost of Water **TOTAL: \$127.03**

NSF (GPH) Water Consumption: 58.6

Gallons of Water per Day **162.91**
 Gallons of Water per Year **59,462.15**
 Cost of Water **TOTAL: \$86.22**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$445.90 TOTAL

YEARLY HEATING COST: \$302.66 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$245.29 TOTAL

YEARLY SEWER COST: \$166.49 TOTAL

Energy Total: \$1,854.78

Associated Chemical Est.: \$1,892.24

Total Cost to End User: \$3,747.01

Energy Total: \$1,712.40

Associated Chemical Est.: \$1,284.38

Total Cost to End User: \$2,996.78

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP DOOR MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Jackson 200B

Racks Washed Per Day:	<u>200</u>
NSF Racks Per Hour:	<u>57</u>
Machine HRS/Operation:	<u>3.51</u>
Local Rate per KWH:	<u>0.05</u>
(typical range is .05 to .075)	

	Amp	Kw	HP
Voltage: 3p/208v			
Pump Motor:	3	0.75	1
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (built-in)		10.5	
Tank Heater:		5	
Tank Heater:			
KWH		16.25	

Daily Machine Cost \$2.85

Booster Heater Model: Built-in

Voltage: 208 amp	KWH:	0	Rise: 70°
Daily Booster Cost		\$0.00	
Daily Machine & Booster		2.85	
Cost Per Month		86.69	

Electrical Cost Per Year \$1,040.28

MODEL: ADS, HT-25

Racks Washed Per Day:	<u>200</u>
NSF Racks Per Hour:	<u>72</u>
Machine HRS/Operation:	<u>2.78</u>
Local Rate per KWH:	<u>0.05</u>
(typical range is .05 to .075)	

	Amp	Kw	HP
Voltage: 3p/208v			
Pump Motor:	8	2.24	3
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (alternate)			
Tank Heater:		8	
Tank Heater:			
KWH		10.24	

Daily Machine Cost \$1.42

Booster Heater Model: Hatco C-12

Voltage: 208 amp	KWH:	12	Rise: 70°
Daily Booster Cost		\$1.67	
Daily Machine & Booster		\$3.09	
Cost Per Month		\$93.99	

Electrical Cost Per Year \$1,127.83

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 52.2

Gallons of Water per Day	<u>183.22</u>
Gallons of Water per Year	<u>66,875.30</u>
Cost of Water	TOTAL: \$96.97

NSF (GPH) Water Consumption: 58.6

Gallons of Water per Day	<u>162.91</u>
Gallons of Water per Year	<u>59,462.15</u>
Cost of Water	TOTAL: \$86.22

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$340.40 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$187.25 TOTAL

YEARLY HEATING COST: \$302.66 TOTAL

YEARLY SEWER COST: \$166.49 TOTAL

Energy Total: \$1,664.90

Associated Chemical Est.: \$1,444.51

Total Cost to End User: \$3,109.41

Energy Total: \$1,683.20

Associated Chemical Est.: \$1,284.38

Total Cost to End User: \$2,967.58

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

Chemical sanitizer compared to HIGH TEMP DOOR MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Jackson ES 2000 (L)

Racks Washed Per Day:	200
NSF Racks Per Hour:	48
Machine HRS/Operation:	4.17
Local Rate per KWH:	0.05
(typical range is .05 to .075)	

	Amp	Kw	HP
Voltage: 115v			
Pump Motor:	12	0.55	0.75
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (built-in)			
Tank Heater:		0	
Tank Heater:			
KWH		0.55	

Daily Machine Cost \$0.11

Booster Heater Model: N/A

Voltage: 208 amp KWH: 0 Rise: 0°

Daily Booster Cost \$0.00

Daily Machine & Booster 0.11

Cost Per Month 3.35

Electrical Cost Per Year \$40.20

MODEL: ADS, HT-25 (Alt)

Racks Washed Per Day:	200
NSF Racks Per Hour:	72
Machine HRS/Operation:	2.78
Local Rate per KWH:	0.05
(typical range is .05 to .075)	

	Amp	Kw	HP
Voltage: 208v			
Pump Motor:	8	2.6	3
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (alternate)	25	13.5	
Tank Heater:	21/8kw		
Tank Heater:			
KWH		16.1	

Daily Machine Cost \$2.24

Booster Heater Model: ADS B-13 Built-on

Voltage: 208 amp KWH: 0 Rise: 40°

Daily Booster Cost \$0.00

Daily Machine & Booster \$2.24

Cost Per Month \$68.13

Electrical Cost Per Year \$817.58

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 57.6

Gallons of Water per Day 240.19

Gallons of Water per Year 87,669.35

Cost of Water **TOTAL: \$127.12**

NSF (GPH) Water Consumption: 58.6

Gallons of Water per Day 162.91

Gallons of Water per Year 59,462.15

Cost of Water **TOTAL: \$86.22**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50 (typical 5.50 per mcf)

YEARLY HEATING COST: \$446.24 TOTAL

Local Sewer Cost: .0028 (typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$245.47 TOTAL

YEARLY HEATING COST: \$302.66 TOTAL

YEARLY SEWER COST: \$166.49 TOTAL

Energy Total: \$859.03

Associated Chemical Est.: \$2,209.79

Total Cost to End User: \$3,068.83

Energy Total: \$1,372.96

Associated Chemical Est.: \$1,284.38

Total Cost to End User: \$2,657.34

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

Chemical Sanitizer compared to HIGH TEMP DOOR MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Jackson ES 4000 (L)

Racks Washed Per Day:	200
NSF Racks Per Hour:	80
Machine HRS/Operation:	2.50
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 115v			
Pump Motor:	12	0.56	0.75
Pump Motor:	12	0.56	0.75
Pump Motor:			
Conveyor Motor:			
Booster (built-in)			
Tank Heater:		0	
Tank Heater:			
KWH		1.12	

Daily Machine Cost \$0.20

Booster Heater Model: N/A

Voltage: 208 amp KWH: 0 Rise: 0°

Daily Booster Cost \$0.00

Daily Machine & Booster 0.20

Cost Per Month 6.08

Electrical Cost Per Year \$72.96

MODEL: ADS, HT-25 (Alt)

Racks Washed Per Day:	200
NSF Racks Per Hour:	72
Machine HRS/Operation:	2.78
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v			
Pump Motor:	8	2.24	3
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (alternate)	25	13.5	
Tank Heater:	21/8kw		
Tank Heater:			
KWH		15.74	

Daily Machine Cost \$3.17

Booster Heater Model: ADS B-13 Built-on

Voltage: 208 amp KWH: 0 Rise: 40°

Daily Booster Cost \$0.00

Daily Machine & Booster \$3.17

Cost Per Month \$96.42

Electrical Cost Per Year \$1,157.02

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 120

Gallons of Water per Day 300.00

Gallons of Water per Year 109,500.00

Cost of Water **TOTAL: \$158.78**

NSF (GPH) Water Consumption: 58.6

Gallons of Water per Day 162.91

Gallons of Water per Year 59,462.15

Cost of Water **TOTAL: \$86.22**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: **\$557.36 TOTAL**

Local Sewer Cost: .0028 (typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: **\$306.60 TOTAL**

Energy Total: \$1,095.70

Associated Chemical Est.: \$2,760.06

Total Cost to End User: \$3,855.75

YEARLY HEATING COST: **\$302.66 TOTAL**

YEARLY SEWER COST: **\$166.49 TOTAL**

Energy Total: \$1,712.40

Associated Chemical Est.: \$1,284.38

Total Cost to End User: \$2,996.78

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP DOOR MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: CMA 180 HTS

MODEL: HT-25 (alt)

Racks Washed Per Day: 200
 NSF Racks Per Hour: 54
 Machine HRS/Operation: 3.70
 Local Rate per KWH: 0.0725
 (US Average .0725)

