Technical Manual

TASKI Diversey

swingo 4000/5000

Diversey
for a cleaner, healthier future™

Edition: V1.01/2012

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Technical Manual

1 Forward

19. September 2012 Edition: V1.01/2012

1 Foreword

1.1 Target

To serve our customers faster and more efficient it is important to achieve a general standard of technical know how with our partners in the market.

Therefore we developed a Technical Training concept which is based on e-spares. The concept consists of a Technical Manual and a Technical Training.

These two tools will be produced for each newly launched machine with a certain complexity. The Technical Manual will be available as PDF file and can be downloaded from e-spares. The Technical Training documentation will be distributed after having attended the technical training.

1.2 Technical Training

The Technical Training is addressed as reference book for the technical training sessions and will be distributed to the floor care responsible and/or to the technical training responsible after attending a training session provided by GTS (max. 2 persons per country).

The intension is, that after this session, a technical trainer is able to perform technical training for their local technical staff and in this way to transfer the knowledge to all service technicians.

The Technical Training is not intended as manual for the service technicians and will be distributed only to the training responsible of each country.

1.3 Technical Manual

The Technical Manual is addressed to the service technicians and should be translated and distributed after a technical training.

It contains a summary of procedures, hints and suggestions etc. which are helpful and

essential for the daily business. The Technical Manual can be downloaded from e-spares/documents.

1.4 Summary

We are convinced that the Technical Manual concept together with the Technical Training are powerful tools, which will help our service organisations to achieve a higher level of quality in repairs and customer satisfaction.

If you have any comments or questions do not hesitate to contact your country responsible.

Sincerely yours

GTS Team

Technical Manual

2 Elementary

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2 Elementary

2.1 Health & Safety

Scrubber dryers may be powered by mains electricity or batteries. There are risks associated with both, which call for proper precautions, such as the provision of good ventilation and the elimination of risk of ignition.

All work, carried out on such machines, should only be performed by trained personnel in accordance with local regulations.

Before working on such a machine, isolate it from any electrical power source.

Always wear the required personal protective equipment (including gloves and goggles) that must be worn when potentially exposed to any hazardous material and when carrying out hazardous tasks.

Note that parts may be contaminated with chemical product. If possible flush hoses out with fresh water prior to carrying out any maintenance. For information on chemical products that are used in this machine, please carefully read the product label and Material Safety Data Sheet (MSDS).

Empty water tanks prior to carrying out any maintenance. Ensure contaminated water is emptied into an approved drain. Avoid pollution.

2.2 ESD

Static electricity is electricity at rest or the accumulation of electric charge, as opposed to an electric current which is the movement of electricity. The flow or movement of people and/or materials in and through the environment causes separation of electrons and therefore static electricity. A familiar example of static electricity is when a person walks across a carpeted floor. Static electricity/electrostatic charge is generated simply by the contact and separation of the soles of that individual's shoes from the carpeted floor.

Electrostatic Discharge (ESD) occurs when the electrostatic charge is transferred from a material that carries the charge to an electrostatic sensitive device. In the example above, this electrostatic discharge is the „shock“ felt after walking across the carpeted floor and then touching a door knob. It is this electrostatic discharge, which comes in varying de-

grees, that can be most damaging to electronical devices.

Static electricity, is a natural phenomenon and consequently electrostatic discharge is the primary cause of countless problems affecting industry, business and personal life. These problems can be as simple as the shock resulting from walking across a carpet; as costly as the destruction of sensitive electronic components.

Almost any material can generate static electricity. The ability to store or unload the charge depends on the type of material.
Static discharge can damage devices, this can result in immediate product failure or in a latent failure. Latent failures can go undetected for a period of time, the results are product failure in the field.
Electrostatic fields are associated with charged objects.
The degree of severity of ESD events depends on the type of discharge which occurs. The three most common ESD charge transfers are:

- from an external object to the device
- from a device to another object
- resulting from electrostatic fields

⚠CAUTION *Please do not store electronics without ESD bags at any time.*

Technical Manual

3 General

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3 General

3.1 General information

3.1.1 Part reference

⚠CAUTION *Explicitly mentioned parts are defined by references corresponding to the e-spares spare parts list.*

E.g. Tank axle (02/118) corresponds to the parts list on e-spares, sub assembly 2, position 118.

3.1.2 Consumable supplies

⚠CAUTION *If you have to remove cable ties then position the new ones at the original place.*

If you have to remove self locking nuts, you should replace them by new ones.

3.1.3 Direction description

⚠CAUTION *On the „RH“ always means on the right hand side of the machine in working direction (when you are standing behind the machine).*

On the „LH“ always means on the left hand side of the machine in working direction (when you are standing behind the machine).

3.1.4 Power source

Depending on the work it might be required to remove the power source (mains/batteries) from the machine.

The in here mentioned sequences (mechanical and electrical) are based on the assumption that the power source (mains/batteries) were removed from the machine before.

3.2 Required material

3.2.1 Tools

- A standard range of tools is required e.g.
  - Fork spanners
  - Allen keys
  - Torx keys

3.2.2 Material

- No special tools are required.

⚠CAUTION *The above listings are only a recommendation for the technical training.*

Technical Manual

4 Technical data

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4 Technical data

4.1 Machine range

SKU	Description	Version	Series
7518096	swingo 4000		
7518663	swingo 4000	Seafreight	
7518373	swingo 5000		
7519000	swingo 5000	Seafreight	

Table 1: Machine range

Remarks

SKU's for all TASKI swingo 4000 and 5000 types are the „naked machine". Tools and batteries have to be ordered separately.

4.2 Technical information

4.2.1 Machine profile

Pos.	Unit	Value 4000	Value 5000
Theoretical performance	(m^2/h)	6375	7875
Working width	(mm)	850	1050
Squeegee width	(mm)	1100	1290
Tank size (bag system)	(l)	200	

Table 2: Machine profile

4.2.2 Technical data

Pos.	Unit	Value 4000	Value 5000
Noise level	(dB(A))	67	
Vibration	(m/s2)	0.36	
Approvals		CE/CB	
Nominal consumption	(W)	2000	
Power drive motor	(W)	1000	
Power suction motor	(W)	400	
Voltage	(V)	24	
Battery capacity maintenance-free	(Ah)/C5	240/330	
Battery capacity wet	(Ah)/C5	360	
Battery autonomy max. (nominal)	(h)	4.5-6.5	
Charger		BMS optional	
Splash water protection class		IPX3	
Electrical protection class		III	

Table 3: Technical data

4.2.3 Machine speed

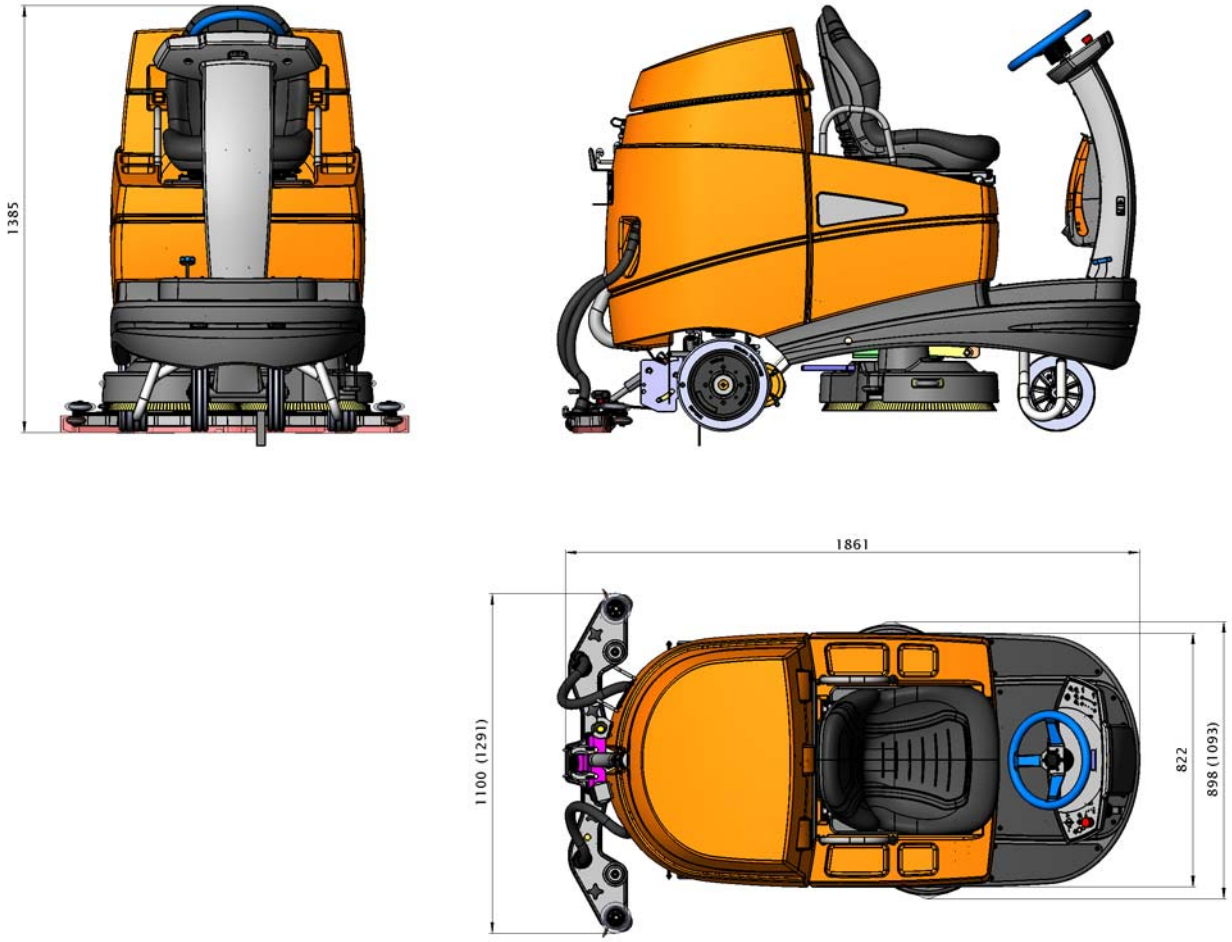
Pos.	Unit	Value 4000	Value 5000
Transportation speed	(km/h)	8	
Cleaning speed	(km/h)	7.5	
Reverse speed	(km/h)	5	
Ramp max. (cleaning/transport)	(%)	10/15	

Table 4: Machine speed

4.2.4 Dimensions and weights

Pos.	Unit	Value 4000	Value 5000
Dimensions without w-counter squeegee	L/W/H (mm)	1780/898/ 1400	1780/1093/ 1400
Door pass through with (without w-contour squeegee)	(mm)	1100 (898)	1291 (1093)
Battery compartment	L/W/H (mm)	730/410/400	
Net weight (without batteries, empty tank and driver)	(kg)	295	325
Weight, ready to use with 240Ah batteries (with 75kg driver)	(kg)	760	790
Weight, ready for shipping	(kg)	325	355
Max. floor pressure front	(N/mm2)	0.67	0.74
Max. floor pressure rear	(N/mm2)	0.56	0.61
Turning radius (between two walls)	(mm)	2000	
Wheel diameter front	(mm)	250	
Wheel diameter rear	(mm)	300	

Table 5: Dimensions and weights



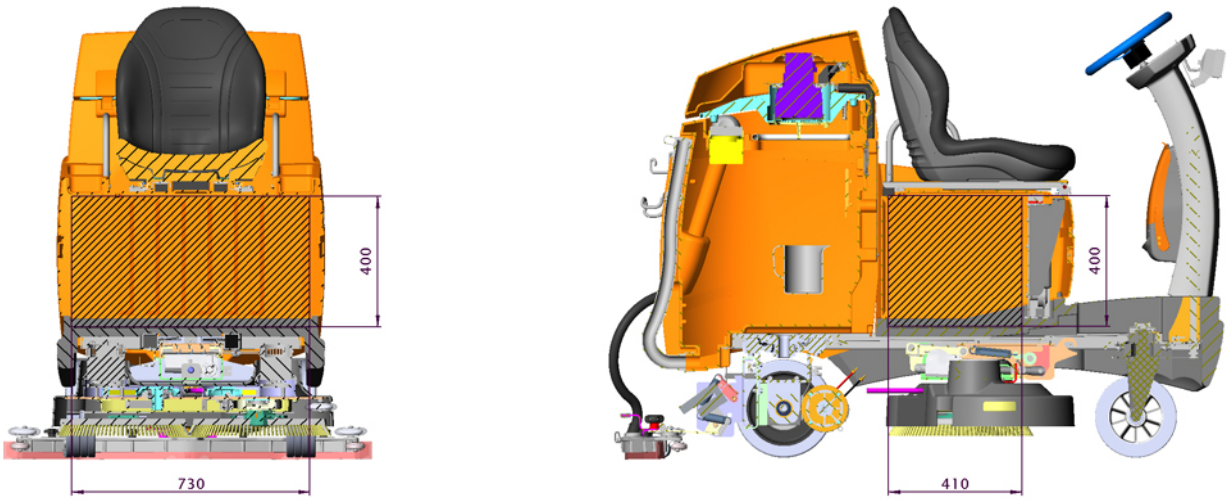
Picture 1: Dimensions

4.2.5 Battery

4.2.5.1 Battery compartment

Pos.	Unit	Value 4000	Value 5000
Battery compartment	L/W/H (mm)	730/410/400	

Table 6: Battery compartment



Picture 2: Battery compartment

4.2.5.2 Battery specifications

⚠CAUTION *Please use batteries from Exide/Sonnenschein, as this is our preferred partner.*

BMS is only for dry (gel) batteries.

Dry batteries

Supplier	Wet/ Dry	Type	Voltage	Ah	Length	Width	Height	Weight
Sonnenschein	D	GF 06 240 V	6	240 (C5)	311	182	359	47
Sonnenschein	D	6 EPzV 330	2	330 (C5)	119	198	370	23

Table 7: Dry batteries

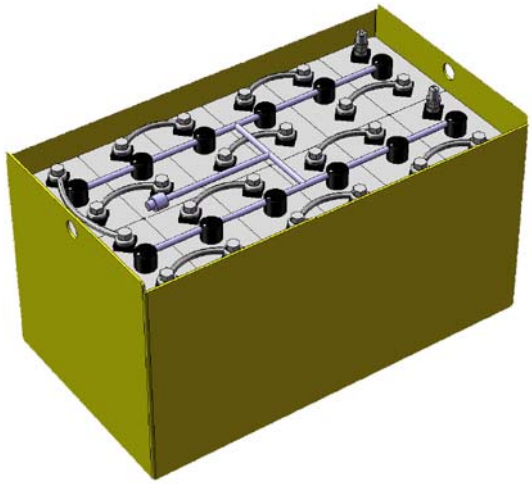
Wet batteries

Supplier	Wet/ Dry	Type	Voltage	Ah	Length	Width	Height	Weight
Exide - Classic	W	6 EPzS 360	2	360 (c5)	119	198	365	22

Table 8: Wet batteries

Remarks

For the EPz dry and wet batteries a tray is needed to place the cells in the machine.



Picture 3: Battery tray

4.2.6 Charger

Pos.	Unit	Value 4000	Value 5000
Primary	(V)	230-240	
Primary	(Hz)	50-60	
Secondary	(V)	24	
Secondary (version 30A/version 40A)	(A)	30/40	
Protection type		IP30	
Approval		UL/CE	
Cable length/BMS cable	(m)	3	

Table 9: Charger

4.2.7 Brush system

Pos.	Unit	Value 4000	Value 5000
Brush system	(mm)	2 units 430	4 units 280
Brush motor	(W)	2 x 750	2 x 750
Brush speed	(rpm)	160	195
Brush pressure min. - max.	(kg)	56-112	60-90
Brush pressure min. - max.	(N/cm2)	0.2-0.4	
Brush pressure min. - max.	(g/cm2)	20-40	

Table 10: Brush system

4.2.8 Suction power

Pos.	Unit	Value 4000	Value 5000
Vacuum motor	(W)	400	
Max. air flow	(l/s)	31.1	
Max. vacuum	(mbar)	161	
Max. vacuum	(kPa)	16.1	

Table 11: Suction power

4.2.9 Additional

Pos.	Unit	Value 4000	Value 5000
Solution dosing		IntelliFlow	
W-contour squeegee lifting		electrical	
Brush lifting		electrical	

Table 12: Additional

4.3 Accessories & Additional parts

4.3.1 Accessories

SKU	Article	Machine
7517859	Scrubbing brush standard 430 mm	4000
7517860	Scrubbing brush washed concrete 430 mm	4000
7517861	Scrubbing brush abrasive 430 mm	4000
7517858	Pad drive harpoon grip 430 mm	4000
7519395	Scrubbing brush standard 280 mm	5000
7510632	Scrubbing brush washed concrete 280 mm	5000
7510633	Scrubbing brush abrasive 280 mm	5000
7510634	Pad drive harpoon grip 280 mm	5000

Table 13: Accessories

SKU	Article	Machine
8502830	Filling hose with universal coupling	4000/5000
7518216	Battery tray with batteries 24V/360Ah (wet cells)	4000/5000

Table 13: Accessories

4.3.2 Additional parts

SKU	Article	Machine
4128992	Flash light Set	4000/5000
4128994	Spotlight Set	4000/5000
4129878	Drainage pump set	4000/5000
4129882	Chassis protection set with protection wheels	4000/5000
7519046	Drain hose long	4000/5000
7518212	TASKI IntelliDose kit	4000/5000

Table 14: Additional parts

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5 Mechanical

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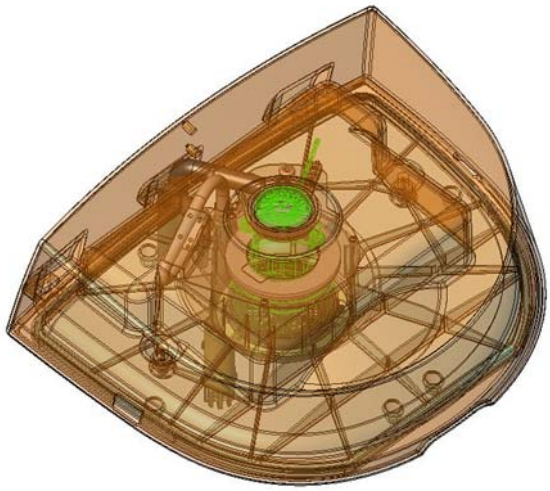
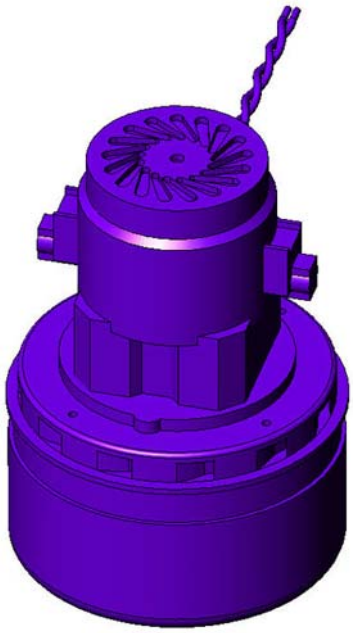
5.1 Upper part, tank

5.1.1 Removing of vacuum motor



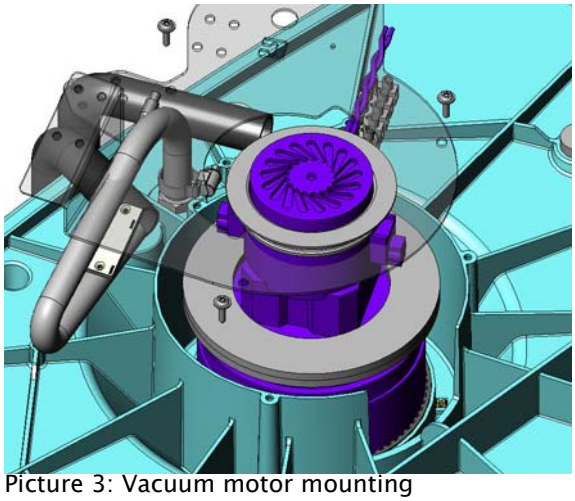
Picture 1: Vacuum motor



Picture 2: Vacuum motor details

- Move the seat to the rearmost position and tilt it forward.
- Open the tank cover (01/101).
- Loosen the two screws (01/108) at the base plate (01/107).
- Close the tank cover.
- Open the tank cover without base plate.

- Disconnect the vacuum motor cables from the connection block (01/114).
- Remove sealing ring (01/102) of vacuum motor to tank cover.
- Remove the 3 screws (01/111) for the vacuum motor holder (01/112).
- Remove the vacuum motor holder.

