

# **RTI** INSTRUCTION AND OPERATING MANUAL

Blower installation Omega 53P





## **Preface**

This instruction and operating manual is required for blower installations manufactured by the following company:

**RTI Transport Installaties B.V.**  
Albert Schweitzerstraat 29  
7131 PG Lichtenvoorde  
Tel. + 31 (0)544-377050

The manual provides information about the following installations:

### **Kaeser Omega 53P**

Carefully read these instructions and the blower's instructions before setting up and going into operation. These manuals contain essential information that must be read to ensure interference-free operation and to achieve longevity.

Repairs, maintenance or conversion work shall only be carried out by authorised, trained and qualified personnel that are familiar with the current safety regulations.



## Contents:

1	<b>General</b>	4
1.1	Contact details	4
1.2	Service facilities	4
1.3	Technical data blower	4
1.4	Oil	4
2	<b>Safety</b>	6
2.1	General	6
2.2	Qualification and training personnel	6
2.3	Operating safety-conscious	6
2.4	Safety instructions operator	6
2.5	Modifications and repairing spare parts	6
2.6	Modifications installation	6
3	<b>Mounting installation</b>	7
3.1	Mounting instructions RTI installation	7
4	<b>Start-up</b>	8
5	<b>Maintenance installation</b>	9
5.1	Inspection during operation	9
5.2	Weekly inspection	10
5.3	Monthly inspection	11
5.4	Half-yearly inspection	12
5.5	Maintenance checklist	12



## 1 General

### 1.1 Contact details

Please mention the PO number when contacting us by phone or mail. You will find the PO number on the type plate of the installation.

Telephone number: (0031) 544-377050  
Fax: (0031) 544-376499  
Email: info@rti.nl

### 1.2 Service facilities

For addresses of service/technical support facilities, please visit our website [www.rti.nl](http://www.rti.nl)

### 1.3 Technical data blower

Maximum operating overpressure (bar)	1,0
Intake volume flow (m <sup>3</sup> /min) at maximum speed	40,96
Maximum operating speed blower	4200
Minimum operating speed blower	700
Permissible ambient temperature (°C)	-15 - + 60
Suction temperature (°C)	-15 - + 40
Weight(kg)	208

### 1.4 Oil

	Omega Fluid	
	SB220	SF220
Description	Synthetic oil	Synthetic oil
Application	For all applications except food products.	Especially for machines in an environment where the compressed air can come in contact with food products.
Oil temperature (°C)	-10 - + 120	-5 - + 110

The lubricating oil of the blower has been filled at the manufacturer.

#### To be added oil volume – orientational values

	Drive side	Control side
Vertical	0,5 ± 15%	0,6 ± 15%
Horizontal	0,32 ± 15%	0,43 ± 15%

CAUTION  
Burn hazard!



Check lubricating oil level

1. Oil sight glass control side
2. Oil sight glass drive side

Check the lubricating oil level in oil sight glass of control and drive side.  
Top up lubricating oil if the lubricating oil level is up to 8 mm beneath the middle of the oil sight glass.



## **2 Safety**

### **2.1 General**

This operating manual provides important information concerning operation and maintenance of the installation that must be observed. Authorised personnel/the operator must read the manual carefully before going into operation and the manual must be kept in direct proximity of the installation.

### **2.2 Qualification and training personnel**

Any work on the blower such as operation and maintenance shall only be carried out by authorised, skilled and qualified personnel, who are familiar with the applicable safety regulations. Repairs, maintenance and conversion work shall only be carried out by authorised personnel.

### **2.3 Operating safety conscious**

Essential safety regulations relating to the setting up, operation and maintenance of blowers are covered by the following publications:

- Regulations for the prevention of accidents, in particular:
  - VBG 16 compressors
- Standards, in particular:
  - DIN EN 12100 Safety of machines
  - DIN EN 1012-1 Compressors and vacuum pumps, safety requirements

The latest edition of each of these regulations shall be applicable. Any special official codes and regulations, particularly safety regulations applicable to your operation in view of the local conditions shall be observed likewise. In the event of competing regulations, the most severe requirements shall apply.

