



Algas-SDITM

...Innovative liquid vaporizing and gas mixing solutions

ISO 9001
Certified

ZIMMER

Dry Electric Vaporizer

Operations & Maintenance
Manual

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DISCLAIMER and COPYRIGHT

DISCLAIMER

Read this Operations and Maintenance Manual before operating the **ZIMMER!**

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PATENTS

For patent information go to: www.algas-sdi.com/patents

WARRANTY and CONTACT INFORMATION

WARRANTY REGISTRATION

Fill out the Warranty Registration information on the last page of this manual. Refer to the nameplate on the vaporizer to fill out the product registration. Then make a photocopy and mail to the address shown at the bottom, or scan and email alternatively.

WARRANTY

Algas-SDI International, LLC (ASDI) warrants that the equipment is free from defects in materials and workmanship under normal use and service. ASDI agrees to repair or replace, at its option, without charge F.O.B. factory, any part which has proven defective to the satisfaction of ASDI within one (1) year from the date of the original installation or with 18 months from the date of shipment, whichever is earlier. Equipment, which in the opinion of ASDI, has been damaged in shipment or by improper installation or operation, or has been abused or tampered with in any way, will not be accepted for return under warranty.

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ASDI CONTACT INFORMATION

If you have questions or need help with your equipment, or want information on other products, contact your distributor or *Algas-SDI* at:

Telephone: 1.206.789.5410

Facsimile: 1.206.789.5414

E-mail: sales@algas-sdi.com

Internet: www.algas-sdi.com

TECHNICAL SPECIFICATIONS

Pressure Relief Valve Set point: 17.24 barg (250 psig)


Heat Exchanger: **MAWP:** 17.24 barg @ 149 °C (250 psig @ 300 °F)
 MDMT: -29 °C @ 17.24 barg (-20 °F @ 250 psig)
 Hydrostatic Test Pressure: 25.86 barg (375 psig)


PED: SEP (Sound Engineering Practice) for models Z25 - Z50
 Category I for models Z100 - Z150

Electrical: **Voltage:** 100 – 277 VAC 1PH (All models)
 Voltage: 240 – 480 VAC 3PH Wye (Z100 and Z150 only)
 Frequency: 50/60Hz
 Circuit breaker: See Electrical Specifications in the Appendix

Ambient temperature rating: -4 °F to +122 °F (-20 °C to +50 °C)

Hazardous Area Rating:

CE 2460  **II 2 G**
DEMKO 19 ATEX 2083X
II 2 G Ex db IIA T3 Gb
IECEX UL 19.0034X
Ex db IIA T3 Gb

 **US**
LPG VAPORIZER
FOR HAZARDOUS
LOCATIONS 2PA5

Class I, Division 1, Group D, T3

Enclosure Rating: Type 4 (shell not required)

Fasteners: M10 x 50 mm CLASS 8.8, Min. Yield strength 640 MPa

Seal-off: 3/4" Male NPT Thread

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ZIMMER 25/40/50 1PH EQUIPMENT DRAWING

ZIMMER 100/150 3PH EQUIPMENT DRAWING

ZIMMER 25/40/50 WIRING SCHEMATIC

ZIMMER 100/150 WIRING SCHEMATIC

ZIMMER SINGLE UNIT HORIZONTAL INSTALLATION DRAWING

ZIMMER MULTI UNIT HORIZONTAL INSTALLATION DRAWING

ZIMMER SINGLE UNIT VERTICAL INSTALLATION DRAWING

ZIMMER WALL MOUNTING DETAIL DRAWING

ZIMMER DRAIN KIT INSTALLATION DRAWING

Warranty Registration - Refer to the nameplate on the vaporizer to fill out the product registration. Then photocopy and mail to address shown.

INTRODUCTION

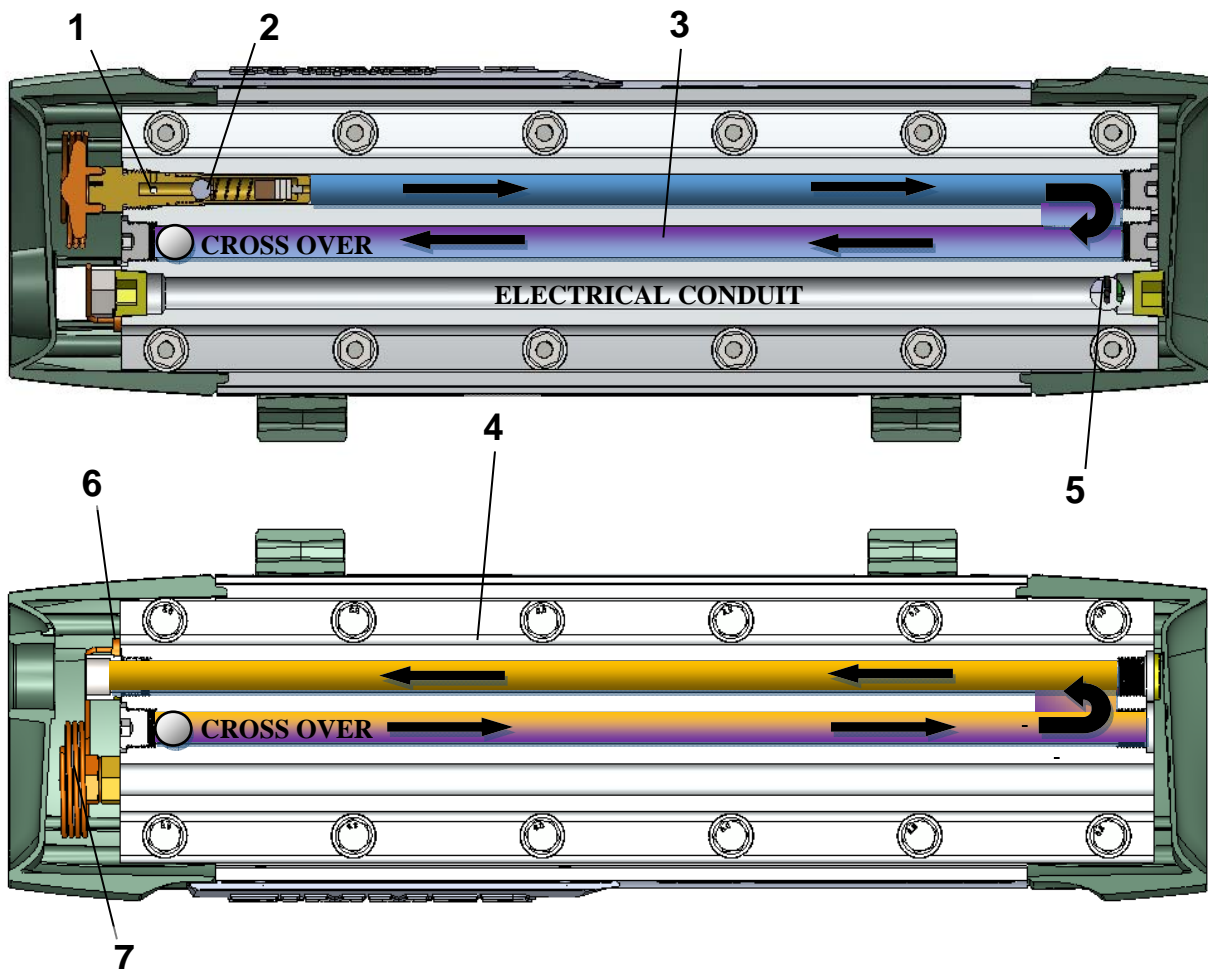
1

Description / Overview

Your new **ZIMMER** is a dry electric LPG or Propane vaporizer that adds energy to vaporize liquid fuel when the amount of energy available from the natural environment is insufficient for vaporization. A primary benefit of this device is that it allows greater capacities from smaller amounts of stored LPG. Often code restrictions limit the number and size of cylinders which can be stored next to a building or in a small space. The **ZIMMER** overcomes this problem and can be supplied by as few as one cylinder or tank of any size, or as many as can be manifolded together according to local codes.

All **ZIMMER** vaporizers are manufactured under a certified ISO 9001 quality system. The inlet control valve and heat exchanger have been proof tested to 110 bar (1600 psig).

How the Vaporizer Works



Ref. 1 – Liquid LPG enters the inlet valve where the inlet valve screen prevents debris from entering.

Ref. 2 – Liquid flows through the inlet valve where it is controlled by a metal-to-metal seat and ball. The infinite seating positions of the ball provide long life.

Ref. 3 – As liquid passes through the tubes, the energy is transferred, causing the liquid to boil. Tubes provide a secure pressure boundary and exceptional heat transfer.

Ref. 4 – Energy drawn from the heat sink is replenished by self-regulating heaters without the need for switches, temperature sensors, relays or other controls. The heaters cannot overheat by nature of their design and they consume only as much energy as is needed for vaporization.

Ref. 5 – Power is supplied to the heaters by a wide range of voltages through a factory-mounted explosion-proof seal.

Ref. 6 – As LPG vapor exits the vaporizer, it heats or cools the temperature-sensitive bulb, providing feedback to the inlet valve.

Ref. 7 – The inlet valve receives feedback from the temperature-sensitive bulb and combines it with pressure feedback to ensure only superheated LPG vapor (superheat is the amount of temperature above the dew point) leaves the vaporizer. The valve modulates the inlet flow to control the process.

In the event of a power failure, the vaporizer will continue to operate until all of the available energy has been used. If the power comes back on before all of the energy has been used, the heat process served by the LPG should remain engaged. Otherwise, the inlet valve will close as the heat stored in the heat exchanger is transferred to the passing fluid. When the power comes back on, the vaporizer will automatically re-energize and begin operation.

Basic Features

The heaters are self-temperature-regulating and therefore do not have (or need) an external temperature sensor. The heat generating material in the heaters also acts as a high-temperature limit by breaking down if it reaches its critical point.

Because of its unique design features, the **ZIMMER** can be operated on power supplies ranging from 100 - 480 volts (480 VAC Wye connection or 277VAC per phase to neutral) depending on the model. When operated at 110V, the maximum continuous capacity rating is reduced by 25%.

Model Selection

The **ZIMMER** is available in three versions – One propane Model (e.g. Z40P) and two LPG models (e.g. Z40L and Z40S).

The difference between the L, P and the S models are the inlet valves. The inlet valve operates on the thermodynamic properties of the specific gas (either LPG or commercial propane). The valve expects to see the vapor exit the vaporizer at 8 °C (15 °F) higher than the boiling point of the respective gas. The unique function of the valve is that it senses both pressure and temperature to truly predict the boiling point.

The valve is clearly marked with a sticker indicating that it is to be used with LPG, Propane or 50/50 (LPG).

Propane version (e.g. Z40P) – See Table 1

- Use with 85% or greater commercial Propane.
- **Never use propane which exceeds 15% Butane.**

Table 1 - Propane version

100% Butane	Never use in this range	0% Propane
15% Butane		85% Propane
0% Butane	Full capacity	100% Propane

LPG version (e.g. Z40L) – See Table 2

- Full capacity is based on LPG containing 60-80% Butane.
- **Never use LPG which contains more than 80% Butane.**
- Using the LPG version with LPG containing more than 40-60% Propane will decrease the capacity of the vaporizer.
*Especially in warmer environments.

Table 2 - LPG version

100% Butane	Never use in this range	0% Propane
80% Butane		20% Propane
60% Butane	*Reduced capacity	40% Propane
40% Butane		60% Propane
0% Butane	Never use in this range	100% Propane

50/50 version (e.g. Z40S) – See Table 3

- Full capacity is based on LPG containing 40-60% Butane.
- **Never use LPG which contains more than 60% Butane.**
- Using the 50/50 version with LPG containing more than 60% Propane will decrease the capacity of the vaporizer.
*Especially in warmer environments.

Table 3 - 50/50 version

100% Butane	Never use in this range	0% Propane
60% Butane	Full capacity	40% Propane
40% Butane		60% Propane
0% Butane	*Reduced capacity	100% Propane

Available Options

Your **ZIMMER** vaporizer may be equipped with one or several factory options. All options can be integrated to **ZIMMER** vaporizer and are designed to enhance convenience to the end user.

Ask for the following items from your local **Algas-SDI** dealer:

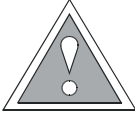
Models Z25, Z40 and Z50

- **Algas-SDI P/N: 80887** Tank Mount Kit for mounting **ZIMMER** to any horizontal tank up to 48" diameter.
- **Algas-SDI P/N: 80888 (includes Kit P/N: 80890)** Piping Kit for use with Tank Mount Kit
- **Algas-SDI P/N: 80885** Wall Mount kit
- **Algas-SDI P/N: 80892** Strainer with 40 mesh and piping kit
- **Algas-SDI P/N: 80890** Outlet regulator/gauge kit with Fluorocarbon elastomer for high temperature gas
- **Algas-SDI P/N: 82288 FILT-EZE** - Vapor filter for filtering out heavier hydrocarbons
- **Algas-SDI P/N: 80895** Seal off and terminal box kit Div 1 *or* **80896** Seal off and terminal box kit Ex.
- **Algas-SDI P/N: 40835** Mobile application end cap latch kit
- **Algas-SDI P/N: 80770** Drain kit for easy removal of heavy ends
- **Algas-SDI P/N: 82288 FILT-EZE** - Vapor filter for filtering out heavier hydrocarbons *or* **P/N 20536-ASME Filtaire F4**
- **Algas-SDI P/N: 80770** Drain Valve kit

Models Z100 and Z150

- **Algas-SDI P/N: 80771** Free standing kit, floor mount
- **Algas-SDI P/N: 81633** Wall Mount kit
- **Algas-SDI P/N: 81634** Strainer and piping kit
- **Algas-SDI P/N: 81635** Regulator and gauge kit
- **Algas-SDI P/N: P/N 20536-ASME Filtaire F4** - Vapor filter for filtering out heavier hydrocarbons
- **Algas-SDI P/N: 54294** 4-Pole 40AMP 3PH Circuit Breaker
- **Algas-SDI P/N: 80770** Drain Valve kit

WARNING



The equipment described in this manual is designed to operate with LP-gas, a flammable fuel under pressure. The nature of the application involves inherent hazards that could result in injury. ONLY a trained and fully qualified person should service this equipment.

NOTE

Prior to installing your new ZIMMER, check all relevant codes and standards that apply in your local area to ensure compliance!

CAUTION

To prevent ignition of hazardous atmospheres:

- 1. Any repairs internal to the flameproof enclosure must be made by the manufacturer or its authorized service center.*
- 2. Keep flameproof enclosure tight, torque to 40,6 Nm (30 ft. lbs.) while in service and disconnect power before installing or removing vaporizer from service.*



NOTE

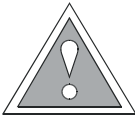
Installer must install a terminal box (connection facility).

Metal Terminal Box (3/4"):

Use a suitably certified metal terminal box (3/4") for the area classification, ATEX or IECEx certified - for Europe; or Class I, Division 1, Group D (UL listed or equivalent) - for US and Canada. Electrical wiring must be rated for -20°C (-4°F) to 130°C (266°F).

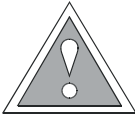
CAUTION

Vaporizer may be hot during or after use.



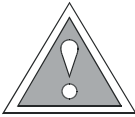
CAUTION

To provide grounding, connect only metal electrical conduit or armored cable to the Metal Terminal Box.



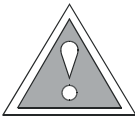
CAUTION

Do not install vaporizer in corrosive environments or expose to corrosive chemicals.



CAUTION

If flameproof joint dimensions are required by the end user, please contact Algas-SDI.



CAUTION

Propane odor can fade.



Preparing the site

When preparing your site, consider local setback limitations for your desired storage container(s). Also, consider points of ingress/egress and other openings into buildings, including any air intakes. The **ZIMMER** vaporizer is explosion-proof, which means that it can be mounted next to, on, or near the storage container(s).

■ For portable applications, the **ZIMMER** (up to 50kg/hr model) can be mounted on the storage container. Make sure the mount touches the vessel in as small an area as possible to avoid corrosion on the vessel surface.

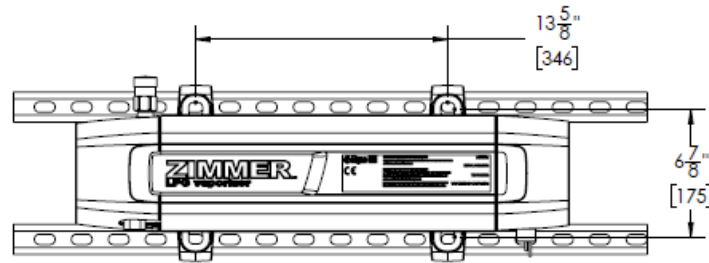
■ For stationary applications mount the **ZIMMER** on a wall or support near the container(s) or on the container (up to 50kg/hr model) by using the tank mount kit.