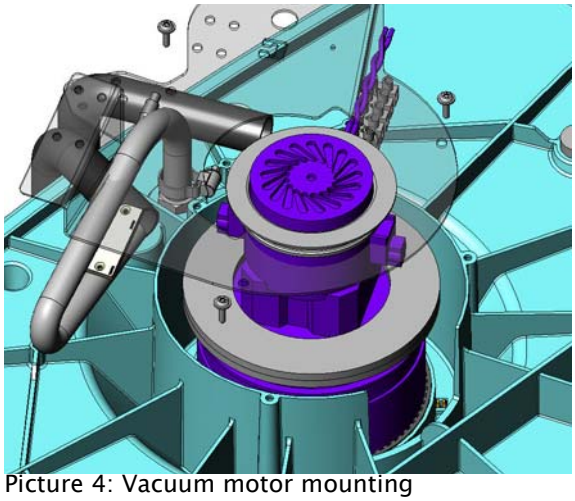


Picture 3: Vacuum motor mounting

- Remove the two vacuum motor sealing rings (01/103).
- Remove the vacuum motor (01/104).
- Remove bottom guide ring (01/105) of the vacuum motor.

5.1 Upper part, tank

5.1.2 Mounting of vacuum motor



Picture 4: Vacuum motor mounting

- Position bottom guide ring of the vacuum motor.
- Build in the vacuum motor.
- Position the two vacuum motor sealing rings.
- Assemble vacuum motor holder.

Remarks

Ensure that the vacuum motor sealings are properly positioned before assembling vacuum motor holder.

- Position and tighten the vacuum motor holder.
- Position top sealing ring of vacuum motor.
- Connect vacuum motor wires to connection block.
- Close tank cover and position it on the base plate.
- Open tank cover together with base plate.
- Tighten the base plate fixation on both sides.

⚠CAUTION *Tighten the fixation rubber locks (01/106) smoothly.*

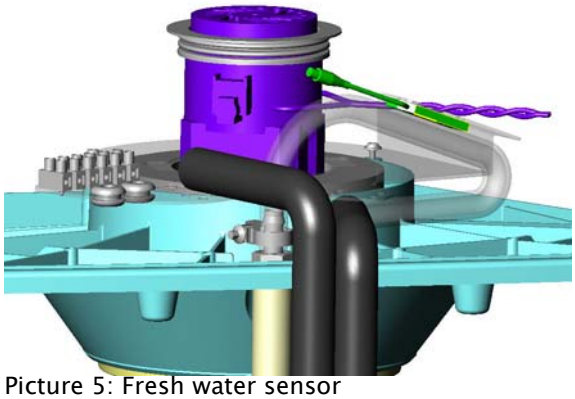
Remarks

Make sure that the vacuum motor top sealing ring (01/102) is positioned properly.

- Close the tank cover.
- Tilt the seat back.

5.1 Upper part, tank

5.1.3 Removing of fresh water sensor

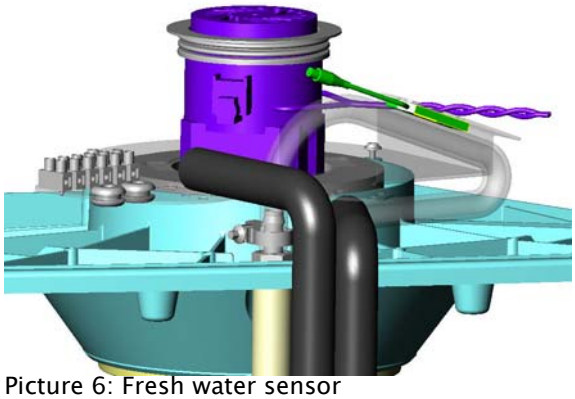


Picture 5: Fresh water sensor

- Remove driver seat and cover according to chapter REMOVING OF DRIVER SEAT COVER.
- Disconnect the fresh water sensor plug at the power electronics
- (04/117).
- Open the tank cover.
- Loosen the two screws (01/108) at the base plate (01/107).
- Close the tank cover.
- Open the tank cover without base plate.
- Thread out the cable of the fresh water sensor (01/113).
- Remove the two cable ties of the fresh water sensor.
- Remove the fresh water sensor from the vacuum motor holder (01/112) and hose (01/131).

5.1 Upper part, tank

5.1.4 Mounting of fresh water sensor



Picture 6: Fresh water sensor

- Position the fresh water sensor with the marked target sign to the hose.
- Mount two new cable ties for the fixation of the fresh water sensor.

Remarks

Cable tie 200 ordering number 4023260.

- Thread in the cable down to the power electronics.
- Connect the fresh water sensor plug to the power electronics.
- Mount driver seat and cover according to the chapter MOUNTING OF DRIVER SEAT COVER.
- Open the tank cover.

Adjustment

For fresh water sensor adjustment refer to the chapter ADJUSTING OF FRESH WATER SENSOR.

- Close tank cover and position it on the base plate.
- Open tank cover together with base plate.
- Tighten the base plate fixation on both sides.

⚠CAUTION *Tighten the fixation rubber locks (01/106) smoothly.*

Remarks

Make sure that the vacuum motor top sealing ring (01/102) is positioned properly.

- Close the tank cover.
- Tilt the seat back.

5.1 Upper part, tank

5.1.5 Adjusting of fresh water sensor

⚠CAUTION *For fresh water sensor: Make sure that the hose of the pump is empty before you start with the adjustment.*

O-Series

- Switch ON the machine.
- Take a screw driver of size 00 and turn the adjustment screw clock wise until the orange LED lights up (turns ON).
- Turn the adjustment screw counter clock wise.
- As soon as the orange LED turns OFF, turn 1 revolution (360°) further.

Series

- Switch ON the machine.
- Take a screw driver of size 00 and turn the adjustment screw clock wise until the orange LED lights up (turns ON).
- Turn the adjustment screw counter clock wise.
- As soon as the orange LED turns OFF, turn 1.5 revolutions (540°) further.

5.1 Upper part, tank

5.1.6 Adjusting of waste water sensor

⚠CAUTION *For waste water sensor: Empty the tank, remove the flex tank and let the inside dry shortly before you start with the adjustment.*

O-Series

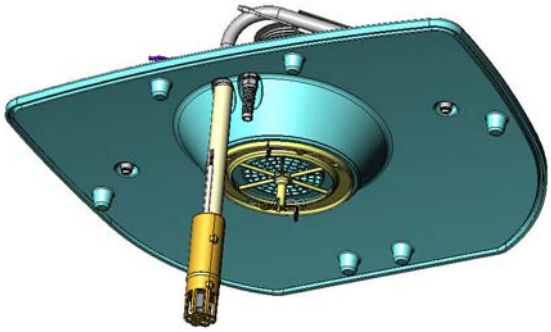
- Switch ON the machine.
- Take a screw driver of size 00 and turn the adjustment screw clock wise until the orange LED lights up (turns ON).
- Turn the adjustment screw counter clock wise.
- As soon as the orange LED turns OFF, turn 1 revolution (360°) further.

Series

- Switch ON the machine.
- Take a screw driver of size 00 and turn the adjustment screw clock wise until the orange LED lights up (turns ON).
- Turn the adjustment screw counter clock wise.
- As soon as the orange LED turns OFF, turn 3 revolutions (1080°) further.

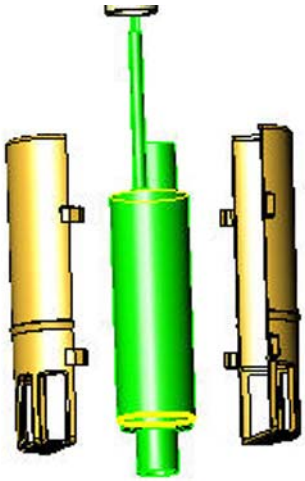
5.1 Upper part, tank

5.1.7 Removing of fresh water pump



Picture 7: Fresh water pump

- Move the seat to the rearmost position and tilt it forward.
- Open the tank cover.
- Loosen the two screws (01/108) on the base plate.
- Close the tank cover.
- Open the tank cover without base plate.
- Disconnect the pump cable from the connection block (01/114).
- Thread out the pump cable.
- Remove the hose clamp (01/123) from the hose on the pump side.



Picture 8: Fresh water pump details

- Remove the fresh water pump (01/124) from the hose (01/122).
- Remove the O-ring (01/126) of the filter bag.
- Remove the filter bag (01/127) of the filter basket (01/125).

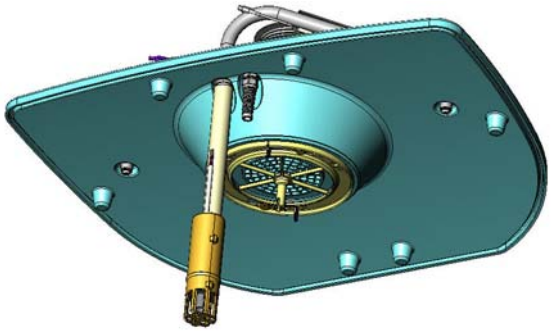
Remarks

Clean or replace the filter bag if necessary.

- Remove the filter basket from the pump.

5.1 Upper part, tank

5.1.8 Mounting of fresh water pump



Picture 9: Fresh water pump

- Mount the filter basket on to the pump.
- Put the filter bag back on the filter basket.
- Mount the O-ring onto the filter bag.
- Connect fresh water hose to the pump.
- Tighten the hose clamp.
- Thread in the pump cable.
- Connect the pump cable to the connection block.
- Close tank cover and position it on the base plate.
- Open tank cover together with base plate.
- Tighten the base plate fixation on both side.

⚠CAUTION *Tighten the fixation rubber locks (01/106) smoothly.*

Remarks

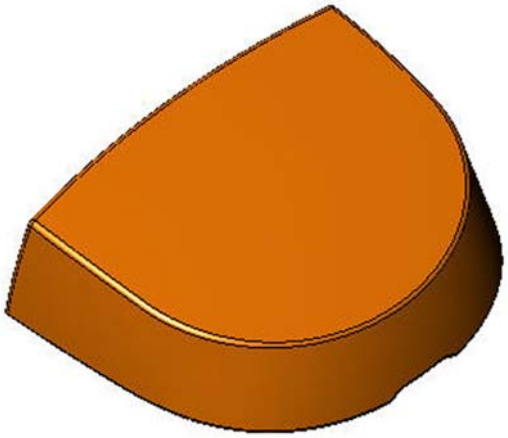
Make sure that the vacuum motor top sealing ring (01/102) is positioned properly.

If you have to remove cable ties then position the new ones at the original place.

- Close the tank cover.
- Tilt the seat back.

5.1 Upper part, tank

5.1.9 Removing of tank cover

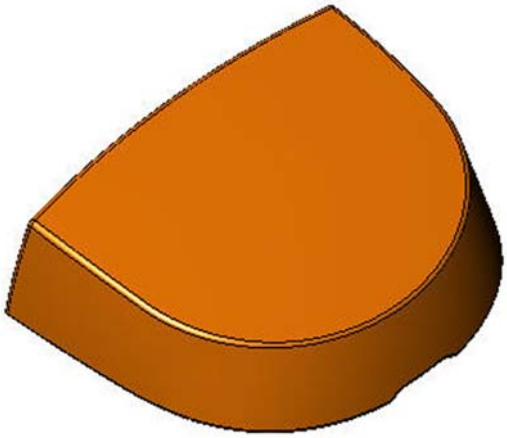


Picture 10: Tank cover

- Move the seat to the rearmost position and tilt it forward.
- Open the tank cover.
- Loosen the two screws (01/108) on the base plate.
- Close the tank cover.
- Open the tank cover without base plate.
- Loosen the two screws (02/106) of the tank cover fixation (02/107).
- Move the two fixation plates of the tank to the side.
- Remove the tank cover (01/101).

5.1 Upper part, tank

5.1.10 Mounting of tank cover



Picture 11: Tank cover

- Position the tank cover.
- Position and tighten the two fixation plates.
- Close tank cover and position it on the base plate.
- Open tank cover together with base plate.
- Tighten the base plate fixation on both sides.

⚠CAUTION *Tighten the fixation rubber locks (01/106) smoothly.*

Remarks

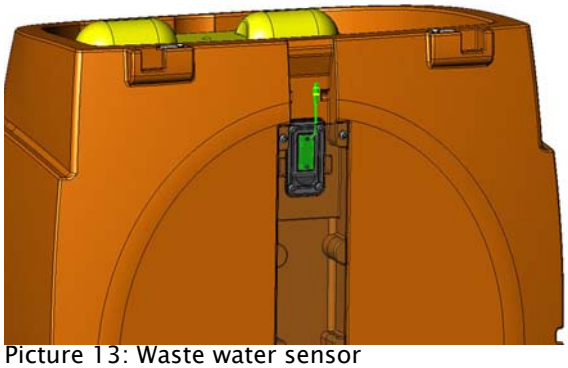
Make sure that the vacuum motor top sealing ring (01/102) is positioned properly.

- Close the tank cover.
- Tilt the seat back.

5.2 Tank

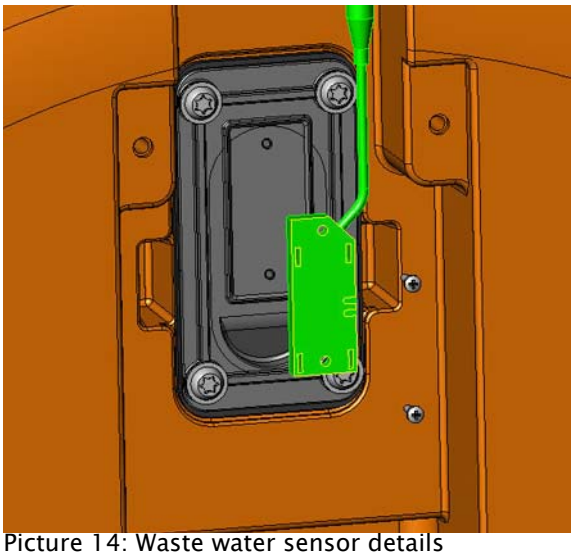
5.2.1 Removing of waste water sensor

Picture 12: Tank complete



Picture 13: Waste water sensor

- Remove the complete seat and cover according to chapter REMOVING OF DRIVER SEAT COVER.
- Disconnect the waste water sensor plug at the power electronics (04/117).
- Remove the two upper screws (02/106) of the sensor cover.
- Remove the sensor cover (02/123).
- Remove the two screws (02/122) of the waste water sensor (02/121).

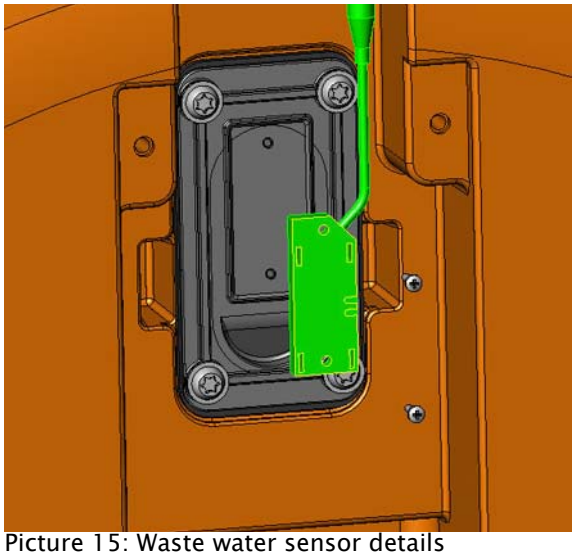


Picture 14: Waste water sensor details

- Remove the waste water sensor.
- Thread out the cable of the waste water sensor.

5.2 Tank

5.2.2 Mounting of waste water sensor



Picture 15: Waste water sensor details

- Position the waste water sensor with the marked target sign in direction of the tank.
- Mount the screws.
- Thread in the cable of the waste water sensor down to the power electronics.
- Connect the waste water sensor plug.
- Mount the complete seat and cover according to chapter MOUNTING OF DRIVER SEAT COVER.

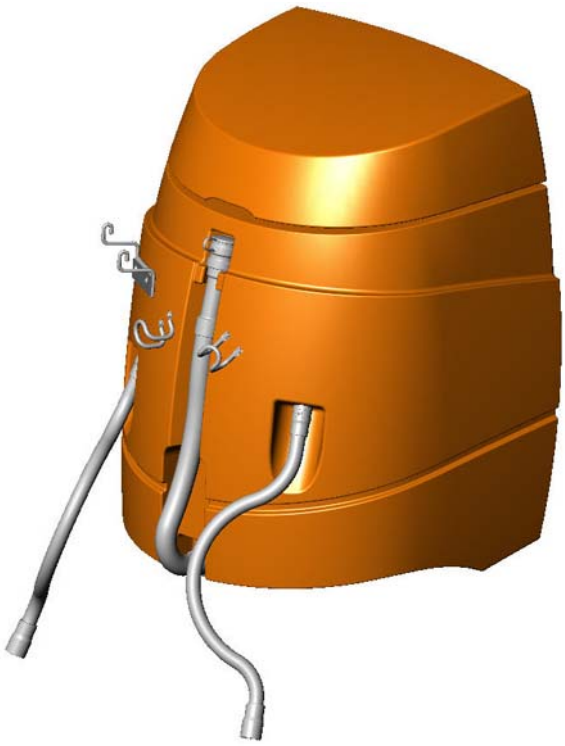
Adjustment

For waste water sensor adjustment refer to the chapter ADJUSTING OF WASTE WATER SENSOR.

- Position the sensor cover.
- Mount the two upper screws.
- Tilt the seat back.

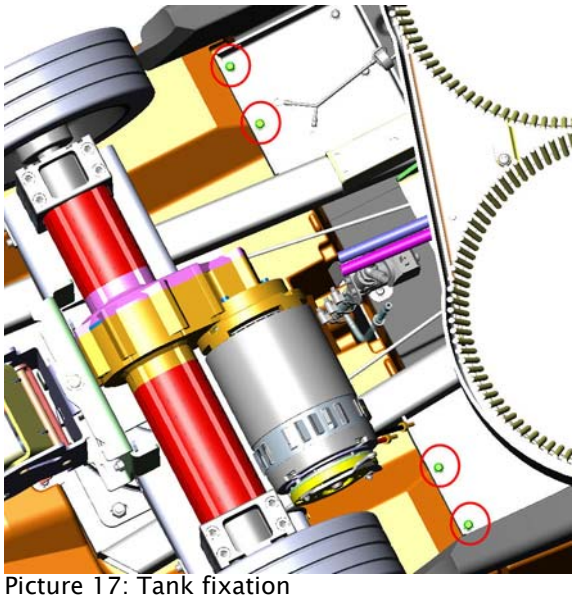
5.2 Tank

5.2.3 Removing of tank



Picture 16: Tank

- Remove the whole tank cover according to chapter REMOVING OF TANK COVER (do not remove base plate).
- Remove waste water sensor according to chapter REMOVING OF WASTE WATER SENSOR.
- Remove the 4 screws (02/125) of the front tank fixation.
- Loosen the two screws (02/125) of the rear tank holder (02/124).
- Remove the complete tank (02/108) by pulling to the rear.

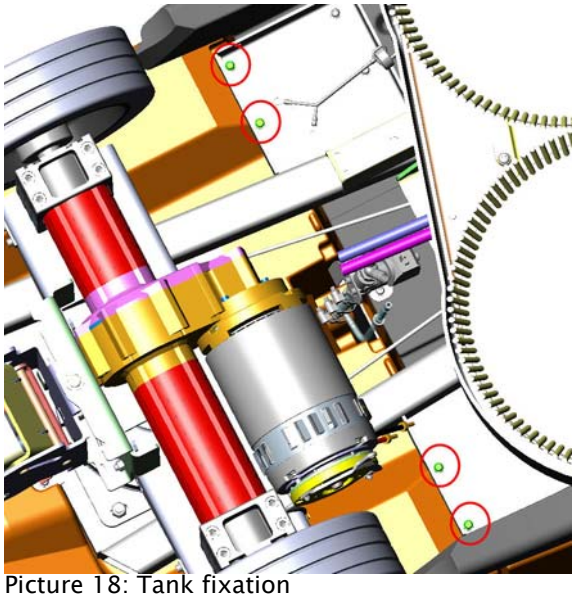


Picture 17: Tank fixation

- According to what you need to exchange, remove the existing parts from the tank and place it on the new one.

