

SHE

Suction Oil Heater - Electric Type



Features

- Precise digital temperature control
- Low watt density design
- Rugged construction
- Removable heating elements
- Oil flow switch
- UL listed control panel
- Minimal field wiring

Benefits

- Five year heating element warranty
- Uniform heat transfer
- Reduced coking and maintenance downtime
- Eliminates need for costly tank insulation
- Long service life
- Safe operation with control panel and oil flow switch



Hauck SHE Electric Suction Oil Heaters make use of the most efficient method to heat stored oil. Only the oil actually pumped from the tank for burning is heated to the proper pumping viscosity of 2000 SSU (4.3×10^{-4} m²/sec). Since there is no need to heat the entire tank, overall heating requirements are considerably reduced. The need for costly tank insulation is completely eliminated. In addition, the condition of the stored oil is not degraded by coking, oil stratification, or the “boiling off” of volatiles. Hauck SHE’s are available in a wide range of heating inputs from 15 to 200 kW to meet specific application requirements.

HAUCK MANUFACTURING COMPANY

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Combustion Excellence Since 1888

SHE

SUCTION OIL HEATER - ELECTRIC TYPE



ADVANTAGES OF THE SHE

Uniform Heat Transfer

Removable Heating Elements

Heats Only the Oil Required

Reduces Coking

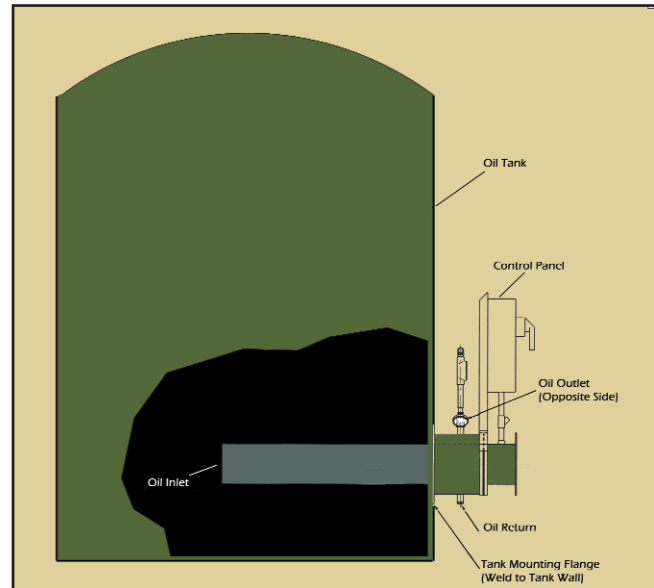
**Eliminates the Need for Costly Tank
Insulation**

The Hauck SHE Electric Suction Oil Heater is designed for applications where heavy grades of fuel oil must be heated to the proper viscosity to facilitate pumping the oil from a storage tank. The use of an electric oil heater frequently eliminates the need for long steam and condensate line extensions or new steam generating installations in situations where steam is not available for heating.

Since the temperature of the stored oil does not directly affect the temperature of the oil delivered to the burner system, the storage tank can be filled at any time with cold oil without affecting the system. Start-up time of the oil system is minimized and oil heating is accomplished quickly and efficiently.

Uniform Heat Transfer

The SHE's heating elements provide uniform heat transfer and come with a five year warranty. These elements are ETL listed and utilize a low watt density design for longer service life and less coking.



Typical arrangement of horizontal suction heater.

The line heater unit is designed to provide approximately 9 watts heat input per square inch of heating surface.

Removable Heating Elements

The SHE's low watt density heat input permits the heating surface to operate at lower temperatures and thereby reduces coking and the frequency of cleaning and servicing. If required, the heating elements can be easily removed and replaced.

Automatic Temperature Control

Each line heater unit is equipped with a digital electronic temperature controller. After the controller is set at the desired temperature, the line heater automatically controls the temperature of the oil, thus eliminating overheating or underheating. The oil temperature is measured by a thermocouple located inside the discharge end of the heater.



**SHE SUCTION OIL HEATER
ELECTRIC TYPE**

Model Number	KW Rating	Oil Temperature Rise (°F)									
		40	50	60	70	80	90	100	110	120	130
SHE 15B	15	287	230	191	164	144	128	115	104	96	88
SHE 20B	20	383	306	255	219	191	170	153	139	128	118
SHE 25B	25	479	383	319	274	239	213	191	174	160	147
SHE 30B	30	574	460	383	328	287	255	230	209	191	177
SHE 35B	35	670	536	447	383	335	298	268	244	223	206
SHE 40B	40	766	613	511	438	383	340	306	279	255	236
SHE 45B	45	862	689	574	492	431	383	345	313	287	265
SHE 50B	50	957	766	638	547	479	426	383	348	319	295
SHE 55B	55	1053	843	702	602	527	468	421	383	351	324
SHE 60B	60	1149	919	766	657	574	511	460	418	383	354
SHE 70B	70	1340	1072	894	766	670	596	536	487	447	412
SHE 80B	80	1532	1225	1021	875	766	681	613	557	511	471
SHE 90B	90	1723	1379	1149	985	862	766	689	627	574	530
SHE 100B	100	1915	1532	1277	1094	957	851	766	696	638	589
SHE 110B	110	2106	1685	1404	1204	1053	936	843	766	702	648
SHE 120B	120	2298	1838	1532	1313	1149	1021	919	836	766	707
SHE 130B	130	2489	1991	1660	1422	1245	1106	996	905	830	766
SHE 140B	140	2681	2145	1787	1532	1340	1191	1072	975	894	825
SHE 160B	160	3064	2451	2042	1751	1532	1362	1225	1114	1021	943
SHE 200B	200	3830	3064	2553	2188	1915	1702	1532	1393	1277	1178