### **2.4 Safety instructions operator**

Securing the blower's operational safety is the responsibility of the operator. Damaged or non-functioning parts must be replaced immediately. If combustible materials are to be handled by the blower, it shall be ensured that the spontaneous-ignition temperature of any dust/air mixture will not be reached. VBG 16 prescribes that a temperature limit of max. 120° C should not be exceeded (measuring point prior to contact with the conveyed product).

### **2.5 Modifications and repairing spare parts**

Unauthorized repair work and modifications are not permitted. Warranty doesn't apply to installations with a damaged seal. Original spare parts and accessories approved by the manufacturer contribute to safety. Using foreign spare parts and accessories may entail the loss of any liability for the consequences arising therefrom.

### **2.6 Modifications installation**

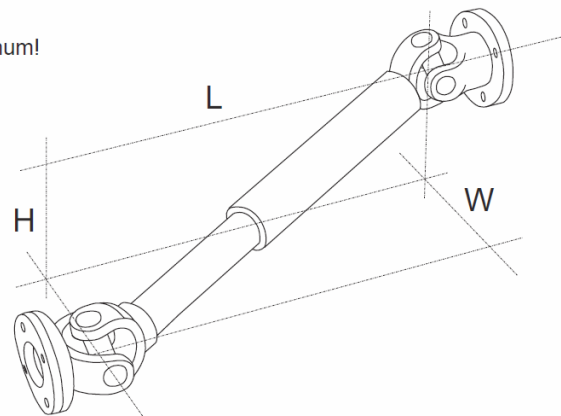
Without approval from RTI, it is not permitted to make any alterations to the installation.

### 3 Mounting installation

#### 3.1 Mounting instructions RTI installation powerband driven

- A** While placing the installation on a pallet, make sure the installation is approximately 30 cm off the ground (raising the installation with timber if necessary).
- B** Drive the installation up to the desired location next to the truck. Make sure the angle of the drive shaft is as small as possible. **Please find the maximum mounting angle in the mounting instructions provided by the truck manufacturer.**

The resulting angle can be 15° maximum!  
 1° to 10° is good  
 11° to 15° is excessive



- C** Place the installation at the same level as the chassis and parallel to the truck. Measure the PTO-shaft. Make sure the installation doesn't exceed the width of the truck.
- D** Measure the brackets and try to use all the holes in the chassis. Brackets should be painted or otherwise protected against corrosion.
- E** The installation must be mounted with at least 3 brackets. (With a box or tank combination at least 4 brackets should be used)
- F** Mark where the holes need to be, drill/punch the holes, paint the brackets in the colour of your choice and let them dry.
- G** Mount the painted brackets onto the chassis with the bolts and nuts specified by the manufacturer.
- H** Subsequently mount the installation onto the brackets with M14 bolts (8.8), washers, spring washers and nuts.

#### NOTE

With a vacuum installation the vacuum valve must be set to -0.5 bar. Please note: the vacuum valve should be set when testing the installation before initial operation. The vacuum valve has not been set when the installation is delivered as a building kit (without mounting by RTI).



## 4 Start-up

Observe the following prior to start-up:

**IT IS OF VITAL IMPORTANCE THAT THERE ARE NO PERSONS UNDERNEATH THE VEHICLE DURING START-UP AND DURING OPERATION!!**

### ● **Preservation:**

The rotors of the blower are sprayed with an anti-corrosion agent prior to delivery. During the initial operation this agent will evaporate as the blower heats up. Since the RTI-installations are all tested a few minutes, the anti-corrosion agent on the rotors will have evaporated.

### ● **Topping up of lubricating oil:**

Check before start-up if the correct amount of lubricating oil is on the dipstick. The correct level corresponds to the middle of the oil sight glass. See chapter 1.4.

### ● **Checking the direction of rotation:**

Looking towards the drive shaft, the blower must rotate clockwise.

The blower must be started and stopped in a fully unloaded condition, without any back pressure.

Never start against any back pressure. (Remove blanking cap or connect hoses.)