5.2 Tank

5.2.4 Mounting of tank



Picture 18: Tank fixation

- Position the tank on the chassis.
- Mount the 4 fixation screws for the tank.
- Tighten the two screws of the rear tank fixation.
- Mount the waste water sensor according to the chapter MOUNTING OF WASTE WATER SENSOR.
- Mount the tank cover according to the chapter MOUNTING OF TANK COVER.

⚠CAUTION *After exchanging the existing parts on the new tank. Make sure that you adjust the waste water sensor new.*

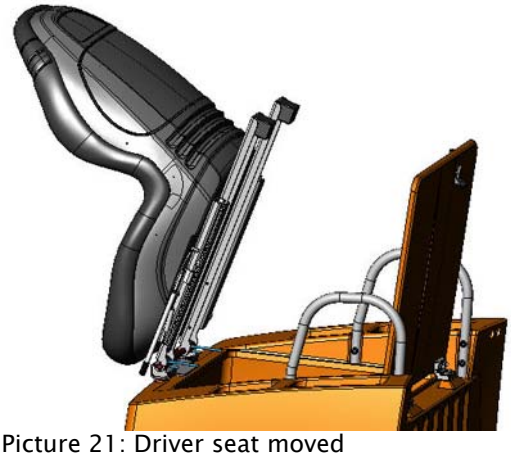
5.3 Driver seat

5.3.1 Removing of driver seat

Picture 19: Driver seat unit

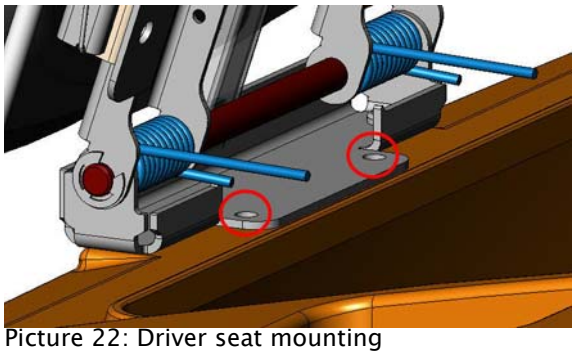
Picture 20: Driver seat

- Move the seat to the rearmost position and tilt it forward.
- Open the locking bar (03/111) of the battery cover (03/113).
- Open the battery cover of the hood.



Picture 21: Driver seat moved

- Disconnect the plug of the seat switch (03/125).
- Remove the two screws (03/122) of the seat hinge bracket (03/121).



Picture 22: Driver seat mounting

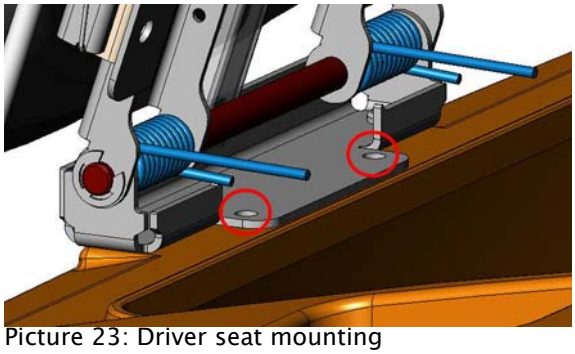
- Remove the complete driver seat (03/101).

⚠CAUTION *Make sure to thread out the seat switch cable from the cover before you remove the driver seat.*

- According to what you need to exchange, remove the existing parts from the seat and place it on the new one.

5.3 Driver seat

5.3.2 Mounting of driver seat



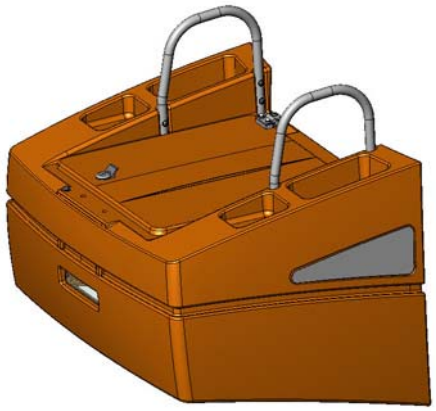
Picture 23: Driver seat mounting

⚠CAUTION *Make sure to thread in the seat switch cable to the cover before you mount the driver seat.*

- Place and tighten the complete seat to the bracket (04/105).
- Connect the plug of the seat switch.
- Close the battery cover.
- Close the locking bar of the battery cover.
- Tilt the seat back.

5.3 Driver seat

5.3.3 Removing of driver seat cover

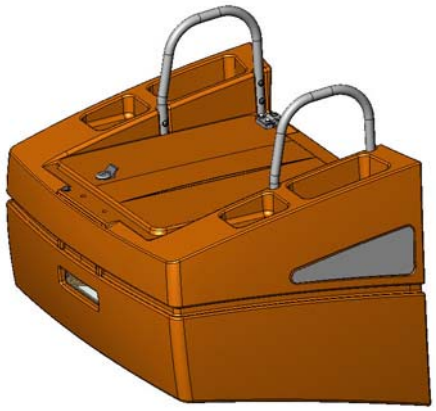


Picture 24: Driver seat cover

- Remove driver seat according to chapter REMOVING OF DRIVER SEAT.
- Remove the driver seat cover (03/114).
- According to what you need to exchange, remove the existing parts from the driver seat cover and place it on the new one.

5.3 Driver seat

5.3.4 Mounting of driver seat cover

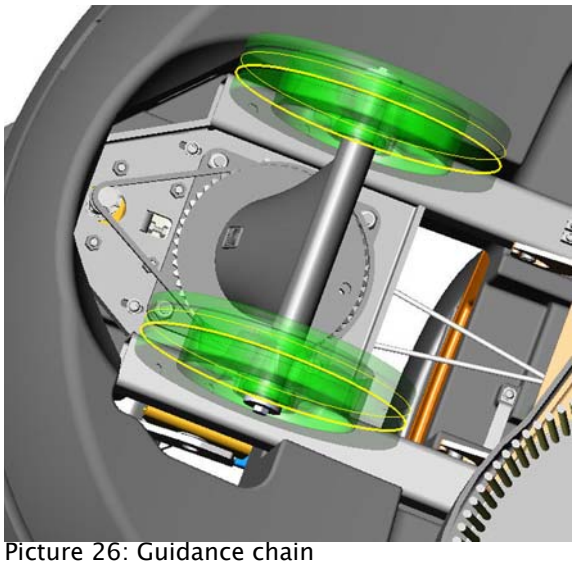


Picture 25: Driver seat cover

- Position the driver seat cover.
- Mount the driver seat according to the chapter MOUNTING OF DRIVER SEAT.

5.4 Guidance

5.4.1 Removing of guidance chain



Picture 26: Guidance chain

- Remove the 6 screws (04/109) of the foot plate.
- Remove the foot plate (04/120).
- Loosen the 4 screws (05/123) of the steering bracket.
- Loosen the nut (05/136) of the tension screw (05/137).
- Untighten the tension screw counter clock wise to release tension of guidance chain (05/130).
- Remove the clip of the chain joint (05/131).

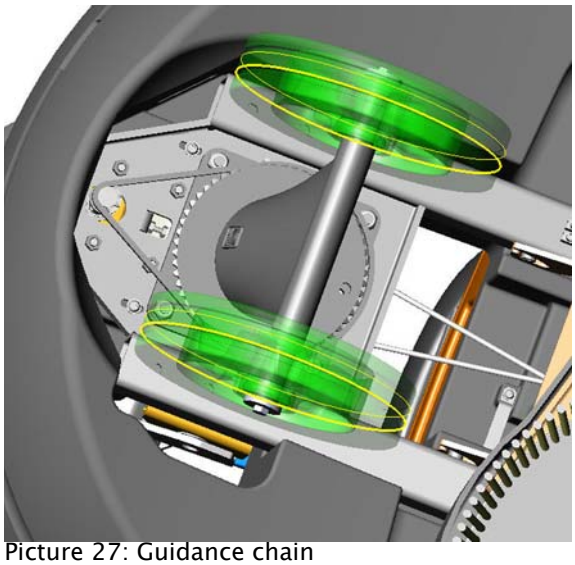
Remarks

The guidance chain clip is at the bottom side of the chain.

- Remove the chain joint (05/131) of the guidance chain (05/130).
- Remove the guidance chain.

5.4 Guidance

5.4.2 Mounting of guidance chain



Picture 27: Guidance chain

- Position the guidance chain onto the chain wheels.
- Mount the chain joint.

Remarks

Mount the chain joint from the upper side, so that the clip is on the bottom side.

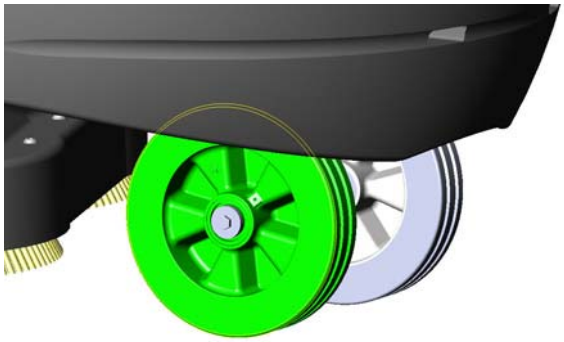
- Mount the chain joint clip.
- Tension the chain with the tension screw.

⚠CAUTION *Make sure you do not tension the chain to much.*

- Tighten nut of the tension screw.
- Tighten the 4 screws of the steering bracket.
- Position the foot plate and mount all screws.

5.4 Guidance

5.4.3 Removing of front wheel



Picture 28: Front wheel

⚠CAUTION *Position a piece of wood in front and behind of the traction wheel to ensure that the machine does not move.*

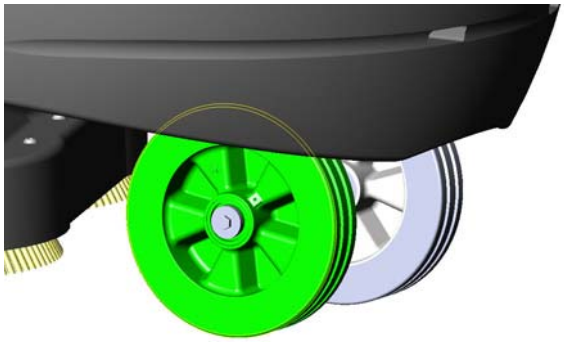
- Lift the front of the machine with a jack.

⚠CAUTION *Make sure you position the jack on the chassis and not on the bottom part (plastic).*

- Remove the screw (05/140) and the two washers (05/141) of the front wheel.
- Remove the front wheel (05/139).

5.4 Guidance

5.4.4 Mounting of front wheel



Picture 29: Front wheel

- Position the front wheel on the axle.
- Mount and tighten the screw and the washers.

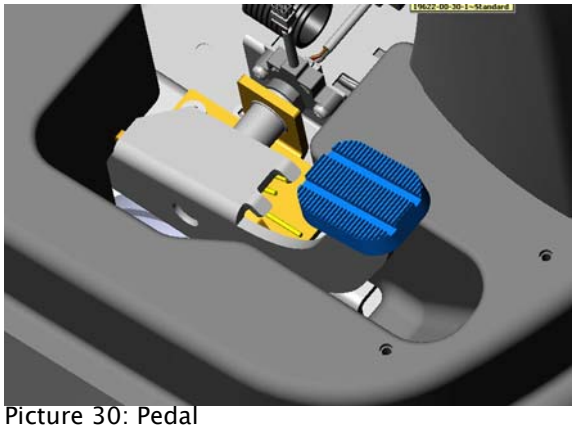
Service

Lubricate the front wheel bearing with ball bearing grease (12/147).

Fix the screws (05/140) of the front wheel with adhesive locking (14/130).

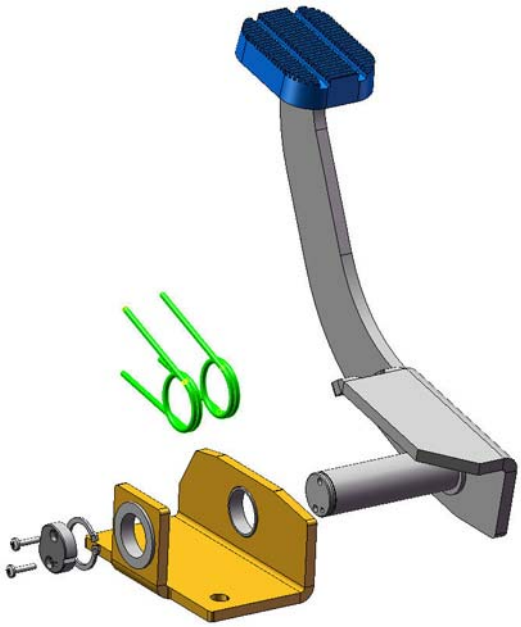
5.5 Pedals

5.5.1 Removing of pedal spring



Picture 30: Pedal

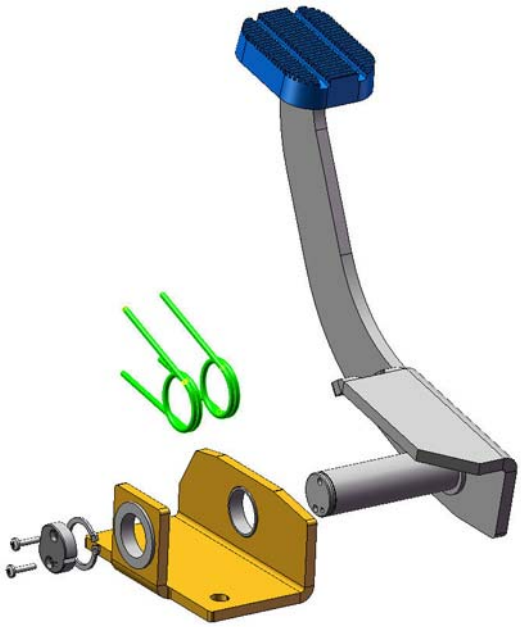
- Remove the 6 screws (04/109) of the foot plate.
- Remove the foot plate (04/120).
- Remove the two screws (06/108) of the pedal holder (06/112).
- Remove the complete pedal from the chassis.
- Remove the two screws (06/111) of the magnet (06/103).
- Remove the magnet from the pedal bolt (06/114).
- Remove the retaining ring (06/110) from the bolt.
- Move both pedal springs to remove tension.
- Remove the pedal (06/114) from the pedal support.
- Remove the pedal torsion springs (06/107).



Picture 31: Pedal springs

5.5 Pedals

5.5.2 Mounting of pedal spring



Picture 32: Pedal springs

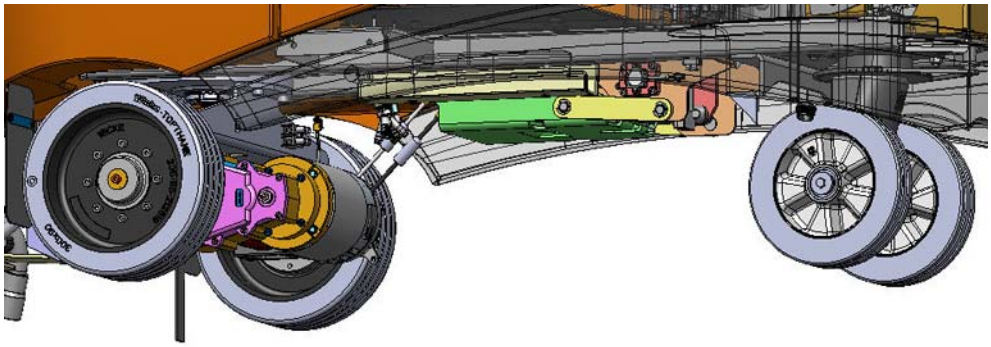
- Position the pedal springs.
- Mount the pedal back on the pedal support.
- Mount the retaining ring on the bolt.
- Move the pedal springs back in position for tension.
- Position and tighten the magnet.
- Position the complete pedal on the chassis.
- Mount the two screws.
- Position the step cover and mount all screws.

Remarks

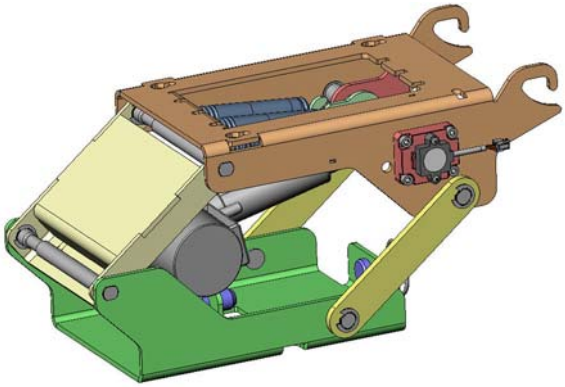
- *For replacing of hall sensor refer to the chapter REMOVING OF HALL SENSOR THROTTLE (refer to „Electrical“ section).*

5.6 Tool lowering unit

5.6.1 Removing of tool lowering unit



Picture 33: Tool lowering unit



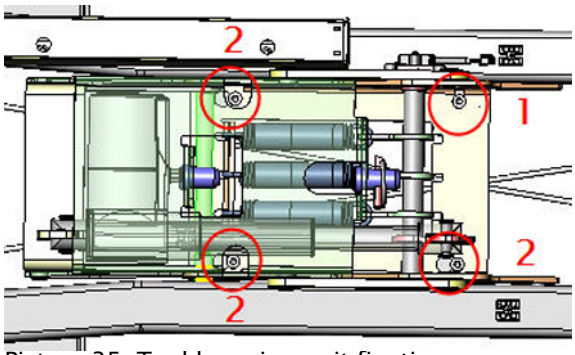
Picture 34: Tool lowering unit details

- Remove the brush unit according to chapter REMOVING OF BRUSH DRIVE.
- Remove the seat and seat cover according to chapter REMOVING OF DRIVER SEAT.
- Disconnect the hall sensor (07/116) and linear drive (07/118) from the power electronics (04/117).
- Thread out the cables of the hall sensor and linear drive.

Remarks

Further numbering refers to picture: Tool lowering unit fixation.

1 Remove fixation screw (07/105) of the tool lowering unit.
2 Loosen the 3 screws (07/105) of the tool lowering unit.



Picture 35: Tool lowering unit fixation

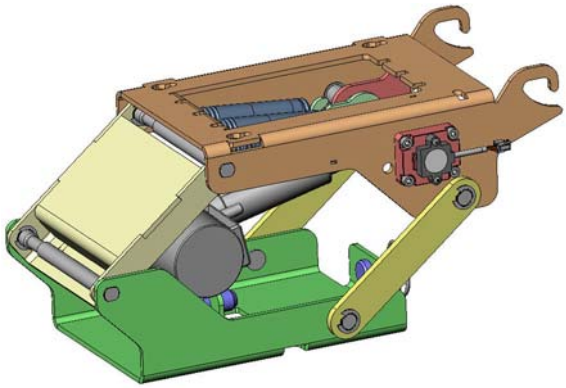
- Remove the tool lowering unit by pushing it to the rear side.

⚠CAUTION *Be aware of the weight of the tool lowering unit.*

- According to what you need to exchange, remove the existing parts from the tool lowering unit and place it on the new one.

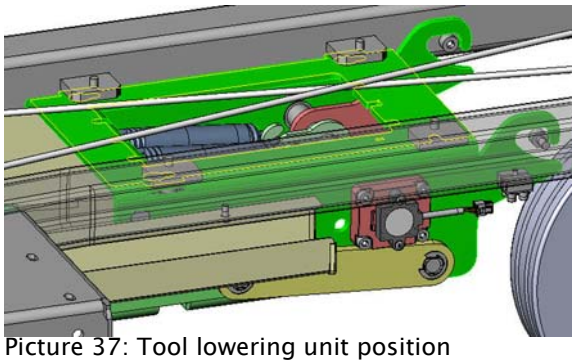
5.6 Tool lowering unit

5.6.2 Mounting of tool lowering unit



Picture 36: Tool lowering unit details

- Position the tool lowering unit on to the support screws (07/124).
- Move it to the mounting position.

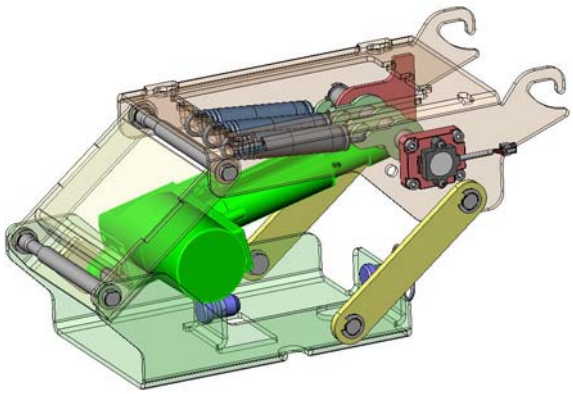


Picture 37: Tool lowering unit position

- Mount the fixation screw (07/105) of the tool lowering unit.
- Tighten all 4 screws (07/105) of the tool lowering unit.
- Thread in the cables of the hall sensor and linear drive.
- Connect the hall sensor and linear drive plugs to the power electronics.
- Mount the seat and seat cover according to chapter MOUNTING OF DRIVER SEAT COVER.
- Mount the brush unit according to chapter MOUNTING OF BRUSH DRIVE.

