

HE-50/HE-51
page 2-3



HE-100/HE-101
page 4-7



HE-110/HE-111
page 8-11



HE-320/HE-321
page 12-14



Installation Information

Outline Drawing
DESCRIPTION:

Heat Exchanger (oil to air) with single fan. For use with B-130H and B-160H housings.

PERFORMANCE:

600 W with 50° delta T (48.6 kHU/minute). Refer to cooling chart for other delta T ratings.

HOSE LENGTH:

5 feet maximum (1.5 meters)

POWER REQUIREMENTS:

HE-50 110 - 120 VAC 50/60 Hz 3.2 Amps

HE-51 200 - 240 VAC 50/60 Hz 2.5 Amps

DIMENSIONS:

Width 4.5 inches (114 mm)

Length 8.5 inches (216 mm)

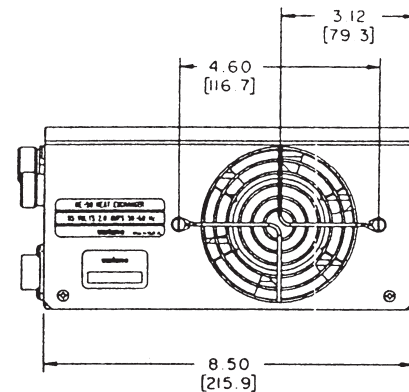
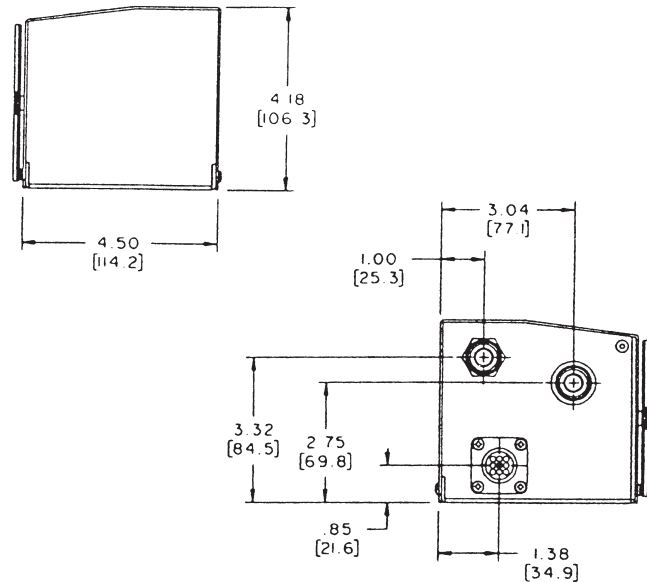
Height 4.2 inches (107 mm)

WEIGHT:

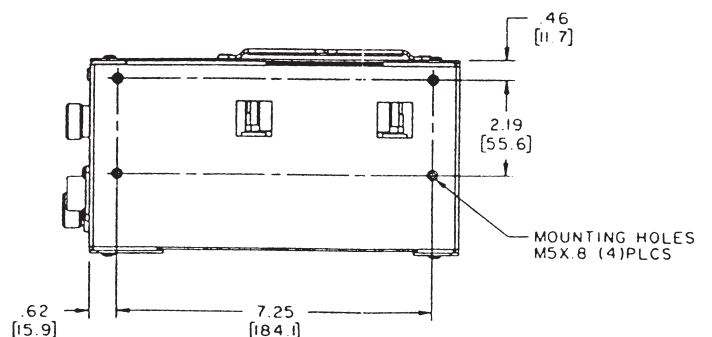
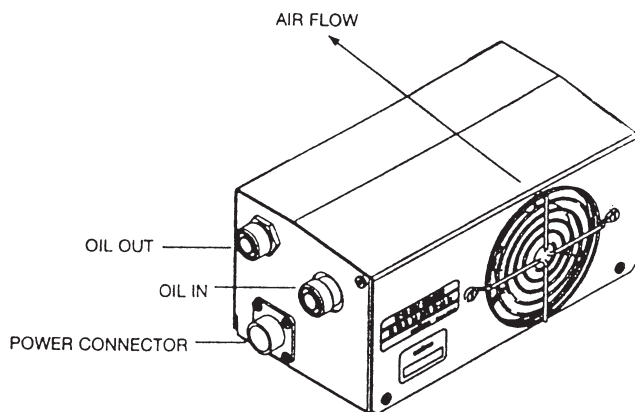
6.6 Pounds (3.0 kg)

MOUNTING:

Select mounting location where ambient temperature is low. Connect power cord to source that is energized whenever x-ray tube with heat exchanger is selected

