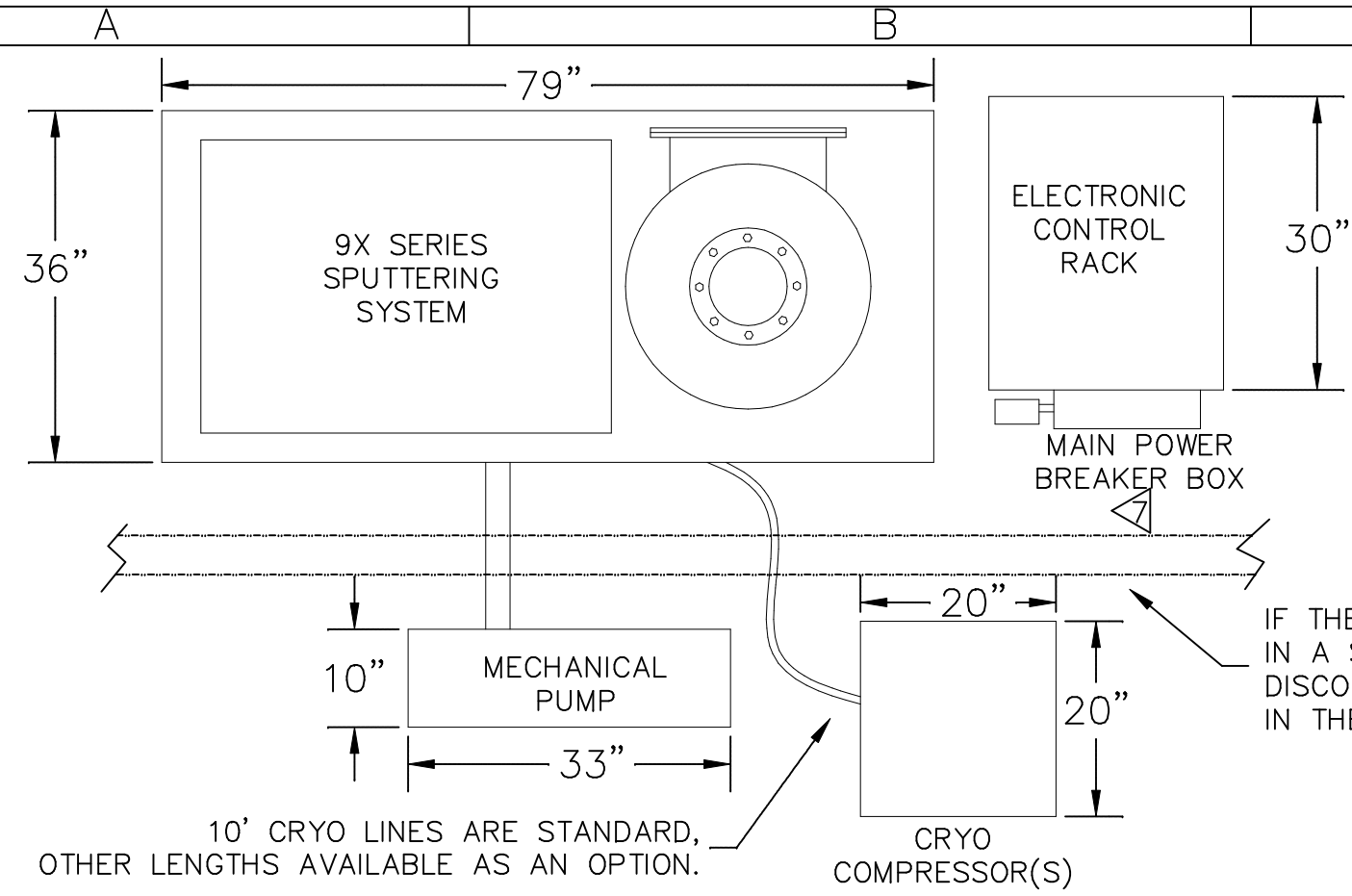


ORIGINAL

DRAWING #	100302	Rev.