NOTES:

1. Oil Capacities based on No. 6 fuel oil exiting the oil suction heater at a viscosity of 2000 SSU and includes a 20% safety factor.
2. Minimum oil flow rate to actuate flow switch for SHE 15-25 is adjustable from 3 to 45 gph; for SHE 30-35 is 90 gph; for SHE 40-50 is 120 gph; SHE 55-120 is 180 gph; for SHE 130-200 is 360 gph.
3. Standard supply voltage 480V/3Ph/60Hz unless otherwise specified on order.

SELECTION

When choosing the proper oil suction heater for a particular application, two basic criteria must be used; the required rise in oil temperature and the maximum oil capacity. The required rise in oil temperature is the difference between the temperature of the unheated oil in the storage tank and the temperature to which the oil must be heated to achieve the pumping viscosity. Typical pumping temperatures for No.4 and No. 6 fuel oil are 120°F and 150°F, respectively. For ease in integrating Hauck oil suction heater equipment, all Hauck literature assumes a pumping viscosity of 2000 SSU. Since the temperature rise can vary even between oil shipments of the same grade, Hauck recommends the use of a Hauck Viscometer to determine the exact required temperature rise for the oil to be burned.

TO SELECT AN OIL SUCTION HEATER:

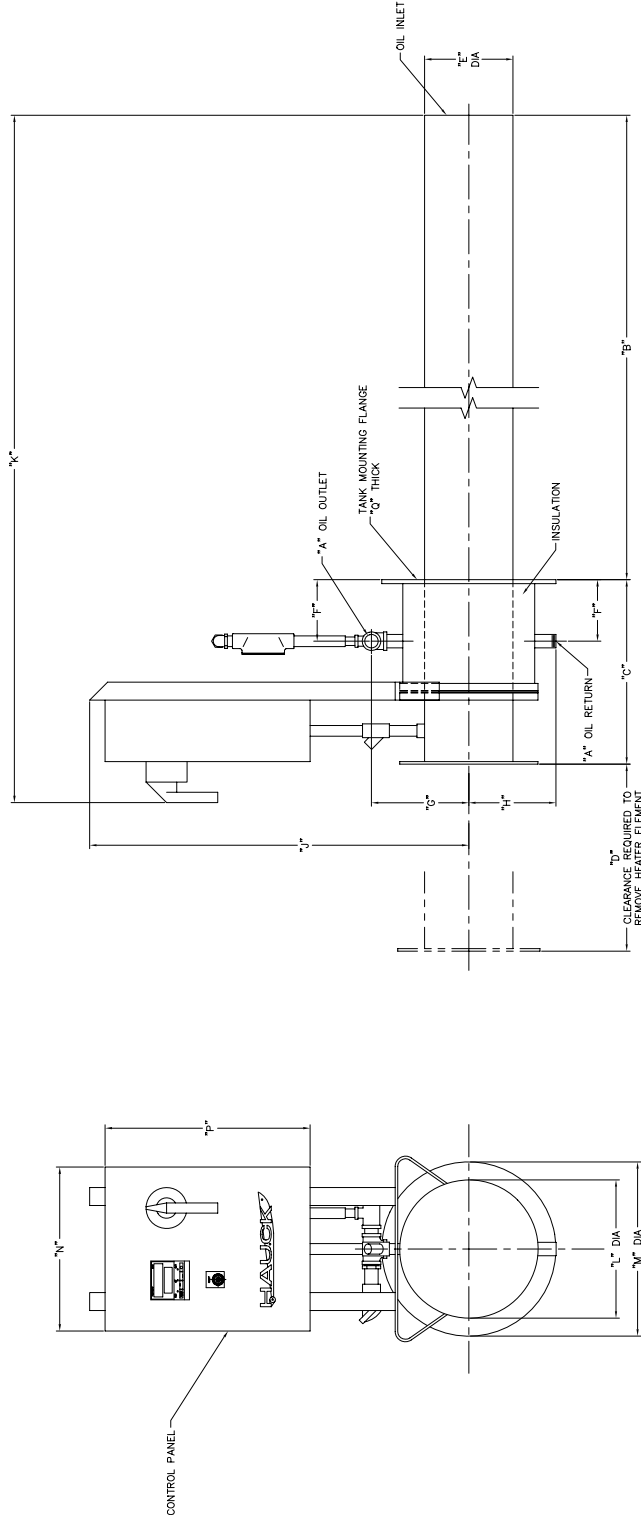
1. Read horizontally across the top of the table, locate the column representing the required oil temperature rise.
2. Read vertically down this column until you reach a capacity which equals or just exceeds your computed maximum capacity.
3. Read horizontally to the left to determine the model number of the oil suction heater which meets your requirements.
4. Ensure that the oil supply system is adequately sized to satisfy the minimum oil flow rate requirement to actuate the flow switch at low fire; if inadequate, consult Hauck for alternate flow switch recommendation.