Racks Washed Per Day: 200
 NSF Racks Per Hour: 72
 Machine HRS/Operation: 2.78
 Local Rate per KWH: 0.0725
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	3	0.75	1
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (built-in)		12	
Tank Heater:		5	
Tank Heater:			
KWH		17.746	

Daily Machine Cost \$4.76

Booster Heater Model: CMA 12Kw Built-in

Voltage: 208 amp KWH: 0 Rise: 40°

Daily Booster Cost \$0.00

Daily Machine & Booster 4.76

Cost Per Month 144.78

Electrical Cost Per Year \$1,737.36

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	8	2.24	3
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (alternate)			
Tank Heater:		13.5	
Tank Heater:			
KWH		15.738	

Daily Machine Cost \$3.17

Booster Heater Model: ADS B-13 Built-on

Voltage: 208 amp KWH: 0 Rise: 40°

Daily Booster Cost \$0.00

Daily Machine & Booster \$3.17

Cost Per Month \$96.42

Electrical Cost Per Year \$1,157.02

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 52

Gallons of Water per Day 192.40

Gallons of Water per Year 70,226.00

Cost of Water **TOTAL: \$101.83**

NSF (GPH) Water Consumption: 58.6

Gallons of Water per Day 162.91

Gallons of Water per Year 59,462.15

Cost of Water **TOTAL: \$86.22**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50 (typical 5.50 per mcf)

YEARLY HEATING COST: **\$357.45 TOTAL**

Local Sewer Cost: .0028 (typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: **\$196.63 TOTAL**

YEARLY HEATING COST: **\$302.66 TOTAL**

YEARLY SEWER COST: **\$166.49 TOTAL**

Energy Total: \$2,393.27

Associated Chemical Est.: \$1,516.88

Total Cost to End User: \$3,910.15

Energy Total: \$1,712.40

Associated Chemical Est.: \$1,284.38

Total Cost to End User: \$2,996.78

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP DOOR MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Champion D-H-1

Racks Washed Per Day:	200
NSF Racks Per Hour:	55
Machine HRS/Operation:	3.64
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	3	0.75	1
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (built-in)			
Tank Heater:		3	
Tank Heater:			
KWH		3.75	

Daily Machine Cost \$0.99

Booster Heater Model: Hatco C-7

Voltage: 208 amp	KWH: 7	Rise: 40°
Daily Booster Cost	\$1.85	
Daily Machine & Booster	2.84	
Cost Per Month	86.38	

Electrical Cost Per Year \$1,036.56

MODEL: ADS, HT-25 (Alt)

Racks Washed Per Day:	200
NSF Racks Per Hour:	72
Machine HRS/Operation:	2.78
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	8	2.24	3
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (alternate)		13.5	
Tank Heater:			
Tank Heater:			
KWH		15.74	

Daily Machine Cost \$3.17

Booster Heater Model: ADS B-13 Built-on

Voltage: 208 amp	KWH: 0	Rise: 40°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	\$3.17	
Cost Per Month	\$96.42	

Electrical Cost Per Year \$1,157.02

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 65

Gallons of Water per Day	236.60
Gallons of Water per Year	86,359.00
Cost of Water	TOTAL: \$125.22

NSF (GPH) Water Consumption: 58.6

Gallons of Water per Day	162.91
Gallons of Water per Year	59,462.15
Cost of Water	TOTAL: \$86.22

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$439.57 TOTAL

YEARLY HEATING COST: \$302.66 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$241.81 TOTAL

YEARLY SEWER COST: \$166.49 TOTAL

Energy Total: \$1,843.16

Energy Total: \$1,712.40

Associated Chemical Est.: \$1,865.35

Associated Chemical Est.: \$1,284.38

Total Cost to End User: \$3,708.51

Total Cost to End User: \$2,996.78

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP DOOR MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Champion D-HB

Racks Washed Per Day:	200
NSF Racks Per Hour:	55
Machine HRS/Operation:	3.64
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	3	0.75	1
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (built-in)		9	
Tank Heater:		3	
Tank Heater:			
KWH		12.746	

Daily Machine Cost \$3.36

Booster Heater Model: Built-in

Voltage: 208 amp	KWH: 0	Rise: 40°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	3.36	
Cost Per Month	102.20	
Electrical Cost Per Year	\$1,226.40	

MODEL: ADS, HT-25 (Alt)

Racks Washed Per Day:	200
NSF Racks Per Hour:	72
Machine HRS/Operation:	2.78
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	8	2.24	3
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (alternate)		13.5	
Tank Heater:			
Tank Heater:			
KWH		15.738	

Daily Machine Cost \$3.17

Booster Heater Model: ADS B-13 Built-on

Voltage: 208 amp	KWH: 0	Rise: 40°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	\$3.17	
Cost Per Month	\$96.42	
Electrical Cost Per Year	\$1,157.02	

WATER AND SEWER USAGE

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 66

Gallons of Water per Day	240.24
Gallons of Water per Year	87,687.60
Cost of Water	TOTAL: \$127.15

NSF (GPH) Water Consumption: 58.6

Gallons of Water per Day	162.91
Gallons of Water per Year	59,462.15
Cost of Water	TOTAL: \$86.22

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$446.33 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$245.53 TOTAL

YEARLY HEATING COST: \$302.66 TOTAL

YEARLY SEWER COST: \$166.49 TOTAL

Energy Total: \$2,045.41

Associated Chemical Est.: \$1,894.05

Total Cost to End User: \$3,939.46

Energy Total: \$1,712.40

Associated Chemical Est.: \$1,284.38

Total Cost to End User: \$2,996.78

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

double/lowtemp vs HIGH TEMP DOOR MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: ADS 5AG (double)

Racks Washed Per Day:	200
NSF Racks Per Hour:	74
Machine HRS/Operation:	2.70
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	15	1.12	1.5
Pump Motor:	15	1.12	1.5
Pump Motor:			
Conveyor Motor:			
Booster (built-in)			
Tank Heater:			
Tank Heater:			
KWH		2.24	

Daily Machine Cost \$0.44

Booster Heater Model: None Needed

Voltage: 208 amp	KWH: 0	Rise: 0°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	0.44	
Cost Per Month	13.38	

Electrical Cost Per Year \$160.56

MODEL: ADS, HT-25 (alt)

Racks Washed Per Day:	200
NSF Racks Per Hour:	72
Machine HRS/Operation:	2.78
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:			
Pump Motor:			
Conveyor Motor:			
Booster (alternate)		13.5	
Tank Heater:			
Tank Heater:			
KWH		15.74	

Daily Machine Cost \$3.17

Booster Heater Model: ADS B-13

Voltage: 208 amp	KWH: 0	Rise: 40°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	\$3.17	
Cost Per Month	\$96.42	

Electrical Cost Per Year \$1,157.02

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 118.4

Gallons of Water per Day	319.68
Gallons of Water per Year	116,683.20
Cost of Water	TOTAL: \$169.19

NSF (GPH) Water Consumption: 61.2

Gallons of Water per Day	170.14
Gallons of Water per Year	62,101.10
Cost of Water	TOTAL: \$90.05

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$593.92 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$326.71 TOTAL

YEARLY HEATING COST: \$316.09 TOTAL

YEARLY SEWER COST: \$173.88 TOTAL

Energy Total: \$1,250.38

Associated Chemical Est.: \$2,941.12

Total Cost to End User: \$4,191.50

Energy Total: \$1,737.05

Associated Chemical Est.: \$1,341.38

Total Cost to End User: \$3,078.43

Conveyors

44"

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: SCT-44 (Stero)

Racks Washed Per Day: **350**
 NSF Racks Per Hour: **209**
 Machine HRS/Operation: **1.67**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		10.0	minimum
Tank Heater:			
KWH		11.68	

Daily Machine Cost \$1.41

Booster Heater Model: Hatco C-30

Voltage: 208 amp KWH: **30** Rise: **40°**
 Daily Booster Cost **\$3.63**
 Daily Machine & Booster **5.04**
 Cost Per Month **153.30**