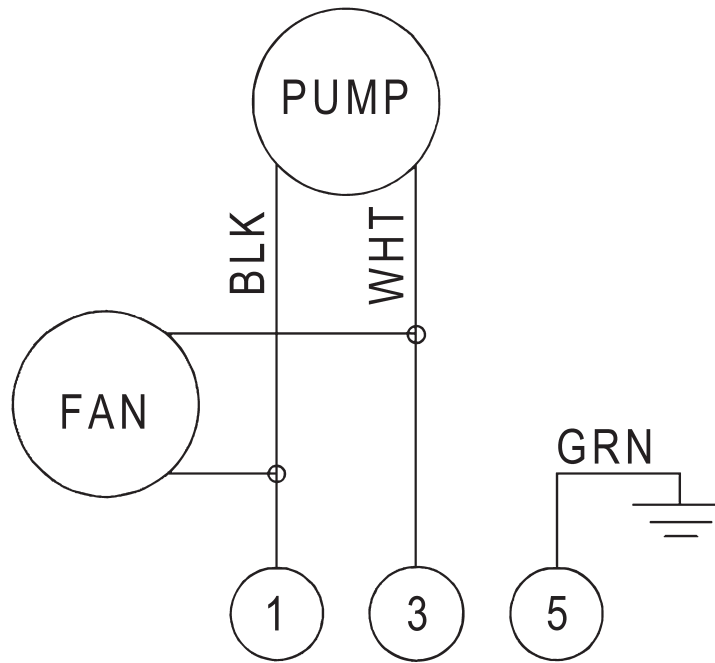


Dimensions are for reference only

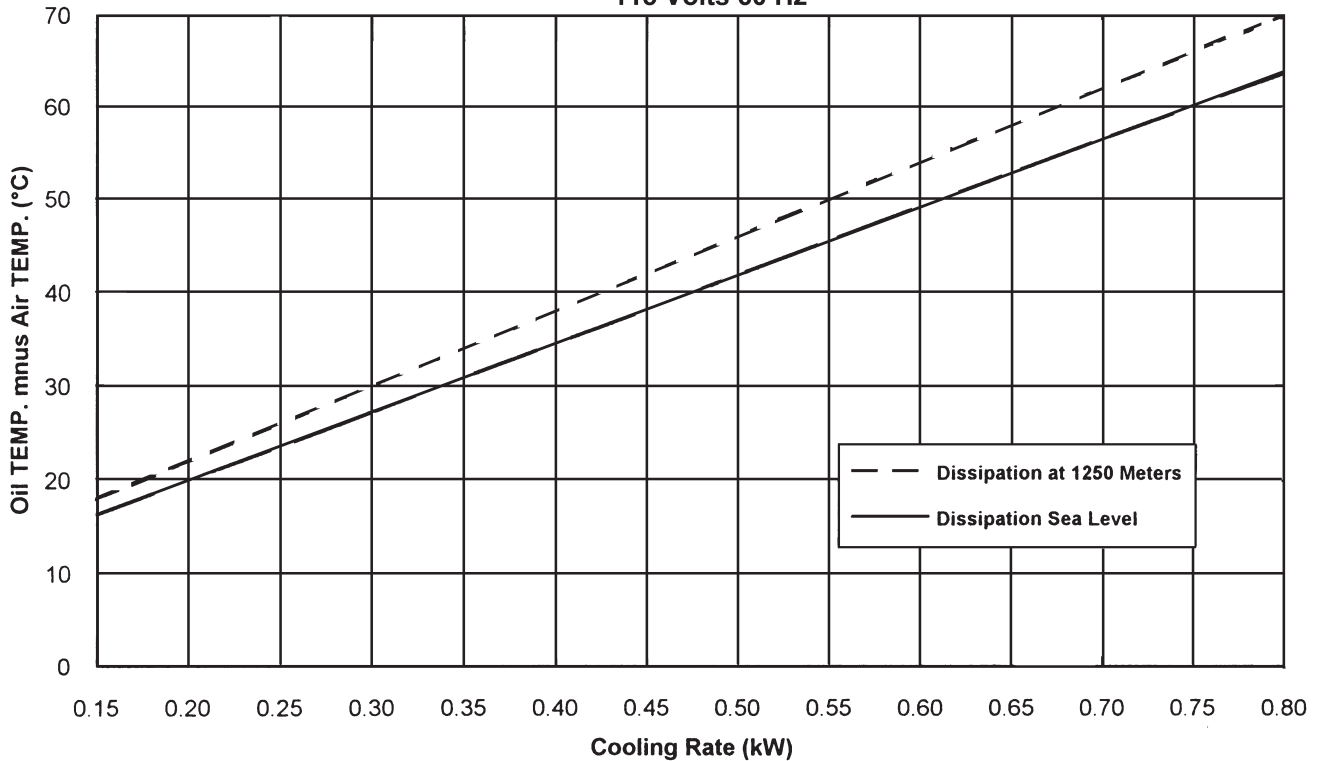

NOTES:

1. ALL DIMENSIONS IN INCHES AND *MILLIMETERS

Wiring Diagram



COOLING CHARACTERISTICS
Oil-Air (ΔT) vs. Cooling Rate
115 Volts 60 Hz



DESCRIPTION:

Heat Exchanger (oil to air) for use with B-130H, B-150H, B-160H and B-180H housings. Oil pump is quiet centrifugal type.

PERFORMANCE:

1130 W with 50° delta T (91.5 kHU/minute). Refer to cooling chart for other delta T ratings.

The HE-100 provides less than 54 db of noise level. The pump noise has been reduced so that the 100 CFM fan is the only source of noise.

HOSE LENGTH:

30 inches minimum (0.75 meters), 40 feet maximum (12 meters). Quote desired length when ordering.

Note: Hose length's longer than 5 feet (1.5 m) require the IK-124 HE diaphragm kit.

POWER REQUIREMENTS:

| | | | |
|--------|---------------|----------|----------|
| HE-100 | 110 - 120 VAC | 50/60 Hz | 1.7 Amps |
| HE-101 | 220 - 230 VAC | 50/60 Hz | 1.5 Amps |

FAIL SAFE DEVICE:

Thermal Switch - Located on housing, normally closed contacts. Open at 80°C. (Thermal switch is internal to B-130 housing.)

DIMENSIONS:

Width 9.625 inches (244 mm)
 Length 9.125 inches (232 mm)
 Height 4.75 inches (121 mm)

WEIGHT:

17.5 Pounds (7.94 kg)
 21.7 Pounds (9.85 kg) with IK-124

MOUNTING: (See page 15 for mounting template)

- A. Select mounting location where ambient temperature is low. Heat exchanger should be mounted so that hoses are not subject to stress, such as stretching, pinching or kinking.
- B. Heat exchanger is provided with threaded holes (10-32) in mounting stand-offs in base. Mounting surface should have access on "back" side for installation of heat exchanger mounting screws. Use template (provided page 15) and #10 drill to drill 4 mounting holes. Use 4, #10 lockwashers and 4, 10-32 screws to mount heat exchanger. Screw length must be equal to thickness of mounting surface plus 3/16". Shim screws with #10 flat washers as necessary to achieve 3/16" available thread for screwing into the stand-offs in heat exchanger base.
- C. Connect power cord to power source appropriate to heat exchanger model (see power requirements). Source must be one that is energized whenever x-ray tube with heat exchanger is selected.
- D. Connect two black wires from housing thermal switch to generator interlocks. (B-130 housing - Thermal switch wires are in stator cable.)

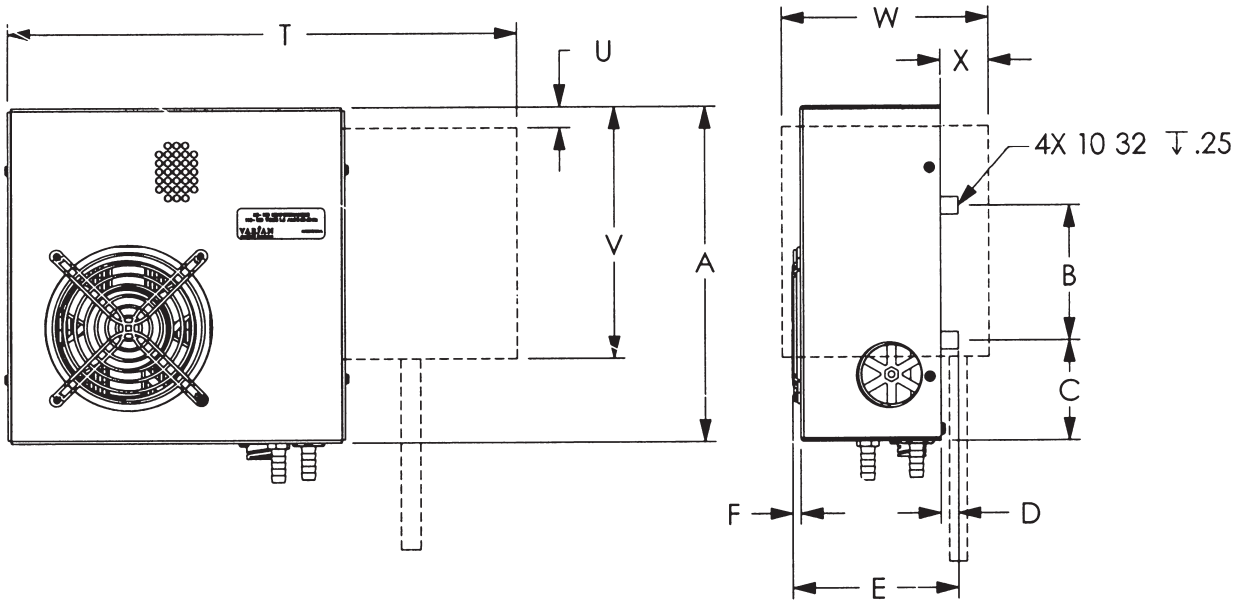
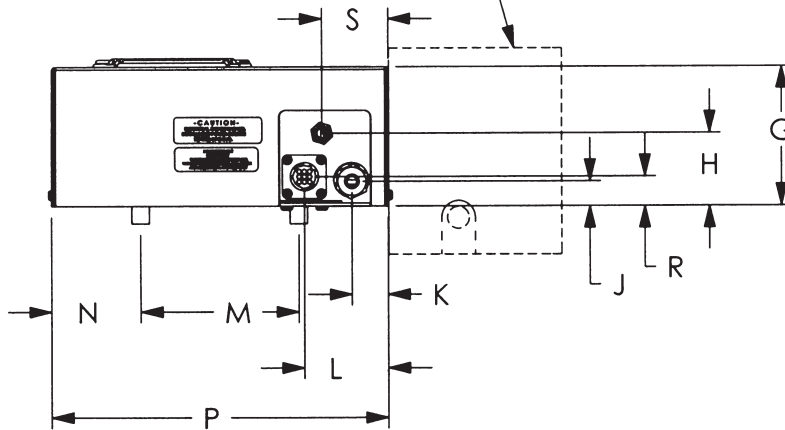
CONNECTING OIL LINES WITH QUICK DISCONNECT FITTINGS:

