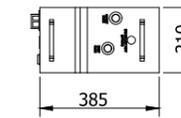
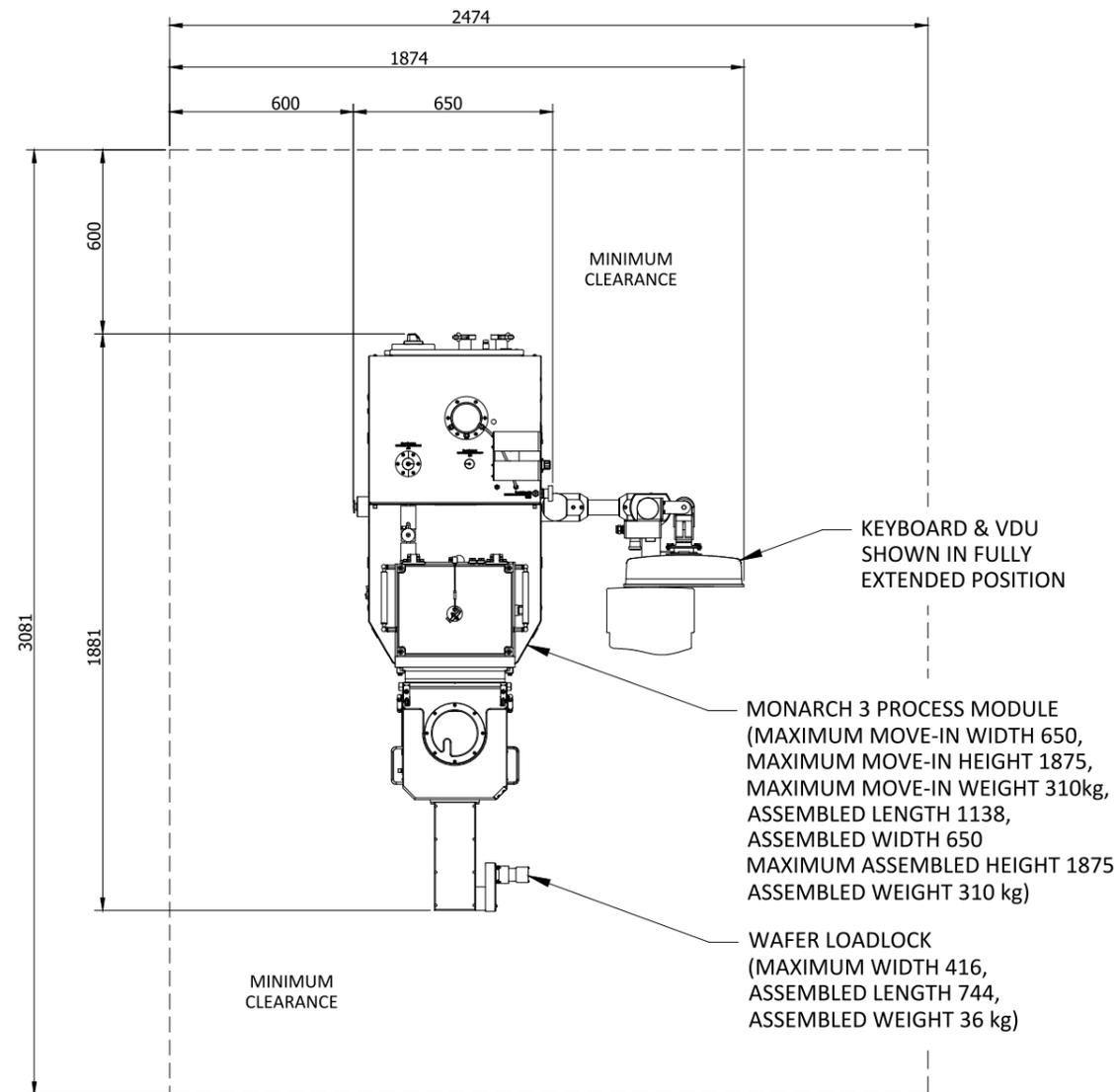




## Floor Layout

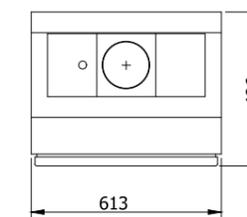
# ALLEGATO A



MONARCH 3 WAFER LOADLOCK  
ROUGHING PUMP x1  
EBARA EV-A03 OR EQUIVALENT  
(HEIGHT 250) (WEIGHT 23 kg)  
(CUSTOMER TO SUPPLY)



MONARCH 3 PROCESS MODULE  
VACUUM PUMP x1  
EBARA EV-S20P OR EQUIVALENT  
(HEIGHT 275) (WEIGHT 60 kg)  
(CUSTOMER TO SUPPLY)