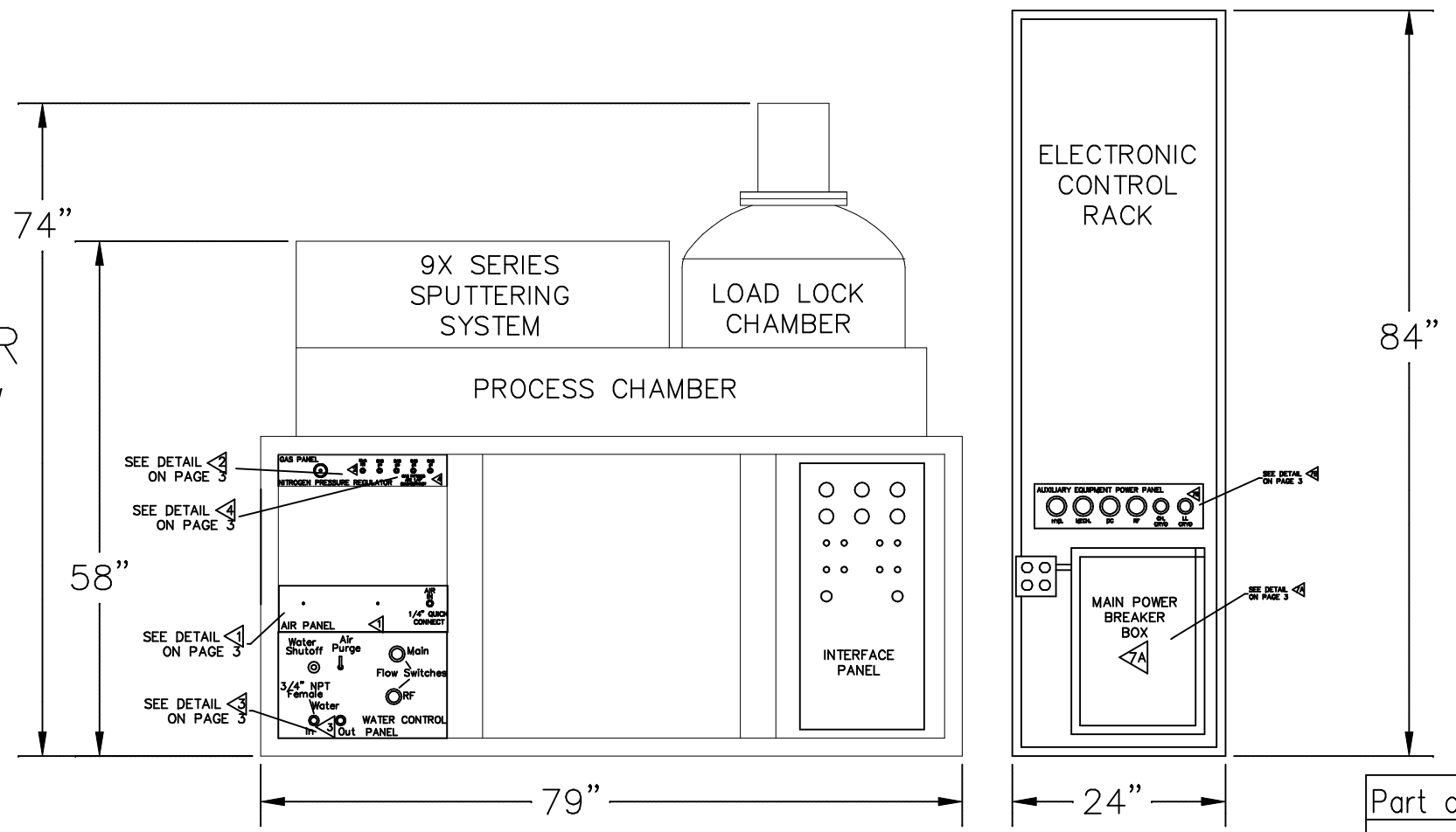
TOP VIEW



IF THE PUMPS ARE LOCATED IN A SERVICE CHASE, ELECTRICAL DISCONNECTS MUST BE PROVIDED IN THE CHASE.

10' CRYO LINES ARE STANDARD, OTHER LENGTHS AVAILABLE AS AN OPTION.

