MM

Plug Sliding Door System

Maintenance Manual

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Revision history

Revision	Date	By	Description
3.1	2022-05-03	Prepared: *M.Stoelinga*	Updated references. Updated overview Layout corrections.
3.0	2021-12-20	Prepared: *M. Stoelinga*	Adjusted preface. Adjusted references. Added notice to apply commissioning settings. Minor text improvements. Added chapter Pneumatic potentiometer tension bracket. Updated overcenter soft stopper. Added torque position 13.
2.2	2021-05-10	Prepared: *M.Stoelinga*	Torque setting catch block adjusted from 26±2Nm to 20±2Nm pos 12. Adjusted revision history details.
2.1	2021-03-26	Prepared: *M.Stoelinga*	Torque setting can be checked by checking the torque marking.
2.0	2021-03-19	Prepared: *M.Stoelinga*	Adjusted torque setting order. Adjusted torque setting value of the shaft coupler from 13±1Nm to 22±2Nm pos 3.
1.3	2020-05-25	Prepared: *M.Stoelinga*	Added repair option to sensitive edge chapter. Adjusted references. Added torque settings chapter. Minor text changes.
1.2	2019-12-06	Prepared: *M.Stoelinga*	Minor text improvements. Updated references.
1.1	2019-07-24	Prepared: *M.Stoelinga*	Adjusted the air leakage test to an acceptable air leakage of 0.2 and 2 bar
1.0	2019-07-19	Prepared: *M.Stoelinga*	Updated Acronyms and Abbreviations. Added Air leakage test. Added microswitches chapter. Lay-out changes. Removed applying grease onto the electric actuator.
0.1	2019-04-15	Prepared: *M.Sandtmann*	Initial version.

Preface

The Quality System of Ventura Systems is accredited to IATF 16949:2016 and ISO 14001:2015.

Printed documents are uncontrolled. Documents are subject to change therefore verify correct revision before use.

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1 Introduction

1.1 Purpose

This maintenance manual describes maintenance and small adjustment procedures for the Ventura plug slide door system. Together with the Installation manuals and system drawings makes a complete set of maintenance documentation. It is important to follow all instructions. All instructions must be conducted without air/electric power unless mentioned otherwise. The instructions should be executed for the left and right door leaf when the system contains two door leaves. A well-adjusted door system is less vulnerable to failure. The right maintenance is crucial for the durability of the door system.

1.2 Scope

The purpose of this document is to guide trained service mechanics trough the maintenance steps of the plug slide door system. When repairs have to be made, the mechanic needs to use the repair manual, or the proper service instruction.

1.3 Definitions

Definition	Description
Wear part	Wear is progressive damage to a part caused by relative motion with respect to another substance or part.
Safety part	A safety part is a part, which is important to the overall safety of a system.

Table 1: Definitions

1.4 Acronyms and Abbreviations

Abbreviation	Description
DCU	Door Control Unit
HQ	Headquarters
IATF	International Automotive Task Force
IM	Installation Manual
ISO	International Standardization Organization
REG	Regulation
PS	Plug Slide
PSI	Pound-force per Square Inch

Table 2: Acronyms and abbreviations

1.5 References

1.5.1 External documents

Reference	Description	Date
APTA:2013	Standard bus procurement guidelines : A standardized request for proposal contract form for the transit industry	2013-05-01
IATF 16949:2016	Automotive quality management system standard	2016-10-01
ISO 14001:2015	Environmental management systems – Requirements with guidance for use	2015-10-01
ISO 9001:2015	ISO Standard for Quality Management Systems – Requirements.	2015-10-01
REG 107 Rev 08	Uniform provisions concerning the approval of category M2 or M3 vehicles with regard to their general construction (Incorporating all valid text up to: Supplement 1 to 08 series of amendments)	2020-11-02
TS 155 Rev 2	Bus door safety systems	2017-11-23

Table 3: External documents

1.5.2 Ventura Systems documents

Reference	Type	Description	Revision	Date
QM000001	DG	Documentation Guideline	4.1	2022-03-16

Table 4: Ventura Systems documents

1.6 Overview

The list below shows a brief overview of the contents each chapter:

1. Gives an introduction, definitions and overview of this document.
2. Contains the general door system safety instructions, safety symbols and disclaimer.
3. Contains the maintenance instructions.
4. Contains the torque settings.
5. Contains operational checks before applying power.

2 Door installation safety

2.1 General

Safety of the operator and bystanders is one of the main concerns in designing and developing a new piece of equipment. Ventura's door systems have the proper safety features for common use of the system. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. As you install, operate, or maintain the door system, you must be alert to potential hazards. Make sure you have the necessary training, skills and tools to perform any assembly, or maintenance procedures. Improper operation and maintenance of this door system may result in a dangerous situation that may cause injury or death.

Ventura Systems cannot anticipate every possible circumstance that may involve a potential hazard. The warnings in this document and on the product are not all-inclusive. If a method of installation or operation is used, which is not specifically recommended by Ventura Systems, you must satisfy yourself that it is safe for you and for others. You should also ensure that the door system will not be damaged or be made unsafe by the installation and/or operational methods you choose. The information, specifications and illustrations in this document are based on the information that was available at the time this document was written and can change at any time without notice.

2.2 Disclaimer

The information contained in this maintenance document is based upon reliable technical data at the time the document was published. These instructions are intended for use by persons having the technical knowledge to maintain this door system. The instructions are to be used at the maintenance mechanic’s own discretion and risk. Ventura Systems assumes no responsibility for results obtained or damage incurred from the use of this material either in whole or in part by the installer. This document provides basic instructions for the maintenance of the door system in a step-by-step sequence that will work in most types of maintenances. While effort has been made to ensure the information in this document is correct and complete, we would appreciate it if you would contact us in case of errors.

2.3 Safety alert symbols

This document contains safety messages which alert you to potential personal injury hazards. Obey all safety messages in this document to avoid possible injury or death. The following key words and layouts calls for your attention: DANGER, WARNING, CAUTION and NOTICE. Below are examples of these safety messages. The NOTE message is used for additional information but these are not threatening for the mechanic, bystanders, nor the door system.

DANGER!

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

WARNING!

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION!

Indicates a potentially hazardous situation which if not avoided, may result in minor or moderate injury.

NOTICE

Indicates that equipment or property damage can result if instructions are not followed.

NOTE

Additional information important but not threatening for people or to the system.

2.4 Safety instructions

WARNING!

This door system is designed for a specific application;
DO NOT modify or use this unit for any application other than for which it was designed.

Door systems operated improperly or by untrained personnel is dangerous. Lack of operation knowledge may cause high risk.

Do not install this door system if it is damaged. If you are in doubt if the door system has a defect, immediately stop the installation and contact Ventura Systems.

Do not connect the door system to air or electric supply during the maintenance process. If the manual states otherwise, follow the manual.

Do not attempt to install the door system under influence of drugs or alcohol.

NOTICE

Do not modify the door system or safety devices. Unauthorized modifications may impair its function and safety.

If equipment has been altered in any way from the original design, Ventura Systems does not accept any liability for injury or warranty.

If replacement of parts is necessary, genuine factory replacement parts must be used to restore the door system to its original specifications.

*always disconnect the air and/or electric power while replacing parts. Safety features may not be active while replacing parts.

Ventura Systems will not accept responsibility for damages as a result of the use of unapproved parts.

While working on the Ventura door systems wear appropriate personal protective equipment.
This list may include but is not limited to:

- Protective shoes with slip resistant soles
- Protective goggles, glasses or face shield
- A hard hat

Follow the regional and country laws and safety precautions.

3 Maintenance

Maintenance of a door system should only be performed when the bus is positioned on a flat surface to prevent distortion/twisting of the bus body, which can lead to inaccurate measurements of the portal.

Whenever the amount of cycles is past, we advise to execute the applicable maintenance. At the table below, we address the chapter names.

Cycles assumption	Minimal maintenance	Applicable for
75.000	Every 3 months	Safety parts Operational checks
150.000	Every 6 months	Wear parts
300.000	Every 12 months	Parts inspections

Table 5: Maintenance frequencies

Execute at least the minimal maintenance intervals.

NOTICE

After maintenance has been completed, the settings must be applied as described in the commissioning manual. Be aware to use the commisioning manual that came with this product.

3.1 Safety parts

The checks in this chapter are safety critical. If these parts are not installed correctly, it can have great consequences for the safety of the system. When the system has two door leaves, the checks must be executed for both sides.
Ventura Systems recommend to execute all safety checks regularly and at least according to the maintenance intervals mentioned in the table *Maintenance frequencies*.