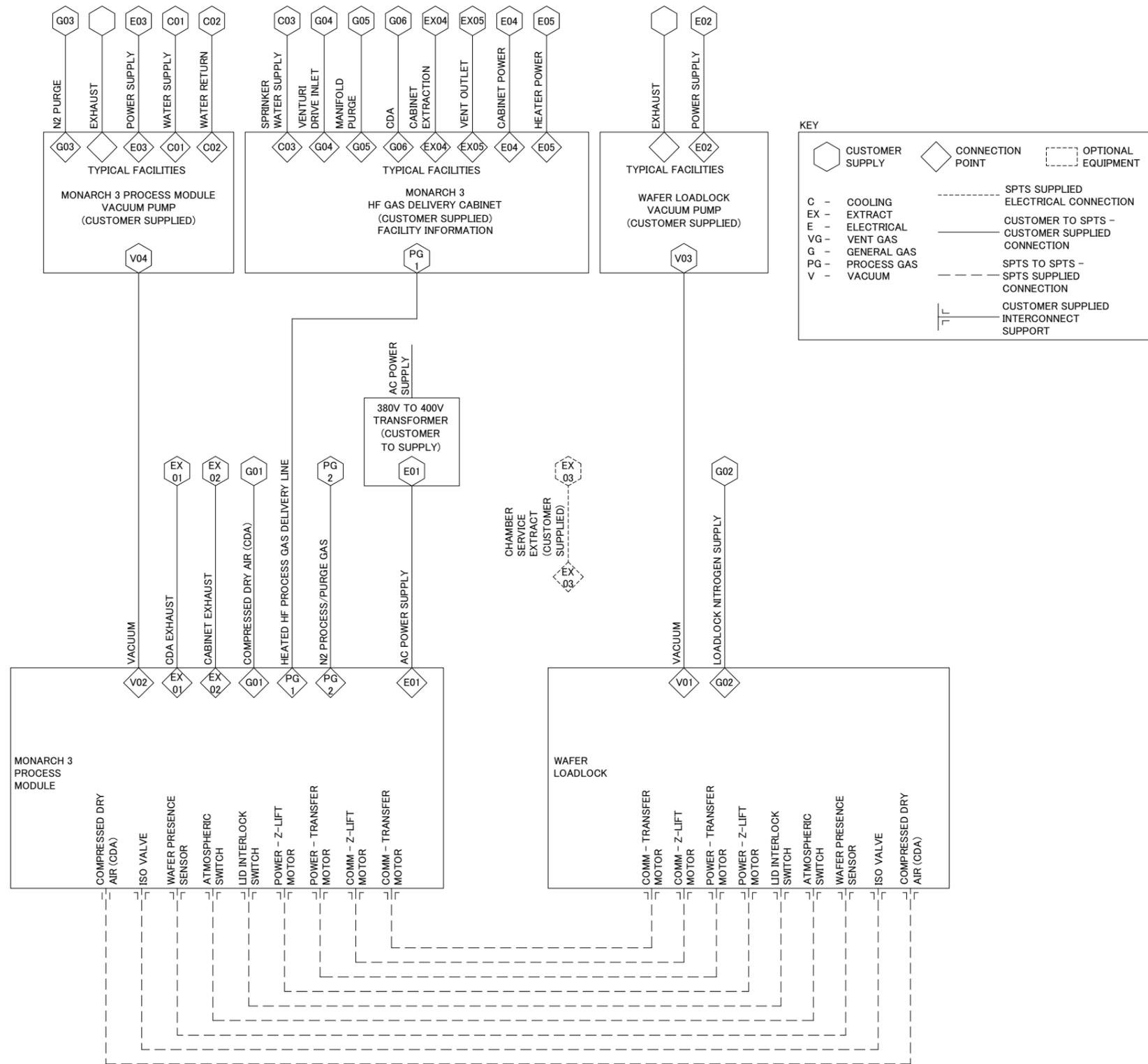
MONARCH 3 PROCESS MODULE  
HF DELIVERY CABINET  
W/ SINGLE PROCESS OUTLET  
(2 CYLINDER CABINET)  
(N2 PURGE PANEL REQUIRED)  
(HEIGHT 2261; WEIGHT 227 kg)  
(CUSTOMER TO SUPPLY)

### SYSTEM NOTES:

1. SPTS RECOMMENDS A MINIMUM CLEARANCE OF 600mm AROUND THE MAIN TOOL AND 500mm AROUND ALL ANCILLARY EQUIPMENT UNLESS SHOWN OTHERWISE.
2. ALL DIMENSIONS ARE APPROXIMATE. DO NOT SCALE. ALL DIMENSIONS ARE IN (mm).
3. PUMPS ARE NOT INTERFACED TO THE MACHINE, SO THEIR DISTANCE IS A FUNCTION OF THE DIAMETER OF THE PUMPING LINE.
4. IT IS THE CUSTOMERS RESPONSIBILITY TO ROUTE THE CABLES IN COMPLIANCE WITH LOCAL ELECTRICAL INSTALLATION REGULATIONS.
5. THE VACUUM LINE BETWEEN PROCESS MODULE AND MAIN DRY PUMP SHOULD CONTAIN HARDWARE NECESSARY (BLANKED OFF CONNECTION PORT WITH ISOLATION VALVE) FOR CONNECTION AND USE OF A BACK-UP PUMP TO REMOVE PROCESS BYPRODUCTS IN THE EVENT OF MAIN PUMP FAILURE/REPLACEMENT.