REAR VIEW



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TOLERANCE	TITLE	9X Series Sputter System
Angles $\pm 1/2^\circ$	Material Used	Modernized MRC (KDF) 900 Series
.XX $\pm .01$	Init. Date	
.XXX $\pm .005$	Drawn by: MNS	03/07/10
Fractions $\pm 1/64$	Checked by:	
Finish Machined	Approved by:	
	Designed by:	
	QC Approved:	
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SCALE: _____ DO NOT SCALE DRAWING	1 OF 3	DRAWING #100302

Part of Assembly #

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1. AIR - COMPRESSED:

Pressure: Ambient \*  
Quality: Dry, oil free and Particulate Free. \*\*  
FLOW RATE: 400 SCFM

\* MEASURED AT THE CONNECTION ON THE UTILITY PANEL AND HELD CONSTANT WITHIN 5 PSI  
\*\* SUCH AIR SHOULD HAVE THE FOLLOWING PROPERTIES:  
DEW POINT: -40° F. (4° C.) OR LOWER.  
OIL CONTENT: LESS THAN ONE PART PER MILLION  
PARTICLE SIZE: LESS THAN .09 MICRON.  
EQUIPMENT TO SUPPLY SUCH AIR IS AVAILABLE FROM PALL CORP., PORT WASHINGTON, N.Y. AND OTHERS SUPPLIERS.

2. DRY NITROGEN:

PRESSURE: 15-20 PSIG. \*  
QUALITY: HIGH PURITY, DRY  
FLOW RATE: 120 SCFM

\* MEASURED AT THE CONNECTION ON THE UTILITY PANEL AND HELD CONSTANT WITHIN 5 PSIG.

3. WATER:

PRESSURE: 40-50 PSIG (SYSTEM DIFFERENTIAL PRESSURE TO BE 40 PSIG OR HIGHER)  
TEMPERATURE: 50° F (10°C) - 74° (24° C.) AND SUFFICIENTLY ABOVE AMBIENT DEW POINT TO PREVENT CONDENSATION.

QUALITY: PARTICLES LESS THAN 100 MICRON  
RESISTIVITY: 100 KOHMS/CM OR GREATER \*  
FLOW RATE: 5.0 GAL /MIN.

\* MEASURED INTO AN OPEN CONTAINER.

4. ARGON:

PRESSURE: 5-10 PSIG.  
QUALITY: PURITY 99.999% SCIENTIFIC GRADE ULTRA HIGH PURITY \*

\* RECOMMEND STAINLESS STEEL INTERCONNECT PLUMBING AND ULTRA HIGH PURITY STAINLESS STEEL DUAL STAGE REGULATOR, COMPATIBLE FOR LEAK TESTING, TO BE USED FOR ARGON.  
ALL GAS LINES MUST BE LEAK TIGHT TO SYSTEM TO INSURE PURITY.

5. AIR - ROOM:

IT IS RECOMMENDED THAT THE ROOM AMBIENT AIR BE 70° F (22°C) +/- 5° (2.3° C).  
CLEAN ROOM ENVIRONMENT, CLASS 10,000 OR BETTER IS RECOMMENDED. RELATIVE HUMIDITY 40% - 60% (NON-CONDENSING).

6. AUXILIARY POWER FOR TEST AND MAINTENANCE:

-100 VAC 60 HZ., 4 OUTLETS MINIMUM, 15 AMP. EA., AVAILABLE IN IMMEDIATE AREA.  
-A TELEPHONE SHOULD BE LOCATED NEAR THE SYSTEM FOR THE CONVENIENCE OF SERVICE PERSONNEL.  
-A HIGH SPEED INTERNET CONNECTION SHOULD BE LOCATED NEAR THE SYSTEM FOR THE CONVENIENCE OF THE SERVICE PERSONNEL.

7A ELECTRICAL POWER:

208 VAC 60 HZ. - Y CONFIGURATION, 3 PHASE, 5 WIRE, SEPARATE GROUND AND NEUTRAL  
NOTE: CUSTOMER CAN UTILIZE AN EXTERNAL 45 KVA STEP-DOWN OR STEP-UP TRANSFORMER TO ACCOMMODATE OTHER AC POWER INPUT VOLTAGES.  
50 HZ. COMPATABILITY IS AVAILABLE UPON REQUEST.  
(REQUIRES FREQUENCY CONVERTER FOR CRYO-PUMP COMPRESSOR AND 50 HZ. MOTOR ON MECHANICAL PUMP AND HYDRAULIC PUMP.)