3.1.1 Lever block

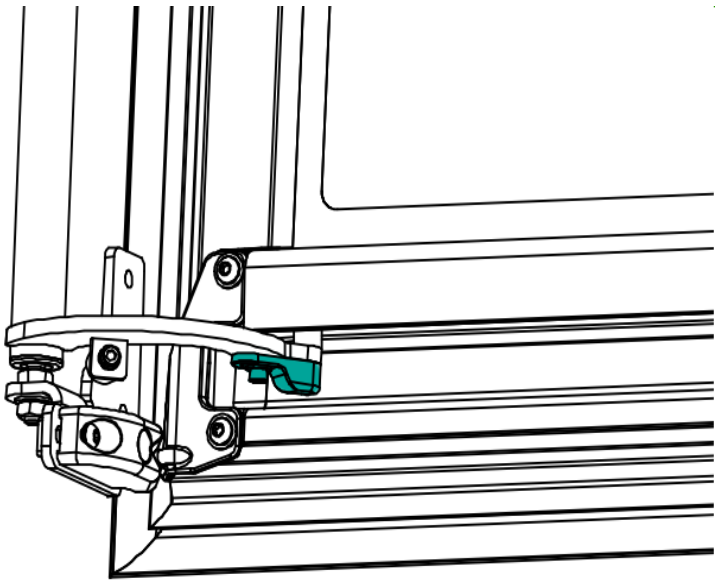


Figure 1: Lever block

WARNING!

When the lever block is not in place, the door leaf could get off the guiding roller when twisted, leading to situations with a high risk of injury to persons. It is very important the lever block is in place.

1. Check if the lever block is present at the bottom of the lever.
2. Check if the lever block is in the right position. It has to be inside the rail of the door leaf.
3. Check if the bolt is on torque.

3.1.2 Emergency release

The emergency release is not always supplied by Ventura. In case the emergency release is supplied by Ventura, execute the following check.
Apply power and/or pressure to the system and put the door(s) in closed position.

CAUTION!

Be aware the system could move when applying power and/or pressure to the system.

1. When the system is active, activate the emergency release.
   The following events should occur.
2. The power/pressure is released from the system.
3. The door(s) can be opened manually.

- Reset the emergency release.
- Open and close the door(s) using the power source.

WARNING!

Remove the power and/or pressure from the system after executing this step and before you continue.

3.1.3 Sensitive edge

- Press against the right mid seal at a height of 1 meter or less. The doors go to open position.
- Press against the left mid seal at a height of 1 meter or less. The doors go to open position.

When the door leaves do not open when pressing the mid seals as described, perform the following checks or execute the repair instruction.

Disconnect the sensitive edge.

- Remove the bolts which connect the door leaf to the door arm.
- Disconnect the connector from the spiral cable **The full door leaf could be removed to continue or a second engineer needs to hold the door, while executing the checks.**
- Connect a multimeter to the connector of the sensitive edge.

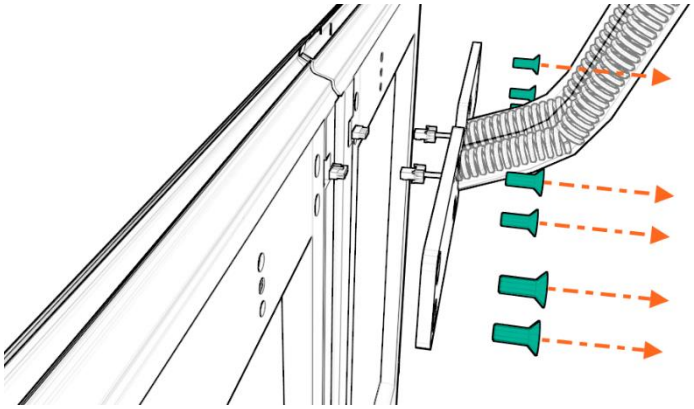


Figure 2: Dismount the door leaf

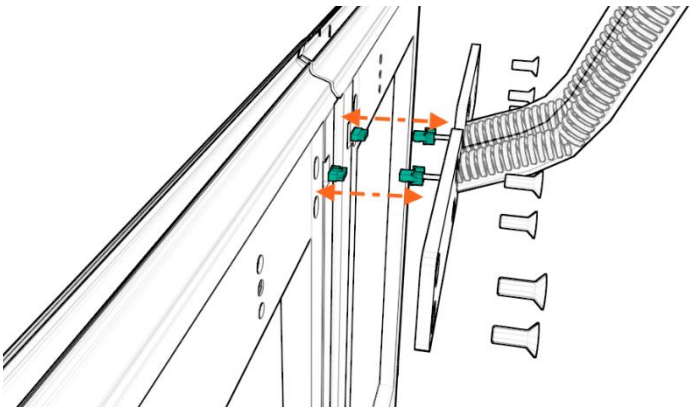


Figure 3: Disconnect the sensitive edge connectors

1. Be sure there is no force pressing the mid seal which can activate the sensitive edge. Resistance is 1200 or 8200 Ω depending on the resistor of the sensitive edge.
2. Apply force onto the mid seal of the door leaf. Resistance is approximately 0. ~0 Ω

In case all checks are approved, reinstall the door leaf.
Reinstall the door leaves following the instructions in the installation manual. Also execute the callibration of the doors.

NOTE

The sensitive edge is malfunctioning when the resistance is infinite. ∞ Ω.

3.1.4 Obstruction detection unit

Only applicable for pneumatic systems.
Apply power and/or pressure to the system and put the door(s) in closed position.

CAUTION!

Be aware the system could move when applying power and/or pressure to the system.

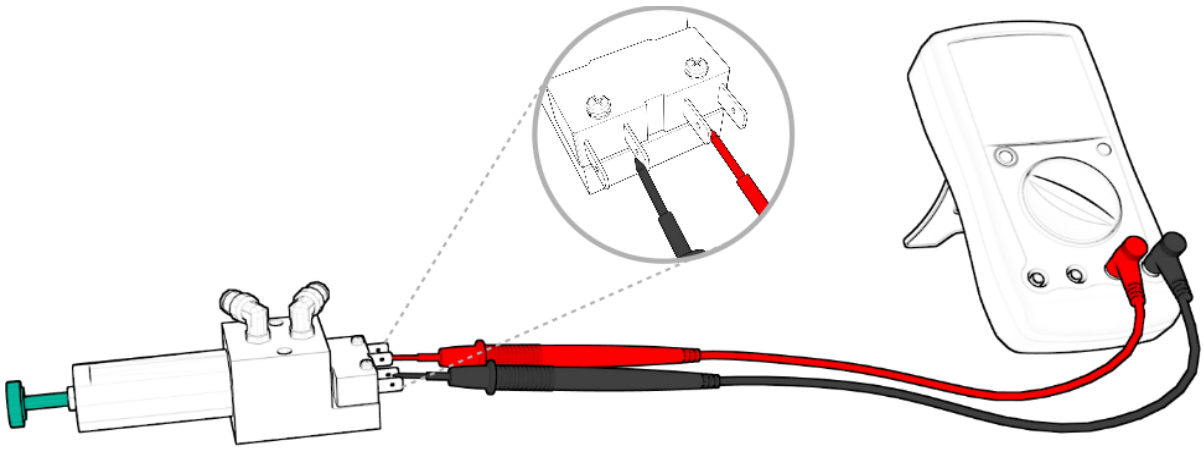


Figure 4: connect multimeter to the obstruction detection unit

1. If a signal is measured, the obstruction detection unit works properly.

WARNING!

Remove the power and/or pressure from the system after executing this step and before you continue.

3.1.5 Pneumatic potentiometer tension bracket

NOTICE

Execute the following step only when the system is pneumatic and has an potentiometer.

CAUTION!

This step is critical for the positioning of the door. When this part does not function fully, errors will occur.

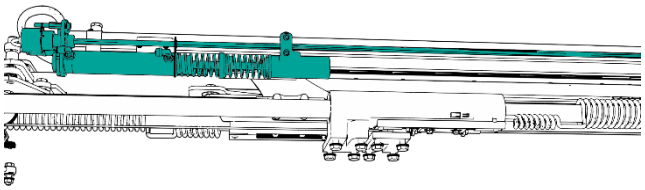


Figure 5: potentiometer with rollers.

Check if the rollers are not worn.

