

DART-SVP Operation Requirements and Recommendations

Power Requirements: 100-240VAC, 2.3A, 50/60 Hz

Size:

Controller:

12" x 9" x 4.5" (extra 0.5" with rubber feet)

Controller will operate in horizontal or vertical orientations.

Largest Footprint = 12" x 9"

Smallest Footprint = 12" x 5"

Source:

H = 6" (from bottom of base plate to top of mounting ring)

W = 6.25" (between y-axis adjustment knobs)

L = 10.5" (from front of mounting ring to back of base plate)

Max Separation Distance, Source & Controller:

Angle Source at max height and 45 degree tilt ~ 24"

Source Flat ~ 31"

(distances based on cabling length and proper bend radius for cable)

Tabletop mounted bracket comes standard with SVP controller so user can hang controller from table, directly below source. Otherwise controller can be placed directly on table at user's discretion.

Bracket mounts to table either via hardware, or adhesive Velcro strips.

Communication: *wired or wireless*

Wired - Computer

Computer must have an available Ethernet port and web browser. If all Ethernet ports are used then a USB to Ethernet adaptor must be provided. IonSense can provide this adaptor upon request.

You must use a cross-over Ethernet cable; one is provided with the DART.

Web Browser:

IonSense Recommends **FireFox v3.0 or higher**

OR

Internet Explorer v7 or higher

Google Chrome v5 or higher

Wireless - iPod

Barring the use of a computer, wireless communication via DART Wireless Kit and Apple iPod Touch **must** be used.

Gas:

Required

Helium: of at least 4.7 grade (99.997% pure.)

Nitrogen: of at least 4.8 grade (99.998% pure.)

Recommended size of tank is 300

Regulator:

Required

Our recommendation is a **single stage** regulator for each gas tank with the following specs:

Stainless steel diaphragm

Helium leak integrity of $1 * 10^{-9}$

Ultrasonically cleaned

1/4" NPT male or female outlet

DART-SVP inlet pressure is **80 PSI**. This is the optimum inlet pressure; different pressures may cause less than optimal performance.

NOTE: A dual stage regulator will work fine, two stages just isn't required.

Part no: SGD3101-100-580 from Specialty Gas Equipment Inc. (www.sgd.com)

Filter:

Recommended

We recommend the use of a **particulate filter** on both N₂ and He gas lines entering the DART Controller if you are connected to **house gas lines**. If you have dedicated gas tanks, a filter is not necessary. This helps to ensure no foreign objects contaminate or block gas flow through the DART. The filter should be placed after the regulator and before the DART Controller.

NOTE: The use of filter will require you to increase the PSI setting on your regulator to make up for the loss in pressure due to the filter. Since each filter may be different we recommend you hook up a flow meter (see below) and be

sure your output gas flow is approximately the same values as stated on the DART quality control document shipped with your unit.

Part no: SGD7510-10-P4MM from Specialty Gas Equipment Inc. (www.sgd.com)

Flow Meter:

Recommended

If customers wish to measure the flow rate of DART gas with an external meter, IonSense recommends the following:

Dwyer Instruments Gas Flow Meter (www.dwyer-inst.com)

Part No: RMA-22

2-25 LPM Air

Omega Digital Mass Flow Meter (www.omega.com)

Part No: FMA1824

0-20 SLPM N2 w/ Digital Display

For Helium flow rate multiply flow value by He Gas K Factor equal to 1.454.

(AC Power adaptor must be purchased separately: FMA178PW)

Pumping:

Required

Required for use with Vapor flange; customers not using a Vapor flange did not need pumping.

IonSense offers an external rough pump for purchase:

Vacuubrand MZ2 NT Pump

Specifications here: <http://www.vacuubrand.com/en-pageID809.php>

Alternatively a customer may opt to use laboratory house vacuum as a substitute, or an equivalent pump.