To prevent air in housing from oil line quick disconnect fittings observe the following procedures.

- A. Do not apply any side pressure on fittings such as from tie-wrapping to cable bundles or looping in tight circle.
- B. Dress heat exchanger hoses so that no kinking, pinching or pressure is exerted on them during any movements of the housing.
- C. Never run heat exchanger with fittings disconnected.
- D. **Always** return heat exchanger with x-ray tube regardless of reason for return.

Outline Drawing

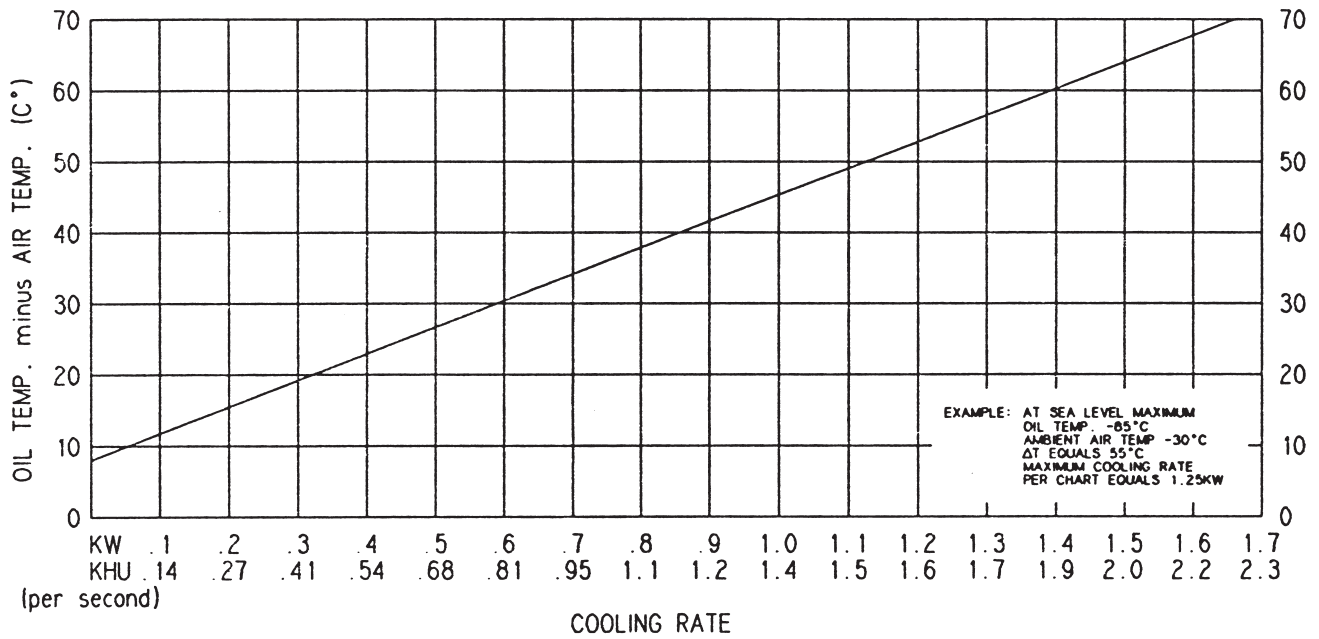
Dimensions are for reference only


 OPTIONAL: IK-124
 EXTERNAL DIAPHRAGM
 FOR LONG HOSE
 APPLICATION


| DIMENSIONAL DATA | | |
|------------------|--------|-------|
| | INCHES | mm |
| DIM | REF | REF |
| A | 9.60 | 243.9 |
| B | 3.88 | 98.4 |
| C | 2.75 | 69.9 |
| D | 0.50 | 12.7 |
| E | 4.73 | 120.1 |
| F | 0.23 | 5.8 |
| G | 4.00 | 101.6 |
| H | 2.09 | 53.1 |
| J | 0.70 | 17.9 |
| K | 1.04 | 26.3 |
| L | 2.40 | 60.8 |
| M | 4.50 | 114.3 |
| N | 2.55 | 64.8 |
| P | 9.60 | 243.9 |
| R | 0.84 | 21.3 |
| S | 1.90 | 48.1 |
| T | 14.57 | 370.1 |
| U | 0.59 | 15.0 |
| V | 7.20 | 182.9 |
| W | 5.91 | 150.1 |
| X | 1.38 | 35.1 |