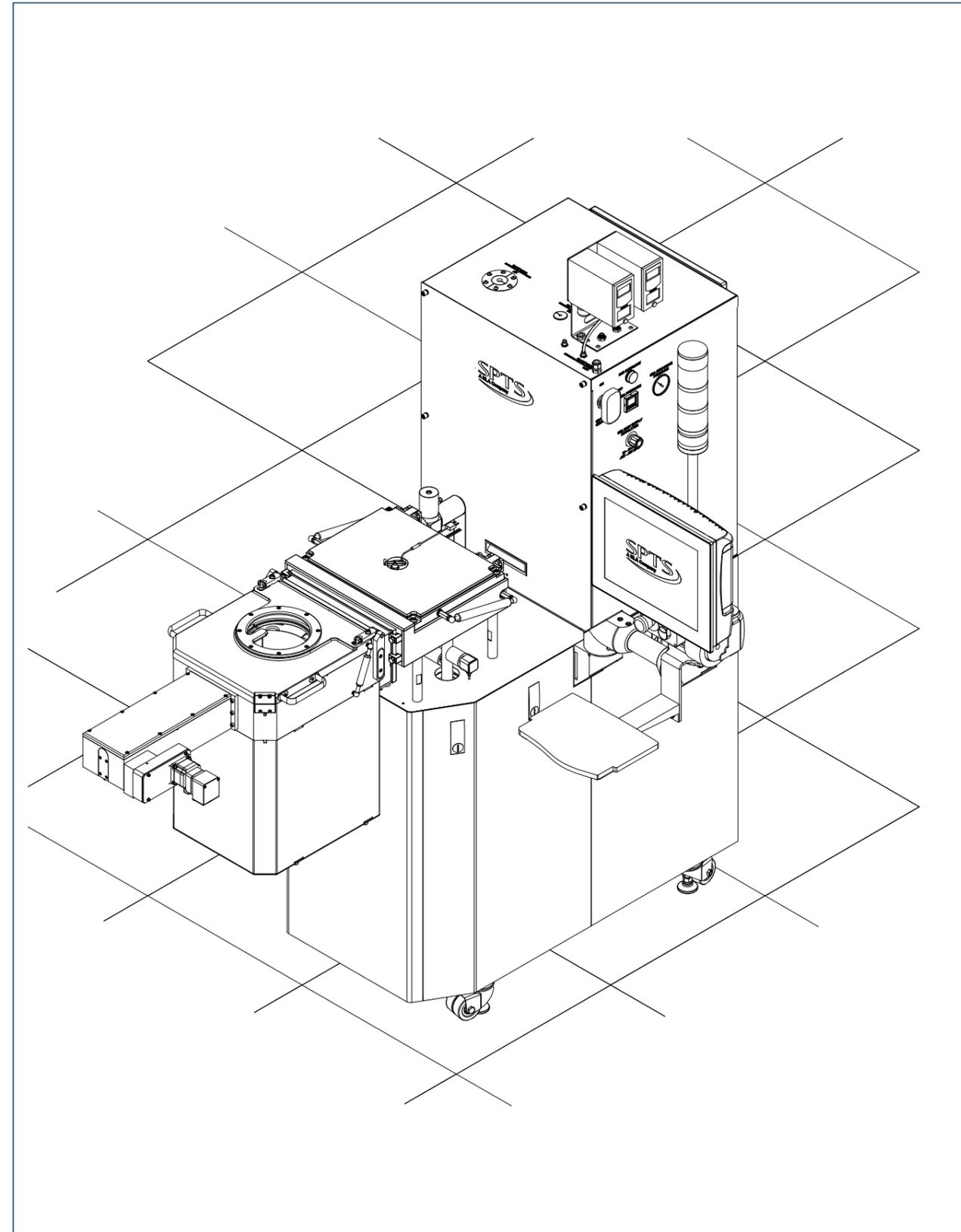


## Facilities Hook-up Diagram



## General Arrangement

Primaxx® Monarch 3  
1620071 ST AGRATE - POLYMI



## Facilities Specification

Primaxx® Monarch 3  
1620071 ST AGRATE - POLYMI

### Systems Environmental Conditions (Clean Room)

Room Temperature		Relative Humidity at 20° C	
Maximum Room Temperature	25° C	Maximum Room Relative Humidity	50 %
Minimum Room Temperature	15° C	Minimum Room Relative Humidity	30 %
Target Room Temperature	20° C	Target Room Relative Humidity	45 %

Note: 1/ Air particle count local to the system - Class 1000 or better  
2/ Operating conditions outside these parameters may have adverse effects to process or hardware.  
If these parameters cannot be met, please contact an SPTS representative for guidance.

### Systems Environmental Conditions (Grey Area)

Room Temperature		Relative Humidity at 20° C	
Maximum Room Temperature	25° C	Maximum Room Relative Humidity	50 %
Minimum Room Temperature	15° C	Minimum Room Relative Humidity	30 %
Target Room Temperature	20° C	Target Room Relative Humidity	45 %

Note: 1/ Air particle count local to the system - Class 10000 or better  
2/ Operating conditions outside these parameters may have adverse effects to process or hardware.  
If these parameters cannot be met, please contact an SPTS representative for guidance.

### Noise

#### Sensitivity

This equipment is not sensitive to noise.

#### Generation

This equipment does not emit significant noise (<75 dBA at operator position).

### Seismic

#### Sensitivity

The equipment is sensitive to vibration. The supporting structure should meet BBN criteria A; i.e. amplitude rates of less than 2000 microinches per second over a frequency range of 8 Hz to 100 Hz.

#### Generation

This equipment does not emit significant vibration.

#### Bracing

When the tool is installed in regions that may require seismic bracing; fixing points are provided for the equipment and its ancillaries.

It is the customers responsibility to provide any additional parts and employ a suitable method of securing the Transport and Process Module to the floor using the Seismic Brackets as the fixing points on the module.

For seismic bracing information for the module's ancillary equipment, refer to their individual OEM Manuals, located in the manual set.



### Electrical Supplies

Ref	E01
Input supply voltage	400 VAC +/- 10 %
Input supply wiring configuration	3 phase, 5-wire
Input supply frequency	50/60 Hz
Peak Power	2.9 kW (Approximate) (See note 1)
Main Circuit Breaker Capacity	20 Amps
Phase to Phase Voltage	400 V (nominal)
Phase to Neutral Voltage	230 V (nominal)
Phase to Ground Voltage	230 V (nominal)
Neutral to Ground Voltage	0 V (nominal) (See note 7)
EPOC Mains Connector (Landing Lug Size) (at PDU)	M8