5.6 Tool lowering unit

5.6.3 Removing of linear drive

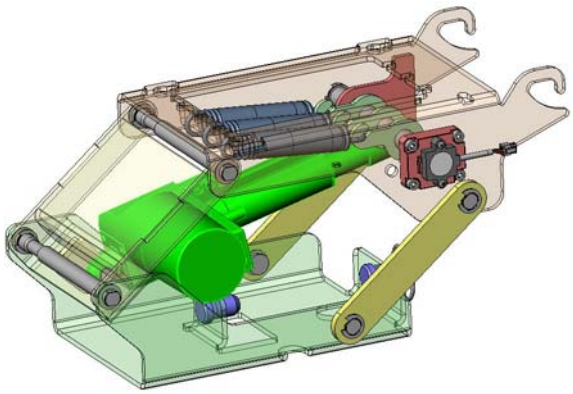


Picture 38: Tool lowering linear drive

- Remove the brush unit according to chapter REMOVING OF BRUSH DRIVE.
- Remove the seat and seat cover according to chapter REMOVING OF DRIVER SEAT COVER.
- Remove the tool lowering unit according to chapter REMOVING OF TOOL LOWERING UNIT.
- Remove the two circlips (07/122) from the two bolts (07/121) of the linear drive (07/118).
- Remove the two bolts.
- Remove the linear drive.

5.6 Tool lowering unit

5.6.4 Mounting of linear drive



Picture 39: Tool lowering linear drive

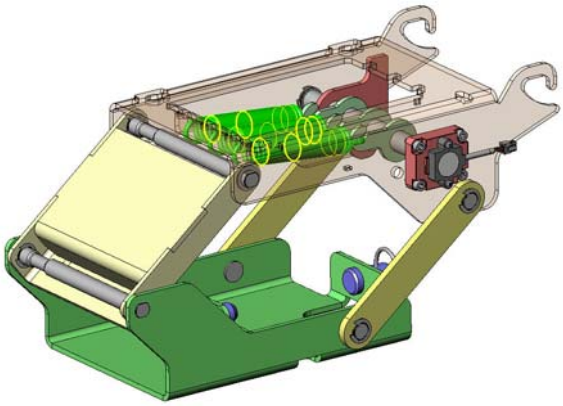
- Position the linear drive.

⚠CAUTION *Take care not to position the motor wrongly.*

- Mount the two bolts and circlips.
- Mount the tool lowering unit according to chapter MOUNTING OF TOOL LOWERING UNIT.
- Mount the seat and seat cover according to chapter MOUNTING OF DRIVER SEAT COVER.
- Mount the brush unit according to chapter MOUNTING OF BRUSH DRIVE.

5.6 Tool lowering unit

5.6.5 Removing of tension spring



Picture 40: Tension spring tool lowering unit

- Remove the brush unit according to chapter REMOVING OF BRUSH DRIVE.
- Remove the seat and seat cover according to chapter REMOVING OF DRIVER SEAT COVER.
- Remove the tool lowering unit according to chapter REMOVING OF TOOL LOWERING UNIT.
- Remove the circlip (07/122) from the bolt (07/121) on the side of the spring bracket (07/112) from the linear drive.
- Remove the bolt.

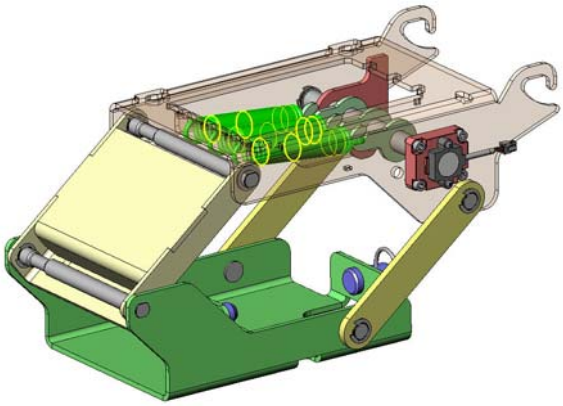
Remarks

To release tension of the 3 tension springs, remove the linear drive on the side of the spring bracket.

- Remove the tension spring (07/111).

5.6 Tool lowering unit

5.6.6 Mounting of tension spring

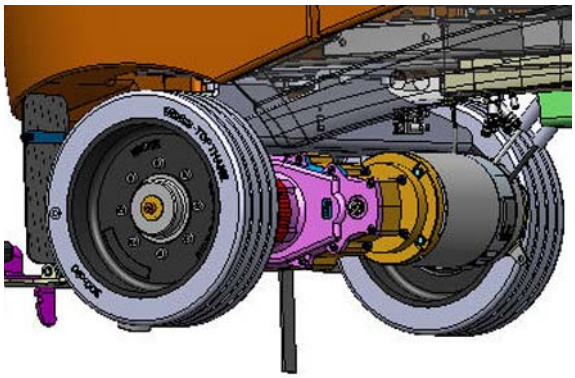


Picture 41: Tension spring tool lowering unit

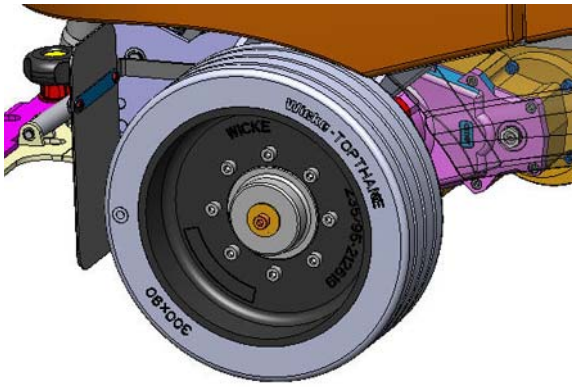
- Mount the tension spring.
- Position the linear drive and mount the bolt and circlip.
- Mount the tool lowering unit according to chapter MOUNTING OF TOOL LOWERING UNIT.
- Mount the seat and seat cover according to chapter MOUNTING OF DRIVER SEAT COVER.
- Mount the brush unit according to chapter MOUNTING OF BRUSH DRIVE.

5.7 Drive unit

5.7.1 Removing of drive wheel



Picture 42: Drive unit



Picture 43: Main wheel

⚠CAUTION *Position a piece of wood in front of and behind the traction wheel to ensure that the machine does not move.*

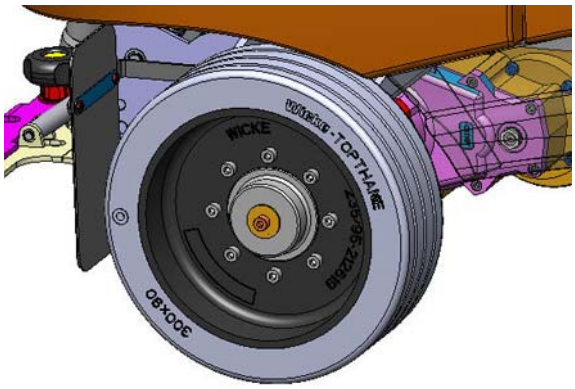
- Remove the squeegee from the squeegee mechanism.
- Lift the side of the machine with a jack.

⚠CAUTION *Make sure you position the jack on the chassis and not on the bottom part or tank (plastic).*

- Remove the 8 screws (08/108) of the main wheel (08/107).
- Remove the main wheel from the traction unit (08/106).

5.7 Drive unit

5.7.2 Mounting of drive wheel



Picture 44: Main wheel

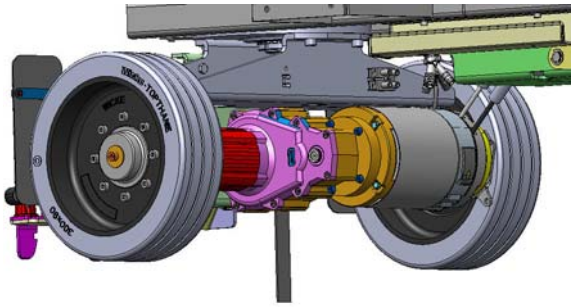
- Position the main wheels on the traction unit.

⚠CAUTION *Make sure you position the main wheel on the traction unit with the fitting side.*

- Mount the screws.
- Lower the machine.
- Tighten the screws.
- Click in the squeegee to the squeegee mechanism.

5.7 Drive unit

5.7.3 Removing of traction unit



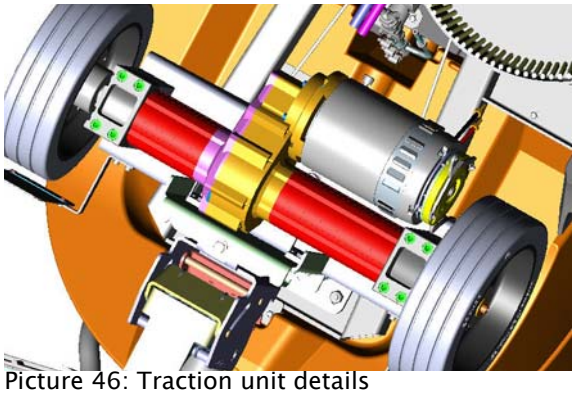
Picture 45: Traction unit

⚠CAUTION *Position a piece of wood in front of and behind the front steering wheel to ensure that the machine does not move.*

- Remove the squeegee mechanism according to chapter REMOVING OF SQUEEGEE MECHANISM.
- Remove the tank according to the chapter REMOVING OF TANK.
- Loosen 16 screws (08/108) of the wheels.
- Lift the back of the machine with a jack.

⚠CAUTION *Make sure you position the jack on the chassis and not on the bottom part or tank (plastic).*

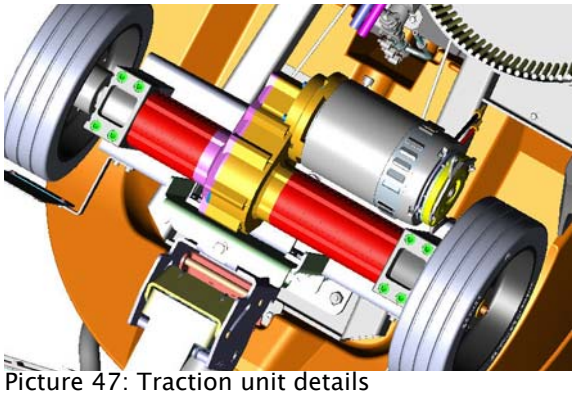
- Position the chassis onto wooden wedges between traction and brush unit.
- Disconnect the traction unit wires from the connection block (08/103) and the brake cable.
- Remove the 8 screws (08/109) and nuts (08/104) from the traction unit.
- Remove the traction unit (08/106) to the back side from the center pivot plate (08/101).



Picture 46: Traction unit details

5.7 Drive unit

5.7.4 Mounting of traction unit

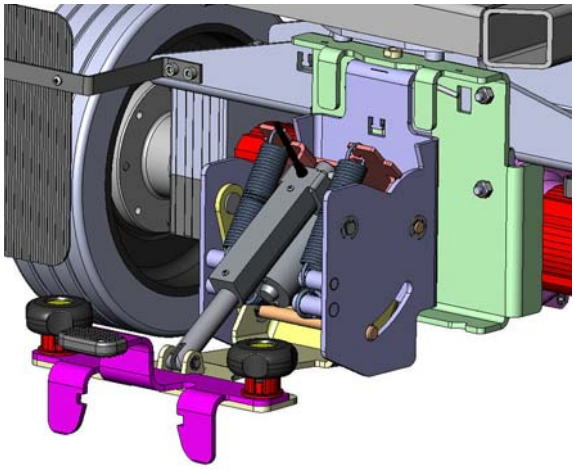


Picture 47: Traction unit details

- Position the traction unit on to the center pivot plate.
- Mount the screws and nuts.
- Connect the traction unit cables to the connection block and the brake cable.
- Remove the wooden wedges from the chassis.
- Mount the tank according to the chapter MOUNTING OF TANK.
- Mount squeegee according to the chapter MOUNTING OF SQUEEGEE MECHANISM.

5.7 Drive unit

5.7.5 Removing of squeegee mechanism unit

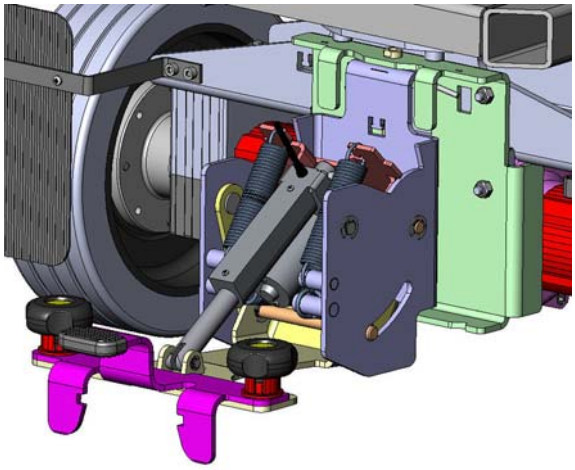


Picture 48: Squeegee mechanism

- Remove the squeegee from the squeegee mechanism.
- Disconnect the plug of the squeegee linear drive (09/112).
- Remove the 4 nuts (08/119) of the squeegee holder (08/118).
- Remove the complete squeegee lowering mechanism from the center pivot (08/101).
- According to what you need to exchange, remove the existing parts from the squeegee mechanism and place it on the new one.

5.7 Drive unit

5.7.6 Mounting of squeegee mechanism unit

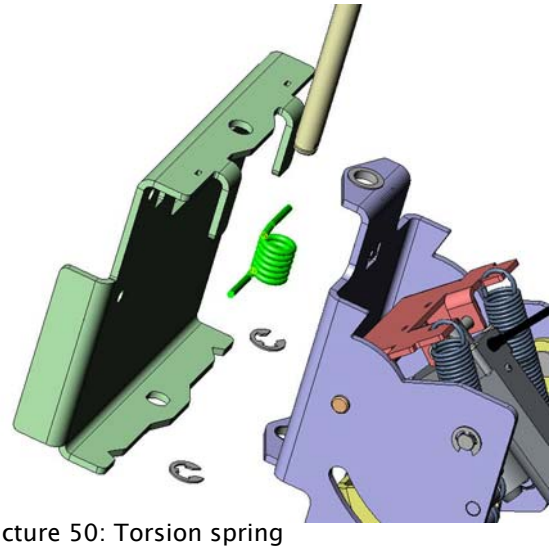


Picture 49: Squeegee mechanism

- Position the squeegee mechanism on to the steering roller.
- Mount the 4 nuts.
- Connect the plug of the squeegee linear drive.
- Click in the squeegee to the squeegee mechanism.

5.7 Drive unit

5.7.7 Removing of squeegee mechanism torsion spring

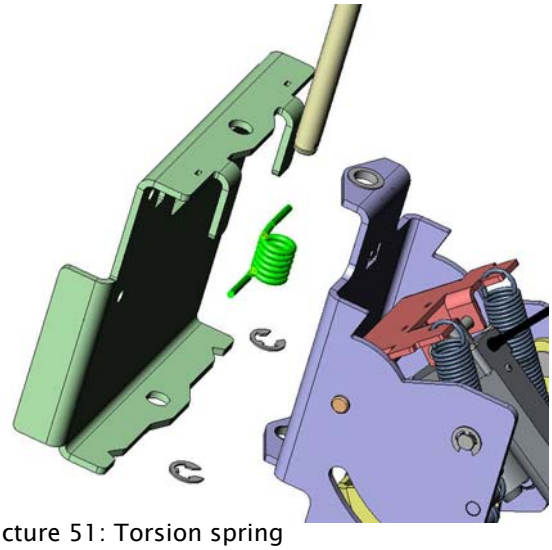


Picture 50: Torsion spring

- Remove the squeegee mechanism according to chapter REMOVING OF SQUEEGEE MECHANISM.
- Remove the two circlips (09/121) of the bolt (09/124).
- Push the torsion spring (09/122) all the way down to release tension.
- Remove the bolt together with the upper side slide bearing (09/120) and pull of the tension spring.

5.7 Drive unit

5.7.8 Mounting of squeegee mechanism torsion spring

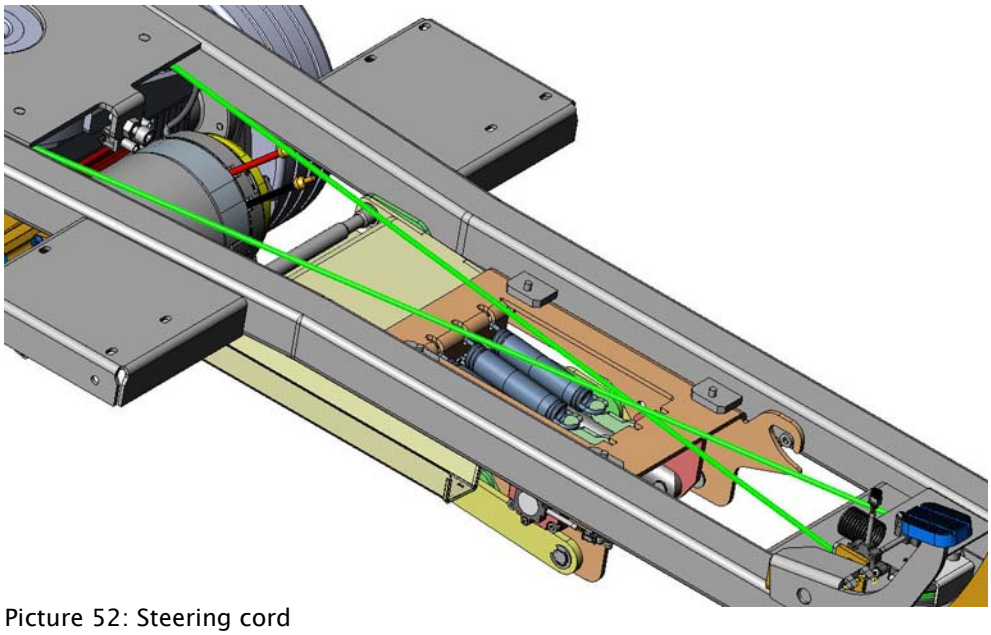


Picture 51: Torsion spring

- Position the bolt and the slide bearing in to the holder (08/118) and the bracket (09/123).
- Mount the torsion spring on to the bottom side of the bolt.
- Mount the bolt in position.
- Mount the upper side circlip onto the bolt.
- Move the torsion spring to the upper end.
- Mount the bottom side circlip onto the bolt.
- Mount the squeegee mechanism according to chapter MOUNTING OF SQUEEGEE MECHANISM.

5.7 Drive unit

5.7.9 Removing of steering cord



Picture 52: Steering cord

- Remove the squeegee from the squeegee mechanism.
- Remove the 6 screws (04/109) of the foot plate.
- Remove the foot plate (04/120).
- Remove the 4 screws (06/106) of the sensor holder (06/101).

Remarks

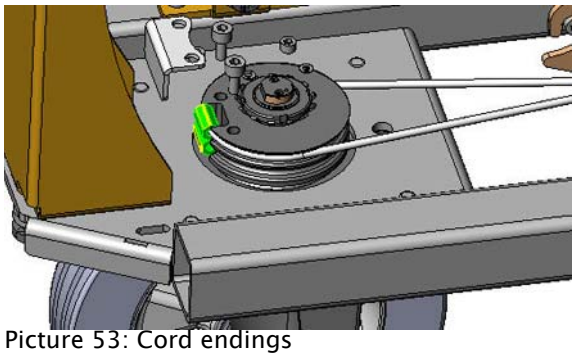
Pull the sensor holder up and position it over foot pedal so you get easier access to the screws of the steering cord guard angle.

- Remove the two screws (05/132) from the steering cord guard angle (05/133).
- Remove the steering cord guard angle.
- Loosen the 4 nuts (08/111) of the center pivot plate (08/101).
- Loosen the nut (06/125) of the tension screw.
- Untighten the tension screw (06/126) counter clock wise to release tension of steering cord (08/110).

Remarks

A movement of 3-4 mm is sufficient to release steering cord.