### ● **Switching-on:**

We refer to the truck's instruction booklet, to switch on the PTO (only with closed enclosure).

It is very important not to exceed the maximum speed range as reported in the inspection report and as displayed on the dashboard of the driver's cab.

Check the air indicator clock. When "red", the blower must be switched off. See inspection checklist.

### ● **Vacuum installation**

With a vacuum installation the vacuum valve must be set to -0.5 bar. Please note: the vacuum valve should be set when testing the installation before initial operation. The vacuum valve has not been set when the installation is delivered as a building kit (without mounting by RTI).

### **CAUTION:**

After a short period of time, the blower will reach maximum running temperature.

When switched-on, it not permitted to loosen the catches on the enclosure!!

We recommend the use of safety gloves when disconnecting hoses or couplings from the enclosure, after the installation has been switched-on.

### **NOTE:**

When cleaning the tank vehicle by means of a steam jet device, water may penetrate inside the blower via the oil seals. To avoid corrosion, the blower shall be set into operation for a short period of time after cleaning.

The non-return valve installed in the discharge silencer is not intended to prevent flow-back of material. Its purpose is to prevent the reverse operation of the blower for an extended period of time.

**It is not permitted to use the attached relief valve as blow-off control valve.**





## **5 Maintenance installation**

### **5.1 INSPECTION DURING OPERATION**

- A: Check the air filter indicator.  
If the red mark is visible, the air intake filter is soiled and poses a risk of overheating and damages.
- B: The safety valve must open at maximum air pressure.  
This valve must NOT be used as blow-off valve. To prevent overheating in the enclosure the valve at the silo tank must blow off before the blower valve does. (blow-off pressure 1.1 bar)
- C: Pay attention to any unusual sounds or peculiarities near the installation.

## 5.2 WEEKLY INSPECTION

\*\*\*\*\*  
**ONLY CARRY OUT WHEN INSTALLATION IS COOL AND AT A STANDSTILL**  
\*\*\*\*\*

- A: Check the level of lubricating oil weekly.  
To achieve longevity of the blower it is important the oil level remains in the middle of the oil sight glass (do not overfill).
- B: Check the air intake filter at regular intervals. Clean or replace the air filter if necessary.  
\* Please note that the air filter is reinserted in the same position (paying attention to the front and back of the element).



Also check the functioning of the air indicator.

- C: It is important to check the airflow and cleanliness of the fan louvres to prevent overheating of the blower.  
(compressed air cooler and when installed the oil cooler)
- D: Check the V-belts as described in the blower's instruction manual.

### 5.3 MONTHLY INSPECTION

\*\*\*\*\*  
**ONLY CARRY OUT WHEN INSTALLATION IS COOL AND AT A STANDSTILL**  
\*\*\*\*\*

**This check may only be carried out by skilled mechanics. Observe the safety very carefully, the enclosure must be removed and rotating parts will be accessible.**

- A: Lubricate cross journals of the PTO-shaft (after approx. 40 operating hours)
- B: Lubricate latches and padlock and check their functioning.
- C: Preserve the blower when it has been at a standstill for a longer period of time. (lubricate the blower's rotor with oil to prevent corrosion)

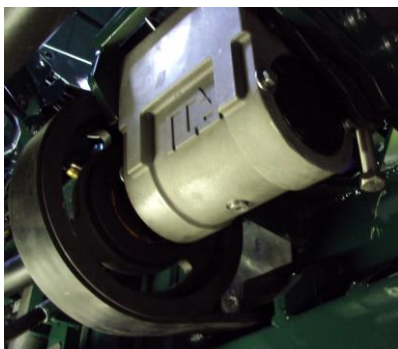
To carry out the following inspections it is necessary to start the installation without enclosure. Please note the dangers that can occur as a result of access to:

- hot parts as blower and silencer (150 ° C)
- rotating parts such as the transmission and the fan
- high sound levels (> 85 dB)

**HEARING PROTECTION OBLIGATED!!**

**DURING INSPECTION NO ONE IS ALLOWED UNDERNEATH THE VEHICLE!!**

- D: Check the functioning of the safety valve.  
Air pressure measured at the discharge flange of the blower may not exceed a maximum gauge pressure of 1 bar.  
Potential pressure loss between blower and silo tank of 0.2 up to 0.3 bar
- E: Check flanges/packing, rubber compensators etc. in the enclosure for air leakages to avoid loosening of the insulation material and overheating.
- F: Check the V-belts as described in the blower's instruction manual.