Materials you may need for installation

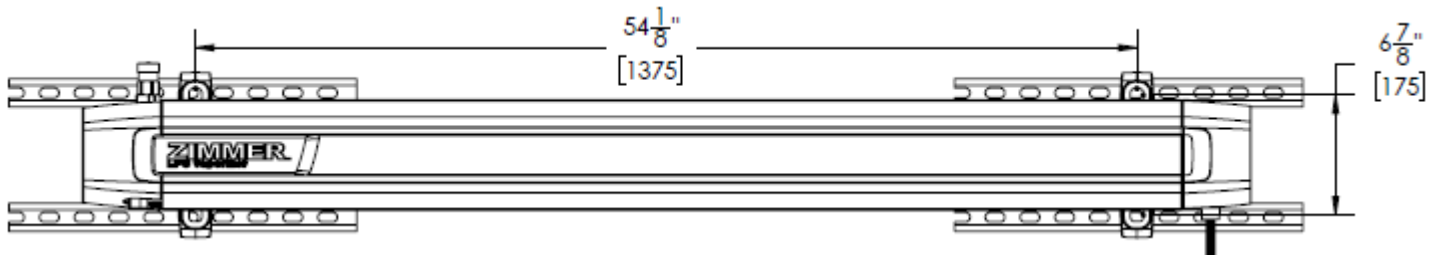
- ◆ Storage tank, or cylinder(s) with liquid withdrawal valve(s) also called “dip tube(s)”, are required.
- ◆ Excess flow valve(s).
- ◆ Manifold piping if using multiple cylinders.
- ◆ Inlet isolation valve with hydrostatic relief valve approved for liquid LP Gas service (included with **Algas-SDI P/N 80892**).
- ◆ Piping components including forged steel union or removable compression/flare fittings.
- ◆ SCH 80 pipe for liquid service, or approved tubing and fittings.
- ◆ Inlet strainer with No.40 mesh screen (in **Algas-SDI P/N 80892**)
- ◆ Outlet regulator with high temperature Fluorocarbon elastomer (Viton) seat, (**Algas-SDI P/N 80890**) (Outlet Range 0.21 – 2.10 Bar [3-30 psig]).
- ◆ Outlet isolation valve approved for LP Gas vapor service (included with **Algas-SDI P/N 80892**).
- ◆ Wall mount kit up to model Z50. (**Algas-SDI P/N 80885**).
- ◆ Electrical disconnect switch (See Electrical Specifications in Appendix).
- ◆ Circuit breaker D curve.
- ◆ Metal Terminal box use **Algas-SDI P/N 80895** (Div 1) and **P/N 80896** (Ex) for models up to 50kg/hr.

- ◆ Wire to connect your **ZIMMER**. Wire type will be determined by your specific voltage, current and wiring conditions.

Mounting the ZIMMER

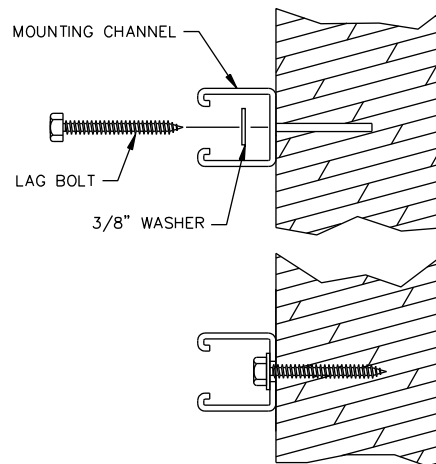
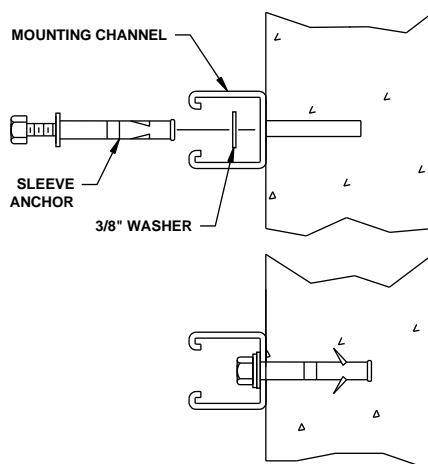
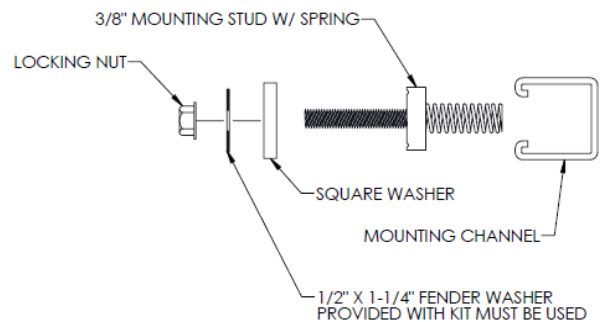


Z25/40/50 model shown

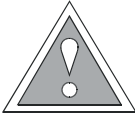


Z100/150 model shown

If mounted outdoors, the **ZIMMER** must be mounted on a horizontal or vertical surface to maintain its enclosure rating. Use **Algas-SDI** Mounting Kit **P/N 80885**, or equivalent components, when mounting the **ZIMMER** to a concrete, masonry or wood construction wall. For mounting options see Available Options.



Piping



CAUTION

Teflon tape can clog orifices if not properly used. If a fitting removed has Teflon tape, make sure to clean all threads and remove all tape debris before re-installing.

The **ZIMMER** is designed for feed-through operation. If you are using cylinders to store the LPG, you will need liquid withdrawal valves in each cylinder. It is best to use valves that have both vapor and liquid withdrawal ports – this allows you to use vapor when your load is small or when the temperature is high, and then use your vaporizer when the ambient energy is insufficient.

Typical Piping Installation – Dip Tube

If you are using a tank to store the LPG, you will need to connect to the bottom of the tank or to a connection that has a “dip tube” extending into the tank for liquid withdrawal.

- ◆ Install an approved isolation valve at the outlet of the tank or use the existing tank valve. If you are using cylinders you should install an isolation valve after the cylinders have been manifolded together. The isolation valve should have a hydrostatic relief valve installed to protect the pipe section between the valves.
- ◆ After the isolation valve, install a ½” or ¾” NPT strainer with a size 40 or smaller mesh screen.
- ◆ Connect the strainer to the inlet of the **ZIMMER** using ½” or ¾” pipe, Schedule 80, depending on the model.

NOTE

*Do not install a check valve between the **ZIMMER** and the tank or cylinders! Liquid must be able to back-flow if necessary.*

- ◆ At the outlet of the **ZIMMER** install an isolation valve approved for LPG vapor service.

- ◆ Next, install a pressure regulator with a high temperature Fluorocarbon elastomer (Viton) seat no more than 1 meter (3 feet) after the vaporizer outlet. Install this regulator as close to the outlet of the vaporizer as possible and always at a higher elevation than the vaporizer outlet to allow any condensed liquid to travel back to the vaporizer. Never install the regulator more than 1 meter (3 feet) from the vaporizer. If you are using PE pipe after the regulator, ensure that it is connected at a minimum 2 meters (6 feet) after the vaporizer.
- ◆ Install a pressure gauge in the regulator or at the regulator outlet.
- ◆ After the regulator, install a “drip-leg” in the piping or a vapor filter to collect any residue or heavy-ends from the LPG. The drip leg should terminate with a valve and a plug for draining.

LPG liquid line size chart (Minimum Pipe Size)

Capacity of units	Distance from storage to vaporizer - feet (meters)										
	MMBtu (Kcal)	Kg	LBS (GPH)	25 (8)	50 (15)	75 (23)	100 (31)	150 (36)	200 (61)	300 (92)	400 (122)
1.1 (288,792)	25	55 (12.5)	½" (DN15)	½" (DN15)	½" (DN15)	½" (DN15)	½" (DN15)	½" (DN15)	¾" (DN20)	¾" (DN20)	¾" (DN20)
1.8 (446,069)	40	88 (20)	½" (DN15)	½" (DN15)	½" (DN15)	¾" (DN20)	¾" (DN20)	1" (DN25)	1" (DN25)	1" (DN25)	1" (DN25)
2.3 (557,584)	50	110 (25)	½" (DN15)	½" (DN15)	½" (DN15)	¾" (DN20)	¾" (DN20)	1" (DN25)	1" (DN25)	1" (DN25)	1" (DN25)
4.6 (1,155,168)	100	220 (50)	½" (DN15)	¾" (DN20)	¾" (DN20)	¾" (DN20)	1" (DN25)	1" (DN25)	1" (DN25)	1" (DN25)	1¼" (DN32)
6,8 (1,722,690)	160	352 (80)	¾" (DN20)	¾" (DN20)	1" (DN25)	1" (DN25)	1" (DN25)	1" (DN25)	1¼" (DN32)	1¼" (DN32)	1¼" (DN32)

Relief valve

For horizontal installation, no modifications to the relief valve orientation are required. For vertical installation, ensure that the relief valve vent is piped in a vertical orientation. This may be achieved by using a pipe away adapter with a ½" NPT pipe nipple and ½" NPT F x F elbow. **Leak test new piping connections during commissioning.**

Note: When mounting vertically, always ensure that the LPG inlet and the outlet end of the vaporizer are on top. Switch the LPG outlet adapter with the pressure relief valve to ensure the pressure relief valve vents upwards.

Filtaire

In areas where LPG quality is poor it may be necessary to install FILTAIRE or FILT-EZE Gas trap at the outlet of your vaporizer.

- ◆ For model Z150 use **FILTAIRE** model F4 **P/N 20536-ASME**.
- ◆ For model Z100 above 14°F (-10°C) ambient temperature (35 psig saturation pressure) use **FILT-EZE P/N 82288**. Below 14°F (-10°C), use **FILTAIRE** model F4 **P/N 20536-ASME**.
- ◆ For models Z25, Z40 and Z50 use **FILT-EZE P/N 82288**.

Installing Multiple Vaporizers

Multiple **ZIMMER** vaporizers can be manifolded together to increase the total system capacity.

- ◆ Manifold the inlets and outlets together using similar length piping runs. It is best to keep the piping as short as possible.
- ◆ Install an isolation valve at the inlet and outlet of each vaporizer.
- ◆ Install an appropriately sized regulator with Fluorocarbon elastomer (Viton) seat after the outlets have been manifolded together. For more than two vaporizers use one adequately sized regulator with a Fluorocarbon elastomer (Viton) seat.

Common piping problems

Problem: Frost or condensation on the liquid LPG piping.

Cause: Vaporizer installed with undersized piping from storage container to vaporizer.

Reason: Liquid LPG boils in the pipe before the vaporizer causing a reduction in vaporization capacity.

Problem: Moisture or water droplets on the piping before the regulator. Frosting of the regulator.

Cause: Outlet regulator installed too far from vaporizer or below vaporizer outlet.

Reason: High pressure LPG vapor condenses between the vaporizer outlet and the regulator.

Problem: Downstream component failure.

Cause: Drip leg or filter is not installed or is too small.

Reason: Oils or heavy ends collect in downstream regulators and other components.

Electrical Service

The **ZIMMER** vaporizer is manufactured as an explosion proof device suitable for hazardous locations. Do not separate the heat exchanger to access the electrical enclosure – ***separating the enclosure will void the warranty!***

- ◆ When connecting the electrical service for the **ZIMMER** you will need a circuit breaker appropriate for the application. See Electrical Specifications in the Appendix.
- ◆ You will also need a disconnect switch located within sight of the vaporizer (refer to Electrical Specification in Appendix).
- ◆ Select the appropriate size conductors based on the current draw (refer to Electrical Specification in Appendix) and conductor run distance (see reference charts below).
- ◆ Install metal terminal box to the ¾" MNPT seal-off to make the wiring connections in accordance with the local electrical codes. Ensure the terminal box is connected to seal-off before vaporizer is mounted to wall.

Metal Terminal Box (3/4") for 50kg/hr and Smaller models

Use a suitably certified metal terminal box for the area classification, ATEX or IECEx certified - for Europe; or Class I, Division 1, Group D (UL listed or equivalent) - for US and Canada. Electrical components must be rated for 130°C (266°F). (**ASDI P/N 80895 (CLASS I DIV 1) OR 80896 (ATEX Ex d)**)

Metal Terminal Box (1-1/4") for 100kg/hr and 150kg/hr models

Ex db IIA Gb or Ex eb IIA Gb, ATEX or IECEx certified - for Europe; or Class I, Division 1, Group D (UL listed or equivalent) - for US and Canada. Electrical components must be rated for 130°C (266°F). (**KILLARK P/N GESLT-4 or equivalent**)

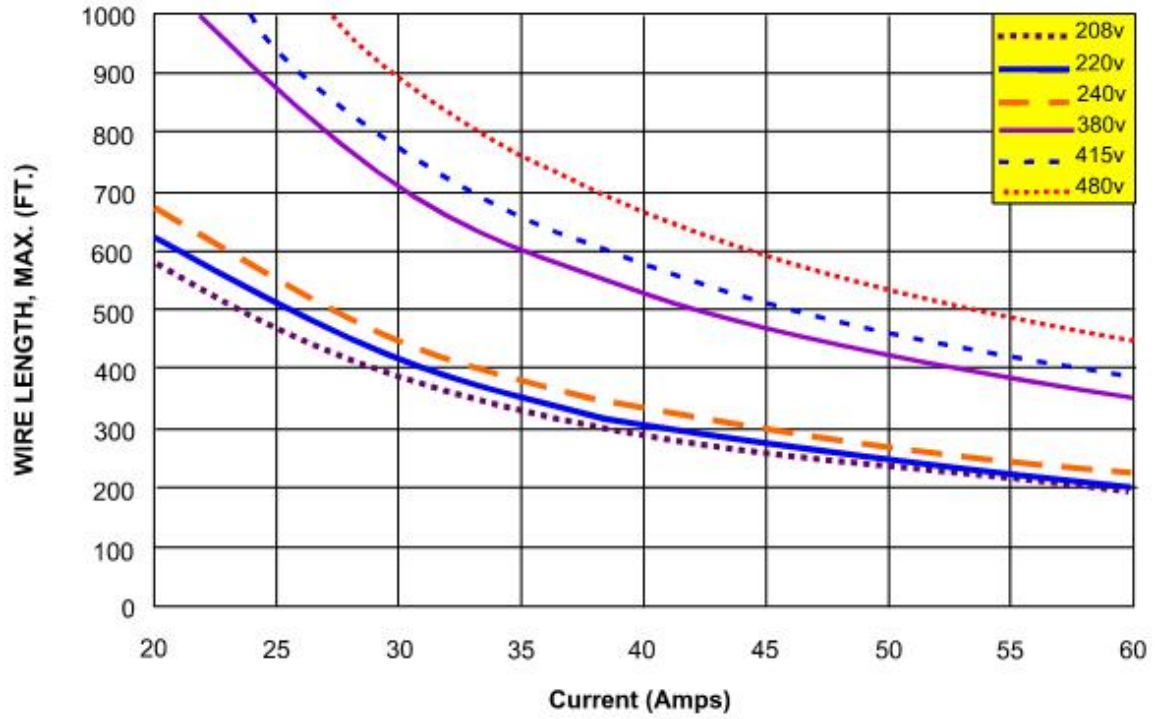
- ◆ Do not separate vaporizer sections to access the wiring. Use conductor assembly provided.
- ◆ Connect the green conductor to ground. See appropriate wiring schematic based on your desired installation. Do not pull on, twist or bend the wires.
- ◆ Mount conduit box prior to mounting vaporizer to the wall for 100kg/hr and 150kg/hr models.

CAUTION

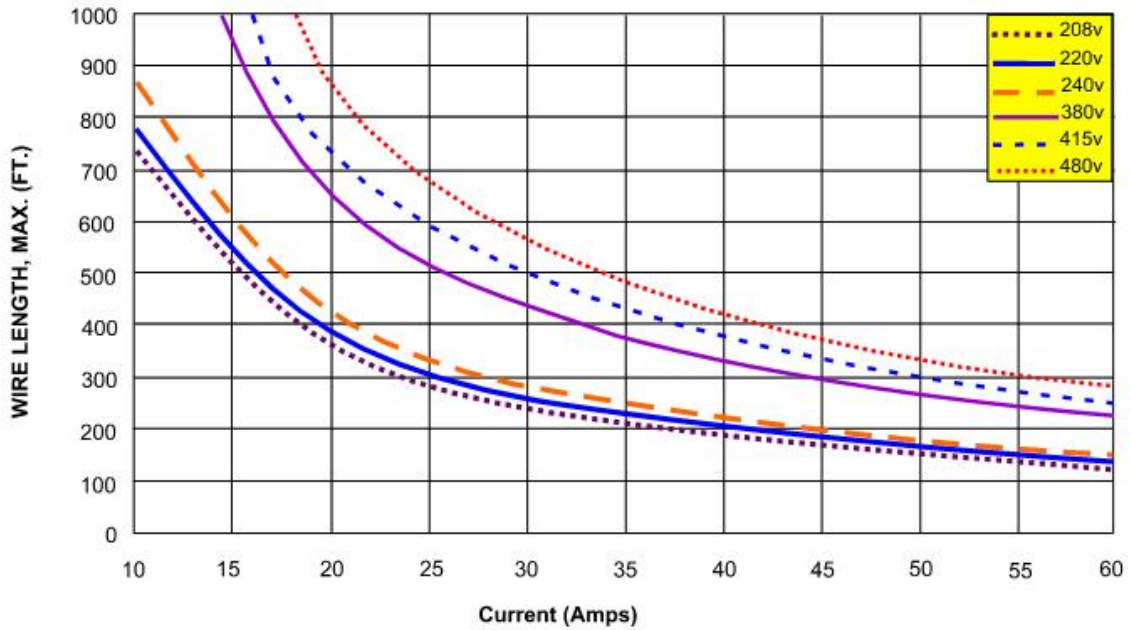
When installing the metal terminal box, use an open-end wrench to securely hold the factory provided seal off to prevent twisting!