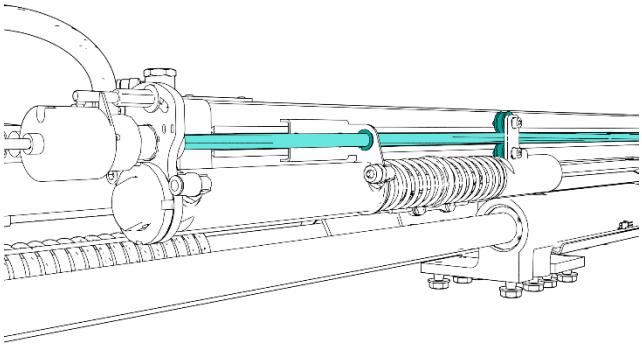


Figure 6: rollers and wearring.

Make sure the rollers are clamping the shaft.

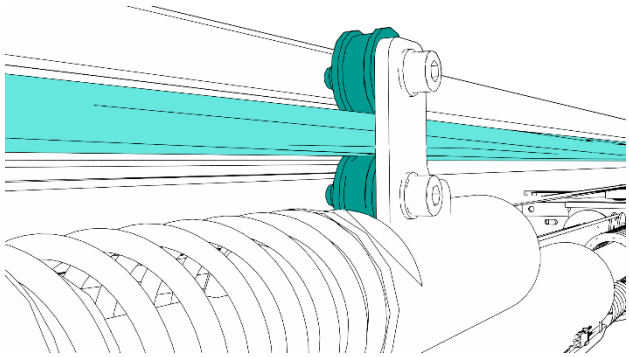


Figure 7: rollers clamp the shaft.

3.2 Wear parts

These parts wear out and must be replaced when damaged, worn, after the prescribed cycles or after the prescribed time the parts are in usage. When a part has an amount of maximum cycles, it will be mentioned.

3.2.1 Overcenter soft stopper

Apply power and/or pressure to the system and put the doors in closed position.

CAUTION!

Be aware the system could move when applying power and/or pressure to the system.

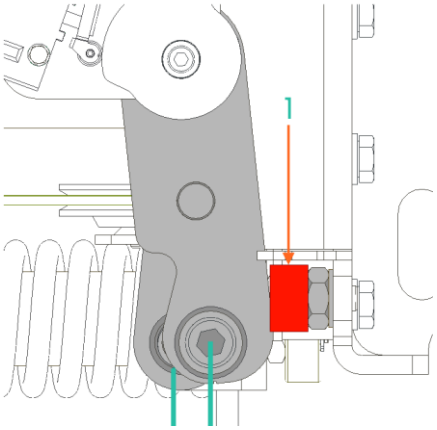


Figure 8: Overcenter electric with unlock cylinder

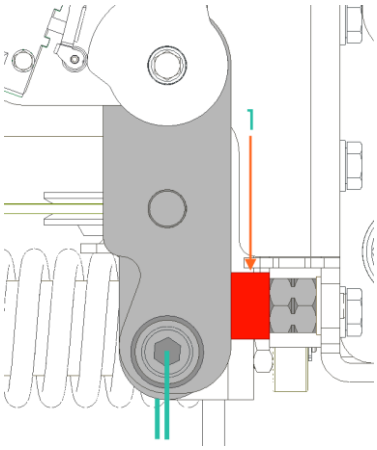


Figure 9: Overcenter pneumatic with unlock cylinder

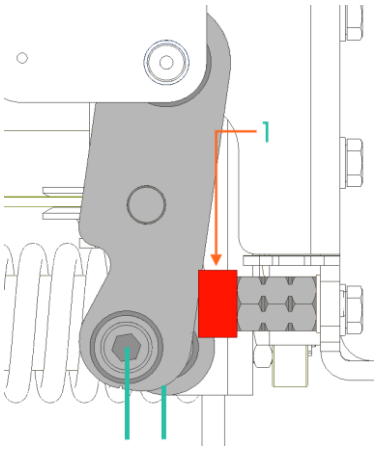


Figure 10: Pneumatic without overcenter function

- Check if the lever touches the soft stopper (1) in closed position, with power/pressure.
- Check if the rubber bush of the soft stopper (1) is not worn. Inner dimension following system drawing.
  If the bush is worn, the system closes with a lot of noise.

WARNING!

Remove the power and/or pressure from the system after executing this step and before you continue.

3.2.2 Cushioning rubber bearing house

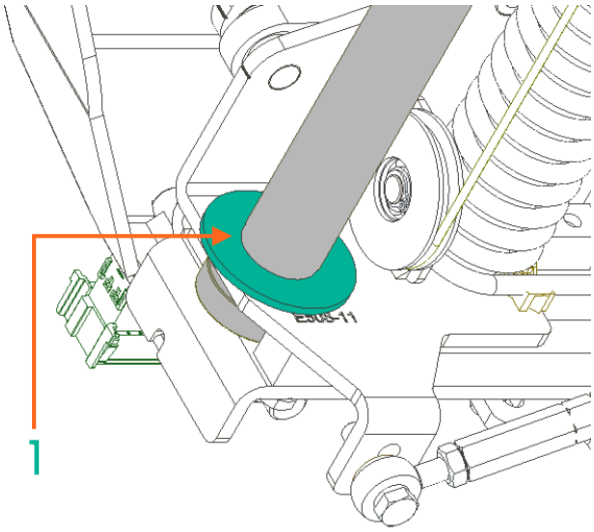


Figure 11: Left cushioning rubber

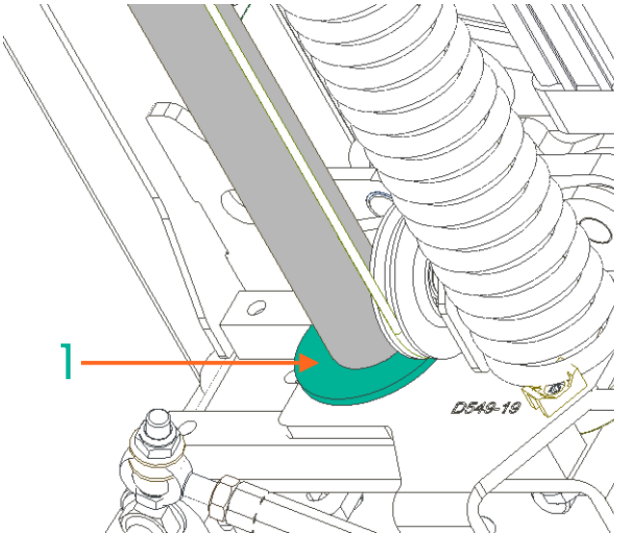


Figure 12: Right cushioning rubber

- Check if the cushioning rubber (1) is present at both sides of the mechanism.
- Check if there is no visible damage on the cushioning rubber.

3.2.3 Guide rollers

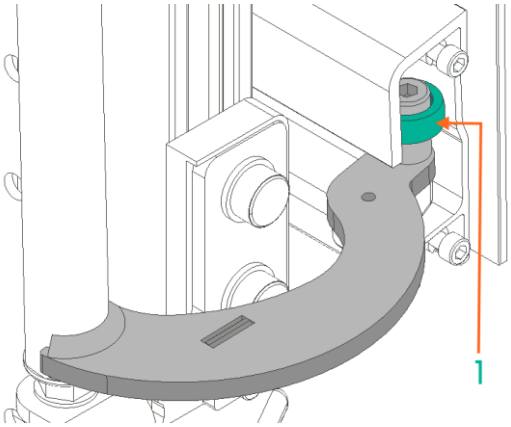


Figure 13: Bottom guide roller

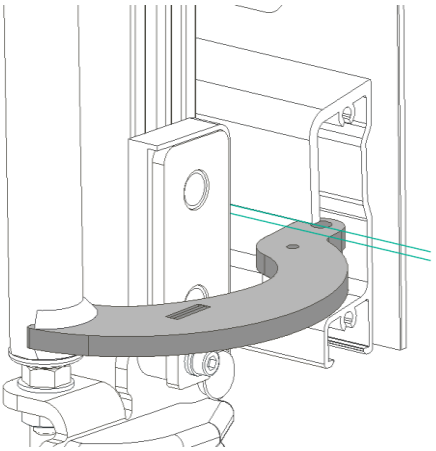


Figure 14: Distance between bottom lever and guiding rail

- Check if the guide rollers (1) on the lever(s) are not worn or damaged in any way. Check for damage visually and feel if there are no worn places on the guide rollers.
  The guide rollers are located at the bottom lever. See left image above.
- Measure if the clearance between the bottom lever and the guiding rail is the same as described in the installation manual over the full length of the door movement.
  If the clearance is not the same, adjust the height of the door shaft following the installation manual.