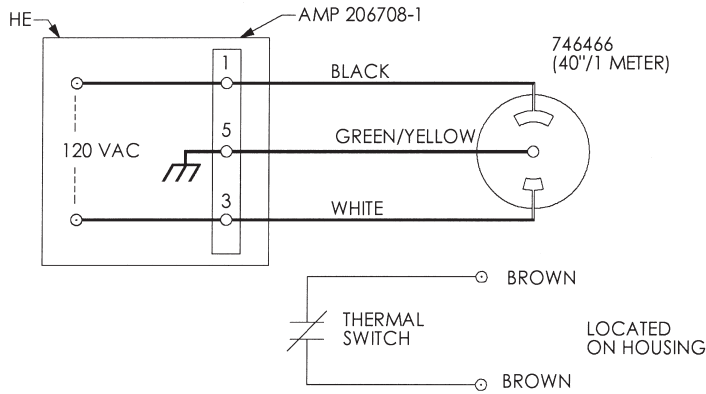
Cooling Characteristics

OIL - AIR (ΔT) vs. COOLING RATE 115/230 VOLTS 60 Hz

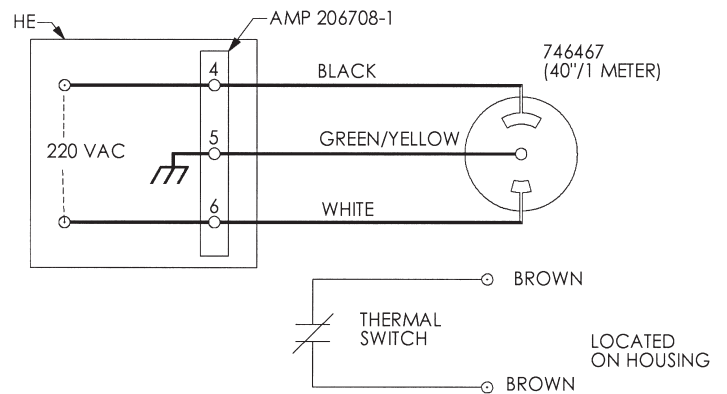


Wiring Diagram

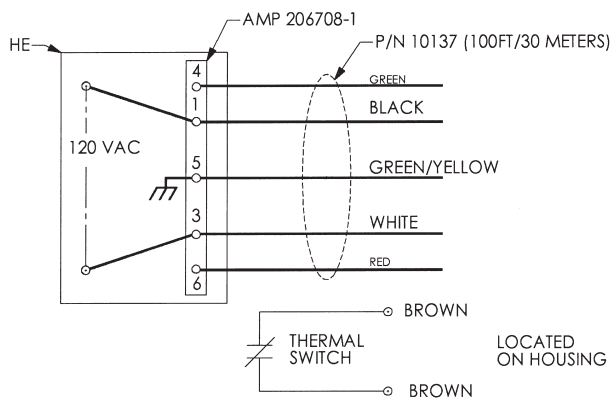
HE 100/HE 110 120VAC
THREE CONDUCTOR CABLE



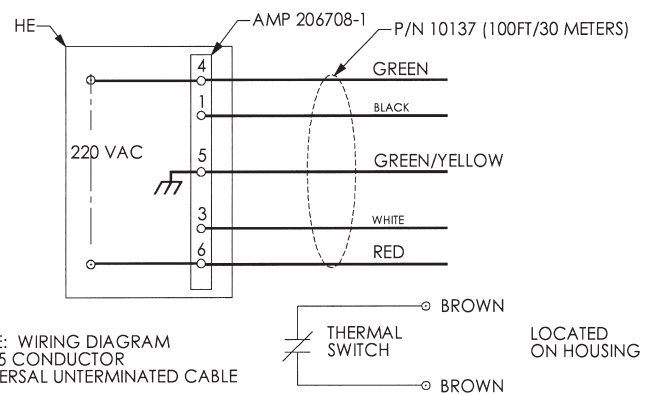
HE 101/HE 111 220VAC
THREE CONDUCTOR CABLE



HE 100/HE 110 120VAC
FIVE CONDUCTOR CABLE



HE 101/HE 111 220VAC
FIVE CONDUCTOR CABLE



NOTE: WIRING DIAGRAM FOR 5 CONDUCTOR UNIVERSAL UNTERMINATED CABLE

DESCRIPTION:

Heat Exchanger (oil to air) for use with B-130H, B-150H, B-160H and B-180H housings. Oil pump is gear type, somewhat noisy.

PERFORMANCE:

1000W with 50° delta T (81 kHU/minute).
Refer to cooling chart for other delta T ratings.

HOSE LENGTH:

30 inches minimum (0.75 meters), 40 feet maximum (12 meters). Quote desired length when ordering.

Note: Hose length's longer than 5 feet (1.5 m) require the IK-124 HE diaphragm kit.

POWER REQUIREMENTS:

| | | | |
|--------|---------------|----------|----------|
| HE-110 | 110 - 120 VAC | 50/60 Hz | 1.5 Amps |
| HE-111 | 220 - 230 VAC | 50/60 Hz | 1.0 Amps |

FAIL SAFE DEVICE:

Thermal Switch - Located on housing, normally closed contacts. Open at 80°C. (Thermal switch is internal to B-130 housing.)

DIMENSIONS:

Width 9.625 inches (244 mm)
Length 9.125 inches (232 mm)
Height 4.75 inches (121 mm)

WEIGHT:

17.5 Pounds (7.94 kg)
21.7 Pounds (9.85 kg) with IK-124
U/L and CSA listed.

MOUNTING: (See page 15 for mounting template)

- A. Select mounting location where ambient temperature is low. Heat exchanger should be mounted so that hoses are not subject to stress, such as stretching, pinching or kinking.
- B. Heat exchanger is provided with threaded holes (10-32) in mounting stand-offs in base. Mounting surface should have access on "back" side for installation of heat exchanger mounting screws. Use template (provided page 15) and #10 drill to drill 4 mounting holes. Use 4, #10 lockwashers and 4, 10-32 screws to mount heat exchanger. Screw length must be equal to thickness of mounting surface plus 3/16". Shim screws with #10 flat washers as necessary to achieve 3/16" available thread for screwing into the stand-offs in heat exchanger base.
- C. Connect power cord to power source appropriate to heat exchanger model (see power requirements). Source must be one that is energized whenever x-ray tube with heat exchanger is selected.
- D. Connect two black wires from housing thermal switch to generator interlocks. (B-130 housing - Thermal switch wires are in stator cable.)

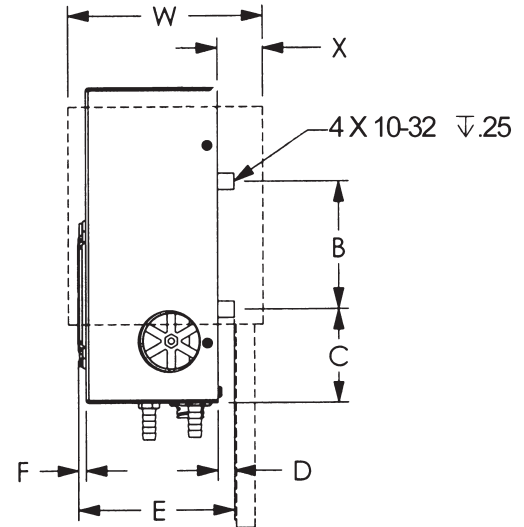
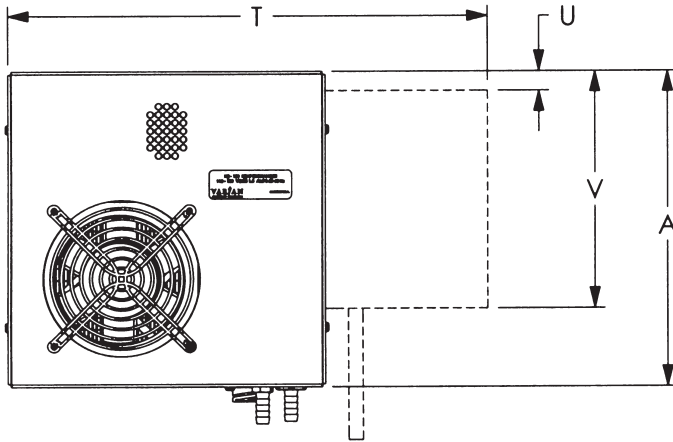
CONNECTING OIL LINES WITH QUICK DISCONNECT FITTINGS:

To prevent air in housing from oil line quick disconnect fittings observe the following procedures.