- Note: 1/ The Peak kVA rating has been calculated using Power Factor of 1.  
 2/ Where the customer's electrical supply does not meet the machines power requirement of 400V, the customer will need to supply a suitable transformer.  
 3/ Electrical connection from the facility supply to the machine input terminals and where applicable, transformers, is required to be performed by a qualified electrician to CE or equivalent local standards. A certificate of compliance is required to confirm the work meets the required standard.  
 4/ The machine must be supplied with an earthed neutral. (If the machine is to be supplied from an Isolation transformer the secondary should have a star configuration with an earthed centre tap providing the neutral).  
 The transformer will need to step from the factory supply voltage either up or down to the tool supply voltage.  
 There is a wide variation of installation requirements for system transformers according to various local and international regulations.  
 It is the customers responsibility to provide correct cable sizing, over current protection and local isolation for the transformer in accordance local electrical safety requirements (often a local electrical contractor is commissioned to take responsibility for all aspects of the supply and installation of the transformer).  
 5/ SPTS does not specify wire sizes. It is the responsibility of the customer or their contractor to specify the cable and size of the breaker upstream accordingly to protect that cable. The type of cable used and the installation method will influence the required conductor area.  
 6/ It is the responsibility of the customer to install a lockable circuit breaker upstream of the Main Tool Disconnect (Circuit Breaker CB1).  
 SPTS recommend that this disconnect device should be locked out and tagged out whenever the Main Tool Disconnect (Circuit Breaker CB1) is turned OFF.  
 7/ The Neutral to Ground Voltage may vary, therefore please contact SPTS for further information if required.



### Electrical Supplies continued

<b>Ref</b>	<b>E02 (Ebara EV-A03 Transport Pump)</b>
Input supply voltage	200-240 V +/- 10 %
Input supply wiring configuration	3 wire (1 phase)
Input supply frequency	50/60 Hz +/- 5 %
Power Capacity	0.8 kVA
Main Fuse	(contact pump manufacturer for details)
SCCR	(contact pump manufacturer for details)
EPOC Mains Connector Manufacturer (at pump)	(contact pump manufacturer for details)
EPOC Mains Connector Type (at pump)	(contact pump manufacturer for details)
UPOC Suitable Wire (at customer connection)	(contact pump manufacturer for details)
<b>Ref</b>	<b>E03 (Ebara EV-S20P Monarch 3 module Pump)</b>
Input supply voltage	380-440 V +/- 10 %
Input supply wiring configuration	4 wire (3 phase + Earth)
Input supply frequency	50/60 Hz +/- 5 %
Power Capacity	3.2 kVA
Main Fuse	15 A
SCCR	10 kA
EPOC Mains Connector Manufacturer (at pump)	(contact pump manufacturer for details)
EPOC Mains Connector Type (at pump)	(contact pump manufacturer for details)
UPOC Suitable Wire (at customer connection)	(contact pump manufacturer for details)
<b>Ref</b>	<b>E04 (Monarch 3 module HF Supply Cabinet Power Supply)</b>
Input supply voltage	100-240 VAC @ 150 VA maximum
Input supply phase	Single-phase-to-neutral (Neutral solidly grounded)
Input supply wires	3
Input supply frequency	50/60 Hz
Minimum Breaker Rating By Manufacturer	240 V, 3 Amps, 10,000 rms saic
<b>Ref</b>	<b>E05 (Monarch 3 module HF Supply Cabinet Heater Trace Supply)</b>
Input supply voltage	208-240 VAC (Optional 110V-120V)
Input supply phase	Single Phase
Input supply wires	3
Input supply frequency	50/60 Hz
Minimum Breaker Rating By Manufacturer	10 Amps GFCI

- Note: 1/ Electrical connection from the facility supply to the chiller transformer, is required to be performed by a qualified electrician to CE or equivalent local standards. A certificate of compliance is required to confirm the work meets the required standard.  
 2/ The customer is responsible for supplying a circuit breaker upstream from the Chiller Transformer at half of the rated current of the chiller.  
 3/ The EPOC elevation is the distance from the floor to the centre of the connector mating face.  
 See the Additional Information Section for further information.

### Earth Bonding

Note: Earth bonding safety checks must be carried out by approved personnel before connecting facilities to the equipment and before mounting process modules to existing installations. Please refer to pre-installation procedures provided in the system documentation.



### Service Liquid Requirements

Ref	House Water Source General Specification
Temperature Inlet	15-25° C
Resistivity	>2500 Ω.cm
Acidity - Alkalinity	7 +/- 0.5 pH
Hardness	<7 mg/L of CaCO2
Solids ppm	<100 mg/L
Chloride - CL	<20 ppm
Total Sodium Chloride	<50 ppm
Molybdenum - Mo	<1 ppm
Ammonia - NH4	<5 ppm
Sodium - Na	<5 ppm
Nitrate	<10 ppm
Sulfate	<30 ppm
Maximum Particle Size	<100 microns

Ref	C01/C02 (Monarch 3 module Pump Water Supply/Return)
Coolant Type	House Water (See House Water Source General Specification)
Maximum Pressure	4 bar
Minimum Pressure Differential	2 bar
Minimum Flow Rate	1.5 lpm
Maximum Flow Rate	3.0 lpm
EPOC Fitting Material (at pump)	Stainless Steel
EPOC Fitting Size (at pump)	1/4 inch
EPOC Fitting Type (at pump)	Swagelok
EPOC Elevation (distance from floor)	62 mm (Supply) / 77 mm (Return) (See note)
Recommended Pump	Ebara EV-S20P

Ref	C03 (Monarch 3 HF Supply Cabinet Sprinkler Water Supply)
Coolant Type	House Water (See House Water Source General Specification)
Supply Pressure	2.14 bar
Flow Rate	145 lpm (See note 1b)
EPOC Fitting Material (at HF Supply Cabinet)	Stainless Steel
EPOC Fitting Size (at HF Supply Cabinet)	1/2 inch
EPOC Fitting Type (at HF Supply Cabinet)	FNPT

Note: The EPOC elevation is the distance from the floor to the centre of the connector mating face.