3.2.4 Catch block

Apply power and/or pressure to the system and put the door(s) in closed position.

CAUTION!

Be aware the system could move when applying power and/or pressure to the system.

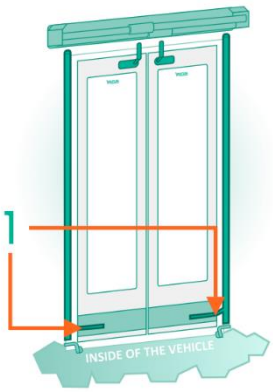


Figure 15: Location of the catch blocks and catch wedges.

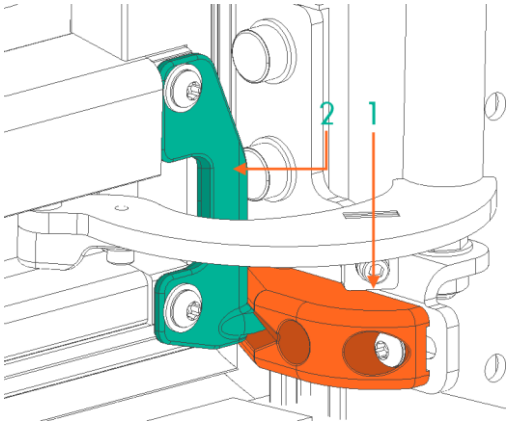


Figure 16: Catch block and wedge right

- Check if the catch wedge (2) is caught by the catch block (1) when the door is closed.
- Check if the catch block (1) or catch wedge (2) is not worn or damaged.

WARNING!

Remove the power and/or pressure from the system after executing this step and before you continue.

3.2.5 Bottom stopper

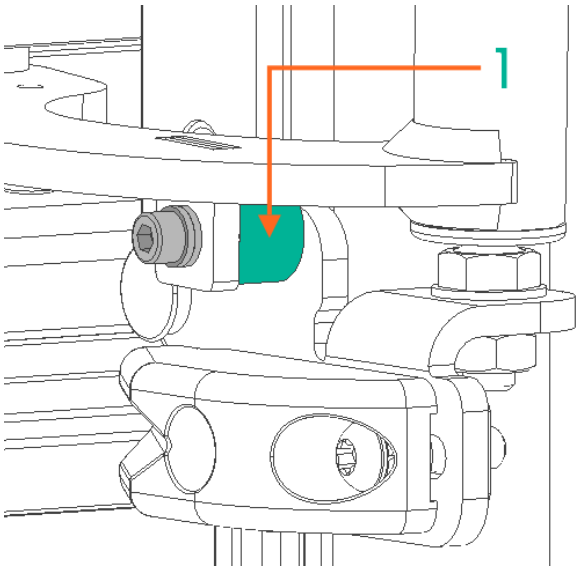


Figure 17: Bottom stopper

- Check if the bottom stopper (1) is present.
- Check if the bottom stopper (1) is not worn or damaged.

3.3 Parts inspections

These parts can get affected by usage and must be re-adjusted or cleaned when needed. Check the distance settings of the door system in open and closed position following the installation manual. Check the torque settings of the door system following the installation manual.

3.3.1 Door shafts

- Check if the door shaft is free from vertical play (up and downward movement).

If the door shaft is free from vertical play, continue without executing this step. If there is play, execute the following checks.

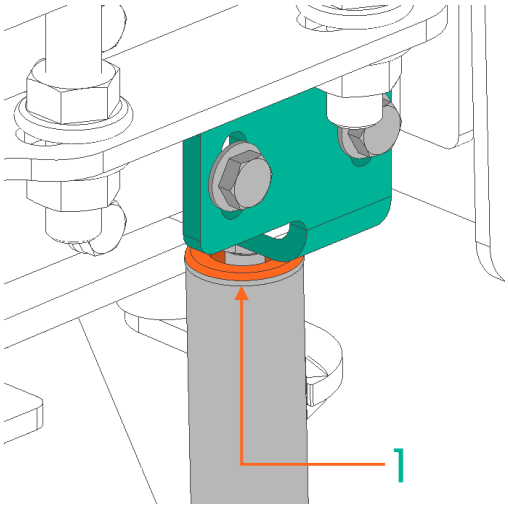


Figure 18: Top bearing door shaft

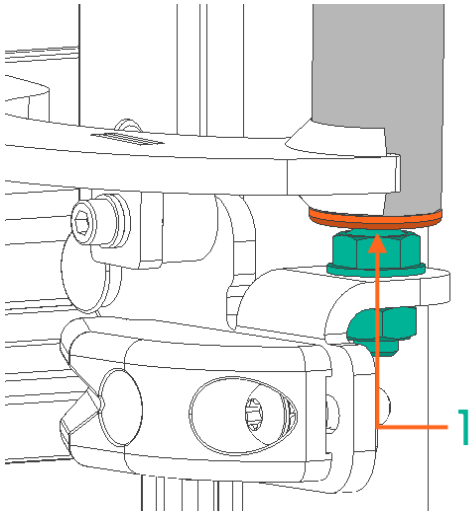


Figure 19: Bottom bearing door shaft

- Check the settings following the installation manual.
- Check if the bearing bush (1) and pivot point at the bottom of the door shaft are not worn or damaged.
- Check if the bearing bush (1) and pivot point at the top of the door shaft is not worn or damaged.

3.3.2 Electric Actuator

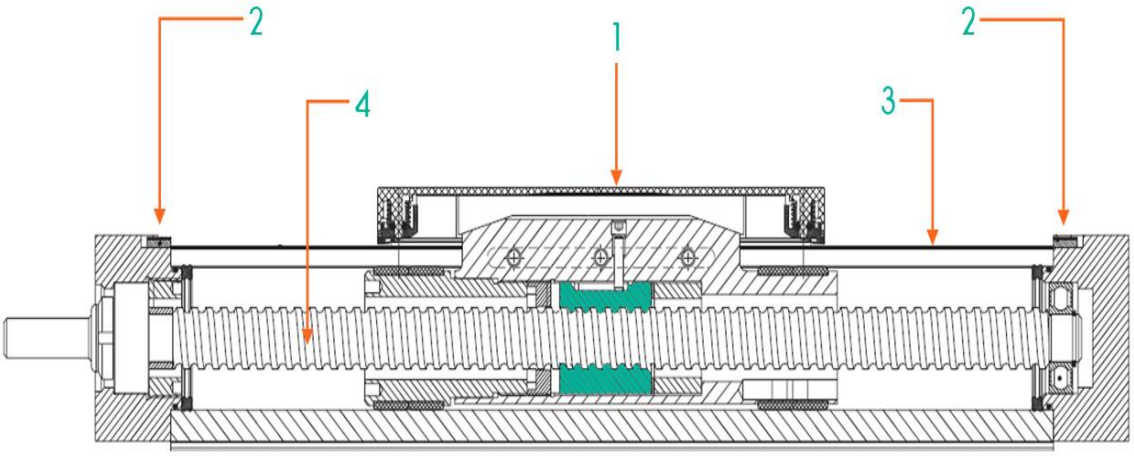


Figure 20: Electric Actuator

- Check if the surface between the cover strip (3) and the aluminum profile of the actuator is clean from dirt and other impurities. (When cleaning do not use any aggressive cleaning materials and / or fluffy cloths.)

3.3.3 Filter regulator

Check if the system is equipped with a regulator or a filter regulator. If there is no regulator or a filter regulator, skip this step.

1. Check if the pressure of the pneumatic system is 8* bar.
   *in case of an electric system with a non-Ventura DCU,
   check if the pressure of the pneumatic system is 6 bar.
2. The filter regulator is semi-automatic, meaning the filter will drain itself when the pneumatic pressure drops below 0.3 bar (4.3 PSI) and the drain is open.
3. Replace the filter when it is not clear white.

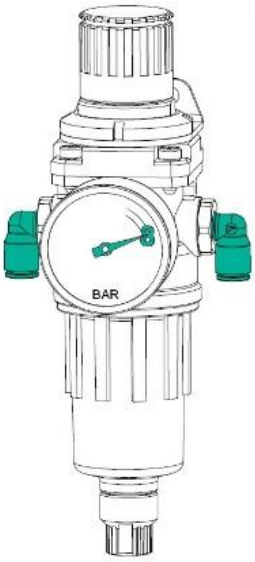


Figure 21: Filter regulator

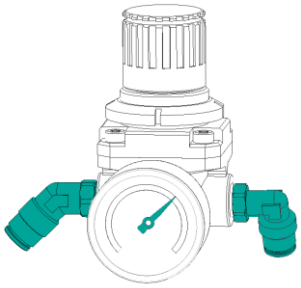


Figure 22: Regulator

Open drain by turning clockwise
Close drain by turning counter clockwise

NOTICE

Depending on the filter regulators location, it is advised to keep the drain closed so it will not spill dirt over vital parts of the bus.