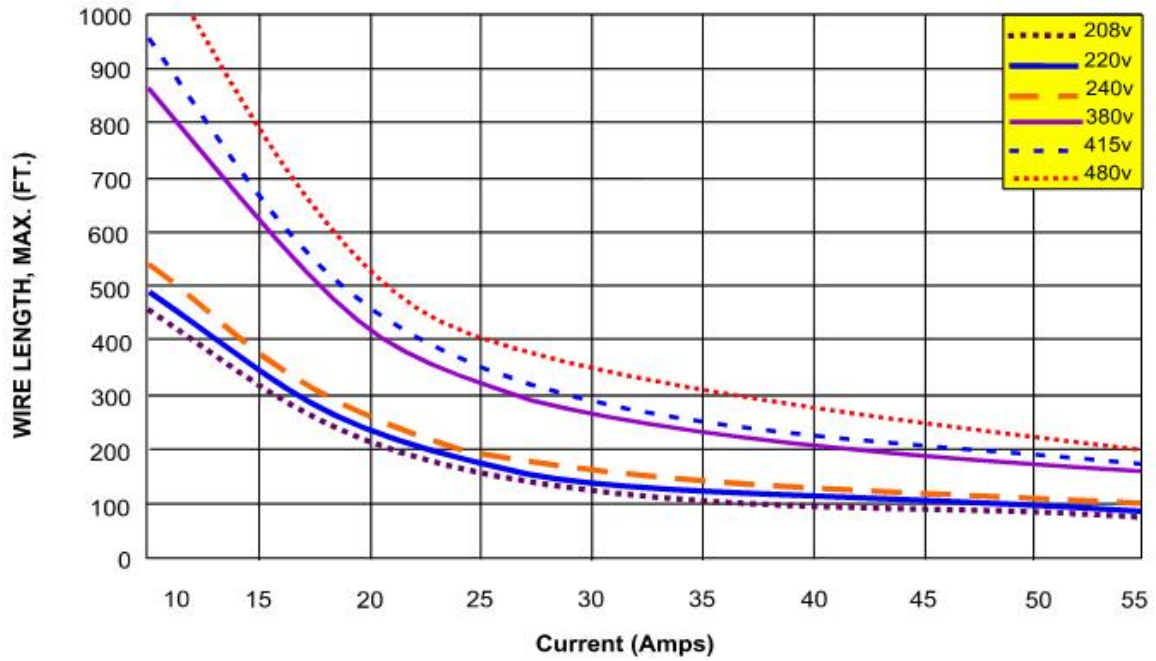
Wire Length Chart [#4 AWG – 21.1 mm²]



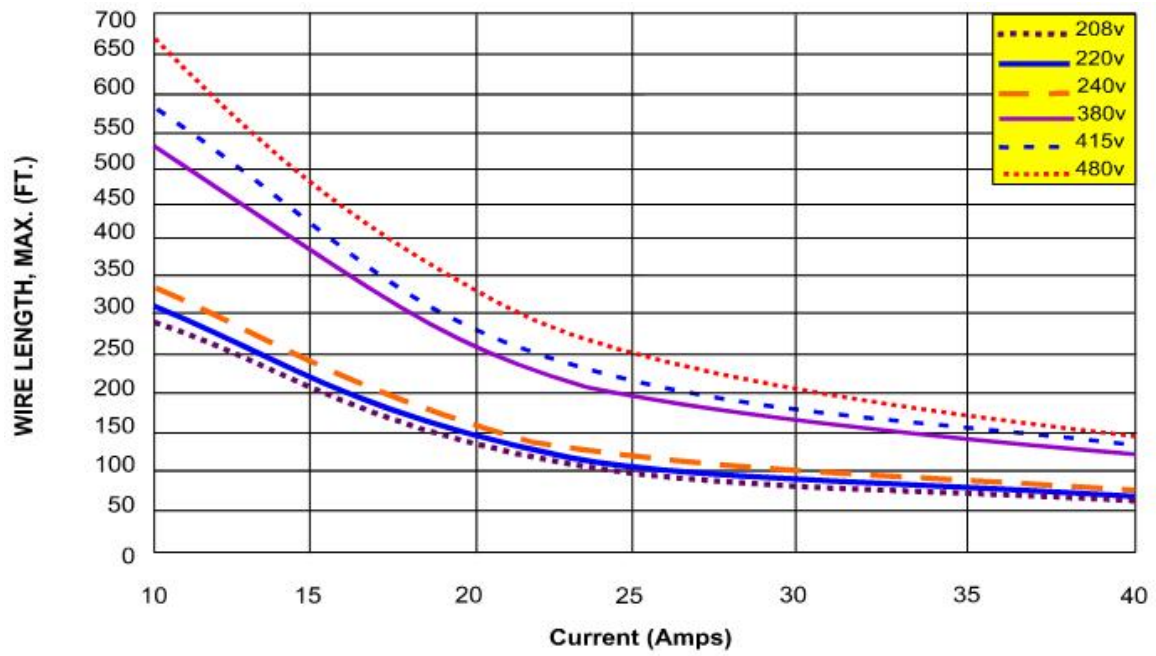
Wire Length Chart [#6 AWG – 13.3 mm²]



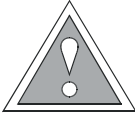
Wire Length Chart [#8 AWG – 8.36 mm²]



Wire Length Chart [10 AWG – 5.26 mm²]



WARNING



The equipment described in this manual is designed to operate with LP-gas, a flammable fuel under pressure. The nature of the application involves inherent hazards that could result in injury. ONLY a trained and fully qualified person should service this equipment.

Putting your vaporizer into service

After completing the piping work, leak check all connections with a soap solution and pressure from the tank or from a pressure tap and compressed air bottle.

To initiate operation of the **ZIMMER** vaporizer, engage the electrical supply at the disconnect and open all valves from the container(s) to the vaporizer.

Depending on the conditions, it could take up to 2-5 minutes for the vaporizer to be ready for full use, though around 1 minute is more typical.

Open the shut-off valve located at the outlet of the vaporizer.

If starting the system for the first time; set the first stage regulator at the outlet of the vaporizer to 0.35 barg (5 psig) or at the desired pressure. This pressure should be kept as low as possible to reduce the risk of vapor re-liquification.

The system should now be ready for use. The vaporizer is designed to be used continuously or can also be used for just the amount of time necessary.

NOTE

During the first few days of use it is a good practice to blow-down the drip leg and strainer to remove any debris which may be left over from installation.

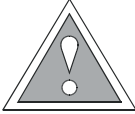
Shutting down the system

For overnight or short time periods:

- ◆ Because the vaporizer uses only a very small amount of electricity (e.g. approximately 300 - 600 watts in 1 PH operation for Z50) when there is no load, it is suitable to leave the power engaged even during periods of non-use. If desired, close the vaporizer outlet shut-off valve when the vaporizer is not being used.

For extended periods:

- ◆ Close the vaporizer outlet shut-off valve.
- ◆ Open the disconnect switch to remove power from the vaporizer.
- ◆ Close the inlet valve or tank valve(s) only after the vaporizer has expanded the remaining gas and pushed it back toward the tank. Trapped liquid can expand when heated causing damage or possible rupture to pipes and components. Always install hydrostatic relief valves between isolation valves.



CAUTION

To prevent ignition of hazardous atmospheres,

1. Any repairs internal to the flameproof enclosure must be made by the manufacturer.
2. Keep flameproof enclosure tight, torque to 40.6 Nm (30 ft. lbs.) while in service and disconnect power before installing or removing vaporizer from service.

GENERAL

ZIMMER vaporizer is designed for long-term trouble-free operation. Because of the nature of their use, and the severe duty they receive, it is important to provide scheduled maintenance. The maintenance schedule, type and frequency, provided in this manual is the minimum maintenance required for proper operation of the vaporizer. Ambient conditions surrounding the vaporizer installation and LPG quality may require a more frequent maintenance schedule. A list of REPLACEMENT PARTS is in the Section 6 of this manual.

Initial Installation & Operation Inspections:

Required 30-60 days after initial installation	
Component	Action Required
Inlet Strainer	Inspect strainer and remove accumulated debris. Note: if debris accumulation is heavy check every 3 - 6 months.
Electronic wiring and connections	Check junction/terminal box electrical connections. Inspect electrical connections for loose conductors and any indication of heat build-up.
Heat exchanger and drip legs	Check all drip legs and vaporizer for heavy ends and oil build-up. If present, first ensure there are no sources of ignition within 25 feet (8 meters), then drain heavy ends. NOTE: In areas where LPG quality is poor it may be necessary for the drip legs and the heat exchanger to be checked for heavy ends more frequently (monthly or bi-monthly depending on LPG quality). Once it is verified that no significant quantity of heavy ends is accumulating during vaporizer operation, this maintenance can be performed on an annual basis.

Servicing your ZIMMER

ZIMMER vaporizers are designed to require very little maintenance. The amount and frequency of maintenance depends on the quality of the LPG. The main servicing points for the system are the drip leg or heavy ends trap, vaporizer gas passages, the inlet strainer and the inlet valve screen.

Annual Maintenance Requirements:

Component	Action Required
Inlet strainer	Remove plug and clean the screen. Replace screen if gaps or holes are present in the screen. If oils or contaminants are present, it may be necessary to use a cleaner to remove them.
Inlet valve	Check for accumulation of heavy ends. Remove the inlet valve, allow heavy ends to drain. Alternatively blow out the oils through the holes in the valve body. <u>Do not disassemble the valve!</u> <u>Ensure thermal probe is pushed all the way in the thermowell.</u>
Relief Valve	Visually check and replace if leaks are observed. Check for excessive corrosion and ensure the relief valve is covered with the appropriate rain cap to prevent rain and debris from entering the valve. Replace rain cap if damaged or missing. Relief valve should be replaced per the manufacturers' recommended replacement date or if it relieves during normal operation.
Electronic wiring and connections	Visually inspect all connections for corrosion, loose conductors, heat build-up and/or charring. Tighten or replace if necessary.
Heat exchanger & system drip legs	Check the system drip legs and vaporizer for heavy ends and oil build-ups. If present, first ensure there are no sources of ignition within 25 feet (8 meters), then drain heavy ends to a <u>safe area</u> . If necessary, the heat exchanger gas passages can be cleaned in situ by removing end caps and plugs and adapters. Use compressed air or a non-metallic brush to clean gas passages. <u>NOTE: In areas where LPG quality is poor it may be necessary for the drip legs and heat exchanger to be checked for heavy ends more frequently (monthly or bi-monthly depending on LPG quality).</u> <u>NOTE: Visually inspect plug, adapter and valve O-rings and perform leak test after re-installing!</u> <u>NOTE: After cleaning ensure that the gas passage inserts are installed back in the same passages they were removed from!</u>
Mounting bracket	Visually inspect mounting brackets for cracks or damage.

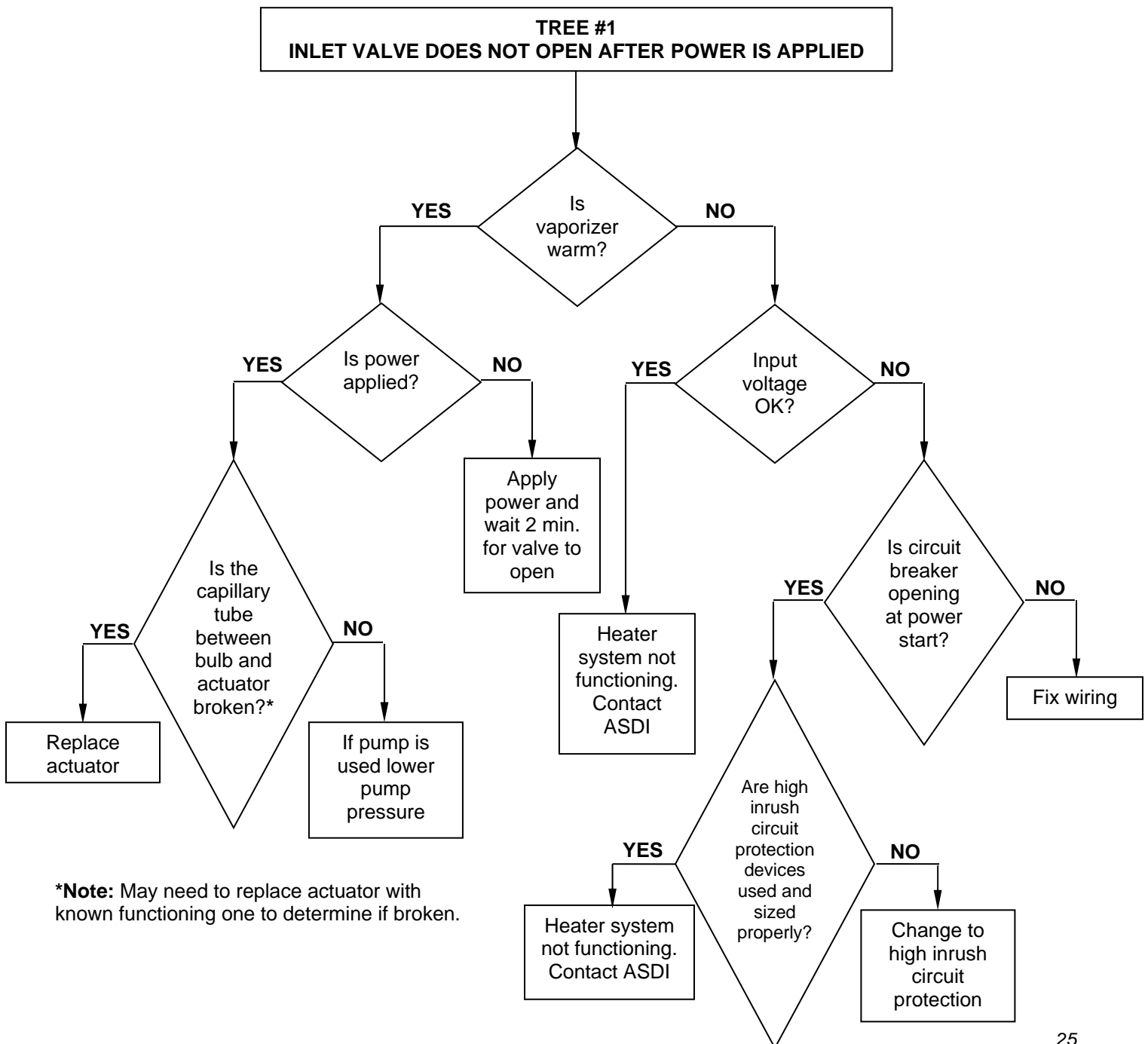


CAUTION – HOT!

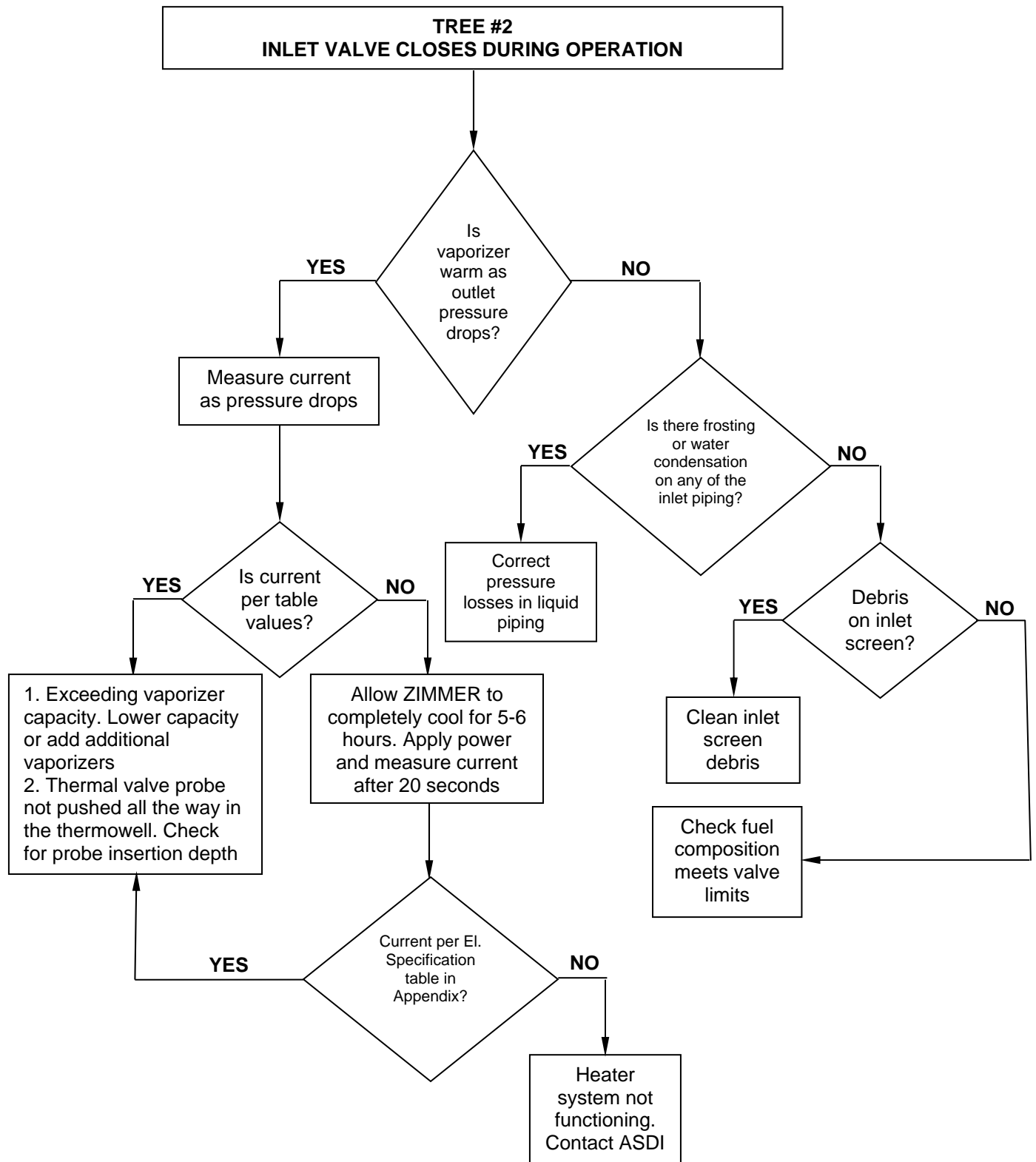
When servicing the vaporizer, always make sure the vaporizer has cooled prior to touching!

The **ZIMMER** is a very simple device with few areas for problems to occur. The main areas of the vaporizer are the inlet valve and the heat exchanger. The heaters used are not ordinary resistance heating elements. The heaters do not have wire filaments that are susceptible to burn-out.