Electrical Cost Per Year \$1,839.60

MODEL: ADS, ADC-44

Racks Washed Per Day: **350**
 NSF Racks Per Hour: **244**
 Machine HRS/Operation: **1.43**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: Hatco C-15

Voltage: 208 amp KWH: **15** Rise: **40°**
 Daily Booster Cost **\$1.56**
 Daily Machine & Booster **\$2.90**
 Cost Per Month **\$88.21**

Electrical Cost Per Year \$1,058.48

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 290

Gallons of Water per Day **484.30**
 Gallons of Water per Year **176,769.50**
 Cost of Water **TOTAL: \$256.32**

NSF (GPH) Water Consumption: 120

Gallons of Water per Day **171.60**
 Gallons of Water per Year **62,634.00**
 Cost of Water **TOTAL: \$90.82**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$899.76 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$494.95 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$3,490.63

Associated Chemical Est.: \$3,818.22

Total Cost to End User: \$7,308.85

Energy Total: \$1,643.48

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$2,996.38

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, *Chemical sanitizer* CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Hobart, C44A

Racks Washed Per Day: 350
NSF Racks Per Hour: 203
Machine HRS/Operation: 1.72
Local Rate per KWH: 0.0725
(US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.51	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		16.70	

Daily Machine Cost \$2.08

Booster Heater Model: Hatco C-30

Voltage: 208 amp KWH: 30 Rise: 40°
Daily Booster Cost \$3.74
Daily Machine & Booster 5.82
Cost Per Month 177.02

Electrical Cost Per Year \$2,124.24

MODEL: ADS, ADC-44 (L)

Racks Washed Per Day: 350
NSF Racks Per Hour: 244
Machine HRS/Operation: 1.43
Local Rate per KWH: 0.0725
(US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.27	3
Pump Motor:	0.5	0.23	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.23	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.92	

Daily Machine Cost \$1.34

Booster Heater Model: None Needed

Voltage: 208 amp KWH: 0 Rise: 0°
Daily Booster Cost \$0.00
Daily Machine & Booster \$1.34
Cost Per Month \$40.76

Electrical Cost Per Year \$489.09

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 300

Gallons of Water per Day 516.00
Gallons of Water per Year 188,340.00
Cost of Water **TOTAL:** \$273.09

NSF (GPH) Water Consumption: 120

Gallons of Water per Day 171.60
Gallons of Water per Year 62,634.00
Cost of Water **TOTAL:** \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50 (typical 5.50 per mcf)

YEARLY HEATING COST: \$958.65 **TOTAL**

Local Sewer Cost: .0028 (typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$527.35 **TOTAL**

YEARLY HEATING COST: \$318.81 **TOTAL**

YEARLY SEWER COST: \$175.38 **TOTAL**

Energy Total: \$3,883.34

Associated Chemical Est.: \$4,068.14

Total Cost to End User: \$7,951.48

Energy Total: \$1,074.09

Associated Chemical Est.: \$1,578.75

Total Cost to End User: \$2,652.85

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Hobart, C44A

Racks Washed Per Day:	<u>350</u>
NSF Racks Per Hour:	<u>203</u>
Machine HRS/Operation:	<u>1.72</u>
Local Rate per KWH:	<u>0.0725</u>
(US Average .0725)	

	Amp	Kw	HP
Voltage: <u>208v,3ph</u>			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		<u>16.68</u>	

Daily Machine Cost \$2.08

Booster Heater Model: Hatco C-30

Voltage: 208 amp	KWH:	<u>30</u>	Rise: 40°
Daily Booster Cost		<u>\$3.74</u>	
Daily Machine & Booster		<u>5.82</u>	
Cost Per Month		<u>177.02</u>	

Electrical Cost Per Year \$2,124.24

MODEL: ADS, ADC-44

Racks Washed Per Day:	<u>350</u>
NSF Racks Per Hour:	<u>244</u>
Machine HRS/Operation:	<u>1.43</u>
Local Rate per KWH:	<u>0.0725</u>
(US Average .0725)	

	Amp	Kw	HP
Voltage: <u>208v,3ph</u>			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		<u>12.89</u>	

Daily Machine Cost \$1.34

Booster Heater Model: Hatco C-15

Voltage: 208 amp	KWH:	<u>15</u>	Rise: 40°
Daily Booster Cost		<u>\$1.56</u>	
Daily Machine & Booster		<u>\$2.90</u>	
Cost Per Month		<u>\$88.21</u>	

Electrical Cost Per Year \$1,058.48

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 300

Gallons of Water per Day	<u>516.00</u>
Gallons of Water per Year	<u>188,340.00</u>
Cost of Water	TOTAL: <u>\$273.09</u>

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	<u>171.60</u>
Gallons of Water per Year	<u>62,634.00</u>
Cost of Water	TOTAL: <u>\$90.82</u>

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$958.65 **TOTAL**

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$527.35 **TOTAL**

YEARLY HEATING COST: \$318.81 **TOTAL**

YEARLY SEWER COST: \$175.38 **TOTAL**

Energy Total: \$3,883.34

Energy Total: \$1,643.48

Associated Chemical Est.: \$4,068.14

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$7,951.48

Total Cost to End User: \$2,996.38

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Hobart, C44A

Racks Washed Per Day: 350
 NSF Racks Per Hour: 203
 Machine HRS/Operation: 1.72
 Local Rate per KWH: 0.0725
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.10	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		GAS	
Tank Heater:			
KWH		1.29	

Daily Machine Cost \$0.16

Booster Heater Model: Hatco Gas Booster

Voltage: 208 amp KWH: 0 Rise: 40°
 Daily Booster Cost \$0.00
 Daily Machine & Booster 0.16
 Cost Per Month 4.87

Electrical Cost Per Year \$58.44

MODEL: ADS, ADC-44

Racks Washed Per Day: 350
 NSF Racks Per Hour: 244
 Machine HRS/Operation: 1.43
 Local Rate per KWH: 0.0725
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: Hatco C-15

Voltage: 208 amp KWH: 15 Rise: 40°
 Daily Booster Cost \$1.56
 Daily Machine & Booster \$2.90
 Cost Per Month \$88.21

Electrical Cost Per Year \$1,058.48

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 300

Gallons of Water per Day 516.00
 Gallons of Water per Year 188,340.00
 Cost of Water **TOTAL:** \$273.09

NSF (GPH) Water Consumption: 120

Gallons of Water per Day 171.60
 Gallons of Water per Year 62,634.00
 Cost of Water **TOTAL:** \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$958.65 **TOTAL**

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$527.35 **TOTAL**

YEARLY HEATING COST: \$318.81 **TOTAL**

YEARLY SEWER COST: \$175.38 **TOTAL**

Energy / Less Gas Fees: \$1,817.54

Associated Chemical Est.: \$4,068.14

Total Cost to End User: \$5,885.68

Energy Total: \$1,643.48

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$2,996.38

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Hobart, C44AW

MODEL: ADS, ADC-44

Racks Washed Per Day: 350
 NSF Racks Per Hour: 126
 Machine HRS/Operation: 2.78
 Local Rate per KWH: 0.0725
 (US Average .0725)

Racks Washed Per Day: 350
 NSF Racks Per Hour: 244
 Machine HRS/Operation: 1.43
 Local Rate per KWH: 0.0725
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		16.68	

Daily Machine Cost \$3.36

Booster Heater Model: Hatco C-12

Voltage: 208 amp KWH: 12 Rise: 40°
 Daily Booster Cost \$2.42
 Daily Machine & Booster 5.78
 Cost Per Month 175.80

Electrical Cost Per Year \$2,109.60

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: Hatco C-15

Voltage: 208 amp KWH: 15 Rise: 40°
 Daily Booster Cost \$1.56
 Daily Machine & Booster \$2.90
 Cost Per Month \$88.21

Electrical Cost Per Year \$1,058.48

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 120

Gallons of Water per Day 333.60
 Gallons of Water per Year 121,764.00
 Cost of Water **TOTAL:** \$176.56