(See Reverse Side For Metric Capacities)

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

**SHE SUCTION OIL HEATER
ELECTRIC TYPE**

SHE 15B THROUGH SHE 25B



MODEL NUMBER	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
SHE 15B	1 NPT [DN 25]	62 [1575]	18 [457]	80 [2032]	8 5/8 [219]	6 [153]	9 1/2 [241]	8 1/2 [216]	37 [940]	82 [2083]	13 1/2 [343]	17 [432]	16 [406]	20 [508]	3/8 [10]
SHE 20B	1 NPT [DN 25]	86 [2184]	18 [457]	104 [2642]	8 5/8 [219]	6 [153]	9 1/2 [241]	8 1/2 [216]	37 [940]	106 [2692]	13 1/2 [343]	17 [432]	16 [406]	20 [508]	3/8 [10]
SHE 25B	1 NPT [DN 25]	110 [2794]	18 [457]	128 [3251]	8 5/8 [219]	6 [153]	9 1/2 [241]	8 1/2 [216]	37 [940]	130 [3302]	13 1/2 [343]	17 [432]	16 [406]	20 [508]	3/8 [10]

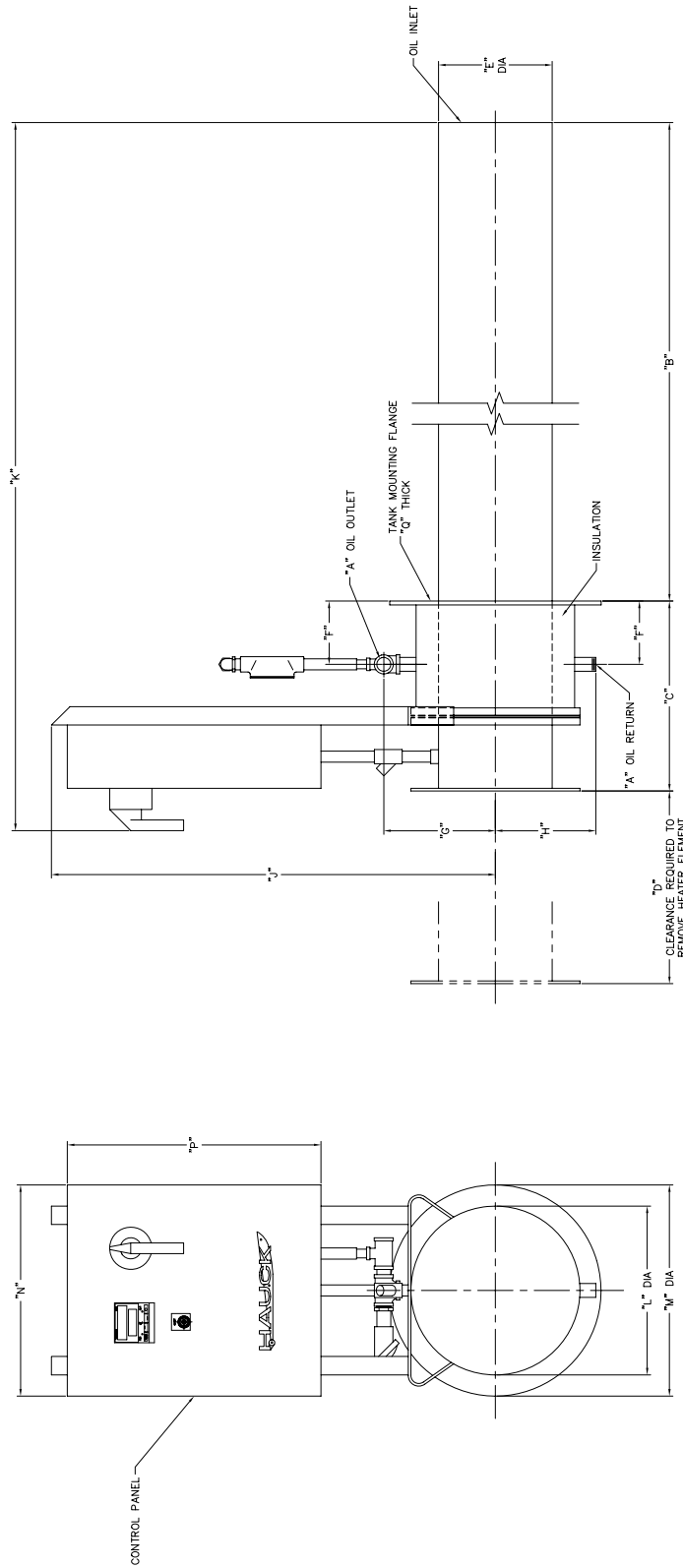
NOTES:
 1. DIMENSIONS ARE IN INCHES [MM], PIPE CONNECTIONS ARE IN NPT [DN].
 2. MAKE HOLE IN TANK APPROXIMATELY 2" [50MM] LARGER THAN "E" DIAMETER AND WELD TANK MOUNTING FLANGE TO THE OUTSIDE TANK WALL.

