SCR-J series high-efficiency filters from SCR

(16bar)

Operation Manual

SHANGHAI SCREW COMPRESSOR CO.,LTD.

Part No. 90652588

Version A

Acknowledgment

Thank you for choosing the SCR high-efficiency filter; This manual will help you better use the filter we provide for you. We welcome you to provide us with valuable suggestions or opinions at any time.

If you encounter any problems while using our filters, you can contact our customer service technical center in a timely manner through the following methods, and we will solve your problem as soon as possible.

1. 24-hour customer service hotline:+86-400-820-5059

2. Welcome to our website: www.scraij.com for timely online service.

3. Send an email to scr@screw.sh.cn

We strive to ensure the completeness and accuracy of the manual, but SCR Corporation reserves the right to continuously develop and improve the product without any obligation to modify or improve previously manufactured products. When there are design changes to the product, no further notice will be given.

Preface

This manual provides a detailed description of the safety precautions for SCR high-efficiency filters designed and produced by SCR Company.

The operators shall carefully read this user manual in its entirety and fully understand the structure, functions, and safety precautions of the filter before proceeding with operation and maintenance. Except as specified in this manual, if users fail to follow the operation and maintenance procedures herein, disassemble or modify the filter without authorization, or use accessories not designated by SCR Company, they will lose the right to claim compensation.

It should be noted that SCR Company continuously engages in research, development, and improvement of its products. After a certain period, the content of this manual may differ from the actual conditions of the product. Before placing an order for the filter, please verify with the Service Department of our company in advance.

Before installing this series of products, carefully read this manual and arrange for professional personnel to install and maintain the product to avoid inconvenience during use. If you still have questions, please contact your local distributor or the Service Department of SCR Company.

—Editor

Standard Warranty Clause

SCR Company provides the following warranties on the manufacturing process and material defects for the SCR high-efficiency filters manufactured by itself in the conditions of normal operation, maintenance, repair and service.

The service life of SCR brand filter elements is 4,000 hours under normal working conditions in the laser cutting industry, and 6,000-8,000 hours under normal working conditions in other industries.

1. For the products not manufactured by SCR Company, the warranty clause of the original manufacturer shall be directly applied in feasible conditions. Within the warranty period,SCR Company or the agent shall be informed in writing in 30 days after the defects are found, and the details shall be attached for identification, including the ex-factory serial number, model, purchasing date and etc.
2. The single responsibility assumed by SCR Company in the warranty clause is to repair or replace the products or parts which are proven defective according to the evidence. If necessary, SCR Company can ask the users to return the defective products or parts to the factory for inspection with freight prepaid.
3. SCR Company holds the warranty period of 3 months or the remaining warranty period for the repaired products, parts or replaced parts in the conditions of normal operation, maintenance, repair and service.
4. The warranty clause is not applicable to the following responsibilities and SCR Company assumes no responsibility or obligation.

A. Indirectly caused, incidental or special losses or damages.
B. Damages caused due to the normal wearing, abnormal operating conditions, neglects or wrong operation of equipment, poor storage or transport.
C. Fail to follow the stipulations in operation instructions, regulations or other special sales conditions.
D. Labor cost, losses or damages caused due to wrong operation (running), maintenance and the repair performed by the maintenance personnel authorized or not authorized by the Buyer.
E. Improper use of products.

In any cases, the compensation obligation of the Seller shall be limited to the scope of the selling price, regardless of the claims caused due to the termination of the contract or the warranty against the production neglect.

NOTICE!

The warranty clause is the sole warranty clause for the Buyer. Any other warranty clauses, whether clearly stated or implied in the law, or are implied in the factors, including any commercial warranty clauses and the ones applied to some special purposes, are excluded and shall not be accepted.

Directory

Chapter 1 Safety Notes

1.Risk of explosion due to filtration of oxygen:Never use the filter described here to filter oxygen! The filter materials and lubricants are not resistant to oxygen.There is a serious risk of spontaneous ignition or explosion.

2.Hazard from filtration of critical media:Filters that have been designed for filtering non-critical gases of fluid must be never be used for filtering explosive,flammable,or toxic gases of fluid.