NSF (GPH) Water Consumption: 120

Gallons of Water per Day 171.60
 Gallons of Water per Year 62,634.00
 Cost of Water **TOTAL:** \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$619.78 **TOTAL**

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$340.94 **TOTAL**

YEARLY HEATING COST: \$318.81 **TOTAL**

YEARLY SEWER COST: \$175.38 **TOTAL**

Energy Total: \$3,246.88

Associated Chemical Est.: \$2,630.10

Total Cost to End User: \$5,876.98

Energy Total: \$1,643.48

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$2,996.38

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, *Chemical Sanitizer* CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Hobart, C44AW (L)

Racks Washed Per Day:	350
NSF Racks Per Hour:	126
Machine HRS/Operation:	2.78
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		16.68	

Daily Machine Cost \$3.36

Booster Heater Model: None Needed

Voltage: 208 amp	KWH: 0	Rise: 0°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	3.36	
Cost Per Month	102.20	
Electrical Cost Per Year	\$1,226.40	

MODEL: ADS, ADC-44 (L)

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: None Needed

Voltage: 208 amp	KWH: 0	Rise: 0°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	\$1.34	
Cost Per Month	\$40.76	
Electrical Cost Per Year	\$489.09	

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	333.60
Gallons of Water per Year	121,764.00
Cost of Water	TOTAL: \$176.56

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$619.78 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$340.94 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$2,363.68

Associated Chemical Est.: \$3,069.18

Total Cost to End User: \$5,432.86

Energy Total: \$1,074.09

Associated Chemical Est.: \$1,578.75

Total Cost to End User: \$2,652.85

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Hobart, CRS-86A

Racks Washed Per Day:	350
NSF Racks Per Hour:	248
Machine HRS/Operation:	1.41
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:	5	1.49	2
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:		15.0	
KWH		33.17	

Daily Machine Cost \$3.39

Booster Heater Model: Hatco C-27

Voltage: 208 amp	KWH: 27	Rise: 40°
Daily Booster Cost	\$2.76	
Daily Machine & Booster	6.15	
Cost Per Month	187.06	

Electrical Cost Per Year \$2,244.72

MODEL: ADS, ADC-44

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: Hatco C-15

Voltage: 208 amp	KWH: 15	Rise: 40°
Daily Booster Cost	\$1.56	
Daily Machine & Booster	\$2.90	
Cost Per Month	\$88.21	

Electrical Cost Per Year \$1,058.48

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 278

Gallons of Water per Day	391.98
Gallons of Water per Year	143,072.70
Cost of Water	TOTAL: \$207.46

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$728.24 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$400.60 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$3,581.02

Associated Chemical Est.: \$3,090.37

Total Cost to End User: \$6,671.39

Energy Total: \$1,643.48

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$2,996.38

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Jackson, ES4400

Racks Washed Per Day:	350
NSF Racks Per Hour:	248
Machine HRS/Operation:	1.41
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		16.68	

Daily Machine Cost \$1.70

Booster Heater Model: Hatco C-24

Voltage: 208 amp	KWH: 24	Rise: 40°
Daily Booster Cost	\$2.45	
Daily Machine & Booster	4.15	
Cost Per Month	126.23	

Electrical Cost Per Year \$1,514.76

MODEL: ADS, ADC-44

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: Hatco C-15

Voltage: 208 amp	KWH: 15	Rise: 40°
Daily Booster Cost	\$1.56	
Daily Machine & Booster	\$2.90	
Cost Per Month	\$88.21	

Electrical Cost Per Year \$1,058.48

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 234

Gallons of Water per Day	329.94
Gallons of Water per Year	120,428.10
Cost of Water	TOTAL: \$174.62

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$612.98 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$337.20 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$2,639.56

Associated Chemical Est.: \$2,601.25

Total Cost to End User: \$5,240.81

Energy Total: \$1,643.48

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$2,996.38

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, *Chemical sanitizer* CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Jackson, ES4400

MODEL: ADS, ADC-44 (L)

Racks Washed Per Day: **350**
 NSF Racks Per Hour: **248**
 Machine HRS/Operation: **1.41**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

Racks Washed Per Day: **350**
 NSF Racks Per Hour: **244**
 Machine HRS/Operation: **1.43**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		16.68	

Daily Machine Cost \$1.70

Booster Heater Model: Hatco C-24

Voltage: 208 amp KWH: **24** Rise: **40°**
 Daily Booster Cost **\$2.45**
 Daily Machine & Booster **4.15**
 Cost Per Month **126.23**

Electrical Cost Per Year \$1,514.76

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: None Needed

Voltage: 208 amp KWH: **0** Rise: **0°**
 Daily Booster Cost **\$0.00**
 Daily Machine & Booster **\$1.34**
 Cost Per Month **\$40.76**

Electrical Cost Per Year \$489.09

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 234

Gallons of Water per Day **329.94**
 Gallons of Water per Year **120,428.10**
 Cost of Water **TOTAL: \$174.62**

NSF (GPH) Water Consumption: 120

Gallons of Water per Day **171.60**
 Gallons of Water per Year **62,634.00**
 Cost of Water **TOTAL: \$90.82**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$612.98 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$337.20 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$2,639.56

Energy Total: \$1,074.09

Associated Chemical Est.: \$2,601.25

Associated Chemical Est.: \$1,578.75

Total Cost to End User: \$5,240.81

Total Cost to End User: \$2,652.85

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Jackson, AJ-44

Racks Washed Per Day:	350
NSF Racks Per Hour:	248
Machine HRS/Operation:	1.41
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)		34.6	
Tank Heater:		15.0	
Tank Heater:			
KWH		51.28	

Daily Machine Cost \$5.24

Booster Heater Model: Internal

Voltage: 208 amp	KWH: 0	Rise: 40°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	5.24	
Cost Per Month	159.38	

Electrical Cost Per Year \$1,912.56

MODEL: ADS, ADC-44

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: Hatco C-15

Voltage: 208 amp	KWH: 15	Rise: 40°
Daily Booster Cost	\$1.56	
Daily Machine & Booster	\$2.90	
Cost Per Month	\$88.21	

Electrical Cost Per Year \$1,058.48

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 234

Gallons of Water per Day	329.94
Gallons of Water per Year	120,428.10
Cost of Water	TOTAL: \$174.62

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$612.98 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$337.20 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$3,037.36

Associated Chemical Est.: \$2,601.25

Total Cost to End User: \$5,638.61

Energy Total: \$1,643.48

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$2,996.38

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Jackson, AJ-86

Racks Washed Per Day:	350
NSF Racks Per Hour:	248
Machine HRS/Operation:	1.41
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:	5	1.49	2
Pump Motor:	3	0.75	1
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)		34.6	
Tank Heater:		15.0	
Tank Heater:		10.0	
KWH		63.52	

Daily Machine Cost \$6.49

Booster Heater Model: Internal

Voltage: 208 amp	KWH:	0	Rise: 40°
Daily Booster Cost		\$0.00	
Daily Machine & Booster		6.49	
Cost Per Month		197.40	

Electrical Cost Per Year \$2,368.80

MODEL: ADS, ADC-44

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: Hatco C-15

Voltage: 208 amp	KWH:	15	Rise: 40°
Daily Booster Cost		\$1.56	
Daily Machine & Booster		\$2.90	
Cost Per Month		\$88.21	

Electrical Cost Per Year \$1,058.48

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 222

Gallons of Water per Day	313.02
Gallons of Water per Year	114,252.30
Cost of Water	TOTAL: \$165.67

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$581.54 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$319.91 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$3,435.91

Energy Total: \$1,643.48

Associated Chemical Est.: \$2,467.85

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$5,903.76

Total Cost to End User: \$2,996.38

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)/k 1 Phase: Kw=(E x I x PF)/k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Insinger, 44-4

