Appendix W - Maintenance Control for RS-B 3 - 11
with less than 2000 hours / year

RENNER Kompressoren

Maintenance work	commissioning	periodically	after ... years									
			1	2	3	4	5	6	7	8	9	10
Fill out commissioning report	✔											
Check screw connections and tighten if necessary	✔											
Check that all connections are firm and tight	✔											
Checking the oil Level	✔	✔										
Check the V-belt tension and wear	✔	✔										
Tighten electric clamps	✔	✔										
Functional check of pressure and temperatur gauges	✔	✔										
Measuring / testing current consumption	✔	✔										
Check ON and OFF settings and adjust if necessary	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Check the alignment of the V-belt pulleys		✔										
Check the dirt level of the air filter and the possibly mounted ventilator filter pads		✔										
Compressors with air receiver, empty the condensate water*		✔										
Examine all the hoses to ensure that they are in good working condition		✔										
Check funktion of the condensate drain*		✔										
Check contactors for wear		✔										
Control the oil / air cooler and clean if necessary		✔										
Check the compressor to ensure that it has no leaks		✔										
Check the overall condition of the compressor		✔										
Check air filter element, replace if necessary		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Clean / replace the filter mats*		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Check / replace the safety valve		✔			✔			✔			✔	
Changing the oil filter			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Change the oil			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Change the fine separator cartridge			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Check the follow-on time (>= 3 min)			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Replace thermal valve element			✔			✔				✔		
Change oil suction / recirculation hoses				✔		✔		✔		✔		✔
Change control air hose				✔		✔		✔		✔		✔
Replace solenoid valve				✔		✔		✔		✔		✔
Maintenance set minimum pressure valve				✔						✔		
Change the V-belt					✔			✔			✔	
Replace the O-ring on the oil filler plug						✔			✔			✔
Maintenance condensate drain*						✔				✔		
Servicing kit for the intake regulator							✔					✔
Replace minimum pressure valve completely							✔					
Replace oil hoses*								✔				
Replace pressure switch / pressure sensor									✔			
Replace motor bearings A and B side									✔			
Replace electrical contactors												✔
Maintenance package 1 (see maintenance package List for each compressor)			✔									
Maintenance package 2				✔								
Maintenance package 3					✔							
Maintenance package 4						✔						
Maintenance package 5							✔					
Maintenance package 6								✔				
Maintenance package 7									✔			
Maintenance package 8										✔		
Maintenance package 9											✔	
Maintenance package 10												✔

* if existing

Appendix W - Maintenance Control for RS-B 3 - 11
with more than 2000 hours / year

RENNER Kompressoren

Maintenance work	commissioning	periodically	after ... hours									
			2000	4000	6000	8000	10000	12000	14000	16000	18000	20000
Fill out Commissioning report	✔											
Check screw connections and tighten if necessary	✔											
Check that all connections are firm and tight	✔											
Checking the oil Level	✔	✔										
Check the V-belt tension and wear	✔	✔										
Tighten electric clamps	✔	✔										
Functional check of pressure and temperatur gauges	✔	✔										
Measuring / testing current consumption	✔	✔										
Check ON and OFF settings and adjust if necessary	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Check the alignment of the V-belt pulleys		✔										
Check the dirt level of the air filter and the possibly mounted ventilator filter pads		✔										
Compressors with air receiver, empty the condensate water*		✔										
Examine all the hoses to ensure that they are in good working condition		✔										
Check funktion of the condensate drain*		✔										
Check contactors for wear		✔										
Control the oil / air cooler and clean if necessary		✔										
Check the compressor to ensure that it has no leaks		✔										
Check the overall condition of the compressor		✔										
Check air filter element, replace if necessary		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Clean / replace the filter mats*		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Check / replace the safety valve		✔			✔			✔			✔	
Changing the oil filter			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Change the oil			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Change the fine separator cartridge			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Check the follow-on time (>= 3 min)			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Replace the O-ring on the oil filler plug				✔		✔		✔		✔		✔
Change oil suction / recirculation hoses				✔		✔		✔		✔		✔
Change control air hose				✔		✔		✔		✔		✔
Maintenance set minimum pressure valve				✔						✔		
Change the V-belt					✔			✔			✔	
Replace thermal valve element					✔			✔			✔	
Maintenance condensate drain*						✔				✔		
Replace solenoid valve						✔				✔		
Servicing kit for the intake regulator							✔					✔
Replace minimum pressure valve completely							✔					
Replace oil hoses*								✔				
Replace pressure switch / pressure sensor									✔			
Replace motor bearings A and B side									✔			
Replace electrical contactors												✔
Maintenance package 1 (see maintenance package List for each compressor)			✔									
Maintenance package 2				✔								
Maintenance package 3					✔							
Maintenance package 4						✔						
Maintenance package 5							✔					
Maintenance package 6								✔				
Maintenance package 7									✔			
Maintenance package 8										✔		
Maintenance package 9											✔	
Maintenance package 10												✔

* if existing

Appendix W2
Maintenance of Motor Bearings

Contents

This Appendix provides an overview of how motor bearings are to be maintained. This description only applies to current systems and may differ to the maintenance required for older motors.