Possible problems



***Note:** May need to replace actuator with known functioning one to determine if broken.



REPLACEMENT PARTS

6

Item	Description	ASDI P/N			Recommended replacement interval
		50/50 LPG	70/30 LPG	PROPANE	
1	Valve actuator replacement kit	40815	40816	40817	only required if damaged
2	Valve cartridge assembly with actuator (includes o-rings)	0902-4009	0902-4007	0902-4008	only required if damaged
3	Replacement vaporizer gas passage plugs (includes o-rings)	60564			N/A
4	Replacement vaporizer adapter fitting (on inlet, outlet and relief valve connection)	60565			N/A
5	Relief valve UL/CE approved	8074-101			N/A
6	End cap with magnets – front end	80041			N/A
7	End cap with magnets – back end	80042			N/A

Q1: What voltages can the ZIMMER operate on?

A1: The UL/CE listing is valid for any voltage between:
100 – 277 VAC, single phase for sizes up to 50 kg/hr.
100 - 277 VAC, single phase; or up to 480 VAC, three phase, 4 wire (wye), for
100 - 150 kg/hr sizes.

Q2: At which voltage are the capacities calculated at

A2: Capacities are rated based on 220 VAC.

Q3: What is the capacity rating based on?

A3: The capacity is based on using a 220V power supply and with LPG having a maximum butane percentage allowed for specific valve Model Selection at an ambient temperature of 104 °F (40 °C) for models Z25, Z40 and Z50 and at an ambient temperature of 80°F (27 °C) for models Z100 and Z150.

Q4: Can the ZIMMER use any mixture of propane and or butane?

A4: There are three versions of the **ZIMMER**- one for commercial propane (Z40P), one for standard LPG, 70% Butane/ 30% Propane (Z40L), and one for 50% Butane/ 50% Propane. The **ZIMMER** is not designed for use with commercial butanes.

- The P valve is designed to operate with a maximum of 15% Butane
- The L valve is designed to operate with a maximum of 80% Butane and ideally with 60-80% Butane. Using less than 60% Butane in the Z40L will result in a reduced capacity.
- The S valve is designed to operate with a maximum of 60% Butane and ideally with 40-60% Butane. Using less than 40% Butane in the Z40S will result in a reduced capacity.

Specific vapor pressure curves are available upon request.

Q5: What is the operating temperature?

A5: The **ZIMMER** uses self-regulating heaters that are not fixed resistance. This means that the **ZIMMER** does not have a fixed temperature setting. The **ZIMMER** will reach its peak temperature at idle, at which point it will consume the least amount of energy. As the flow rate increases, heat is drawn from the heaters causing the resistance to decrease and allowing them to produce more energy.

Q6: What is the pressure drop at maximum flow?

A6: This depends on the pressure. At 100 psig (7kg/cm²) the pressure drop is about 1-2 psig for 50 kg/hr model or less flow. For the 100 kg/hr or 150 kg/hr models, pressure drop is about 6 psig. If using 150 kg/hr model in cold climates, contact factory for additional information.

Q7: What prevents liquid from passing downstream?

A7: The vapor temperature at the exit of the vaporizer, in combination with the LPG pressure exerts a specific force against a preset spring and ball assembly. As the temperature drops the resulting decrease in force on the spring causes the ball to modulate closed against the valve seat. The temperature and pressure curves are matched based on your specific Butane/Propane content.

Q8: Can liquid pass downstream when the electricity fails?

A8: No. Because the inlet control valve does not require electricity to operate, it is fail-safe. The valve operates as stated in A7 to ensure that no liquid passes downstream.

Q9: Because there are no switches, what prevents the heaters from overheating?

A9: The **ZIMMER** heaters are not traditional filament-type resistance heaters. Instead, the heaters are made from a special ceramic-like silicon material that cannot exceed a certain temperature. If the heaters are subjected to a higher temperature during use the molecular structure will degrade into an infinite resistance form yielding no heat output.

Q10: Can I leave my ZIMMER on overnight while it is not in use?

A10: Yes. Your **ZIMMER** is designed for continuous use. Additionally, the **ZIMMER** consumes very little energy while not in use (e.g. approximately 300 - 600 watts in 1 PH operation for 50 kg/hr model).

Q11: If the power goes out for a brief period of time, will it shut down the gas supply to my burners or pilots?

A11: Generally, no. For short power outages the **ZIMMER** will continue operating – even without power. Although no additional heat will be added, the heat exchanger's aluminum body generally will have enough reserve energy to sustain a short power outage. When the power comes back on, the heat-sink will be replenished. Since the inlet control valve does not require electricity for operation, its function is independent of the power supply.

Q12: Does the ZIMMER have to be horizontally mounted on a wall?

A12: Horizontal mounting is the preferred mounting, but vertical mounting is possible. If mounting vertically, local codes may require an elbow to be mounted between the **ZIMMER** and pressure relief valve to direct released LPG upward instead of outward or you may swap the inlet adapter with the relief valve to ensure relief valve points upward.

Q13: What is the recommended first stage regulator?

A13: Regulator must be sized adequately for flow and must have high temperature Fluorocarbon elastomer seat (Viton).

Q14: Can the ZIMMER be used in an economy configuration like the XP vaporizers?

A14: It is possible, but at present **Algas-SDI** does not offer an economy kit for the **ZIMMER**.

Q15: What is the minimum temperature rating for the ZIMMER?

A15: The UL/CE approval is valid for -4°F (-20 °C).

Q16: Does the capacity need to be de-rated at various ambient conditions?

A16: In general, no. In fact, the **ZIMMER** will actually vaporize more at lower temperatures. At extreme low temperatures and at extreme high temperatures, the **ZIMMER** capacities are de-rated somewhat.

Q17: What is the "maximum current draw"* from the *ZIMMER* and under what conditions does this occur?

A17: The maximum current occurs at the maximum capacity, the lowest temperature and the lowest voltage. The maximum power output occurs at the same conditions, except additionally at the highest voltage. Please see electrical table in Appendix.

* Maximum current draw is defined as anything after the first five seconds preceding a cold start.

Q18: What is the outer shell material, and is it "hot to the touch"?

A18: The outer shell material is made from anodized aluminum. Under normal operating conditions, the shell should be safe to touch. However, in idle conditions and depending on your installation, it may be too hot to touch. Depending on your installation, you may want to consider mounting in a way to reduce risk to touching the vaporizer on idle.

Q19: Are common spare parts the same as the first-generation *ZIMMER*?

A19: The *ZIMMER* requires very few spare parts. Of those required, some are common between *ZIMMER* revisions however some are not. Most notably, the inlet valve is different between *ZIMMER* families and are ordered under separate part numbers.

Q21: Why do I require special circuit breakers for *ZIMMER* vaporizers?

A21: Because of the high initial current of the *ZIMMER*, Type D or TYPE J breakers are required. Please see electrical specifications in the Appendix.

Q22: Can multiple *ZIMMER* vaporizers be installed together? If so, do they require balancing orifices?

A22: Multiple *ZIMMER* vaporizers can be installed in parallel. Due to the self-balancing nature of the *ZIMMER*, no balancing orifices are required. Additionally, you can parallel install *ZIMMER* vaporizers of different sizes, again without the need for balancing orifices.

Q23: Can first generation and second-generation *ZIMMER* vaporizers be used together? If so, do they require balancing orifices?

A23: First and second-generation *ZIMMER* vaporizers can be installed together in parallel, again without the need for balancing orifices. **Note:** The start up time is based upon the first-generation *ZIMMER*.

Q24: Can a propane version of the *ZIMMER* be converted to an LPG model?

A24: Yes, with replacement of the inlet valve. If using the wrong valve, you may experience capacity de-rate or passing of liquid. Contact the factory for the correct inlet valve for your application.

Q25: What is the start-up time for the *ZIMMER*?

A25: The *ZIMMER* will be ready to flow LPG within one minute.

Q25: What is the recommended pipe-away method for the second-generation *ZIMMER*?

A25: To pipe-away REGO 3129G used on the second-generation *ZIMMER*, use the REGO pipe-away adapter, 3129-10.

Q25: Is it possible to clean the new *ZIMMER* without removing from service?

A25: Yes. The innovative design of the *ZIMMER* allows tubes to be cleaned in place, and for the inlet valve to be removed from service without disconnecting the remaining LPG connections or electrical connections. See Maintenance section.

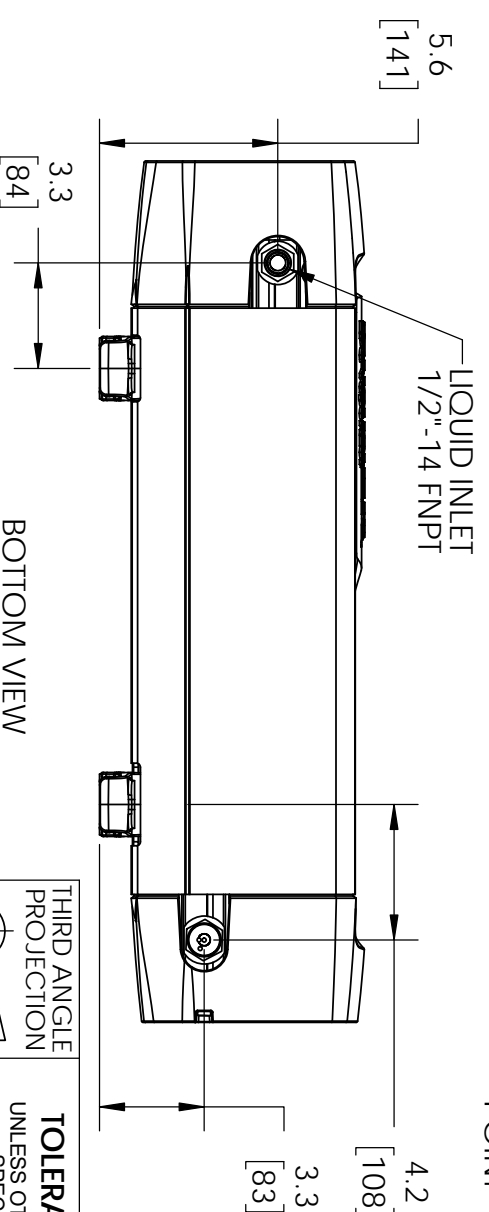
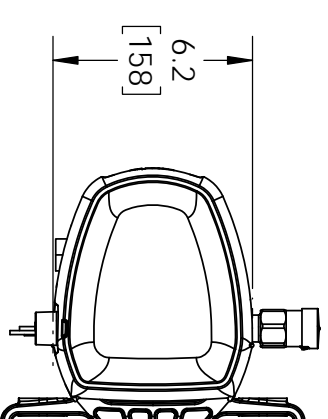
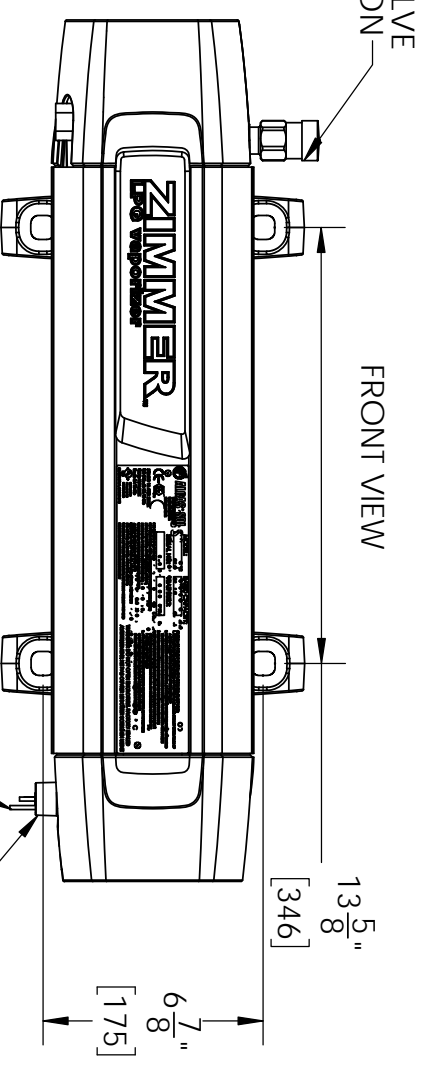
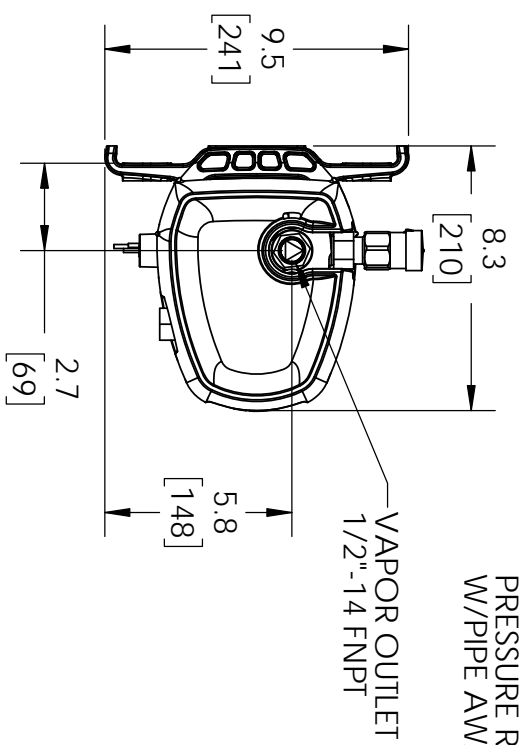
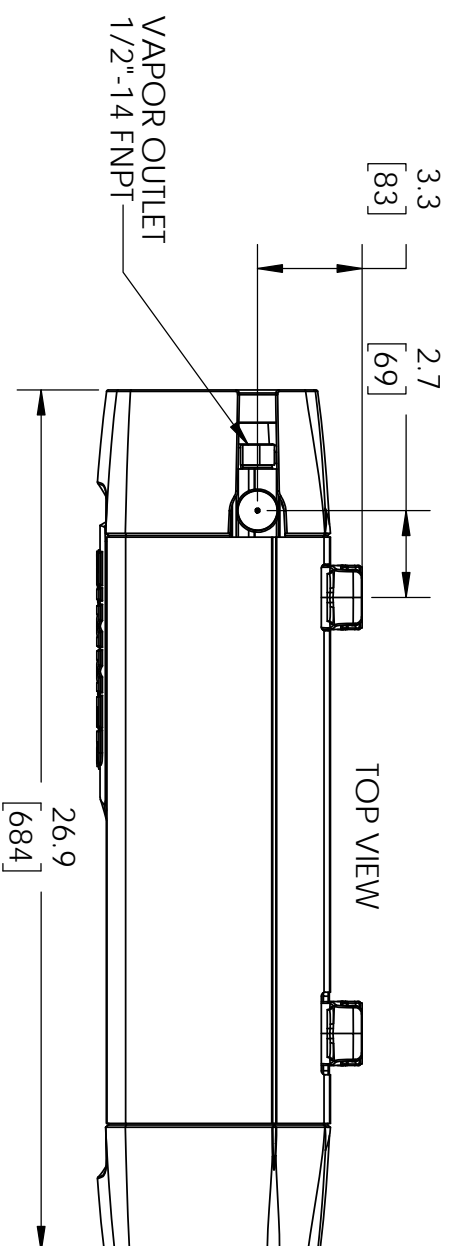
ELECTRICAL SPECIFICATIONS

Single phase wiring						
Z25 (25 kg/hr nominal)***						
Voltage L1 to Neutral [V]	100	120	208	220	240	277
Power [kW] *	2.2	2.2	3.0	3.0	3.0	3.0
Current at rated capacity [A] *	22.3	18.6	14.3	13.5	12.4	10.7
Breaker - D/J type [A] (125%) *	30	25	20	20	15	15
Z40 (40kg/hr nominal)***						
Voltage L1 to Neutral [V]	100	120	208	220	240	277
Power [kW] *	3.6	3.6	4.8	4.8	4.8	4.8
Current at rated capacity [A] *	35.7	29.8	22.9	21.6	19.8	17.2
Breaker - D/J type [A] (125%) *	45	40	30	30	25	25
Z50 (50 kg/hr nominal)***						
Voltage L1 to Neutral [V]	100	120	208	220	240	277
Power [kW] *	4.5	4.5	6.0	6.0	6.0	6.0
Current at rated capacity [A] *	44.6	37.2	28.6	27.0	24.8	21.5
Breaker - D/J type [A] (125%) *	60	50	40	35	35	30
Z100 (100 kg/hr nominal)**/**						
Voltage L1, L2 or L3 to Neutral [V]	100	120	208	220	240	277
Power [kW] *	8.9	8.9	11.9	11.9	11.9	11.9
Current at rated capacity [A] *	29.8	24.8	22.9	21.6	19.8	17.2
Breaker - D/J type [A] (125%) *	40	35	30	30	25	25
Z150 (150 kg/hr nominal)**/**						
Voltage L1, L2 or L3 to Neutral [V]	100	120	208	220	240	277
Power [kW] *	13.4	13.4	17.9	17.9	17.9	17.9
Current at rated capacity [A] *	44.6	37.2	28.6	27.0	24.8	21.5
Breaker - D/J type [A] (125%) *	60	50	40	35	35	30
Three phase wiring (4 Wire Wye)						
Z100 (100 kg/hr nominal)***						
Three Phase Line to Line voltage [V]	173	208	360	380	415	480
Voltage L1, L2 or L3 to Neutral [V]	100	120	208	220	240	277
Power [kW] *	8.9	8.9	11.9	11.9	11.9	11.9
Current at rated capacity [A] *	29.8	24.8	22.9	21.6	19.8	17.2
Breaker - D/J type [A] (125%) *	40	35	30	30	25	25
Z150 (150 kg/hr nominal)***						
Three Phase Line to Line voltage [V]	173	208	360	380	415	480
Voltage L1, L2 or L3 to Neutral [V]	100	120	208	220	240	277
Power [kW] *	13.4	13.4	17.9	17.9	17.9	17.9
Current at rated capacity [A] *	44.6	37.2	28.6	27.0	24.8	21.5
Breaker - D/J type [A] (125%) *	60	50	40	35	35	30

*Your exact conditions may result in differing power and current.