Racks Washed Per Day:	350
NSF Racks Per Hour:	217
Machine HRS/Operation:	1.61
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:		1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		16.68	

Daily Machine Cost \$1.95

Booster Heater Model: Hatco C-24

Voltage: 208 amp	KWH: 24	Rise: 40°
Daily Booster Cost	\$2.80	
Daily Machine & Booster	4.75	
Cost Per Month	144.48	
Electrical Cost Per Year	\$1,733.76	

MODEL: ADS, ADC-44

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: Hatco C-15

Voltage: 208 amp	KWH: 15	Rise: 40°
Daily Booster Cost	\$1.56	
Daily Machine & Booster	\$2.90	
Cost Per Month	\$88.21	
Electrical Cost Per Year	\$1,058.48	

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 198

Gallons of Water per Day	318.78
Gallons of Water per Year	116,354.70
Cost of Water	TOTAL: \$168.71

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$592.25 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$325.79 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total:	\$2,820.52
Associated Chemical Est.:	\$2,513.26
Total Cost to End User:	\$5,333.78

Energy Total:	\$1,643.48
Associated Chemical Est.:	\$1,352.89
Total Cost to End User:	\$2,996.38

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Champion 44KB

Racks Washed Per Day:	350
NSF Racks Per Hour:	201
Machine HRS/Operation:	1.74
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		16.68	

Daily Machine Cost \$2.10

Booster Heater Model: Hatco C-36

Voltage: 208 amp	KWH: 36	Rise: 40°
Daily Booster Cost	\$4.54	
Daily Machine & Booster	6.64	
Cost Per Month	201.96	

Electrical Cost Per Year \$2,423.52

MODEL: ADS, ADC-44

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: Hatco C-15

Voltage: 208 amp	KWH: 15	Rise: 40°
Daily Booster Cost	\$1.56	
Daily Machine & Booster	\$2.90	
Cost Per Month	\$88.21	

Electrical Cost Per Year \$1,058.48

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 324

Gallons of Water per Day	563.76
Gallons of Water per Year	205,772.40
Cost of Water	TOTAL: \$298.37

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$1,047.38 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$576.16 TOTAL

Energy Total: \$4,345.43

Associated Chemical Est.: \$4,444.68

Total Cost to End User: \$8,790.12

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$1,643.48

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$2,996.38

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, *Chemical sanitizer* CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Champion KL44 (L)

MODEL: ADS, ADC-44 (L)

Racks Washed Per Day: **350**
 NSF Racks Per Hour: **200**
 Machine HRS/Operation: **1.75**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

Racks Washed Per Day: **350**
 NSF Racks Per Hour: **244**
 Machine HRS/Operation: **1.43**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		10.0	
Tank Heater:			
KWH		11.68	

Daily Machine Cost \$1.48

Booster Heater Model: None Needed

Voltage: 208 amp KWH: **0** Rise: 0°
 Daily Booster Cost **\$0.00**
 Daily Machine & Booster **1.48**
 Cost Per Month **45.02**

Electrical Cost Per Year \$540.24

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: None Needed

Voltage: 208 amp KWH: **0** Rise: 0°
 Daily Booster Cost **\$0.00**
 Daily Machine & Booster **\$1.34**
 Cost Per Month **\$40.76**

Electrical Cost Per Year \$489.09

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 321

Gallons of Water per Day **561.75**
 Gallons of Water per Year **205,038.75**
 Cost of Water **TOTAL: \$297.31**

NSF (GPH) Water Consumption: 120

Gallons of Water per Day **171.60**
 Gallons of Water per Year **62,634.00**
 Cost of Water **TOTAL: \$90.82**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$1,043.65 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$574.11 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$2,455.30

Energy Total: \$1,074.09

Associated Chemical Est.: \$5,168.21

Associated Chemical Est.: \$1,578.75

Total Cost to End User: \$7,623.51

Total Cost to End User: \$2,652.85

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: CMA-44 (H)

Racks Washed Per Day:	350
NSF Racks Per Hour:	205
Machine HRS/Operation:	1.71
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	3.2	0.75	1
Pump Motor:	3.2	0.75	1
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (built-in)			
Tank Heater:		10.0	
Tank Heater:			
KWH		11.72	

Daily Machine Cost \$1.45

Booster Heater Model: Hatco C-24

Voltage: 208 amp	KWH: 24	Rise: 40°
Daily Booster Cost	\$2.98	
Daily Machine & Booster	4.43	
Cost Per Month	134.74	

Electrical Cost Per Year \$1,616.88

MODEL: ADS, ADC-44

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: Hatco C-15

Voltage: 208 amp	KWH: 15	Rise: 40°
Daily Booster Cost	\$1.56	
Daily Machine & Booster	\$2.90	
Cost Per Month	\$88.21	

Electrical Cost Per Year \$1,058.48

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 192

Gallons of Water per Day	328.32
Gallons of Water per Year	119,836.80
Cost of Water	TOTAL: \$173.76

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$609.97 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$335.54 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$2,736.16

Associated Chemical Est.: \$2,588.47

Total Cost to End User: \$5,324.63

Energy Total: \$1,643.48

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$2,996.38

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, *Chemical Sanitizer* CONVEYORS

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: CMA-44 (L)

Racks Washed Per Day:	350
NSF Racks Per Hour:	205
Machine HRS/Operation:	1.71
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	3.2	0.75	1
Pump Motor:	3.2	0.75	1
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (built-in)			
Tank Heater:		10.0	
Tank Heater:			
KWH		11.72	

Daily Machine Cost \$1.45

Booster Heater Model: None Needed

Voltage: 208 amp	KWH: 0	Rise: 0°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	1.45	
Cost Per Month	44.10	
Electrical Cost Per Year	\$529.20	

MODEL: ADS, ADC-44 (L)

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.89	

Daily Machine Cost \$1.34

Booster Heater Model: None Needed

Voltage: 208 amp	KWH: 0	Rise: 0°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	\$1.34	
Cost Per Month	\$40.76	
Electrical Cost Per Year	\$489.09	

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 192

Gallons of Water per Day	328.32
Gallons of Water per Year	119,836.80
Cost of Water	TOTAL: \$173.76

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$609.97 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$335.54 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$1,648.48

Associated Chemical Est.: \$3,020.61

Total Cost to End User: \$4,669.08

Energy Total: \$1,074.09

Associated Chemical Est.: \$1,578.75

Total Cost to End User: \$2,652.85

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, Chemical Sanitizer CONVEYORS

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: ADS 5AG (double)

Racks Washed Per Day:	350
NSF Racks Per Hour:	74
Machine HRS/Operation:	4.73
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 110v,1ph			
Pump Motor:	15	1.12	1.5
Pump Motor:	15	1.12	1.5
Pump Motor:			
Conveyor Motor:			
Booster (built-in)			
Tank Heater:			
Tank Heater:			
KWH		2.24	

Daily Machine Cost \$0.77

Booster Heater Model: None Needed

Voltage: 208 amp	KWH: 0	Rise: 0°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	0.77	
Cost Per Month	23.42	
Electrical Cost Per Year	\$281.04	

MODEL: ADS, ADC-44 (L)

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Pump Motor:			
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		8.0	
Tank Heater:		2.2	
KWH		12.9	

Daily Machine Cost \$1.34

Booster Heater Model: None Needed

Voltage: 208 amp	KWH: 0	Rise: 0°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	\$1.34	
Cost Per Month	\$40.76	
Electrical Cost Per Year	\$489.09	

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 118.4

Gallons of Water per Day	560.03
Gallons of Water per Year	204,410.95
Cost of Water	TOTAL: \$296.40

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psij}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$1,040.45 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$572.35 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$2,190.24

Associated Chemical Est.: \$5,152.38

Total Cost to End User: \$7,342.62

Energy Total: \$1,074.09

Associated Chemical Est.: \$1,578.75

Total Cost to End User: \$2,652.85

Conveyors

66"