### Process Liquids

Ref	Specification (Monarch 3 module Alcohol Supply)
Liquid Required	Alcohol
Alcohol Source Canister Maximum Liquid Volume	4000 ml
Maximum Liquid Alcohol Flow Rate	2 ccm
Alcohol Canister Supply Pressure	5 to 10 PSIG

Note: SPTS specifies and approves the use of one of the following consumables, any attempt at substituting an item with one that is not listed must first be reviewed and approved by SPTS. Additional information is available by contacting SPTS.

Alcohol: Supplier: JT Baker  
Additional Description: Alcohol, Anhydrous, Reagent, PHOTOREX Reagent  
Ordering Numbers: 9401-06 Poly Bottle 4L

Alcohol: Supplier: Merck  
Additional Description: VLSI 99.99 %, Plastic Bottle

# Facilities Data Sheet

## Facilities Specification continued

Primaxx® Monarch 3  
1620071 ST AGRATE - POLYMI



### General Gas Requirements

Ref	G01 (System CDA supply)
Gas Required	Compressed Dry Air (CDA)
Pressure	60-80 PSig
Cleanliness Required	<5 micron particles
Maximum Flow Rate	1 slpm
EPOC Fitting Material (at machine)	Stainless Steel 316L
EPOC Fitting Size (at machine)	3/8 inch
EPOC Fitting Type (at machine)	Swagelok
Ref	G02 (Wafer Loadlock Nitrogen Supply)
Gas Required	Vent Nitrogen
Pressure	20-40 PSig
Regulation Required?	Yes
Purity Specification	99.99 %
Filtration	0.003 µm (See note 1)
Minimum Flow	0 slpm (See Note 2)
Average Flow	>0 slpm (See Note 2)
Maximum Flow	50 slpm (See Note 2)
EPOC Fitting Material (at machine)	Stainless Steel 316L
EPOC Fitting Size (at machine)	1/4 inch
EPOC Fitting Type (at machine)	VCR (Male)
EPOC Elevation (distance from floor)	50 mm (See note 4)

Note: 1/ The customer is responsible for supplying a clean regulated filtered gas supply to the tool. Typical filtration to 0.003µm particulate size.  
2/ Average/Maximum Flow/Pressure is dependent upon application.  
3/ Maximum pressure is 100 PSig. Safety Relief Value must be provided for the internal solenoids.  
4/ The EPOC elevation is the distance from the floor to the centre of the connector mating face.  
See the Additional Information Section for further information.

# Facilities Data Sheet

## Facilities Specification continued

Primaxx® Monarch 3  
1620071 ST AGRATE - POLYMI



### General Gas Requirements continued

Ref	G03 (Ebara EV-S20P Monarch 3 module Pump Purge)
Gas Required	Nitrogen
Pressure [Gauge Pressure]	Supply 0.15 - 0.7 MPa [Setting 0.09 - 0.12 MPa]
Approximate Flow [N2-0 Mode]	17~20 Pa m³/s [2.4 Pa m³/s]
EPOC Fitting Material (at pump)	Stainless Steel
EPOC Fitting Size (at pump)	1/4 inch
EPOC Fitting Type (at pump)	Swagelok
EPOC Elevation (distance from floor)	97 mm (See note 5)
Ref	G04 (Monarch 3 module HF Supply Cabinet N2 Supply Venturi Drive)
Gas Required	Nitrogen
Pressure	85-95 PSig (See note 4)
Flow Rate	50-60 lpm
EPOC Fitting Material (at HF Supply Cabinet)	Stainless Steel 316L
EPOC Fitting Size (at HF Supply Cabinet)	1/4 inch
EPOC Fitting Type (at HF Supply Cabinet)	Swagelok
EPOC Elevation (distance from floor)	1768 mm (See note 5)
Ref	G05 (Monarch 3 module HF Supply Cabinet Purge)
Gas Required	Nitrogen, UHP Grade
Pressure	80-90 PSig (See note 4)
Flow Rate	2.5-2.8 lpm (5-6 CFH)
EPOC Fitting Material (at HF Supply Cabinet)	Stainless Steel 316L
EPOC Fitting Size (at HF Supply Cabinet)	1/4 inch
EPOC Fitting Type (at HF Supply Cabinet)	Swagelok
EPOC Elevation (distance from floor)	1768 mm (See note 5)
Ref	G06 (Monarch 3 module HF Supply Cabinet)
Gas Required	Compressed Dry Air (CDA)
Flow Rate Required	1 lpm (See note 4)
Cleanliness Required	<5 micron particles
Flow Rate (Maximum)	1 lpm (each)
EPOC Fitting Material (at machine)	Stainless Steel 316L
EPOC Fitting Size (at machine)	1/4 inch
EPOC Fitting Type (at machine)	Swagelok

Note: 1/ The customer is responsible for supplying a clean regulated filtered gas supply to the tool. Typical filtration to 0.003µm particulate size.  
2/ Average/Maximum Flow/Pressure is dependent upon application.  
3/ Maximum pressure is 100 PSig. Safety Relief Value must be provided for the internal solenoids.  
4/ Contact cabinet supplier to determine requirements: Separate cylinder, purge manifold and pressure relief valve (125 PSig) may be required.  
5 The EPOC elevation is the distance from the floor to the centre of the connector mating face.  
See the Additional Information Section for further information.