**Requires three (3) single phase breakers, one for each leg (L1, L2, L3)

***25% capacity derate with 100-120V line to line voltage



- NOTES:
1. ELECTRICAL: 120-277 VAC, 1PH, 50/60HZ CONFORMS TO HAZARDOUS AREA RATING:
 2. ATEX/IECEX Ex db IIA T3 Gb
 3. UL CLASS1, DIV 1, GROUP D T3
 4. ENCLOSURE : TYPE 4, HORIZONTAL OR VERTICAL MOUNT
 5. RELIEF VALVE SET: 250 PSIG [17,24 BAR]
 6. MAWP: 250 PSIG AT 300°F [17,24 BAR AT 149°C]
 7. MDMT: -20°F AT 250 PSIG [17,24 BAR AT -29°C]
 8. WEIGHT: 50 LB [23 KG]
 9. DIMENSIONS SHOWN IN INCHES [MM]



THIRD ANGLE PROJECTION
TOLERANCES UNLESS OTHERWISE SPECIFIED

DO NOT SCALE DRAWING

ANGLE ±1°
FRACTIONS ± 1/4"



151 S. Michigan St. Seattle, Washington, USA 98108
Tel: (206) 789-5410 Fax: (206) 789-5414

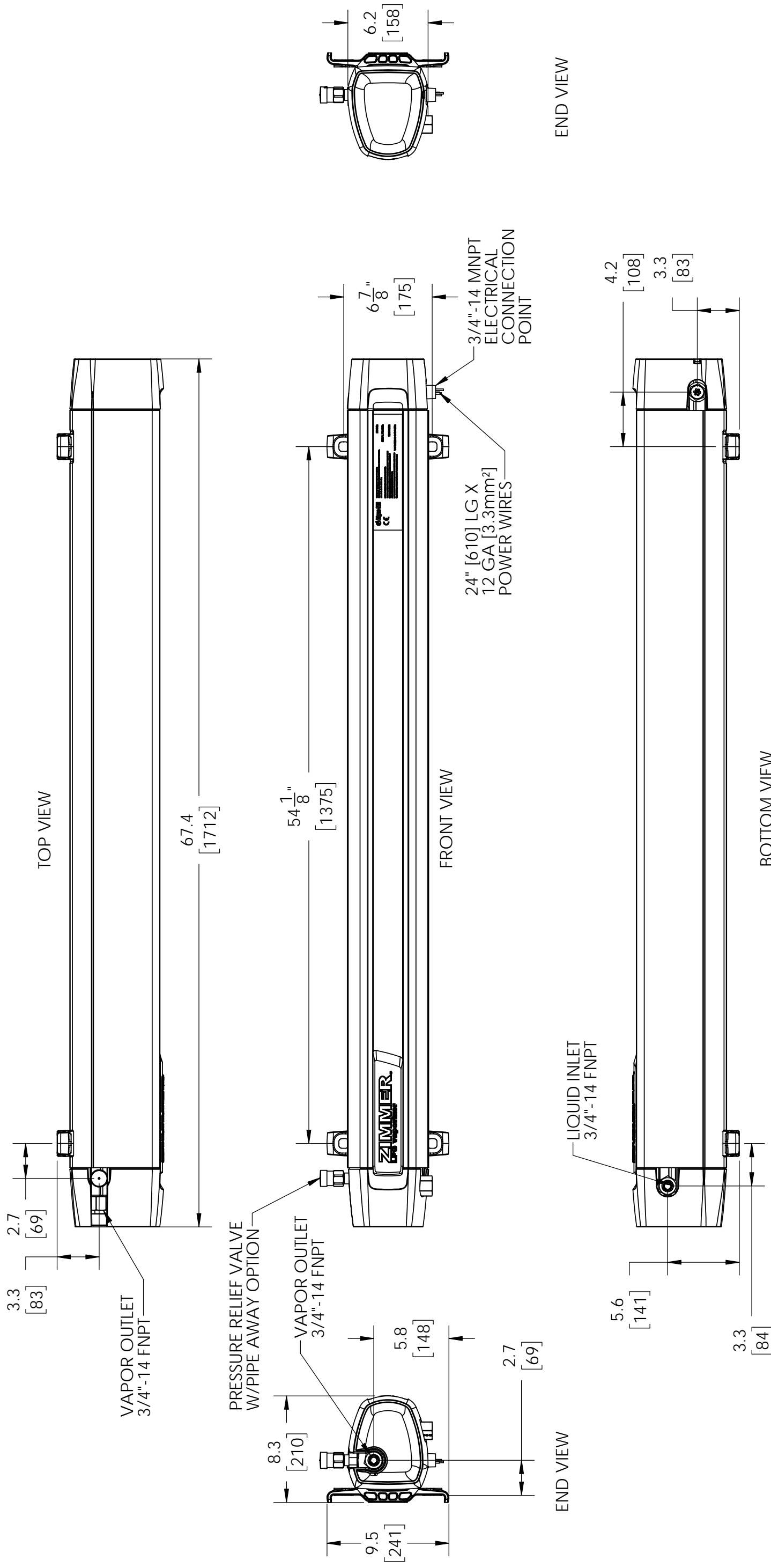
Part # N/A

Drawn By: AAS
Checked By:
Approved By:
Date: 1/29/2018
Scale: 1:8 AND NOTED
Job # ASDI STD

Title: ZIMMER 1PH, EQUIPMENT DRAWING

Size: B Dwg. # 0903-6001 Sht. No.: 1 of 1 Rev.: B

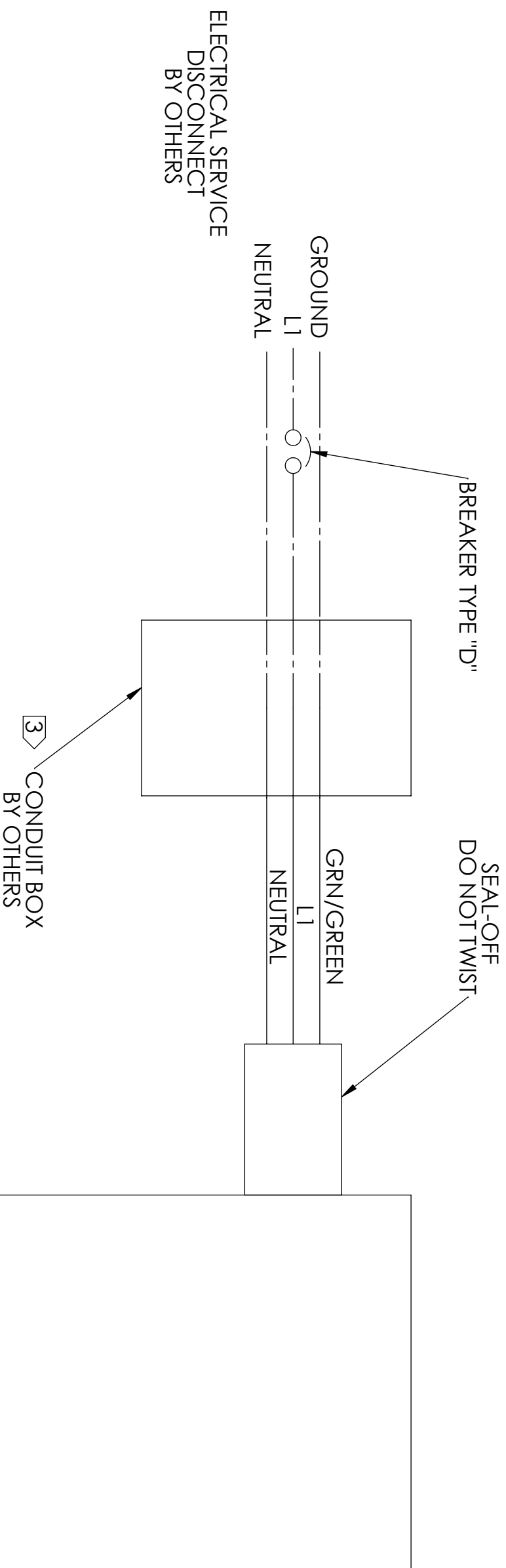
INTERPRET THIS DRAWING IN ACCORDANCE WITH ANSI/ASME Y14.5-2009
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- NOTES:
1. ELECTRICAL: 1PH 110-277VAC, 3PH 4 WIRE WYE 240-480 VAC, 50/60HZ
 2. CONFORMS TO HAZARDOUS AREA RATING:
 1. IECEx/ATEX Ex db IIA T3 Gb
 2. UL: CLASS I, DIV 1, GROUP D T3
 3. ENCLOSURE: TYPE 4, HORIZONTAL OR VERTICAL MOUNT
 4. RELIEF VALVE SET: 250 PSIG [17.24 BAR]
 5. MAWP: 250PSIG AT 300°F [17.24 BARG AT 149°C]
 6. MDMT: -20°F [-29°C] AT 250 PSIG [17.24 BAR]
 7. WEIGHT: 170 LB [77 KG]
- DIMENSIONS SHOWN IN INCHES [MM]

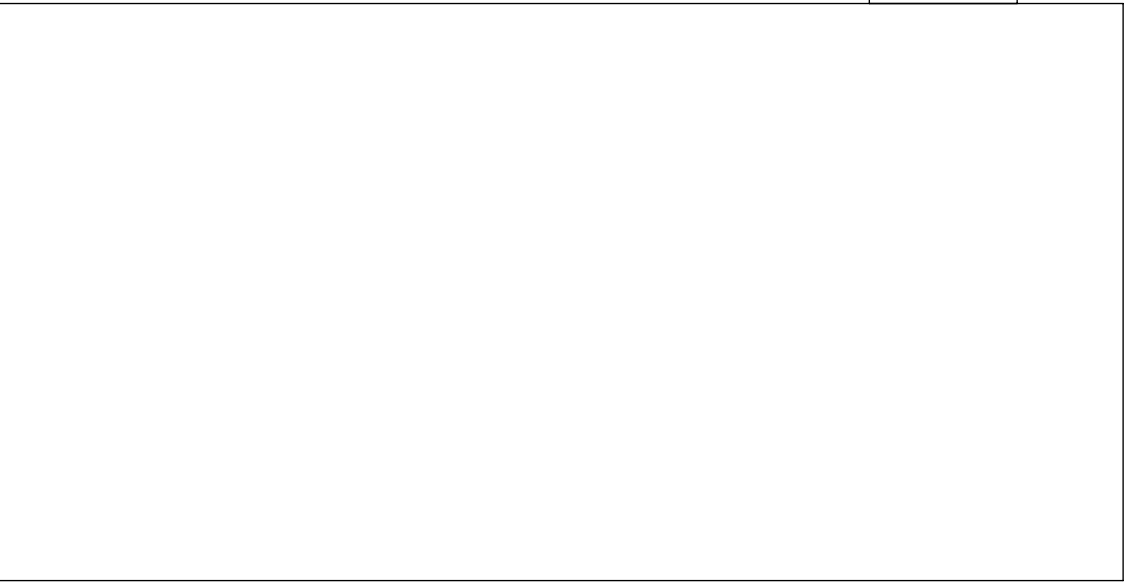
THIRD ANGLE PROJECTION		TOLERANCES UNLESS OTHERWISE SPECIFIED X ± 0.10 .XX ± 0.030 .XXX ± 0.010 ANGLE ± 1° FRACTIONS ± 1/4"	Algas.SDI 151 S. Michigan St., Seattle, Washington, USA 98108 Tel: (206) 789-5410 Fax: (206) 789-5414	Drawn By: AAS
				Checked By: DIN
DO NOT SCALE DRAWING		INTERPRET THIS DRAWING IN ACCORDANCE WITH ANSI/ASME Y14.5-2009	Part # N/A Job # ASDI STD	Approved By:
			Title: ZIMMER 3PH, EQUIPMENT DRAWING	Date: 1/31/2018
			Size: B	Scale: 1:1.6 AND NOTED
			Sht. No.: 1 of 1	Rev.: B
			Dwg. # 0903-6002	

1-PHASE WIRING SCHEMATIC





- NOTES:
1. FOR BREAKER SIZE, PLEASE REFERENCE THE ELECTRICAL SPECIFICATION IN THE OPERATIONS MANUAL.
 2. L1 TO NEUTRAL VOLTAGE: 100VAC - 277VAC
 3. FOR JUNCTION BOX SIZING PLEASE REFERENCE THE ELECTRICAL SERVICE SECTION OF THE MANUAL.

REVISIONS				
REV.	DESCRIPTION	DATE	NAME	ECN #
A	INITIAL RELEASE	9/18/2018	AAS	



ZIMMER VAPORIZER

 <p>THIRD ANGLE PROJECTION</p>	<p>TOLERANCES UNLESS OTHERWISE SPECIFIED</p> <p>.X ± 0.030 .XX ± 0.010 .XXX ± 0.005</p> <p>ANGLE ± 1° FRACTIONS ± 1/16"</p>	<p>DO NOT SCALE DRAWING</p>	<p>INTERPRET THIS DRAWING IN ACCORDANCE WITH ANSI/ASME Y14.5-2009</p>	<p>151 S. Michigan St., Seattle, Washington, USA 98108 Tel: (206) 789-5410 Fax: (206) 789-5414</p>	<p>Drawn By: AAS</p> <p>Checked By:</p> <p>Approved By:</p> <p>Date: 9/18/2018</p> <p>Scale: 1:4 AND NOTED</p> <p>Job # ASDI STD</p>
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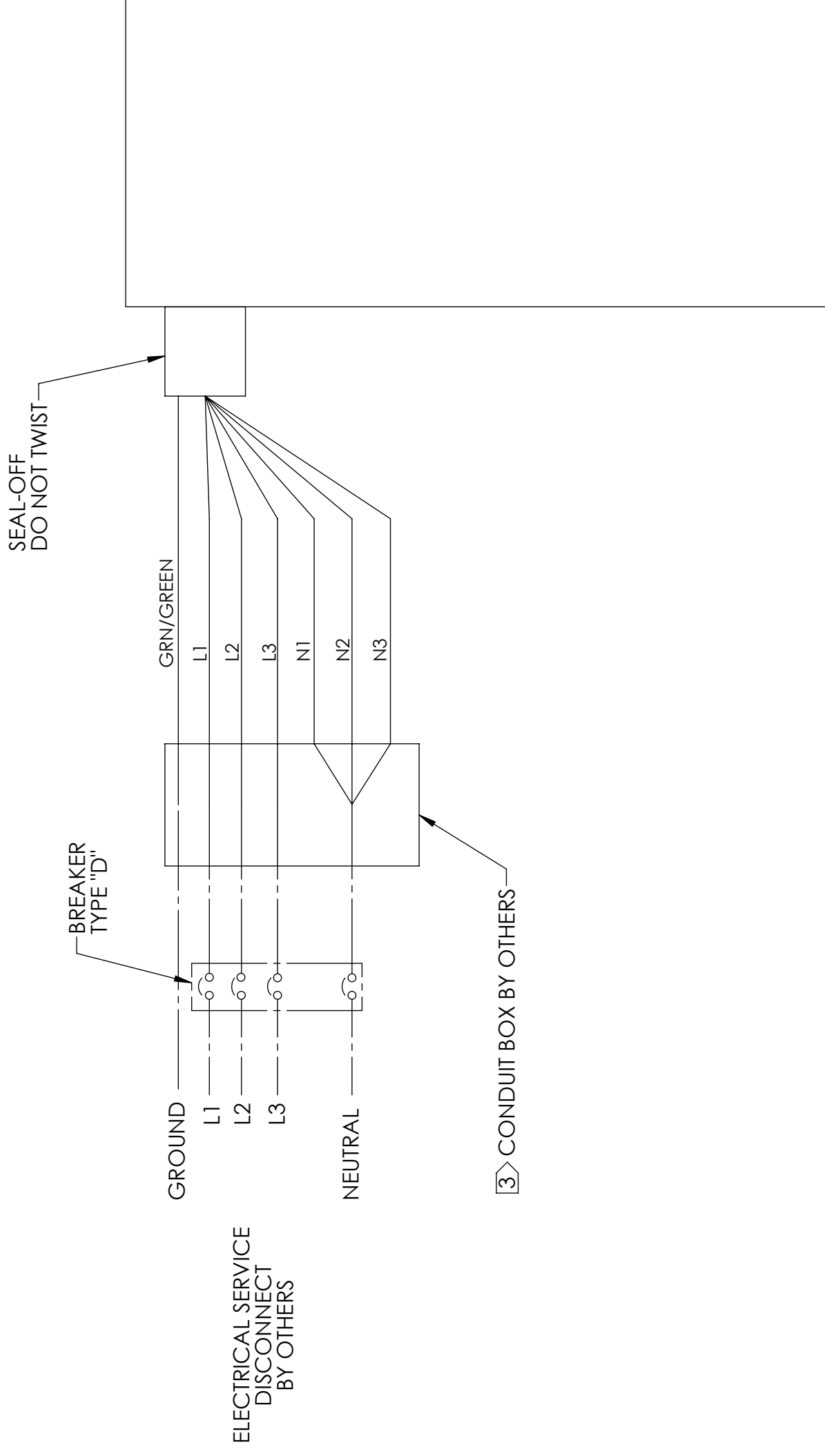
Aigas.SDI

Size: **B** Dwg. # **0903-7001** Sht. No.: 1 of 1 Rev.: **A**

3-PHASE WIRING SCHEMATIC

REVISIONS

REV.	DESCRIPTION	DATE	NAME	ECR/ECN
A	INITIAL RELEASE	9/7/2018	AAS	
B	UPDATED WIRE NAMES ENLARGED IMAGE AND CENTERED ADDED SINGLE PHASE TRIPLE BREAKER SHT 3	9/17/2018	AAS	



- NOTE:
- FOR BREAKER SIZE, PLEASE REFERENCE THE ELECTRICAL SPECIFICATION IN THE OPERATIONS MANUAL
 - L1, L2, L3 TO NEUTRAL VOLTAGE: 100VAC - 277VAC
- FOR JUNCTION BOX SIZING PLEASE REFERENCE THE ELECTRICAL SERVICE SECTION OF THE MANUAL.