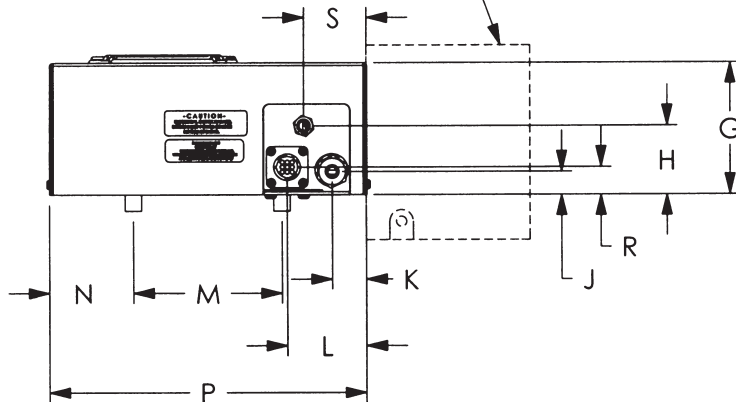
- A. Do not apply any side pressure on fittings such as from tie-wrapping to cable bundles or looping in tight circle.
- B. Dress heat exchanger hoses so that no kinking, pinching or pressure is exerted on them during any movements of the housing.
- C. Never run heat exchanger with fittings disconnected.
- D. **Always** return heat exchanger with x-ray tube regardless of reason for return.

Outline Drawing

Dimensions are for reference only



OPTIONAL: IK-124
 EXTERNAL DIAPHRAGM
 FOR LONG HOSE
 APPLICATION

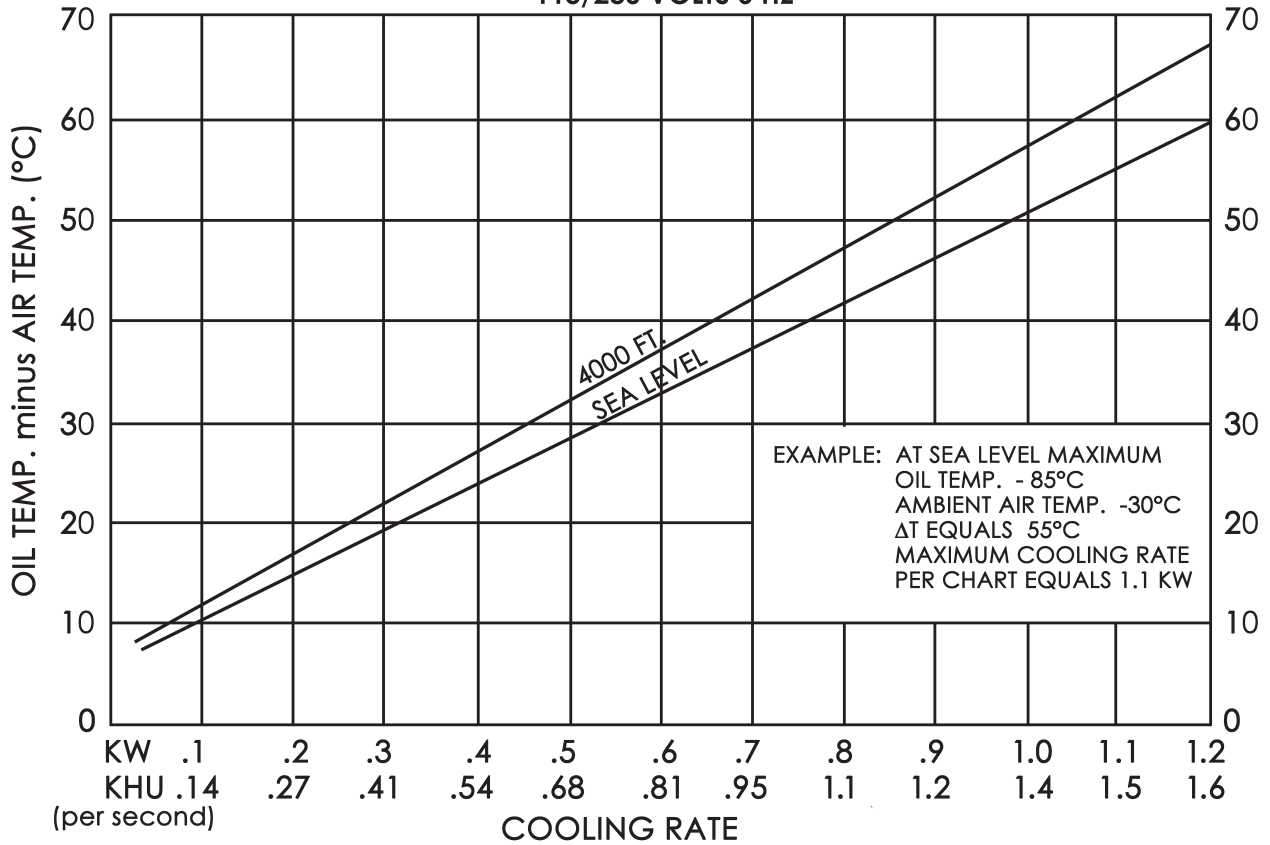


| DIMENSIONAL DATA | | |
|------------------|--------|-------|
| DIM | INCHES | mm |
| A | 9.60 | 243.9 |
| B | 3.88 | 98.4 |
| C | 2.75 | 69.9 |
| D | 0.50 | 12.7 |
| E | 4.73 | 120.1 |
| F | 0.23 | 5.8 |
| G | 4.00 | 101.6 |
| H | 2.09 | 53.1 |
| J | 0.70 | 17.9 |
| K | 1.04 | 26.3 |
| L | 2.40 | 60.8 |
| M | 4.50 | 114.3 |
| N | 2.55 | 64.8 |
| P | 9.60 | 243.9 |
| R | 0.84 | 21.3 |
| S | 1.90 | 48.1 |
| T | 14.57 | 370.1 |
| U | 0.59 | 15.0 |
| V | 7.20 | 182.9 |
| W | 5.91 | 150.1 |
| X | 1.38 | 35.1 |