- Remove the two endings of the steering cord from the steering unit (05/135).

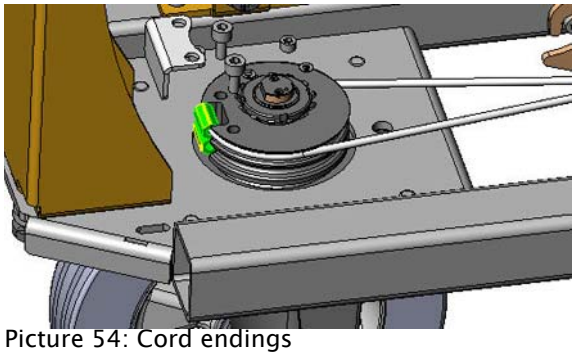


Picture 53: Cord endings

- Remove the steering cord.

5.7 Drive unit

5.7.10 Mounting of steering cord



Picture 54: Cord endings

- Position the steering cord starting from the center pivot plate.

⚠CAUTION *Make sure you position the steering cord above the connection cables.*

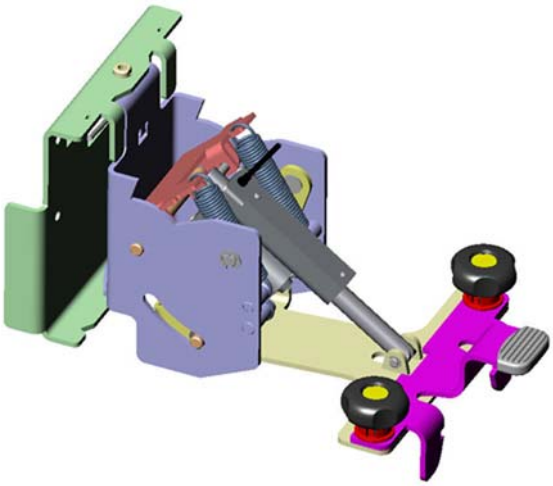
Remarks

Make sure you crossover the cord for the correct function of the steering.

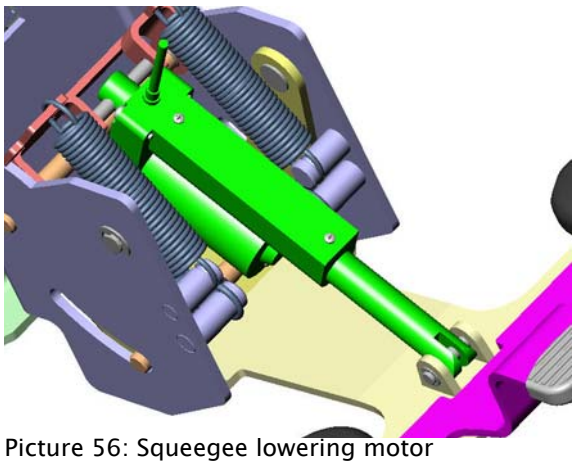
- Mount the two endings of the steering cord.
- Mount the steering cord guard and the 2 screws.
- Tension the cord with the tension screw.
- Tighten nut of the tension screw.
- Tighten the 4 nuts of the steering roller.
- Position the sensor bracket and mount the 4 screws.
- Position and tighten the step cover.
- Click in the squeegee to the squeegee mechanism.

5.8 Squeegee mechanism

5.8.1 Removing of squeegee linear drive

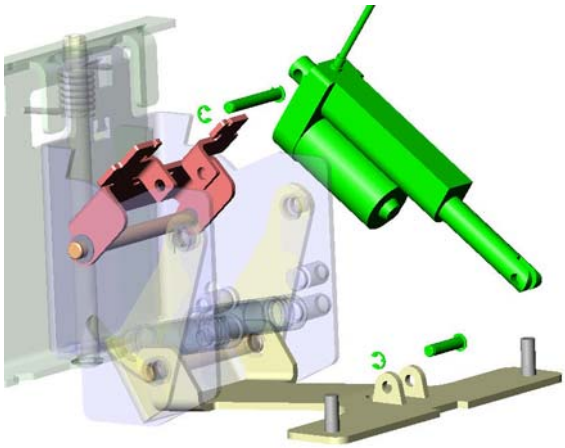


Picture 55: Squeegee lowering unit



Picture 56: Squeegee lowering motor

- Unhook the two tension springs (09/106) from the lever (09/105) and bracket (09/123).
- Remove one of the circlips (09/110) of the bolt (09/113) from the squeegee bracket (09/115).
- Remove the lower bolt from the linear drive (09/112).
- Remove one of the circlips (09/110) of the bolt (09/111) from the lever (09/105).
- Remove the upper bolt from the linear drive (09/112).

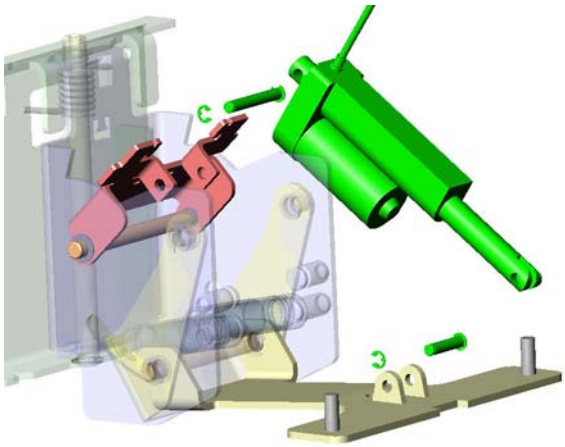


Picture 57: Squeegee lowering motor mounting

- Disconnect the plug which is positioned on the center pivot plate (08/101).
- Remove the linear drive.

5.8 Squeegee mechanism

5.8.2 Mounting of squeegee linear drive

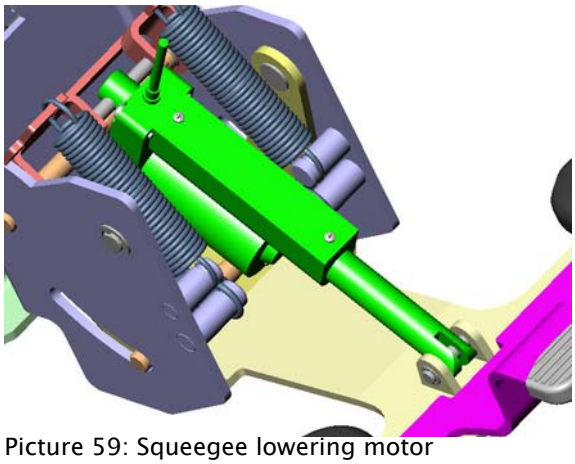


Picture 58: Squeegee lowering motor mounting

- Position the linear drive onto the swinging arm and lever.

⚠CAUTION *Take care not to position the motor wrongly.*

- Mount first the upper bolt and circlip.
- Mount the lower bolt and circlip.

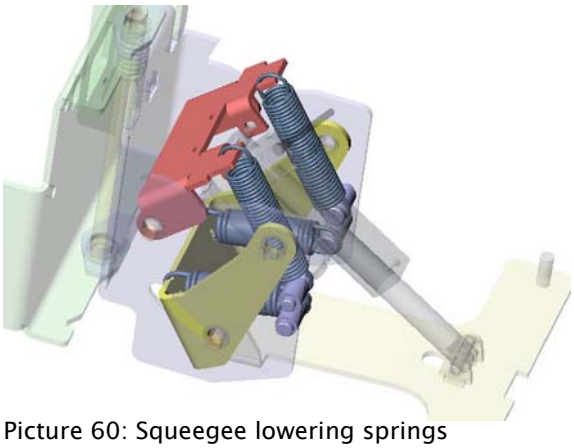


Picture 59: Squeegee lowering motor

- Mount the two tension springs on to the lever and bracket.
- Connect the plug.

5.8 Squeegee mechanism

5.8.3 Removing of tension spring



Picture 60: Squeegee lowering springs

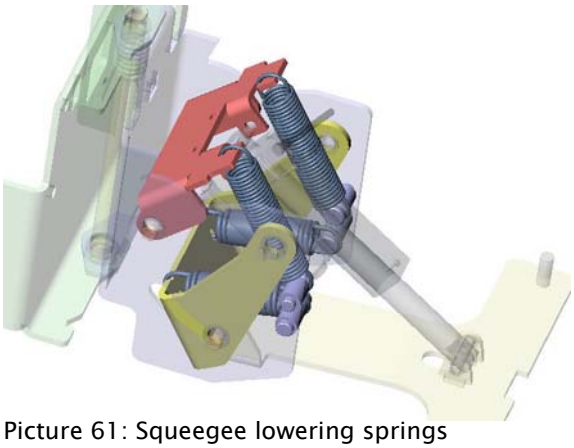
- Remove the linear drive according to chapter REMOVING OF SQUEEGEE LINEAR DRIVE.
- Unhook the two tension springs (09/106) from the lever (09/105) and bracket (09/123).
- Unhook the two tension springs (09/109) from the lever (09/108) and support (09/123).

⚠CAUTION *Take care when removing the tension springs. They are under tension.*

To remove you would need tools as screw driver/pliers.

5.8 Squeegee mechanism

5.8.4 Mounting of tension spring



Picture 61: Squeegee lowering springs

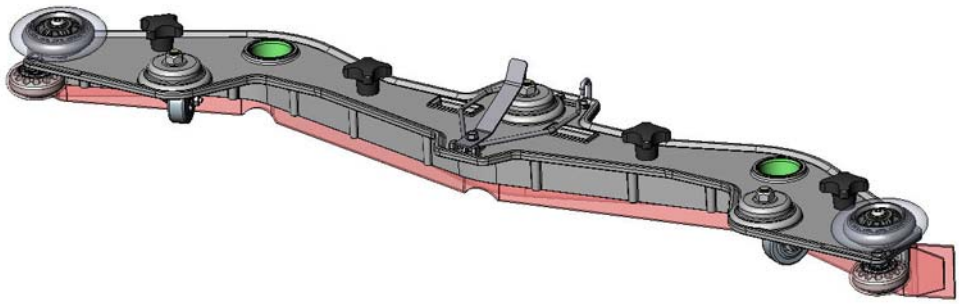
- Mount the two tension springs (09/109) on the lever (09/108) and support (09/123).
- Mount the two tension springs (09/106) on to the lever (09/105) and support (09/123).

⚠CAUTION *Mount the tension springs according to e-spares. Be aware that there are two different types.*

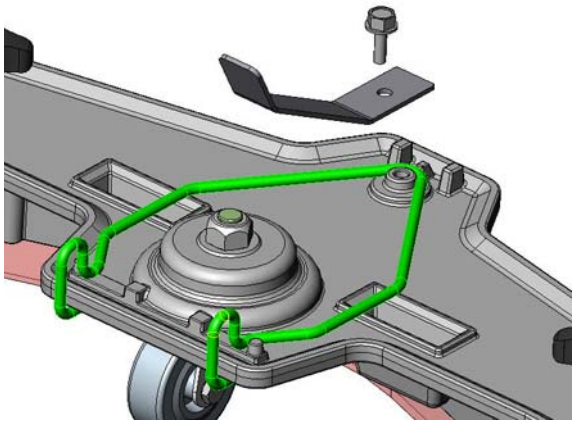
Complete assembling according to chapter MOUNTING OF SQUEEGEE LINEAR DRIVE.

5.9 Squeegee 1850/4000

5.9.1 Removing of wire spring



Picture 62: Squeegee 1850/4000

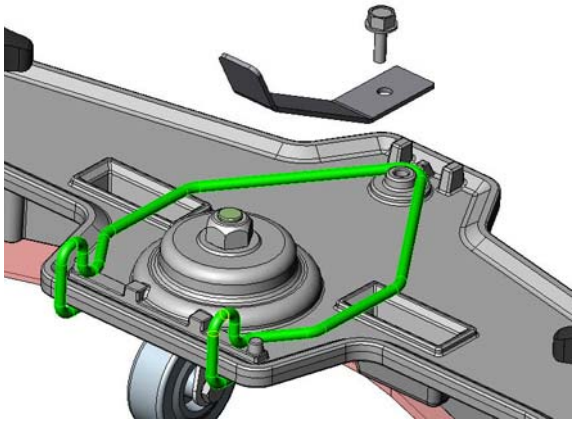


Picture 63: Wire spring

- Remove the self threading screw (1850:04/114, 4000:10/114) and the flat spring (1850:04/113, 4000:10/113).
- Remove wire spring (1850:04/112, 4000:10/112).

5.9 Squeegee 1850/4000

5.9.2 Mounting of wire spring



Picture 64: Wire spring

- Mount the new wire spring.

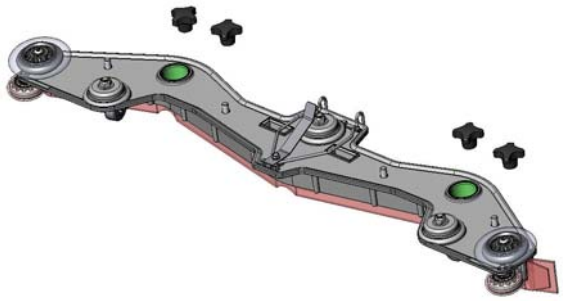
Remarks

Please hook in the back part of the wire spring and place it inside the moving way slots.

- Mount the flat spring and the screw.

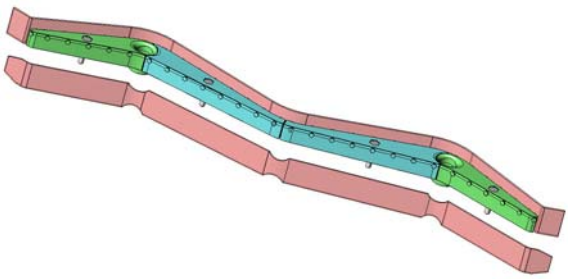
5.9 Squeegee 1850/4000

5.9.3 Removing of front blade



Picture 65: Squeegee 1850/4000 star knob

- Remove the 4 star knobs (1850:04/115; 4000:10/115).
- Push/pull out the blade holders (1850:04/102,103,104,105, 4000:10/102,103,104,105) of the squeegee body (1850:04/108, 4000:10/108).

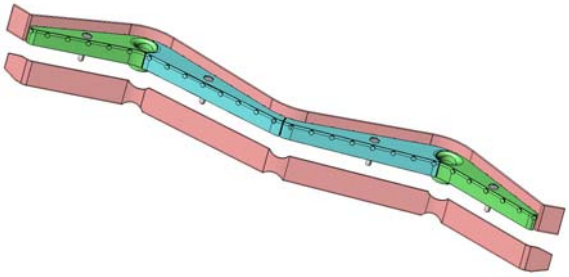


Picture 66: Squeegee 1850/4000 front blade

- Remove the front blade (1850:04/106, 4000:10/106) by tearing it off from the blade holders.

5.9 Squeegee 1850/4000

5.9.4 Mounting of front blade

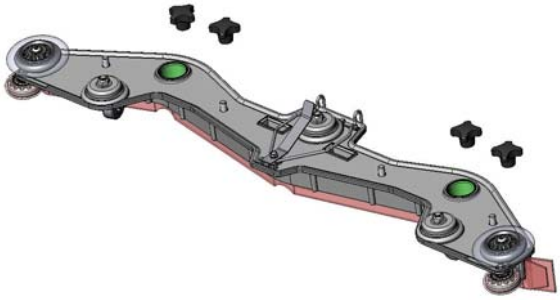


Picture 67: Squeegee 1850/4000 front blade

- Position new front blade nicely on the pins of the squeegee holders.

Remarks

Take notice of the middle sign on the blade.



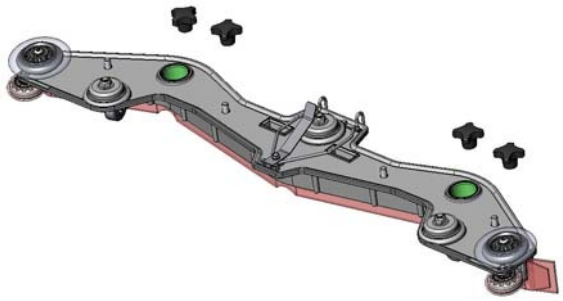
Picture 68: Squeegee 1850/4000 star knob

- Insert all 4 squeegee holders together into the squeegee body.
- Mount the star knobs.

⚠CAUTION *Ensure that the front blade is nicely fitted into the squeegee body before tightening the star knobs.*

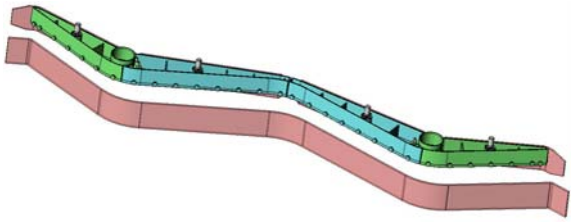
5.9 Squeegee 1850/4000

5.9.5 Removing of back blade



Picture 69: Squeegee 1850/4000 star knob

- Remove the 4 star knobs (1850:04/115, 4000:10/115).
- Push/pull out the blade holders (1850:04/102,103,104,105, 4000:10/102,103,104,105) of the squeegee body (1850:04/108, 4000:10/108).

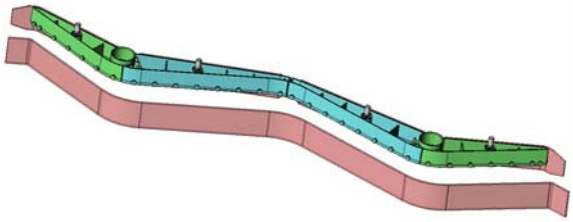


Picture 70: Squeegee 1850/4000 back blade

- Remove the back blade (1850:04/107, 4000:10/107) by tearing it off from the blade holders.

5.9 Squeegee 1850/4000

5.9.6 Mounting of back blade

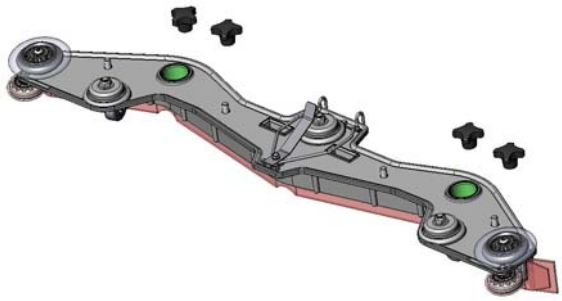


Picture 71: Squeegee 1850/4000 back blade

- Position new back blade nicely on the pins of the squeegee holders.

Remarks

Take notice of the middle sign on the blade.



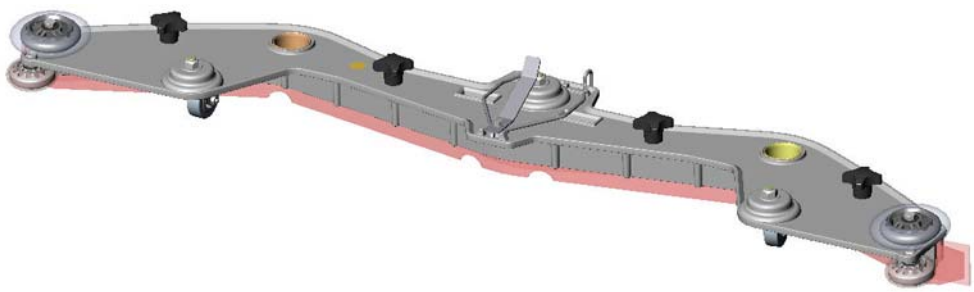
Picture 72: Squeegee 1850/4000 star knob

- Insert all 4 squeegee holders together into the squeegee body.
- Mount the star knobs.