3.3.4 Tension steel cables

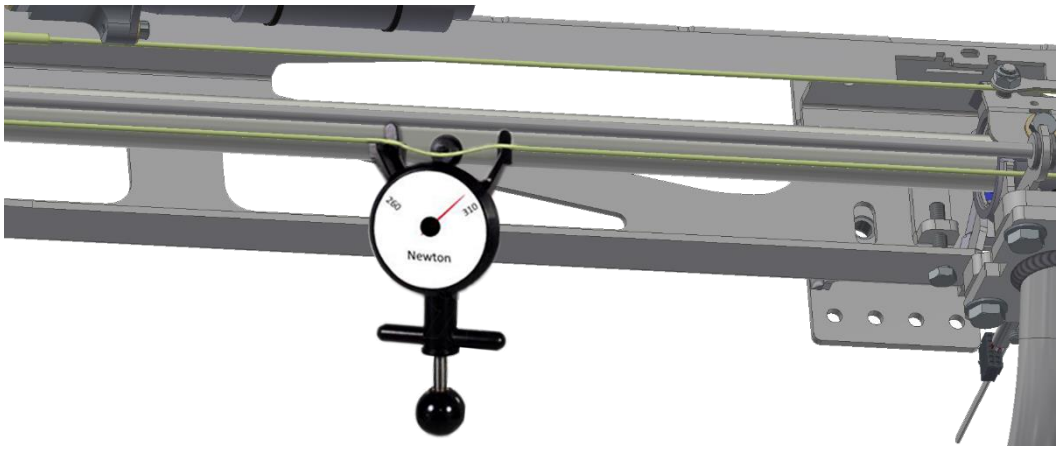


Figure 23: Tension meter

1. Put the doors in open position.
2. Apply the tension meter as described by the manufacturer.

- Check if the tension in the cable is 260-310 Newton.

NOTE

When using a sonic tension meter, the tension has to be 33-39 hertz.

3.3.5 Clamping force test

Be assured all safety features of the system are active. Execute the obstruction test following the applicable regulations for your company. (Regulations Ventura meets are REG107, TS155)

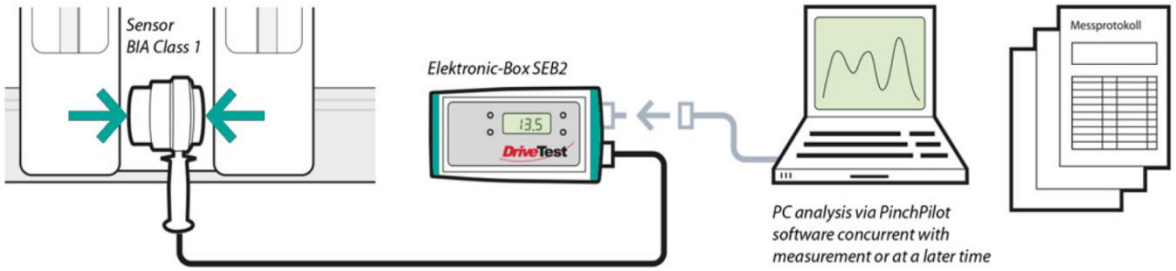


Figure 24: Obstruction test setup

1. Setup the measurement system following the user manual included with the measurement tool.
2. Apply power and/or pressure to the system.

CAUTION!

Be aware the system could move when applying power and/or pressure to the system.

3. Put the doors in open position.
4. Execute the test according to the applicable regulations.

When the test is not successful;

- Check the safety parts of system.
- Check adjustments following the installation manual.

WARNING!

Remove the power and/or pressure from the system after executing this step and before you continue.

3.3.6 Grease bearing house

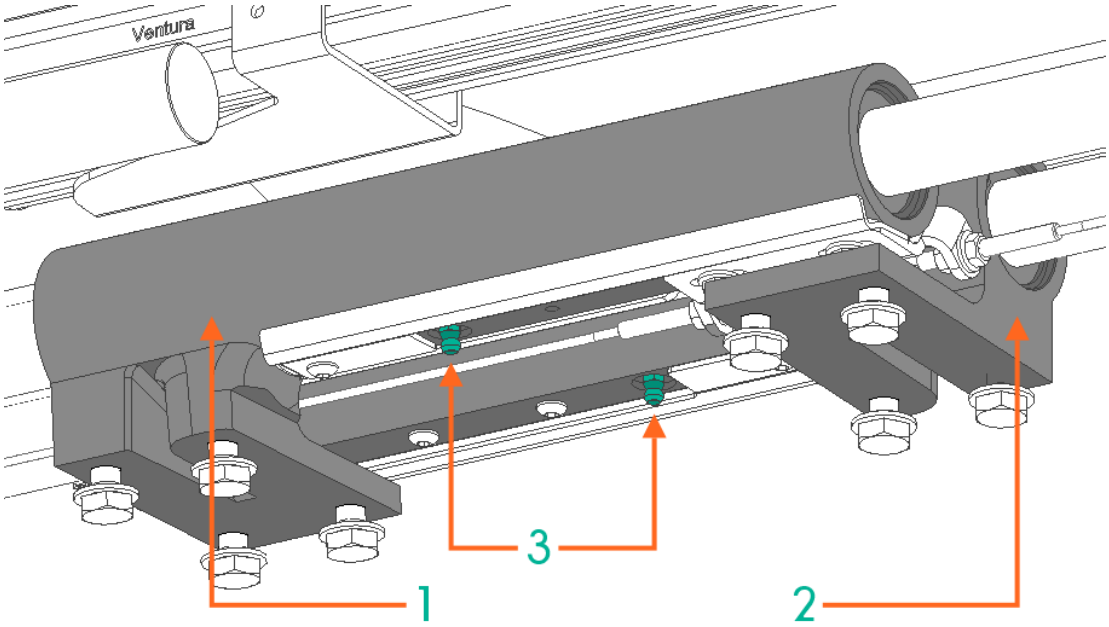


Figure 25: Front and back bearing housings

NOTICE

If a refill of grease is needed, do not use more than 20gr. When the bearing house has too much grease, the friction will hinder a smooth opening and closing movement of the door system.

- Check the greasing of the bearing houses on the front (1) and back (2). Both housings are greased before delivery.
- If necessary, grease front and back housing using the lubrication nipples (3). Both bearing houses have to be refilled every year (Normal use, 20gr grease)
- If grease is needed, grease the bearing house with 10 gr. grease, move the door leaf a few times.
  Grease again with 10gr. grease.

NOTE

Use "Arcanol MULTITOP" or a grease with similar specifications

3.3.7 Grease spiral cable guiding shaft

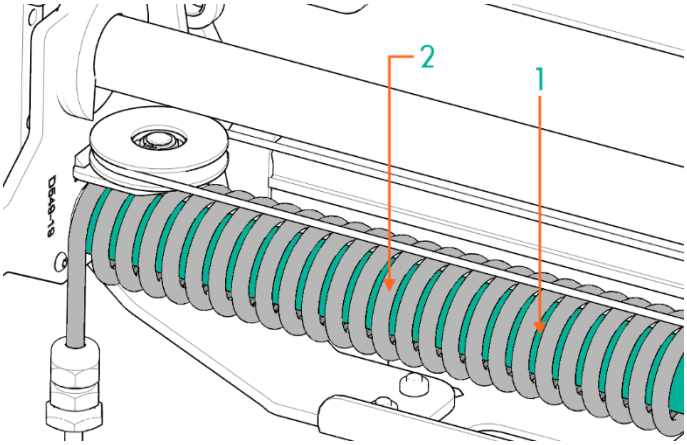


Figure 26: Left spiral cable

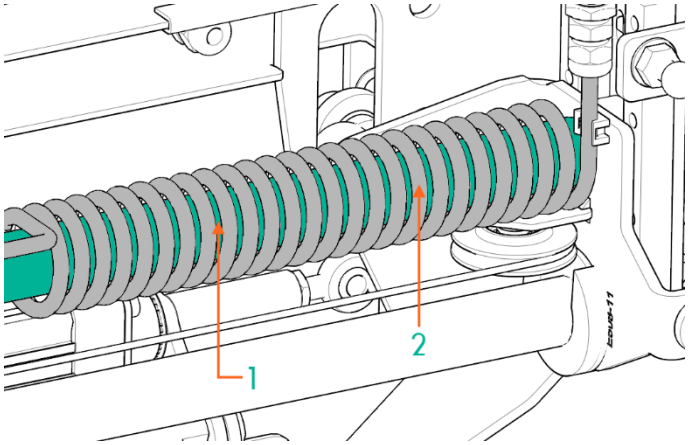


Figure 27: Right spiral cable

Before continuing, place the doors in open position.

