



ECO-STAR II

Packaged Low NOx Multi-Fuel Burner



Features

- Compact, packaged design
- Burner skid-mounted fuel manifolds
- Multi-fuel capability: natural gas, No. 2 - No. 6 oils, liquid propane, landfill gas
- 1800 rpm impellers for low wear
- Single pilot/main flame scanner
- Total air design
- Compressed air/oil firing optional
- Ultra low NOx design for < 35 ppm available

Benefits

- Easy installation, setup and maintenance
- Low noise
- Fast mixing/burning - compact flames
- Improved waste and heavy oil atomization
- Fuel efficient
- Variable flame shaping
- Low CO, NOx and VOC emissions



The Eco-Star II continues Hauck's high quality commitment to the latest generation of combustion alternatives for industry. Maintaining the same excellent burner stability as the original Eco-Star, the Eco-Star II offers design and performance advantages in a more compact profile that is service accessible and simple to install. This burner supports a variety of fuels, including landfill gas, offering flexibility in determining optimum fuel costs. Emissions of NOx, CO and VOCs are minimized with proven, state of the art technologies.

ECO-nomical

ECO-logical

the ECO-STAR II

Combustion Excellence Since 1888

**HAUCK MANUFACTURING
COMPANY**

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Phone: 717-272-3051
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Hauck Manufacturing Company

ECO-STAR II

PACKAGED LOW NOX MULTI-FUEL BURNER



ADVANTAGES OF THE ECO-STAR II

- Low Noise
- Compact Design
- Flame Adjustability
- Improved Fuel Efficiency
- Low Emissions

Available in sizes ranging from 75 to 200 million Btu/hour (22,000 to 59,000 kW), the Eco-Star II is ready to meet your production needs. Capable of supporting a variety of fuels, including landfill gas, this burner offers the ultimate flexibility in dealing with today's highly volatile fuel pricing. The standard design can be applied to applications up to 1500 °F (815 °C).

The Eco-Star II precisely controls air/fuel ratio with a 100% total air design. This proven technology reduces inefficient excess air, lowering fuel costs and improving production. The burner's compact, skid-mounted package adapts easily to most installations.

The Eco-Star II is designed to be a uniquely reliable low emission burner.

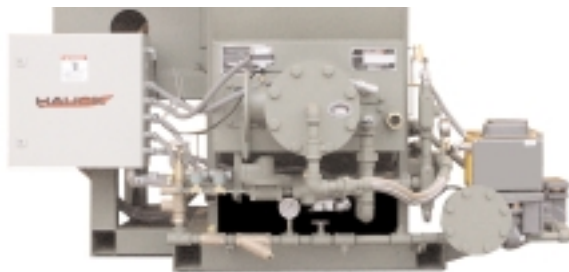
The Eco-Star II uses a patented* design that combines an internal zone of intense recirculation with staged fuel injection to reduce emission of NOx and VOCs, and keep CO to a minimum. The burner's wide, high efficiency flame shaping ability allows the flame to be adapted to specific process requirements. All combustion is completed within the recommended combustion zone, further reducing emissions by eliminating flame quenching from process materials.

The Eco-Star II's sealed-in construction, coupled with its high efficiency aerodynamic design, significantly reduces operational noise. As with all Hauck products, the Eco-Star II is backed by our nationally recognized service department.

*US Patent US005700143A



**ECO-STAR II 150, 45 Spin, No. 2 Oil,
150 Million Btu/hr (44,000 kW)**



ECO-STAR II Oil Manifold



ECO-STAR II Gas Manifold

www.hauckburner.com



ECO-STARITM ESII-75 – ESII-200

Eco-Star II Capacity Ratings for Aggregate Drying

<i>Natural Gas</i>				
ECO-STAR II Model	Maximum Capacity (MM Btu/hr)	Main Air Flow (scfh)	Natural Gas Flow (scfh)	Capacity w/ FGR (MM Btu/hr)
75	86	1,050,000	82,930	69
100	104	1,270,000	100,300	83
125	140	1,720,000	135,840	112
150	160	1,960,000	154,790	128
175	190	2,330,000	184,020	152
200	207	2,540,000	200,600	166

<i>No. 2 Oil (Low Pressure Atomization)</i>				
ECO-STAR II Model	Maximum Capacity (MM Btu/hr)	Primary Air Flow at 36 osig (scfh)	Main Air Flow (scfh)	No. 2 Oil Flow (Gal/hr)
75	82	46,500	1,030,000	582
100	100	46,500	1,270,000	711
125	135	46,500	1,720,000	954
150	153	46,500	1,960,000	1,084
175	184	66,000	2,350,000	1,305
200	200	66,000	2,540,000	1,408