### Vacuum Connections

<b>Ref</b>	<b>V01</b> (Transport Roughing)
Vacuum Required	Rough
EPOC Fitting Material (at machine)	Stainless Steel
EPOC Fitting Type & Size (at machine)	KF40
EPOC Elevation (distance from floor)	207.6 mm (See note 5)
UPOC Pipework Diameter	235 mm (See note 2&3)
Recommended Pump	Ebara EV-A03 (Customer to supply)
<b>Ref</b>	<b>V02</b> (Monarch 3 module)
Vacuum Required	Process
Rate	≥1400 lpm
EPOC Fitting Material (at machine)	Stainless Steel
EPOC Fitting Type & Size (at machine)	NW40 Flange
EPOC Elevation (distance from floor)	57 mm (See note 5)
UPOC Pipework Diameter	Unknown (See notes 1 & 2)
Recommended Pump	Ebara EV-S20P (Customer to supply)
<b>Ref</b>	<b>V03</b> (Ebara EV-A03 Wafer Loadlock Pump)
EPOC Fitting Material (at machine)	Stainless Steel
EPOC Fitting Type & Size (at machine)	NW50
UPOC Pipework Diameter	38.1 mm (See notes 1&2)
EPOC Elevation (distance from floor)	235 mm (See note 5)
<b>Ref</b>	<b>V04</b> (Ebara EV-S20P Monarch 3 module Pump)
EPOC Fitting Material (at machine)	Stainless Steel
EPOC Fitting Type & Size (at machine)	NW50
UPOC Pipework Diameter	38.1 mm (See notes 1&2)
EPOC Elevation (distance from floor)	228 mm (See note 5)

Note: 1/ The pipe work diameter is determined as follows;

In the first instance, preferably the largest diameter (100 mm) should be used for the entire total length of the pipe.

If there are constraints then the following must be applied, taking note of bends in the total length:

The pipe work minimum diameter is determined by its total length.

i.e. <10 m long = 63 mm diameter, <20 m long = 75 mm diameter, >20 m long = 100 mm diameter. Each bend equates to 0.6 m.

Only swept bends should be used and 0.6 m per bend should be included in the pipe's total length.

2/ The customer should contact us to confirm the adequacy of the foreline should there be any doubt.

3/ In order to check the foreline for leaks, SPTS recommend fitting an isolation valve on the chamber pump.

4/ SPTS recommend that one metre of flexible pipework is used either on its own or as part of a solid pipe pumping line to prevent any vibration from the pump transferring to the PM.

5/ The EPOC elevation is the distance from the floor to the centre of the connector mating face.

See the Additional Information Section for further information.



### Exhaust Plumbing

<b>Ref</b>	<b>EX01</b> (Monarch 3 CDA Exhaust) (See note 2)
Exhaust Required	General
Temperature Outlet	Ambient (~21 °C)
Pressure	-10 to -20 Pa
EPOC Fitting Material (at machine)	Plastic
EPOC Fitting Size (at machine)	10 mm (ID)
EPOC Fitting Type (at machine)	Push Fit
EPOC Elevation (distance from floor)	158.3 mm (See note 5)
<b>Ref</b>	<b>EX02</b> (Monarch 3 Cabinet Exhaust)
Rate	1 IWC @ 100 (m³/hr) (See note 3)
EPOC Fitting Material (at machine)	Stainless Steel
EPOC Fitting Size (at machine)	4 inch OD
EPOC Fitting Type (at machine)	Bond or clamp to metal spigot
<b>Ref</b>	<b>EX03</b> (Chamber Service Extract) (Customer to supply)
Exhaust Required	Toxic/Pyrophoric
Temperature Outlet	Ambient (~21 °C)
Pressure	>60 Pa Below Atmosphere
EPOC Fitting Material	Stainless Steel
EPOC Fitting Size	150 mm
EPOC Fitting Type	Customer Supplied
<b>Ref</b>	<b>EX04</b> (Monarch 3 module HF Supply Cabinet Extraction)
Pressure	-1.0 inch H2O (with access hatch closed)
Flow	75 cfm (with access hatch closed)
EPOC Fitting Material (at HF Supply Cabinet)COPY	Stainless Steel
EPOC Fitting Size (at HF Supply Cabinet)	6 inches OD
EPOC Fitting Type (at HF Supply Cabinet)	Bond or clamp to metal spigot
EPOC Elevation (distance from floor)	2159 mm (See note 5)
<b>Ref</b>	<b>EX05</b> (Monarch 3 module HF Supply Cabinet Vent Outlet) (See note 4)
EPOC Fitting Size (at HF Supply Cabinet)	3/8 inch
EPOC Fitting Type (at HF Supply Cabinet)	Swagelok
EPOC Elevation (distance from floor)	1763.5 mm (See note 5)

Note: 1/ SPTS recommend that where hazardous gases are used, customers should supply an appropriate gas detection system, which can be interfaced to the machine using an external interlock connection provided.

2/ The CDA exhaust line is fitted with an exhaust silencer which can be removed to allow the customer to connect their return line.

3/ Customer to supply damper/blow gate and gauge for -30 Pa +/- 2 Pa control when gas box door is closed.

4/ Contact Cabinet supplier to determine requirements.

5/ The EPOC elevation is the distance from the floor to the centre of the connector mating face.

# Facilities Data Sheet

## Facilities Specification continued

Primaxx® Monarch 3  
1620071 ST AGRATE - POLYMI

### Process Gas Requirements (PM Monarch 3)

<b>Ref</b>	<b>PG1</b> (HF Gas Line) (Refer to HF Delivery Schematic, Example Configs 1&2)
Gas Required	Hydrogen Fluoride, Anhydrous
Required Pressure	300 - 600 torr (at Gas Box)
Maximum Flow Rate	2 slpm
Purity	99.99%
Filtration	Do not install filter
EPOC Fitting Material (at machine)	Stainless Steel 316L
EPOC Fitting Size (at machine)	1/4 inch
EPOC Fitting Type (at machine)	MVCR (Male)
EPOC Fitting Type (at HF Cylinder)	
<b>Ref</b>	<b>PG2</b> (Process Gas / Purge)
Gas Required	Nitrogen
Required Pressure	20-40 PSig
Maximum Flow Rate	10 slpm
Purity	99.999%
Filtration	0.003 µm (See note)
EPOC Fitting Material (at machine)	Stainless Steel 316L
EPOC Fitting Size (at machine)	1/4 inch
EPOC Fitting Type (at machine)	FVCR (Female)

Note: The customer is responsible for supplying a clean regulated filtered gas supply to the tool, unless otherwise directed.  
Typical filtration to 0.003 µm particulate size.