THIRD ANGLE
PROJECTION



DO NOT
SCALE
DRAWING

INTERPRET THIS DRAWING IN ACCORDANCE
WITH ANSI/ASME Y14.5-2009

TOLERANCES

UNLESS OTHERWISE
SPECIFIED

.X ± 0.10

.XX ± 0.030

.XXX ± 0.010

ANGLE ± 1°

FRACTIONS ± 1/4"

Part #

Title:

Size: **B**

Sht. No.: 1 of 3

Rev.: **B**



151 S. Michigan St., Seattle, Washington, USA 98108
Tel: (206) 789-5410 Fax: (206) 789-5414

Job #

ASDI STD

N/A

ZIMMER 100/150KG WIRING SCHEMATIC,

3 PHASE, 4-WIRE (Wye)

Dwg. #

0903-7002

ZIMMER VAPORIZER

Drawn By: AAS

Checked By: DN

Approved By:

Date: 9/7/2018

Scale: 1:4 AND NOTED

Job #

ASDI STD

N/A

ZIMMER 100/150KG WIRING SCHEMATIC,

3 PHASE, 4-WIRE (Wye)

Dwg. #

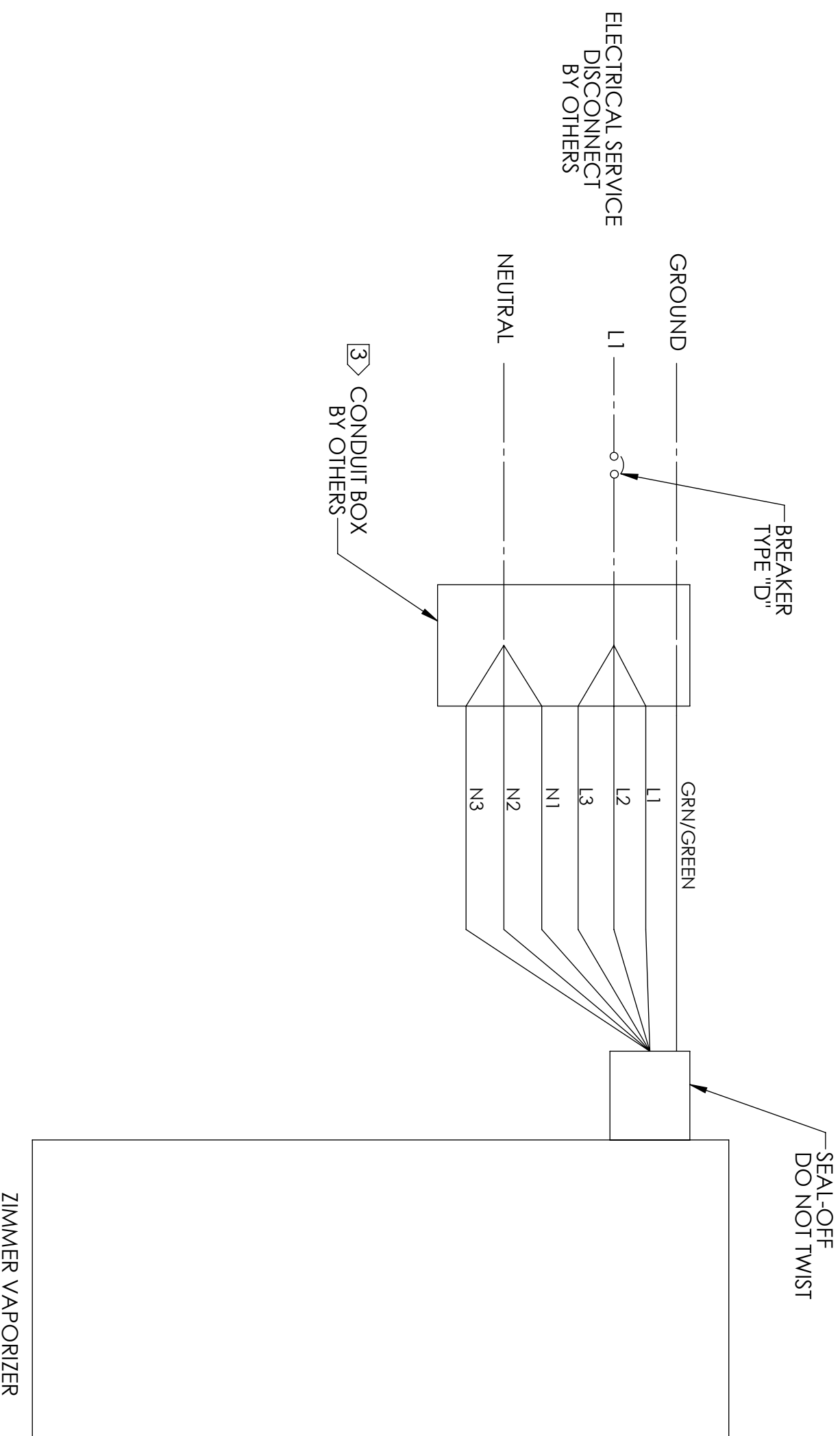
0903-7002

Sht. No.: 1 of 3

Rev.: **B**

1-PHASE WIRING SCHEMATIC

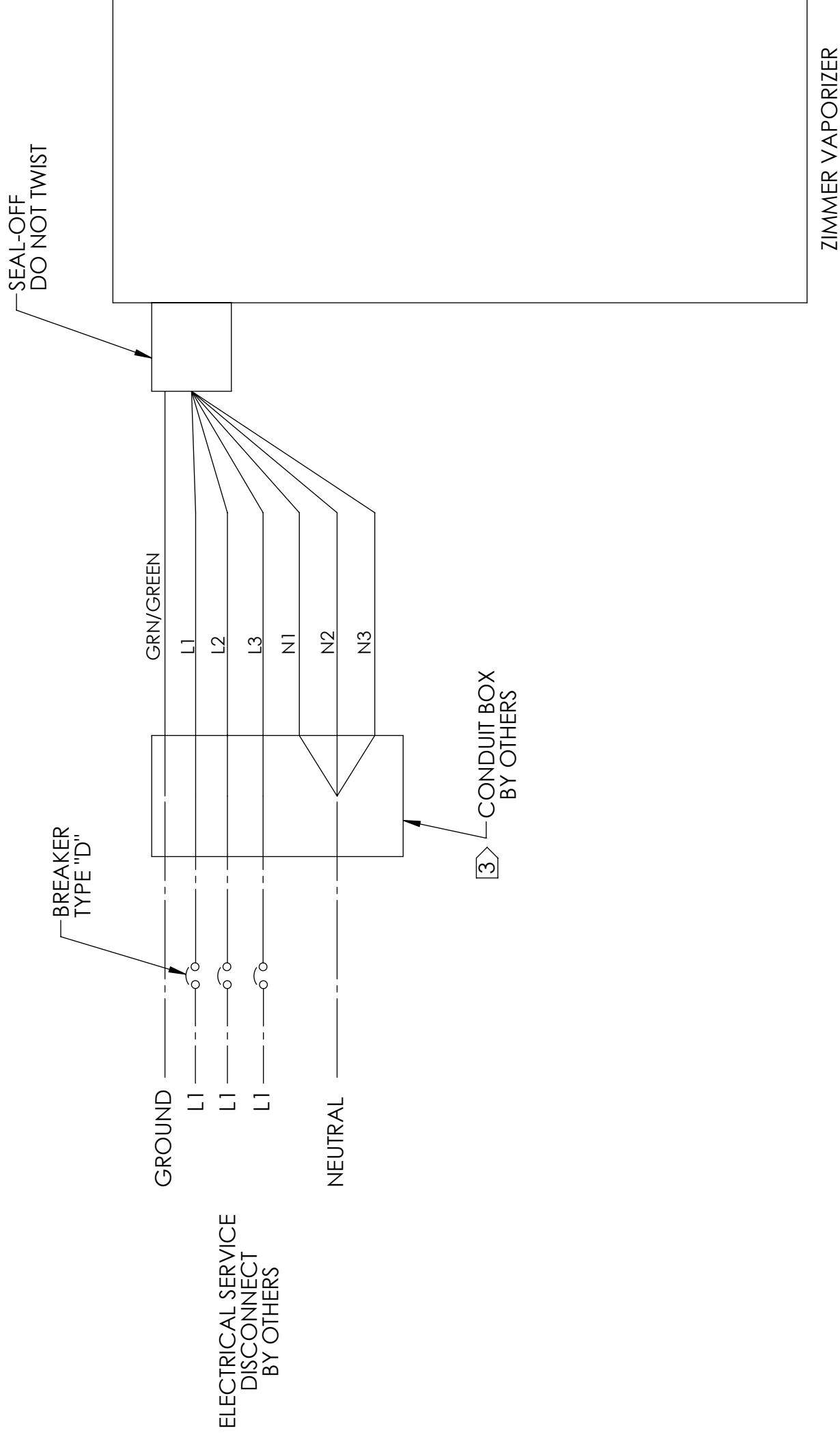
SINGLE BREAKER



- NOTE:
- FOR BREAKER SIZING, PLEASE REFERENCE THE ELECTRICAL SPECIFICATION IN THE OPERATIONS MANUAL
 - L1 TO NEUTRAL VOLTAGE 100VAC - 277VAC
 - FOR JUNCTION BOX SIZING PLEASE REFERENCE THE ELECTRICAL SERVICE SECTION OF THE MANUAL.

THIRD ANGLE PROJECTION	TOLERANCES UNLESS OTHERWISE SPECIFIED .X ±0.1 .XX ±0.03 .XXX ±0.01	151 S. Michigan St., Seattle, Washington, USA 98108 Tel: (206) 789-5410 Fax: (206) 789-5414	Drawn By: AAS
DO NOT SCALE DRAWING	ANGLE ±0°30' FRACTIONS ± 1/4"	Algas.SDI TM	Checked By: DN
INTERPRET THIS DRAWING IN ACCORDANCE WITH ANSI/ASME Y14.5-2009	Title: ZIMMER 100/150KG WIRING SCHEMATIC, 1-PHASE, 1 BREAKER	Part #: N/A	Approved By:
THIS DRAWING SHALL NOT BE REPRODUCED OR USED IN ANY MANNER DERIVATIVE WITHOUT THE INTERESTS OF COPRIGHT ALGAS.SDI	Size: B	Dwg. #: 0903-7002	Date: 9/7/2018
			Scale: 1:4 AND NOTED
			Job #: ASDI STD
			Sht. No.: 2 of 3
			Rev.: B

1-PHASE WIRING SCHEMATIC TRIPLE-BREAKER

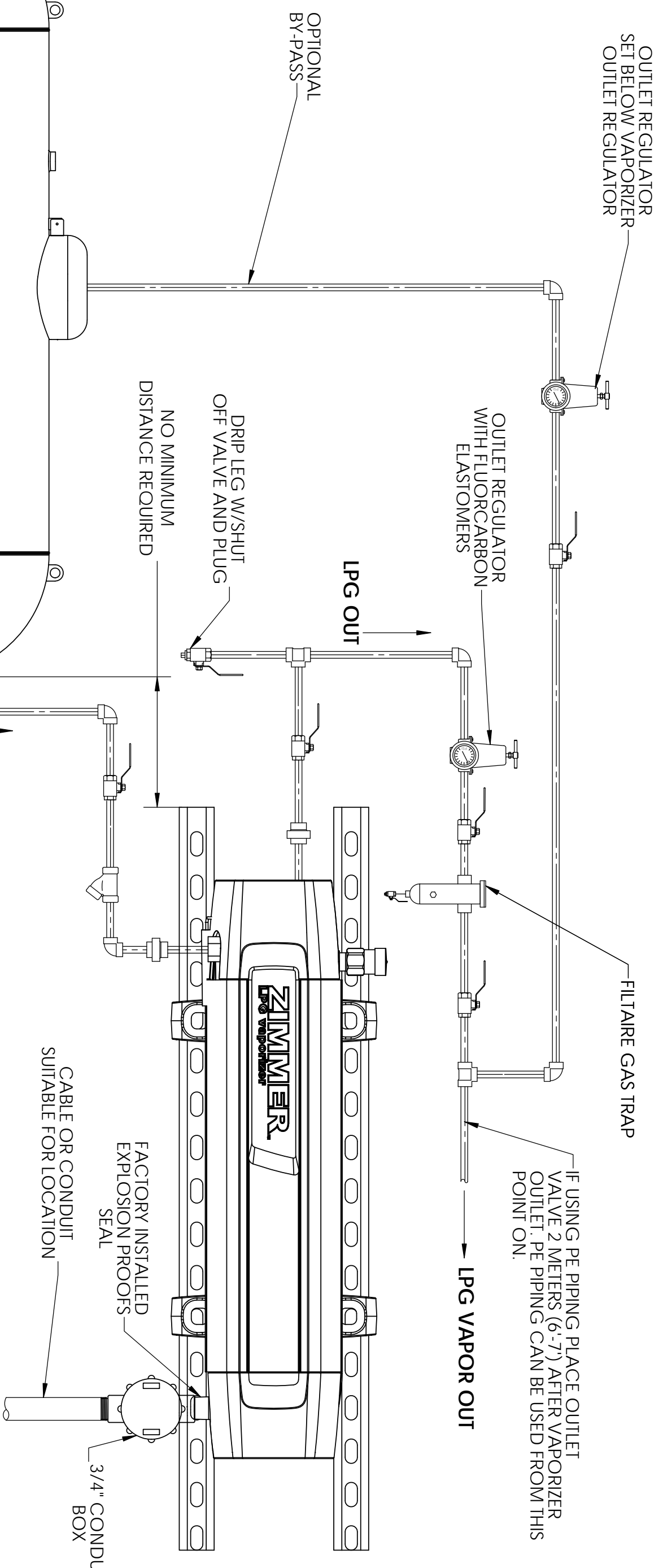


NOTE:

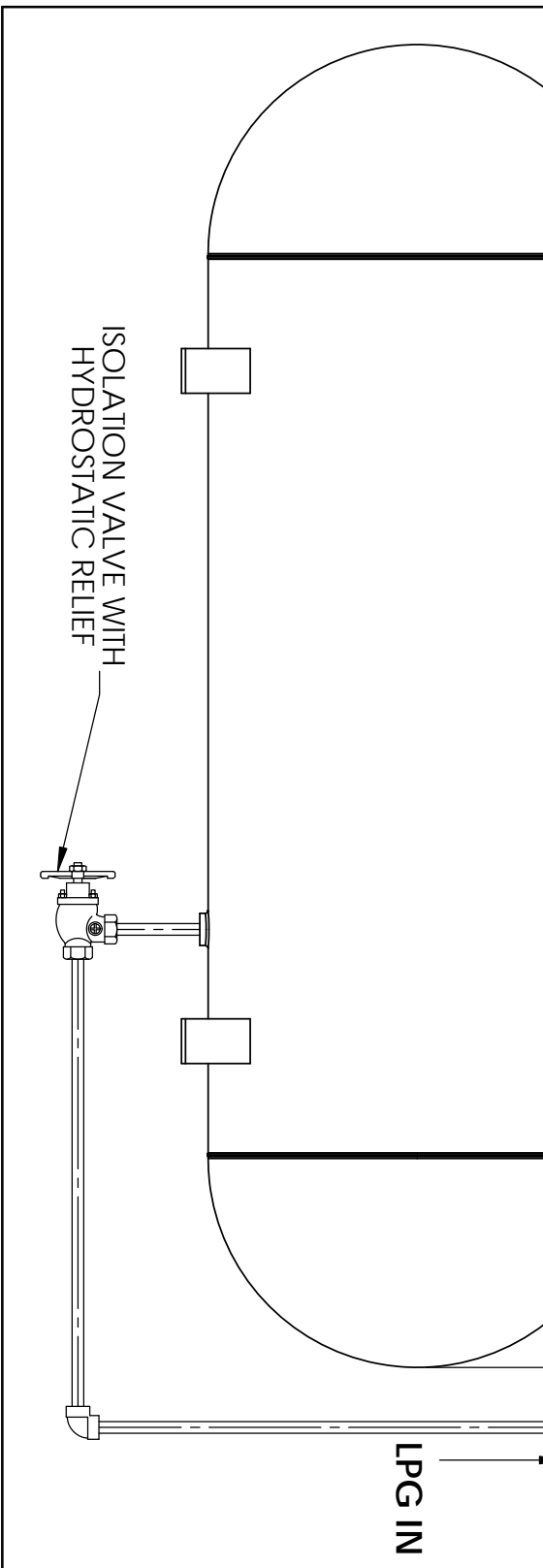
1. FOR BREAKER SIZING, PLEASE REFER TO ELECTRICAL SPECIFICATION IN THE OPERATING MANUAL.
2. L1 TO NEUTRAL VOLTAGE: 100V AC - 277 VAC
3. FOR JUNCTION BOX SIZING PLEASE REFERECNE THE ELECTRICAL SERVICE SECTION OF THE MANUAL.