Cooling Characteristics

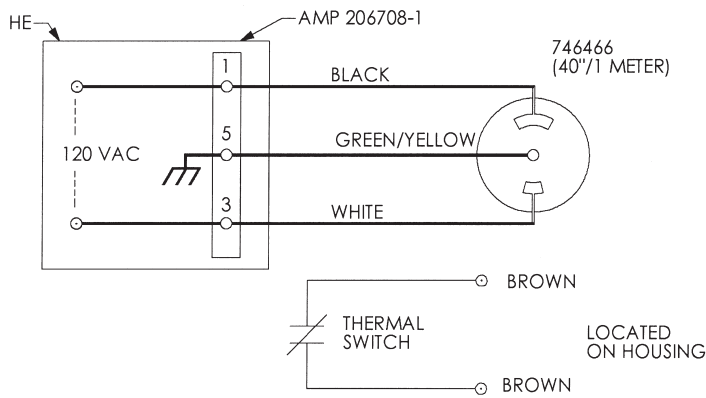
OIL - AIR (ΔT) vs. COOLING RATE

115/230 VOLTS 6 HZ

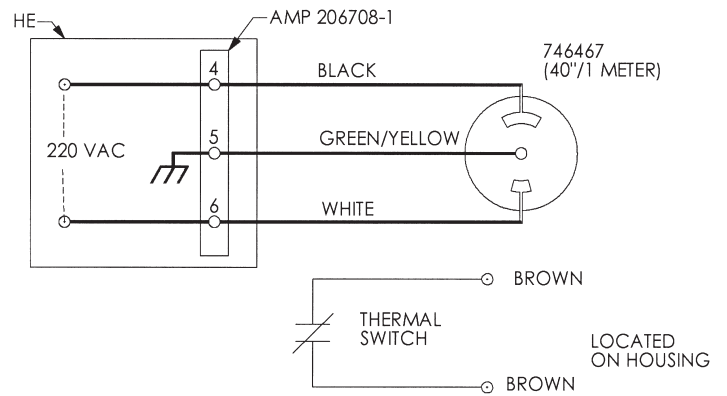


Wiring Diagram

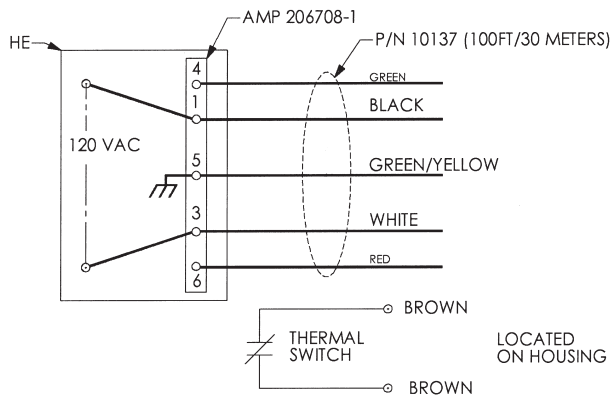
HE 100/HE 110 120VAC
THREE CONDUCTOR CABLE



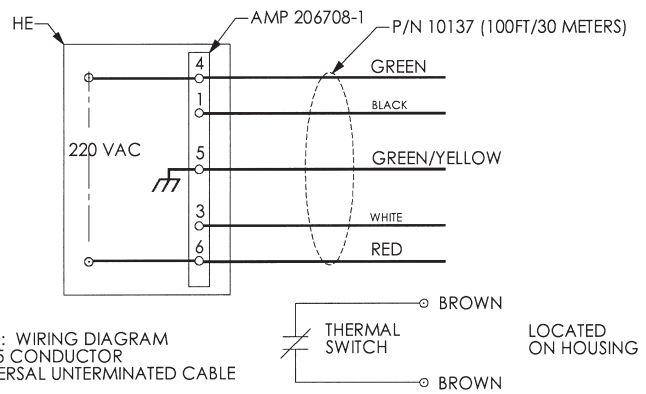
HE 101/HE 111 220VAC
THREE CONDUCTOR CABLE



HE 100/HE 110 120VAC
FIVE CONDUCTOR CABLE



HE 101/HE 111 220VAC
FIVE CONDUCTOR CABLE



NOTE: WIRING DIAGRAM FOR 5 CONDUCTOR UNIVERSAL UNTERMINATED CABLE

DESCRIPTION:

Heat Exchanger (oil to air) with single fan. For use with B-160H, B-180H and MAMRAD-105H housings. Oil pump is gear type.

PERFORMANCE:

2.4 kW with 50° delta T (194 kHU/minute). Refer to cooling chart for other delta T ratings.

HOSE LENGTH:

30 inches minimum (0.75 meters), 40 feet maximum (12 meters).

Note: Hose length's longer than 5 feet (1.5 m) require the IK-124 HE diaphragm kit.

POWER REQUIREMENTS:

| | | | |
|--------|---------------|----------|----------|
| HE-320 | 110 - 120 VAC | 50/60 Hz | 2.0 Amps |
| HE-321 | 220 - 230 VAC | 50/60 Hz | 1.2 Amps |

FAIL SAFE DEVICE:

Flow Switch - Normally open contacts. Contacts closed with adequate oil flow.

DIMENSIONS:

Width 9.125 inches (232 mm)
Length 16 inches (406 mm)
Height 5.25 inches (133 mm)

WEIGHT:

26 Pounds (11.8 kg)

MOUNTING:

Select mounting location where ambient temperature is low.

Connect power cord to source that is energized whenever x-ray tube with heat exchanger is selected.

Connect flow switch and thermal switch on housing in series with existing exposure interlocks.

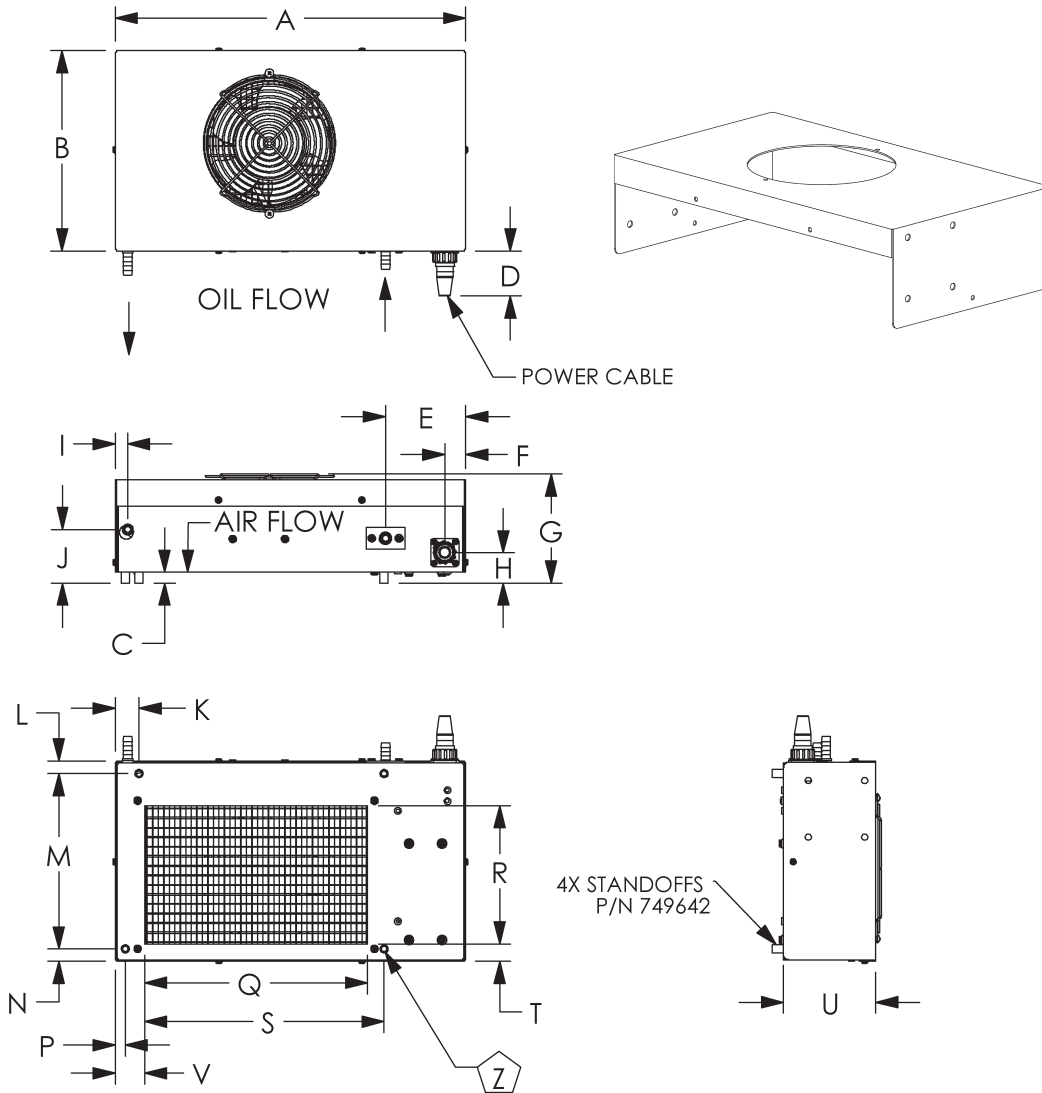
CONNECTING OIL LINES WITH QUICK DISCONNECT FITTINGS:

To prevent air in housing from oil line quick disconnect fittings observe the following procedures.

- A. Do not apply any side pressure on fittings such as from tie-wrapping to cable bundles or looping in tight circle.
- B. Never run heat exchanger with fittings disconnected.
- C. **Always** return heat exchanger with x-ray tube regardless of reason for return.

Outline Drawing

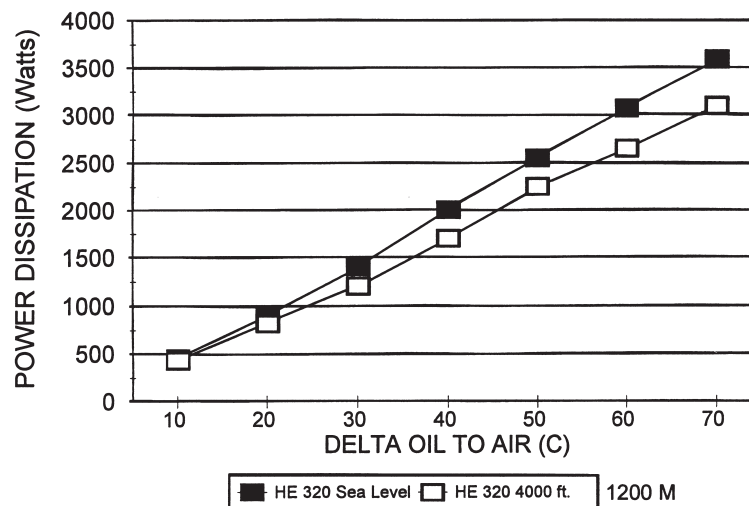
Dimensions are for reference only



| DIMENSIONAL DATA | | |
|------------------|--------|-------|
| DIM | INCHES | mm |
| A | 15.91 | 404.1 |
| B | 9.08 | 230.6 |
| C | 0.50 | 12.7 |
| D | 2.25 | 57.2 |
| E | 3.58 | 90.9 |
| F | 0.95 | 24.1 |
| G | 4.95 | 125.7 |
| H | 1.38 | 35.1 |
| I | 0.52 | 13.2 |
| J | 2.30 | 58.4 |
| K | 1.08 | 27.4 |
| L | 0.58 | 14.7 |
| M | 7.94 | 201.7 |
| N | 0.56 | 14.2 |
| P | 0.45 | 11.4 |
| Q | 10.13 | 257.3 |
| R | 6.27 | 159.3 |
| S | 10.88 | 276.4 |
| T | 0.78 | 19.8 |
| U | 4.19 | 106.4 |
| V | 1.33 | 33.8 |
| W | | |
| X | | |
| Y | | |