Y7382
(NOT TO SCALE)

(OVER)

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SHE 30B THROUGH SHE 70B

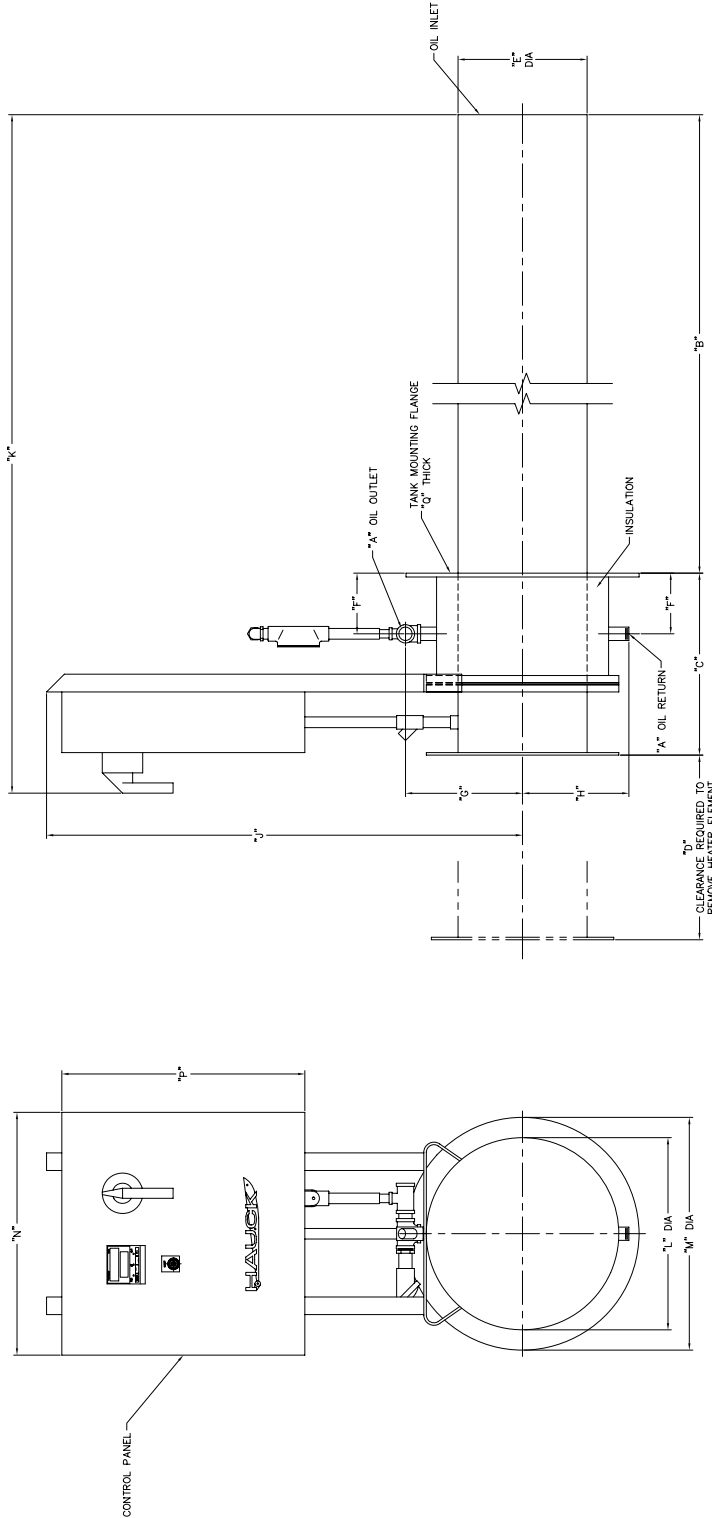


MODEL NUMBER	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
SHE 30B	1 NPT [DN 25]	98 [2489]	18 [457]	116 [2946]	10 3/4 [273]	6 [153]	10 9/16 [266]	9 1/2 [241]	42 [1067]	118 [2997]	16 [406]	20 [508]	20 [508]	24 [610]	3/8 [10]
SHE 35B	1 NPT [DN 25]	110 [2794]	18 [457]	128 [3251]	10 3/4 [273]	6 [153]	10 9/16 [266]	9 1/2 [241]	42 [1067]	130 [3302]	16 [406]	20 [508]	20 [508]	24 [610]	3/8 [10]
SHE 40B	1 NPT [DN 25]	122 [3099]	18 [457]	140 [3556]	10 3/4 [273]	6 [153]	10 9/16 [266]	9 1/2 [241]	42 [1067]	142 [3607]	16 [406]	20 [508]	20 [508]	24 [610]	3/8 [10]
SHE 45B	1 NPT [DN 25]	146 [3708]	18 [457]	164 [4166]	10 3/4 [273]	6 [153]	10 9/16 [266]	9 1/2 [241]	42 [1067]	166 [4216]	16 [406]	20 [508]	20 [508]	24 [610]	3/8 [10]
SHE 50B	1 NPT [DN 25]	158 [4013]	18 [457]	176 [4470]	10 3/4 [273]	6 [153]	10 9/16 [266]	9 1/2 [241]	42 [1067]	178 [4521]	16 [406]	20 [508]	20 [508]	24 [610]	3/8 [10]
SHE 55B	1 NPT [DN 25]	182 [4623]	18 [457]	200 [5080]	10 3/4 [273]	6 [153]	10 9/16 [266]	9 1/2 [241]	42 [1067]	202 [5131]	16 [406]	20 [508]	20 [508]	24 [610]	3/8 [10]
SHE 60B	1 NPT [DN 25]	194 [4928]	18 [457]	212 [5385]	10 3/4 [273]	6 [153]	10 9/16 [266]	9 1/2 [241]	42 [1067]	214 [5436]	16 [406]	20 [508]	20 [508]	24 [610]	3/8 [10]
SHE 70B	1 NPT [DN 25]	230 [5842]	18 [457]	248 [6298]	10 3/4 [273]	6 [153]	10 9/16 [266]	9 1/2 [241]	42 [1067]	250 [6350]	16 [406]	20 [508]	20 [508]	24 [610]	3/8 [10]