- Check if shaft (1) on left and right side is clean of dirt.
- Check if there is a layer of grease on top of the left and right shaft (1) which helps the spiral cable (2) run smoothly over the shaft. Apply grease when needed.

NOTE

Use "Kroon Multi Purpose Lithep EP2" or a grease with similar specifications

3.3.8 Air leakage test

All stated air leakage test values are applicable solely on one door system. Only check the leakage on door systems when the door is not functioning correctly or air leakage is hearable.
Check for damaged air pipes or connectors. Try to find where the leakage is coming from. Is there any air leak noise? Can you feel air coming from the connectors or pipes?

To reduce air leakage, maintain the filter regulator at least every 2 months. Manually drain the bowl according to the maintenance manual. Change the filter element inside the bowl, at least every year.

Starting pressure of the test is 8 Bars, test time is one minute.
The leakage value is a constant indicator in testing supplied pneumatic parts.

Cylinder type	Air leakage value (Bar)
Common cylinder	0.1
Rodless cylinder	1.0

Table 6: Air leakage values

The following explanation uses icons how to connect the Manometer. The icons used are displayed in the legend.

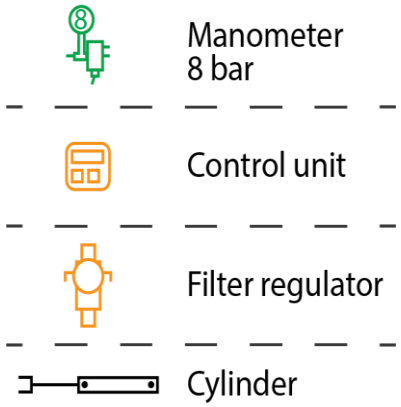


Figure 28: Legend for air leakage images

Testing the complete door system

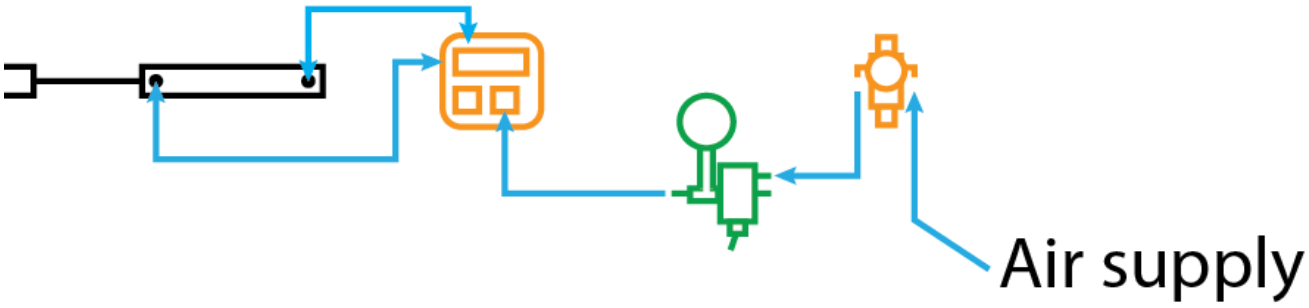


Figure 29: Testing complete door system

1. Connect the testing device between the filter regulator and the rest of the door system as shown in the image above.
2. Start the engine of the bus, air pressure should be 8 Bar.
3. Let go of the air pressure at the filter regulator.
4. Set the test device on "open".
5. Turn up the air pressure at the filter regulator till 8 Bar.
6. Turn on the manometer at the testing device by pressing the left button and check the pressure.
7. Set the test device on "testing".
8. Measure the pressure drop for 1 minute in open position, the value from 8 Bar should not drop more than 1 Bar. Repeat this for the closed position.
9. Set the test device on "open".
10. Let go of the air pressure at the filter regulator.
11. Remove the testing device and fit the air tubes in their original state.
12. Turn up the air pressure at the filter regulator till 8 Bar.
13. If the value drops more than 1 Bar in one minute, contact Ventura Support.

Testing door open

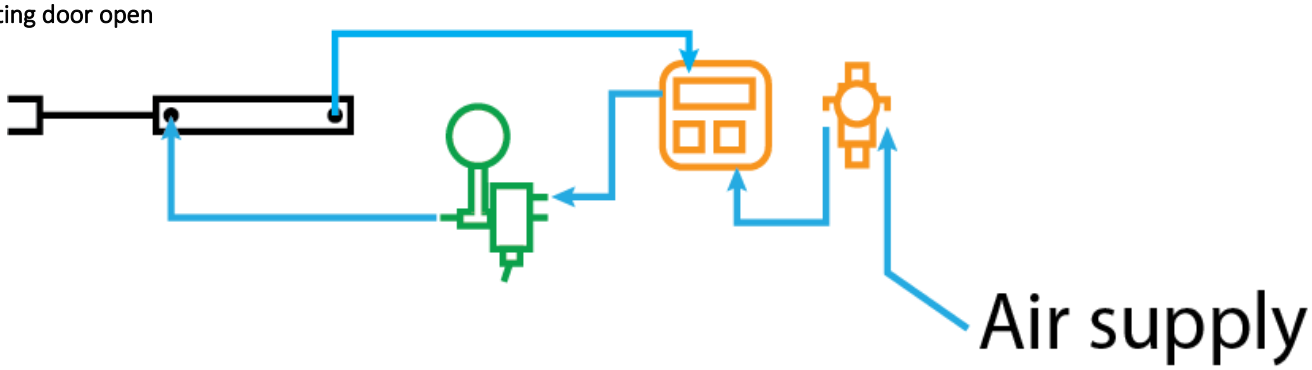


Figure 30: Testing door open position

1. Connect the testing device between the closed position of the cylinder and the rest of the door system as shown in the image above.
2. Start the engine of the bus, air pressure should be 8 Bar.
3. Close the door.
4. Set the test device on "open".
5. Open the door.
6. Turn on the manometer at the testing device by pressing the left button a check the pressure.
7. Set the testing device on "testing"
8. Measure the pressure drop for one minute in open position. The value of 8 Bar should not drop more than 1 Bar.
9. Set the testing device on "open".
10. Close the door.
11. Remove the testing device and fit the air tubes in their original state.

Testing door closed

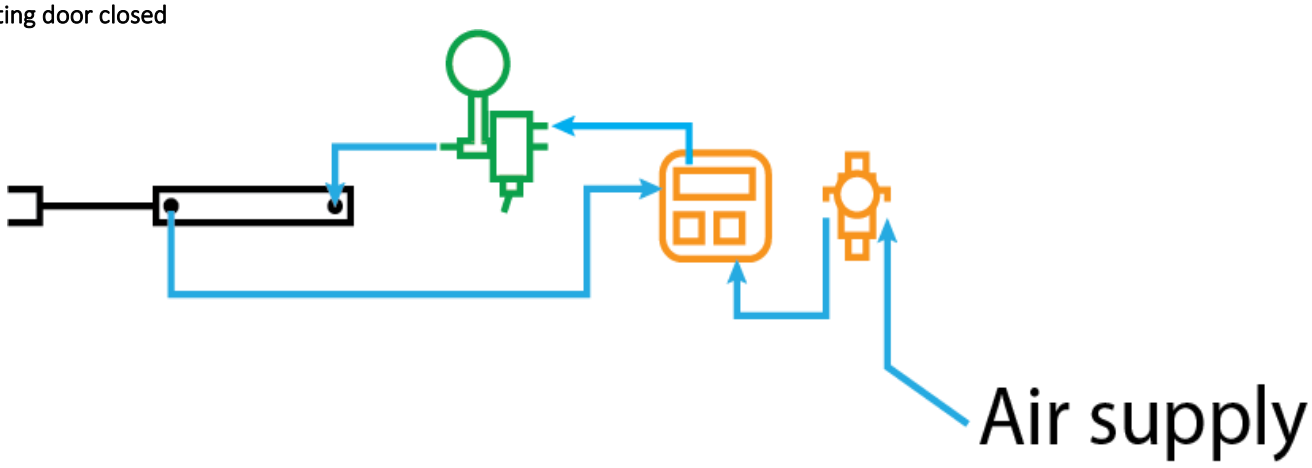


Figure 31: Testing door open position

1. Connect the testing device between the open position of the cylinder and the rest of the door system as shown in the image above.
2. Start the engine of the bus, air pressure should be 8 Bar.
3. Open the door.
4. Set the test device on "open".
5. Close the door.
6. Turn on the manometer at the testing device by pressing the left button a check the pressure.
7. Set the testing device on "testing"
8. Measure the pressure drop for one minute in open position. The value of 8 Bar should not drop more than 1 Bar.
9. Set the testing device on "open".
10. Open the door.
11. Remove the testing device and fit the air tubes in their original state.