<i>No. 2 Oil (Compressed Air Atomization)</i>				
ECO-STAR II Model	Maximum Capacity (MM Btu/hr)	Compressed Air Flow at 60 psig (scfh)	Main Air Flow (scfh)	No. 2 Oil Flow (Gal/hr)
75	79	3,600	1,030,000	558
100	100	3,600	1,310,000	710
125	130	5,400	1,700,000	921
150	150	5,400	1,960,000	1,062
175	180	6,900	2,350,000	1,273
200	200	7,100	2,610,000	1,414

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

(OVER)



Eco-Star II Capacity Ratings for Aggregate Drying

<i>Liquid Propane</i>					
ECO-STAR II Model	Maximum Capacity (MM Btu/hr.)	Primary Air Flow at 36 osig (scfh)	Main Air Flow (scfh)	LP Flow (Gal/hr.)	Capacity w/ FGR (MM Btu/hr)
75	83	46,500	980,000	914	66
100	101	46,500	1,200,000	1,110	81
125	132	46,500	1,590,000	1,457	106
150	150	46,500	1,810,000	1,653	120
175	175	66,000	2,090,000	1,920	140
200	191	66,000	2,290,000	2,098	153

Asphalt Application Notes:

1. Burner capacities are based on 60Hz power and scfh (standard cubic feet per hour) 60°F air at sea level.
2. Natural gas capacities based on higher heating value of 1,034 Btu per cubic foot, 2-4 psig manifold pressure, 30% excess air, and stoichiometric ratio of 9.74 cubic feet air/cubic foot of natural gas.
3. Light No. 2 oil capacities based on higher heating value of 141,146 Btu per gallon, 35% excess air, and stoichiometric ratio of 1371.1 cubic feet air/gallon of No. 2 oil.
4. Liquid propane capacities based on higher heating value of 90,912 Btu per gallon, 30% excess air, and stoichiometric ratio of 864 cubic feet air/gallon of liquid propane.
5. Low pressure atomizing air for the Eco-Star II (Optional LP and low pressure oil atomization) is provided by a Hauck high efficiency Turbo Blower.

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ECO-STARITM ESII-75 – ESII-200

Eco-Star II Industrial Capacity Ratings

<i>Natural Gas</i>			
ECO-STAR II Model	Maximum Capacity (MM Btu/hr)	Main Air Flow (scfh)	Natural Gas Flow (scfh)
75	101	1,050,000	98,003
100	123	1,270,000	118,536
125	166	1,720,000	160,538
150	189	1,960,000	182,938
175	225	2,330,000	217,472
200	245	2,540,000	237,073

<i>No. 2 Oil (Low Pressure Atomization)</i>				
ECO-STAR II Model	Maximum Capacity (MM Btu/hr)	Primary Air Flow at 36 osig (scfh)	Main Air Flow (scfh)	No. 2 Oil Flow (Gal/hr)
75	92	46,500	1,030,000	654
100	113	46,500	1,270,000	800
125	152	46,500	1,720,000	1,074
150	172	46,500	1,960,000	1,220
175	207	66,000	2,350,000	1,468
200	224	66,000	2,540,000	1,584

<i>No. 2 Oil (Compressed Air Atomization)</i>				
ECO-STAR II Model	Maximum Capacity (MM Btu/hr)	Compressed Air Flow at 60 psig (scfh)	Main Air Flow (scfh)	No. 2 Oil Flow (Gal/hr)
75	89	3,600	1,030,000	628
100	109	3,600	1,270,000	774
125	146	5,400	1,700,000	1,037
150	169	5,400	1,960,000	1,195
175	202	6,900	2,350,000	1,432
200	219	7,100	2,540,000	1,548

(OVER)

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.



Eco-Star II Industrial Capacity Ratings

<i>Liquid Propane</i>				
ECO-STAR II Model	Maximum Capacity (MM Btu/hr)	Primary Air Flow at 36 osig (scfh)	Main Air Flow (scfh)	LP Flow (Gal/hr)
75	94	46,500	980,000	1,033
100	114	46,500	1,200,000	1,255
125	150	46,500	1,590,000	1,647
150	170	46,500	1,810,000	1,868
175	197	66,000	2,090,000	2,170
200	216	66,000	2,290,000	2,371

Application Notes:

1. Burner capacities are based on 60Hz power and scfh (standard cubic feet per hour) 60°F air at sea level.
2. Natural gas capacities based on higher heating value of 1,034 Btu per cubic foot, 2-4 psig manifold pressure, 10% excess air, and stoichiometric ratio of 9.74 cubic feet air/cubic foot of natural gas.
3. Light No. 2 oil capacities based on higher heating value of 141,146 Btu per gallon, 20% excess air, and stoichiometric ratio of 1371.1 cubic feet air/gallon of No. 2 oil.
4. Liquid propane capacities based on higher heating value of 90,912 Btu per gallon, 15% excess air, and stoichiometric ratio of 864 cubic feet air/gallon of liquid propane.
5. Low pressure atomizing air for the Eco-Star II (Optional LP and low pressure oil atomization) is provided by a Hauck high efficiency Turbo Blower.