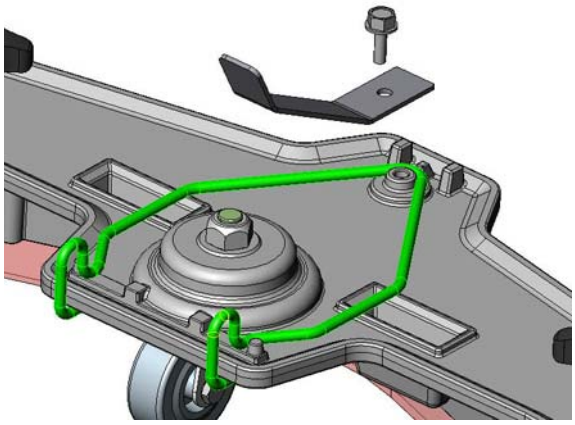
⚠CAUTION *Ensure that the front blade is nicely fitted into the squeegee body before tightening the star knobs.*

5.10 Squeegee 5000

5.10.1 Removing of wire spring



Picture 73: Squeegee 5000

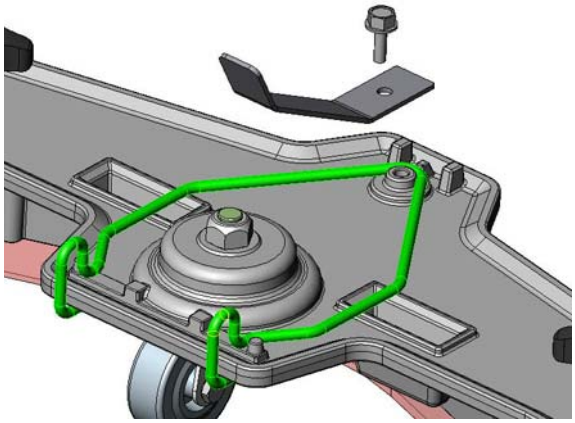


Picture 74: Wire spring

- Remove the self threading screw (11/114) and the flat spring (11/113).
- Remove wire spring (11/112).

5.10 Squeegee 5000

5.10.2 Mounting of wire spring



Picture 75: Wire spring

- Mount the new wire spring.

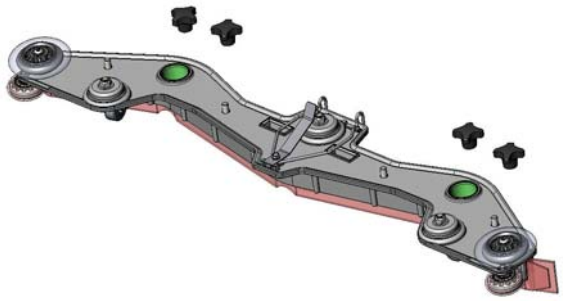
Remarks

Please hook in the back part of the wire spring and place it inside the moving way slots.

- Mount the flat spring and the screw.

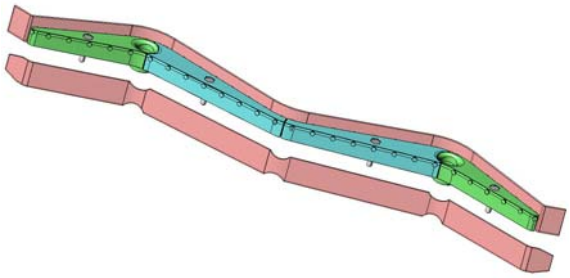
5.10 Squeegee 5000

5.10.3 Removing of front blade



Picture 76: Squeegee 5000 star knob

- Remove the 4 star knobs (11/115).
- Push/pull out the blade holders (11/102,103,104,105) of the squeegee body (11/108).

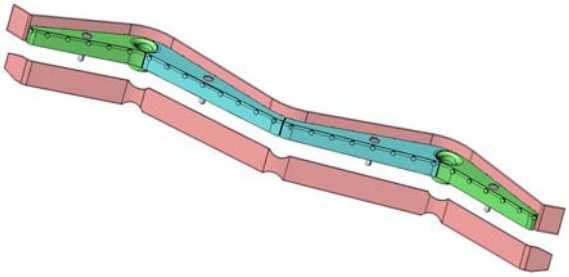


Picture 77: Squeegee 5000 front blade

- Remove the front blade (11/106) by tearing it off from the blade holders.

5.10 Squeegee 5000

5.10.4 Mounting of front blade

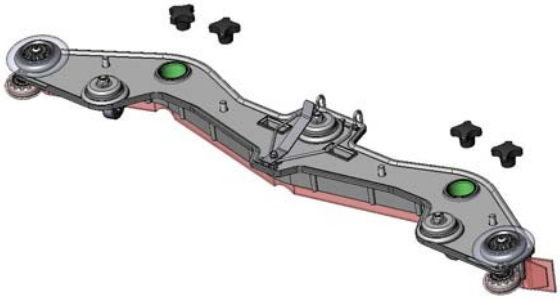


Picture 78: Squeegee 5000 front blade

- Position new front blade nicely on the pins of the squeegee holders.

Remarks

Take notice of the middle sign on the blade.



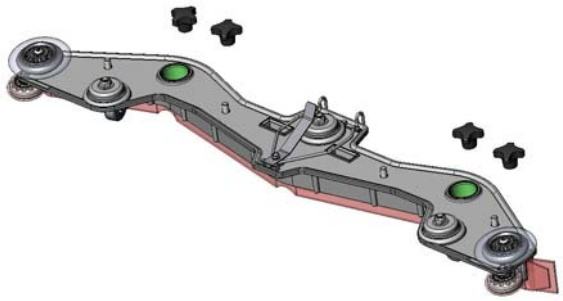
Picture 79: Squeegee 5000 star knob

- Insert all 4 squeegee holders together into the squeegee body.
- Mount the star knobs.

⚠CAUTION *Ensure that the front blade is nicely fitted into the squeegee body before tightening the star knobs.*

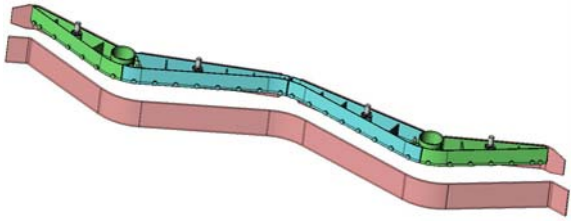
5.10 Squeegee 5000

5.10.5 Removing of back blade



Picture 80: Squeegee 5000 star knob

- Remove the 4 star knobs (11/115).
- Push/pull out the blade holders (11/102,103,104,105) of the squeegee body (11/108).

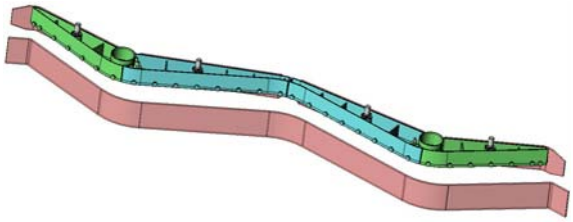


Picture 81: Squeegee 5000 back blade

- Remove the back blade (11/107) by tearing it off from the blade holders.

5.10 Squeegee 5000

5.10.6 Mounting of back blade

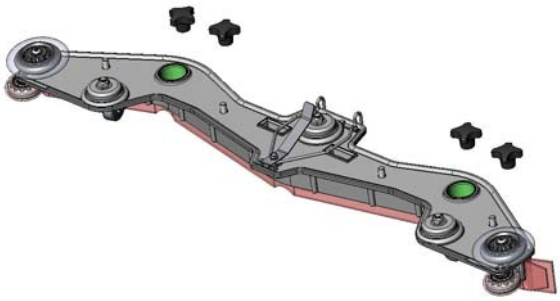


Picture 82: Squeegee 5000 back blade

- Position new back blade nicely on the pins of the squeegee holders.

Remarks

Take notice of the middle sign on the blade.



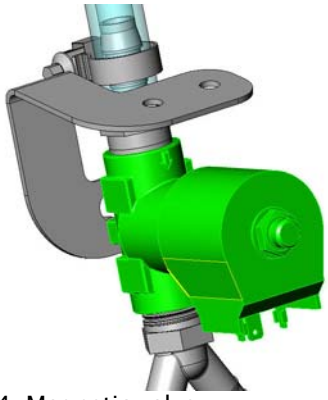
Picture 83: Squeegee 5000 star knob

- Insert all 4 squeegee holders together into the squeegee body.
- Mount the star knobs.

⚠CAUTION *Ensure that the front blade is nicely fitted into the squeegee body before tightening the star knobs.*

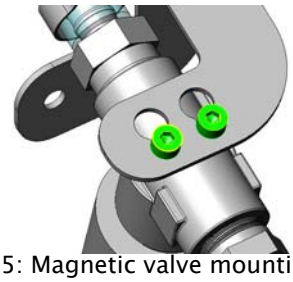
5.11 Magnetic valve

5.11.1 Removing of magnetic valve



Picture 84: Magnetic valve

- Remove the two/four hoses (4000: 12/149, 5000: 13/149) of the brush unit from the Y-connector (15/107).
- Loosen the two screws (15/106) for the magnetic valve (15/101).

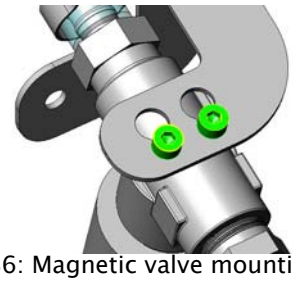


Picture 85: Magnetic valve mounting

- Thread out the magnetic valve from the bracket (15/105).
- Remove the wires to the magnetic valve.
- Loosen the hose clamp (15/112).
- Remove the upper hose (15/103) from the nipple connector (15/104).
- Remove the magnetic valve.
- According to what you need remove it from the existing magnetic valve and place it on the new one.

5.11 Magnetic valve

5.11.2 Mounting of magnetic valve

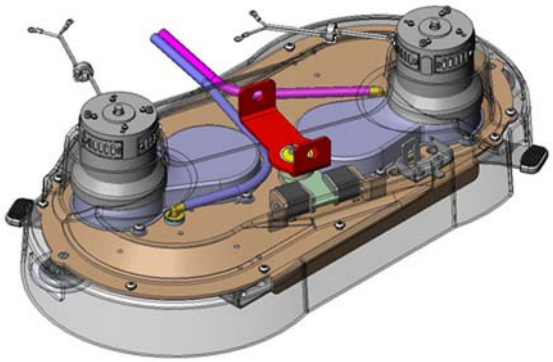


Picture 86: Magnetic valve mounting

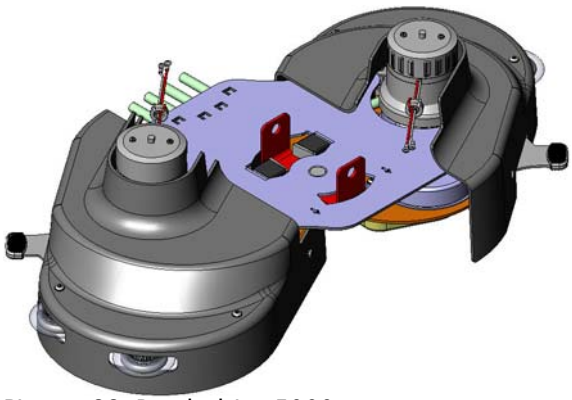
- Take the magnetic valve and make sure that nipple connector (15/104) and Y-/ double Y- nipple (15/107) is mounted.
- Mount the upper hose onto the male connector.
- Tighten the clamp.
- Mount the wires.
- Thread in the magnetic valve into the bracket.
- Tighten the two screws to fix magnetic valve on the bracket.
- Mount the two/four hoses from the brush unit onto the Y-/ double Y-nipple.

5.12 Brush drive 4000/5000

5.12.1 Removing of brush drive unit



Picture 87: Brush drive 4000

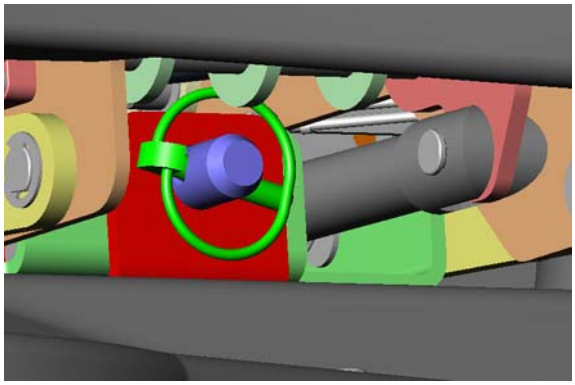


Picture 88: Brush drive 5000

- Remove the tools.
- Lower the brush unit by pressing the brush button on the dashboard.
- As soon as the brush unit is touching the floor press the stop actuator (05/111).

⚠CAUTION *The upper mentioned procedures are not really necessary. Be aware that the brush unit can fall onto the floor if it is not lowered.*

- Remove the magnetic valve according to chapter REMOVING OF MAGNIEIC VALVE.
- Disconnect the brush motor wires from the two connection blocks (06/123) mounted on the chassis (06/120).
- Remove the pin with ring (07/110).

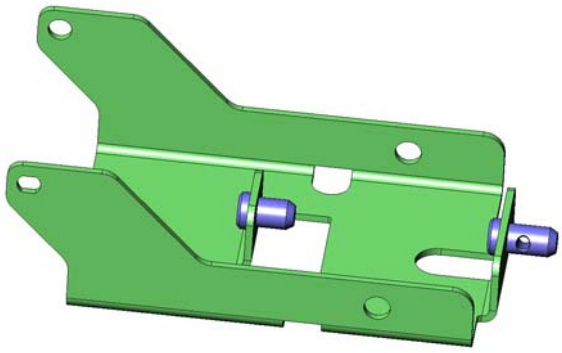


Picture 89: Pin with ring

- Remove the whole brush unit by pulling it off from the bolts of the brush holding bracket (07/108).

Remarks

Push the brush unit to the front side so the bracket (4000:12/132, 5000:14/132) comes off of the brush holding console (07/108).



Picture 90: Brush holding bracket

- Release the stop actuator.
- Switch ON the machine so the brush unit goes into the upper position.
- Slide out the brush unit to the LH side of the machine.

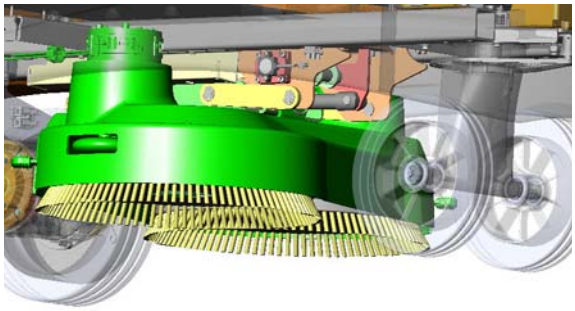
Remarks

To slide out the brush unit it is best that you move it all the way to the back side near the taction motor (08/106).

⚠CAUTION *Ensure that you do not damage the magnetic valve. Move it to the side before sliding the brush unit out.*

5.12 Brush drive 4000/5000

5.12.2 Mounting of brush drive unit



Picture 91: Brush drive mounting

- Slide in the brush unit.

Remarks

To slide in the brush unit it is best that you move it all the way to the back side near the taction motor.

⚠CAUTION

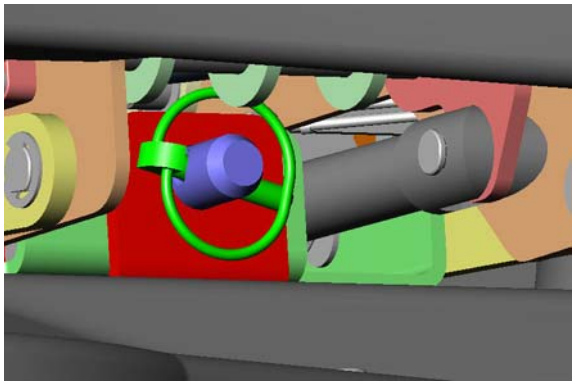
Ensure that you do not damage the magnetic valve. Move it to the side before sliding the brush unit in.

- Place the brush unit in the correct position so the brush holding bracket is in line.
- Switch ON the machine and lower the brush unit.

Remarks

As soon as the brush lowering unit gets a resistance it stops. Therefore you do not have much pressure on it and you still can move the brush unit.

- Move the brush unit into the correct position.
- Place the holes of the bearing bracket onto the bolts of the brush holding bracket.
- Push the brush unit to the back side.
- Mount the pin with ring.

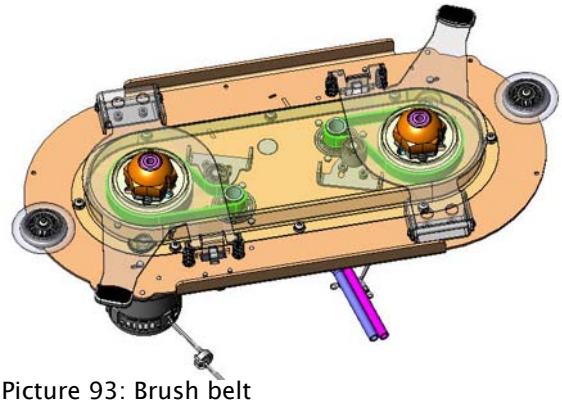


Picture 92: Pin with ring

- Connect the wires to the two connection blocks.
- Mount the magnetic valve according to the chapter MOUNTING OF MAGNETIC VAVLVE.

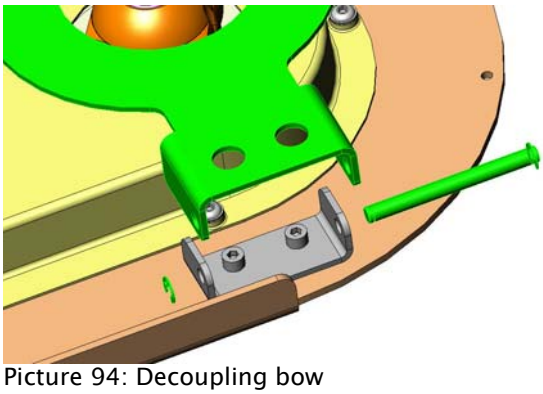
5.13 Brush drive 4000

5.13.1 Removing of brush belt



Picture 93: Brush belt

- Remove brush drive according to chapter REMOVING OF BRUSH DRIVE UNIT.
- Remove the 8 screws (12/102) for the two brush covers (12/101).
- Remove the brush covers.
- Remove the two tension springs (12/139) of decoupling bow (12/143).
- Remove one circlip (12/145) from the bolt (12/146).
- Pull out the bolt and remove the decoupling bow.



Picture 94: Decoupling bow

Remarks

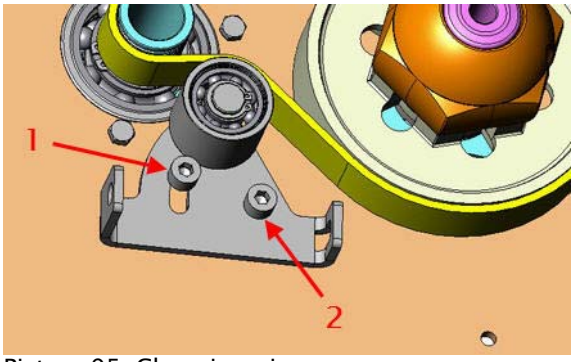
You need to remove the LH and RH side decoupling bow.

- Remove the 8 screws (12/102) of the protective cover (12/141).
- Remove the protective cover.

Remarks

Further numbering refers to picture: Clamping piece.

1 Remove fixation screw (12/122) of the clamping piece (12/130).
2 Loosen the center screw (12/122) to turn the clamping piece.
- Turn the clamping piece with a screw driver to release the tension of the brush belt.

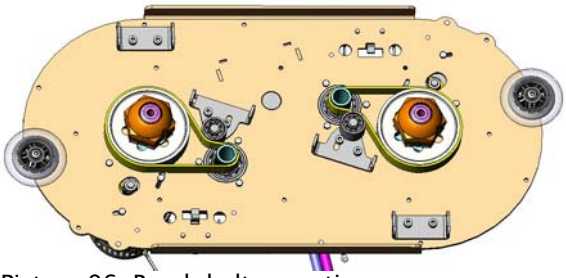


Picture 95: Clamping piece

- Remove the brush belt (12/125).

5.13 Brush drive 4000

5.13.2 Mounting of brush belt



Picture 96: Brush belt mounting

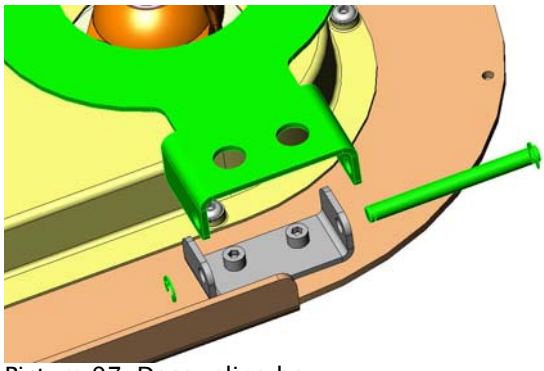
- Position the brush belt carefully.
- Turn the clamping piece with a screw driver to tension the brush belt.
- Position the fixation screw and tighten the center screw of the clamping piece.

Adjustment

Turn the coupling hubs (12/128) by hand in opposite direction to ensure that the belt is correctly mounted and stays in the middle of the pulley.

- Tighten the fixation screws.
- Position the protective cover onto the brush unit.
- Position and tighten the 8 screws of the protective cover.