4 Torque Settings

All generic plug slide settings that require torque tightening are in this chapter. Check all mentioned fasteners on the correct torque settings. In case of a double leaf system, check both sides. The torque settings of marked fasteners may be verified by checking if the marking is intact.
The fasteners which connect Ventura parts onto the vehicle are, in most cases, non-Ventura parts. Therefor the torque of these fasteners is not defined by Ventura.

After setting a part to torque specification, mark the connection with a torque marker.

Figure 32: mark the fasteners with a torque marker.

The position in the system overview have details in the following part of this manual. In the second part the torque settings are described.

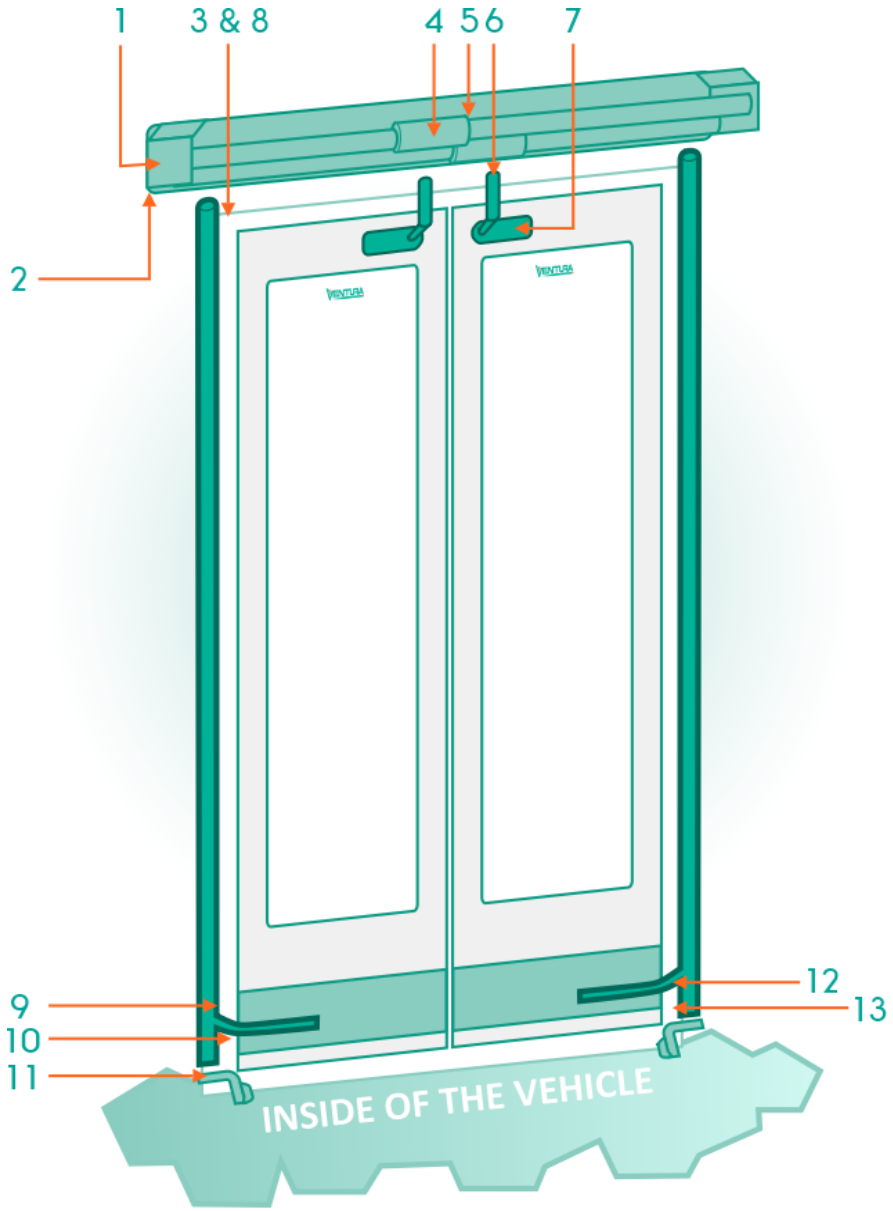
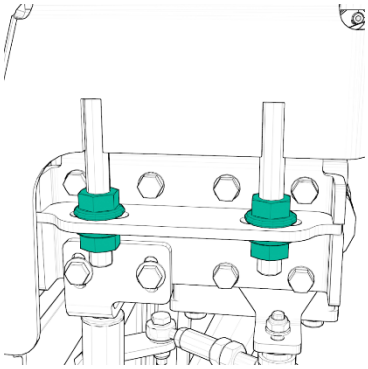


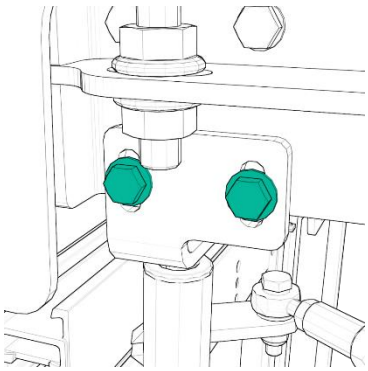
Figure 33: torque setting overview.

