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ROTOR – AIR SUPPLY - RECOMMENDATIONS

INTRODUCTION

This document explains the requirements for the ROTOR if using a laboratory mains air supply.

PRESSURE REQUIREMENTS

The ROTOR requires a minimum of **6 Bar - 0.6 MPa - 87 psi.**

The ROTOR has its own pressure valve which is set at **4.5 Bar - 0.45 MPa - 65 psi** , but the supply pressure must be able to maintain a pressure above this.

AIR SUPPLY REQUIREMENTS

The Air Supply should meet ISO 8573 standards. The specification is described in the attached ISO 8573 Compressed Air Quality document. The class required for the ROTOR is 2.6.3. Please see the highlighted notes in the appendix of this document for an explanation.

A Membrane Drier is recommended which would enable your air supply to meet the correct specifications. The document of a particular IDG Membrane Drier can be obtained from Singer Instruments Technical Support.

We recommend that all modifications to your air supply are made by qualified/ approved personnel.

ROTOR CONNECTION

Singer Instruments can supply 2 types of connector which will attach to the ROTOR to take the following tubing.

1. 6mm diameter tubing which is often used for compressors with quick connect fittings but can also be used with the correct fittings on a mains supply.
2. 8.5mm bore pneumatic tubing which requires a hose clip.

Connections to the mains supply and also to the connector are the responsibility of the customer. Singer Instruments can supply 6mm tubing but the 8.5mm bore tubing and hose clips will be supplied by the customer.

CONCLUSION

We hope that this explanation will assist you in performing the above procedure. If you need further assistance do not hesitate to contact the Technical Support Team at Singer Instruments.

CONTACT INFORMATION

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APPENDIX

ISO 8573 Compressed Air Quality

ISO 8573 is the group of international standards relating to the quality of compressed air. These documents are broken down into nine parts, part one specifies the quality requirements of the compressed air and parts two to nine specify the methods of testing for a range of contaminates.

ISO 8573.1

Purity levels for the main contaminates are shown in separate tables, however below we have combined all three to make it easier to follow.

			Solid Particles			Water		Oil
Purity Class		Max No. of particles per m3		Particle Size	Concentration			Total Oil
	0.1-0.5 micron	0.5-1 micron	1-5 micron	micron	mg/m3	Pressure Dewpoint	g/m3	mg/m3
0	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
1	100	1	0	-	-	-70c	-	0.01
2	100,000	1000	10	-	-	-40c	-	0.1
3	-	10,000	500	-	-	-20c	-	1
4	-	-	1000	-	-	+3c	-	5
5	-	-	20,000	-	-	+7c	-	-
6	-	-	-	5	5	+10c	-	-
7	-	-	-	40	10	-	0.5	-
8	-	-	-	-	-	-	5	-
9	-	-	-	-	-	-	10	-

* As specified by the equipment user or supplier

When writing a purity specification it should be in the form ISO 8573.1 : 2001 Class S.W.O
For example ISO 8573.1 : 2001 Class 1.2.1 - would mean class one for solid particles, class two for water, class one for oil.

Equipment required to meet the grades

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The following table shows what equipment is required to meet each grade specified above

	Solid Particles	Solid Particles	Water	Oil
Purity Class	Wet Particulate	Dry Particulate	Vapour	Total Oil
1	Pre-filter, Micronic filter, & High efficiency filter	AR Pre filter, AAR Micronic filter, High efficiency filter	Adsorption dryer	Pre-filter, Micronic filter & Activated carbon filter
2	Pre-filter, Micronic filter	AR Pre filter, AAR Micronic	Adsorption dryer	Pre-filter, Micronic filter
3	Pre-filter	AR Pre filter	Adsorption dryer	Pre-filter
4	Pre-filter	AR Pre filter	Refrigeration dryer	Pre-filter
5	Pre-filter	AR Pre filter	Refrigeration dryer	-
6	-	-	Refrigeration dryer	-

General purpose oil free air is considered ISO 8573.1 Class 2.4.2
In a typical environment this is achieved by installing a pre-filter, refrigeration dryer, micronic filter.