THIRD ANGLE PROJECTION		TOLERANCES UNLESS OTHERWISE SPECIFIED .X ±0.1 .XX ±0.03 .XXX ±0.01 ANGLE ±0°30' FRACTIONS ± 1/4"	Algas.SDI 151 S. Michigan St., Seattle, Washington, USA 98108 Tel: (206) 789-5410 Fax: (206) 789-5414	Drawn By: AAS
DO NOT SCALE DRAWING	INTERPRET THIS DRAWING IN ACCORDANCE WITH ANSI/ASME Y14.5-2009	Part # N/A	Job # ASDI STD	Checked By: DN
THIS DRAWING SHALL NOT BE REPRODUCED OR USED IN ANY MANNER DETRIMENTAL TO ITS INTERESTS. ALL RIGHTS RESERVED. © COPYRIGHT ALGAS.SDI		Title: ZIMMER 100/150KG WIRING SCHEMATIC		Approved By:
		Size: B	Dwg. # 0903-7002	Date: 9/7/2018
		Sht. No.: 3 of 3		Scale: 1:4 AND NOTED
		Rev.: B		

REVISIONS				
REV.	DESCRIPTION	DATE	NAME	ECR/ECN
A	INITIAL RELEASE	1/15/2018	AAS	



- NOTES:
1. FOLLOW ALL LOCAL CODES & REGULATION FOR INSTALLATION
 2. LEAK TEST ALL CONNECTION AFTER INSTALLATION.
 3. ADDITIONAL UNIONS MAY BE REQUIRED AND ARE RESPONSIBILITY OF THE CUSTOMER



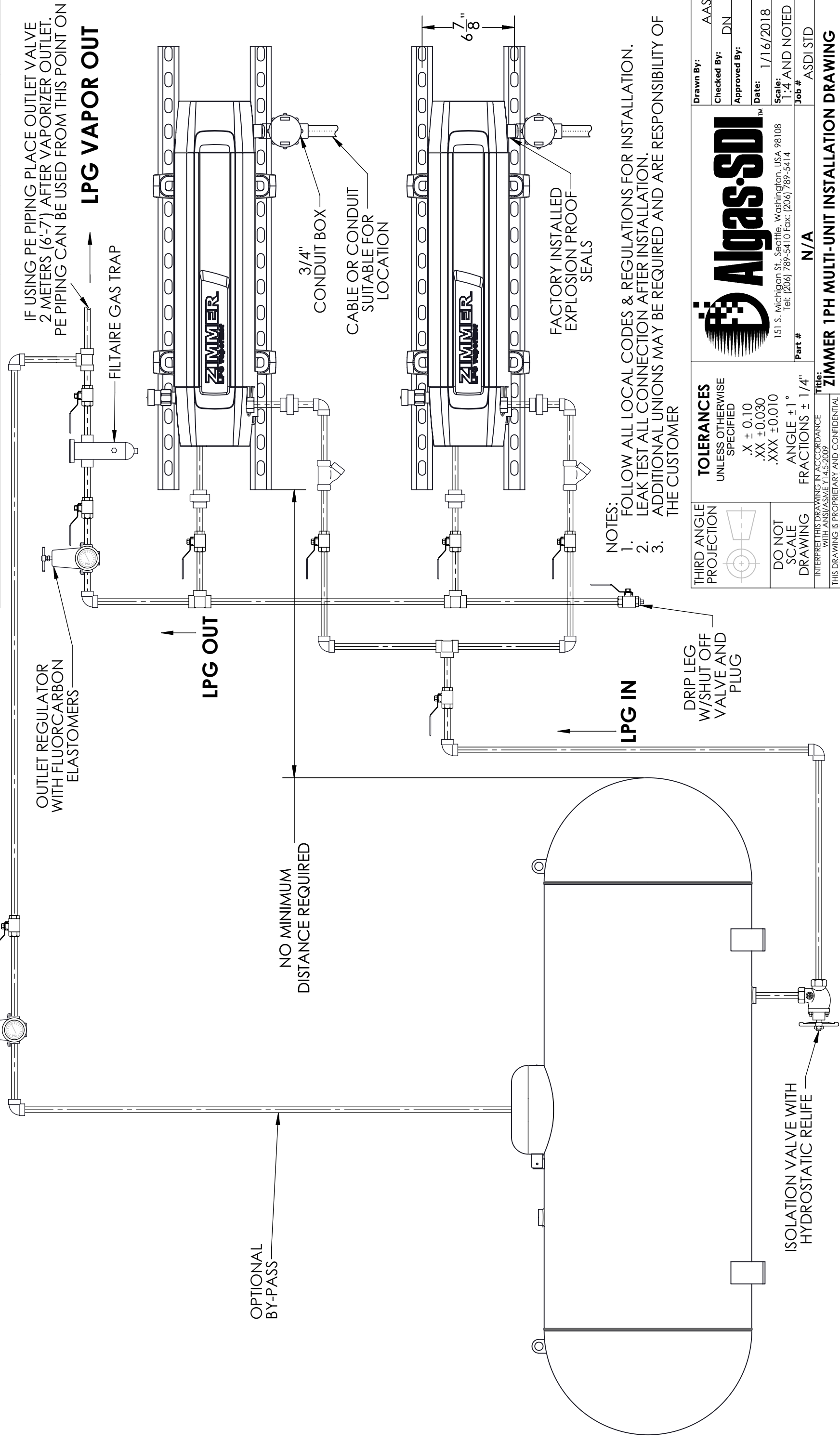
THIRD ANGLE PROJECTION	TOLERANCES UNLESS OTHERWISE SPECIFIED		Algas.SDI 151 S. Michigan St. Seattle, Washington, USA 98108 Tel: (206) 789-5410 Fax: (206) 789-5414	Drawn By: AAS Checked By: DN Approved By: Date: 1/15/2018 Scale: 1:8 AND NOTED Job #: ASDI STD
DO NOT SCALE DRAWING	ANGLE ±1° FRACTIONS ± 1/4" .X ± 0.10 .XX ± 0.030 .XXX ± 0.010	INTERPRET THIS DRAWING IN ACCORDANCE WITH ANSI/ASME Y14.5-2009	Title: ZIMMERMER 1PH SINGLE UNIT INSTALLATION DRAWING Part #: N/A	Job #: ASDI STD
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Size: **B** Dwg. # **0903-8001** Sht. No.: 1 of 1 Rev.: **A**

REVISIONS

REV.	DESCRIPTION	DATE	NAME	ECR/ECN
A	INITIAL RELEASE	1/16/2018	AAS	

OUTLET REGULATOR
SET BELOW VAPORIZER
OUTLET REGULATOR



IF USING PE PIPING PLACE OUTLET VALVE
2 METERS (6'-7") AFTER VAPORIZER OUTLET.
PE PIPING CAN BE USED FROM THIS POINT ON

LPG VAPOR OUT

FILTAIRE GAS TRAP

LPG OUT

OPTIONAL
BY-PASS

NO MINIMUM
DISTANCE REQUIRED

3/4"
CONDUIT BOX

CABLE OR CONDUIT
SUITABLE FOR
LOCATION

6 7/8"

FACTORY INSTALLED
EXPLOSION PROOF
SEALS

NOTES:

1. FOLLOW ALL LOCAL CODES & REGULATIONS FOR INSTALLATION.
2. LEAK TEST ALL CONNECTION AFTER INSTALLATION.
3. ADDITIONAL UNIONS MAY BE REQUIRED AND ARE RESPONSIBILITY OF THE CUSTOMER

DRIP LEG
W/SHUT OFF
VALVE AND
PLUG

LPG IN

THIRD ANGLE
PROJECTION



DO NOT
SCALE
DRAWING

INTERPRET THIS DRAWING IN ACCORDANCE
WITH ANSI/ASME Y14.5-2009

TOLERANCES
UNLESS OTHERWISE
SPECIFIED

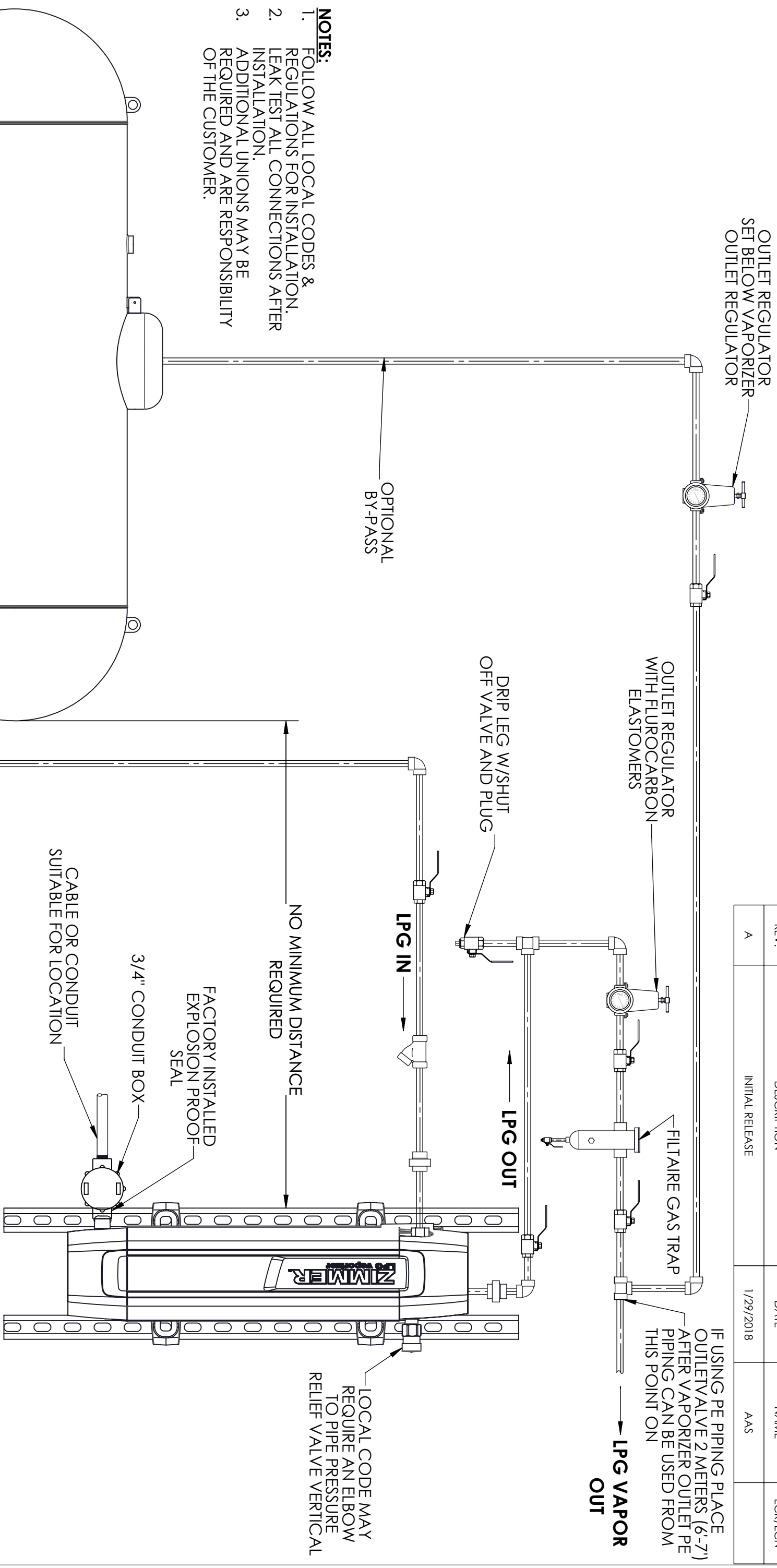
- .X ± 0.10
- .XX ± 0.030
- .XXX ± 0.010
- ANGLE ± 1°
- FRACTIONS ± 1/4"



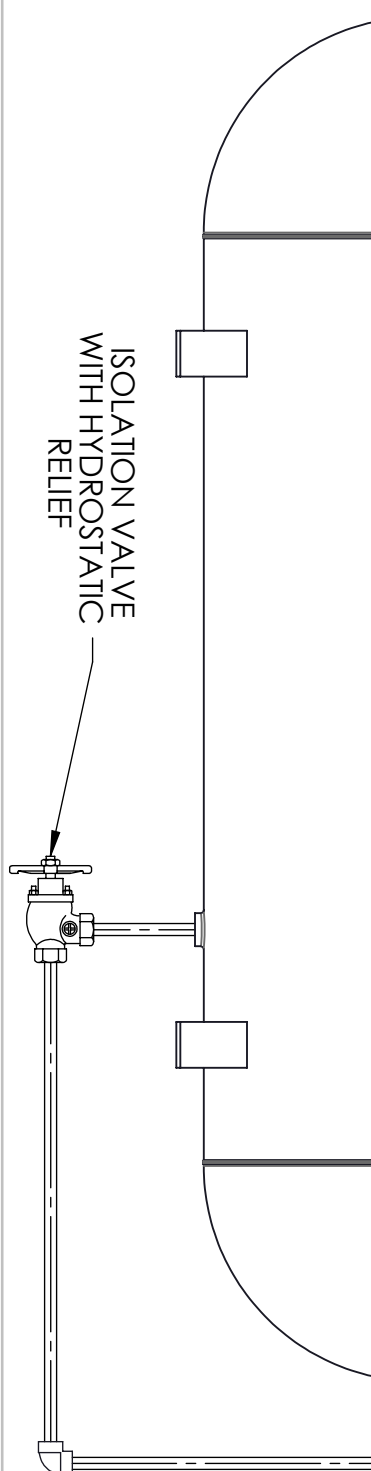
151 S. Michigan St., Seattle, Washington, USA 98108
Tel: (206) 789-5410 Fax: (206) 789-5414

Drawn By:	AAS
Checked By:	DN
Approved By:	
Date:	1/16/2018
Scale:	1:4 AND NOTED
Job #	ASDI STD
Part #	N/A
TITLE: ZIMMER 1PH MULTI-UNIT INSTALLATION DRAWING	
Size: B	Dwg. # 0903-8002
Sht. No.: 1 of 1	Rev.: A

REVISIONS				
REV.	DESCRIPTION	DATE	NAME	ECR/ECN
A	INITIAL RELEASE	1/29/2018	AAS	

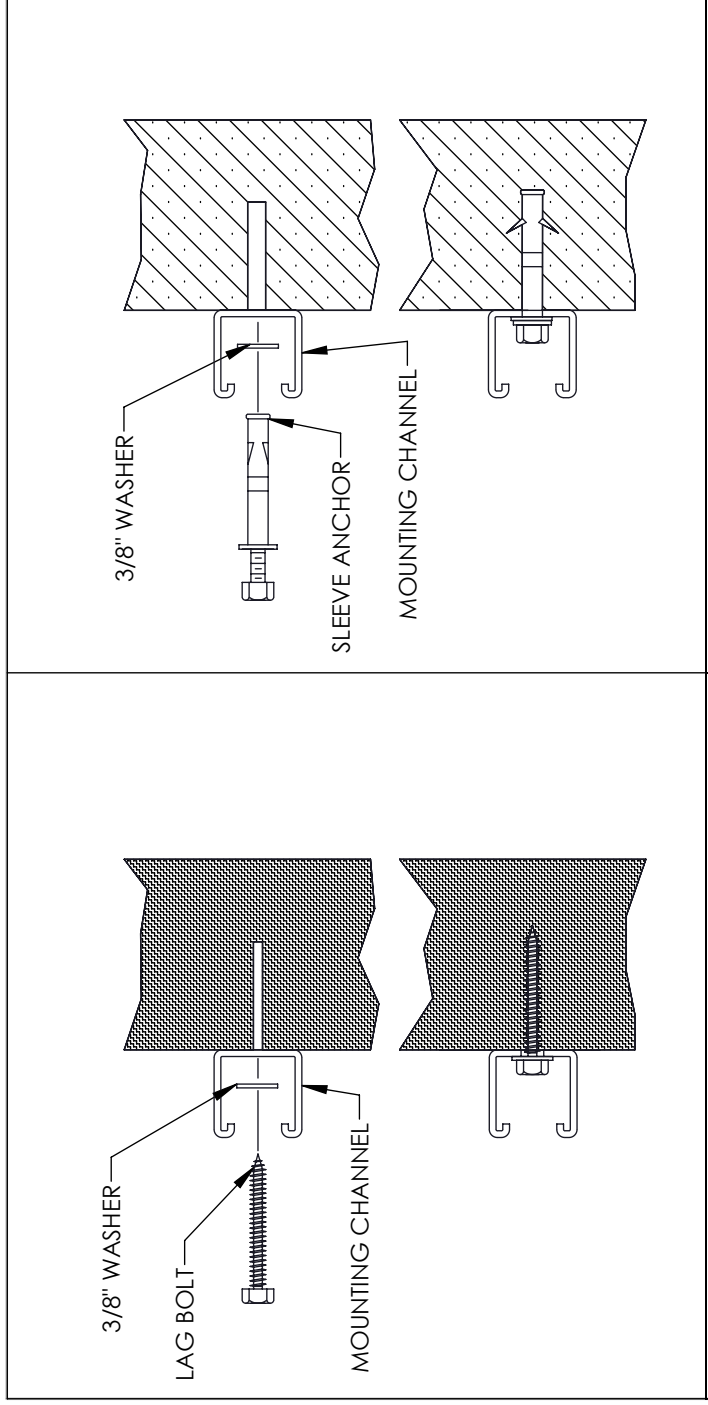
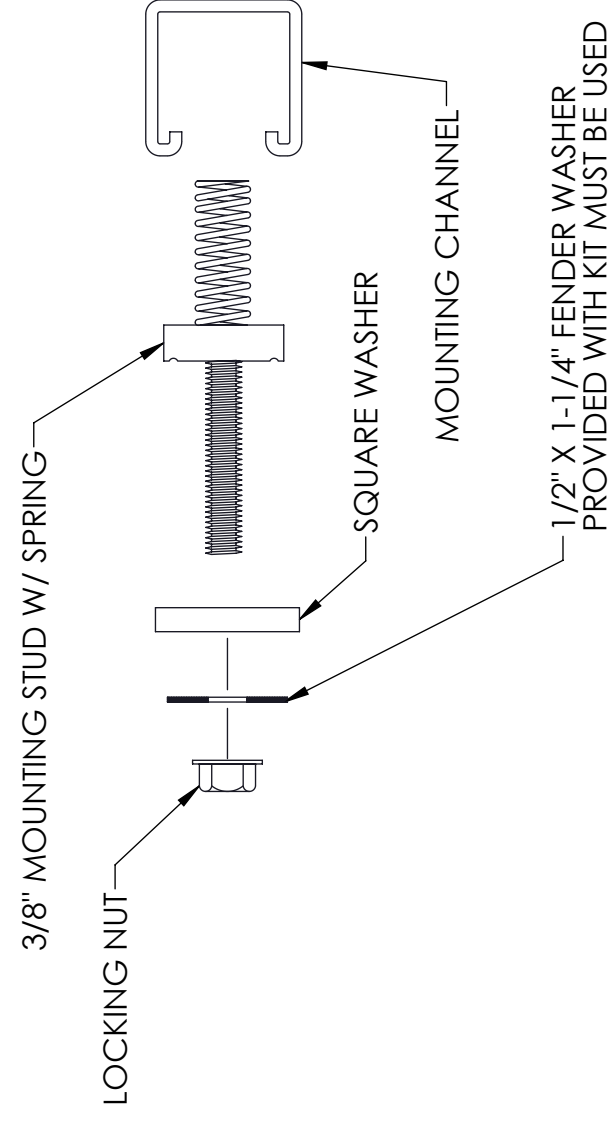


- NOTES:**
1. FOLLOW ALL LOCAL CODES & REGULATIONS FOR INSTALLATION.
 2. LEAK TEST ALL CONNECTIONS AFTER INSTALLATION.
 3. ADDITIONAL UNIONS MAY BE REQUIRED AND ARE RESPONSIBILITY OF THE CUSTOMER.