⚠CAUTION *Ensure that the brush belt does not touch the cover.*



Picture 97: Decoupling bow

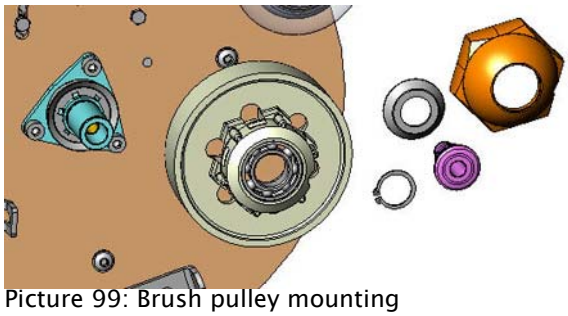
- Position the decoupling bow.
- Mount the axle and position the circlip.
- Mount the tension springs of the decoupling bow.
- Position the two brush covers onto the brush unit.
- Position and tighten the 8 screws for the two covers.
- Complete assembling according to chapter MOUNTING OF BRUSH DRIVE UNIT.

5.13 Brush drive 4000

5.13.3 Removing of brush pulley

Picture 98: Brush pulley

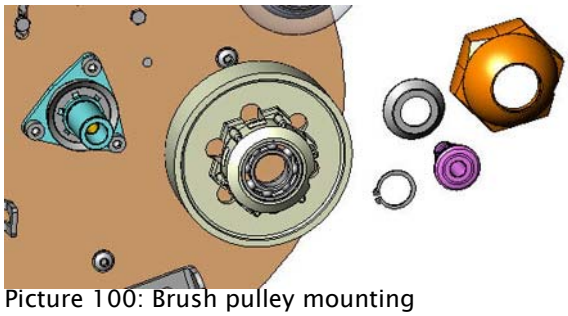
- Remove the brush drive according to chapter REMOVING OF BRUSH DRIVE UNIT.
- Remove brush belt according to chapter REMOVING OF BRUSH BELT.
- Remove the coupling hub (12/128) carefully with a screw driver.
- Remove the centre plug (12/129) and the sealing ring (12/127).
- Remove the retaining ring (12/126).
- Pull off the pulley (12/124) from the bracket (12/121).



Picture 99: Brush pulley mounting

5.13 Brush drive 4000

5.13.4 Mounting of brush pulley



Picture 100: Brush pulley mounting

- Mount the pulley onto the axle.

Service

Apply gear/bearing lubricant on the pulley (12/124), the bracket (12/121) and sealing ring (12/123).

- Position the retaining ring.
- Mount the center plug and the sealing ring.

Service

Apply lubricant onto the sealing ring (12/127).

- Mount the coupling hub.

⚠CAUTION *The coupling hub is coded and has to match to the pulley. Use a wooden piece and a hammer to mount the coupling hub onto the pulley.*

05.68.37 brush drive – pulley – 4000_V1.00.fm

Picture 101: Brush pulley

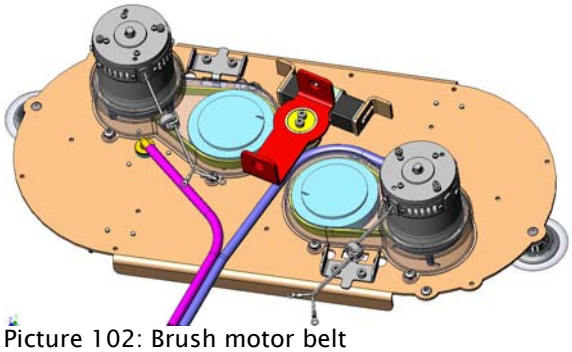
- Complete assembling according to chapter MOUNTING OF BRUSH BELT.
- Complete assembling according to chapter MOUNTING OF BRUSH DRIVE UNIT.

Remarks

If you have to remove the complete pulley and axle together then you can remove the three screws (12/122) with an Allen key by positioning the slot of the pulley (12/124) right over the screws.

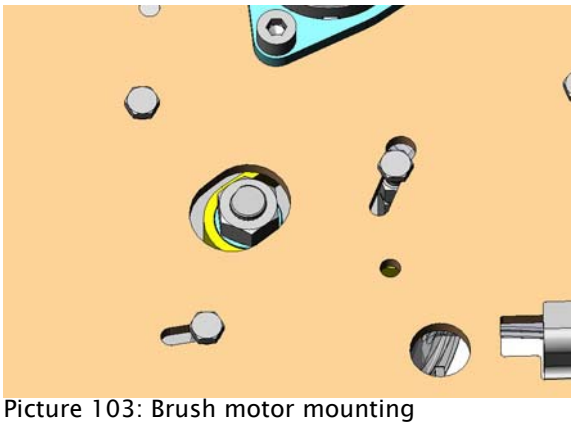
5.13 Brush drive 4000

5.13.5 Removing of motor & motor belt



Picture 102: Brush motor belt

- Remove brush drive according to chapter REMOVING OF BRUSH DRIVE UNIT.
- Remove the protective cover (12/141) according to chapter REMOVING OF BRUSH BELT.
- Remove the sealing ring (12/104) of the motor cover (12/105).
- Remove the 4 screws (12/102) from the motor cover.
- Remove the motor cover.



Picture 103: Brush motor mounting

- Remove the three screws (15/131) of the brush base plate (12/115).
- Remove the brush motor (15/125) and/or the motor belt (15/127).

5.13 Brush drive 4000

5.13.6 Mounting of motor & motor belt

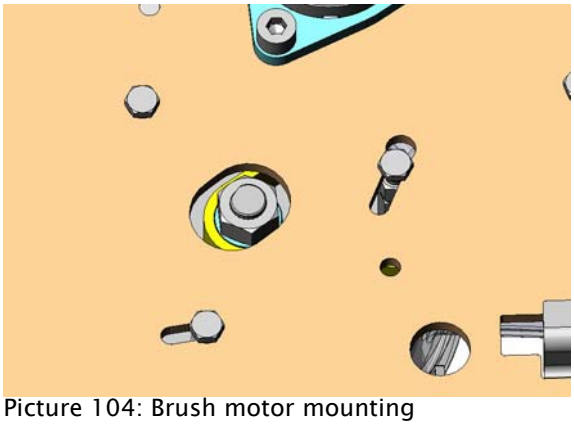
- Position the new motor/new belt.

⚠CAUTION *Take care that the belt is positioned correctly.*

- Position the screws.

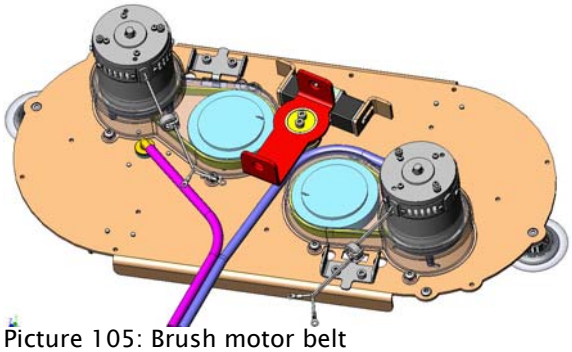
Service

Apply adhesive looking (15/133) on the screws (15/131).



Picture 104: Brush motor mounting

- To tension the belt move the motor in position.
- Tighten all screws.

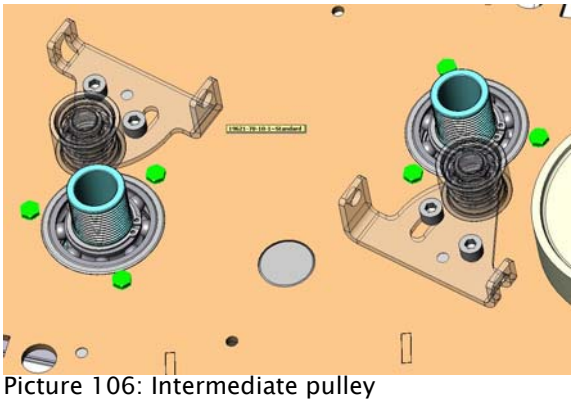


Picture 105: Brush motor belt

- Mount the motor cover and screws.
- Mount the sealing ring.
- Complete assembling according to the chapter MOUNTING OF BRUSH BELT.
- Complete assembling according to the chapter MOUNTING OF BRUSH DRIVE UNIT.

5.13 Brush drive 4000

5.13.7 Removing of intermediate pulley

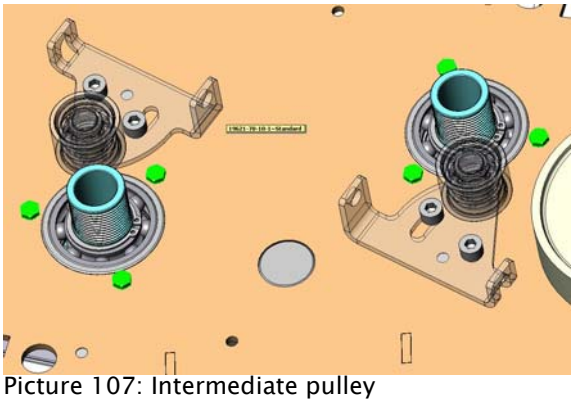


Picture 106: Intermediate pulley

- Remove brush drive according to chapter REMOVING OF BRUSH DRIVE UNIT.
- Remove brush belt according to chapter REMOVING OF BRUSH BELT.
- Remove motor belt according to chapter REMOVING OF MOTOR & MOTOR BELT.
- Remove the three screws (12/131) for the intermediate pulley.
- Remove the complete intermediate pulley (12/110).

5.13 Brush drive 4000

5.13.8 Mounting of intermediate pulley



Picture 107: Intermediate pulley

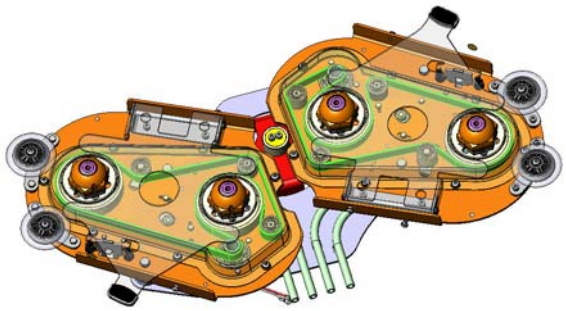
- Mount the new intermediate pulley.
- Position and tighten the screws.
- Complete assembling according to the chapter MOUNTING OF MOTOR & MOTOR BELT.
- Complete assembling according to the chapter MOUNTING OF BRUSH BELT.
- Complete assembling according to the chapter MOUNTING OF BRUSH DRIVE UNIT.

Remarks

The intermediate pulley is seperate and as set available. Refer to e-spares.

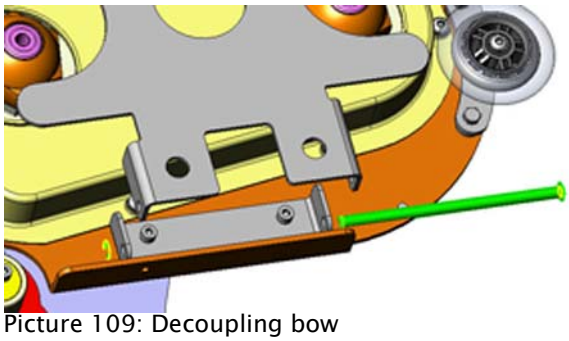
5.14 Brush drive 5000

5.14.1 Removing of brush belt



Picture 108: Brush belt

- Remove brush drive according to chapter REMOVING OF BRUSH DRIVE UNIT.
- Remove the 8 screws (13/102) for the two brush covers (13/101).
- Remove the brush covers.
- Remove the two tension springs (13/139) of decoupling bow (14/119).
- Remove one circlip (14/149) from the bolt (14/109).
- Pull out the bolt and remove the decoupling bow.



Picture 109: Decoupling bow

Remarks

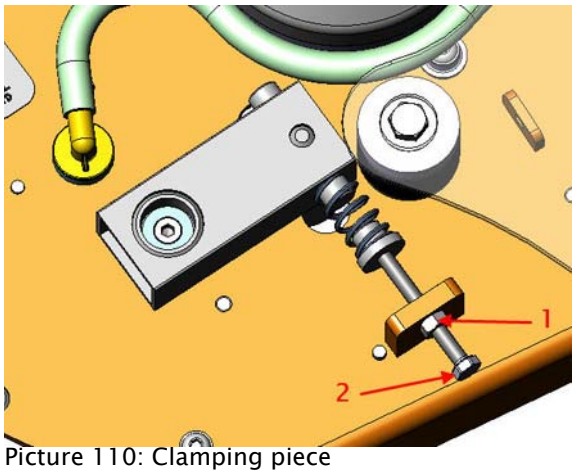
If you have to replace both brush belts, then you need to remove the LH and RH side decoupling bow.

- Remove the 8 screws (14/125) of the protective cover (14/112).
- Remove the protective cover.

Remarks

Further numbering refers to picture: Clamping piece.

1 Loosen fixation nut (13/127) of the tension screw (13/128).
2 Loosen the tension screw to turn the clamping lever (13/113).
- Turn the center screw completely out to release the tension of the brush belt.
- Remove the pressure spring (13/125) and the bolt (13/126) to move the clamping lever to the end stop.

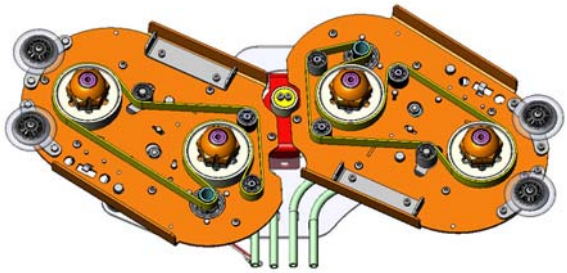


Picture 110: Clamping piece

- Remove the brush belt (14/114).

5.14 Brush drive 5000

5.14.2 Mounting of brush belt



Picture 111: Brush belt mounting

- Position the brush belt carefully.
- Position the pressure spring and bolt onto the clamping lever.

Picture 112: Clamping lever adjustment

- Turn the center screw to tension the brush belt.

Adjustment

Position the clamping lever as a pre adjustment to the value x=40mm according to the picture.

- Position and tighten the fixation nut of tension screw from the clamping piece.

Adjustment

Turn the coupling hubs (14/128) by hand in opposite direction to ensure that the belt is correctly mounted and stays in the middle of the pulley.

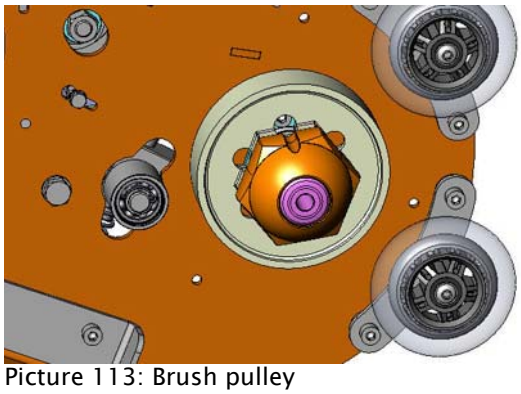
- Position the protective cover onto the brush unit.
- Position and tighten the 8 screws of the protective cover.

⚠CAUTION *Ensure that the brush belt does not touch the cover.*

- Position the decoupling bow.
- Mount the axle and position the circlip.
- Mount the tension springs of the decoupling bow.
- Position the two brush covers onto the brush unit.
- Position and tighten the 8 screws for the two covers.
- Complete assembling according to chapter MOUNTING OF BRUSH DRIVE UNIT.

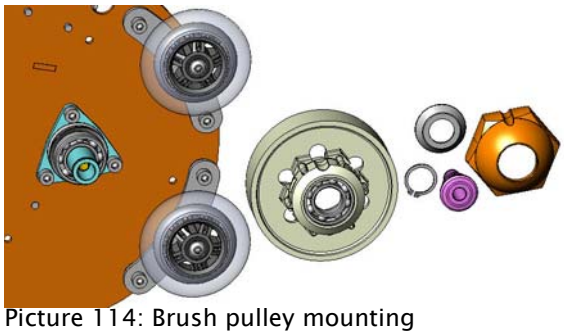
5.14 Brush drive 5000

5.14.3 Removing of brush pulley



Picture 113: Brush pulley

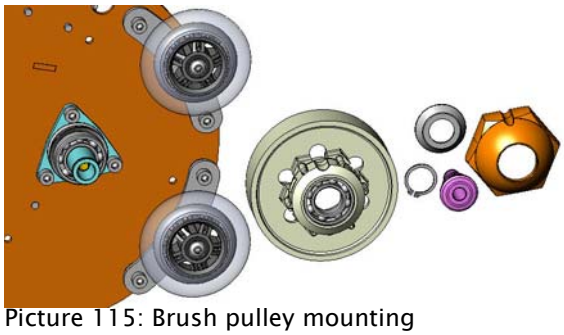
- Remove the brush drive according to chapter REMOVING OF BRUSH DRIVE UNIT.
- Remove brush belt according to chapter REMOVING OF BRUSH BELT.
- Remove the coupling hub (14/128) carefully with a screw driver.
- Remove the centre plug (14/129) and the sealing ring (14/127).
- Remove the retaining ring (14/126).
- Pull off the pulley (14/124) from the bracket (14/121).



Picture 114: Brush pulley mounting

5.14 Brush drive 5000

5.14.4 Mounting of brush pulley



Picture 115: Brush pulley mounting

- Mount the pulley onto the axle.

Service

Apply gear/bearing lubricant on the pulley (14/124), the bracket (14/121) and sealing ring (14/123).

- Position the retaining ring.
- Mount the center plug and the sealing ring.

Service

Apply lubricant onto the sealing ring (14/127).

- Mount the coupling hub.

⚠CAUTION *The coupling hub is coded and has to match to the pulley.*

Use a wooden piece and a hammer to mount the coupling hub onto the pulley.

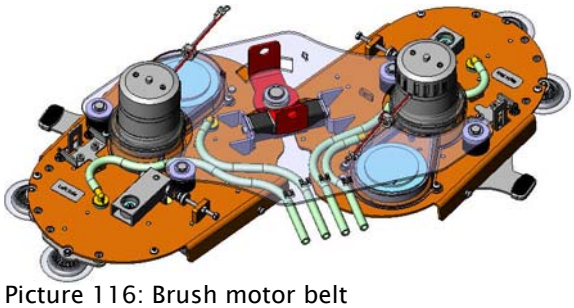
- Complete assembling according to chapter MOUNTING OF BRUSH BELT.
- Complete assembling according to chapter MOUNTING OF BRUSH DRIVE UNIT.

Remarks

If you have to remove the complete pulley and axle together then you can remove the three screws (14/122) with an Allen key by positioning the slot of the pulley (14/124) right over the screws.

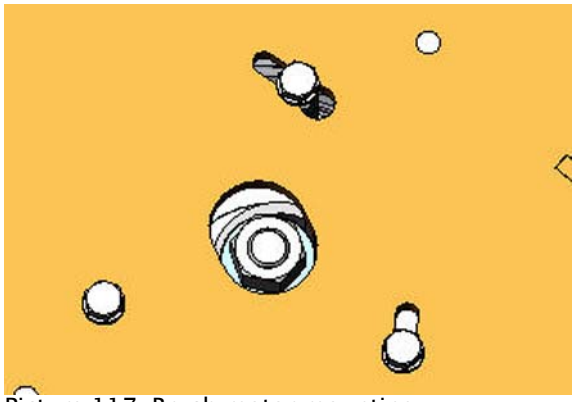
5.14 Brush drive 5000

5.14.5 Removing of motor & motor belt



Picture 116: Brush motor belt

- Remove brush drive according to chapter REMOVING OF BRUSH DRIVE UNIT.
- Remove the protective cover (14/112) according to chapter REMOVING OF BRUSH BELT.
- Remove the sealing ring (13/104) of the motor cover (13/105).
- Remove the 4 screws (13/102) from the motor cover.
- Remove the motor cover.



Picture 117: Brush motor mounting

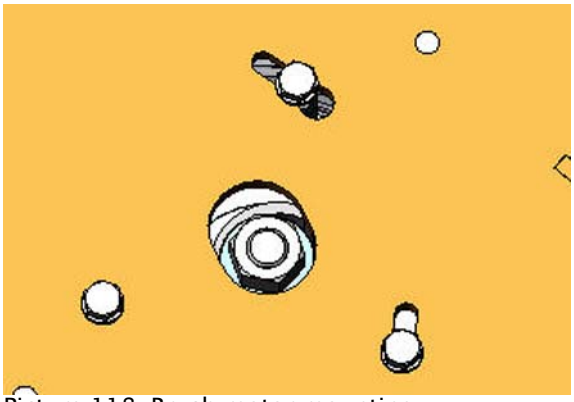
- Remove the three screws (15/131) of the brush base plate (13/115).
- Remove the brush motor (15/125) and/or the motor belt (15/127).