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CAPACITIES

**ECO-STAR™
ES-25 – ES-50**

Burner Model	Nominal Burner Air Flow (SCFH)	Compressed Air Flow (SCFM) (Optional)	Integral Burner Blower (HP)	Primary Air Blower Model (LP & Low Pressure Oil) (Optional)	Primary Air Flow (SCFH) (Optional)	Primary Air Blower (HP) (Optional)	Nominal Btu Rating (10 ⁶ Btu/Hr.)
ES-25	410,000	N/A	20	TBA-36-10	20,000	10	25
ES-50	720,000	N/A	30	TBA-36-10	20,000	10	50

Notes:

1. Burner capacity is based on 60Hz power and SCFH (Standard Cubic Feet per Hour) 70°F air at sea level. Correction factors must be applied for variations in altitude, temperature, or frequency. Consult Hauck for assistance, if required. An altitude correction table is available in Application Sheet GJ75FA.
2. Oil capacities based on higher heating value of 138,000 Btu per gallon. Viscosity of oil delivered at the burner must be 90 SSU.
3. Nominal gas capacity based on higher heating value of 1000 Btu per cubic foot and 2-4 psig manifold pressure. Actual requirements will vary with burner size.
4. The exhaust fan must be able to provide a slight negative pressure (suction in the range of 0.25 to 1"wc) at the burner breech plate to exhaust the products of combustion.
5. Propane capacity based on higher heating value of 91,000 Btu per gallon and 100 psi above vapor pressure (@70°F) at burner LP connection
6. Nominal Btu rating at 25% excess air.
7. Eco-Star™ Burner airflow can be accurately monitored using the body pressure tap on either side of the burner air plenum downstream of the outer damper. An accurate device capable of reading up to 30"wc will be required for this measurement.
8. All burners are supplied with fuel flow measuring devices. Liquid fuel trains are supplied with an inline flow meter. Burners equipped with a gas orifice meter can be accurately checked for gas flow by measuring the differential pressure across the orifice meter with a U-tube device (manometer) capable of reading in the range of 0 to 20"wc.
9. The Eco-Star™ uses compressed air, supplied by customer at a nominal 60 psig to the burner nozzle, for optimum fuel oil atomization.
10. Horsepower rating of primary air blower based on Hauck Turbo Blower performance. Blowers of other manufacturers may be used, however, higher horsepower motors may be required because of lower efficiencies.
11. Low pressure atomizing air for the Eco-Star™ (Optional LP and low pressure oil atomization) is provided by a 36 psi Hauck high efficiency Turbo Blower. The Low Pressure air is used to not only atomize liquid fuels, but also improve mixing speed in the combustion zone.