OVERALL LINE IMPEDANCE: 0.1 OHM MAX.  
MAIN POWER LINE MUST BE TRANSIENT FREE.  
PRIMARY AC POWER INPUT IS TO THE REAR OF THE ELECTRONICS CONTROL RACK  
THE ELECTRONICS CONTROL RACK PROVIDES ALL AC & DC POWER TO THE MAIN VACUUM SYSTEM.

7B THE HYDRAULIC PUMP PACKAGE, THE MECHANICAL PUMP, THE CRYO PUMP(S), AND THE DC AND RF SPUTTERING POWER SUPPLIES GET THEIR AC POWER FROM A SEPARATE PANEL LOCATED AT THE REAR OF THE ELECTRONICS CONTROL RACK

8. ALL UTILITY CONNECTIONS SHOULD BE FLEXIBLE TO ALLOW SOME REPOSITIONING OF THE SYSTEM WHEN NECESSARY FOR MAINTENANCE PERSONNEL ACCESS. COMPLETE ACCESS, A MINIMUM OF 24 INCHES, ALL AROUND THE SYSTEM IS REQUIRED FOR SERVICING.
9. SHOULD IT BECOME NECESSARY AT ANY TIME TO CHECK THE SYSTEM FOR LEAKS, IT IS THE CUSTOMERS RESPONSIBILITY TO PROVIDE A WORKING LEAK DETECTOR AT A MINIMUM SENSITIVITY OF 2.0 X 10<sup>-18</sup> ST. ATM. CC/SEC. FOR HELIUM AT FULL PUMPING SPEED TO BE USED BY MAT-VAC SERVICE PERSONNEL.
10. EXTERNAL SHUTDOWN VALVES AND FUSE DISCONNECTS ARE RECOMMENDED FOR ALL UTILITIES. DUAL STAGE ULTRA HIGH PURITY REGULATORS ARE REQUIRED FOR ALL PROCESS GASSES.
11. SYSTEM MAIN FRAME MUST BE GROUNDED TO THE NEAREST HIGH VOLTAGE EQUIPMENT EARTH GROUND. CLOSE PROXIMITY TO THE SYSTEM IS PREFERABLE.  
ALL EQUIPMENT GROUNDING MUST BE APPROVED BY A LICENSED ELECTRICIAN AS PER NFPA 70: NATIONAL ELECTRIC CODE, OR OTHER COUNTRY EQUIVALENT.  
THE SYSTEM ELECTRONICS CONTROL RACK IS TO BE GROUNDED TO THE SYSTEM MAIN FRAME.
12. CAUTION: EQUIPMENT FAILURES ATTRIBUTED TO:
  - INSUFFICIENT COOLANT FLOW
  - INPUT POWER OF INSUFFICIENT QUALITY
  - FAILURE TO MAINTAIN THE INTEGRITY OF COOLING WATER CIRCUIT.
 CAUTION MUST BE EXERCISED WHEN A CLOSED LOOP WATER RECIRCULATOR (CHILLER) IS UTILIZED TO PREVENT EXCESSIVE WATER/BACK PRESSURE WHICH MAY DEGRADE WATER FITTING SEALS RESULTING IN MAJOR WATER LEAKS.
13. INITIAL INSPECTION OF ALL UTILITIES AND INITIAL TURN-ON OF THE SYSTEM BY A MAT-VAC FIELD REPRESENTATIVE IS RECOMMENDED.

NOTE; ANY OTHER DEVIATION FROM THE REQUIREMENTS OF THIS DOCUMENT MAY EFFECT THE WARRANTY STATUS OF THE EQUIPMENT.