- NOTES:**
1. DIMENSIONS ARE IN INCHES [MM], PIPE CONNECTIONS ARE IN NPT [DN].
 2. MAKE HOLE IN TANK APPROXIMATELY 2" [50MM] LARGER THAN "E" DIAMETER AND WELD TANK MOUNTING FLANGE TO THE OUTSIDE TANK WALL.
- Y7383**
(NOT TO SCALE)

**SHE SUCTION OIL HEATER
ELECTRIC TYPE**

SHE 80B THROUGH SHE 130B



MODEL NUMBER	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
SHE 80B	1 NPT [DN 25]	146 [3708]	18 [457]	164 [4166]	12 3/4 [324]	6 [153]	11 9/16 [294]	10 1/2 [267]	47 [1194]	166 [4216]	19 [483]	23 [584]	24 [610]	24 [610]	3/8 [10]
SHE 90B	1 NPT [DN 25]	170 [4318]	18 [457]	188 [4775]	12 3/4 [324]	6 [153]	11 9/16 [294]	10 1/2 [267]	47 [1194]	190 [4826]	19 [483]	23 [584]	24 [610]	24 [610]	3/8 [10]
SHE 100B	1 NPT [DN 25]	182 [4623]	18 [457]	200 [5080]	12 3/4 [324]	6 [153]	11 9/16 [294]	10 1/2 [267]	47 [1194]	202 [5131]	19 [483]	23 [584]	24 [610]	24 [610]	3/8 [10]
SHE 110B	1 NPT [DN 25]	206 [5232]	18 [457]	224 [5690]	12 3/4 [324]	6 [153]	11 9/16 [294]	10 1/2 [267]	47 [1194]	226 [5740]	19 [483]	23 [584]	24 [610]	24 [610]	3/8 [10]
SHE 120B	1 NPT [DN 25]	218 [5537]	18 [457]	236 [5994]	12 3/4 [324]	6 [153]	11 9/16 [294]	10 1/2 [267]	47 [1194]	238 [6045]	19 [483]	23 [584]	24 [610]	24 [610]	3/8 [10]
SHE 130B	1 1/2 NPT [DN 40]	242 [6147]	18 [457]	360 [6604]	12 3/4 [324]	6 [153]	11 9/16 [294]	10 1/2 [267]	47 [1194]	262 [6655]	19 [483]	23 [584]	24 [610]	24 [610]	3/8 [10]