### Additional Information (PM Monarch 3)

Note: 1/ The Anhydrous HF supply line must be heated to 45° C to 50° C. Heat gradient permitted with higher temperature at gas box.  
2/ Anhydrous HF supply line must use absolute pressure regulator.  
3/ Anhydrous HF supply line should be double wall as per the following:  
a/ Process line to be 316L seamless tubing  
b/ Containment tube to be 316L welded tubing  
4/ Anhydrous HF supply line to be chemically cleaned and passivated to comply with or exceed ASTM G-93 level-A and CGA G4.1  
5/ Monarch 25 materials:  
a/ Nitrogen: Process tubing: 316L SST, 0.25 inch O.D.  
b/ Alcohol: Process tubing: 316L SST, 0.25 inch O.D.  
c/ HF: Process tubing: 316L SST, 0.25 inch O.D.  
d/ Upper & lower chamber parts: Nickel plated Aluminum 6061  
e/ o-rings: Chemraz 570  
f/ MFCs: Wetted materials: 316L SST

### HF Delivery Schematic, Example Notes

HF Delivery Schematic, Example Notes:

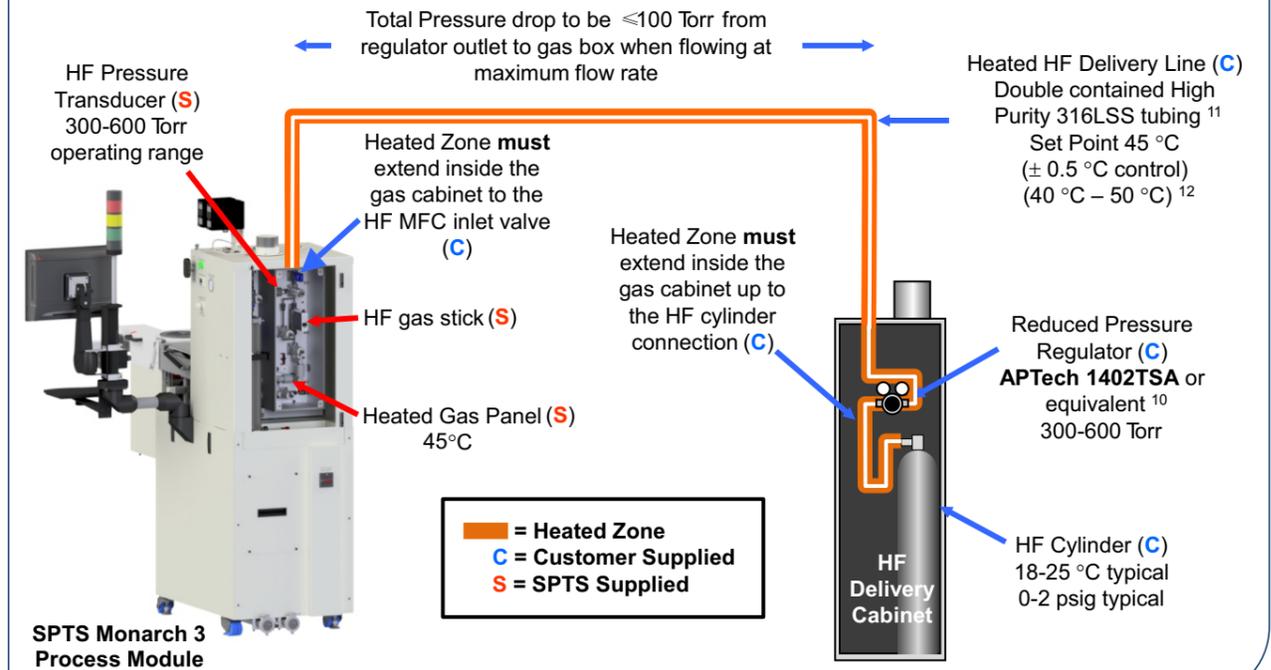
- 1/ The heated delivery zone starts at the HF cylinder valve and continues without interruption to the HF MFC inlet valve in the gas box.
- 2/ The HF delivery line heater should be set to 45° C (controlled to +/- 0.5° C) with all points in the line between 40° C - 50° C.
- 3/ An optional second heated zone can be used inside the HF cabinet. The delivery cabinet manifold heater should be set to 40° C (controlled to +/- 0.5° C) with all points in the manifold between 35° C - 45° C. If this option is not used the heater in #2 MUST extend to the HF cylinder valve through the gas cabinet wall as described in #1.
- 4/ It is preferred that if there is a temperature gradient in the delivery path that the direction of the gradient is cooler towards the cylinder end.
- 5/ Typical HF cylinder pressure at RT is 0-2 PSig. If the HF cabinet is not in a controlled environment, pressures below this range may result and limit the delivery of the HF. This should be avoided.
- 6/ HF cabinet delivery pressure is to be regulated between 300-600 torr.
- 7/ An absolute or sub atmospheric pressure regulator APtech 1402TSA or equivalent is REQUIRED.
- 8/ Ideal HF delivery pressure (while flowing) at the HF MFC inlet is between 300-600 torr. This will give the pressure drop required to deliver the full range of HF to the MFC.
- 9/ The pressure drop across the HF delivery line should not exceed 100 torr at maximum flow. Delivery line length should be kept to a minimum or a larger diameter line may be required for extended runs.  
NOTE: In order to minimize the pressure drop do not install a filter in the HF delivery path. The Process Module Gas Panel contains a pre-installed filter in the HF delivery gas.
- 10/ A reduced pressure regulator capable of sub-atmospheric downstream pressures must be used. The regulator MUST also operate in a manner that prevents downstream pressures from "leaking" up when gas flows are zero.
- 11/ Double containment HF delivery line is recommended. Inner process line to be seamless, electropolished, 316L SS.  
All fittings should be limited to within vented areas.
- 12/ All points on the heated HF delivery line should be measure between 40° C and 50° C.
- 13/ All points on the independently heated cabinet manifold should measure between 35° C and 45° C.