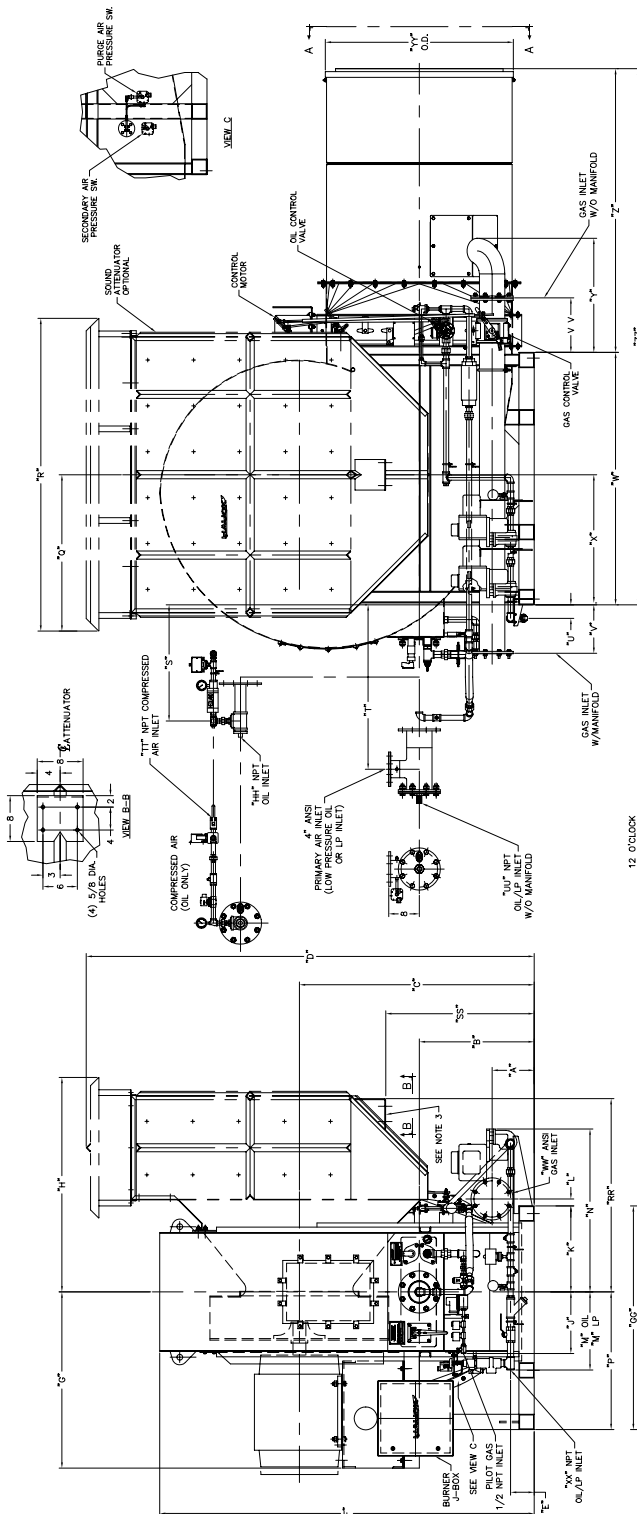


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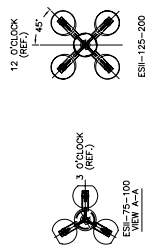
DIMENSIONS

ECO-STARITM


ESII-75 – ESII-200



Y6916




POSITION OF OIL INSERT
IN RELATIONSHIP TO
PRIMARY AIR TUBE



3/16"

POSITION OF COND. AIR INSERT
IN RELATIONSHIP TO
PRIMARY AIR TUBE



3/16"

NOTE:

1. FOR OPTIONAL RESINITE RACK MOUNTED MANIFOLD SEE DWG. C19687
2. FOR OPTIONAL COMPRESSED AIR MANIFOLD WITH REGULATOR SEE SALES
3. ATTENTION FOR REMOVAL OF THE COND. AIR INSERT SUPPLIED BY CUSTOMER MUST BE REMOVABLE FOR C19694-0.

	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"K"	"L"	"M" LP	"N" OIL	"N" LP	"P"	"Q"
MODEL																
CSU-75	9 1/16	24	51 1/4	98 7/8	5 3/8	80 5/8	39 1/4	52 5/8	18 5/8	19	1 9/16	17 5/16	35 13/16	35 7/8	33	35 3/4
CSU-100	9 1/16	24	51 1/4	98 7/8	5 3/8	80 5/8	39 1/4	52 5/8	18 5/8	19	1 9/16	17 5/16	35 13/16	35 7/8	33	35 3/4
CSU-125	3 7/16	36	64 5/8	113 1/16	5 5/32	97 1/2	40 5/8	53 7/16	17 5/8	30	13/16	8 1/4	18 1/2	14 5/16	40	30 13/16
CSU-150	3 7/16	36	64 5/8	113 1/16	5 5/32	97 1/2	40 5/8	53 7/16	17 5/8	30	13/16	8 1/4	18 1/2	14 5/16	40	30 13/16
CSU-175	11	30	61 3/8	117 1/16	6 3/16	97 13/16	46 1/16	56 1/16	16 1/8	22 1/2	1 7/8	20 3/8	24 5/8	42 15/16	36	40 7/8
CSU-200	11	30	61 3/8	117 1/16	6 3/16	97 13/16	46 1/16	56 1/16	16 1/8	22 1/2	1 7/8	20 3/8	24 5/8	42 15/16	36	40 7/8

MODEL	"R"	"13"	"17"	"U"	γ^a	"W"	"X"	γ^b	α_z^c	"RR"	"SS"	"1U"	γ^d	"V"	"V"	"WM"	"X"	"LP"	"X"	OIL	"ZZ"
CSH-75	71	1/2	13	7/16	5	1/2	13	56	28 1/2	83 5/8	47	34 1/4	1/2	3/4	13 9/16	4	3/4	1	36 7/8	139 1/8	1
CSH-100	71	1/2	13	7/16	16	7/8	5	12	28 1/8	83 5/8	47	34 1/4	1/2	3/4	13 9/16	4	1	1	38 7/8	139 1/8	1
CSH-125	73	1/2	17	16	18	4	1/16	11 13/16	58	29 1/8	76 3/8	47	7/8	3/4	3/4	15 1/2	6	1 1/4	45	133 7/8	1
CSH-150	73	1/2	17	16	18	4	1/16	11 13/16	58	29 1/8	76 3/8	47	7/8	3/4	3/4	15 1/2	6	1 1/4	45	133 7/8	1
CSH-175	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-200	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-225	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-250	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-275	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-300	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-325	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-350	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-375	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-400	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-425	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-450	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-475	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-500	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-525	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/16
CSH-550	81	3/4	19	16	19	5/8	3	12	29 13/16	87 1/4	117/16	50	9/16	36	3/4	1	14 1/4	6	1 1/4	49 1/8	140 3/1