3.Hazard due to a sudden release of pressure:Never remove any parts of the filter,or manipulate the same in any way,for as long as the filter is still pressurized! A sudden escape of pressure may cause serious injuries.Before carrying out any work on the filter,First depressurize the filter（0MPa）。

4.Hazards caused by high temperature surfaces：The media that flow through the filter can have a temperature of up to 80℃.Do not touch hot surfaces .Note the operating instruction issued by the operator.

Chapter 2 Installation instructions

1. As a rule,the filters should always be used in the pipe system at the point with the lowest temperature.
For changing filter elements,sufficient free space underneath the filter must be provided
A safety device for maintaining the maximum working pressure and the permissible fluid temperature must be available.
Dust may escape from the cartridge .Protect the downstream compressed air network by installing a suitable downstream filter.

2. Minute particle of silicone or grease penetrating the housing and the filter element might have a negative effect on the quality of the paintwork.
Therefore,always wear protective gloves made of cotton or plastic that are free of silicone or grease when handling the filters.

① Before fitting the filter the relevant section in the pipe system must be depressurized to 0 bar g .
② Check filter for possible transport damage.Do not fit a damaged filter.
③ If necessary,fit a bracket or pipe support .when selecting the mounting,take into account the weight of the filter and the weight of the possible water condensate.
④ The filter mus always be fitted vertically,The flow direction is marked by an arrow on the housing top section. A reversed air flow through a cartridge can damage the cartridge.Make sure the air always flows through the cartridge from bottom to top.
⑤ Fit filter in the pipe system
⑥ Re-pressurize pipe section and check for leaks.

Chapter 3 Start up and Operation

1. Min.Working Pressure 0MPa （0 bar g， 0 Psi g),Max.Working Pressure1.6MPa (16bar g,232 Psi g).

2. Notes for filter operation：

① Only use the filter in accordance with the minimum and maximum operating conditions specified on the type plate.

② Without prior approval by the manufacturer ,no conversions and modifications must be made to the filters!

③ Any non-approved modifications endanger the operational safety and may cause damage or personal injury.

④ Avoid sudden pressure fluctuations on pressure build up and de-pressurization.if the pressure builds up or drops ,too quickly this may cause damage to the filter.

⑤ Whilst the pressure unit is in operation ,the filter surfaces can become extremely hot.always remember this when working on the filter.

⑥ When using accessories with an external power supply,there is a hazard from electrical voltage .therefore,work on electrical components must be carried out in a voltage-free condition.

Chapter 4 Maintenance and Warranty

1. Maintenance/repair instructions:

① Always maintain the prescribed service intervals,if these are not complied with ,the filter may not function correctly and the manufacturer does not accept any liability whatever for any possible consequences.
6.
② Repairs and maintenance should be carried out by specialist personnel only.

③ For the service environment where the air temperature is below 0℃ (inclusive), when the air compressor is stopped and the air pressure of the compressed air pipeline is 0MPa, please open the (automatic, semi-automatic, manual or electronic) drainage ball valve at the bottom of the filter and gas-water separator in time, and thoroughly discharge the water, oil and other liquids inside the filter and gas-water separator to prevent blockage caused by icing due to too low air temperature, and prevent the shell from being forcibly expanded due to icing stress. If ice is found at the water outlet of the filter and gas-water separator before starting up, wrap a heating belt (ring) on the surface of the pipe body of the filter and gas-water separator, heat it to 1.5℃-80℃ for about 0.5 hours, and completely thaw it until liquid flows out from the water outlet.

2. Disassembly and assembly instructions：

The filter housing and filter element may be contaminated by substances inside the filter. So it is necessary to regularly read the material safety data sheets for different liquids. Please disassemble the filter accessories according to relevant regulations.

3.Warranty Notes:

When it appears the below things,the product is out of warranty:

① The use is not accordance with the products function.

② The maintenance don't accord to the product instruction notes.

③ The original parts are damaged or used.