THIRD ANGLE PROJECTION	TOLERANCES UNLESS OTHERWISE SPECIFIED	DO NOT SCALE DRAWING	ANGLE ± 1°	FRACTIONS ± 1/4"	THIS DRAWING IS PROPRIETARY AND CONFIDENTIAL AND SHALL NOT BE REPRODUCED OR USED IN ANY MANNER DETRIMENTAL TO AIGAS-SDI'S INTERESTS. ALL RIGHTS RESERVED. © COPYRIGHT AIGAS-SDI
	.X ± 0.10 .XX ± 0.030 .XXX ± 0.010	INTERPRET THIS DRAWING IN ACCORDANCE WITH ANSI/ASME Y14.5-2009	1/29/2018	N/A	Algas-SDI 151 S. Michigan St. Seattle, Washington, USA 98108 Tel: (206) 789-5410 Fax: (206) 789-5414
Title: ZIMMER 1PH SINGLE UNIT, VERTICAL INSTALLTION	Drawn By: AAS Checked By: DN Approved By:	Part # N/A	Date: 1/29/2018 Scale: 1:4 AND NOTED	Job # ASDI STD	
Size: B Dwg. # 0903-8003		Sht. No.: 1 of 1		Rev.: A	

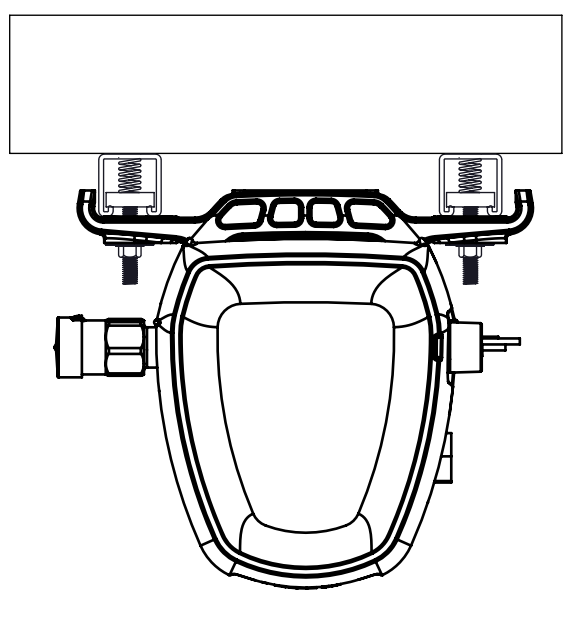
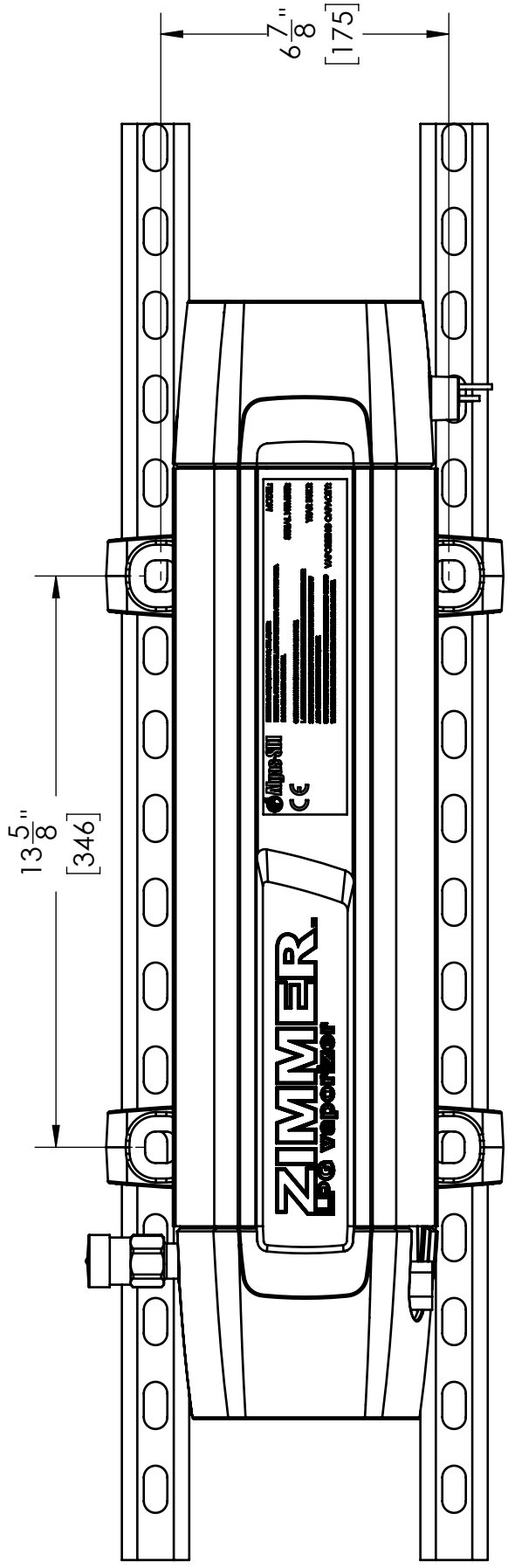
REVISIONS			
REV.	DESCRIPTION	DATE	NAME
A	INITIAL RELEASE	5/21/2018	AAS



MOUNTING CHANNEL INSTALLATION FOR SOFT (WOOD) WALLS

ANCHORING METHODS FOR RECOMMENDED MOUNTING KIT A.S.D.I PART NO 80885

MOUNTING CHANNEL INSTALLATION FOR CONCRETE WALLS



NOTE:
1. DIMENSIONS SHOWN INCHES [MM]

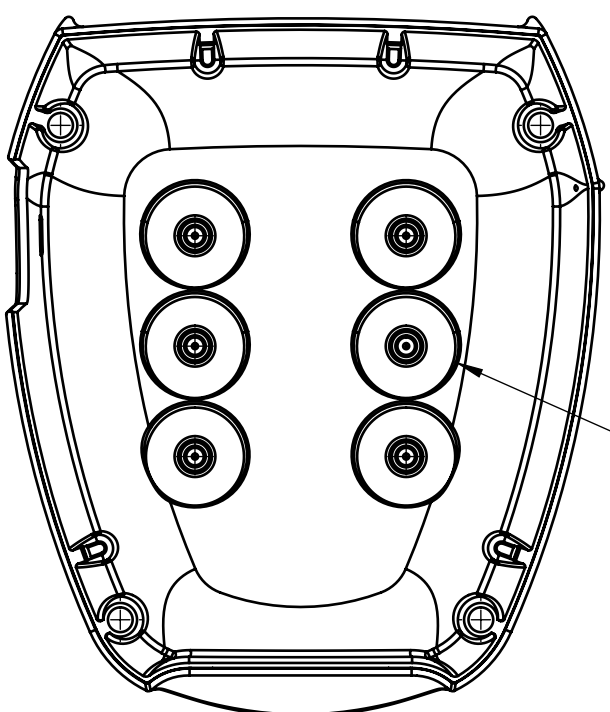
THIRD ANGLE PROJECTION		TOLERANCES UNLESS OTHERWISE SPECIFIED .X ± 0.10 .XX ± 0.030 .XXX ± 0.010 ANGLE ± 1° FRACTIONS ± 1/4"	Drawn By: AAS
			Checked By: DN
DO NOT SCALE DRAWING <small>INTERPRET THIS DRAWING IN ACCORDANCE WITH ANSI/ASME Y14.5-2009</small>	<small>THIS DRAWING SHALL NOT BE REPRODUCED OR USED IN ANY MANNER DETRIMENTAL TO ITS INTERESTS. ALL RIGHTS RESERVED. © COPYRIGHT ALGAS.SDI</small>	Title: ZIMMER ELECTRIC LP-GAS VAPORIZER MOUNTING DETAILS	Approved By:
			Date: 5/21/2018
		Scale: 1:8 AND NOTED	Job # ASDI STD
		Part # N/A	Sht. No.: 1 of 1
		Size: B	Rev.: A



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Tel: (206) 789-5410 Fax: (206) 789-5414

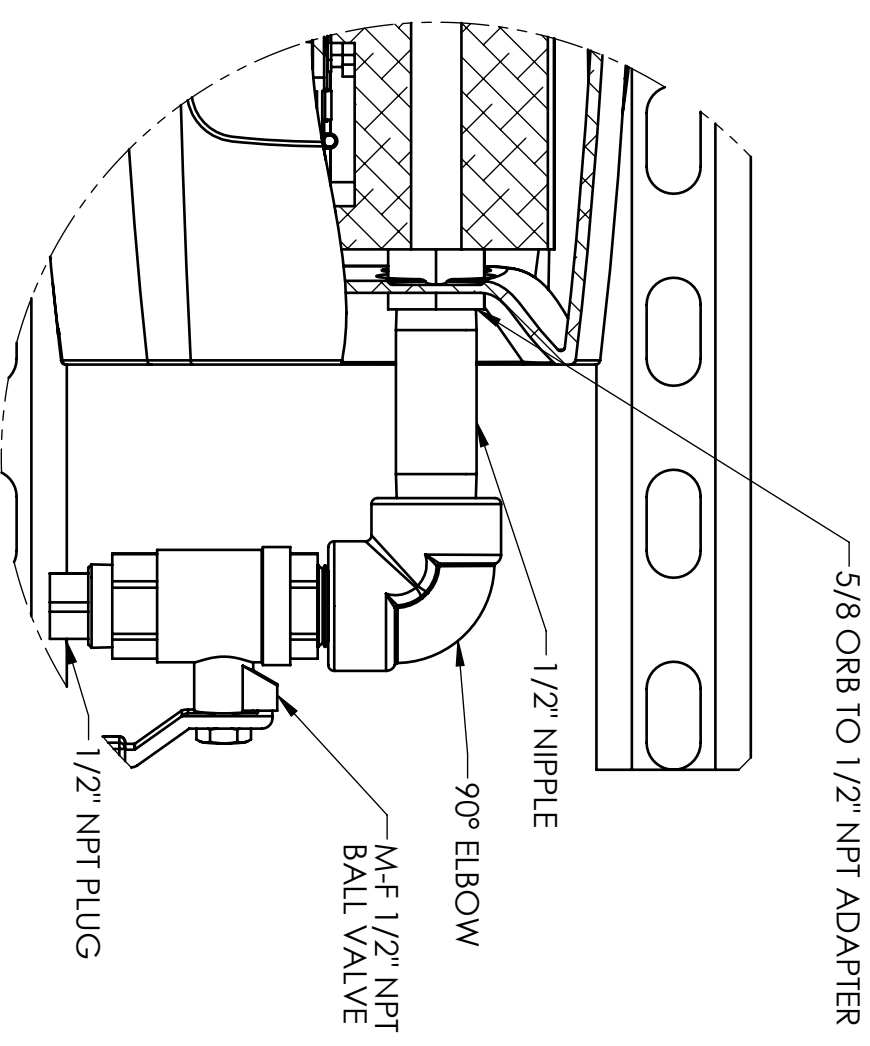
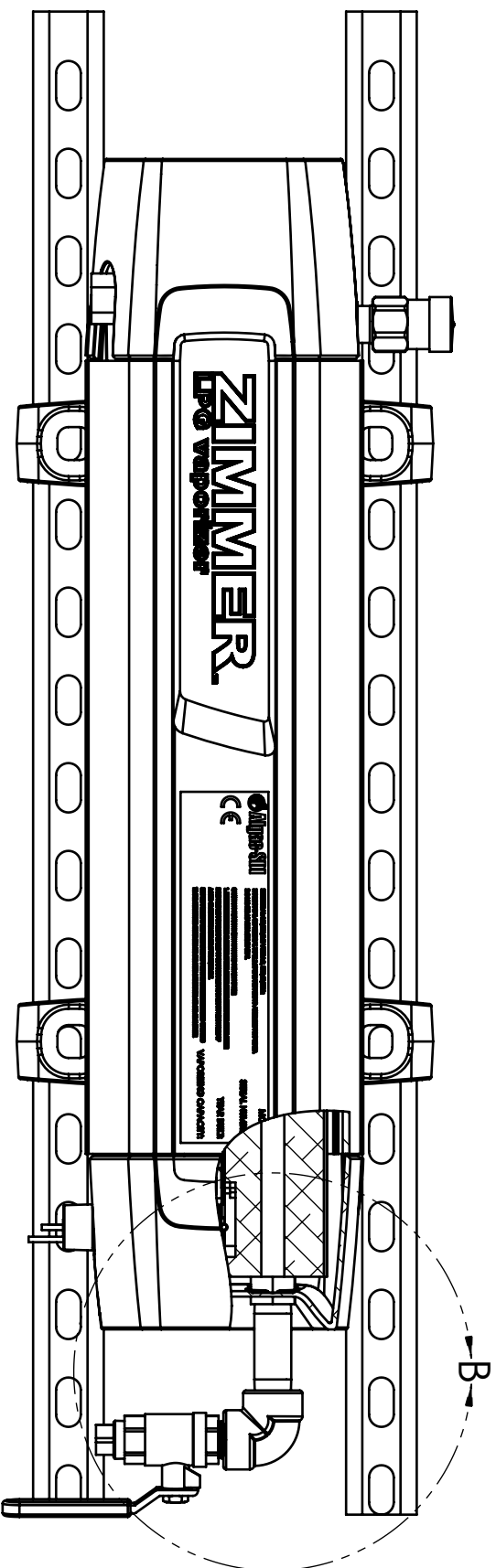
ZIMMER ELECTRIC LP-GAS VAPORIZER MOUNTING DETAILS

0903-8004



—DRILL AT CENTER OF PROVIDED DIMPLES
TO CREATE 1-1/4" HOLE

BACK ENDCAP



—5/8 ORB TO 1/2" NPT ADAPTER

1/2" NIPPLE

90° ELBOW

M-F 1/2" NPT
BALL VALVE

1/2" NPT PLUG

DETAIL B
SCALE 1 : 2

THIRD ANGLE PROJECTION	TOLERANCES UNLESS OTHERWISE SPECIFIED	Drawn By: AAS
DO NOT SCALE DRAWING	.X ± 0.10 .XX ± 0.03 .XXX ± 0.01 ANGLE ± 1° FRACTIONS ± 1/4"	Checked By: DN
INTERPRET THIS DRAWING IN ACCORDANCE WITH ANSI/ASME Y14.5-2009	151 S. Michigan St., Seattle, Washington, USA 98108 Tel: (206) 789-5410 Fax: (206) 789-5414	Approved By:
THIS DRAWING SHALL NOT BE REPRODUCED OR USED IN ANY MANNER WITHOUT THE INTERESTS ALL RIGHTS RESERVED. © COPYRIGHT ALGAS.SDI	Part # 80770	Date: 5/23/2018
	Title: ZIMMER DRAIN KIT INSTALLATION	Scale: 1:4 AND NOTED
	Size: B Dwg. # 0903-8005	Job # ASDI STD
		Sht. No.: 1 of 1 Rev.: A



Innovative Liquid Vaporizing and Gas Mixing Solutions

WARRANTY REGISTRATION

Type of Equipment: _____ Serial Number: _____
 ASDI Sales Order #: _____ Order Date: _____
 Purchased By: _____

To help us give you better service, please fill out this warranty registration form and return it to ASDI to register your purchase and for follow up on the performance of ASDI equipment. We are dedicated to producing a quality product and if a problem occurs, ASDI wants to know about it.

Please help us with a small amount of information about your company and how the equipment will be used. When contacting ASDI, please have the type of equipment and the serial number handy so we can give you accurate information. If you have had any kind of problem with this equipment, or you have any comments, please attach a separate sheet to this form. Keep a copy for your records.

End Customer/Company Name: _____
 Address: _____ Tel: _____
 City: _____ Fax: _____
 State: _____ Zip: _____

Name of individual to contact for follow up information: _____
 Title: _____

Usage - Circle one: Base Load Standby System Peak Shaving
 Other: _____

In what application is the equipment being used? _____

When was the equipment put in service? _____ / _____ / _____

Note: If you have more than one piece of ASDI equipment, fill out one warranty sheet and staple the others to it, ASDI will do the rest.

151 South Michigan Street, Tel: 206.789.5410 E-mail: sales@algas-sdi.com
 Seattle, Washington, 98108, USA Fax: 206.789.5414 Internet: www.algas-sdi.com

Algas-SDI International, LLC
151 S. Michigan Street
Seattle, Washington 98108
USA

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Fax.: 1.206.789.5414

www.algas-sdi.com