	"AA"	"BB"	"CC"	"DD"	"EE"	"FF"	"GC"	"HH"	"JJ"
MODEL	ES10-100	58	56	53	51	1/2	34	52	3/4
	ES10-150	38	54	53	51	1/2	34	52	3/4
	ES10-175	58	56	54	53	1/2	34	52	3/4
	ES10-150	61	5/8	58	59	5/8	N/A	N/A	3/4
	ES10-125	61	5/8	58	59	5/8	N/A	N/A	3/4
	ES10-150	61	5/8	58	59	5/8	N/A	N/A	3/4
	ES10-175	45	66	41	63	17	34	58	1/2
	ES10-200	45	66	41	63	17	34	58	1/2
	ES10-175	45	66	41	63	17	34	58	1/2
	ES10-200	45	66	41	63	17	34	58	1/2

(Metric Dimensions on Reverse Side)

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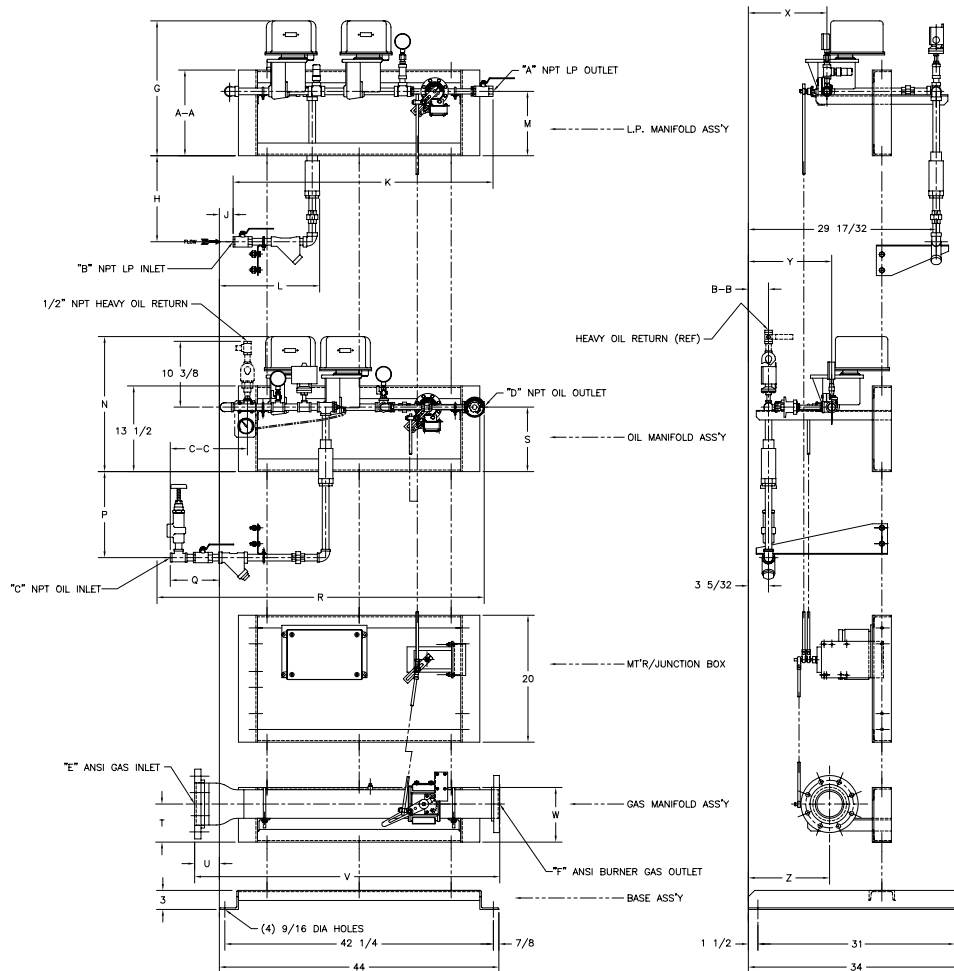
ESII-3



MORTERA Y COMPAÑIA, S. A DE C. V.

DIMENSIONS

ECO-STARITM OPTIONAL RACK MOUNTED FUEL MANIFOLD ESII-75 – ESII-200



NOTES:

1. ANY COMBINATION OF FUEL MODULES CAN BE SUPPLIED W/BASE AND MTR/JUNCTION BOX AS SPECIFIED ON ORDER.
2. ESII-75 TO ESII-200 UTILIZE FUEL MANIFOLDS THAT ARE INTEGRAL TO THE BURNER SKID; OPTIONAL REMOTE RACK MOUNTED FUEL MANIFOLDS ARE OPTIONAL.