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYORS

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .0746 Kw

MODEL: Hobart CRS-66A

Racks Washed Per Day:	<u>350</u>
NSF Racks Per Hour:	<u>203</u>
Machine HRS/Operation:	<u>1.72</u>
Local Rate per KWH:	<u>0.0725</u>
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	5	1.49	2
Pump Motor:	3	0.75	1
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		<u>17.42</u>	

Daily Machine Cost \$2.17

Booster Heater Model: Hatco C-30

Voltage: 208 amp	KWH: <u>30</u>	Rise: 40°
Daily Booster Cost	<u>\$3.74</u>	
Daily Machine & Booster	<u>5.91</u>	
Cost Per Month	<u>179.79</u>	
Electrical Cost Per Year	<u>\$2,157.48</u>	

MODEL: ADC-66

Racks Washed Per Day:	<u>350</u>
NSF Racks Per Hour:	<u>244</u>
Machine HRS/Operation:	<u>1.43</u>
Local Rate per KWH:	<u>0.0725</u>
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	5.8	1.12	1.5
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:	46	18.0	
Tank Heater:	6	2.2	
KWH		<u>24.00</u>	

Daily Machine Cost \$2.49

Booster Heater Model: Hatco C-12

Voltage: 208 amp	KWH: <u>12</u>	Rise: 40°
Daily Booster Cost	<u>\$1.24</u>	
Daily Machine & Booster	<u>\$3.73</u>	
Cost Per Month	<u>\$113.45</u>	
Electrical Cost Per Year	<u>\$1,361.42</u>	

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 748.051 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 300

Gallons of Water per Day	<u>516.00</u>
Gallons of Water per Year	<u>188,340.00</u>
Cost of Water	<u>TOTAL: \$273.09</u>

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	<u>171.60</u>
Gallons of Water per Year	<u>62,634.00</u>
Cost of Water	<u>TOTAL: \$90.82</u>

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$958.65 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$527.35 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$3,916.58

Associated Chemical Est.: \$4,068.14

Total Cost to End User: \$7,984.72

Energy Total: \$1,946.43

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$3,299.32

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, Low TEMP Conveyor MACHINE

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .7457 Kw, Kw x 1.341= hp

MODEL: Hobart CRS 76A (L)

MODEL: ADC-66 (L)

Racks Washed Per Day: **1200**
 NSF Racks Per Hour: **252**
 Machine HRS/Operation: **4.76**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

Racks Washed Per Day: **1200**
 NSF Racks Per Hour: **244**
 Machine HRS/Operation: **4.92**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:		1.49	2
Pump Motor:		0.75	1
Pump Motor:			
Conveyor Motor:		0.19	0.25
Booster (built-in)			
Tank Heater:		20.0	
Tank Heater:			
KWH		22.42	

Daily Machine Cost 7.74

Booster Heater Model:

Voltage: 208 amp KWH: **0** Rise: **0°**
 Daily Booster Cost **\$0.00**
 Daily Machine & Booster **7.74**
 Cost Per Month **235.42**

Electrical Cost Per Year \$2,825.04

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5.8	1.12	1.5
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:	28	12.0	16
Tank Heater:	6	2.2	2.9
KWH		18.00	

Daily Machine Cost \$6.42

Booster Heater Model:

Voltage: 208 amp KWH: **0** Rise: **0°**
 Daily Booster Cost **\$0.00**
 Daily Machine & Booster **\$6.42**
 Cost Per Month **\$195.27**

Electrical Cost Per Year \$2,343.24

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 150

Temp Set @ 140°

NSF (GPH) Water Consumption: 312

Gallons of Water per Day **1485.12**
 Gallons of Water per Year **542,068.80**
 Cost of Water **TOTAL: \$786.00**

NSF (GPH) Water Consumption: 120

Gallons of Water per Day **590.40**
 Gallons of Water per Year **215,496.00**
 Cost of Water **TOTAL: \$312.47**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per 1000cf)

YEARLY HEATING COST: \$2,759.13 TOTAL

YEARLY HEATING COST: \$1,096.87 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$1,517.79 TOTAL

YEARLY SEWER COST: \$603.39 TOTAL

Energy Total: \$7,887.96

Energy Total: \$4,355.97

Associated Chemical Est.: \$13,663.39

Associated Chemical Est.: \$5,431.79

Total Cost to End User: \$21,551.35

Total Cost to End User: \$9,787.76

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYORS

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .0746 Kw

MODEL: Hobart CRS-86A

Racks Washed Per Day: **350**
 NSF Racks Per Hour: **248**
 Machine HRS/Operation: **1.41**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	5	1.49	2
Pump Motor:	3	0.75	1
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:		15.0	
KWH		32.42	

Daily Machine Cost \$3.31

Booster Heater Model: Hatco C-27

Voltage: 208 amp KWH: **27** Rise: **40°**
 Daily Booster Cost **\$2.76**
 Daily Machine & Booster **6.07**
 Cost Per Month **184.63**

Electrical Cost Per Year \$2,215.56

MODEL: ADC-66

Racks Washed Per Day: **350**
 NSF Racks Per Hour: **244**
 Machine HRS/Operation: **1.43**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	5.8	1.12	1.5
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:	46	18.0	
Tank Heater:	6	2.2	
KWH		24.00	

Daily Machine Cost \$2.49

Booster Heater Model: Hatco C-12

Voltage: 208 amp KWH: **12** Rise: **40°**
 Daily Booster Cost **\$1.24**
 Daily Machine & Booster **\$3.73**
 Cost Per Month **\$113.45**

Electrical Cost Per Year \$1,361.42

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 748.051 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 278

Gallons of Water per Day **391.98**
 Gallons of Water per Year **143,072.70**
 Cost of Water **TOTAL: \$207.46**

NSF (GPH) Water Consumption: 120

Gallons of Water per Day **171.60**
 Gallons of Water per Year **62,634.00**
 Cost of Water **TOTAL: \$90.82**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$728.24 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$400.60 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$3,551.86

Associated Chemical Est.: \$3,090.37

Total Cost to End User: \$6,642.23

Energy Total: \$1,946.43

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$3,299.32

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYORS

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .0746 Kw

MODEL: Hobart CPW100A

Racks Washed Per Day:	350
NSF Racks Per Hour:	248
Machine HRS/Operation:	1.41
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:		1.49	2
Pump Motor:		1.49	2
Pump Motor:		1.49	2
Conveyor Motor:		0.12	1/6
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:		10.0	
KWH		29.60	

Daily Machine Cost \$3.03

Booster Heater Model: Hatco C-27

Voltage: 208 amp	KWH: 27	Rise: 40°
Daily Booster Cost	\$2.76	
Daily Machine & Booster	5.79	
Cost Per Month	176.11	

Electrical Cost Per Year \$2,113.32

MODEL: ADC-66

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	8	2.24	3
Pump Motor:	5.8	1.12	1.5
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:	46	18.0	
Tank Heater:	6	2.2	
KWH		24.00	

Daily Machine Cost \$2.49

Booster Heater Model: Hatco C-15

Voltage: 208 amp	KWH: 15	Rise: 40°
Daily Booster Cost	\$1.56	
Daily Machine & Booster	\$4.05	
Cost Per Month	\$123.18	

Electrical Cost Per Year \$1,478.22

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 748.051 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 278

Gallons of Water per Day	391.98
Gallons of Water per Year	143,072.70
Cost of Water	TOTAL: \$207.46

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$728.24 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$400.60 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$3,449.62

Energy Total: \$2,063.22

Associated Chemical Est.: \$3,090.37

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$6,539.99

Total Cost to End User: \$3,416.12

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Jackson, ES4400

Racks Washed Per Day: 350
 NSF Racks Per Hour: 248
 Machine HRS/Operation: 1.41
 Local Rate per KWH: 0.0725
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		16.68	