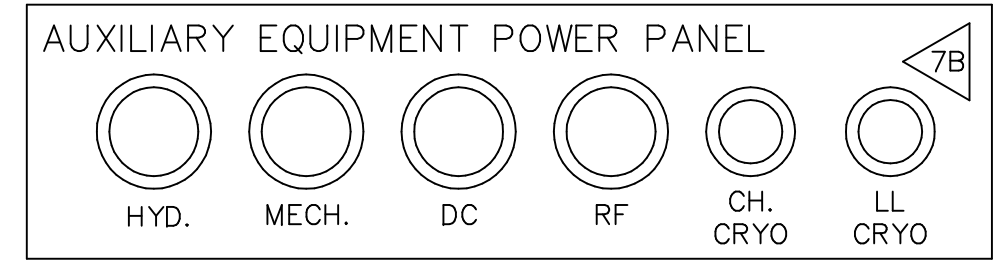
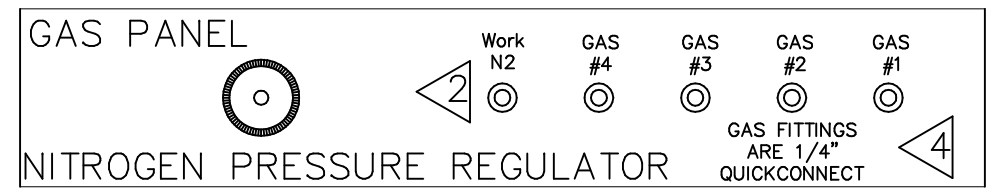
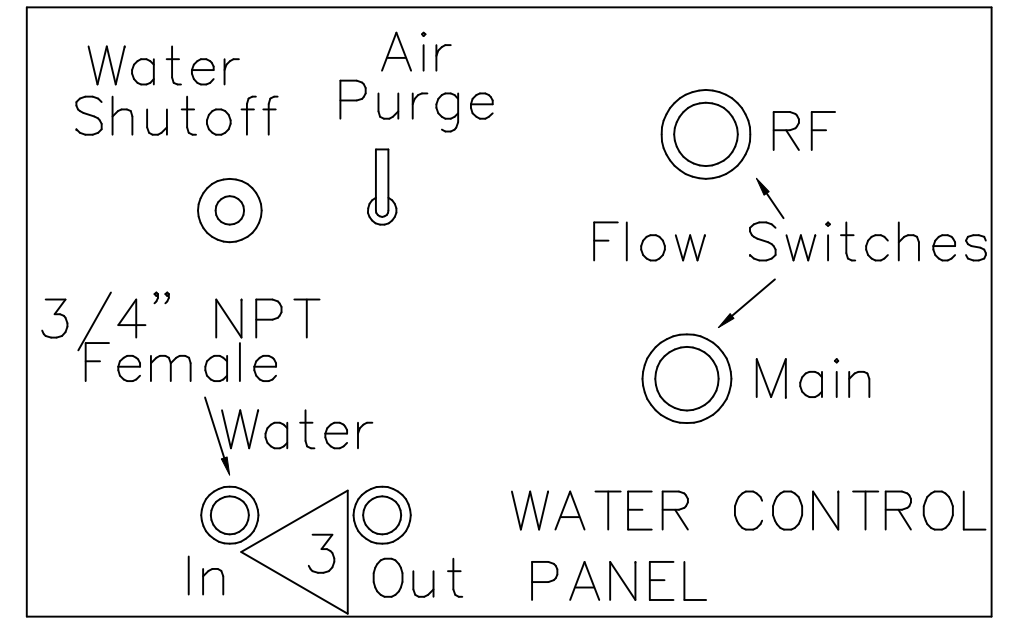
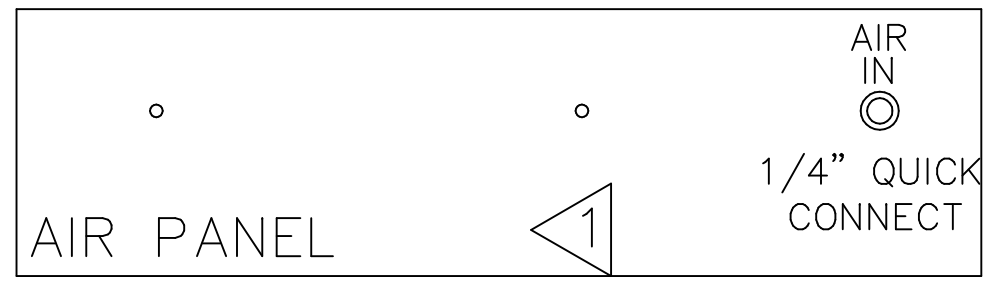
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.XXX ±.005	Drawn by: MNS	03/07/10
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	DO NOT SCALE DRAWING	
	2 OF 3	
		DRAWING #100302

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ORIGINAL

DRAWING #	100302	Rev.
3/12/10	Reversed Water Flow Switches	A



PANEL DETAILS

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