CY6967

MODEL NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P
ESII-75	3/4	3/4	3/4	1	6	4	21 1/4	13 9/16	2 3/16	40 7/8	15 3/4	10 1/8	21 1/4	13 9/16
ESII-100		1	1				26 1/4	13 7/16	-4 3/8	47	11	15 1/8		13 7/16
ESII-125	1	1 1/4	1 1/4	1	8	6	30 15/16	13 3/16	26 11/16	20 3/16	47 7/16	15 7/16	25 13/16	13 1/4
ESII-150														
ESII-175														
ESII-200														

MODEL NO.	Q	R	S	T	U	V	W	X	Y	Z	A-A	B-B	C-C
ESII-75	7 11/16	49 3/4	10 1/4	6	-4	48	8 5/8	12 3/8	13 1/8	12 13/16	13 1/2	13 1/8	12 1/8
ESII-100	-1 1/4	40 7/16											
ESII-125	-1	40 11/16	10 5/16	9 7/8	-5/8	44 5/8	9 5/8	13	13 1/8	12 3/4	18 1/2	3 5/32	8 1/16
ESII-150													
ESII-175													
ESII-200													

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ESII-3.1

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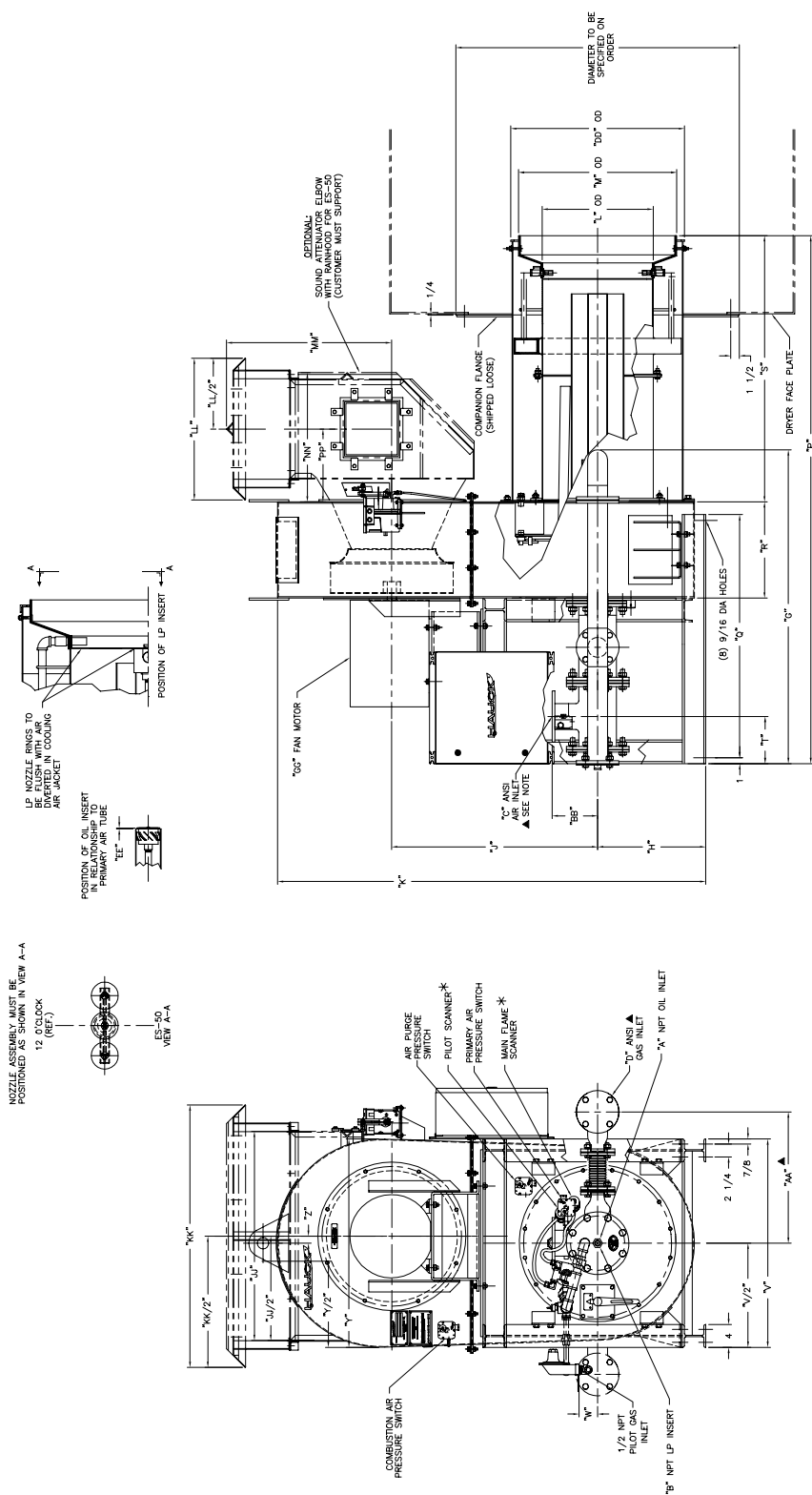


MORTERA Y COMPAÑIA, S. A DE C. V.