Chapter 5 Technical Data

1. SCR-J series compressed air filter cartridge level selection (rated air pressure of 7 bar g, 21 ℃)

（★ 1μm=1micron； 1ppm=1.2mg/m³）

Grade		oil content（ppm）	Initial pressure difference（bar）	Maximum particulate matter per cubic meter		
				1-5（μm）	0.5-1（μm）	0.1-0.5（μm）
C	Primary Filter	3	0.02	-	-	-
T	Intermediate Filter	0.1	0.06	-	-	-
A	Fine filter	0.01	0.07	≤100，000	-	-
H	Activated carbon filter	0.003	0.04	≤1，000	≤90，000	-
F	Dust filter	-	0.017	≤100	≤6，000	≤400，000

It is very important to replace element frequently： If not replace the element frequently,which will lead to reduce the product quality and air quality,also increase the cost.The service life of SCR brand filter elements is 4,000 hours under normal working conditions in the laser cutting industry, and 6,000-8,000 hours under normal working conditions in other industries.

Using SCR filters brings you: continuous protection of downstream equipment and processes with high-quality compressed air, always low operating costs, 6000-8000 hours of performance guarantee, and safety and peace of mind.

2. Selection of SCR series compressed air filters: The following flow rates refer to the flow rates under standard operating conditions of 7 bar g and other working pressures. Please refer to the correction factors below.

SCR-J Filter (Suitable for 1.6MPa) Product Selection Requirements									
Filter model	Flow rate m^3/min	Interface	Dimension						Type of filterelement
			A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)	
SCR-J005*	0.7	Rc1/2	261	169	39	70	76.5	53	Ø5	SCR-J005*
SCR-J010*	1.2	Rc3/4	330	238	39	91.5	95	53	Ø6.5	SCR-J010*
SCR-J020*	2.3	Rc1	369	277	39	91.5	95	53	Ø6.5	SCR-J020*
SCR-J030*	3.5	Rc1	398	307	39	117	123.5	53	Ø9	SCR-J030*
SCR-J050*	5.7	Rc1-1/2	516	424	39	117	123.5	53	Ø9	SCR-J050*
SCR-J070*	7.8	Rc1-1/2	516	424	39	117	123.5	53	Ø9	SCR-J070*
SCR-J110*	11.6	Rc2	642	550	39	160	170	53	Ø12	SCR-J110*
SCR-J150*	15.5	Rc2	642	550	39	160	170	53	Ø12	SCR-J150*
SCR-J200*	20.8	Rc2-1/2	742	650	39	195	205	53	Ø12	SCR-J200*
SCR-J250*	25.3	Rc2-1/2	742	650	39	195	205	53	Ø12	SCR-J250*
SCR-J300*	30.8	Rc3	897	805	39	195	205	53	Ø12.5	SCR-J300*
SCR-J400*	40.5	Rc4	920	828	39	211.5	210	53	Ø12.5	SCR-J400*

Pressure	Barg	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	psig	15	29	44	59	73	87	100	116	131	145	160	174	189	203	219	232
Correction factor		0.38	0.53	0.65	0.76	0.85	0.93	1.00	1.07	1.13	1.19	1.23	1.31	1.36	1.41	1.46	1.51

Please use the following formula for the correction factor corresponding to a working pressure other than 7 bar g (100 psi g)

For example, the correction factor at 9 bar g= $\sqrt{\frac{working\ pressure}{Nominal\ work\ pressure}} = \sqrt{\frac{9\text{bar g}}{7\text{bar g}}} = 1.13$

Therefore, the working pressure corresponding to 9bar g is the nominal working pressure multiplied by 1.13.

Chapter 6 Exploded drawing

1.Compressed air inlet； 2.Compressed air outlet； 3.Filter element；

4.Stainless steel diamond mesh design with large airflow area and low resistance；

5.Aluminum alloy material, high-strength and high hardness material, internal and external surge treatment；

6.The water valve is equipped with a sealing ring, which does not require the use of adhesive tape and is easy and fast to install；

7.Differential pressure gauge: Accurately indicates the differential pressure condition of the filter element, reminding timely replacement of the filter element.