# Facilities Data Sheet

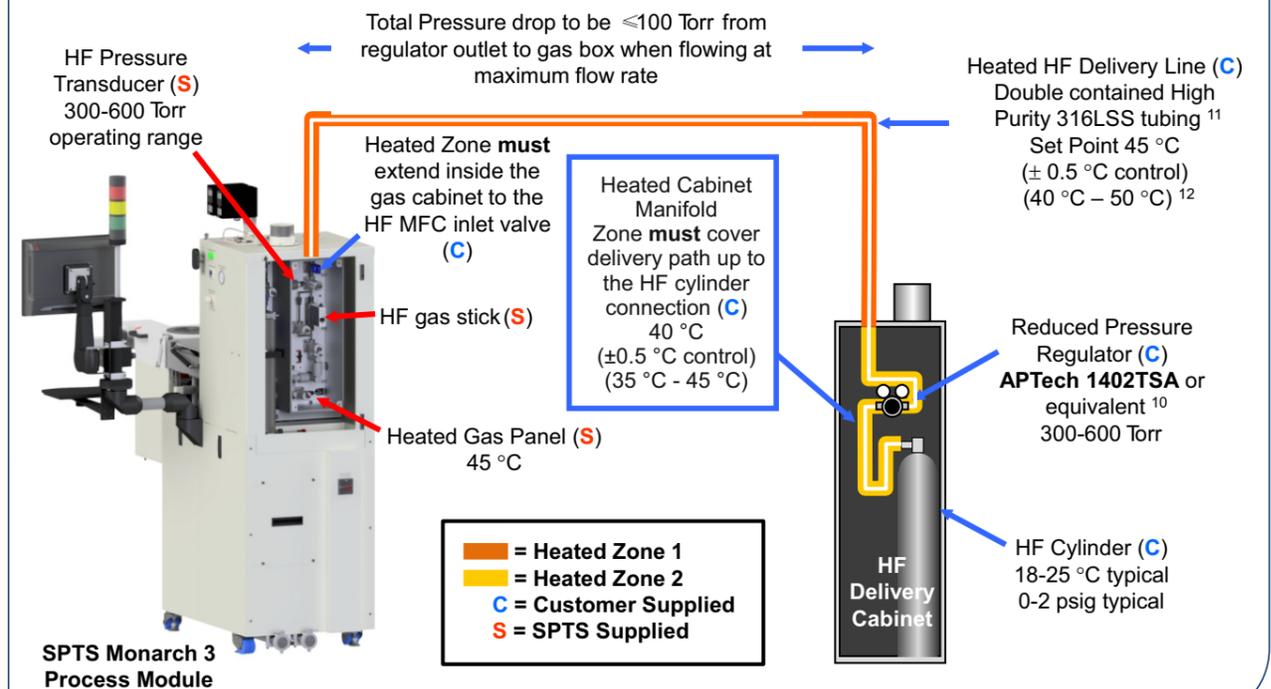
## Facilities Specification continued

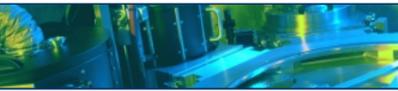
Primaxx® Monarch 3  
1620071 ST AGRATE - POLYMI

### HF Delivery Schematic, Example - Configuration 1



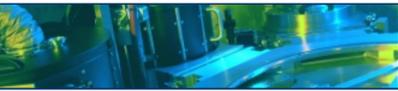
### HF Delivery Schematic, Example - Configuration 2





### Additional Information

Note: 1/ A helium leak detector or similar equipment must be made available for SPTS's appointed engineer to use to commission the equipment. Failure to provide this equipment may result in unnecessary delays in the commissioning of the system.  
 2/ All facilities points of connection to have flexibility designed in to allow for vibration due to a seismic event.  
 3/ SPTS recommends a noise survey assessment as part of the installation.  
 SPTS also recommends positioning the pumps in the grey area away from the operators point of use, if possible.  
 4/ An input from a fire system can be linked in to the SPTS EMO circuit if required.  
 5/ It is the customers responsibility to route the cables between the main machine and electrical cabinets in compliance with local electrical installation regulations.  
 6/ The EPOC Elevation distance shown in these tables are nominal dimensions; taken from the Datum (floor) height and calculated when the base of the frame is at it's lowest point from the floor. The frame sits on adjustable feet, therefore after levelling the machine, the actual dimensions could differ from those quoted, by up to the limit of the adjustment range of the feet. To ensure that pipework and cabling are not over-stressed during installation, SPTS recommend that customer's pre-facilitised pipework and cabling should be designed to be capable of absorbing the maximum height difference, caused by the adjustment of the feet. Connections to the internal Gas box gas lines should not be over-stressed during installation. SPTS recommend that customer's pre-facilitised pipework should be capable, by design, of absorbing any height difference caused by the adjustment of the feet.  
 7/ None of the flange or connection points on the system are to be load bearing. It is the customers responsibility to ensure the facilities fitting are properly supported.



### Revision History

Revision	Date	System Configuration Document (SCD) Revision	Description of change
A	08/01/24	-	INITIAL RELEASE
-	-	-	-