Daily Machine Cost \$1.70

Booster Heater Model: Hatco C-24

Voltage: 208 amp KWH: 24 Rise: 40°

Daily Booster Cost \$2.45

Daily Machine & Booster 4.15

Cost Per Month 126.23

Electrical Cost Per Year \$1,514.76

MODEL: ADS, ADC-66

Racks Washed Per Day: 350
 NSF Racks Per Hour: 244
 Machine HRS/Operation: 1.43
 Local Rate per KWH: 0.0725
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5.8	1.12	1.5
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		18.0	
Tank Heater:		2.2	
KWH		24.00	

Daily Machine Cost \$2.49

Booster Heater Model: Hatco C-15

Voltage: 208 amp KWH: 15 Rise: 40°

Daily Booster Cost \$1.56

Daily Machine & Booster \$4.05

Cost Per Month \$123.18

Electrical Cost Per Year \$1,478.22

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 234

Gallons of Water per Day 329.94

Gallons of Water per Year 120,428.10

Cost of Water **TOTAL:** \$174.62

NSF (GPH) Water Consumption: 120

Gallons of Water per Day 171.60

Gallons of Water per Year 62,634.00

Cost of Water **TOTAL:** \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$612.98 **TOTAL**

YEARLY HEATING COST: \$318.81 **TOTAL**

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$337.20 **TOTAL**

YEARLY SEWER COST: \$175.38 **TOTAL**

Energy Total: \$2,639.56

Energy Total: \$2,063.22

Associated Chemical Est.: \$2,601.25

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$5,240.81

Total Cost to End User: \$3,416.12

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYORS

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .0746 Kw

MODEL: Jackson, AJ-66

MODEL: ADC-66

Racks Washed Per Day: 350
 NSF Racks Per Hour: 287
 Machine HRS/Operation: 1.22
 Local Rate per KWH: 0.0725
 (US Average .0725)

Racks Washed Per Day: 350
 NSF Racks Per Hour: 244
 Machine HRS/Operation: 1.43
 Local Rate per KWH: 0.0725
 (US Average .0725)

	Amp	Kw	HP
Voltage: <u>208v/3ph</u>			
Pump Motor:	5	1.49	2
Pump Motor:	5	1.49	2
Pump Motor:	3	0.75	1
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		10.0	
Tank Heater:		15.0	
KWH		28.92	

Daily Machine Cost \$2.56

Booster Heater Model: Internal

Voltage: 208 amp KWH: 34.6 Rise: 40°
 Daily Booster Cost \$3.06
 Daily Machine & Booster 5.62
 Cost Per Month 170.95

Electrical Cost Per Year \$2,051.40

	Amp	Kw	HP
Voltage: <u>208v/3ph</u>			
Pump Motor:	5.8	1.12	1.5
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:	46	18.0	
Tank Heater:	6	2.2	
KWH		24.00	

Daily Machine Cost \$2.49

Booster Heater Model: Hatco C-15

Voltage: 208 amp KWH: 15 Rise: 40°
 Daily Booster Cost \$1.56
 Daily Machine & Booster \$4.05
 Cost Per Month \$123.18

Electrical Cost Per Year \$1,478.22

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 748.051 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 222

Gallons of Water per Day 270.84
 Gallons of Water per Year 98,856.60
 Cost of Water **TOTAL:** \$143.34

NSF (GPH) Water Consumption: 120

Gallons of Water per Day 171.60
 Gallons of Water per Year 62,634.00
 Cost of Water **TOTAL:** \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$503.18 **TOTAL**

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$276.80 **TOTAL**

YEARLY HEATING COST: \$318.81 **TOTAL**

YEARLY SEWER COST: \$175.38 **TOTAL**

Energy Total: \$2,974.72

Associated Chemical Est.: \$2,135.30

Total Cost to End User: \$5,110.02

Energy Total: \$2,063.22

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$3,416.12

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYORS

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .0746 Kw

MODEL: Jackson, AJ-86

Racks Washed Per Day:	350
NSF Racks Per Hour:	287
Machine HRS/Operation:	1.22
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	5	1.49	2
Pump Motor:	5	1.49	2
Pump Motor:	3	0.75	1
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		10.0	
Tank Heater:		15.0	
KWH		28.92	

Daily Machine Cost \$2.56

Booster Heater Model: Internal

Voltage: 208 amp	KWH:	34.6	Rise: 40°
Daily Booster Cost		\$3.06	
Daily Machine & Booster		5.62	
Cost Per Month		170.95	

Electrical Cost Per Year \$2,051.40

MODEL: ADC-66

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	5.8	1.12	1.5
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:	46	18.0	
Tank Heater:	6	2.2	
KWH		24.00	

Daily Machine Cost \$2.49

Booster Heater Model: Hatco C-15

Voltage: 208 amp	KWH:	15	Rise: 40°
Daily Booster Cost		\$1.56	
Daily Machine & Booster		\$4.05	
Cost Per Month		\$123.18	

Electrical Cost Per Year \$1,478.22

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 748.051 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 222

Gallons of Water per Day	270.84
Gallons of Water per Year	98,856.60
Cost of Water	TOTAL: \$143.34

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$503.18 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$276.80 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$2,974.72

Associated Chemical Est.: \$2,135.30

Total Cost to End User: \$5,110.02

Energy Total: \$2,063.22

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$3,416.12

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Jackson, ES4400

Racks Washed Per Day:	350
NSF Racks Per Hour:	248
Machine HRS/Operation:	1.41
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		16.68	

Daily Machine Cost \$1.70

Booster Heater Model: Hatco C-24

Voltage: 208 amp	KWH: 24	Rise: 40°
Daily Booster Cost	\$2.45	
Daily Machine & Booster	4.15	
Cost Per Month	126.23	

Electrical Cost Per Year \$1,514.76

MODEL: ADS, ADC-66

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5.8	1.12	1.5
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		18.0	
Tank Heater:		2.2	
KWH		24.00	

Daily Machine Cost \$2.49

Booster Heater Model: Hatco C-15

Voltage: 208 amp	KWH: 15	Rise: 40°
Daily Booster Cost	\$1.56	
Daily Machine & Booster	\$4.05	
Cost Per Month	\$123.18	

Electrical Cost Per Year \$1,478.22

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 234

Gallons of Water per Day	329.94
Gallons of Water per Year	120,428.10
Cost of Water	TOTAL: \$174.62

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$612.98 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$337.20 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$2,639.56

Associated Chemical Est.: \$2,601.25

Total Cost to End User: \$5,240.81

Energy Total: \$2,063.22

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$3,416.12

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYORS

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .0746 Kw

MODEL: CMA 66-H

Racks Washed Per Day:	350
NSF Racks Per Hour:	205
Machine HRS/Operation:	1.71
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	3.2	0.75	1
Pump Motor:	3.2	0.75	1
Pump Motor:	3.2	0.75	1
Conveyor Motor:	0.5	0.22	0.3
Booster (built-in)			
Tank Heater:		10.0	
Tank Heater:			
KWH		12.46	

Daily Machine Cost \$1.54

Booster Heater Model: Hatco C-24

Voltage: 208 amp	KWH: 24	Rise: 40°
Daily Booster Cost	\$2.98	
Daily Machine & Booster	4.52	
Cost Per Month	137.34	

Electrical Cost Per Year \$1,648.08

MODEL: ADC-66

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	5.8	1.12	1.5
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:	46	18.0	
Tank Heater:	6	2.2	
KWH		24.00	

Daily Machine Cost \$2.49

Booster Heater Model: Hatco C-12

Voltage: 208 amp	KWH: 12	Rise: 40°
Daily Booster Cost	\$1.24	
Daily Machine & Booster	\$3.73	
Cost Per Month	\$113.45	

Electrical Cost Per Year \$1,361.42

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 748.051 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate: 100)

Temp Set @ 140°

NSF (GPH) Water Consumption: 192

Gallons of Water per Day	328.32
Gallons of Water per Year	119,836.80
Cost of Water	TOTAL: \$173.76

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS (mcf) ELECTRIC (kwh) STEAM (psi)

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$609.97 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$335.54 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$2,767.36