Continuously lubricated motor bearings

Our compressors **up to 37kW** are fitted with motors having closed, continuously lubricated deep-groove ball bearings – theoretical service life is between 15,000 and 30,000 operating hours (oh). If operating conditions are different to that defined in the instruction manual, it is imperative that the maintenance intervals are adjusted to the prevailing circumstances and conditions to ensure reliable operations. Should there be high levels of dirt and dust, frequent switch-ons and high ambient temperatures as well as operations at 60Hz, the maintenance intervals must be adjusted accordingly.

Description Procedure for replacing bearings

1. Switch off unit and prevent it from being restarted by accident.
2. If applicable, uninstall the motor and remove the ancillary components (fan impeller, frame, fan cover, pulley)
3. Disassemble the bearing cover (center) and bearing shield (outside)
4. Remove the old bearing with a puller (if difficult, carefully warm up the bearing) and remove the old grease
5. Carefully warm up the inner ring of the new bearing
6. Push the new bearing to the stop on the shaft and keep it there briefly
7. Generously grease the new bearing with suitable grease
8. Re-assemble the bearing cover and bearing shield
9. Re-install bearing seal

The type designations of the motor bearings can be found in Table 1.

Appendix W2 Maintenance of Motor Bearings (cont.)

Motor bearings requiring re-lubrication

Our motors from 45 kW are fitted with “open” ball bearings. Motors this size and up have re-lubrication devices on the A- and B-sides.
These bearings must be re-lubricated regularly in accordance with the information given in the maintenance check sheet.
Our motors are pre-lubricated from the factory with a polyurea-based high-temperature grease for min. 150°C.
For instance, SKF LGHP 2 or a polyurea-based equivalent is to be used. Order no.: 10254
It is imperative that these specifications are adhered to when re-lubricating the motor bearings as mixing different greases can significantly shorten the life of the bearings.

NB! If operating conditions are different, it is imperative that the maintenance intervals are adjusted to the local circumstances and conditions to ensure reliable operations. This means that should there be high levels of dirt and dust, frequent switch-ons and high ambient temperatures as well as operations at 60Hz, the maintenance intervals must be shortened.

Procedure for re-lubrication

Please carry out the following steps to re-lubricate the motor bearings:

1. Switch off unit and prevent it from being restarted by accident.
2. Thoroughly clean the grease nipples and surrounds.
3. Remove the cap of the re-lubrication device.
4. Remove the cover of the drainage opening (usually opposite). Excess grease is discharged here.
5. Introduce approx. half of the grease to be used for re-lubrication – it is best to use a grease gun. Then let the motor run for approximately 1 minute.
6. Switch the unit off and introduce the remaining re-lubrication grease.
7. Re-install the cap of the re-lubrication device and the cover of the drainage opening.

Idleness of motors

If the motors are idle for a longer period of time, the motor shaft should be rotated once a month. Rotate the motor shaft manually for at least 5 rotations and bring to a stop in a different position to the starting position.
If the motors have to be idle for more than 6 months, the motor bearings must be re-lubricated before start-up.
If the motors have to be idle for more than 2 years, the motor bearings must be replaced.

Appendix W2 Maintenance of Motor Bearings (cont.)

The details of the bearings installed by us and the lubrication quantities to be filled (only for WEG motors) are listed below:

Size	Output (kW)	A-side	B-side	Grease quantity (grams)	Re-lubrication interval
90	1,5 / 2,2	6205 ZZ	6204 ZZ	-	-
112	3,7	6307 ZZ	6206 ZZ	-	-
112	3 / 4 / 5,5	6207 ZZ	6206 ZZ	-	-
132	4 / 4,5 / 5,5 / 7,5 / 9 / 1-11	6308 ZZ	6207 ZZ	-	-
160	11 / 15	6309 C3	6209 Z-C3	-	-
180	18,5 / 22	6311 C3	6211 Z-C3	-	-
200	30 / 37	6312 C3	6212 Z-C3	-	-
225	45	6314 C3	6314 C3	27	5000
250	55	6314 C3	6314 C3	27	5000
280	75 / 85 / 90 / 1-110	6314 C3	6314 C3	27	5000
315	110 / 132 / 160	6314 C3	6314 C3	27	5000

Table 1

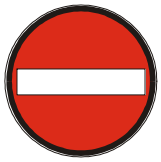
Operat. Hours	Airfilter cartridge		Oilfilter cartridge	Oilseparator cartridge			Oilfilling			Drive belt			Motor bearings A + B Side		other service work (take another sheet if required)	Signature and date
	cleaned	replaced	replaced	differential pressure	delta p in bar	replaced	checked	replenished	replaced	checked	retensioned	replaced	regreased	replaced		

Please tick the work which has been done and/or record measured data which confirm by signature .

Appendix ADS
End Pessure Switch

Contents

Warning!



From the factory side, the pressure switch is ideally adjusted to the respective machine configuration. Any change to the default settings can have serious consequences on the service life of your system. The legal warranty will expire if making changes that have not been discussed in advance with RENNER Kompressoren GmbH.

Function

The pressure switch controls the switch-on and switch-off pressure applicable for the respective system. The difference between switch-on and switch-off pressure is generally 1.5 bar. For changes to the switch-off pressure settings made on the factory side, the safety valve is activated if the the permitted maximum pressure is exceeded.

Continued overleaf