Position 1



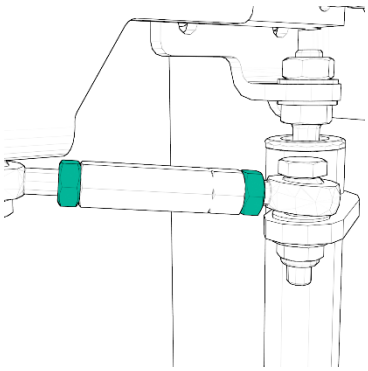
121±9 Nm, 2 per side

Position 2



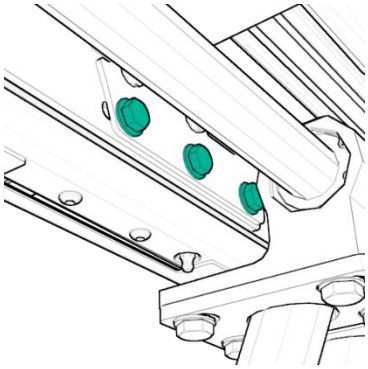
22±2 Nm, 2 per side

Position 3



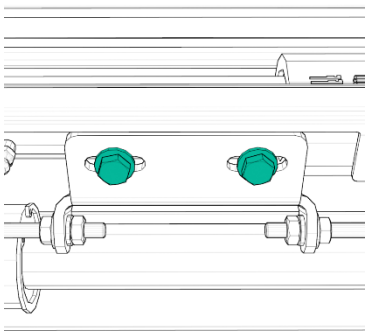
22±2 Nm, 2 per side

Position 4



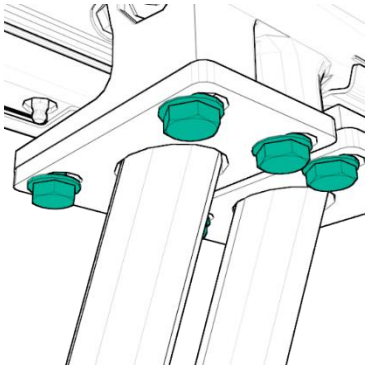
22±2 Nm, 3pc

Position 5



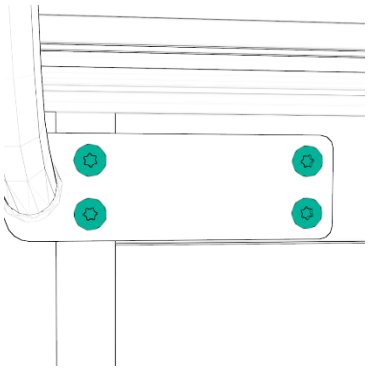
9±1 Nm, 2pc

Position 6



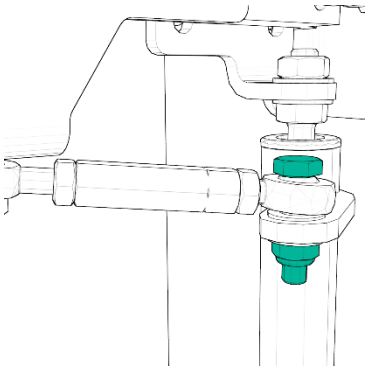
45±4 Nm, 4 per side

Position 7



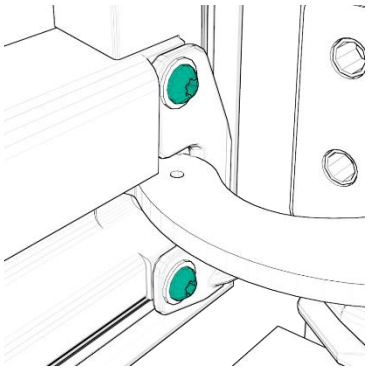
59±5 Nm, 4 per side

Position 8



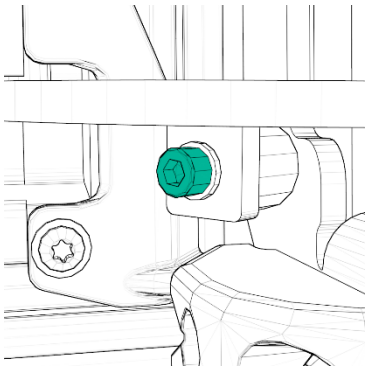
22±2 Nm, 1 per side

Position 9



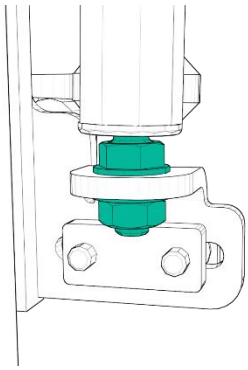
26±2 Nm, 2 per side

Position 10



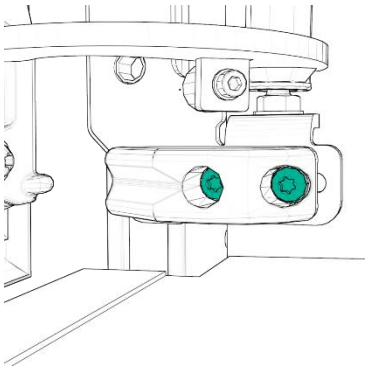
9±1 Nm, 1 per side

Position 11



45±4 Nm, 1 per side

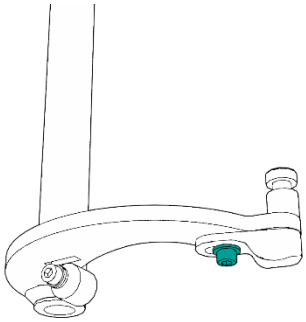
Position 12



20±2 Nm, 2 per side

Continue on the next page.

Position 13



Loctite 243 on the bolt.
8±1 Nm, 1 per side

5 Operational checks

Execute these checks before applying power.

WARNING!

Applying power to an unchecked system may result in a potentially hazardous situation which, if not avoided, could result in death or serious injury.

No.	Check	Verified by	Approved
1.	Be assured all fasteners are on torque as described in the installation manual of this system.		
2.	Check if no cables/tubes are loose on the system.		
3.	Check if all parts are in place.		
4.	Manually check if the door leaf/leaves open and close without obstructions.		
5.	All safety parts are connected.		

After these checks, the power may be applied.

5.1 Operation and controls

These checks are all with power and/or pressure.

No.	Check	Verified by	Approved
1.	In case of Pneumatic parts: There is no leakage in the pneumatic system. Also, no leakage while opening and closing the doors.		
2.	In case of electric parts: Check if the electric parts and wires has no short circuits or damages.		
3.	Check if all settings match the installation manual.		

5.2 Safety checks

These checks are all with power and/or pressure.

No.	Check	Verified by	Approved
1.	All emergency buttons are functioning.		
2.	Check pneumatic obstruction detections. (if applicable)		
3.	Apply an obstruction while closing. Doors open again. Test left and right separately. *CAUTION!		
4.	Apply an obstruction while opening. Doors go to half open position. Test left and right separately. (if applicable) *CAUTION!		
5.	Check if the mechanism goes overcenter in closed position. (if applicable)		

CAUTION!

Do not use body parts to apply an obstruction.

6 Contact

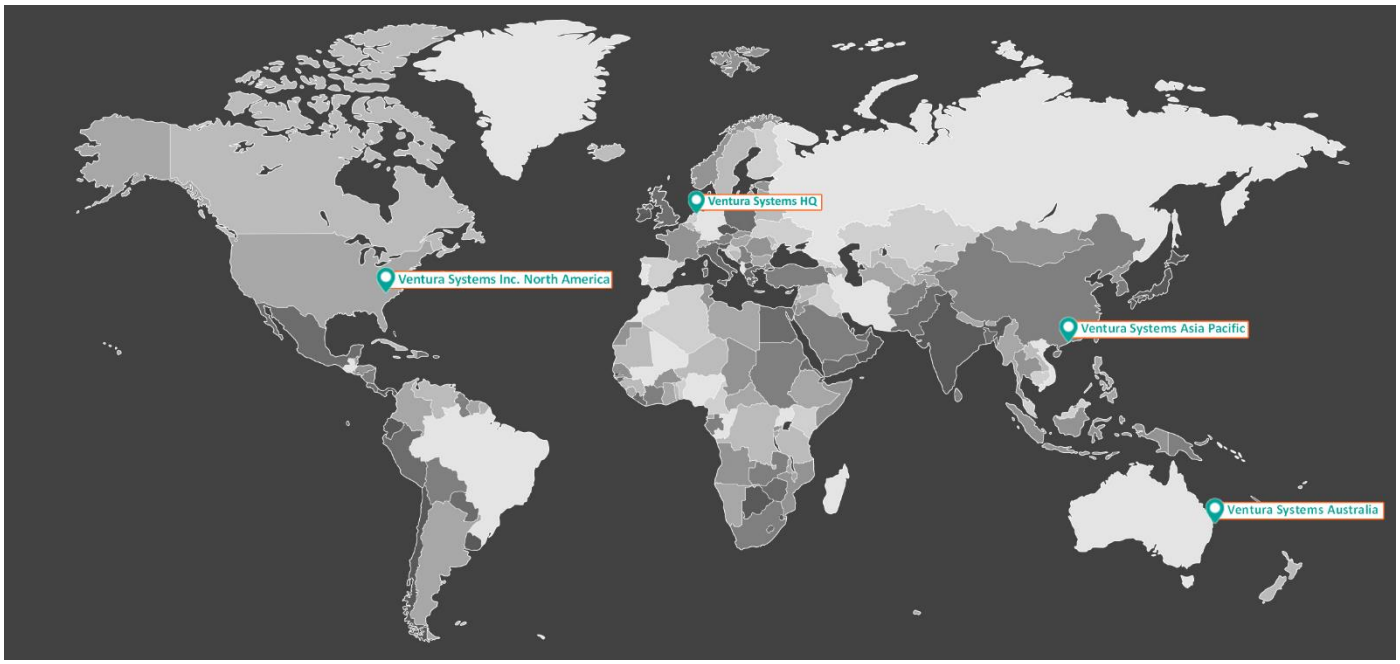


Figure 34: World map Ventura locations

	Ventura Systems HQ	Ventura Systems Asia Pacific	Ventura Systems Australia	Ventura Systems Inc North America
	De Marne 216 8701MH Bolsward The Netherlands	Unit 10 on the 13/F Fotan Industrial Centre 26-28 Au Pui Wan Street Hong Kong	PO Box 284 Sanctuary Cove QLD 4212 Australia	160 Gibson Ct NC 28034 Dallas
	+31 (0) 51 557 7750	+852 2712 6001		+1 704-691-0311
	+31 (0) 51 557 3410	+852 2512 2325		+1 704-691-0313
	support@venturasystems.com	info@venturasystems.hk	info@venturasystems.com.au	info@venturasystems.com
	www.venturasystems.com			

Table 7: General contact information

	Ventura Systems HQ	Ventura Systems Asia Pacific	Ventura Systems Australia	Ventura Systems Inc North America
	parts@venturasystems.com	info@venturasystems.hk	info@venturasystems.com.au	info@venturasystems.com
	+31 (0) 515 577485			

Table 8: Parts contact information

Contact your local Agent for parts.