Associated Chemical Est.: \$2,588.47

Total Cost to End User: \$5,355.83

Energy Total: \$1,946.43

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$3,299.32

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYORS

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .0746 Kw

MODEL: Champion 44KPRB66"

MODEL: ADC-66

Racks Washed Per Day: **350**
 NSF Racks Per Hour: **201**
 Machine HRS/Operation: **1.74**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

Racks Washed Per Day: **350**
 NSF Racks Per Hour: **244**
 Machine HRS/Operation: **1.43**
 Local Rate per KWH: **0.0725**
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	5	1.49	2
Pump Motor:	3	0.75	1
Pump Motor:			
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		15.0	
Tank Heater:			
KWH		17.42	

Daily Machine Cost \$2.20

Booster Heater Model: Champ.-36

Voltage: 208 amp KWH: **36** Rise: **40°**
 Daily Booster Cost **\$4.54**
 Daily Machine & Booster **6.74**
 Cost Per Month **205.05**

Electrical Cost Per Year \$2,460.60

	Amp	Kw	HP
Voltage: 208v/3ph			
Pump Motor:	5.8	1.12	1.5
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:	46	18.0	
Tank Heater:	6	2.2	
KWH		24.00	

Daily Machine Cost \$2.49

Booster Heater Model: Hatco C-12

Voltage: 208 amp KWH: **12** Rise: **40°**
 Daily Booster Cost **\$1.24**
 Daily Machine & Booster **\$3.73**
 Cost Per Month **\$113.45**

Electrical Cost Per Year \$1,361.42

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 748.051 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 324

Gallons of Water per Day **563.76**
 Gallons of Water per Year **205,772.40**
 Cost of Water **TOTAL: \$298.37**

NSF (GPH) Water Consumption: 120

Gallons of Water per Day **171.60**
 Gallons of Water per Year **62,634.00**
 Cost of Water **TOTAL: \$90.82**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: **\$1,047.38** TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: **\$576.16** TOTAL

YEARLY HEATING COST: **\$318.81** TOTAL

YEARLY SEWER COST: **\$175.38** TOTAL

Energy Total: \$4,382.51

Associated Chemical Est.: \$4,444.68

Total Cost to End User: \$8,827.20

Energy Total: \$1,946.43

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$3,299.32

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, HIGH TEMP CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: SCT-66S (Stero)

MODEL: ADS, ADC-66

Racks Washed Per Day: 350
 NSF Racks Per Hour: 209
 Machine HRS/Operation: 1.67
 Local Rate per KWH: 0.0725
 (US Average .0725)

Racks Washed Per Day: 350
 NSF Racks Per Hour: 244
 Machine HRS/Operation: 1.43
 Local Rate per KWH: 0.0725
 (US Average .0725)

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:		0.75	1
Pump Motor:	5	1.49	2
Pump Motor:		0.19	0.25
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		10.0	
Tank Heater:		20.0	
KWH		32.61	

Daily Machine Cost \$3.95

Booster Heater Model: Hatco C-30

Voltage: 208 amp KWH: 30 Rise: 40°
 Daily Booster Cost \$3.63
 Daily Machine & Booster 7.58
 Cost Per Month 230.55

Electrical Cost Per Year \$2,766.60

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:		1.12	1.5
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		18.0	
Tank Heater:		2.2	
KWH		24.00	

Daily Machine Cost \$2.49

Booster Heater Model: Hatco C-15

Voltage: 208 amp KWH: 15 Rise: 40°
 Daily Booster Cost \$1.56
 Daily Machine & Booster \$4.05
 Cost Per Month \$123.18

Electrical Cost Per Year \$1,478.22

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 290

Gallons of Water per Day 484.30
 Gallons of Water per Year 176,769.50
 Cost of Water **TOTAL: \$256.32**

NSF (GPH) Water Consumption: 120

Gallons of Water per Day 171.60
 Gallons of Water per Year 62,634.00
 Cost of Water **TOTAL: \$90.82**

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: **\$899.76 TOTAL**

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: **\$494.95 TOTAL**

YEARLY HEATING COST: **\$318.81 TOTAL**

YEARLY SEWER COST: **\$175.38 TOTAL**

Energy Total: \$4,417.63

Energy Total: \$2,063.22

Associated Chemical Est.: \$3,818.22

Associated Chemical Est.: \$1,352.89

Total Cost to End User: \$8,235.85

Total Cost to End User: \$3,416.12

ENERGY ANALYSIS

COMPARISON FOR COMMERCIAL DISHMACHINES

CALCULATIONS PREPARED FOR:

SAMPLE, *Chemical sanitizer* CONVEYOR

ELECTRICAL

3 Phase: Kw=(1.73 x E x I x PF)+k 1 Phase: Kw=(E x I x PF)+k KWH= 1000w/1 hr E= volts I= amperes HP= .07457 Kw, Kw x 1.341=hp

MODEL: Champion KL66 (L)

Racks Washed Per Day:	350
NSF Racks Per Hour:	200
Machine HRS/Operation:	1.75
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5	1.49	2
Pump Motor:			
Pump Motor:		0.75	1
Conveyor Motor:	0.5	0.19	0.25
Booster (built-in)			
Tank Heater:		10.0	
Tank Heater:			
KWH		12.42	

Daily Machine Cost \$1.58

Booster Heater Model: None Needed

Voltage: 208 amp	KWH: 0	Rise: 0°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	1.58	
Cost Per Month	48.06	
Electrical Cost Per Year	\$576.72	

MODEL: ADS, ADC-66 (L)

Racks Washed Per Day:	350
NSF Racks Per Hour:	244
Machine HRS/Operation:	1.43
Local Rate per KWH:	0.0725
(US Average .0725)	

	Amp	Kw	HP
Voltage: 208v,3ph			
Pump Motor:	5.8	1.12	1.5
Pump Motor:	8	2.24	3
Pump Motor:	0.5	0.22	0.3
Conveyor Motor:	0.5	0.22	0.3
Booster (alternate)			
Tank Heater:		18.0	
Tank Heater:		2.2	
KWH		24.00	

Daily Machine Cost \$2.49

Booster Heater Model: None Needed

Voltage: 208 amp	KWH: 0	Rise: 0°
Daily Booster Cost	\$0.00	
Daily Machine & Booster	\$2.49	
Cost Per Month	\$75.74	
Electrical Cost Per Year	\$908.83	

WATER AND SEWER USAGE

CCF = 100 ft³ CCF x 7.48 = gal. Gal. x .1337 = ft³

Local Water Cost: .00145

(typical 1.09 ccf or .00145 per gallon)

Primary Heating Capacity

(GPH recover Rate:) 100

Temp Set @ 140°

NSF (GPH) Water Consumption: 321

Gallons of Water per Day	561.75
Gallons of Water per Year	205,038.75
Cost of Water	TOTAL: \$297.31

NSF (GPH) Water Consumption: 120

Gallons of Water per Day	171.60
Gallons of Water per Year	62,634.00
Cost of Water	TOTAL: \$90.82

UNIDENTIFIED ENERGY COST OF PRIMARY HEATING IS CALCULATED USING TABLES AND LOCAL RATES AT A 70° RISE FROM GROUND TEMP: GAS {mcf} ELECTRIC {kwh} STEAM {psi}

Local Gas Rate: 5.50

(typical 5.50 per mcf)

YEARLY HEATING COST: \$1,043.65 TOTAL

Local Sewer Cost: .0028

(typical 2.1 per ccf or .0028 per gallon)

YEARLY SEWER COST: \$574.11 TOTAL

YEARLY HEATING COST: \$318.81 TOTAL

YEARLY SEWER COST: \$175.38 TOTAL

Energy Total: \$2,491.78

Associated Chemical Est.: \$5,168.21

Total Cost to End User: \$7,659.99

Energy Total: \$1,493.84

Associated Chemical Est.: \$1,578.75

Total Cost to End User: \$3,072.59