DIMENSIONS

ECO-STAR™

ES-25 – ES-50



MODEL	A	B	C	D	G	H	J	K	L	M	P	Q	R	S	T	V	W	Y	Z
ES-25	1/2	3/8	4	2 1/2	51 7/8	15	29 5/16	61 21/32	14 1/2	23	86	39 7/8	15 7/8	44 1/8	9 1/8	32	4 3/8	35	2
FS-50	3/4	3/4		3	55	19	36 3/16	75 3/16	19 1/2	28 1/2	92 1/2	41 5/8	17 1/8	46 3/4	8 1/4	36 1/2	1 5/8	36 1/2	1 7/32

MODEL	AA	BB	CC	DD	EE	GG	HH	JJ	KK	LL	MM	NN	PP	QQ	RR
ES-25	22 1/4	6	12 - 33	25 5/8	0	254T-20HP	1 1/2	---	---	---	---	---	---	---	---
ES-50	23	8	12 - 35	30 3/8	3/16	284TS-30HP	4	36 13/16	46	24 13/16	20	22 11/16	12 3/4	45	46

CY6931

NOTES:

- ▲ AIR INLET MAY BE LOCATED IN ANY POSITION, GAS INLET MAY BE LOCATED AT EITHER LEFT OR RIGHT SIDE OF CHAMBER.
- * SCANNERS ARE SHIPPED LOOSE—MUST BE ASSEMBLED PRIOR TO FIRING.



ECO-STAR 25 - 50

60 Hz Aggregate Drying Ratings

<i>Natural Gas</i>				
Burner Model	Maximum Capacity (MM Btu/hr)	Main Air Flow (scfh)	Natural Gas Flow (scfh)	Capacity w/FGR (MM Btu/hr)
ES 25	37	458,000	36,200	30
ES 50	63	766,000	60,500	50

<i>No. 2 Fuel Oil (Low Pressure Atomization)</i>				
Burner Model	Maximum Capacity (MM Btu/hr)	Primary Air Flow at 36 osig (scfh)	Main Air Flow (scfh)	No. 2 Fuel Oil Flow (gph)
ES 25	36	20,000	458,000	258
ES 50	60	20,000	766,000	425

<i>No. 2 Fuel Oil (Compressed Air Atomization)</i>				
Burner Model	Maximum Capacity (MM Btu/hr)	Compressed Air Flow at 60 psig (scfh)	Main Air Flow (scfh)	No. 2 Fuel Oil Flow (gph)
ES 25	Consult Hauck			
ES 50	Consult Hauck			

<i>Liquid Propane</i>					
Burner Model	Maximum Capacity (MM Btu/hr)	Primary Air Flow at 36 osig (scfh)	Main Air Flow (scfh)	LP Flow (gph)	Capacity w/FGR (MM Btu/hr)
ES 25	39	20,000	458,000	425	31
ES 50	64	20,000	766,000	700	51

(Application Notes on Reverse Side)

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.



Asphalt Application Notes:

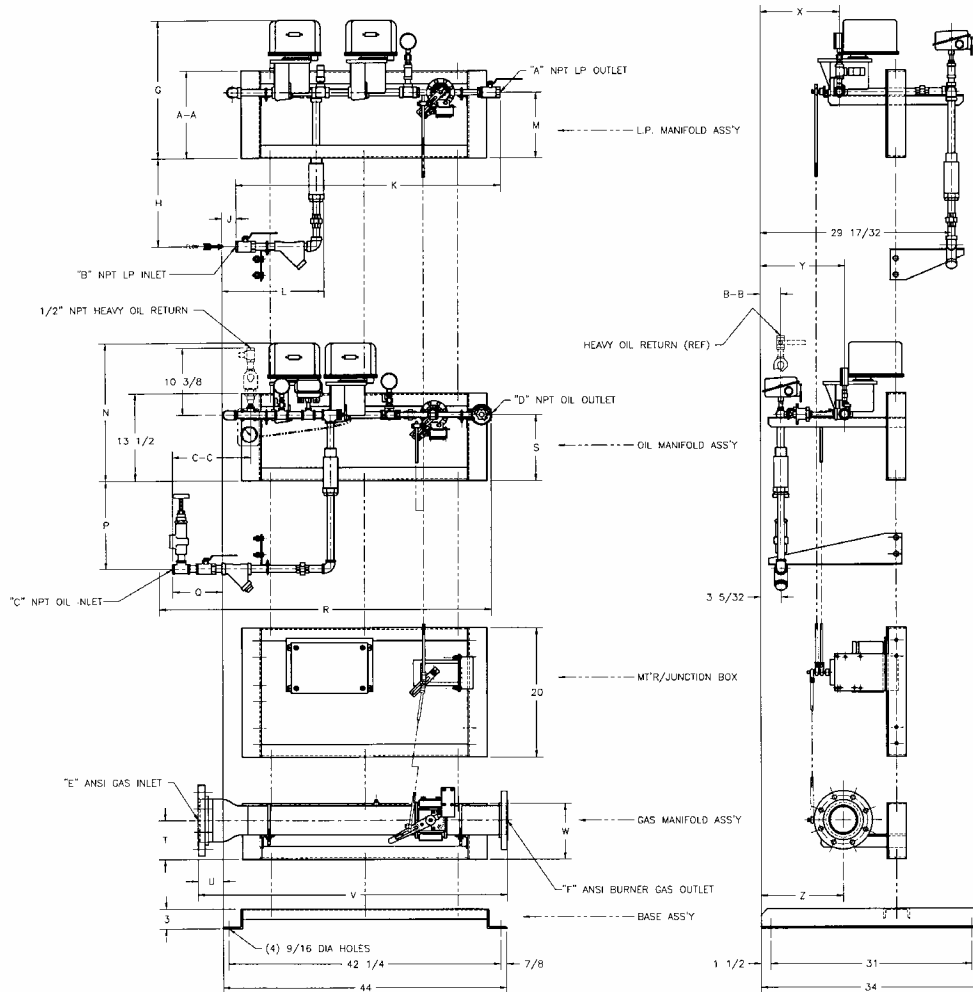
1. Burner capacity is based on 60Hz power and scfh (standard cubic feet per hour) 60°F air at sea level. Correction factors must be applied for variations in altitude, temperature, or frequency; consult Hauck. An altitude correction table is available in Hauck Application Sheet GJ75.
2. Natural gas capacities based on higher heating value of 1,034 Btu per cubic foot, 2-4 psig manifold pressure, 30% excess air, and stoichiometric ratio of 9.74 cubic feet air/cubic foot of natural gas.
3. No. 2 fuel oil capacities based on higher heating value of 141,146 Btu per gallon, 35% excess air, and stoichiometric ratio of 1371.1 cubic feet air/gallon of No. 2 oil.
4. Liquid propane capacities based on higher heating value of 90,912 Btu per gallon, 30% excess air, and stoichiometric ratio of 864 cubic feet air/gallon of liquid propane.
5. The exhaust fan must be able to provide a slight negative pressure (suction in the range of 0.25 to 1" wc) at the burner breech plate to exhaust the products of combustion.
6. Eco-StarII™ Burner airflow can be accurately monitored using the body pressure tap on either side of the burner air plenum downstream of the outlet damper. An accurate device capable of reading up to 30" wc will be required for this measurement.
7. All burner fuel manifolds are supplied with fuel flow measuring devices. Liquid fuel manifolds are equipped with an inline flow meter. Gaseous fuel manifolds are equipped with a gas orifice meter that can be accurately checked for gas flow by measuring the differential pressure across the orifice meter with a U-tube device (manometer) capable of reading in the range of 0 to 20"wc.
8. Low pressure atomizing air, used for firing low pressure fuel oil or LP, is provided by a 36 psi Hauck high efficiency Turbo Blower. The low pressure air is used to not only atomize liquid fuels, but also improve mixing speed in the combustion zone.
9. High pressure compressed air, used for firing heavy oils or any fuel oil at high elevations, must be supplied by the customer at a nominal 60 psig to the burner nozzle, for optimum fuel oil atomization.



MORTERA Y COMPAÑIA, S. A DE C. V.

DIMENSIONS

ECO-STAR™ RACK MOUNTED FUEL MANIFOLD ES-25 – ES-50



NOTES:

1. ANY COMBINATION OF FUEL MODULES CAN BE SUPPLIED W/BASE AND MT'R/JUNCTION BOX AS SPECIFIED ON ORDER.

Y5493

(NOT TO SCALE)

MODEL NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P
ES-25	3/4	3/4	1/2	1/2	3	3	21 3/16	13 9/16	-5	49 9/16	14 5/16	10	21 1/8	13 9/16
ES-50				3/4	4		21 1/4					10 1/8		13

MODEL NO.	Q	R	S	T	U	V	W	X	Y	Z	A-A	B-B	C-C
ES-25	1/8	41 3/4	10	7 5/8	3/4	42 1/2	8 5/8	12 3/8	11 7/8	12 5/16	13 1/2	13 1/8	4 5/8
ES-50	1/4	42		3 3/4	-9/16	43 13/16			13 1/8				

(Metric Dimensions on Reverse Side)

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1/05

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ES-3.1