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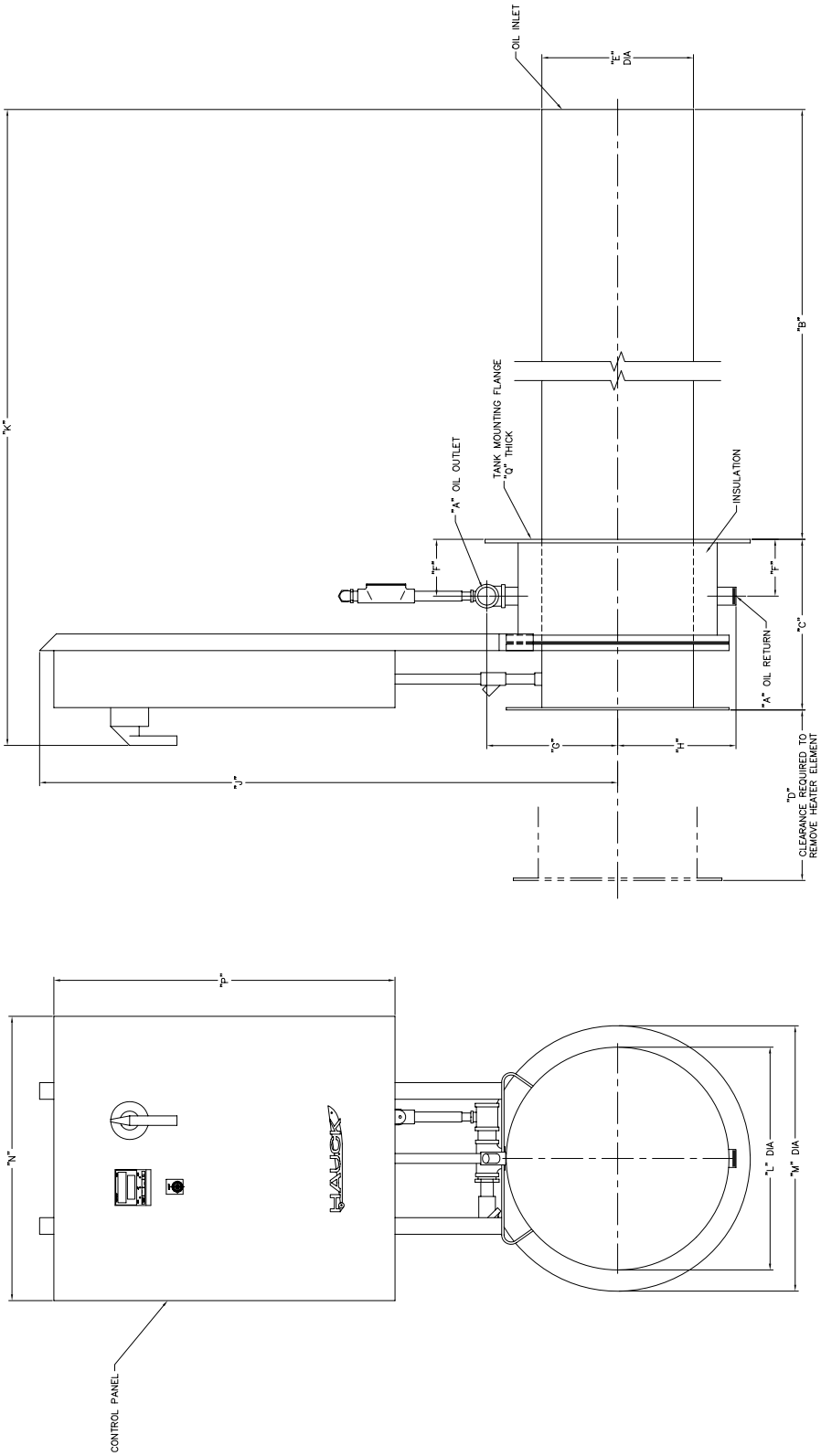
- NOTES:**
1. DIMENSIONS ARE IN INCHES [MM], PIPE CONNECTIONS ARE IN NPT [DN].
 2. MAKE HOLE IN TANK APPROXIMATELY 2" [50MM] LARGER THAN "E" DIAMETER AND WELD TANK MOUNTING FLANGE TO THE OUTSIDE TANK WALL.

(OVER)

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SHE SUCTION OIL HEATER ELECTRIC TYPE

SHE 140B THROUGH SHE 200B



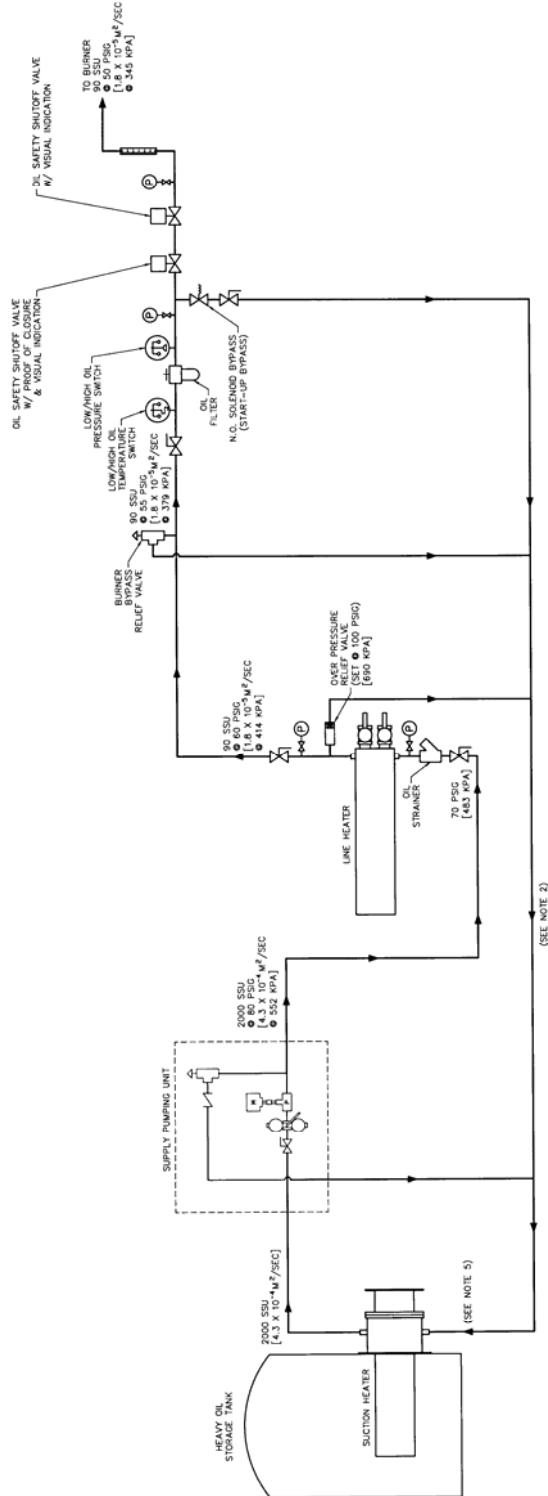
MODEL NUMBER	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
SHE 140B	1 1/2 NPT [DN 40]	146 [3708]	18 [457]	166 [4216]	16 [406]	6 [153]	13 13/16 [351]	12 1/2 [318]	61 [1549]	168 [4267]	23 1/2 [597]	28 [711]	30 [762]	36 [914]	3/8 [10]
SHE 160B	1 1/2 NPT [DN 40]	170 [4318]	18 [457]	190 [4826]	16 [406]	6 [153]	13 13/16 [351]	12 1/2 [318]	61 [1549]	192 [4877]	23 1/2 [597]	28 [711]	30 [762]	36 [914]	3/8 [10]
SHE 200B	1 1/2 NPT [DN 40]	218 [5537]	18 [457]	238 [6045]	16 [406]	6 [153]	13 13/16 [351]	12 1/2 [318]	61 [1549]	240 [6096]	23 1/2 [597]	28 [711]	30 [762]	36 [914]	3/8 [10]