Stainless steel tension bolt M16x140 art.no. 16140



## 5.4 HALFYEARLY INSPECTION

\*\*\*\*\*  
**ONLY CARRY OUT WHEN INSTALLATION IS COOL AND AT A STANDSTILL**  
\*\*\*\*\*

**This check may only be carried out by skilled mechanics. Observe the safety very carefully, the enclosure must be removed and rotating parts will be accessible.**

- A:** Change the lubricating oil simultaneously with the truck's engine oil, at least twice a year.  
(oil type SB220/SF220)
- B:** Demount the non-return valve and check for proper functioning.
- C:** The aluminium bearing block (type 405) is supplied with 200 ml. oil (ISOVG68).  
Check the seals for damages/leakage.  
Change the oil every 4 years (or every 3,500 hours).

### **NOTE:**

**The operating instructions provided by the blower manufacturer should be read carefully.**

## 5.5 Maintenance/inspection list

Along with every maintenance inspection the maintenance checklist on the next page must be filled out. We recommend sending the checklist to RTI after filling it out.

Mail: [info@rti.nl](mailto:info@rti.nl)  
Fax: (0031) 544-376499

Hold on to the checklist, the checklist can be handed to the mechanic when the next maintenance service is due or when the installation needs to be repaired. (Do not forget to take the checklist back with you)

# Maintenance checklist



<b>Firma</b>	:	<b>Date maintenance</b>	:
<b>Name mechanic</b>	:	<b>Blower</b>	:
<b>Address</b>	:	<b>Serial number</b>	:
	:	<b>Installation-no.</b>	: PO.....
<b>Truck</b>	:	<b>Year manufactured</b>	:
<b>Truck nr.</b>	:		:
<b>Licence plate no.</b>	:	<b>Chassis:</b>	<b>No. KM driven:</b>

**Actions**

**BLOWER:**

- Drain oil
- Clean magnetic plugs
- Check potential leakage machine
- Change + top up oil

**SILENCER:**

- Demount discharge silencer
- Check rotors for damages or greasiness
- Flush blower twice with 1/4L degreaser
- Check rubber compensator for cracks replace if necessary
- Check aluminium pipes and silencers for cracks and leakage
- Mount discharge silencer
- Check the indicator's piping for cracks and leakage

**AIRFILTER:**

- Take air filter lid off
- Check the lid's latches
- Check if the insulation material is secured in suction part if this isn't the case repair and finish with sealant
- Check functioning of air filter indicator
- Clear intake-side of degreaser residue
- Place new air filter elements

**ENCLOSURE:**

- Check the insulation material in the enclosure for damages (cover, back panel, floor panel) if necessary repair and finish with sealant
- Check if the fan louvers are open
- Check if the discharge silencer is clean (flow)
- Check the frame and brackets for potential cracks
- Check if the bolts of the brackets are secured
- Check the seal washers of the Storz coupling for cracks and leakage
- Check the functioning of the cover's latches
- Tighten the bolts of the mounting brackets

**TRANSMISSION:**

- Check the PTO-shaft for leeway in the cross journals
- Lubricate the PTO-shaft with EP grease (red)
- Tighten the bolts of the PTO-shaft flanges
- Check the automatic tensioner for leakage
- Check the seal for damages (replace if necessary)
- Change the oil and the seal every 5 years (ISO VG 68)
- Check the V-belts for damages
- Check if the gearing of the V-belts is complete

**TESTING:**

- Operation test run of machine
- Check density of discharge sides
- Check pressure valve for 1 bar
- Check functioning of the indicator
- Check the engine for unusual sounds