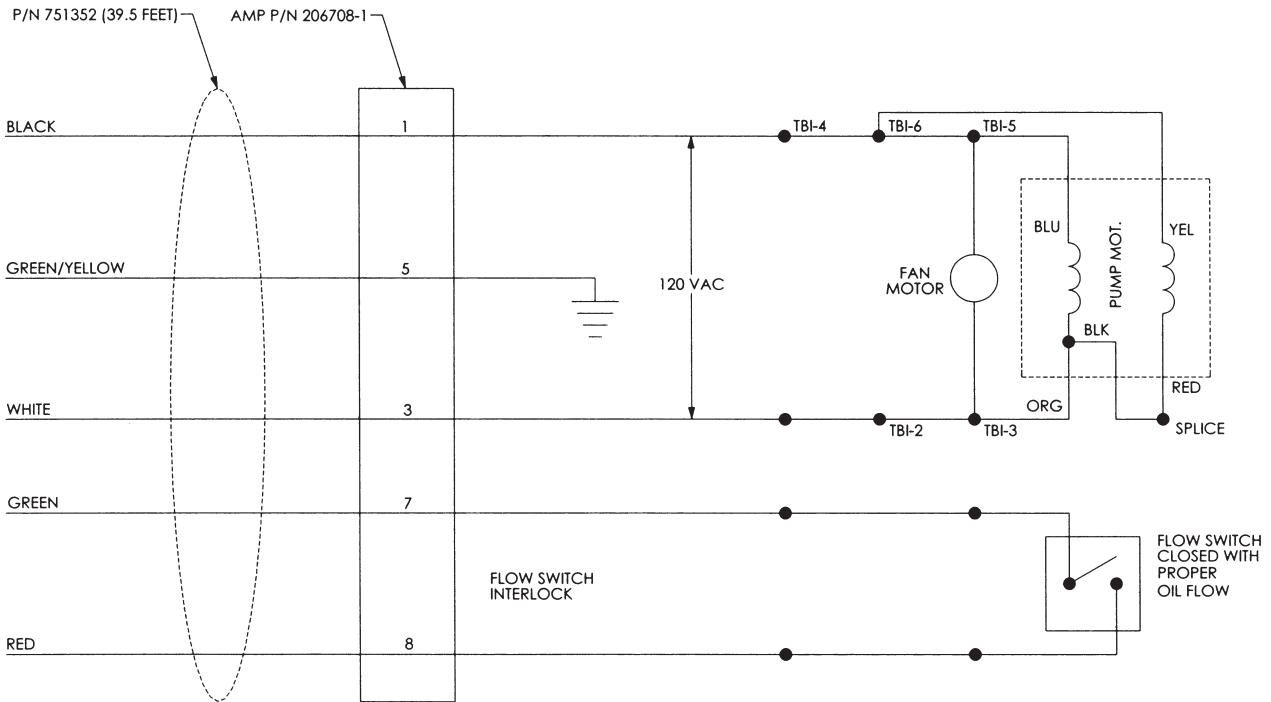
4 X 1/4-20

COOLING CHARACTERISTICS HE 320 POWER DISSIPATION

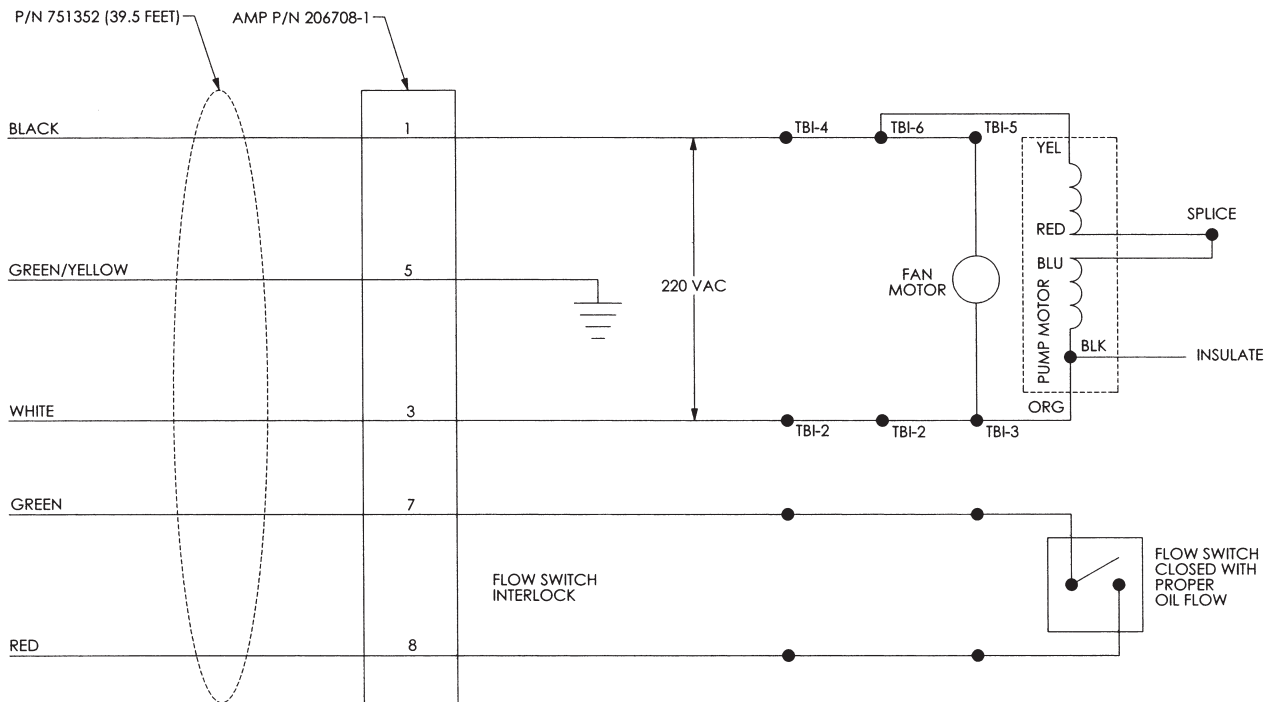


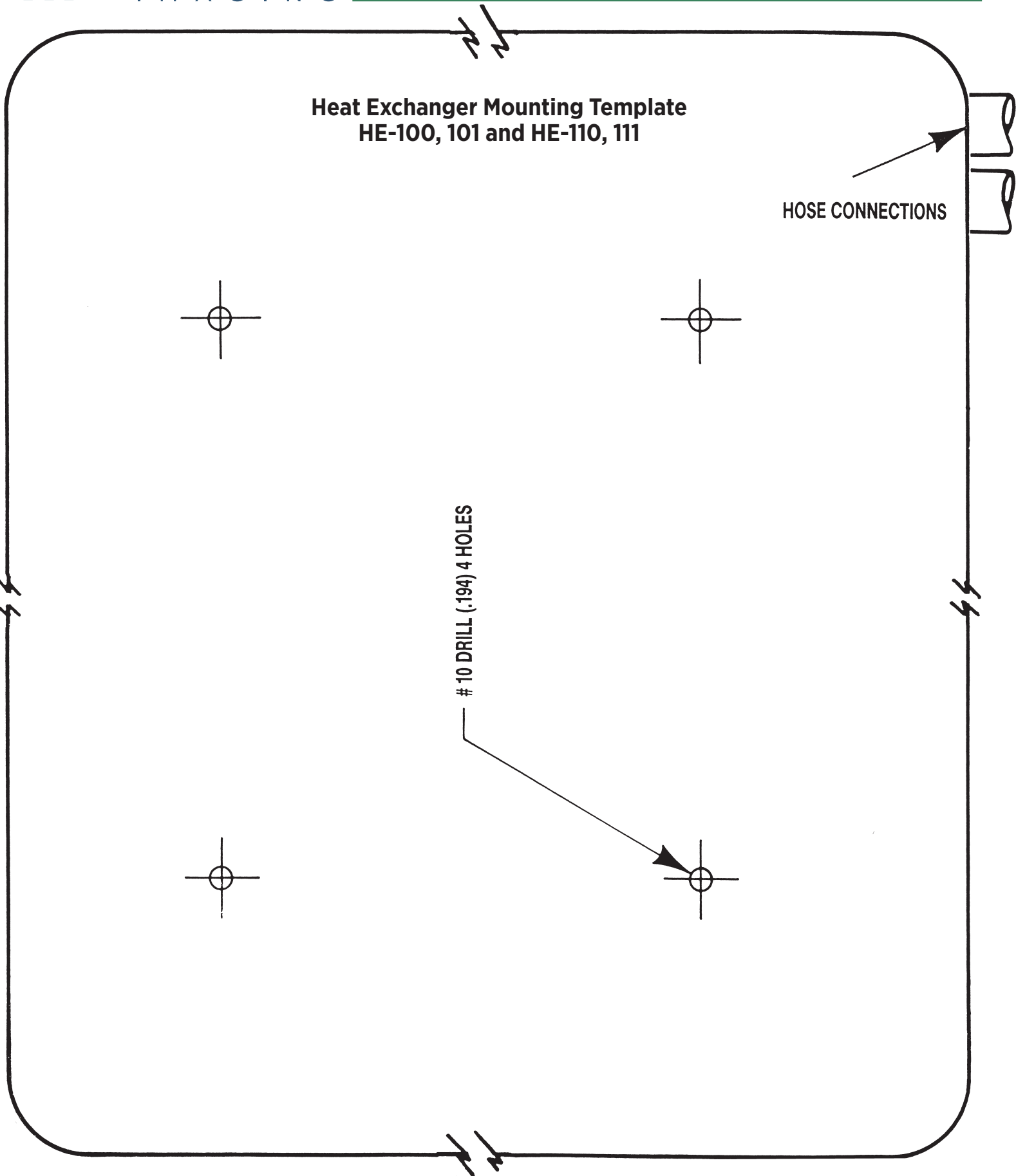
Wiring Diagram

HE-320



HE-321







Salt Lake City, UT 1-801-972-5000

*For a complete listing of our global offices,
visit www.vareximaging.com*

Manufactured by Varex Imaging Corporation
Fabrique par Varex Imaging Corporation
Hergestellt von Varex Imaging Corporation
Fabricado por Varex Imaging Corporation

Specifications subject to change without notice.
Spécifications susceptibles d'être modifiées sans préavis.
Technische Daten ohne Gewähr.
Especificaciones sujetas a cambio sin previo aviso.