- NOTES:**
- DIMENSIONS ARE IN INCHES [MM], PIPE CONNECTIONS ARE IN NPT [DN].
 - MAKE HOLE IN TANK APPROXIMATELY 2" [50MM] LARGER THAN "E" DIAMETER AND WELD TANK MOUNTING FLANGE TO THE OUTSIDE TANK WALL.
- Y7385**
(NOT TO SCALE)



SHE SUCTION OIL HEATER ELECTRIC TYPE

TYPICAL SINGLE BURNER SYSTEM HEAVY OIL SUPPLY



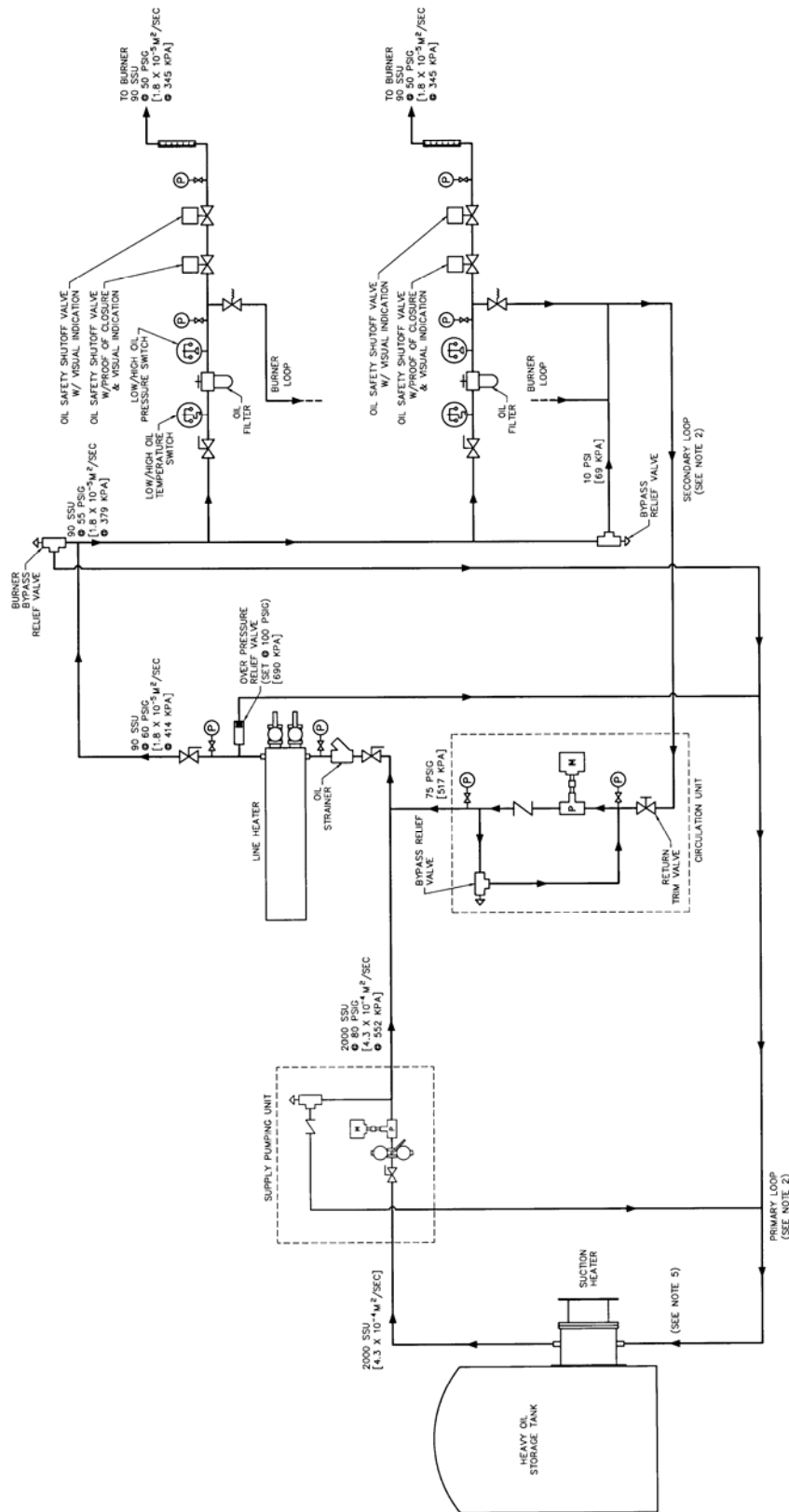
- NOTES:
1. PIPING SCHEMATIC SHOWS TYPICAL COMPONENTS AND NOMINAL VISCOSITIES AND PRESSURES FOR HEAVY FUEL OIL SUPPLY; ACTUAL REQUIREMENTS ARE DEPENDENT UPON THE SPECIFIC BURNER SYSTEM (CONSULT HAUCK).
 2. OIL RETURN LINES TO BE SIZED ACCORDING TO DISTANCE TO PUMP - MINIMUM SIZE EQUAL TO TWO PIPE SIZES LARGER THAN OIL SUPPLY LINE (SEE GL88 FOR MINIMUM LINE SIZES FOR HAUCK SUPPLY PUMPING OIL UNITS).
 3. ALL HEAVY FUEL OIL PIPING MUST BE HEAT TRACED (ELECTRIC OR STEAM) AND INSULATED. SELF-REGULATING HEAT TRACING IS RECOMMENDED TO MAINTAIN THE DESIRED TEMPERATURE OF A GIVEN FUEL OIL TO ACHIEVE 90 SSU (1.8 x 10⁻³ M³/SEC) AT THE BURNER ELECTRICAL HEAT TRACING WITH A NOMINAL RATING OF 12 W/FT (34W/M) COVERED WITH A NOMINAL 2" (50MM) FIBERGLASS TYPE INSULATION IS SUFFICIENT FOR MOST APPLICATIONS.
 4. IF USING NO. 6 FUEL OIL AND THE PIPING BETWEEN THE SUPPLY PUMPING UNIT AND THE HEAVY OIL MANIFOLD IS GREATER THAN 50 FT (15M), AN ADDITIONAL BYPASS RELIEF VALVE MAY BE REQUIRED IN THE SUPPLY PIPING TO ACCOMMODATE COLD SYSTEM START UP (CONSULT HAUCK).
 5. IF SUCTION HEATER IS NOT UTILIZED, OIL RETURN LINE SHOULD BE PIPED TO THE OIL STORAGE TANK.

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(NOT TO SCALE)

(OVER)

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

TYPICAL MULTIPLE BURNER SYSTEM HEAVY OIL SUPPLY



NOTES:

1. PIPING SCHEMATIC SHOWS TYPICAL COMPONENTS AND NOMINAL VISCOSITIES AND PRESSURES FOR HEAVY FUEL OIL SUPPLY; ACTUAL REQUIREMENTS ARE DEPENDENT UPON THE SPECIFIC BURNER SYSTEM (CONSULT HAUCK).
2. OIL RETURN LINES TO BE SIZED ACCORDING TO DISTANCE TO PUMP - MINIMUM SIZE EQUAL TO TWO PIPE SIZES LARGER THAN OIL SUPPLY LINE (SEE GL88 FOR MINIMUM LINE SIZES FOR HAUCK SUPPLY PUMPING OIL UNITS).
3. FOR ALL HEAVY OIL APPLICATIONS, OIL PIPING MUST BE HEAT TRACED (ELECTRIC OR STEAM) AND INSULATED. SELF-REGULATING HEAT TRACING IS RECOMMENDED TO MAINTAIN THE DESIRED TEMPERATURE OF A GIVEN FUEL OIL TO ACHIEVE 90 SSU ($1.8 \times 10^{-5} \text{ M}^2/\text{SEC}$) OR LESS AT THE BURNER. ELECTRICAL HEAT TRACING WITH A NOMINAL RATING OF 12 W/FT (34W/M) COVERED WITH A NOMINAL 2" (50MM) FIBERGLASS TYPE INSULATION IS SUFFICIENT FOR MOST APPLICATIONS.
4. IF USING NO. 6 FUEL OIL AND THE PIPING BETWEEN THE SUPPLY PUMPING UNIT AND THE HEAVY OIL MANIFOLD IS GREATER THAN 50 FT (15 M), AN ADDITIONAL BYPASS RELIEF VALVE MAY BE REQUIRED IN THE SUPPLY PIPING TO ACCOMMODATE COLD SYSTEM START UP (CONSULT HAUCK).
5. IF SUCTION HEATER IS NOT UTILIZED, OIL RETURN LINE SHOULD BE PIPED TO THE OIL STORAGE TANK.

Y7123
(NOT TO SCALE)