5.14 Brush drive 5000

5.14.6 Mounting of motor & motor belt

- Position the new motor/new belt.

⚠CAUTION *Take care that the belt is positioned correctly.*



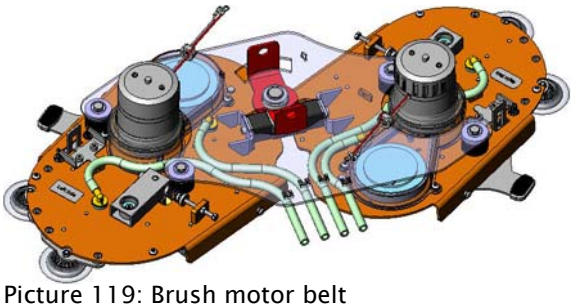
Picture 118: Brush motor mounting

- Position the screws.

Service

Apply adhesive looking (15/133) on the screws (15/131).

- To tension the belt move the motor in position.
- Tighten all screws.

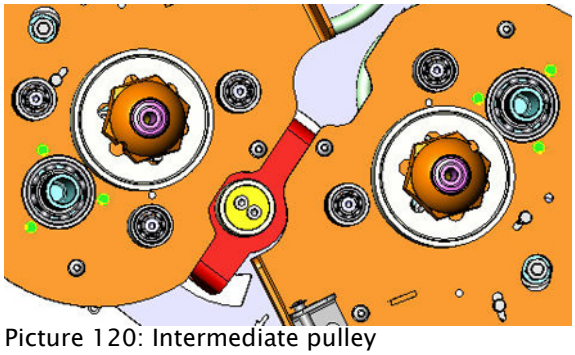


Picture 119: Brush motor belt

- Mount the motor cover and screws.
- Mount the sealing ring.
- Complete assembling according to the chapter MOUNTING OF BRUSH BELT.
- Complete assembling according to the chapter MOUNTING OF BRUSH DRIVE UNIT

5.14 Brush drive 5000

5.14.7 Removing of intermediate pulley

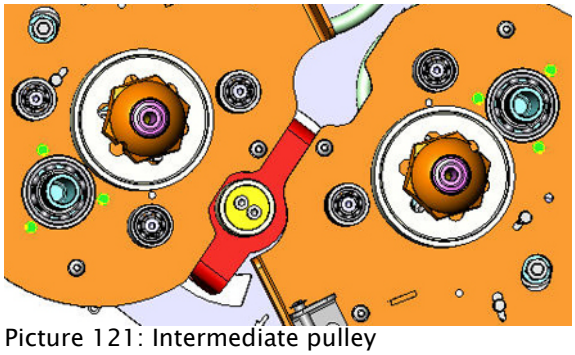


Picture 120: Intermediate pulley

- Remove brush drive according to chapter REMOVING OF BRUSH DRIVE UNIT.
- Remove brush belt according to chapter REMOVING OF BRUSH BELT.
- Remove motor belt according to chapter REMOVING OF MOTOR & MOTOR BELT.
- Remove the three screws (13/121) for the intermediate pulley.
- Remove the complete intermediate pulley (13/110).

5.14 Brush drive 5000

5.14.8 Mounting of intermediate pulley



Picture 121: Intermediate pulley

- Mount the new intermediate pulley.
- Position and tighten the screws.
- Complete assembling according to the chapter MOUNTING OF MOTOR & MOTOR BELT.
- Complete assembling according to the chapter MOUNTING OF BRUSH BELT.
- Complete assembling according to the chapter MOUNTING OF BRUSH DRIVE UNIT.

Remarks

- *The intermediate pulley is separate and as set available. Refer to e-spares.*

Technical Manual

swingo 4000/5000

6 Electrical

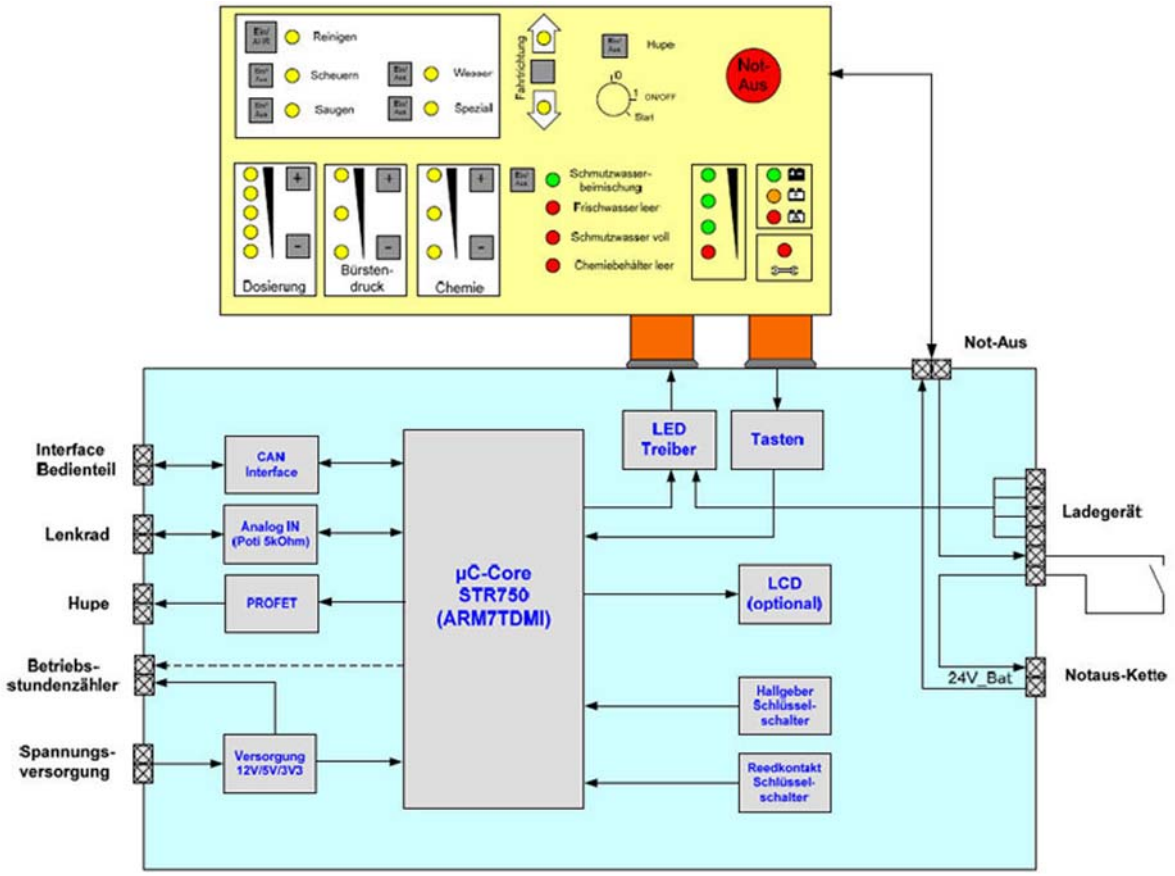
19. September 2012 Edition: V1.01/2012

6.1 System architect

6.1.1 General

- The firmware is memorised only on the power electronics.
- The dashboard visualises the states of the machine. It also functions as a connection between the power electronics and the devices. (e.g. hall sensor, key switch and foil keyboard)
- Applying the correct torque where required is essential for a safe operation of the machine.
- ESD can harm the electronic boards and therefore reduce the life time of the machine. Use always an ESD bag to protect them.

6.1.2 System overview



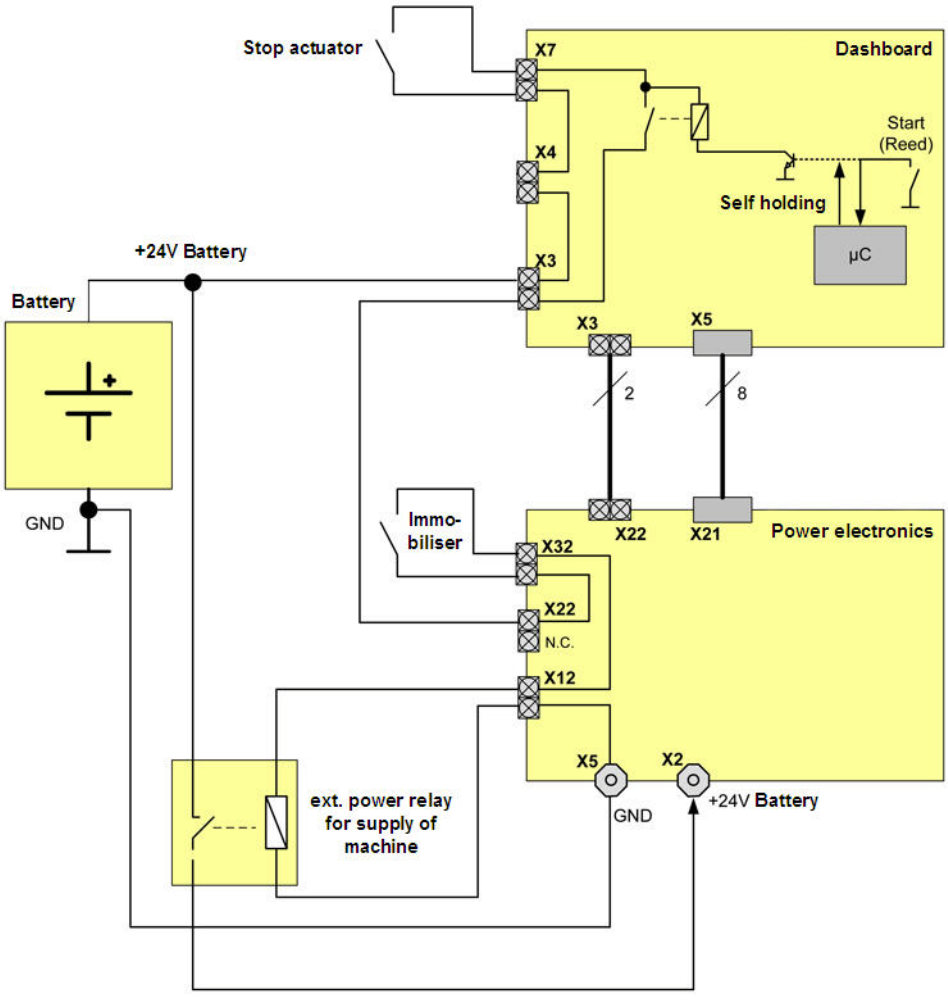
Picture 1: System overview

6.1.3 Start up/Self holding

The TASKI swingo 4000/5000 has an emergency loop. This includes a separate power relay (04/110), which switches the complete power of the machine. In an emergency situation you shut down the machine by pressing the stop actuator (05/111).

The machine is switched ON by turning the key (15/116) to the „Start“ position, similar known as with cars. When the key switch is turned to the „Start“ position the magnet passes over a reed contact and feeds the power electronics with power. The power electronics get power and it enables the processor to start and go into the self holding. Afterwards the key falls back into the position „1“ and the magnet activates the hall sensor. The power electronics stays on as long it is:

- Not switched OFF by the key switch.
- The switch-off timer does not reach 5 minutes.
- The charger is not connected to main OR battery plug is not connected to charger jack housing (04/102).
- The stop actuator is pressed.



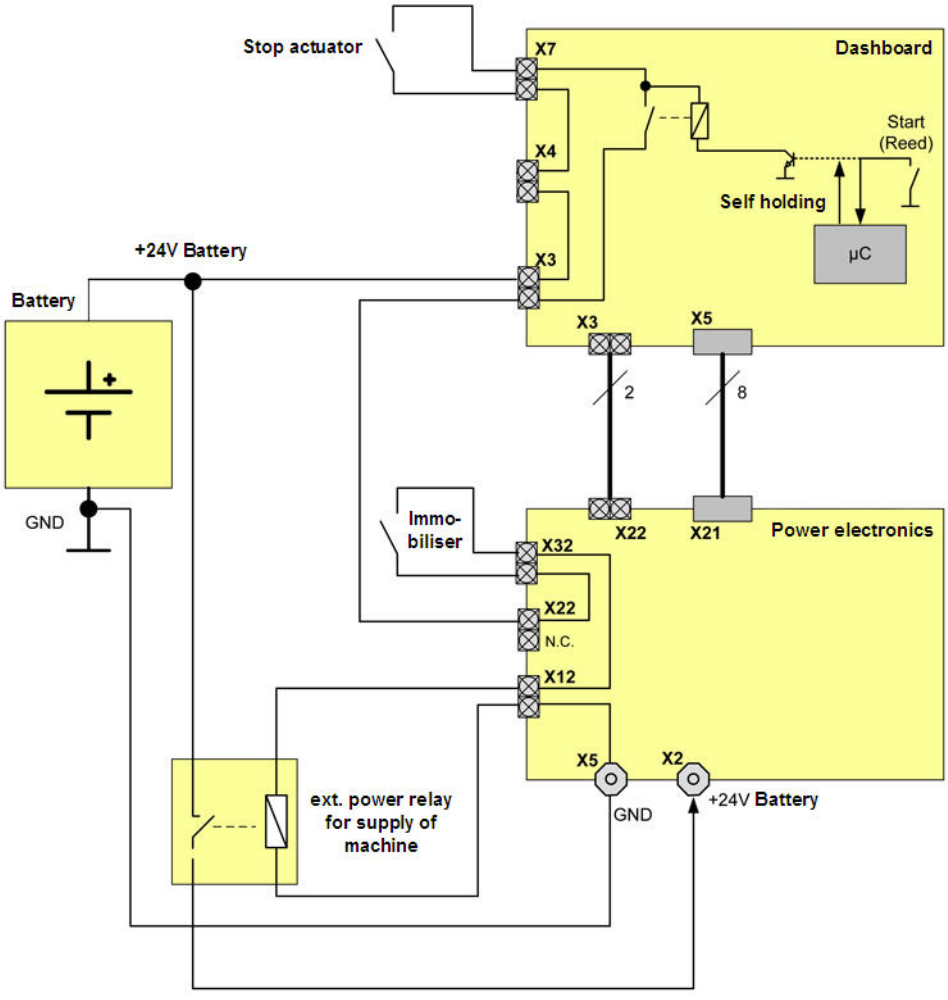
Picture 2: Start up/Self holding

6.1.4 Emergency loop

The machine has a separate emergency loop, which contains following elements:

- Stop actuator.
- Charger (internal switch) OR battery connector switch (04/118).
- Start up/Self holding.

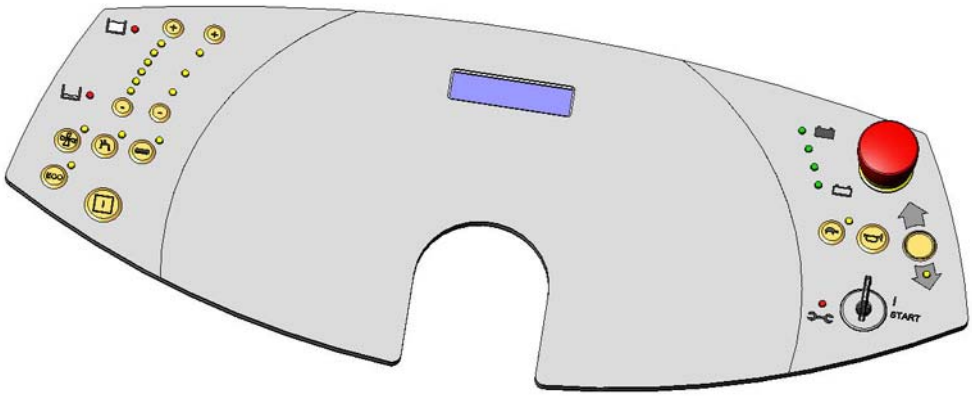
The emergency loop controls the power relay (04/110). Only when the complete emergency loop is closed the relay is active and the power supply is ensured.



Picture 3: Start up/Self holding

6.2 Dashboard

6.2.1 Removing of dashboard



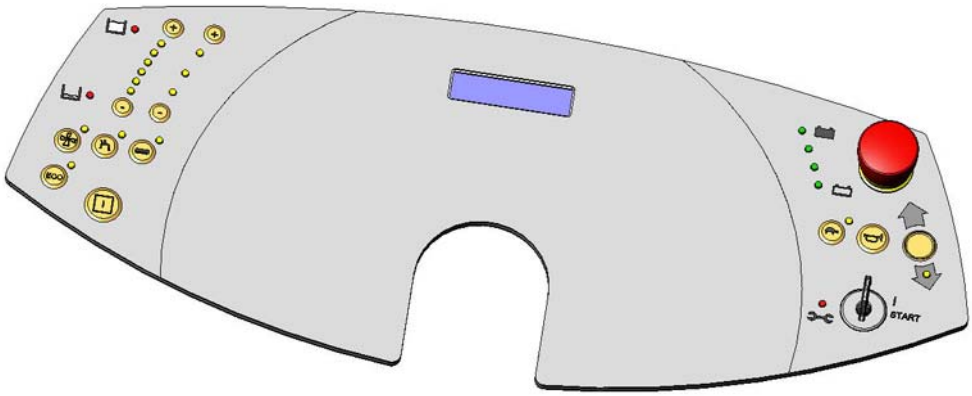
Picture 4: Dashboard

- Remove the two socket head cap screws (05/121) with the two washers (05/120) from bottom side (opposite the dashboard) of the steering column (05/110).
- Remove the dashboard (05/109) from the steering column.

⚠CAUTION *Be cautious when removing the dashboard as you can damage the wires or the ribbon cables of the dashboard. Disconnect all electrical connections to dashboard.*

6.2 Dashboard

6.2.2 Mounting of dashboard



Picture 5: Dashboard

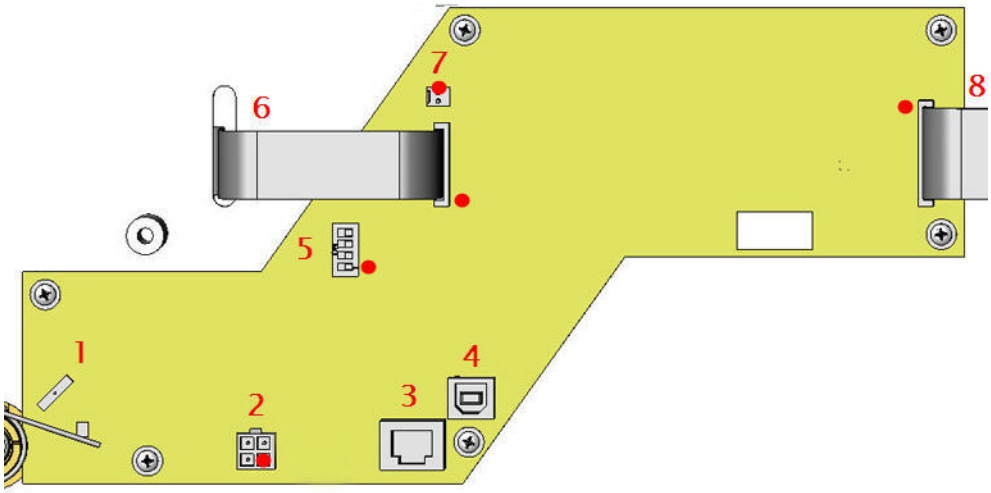
- Connect all electrical connections to dashboard.
- Mount dashboard onto the steering column.

⚠CAUTION *Ensure that you do not damage the wires and especially the ribbon cable to the key foil when inserting the dashboard into the steering column.*

- Fix the dashboard with the two screws and the two washers to the steering column.

6.2 Dashboard

6.2.3 Connections



Picture 6: Dashboard connections

Please find description of the connections on the following table. The connections are marked in the upper picture (Picture 6: Dashboard connections) with numbers and the pin 1 of the connections is marked with a red dot.

Pos.	Plug	Description [plug]	Pin	Description [pin]
1		Reed element - Start	1	Reed element - Start
2	X3	Emergency loop	1	Plus (+) 24VDC (plus) permanent
2	X3	Emergency loop	2	Emergency loop - Power electronics
2	X3	Power supply	3	Plus (+) 24VDC
2	X3	Power supply	4	GND
3	X5	Communication	1	CAN_H
3	X5	Communication	2	CAN_L
3	X5	Communication	3	Not connected
3	X5	Communication	4	Not connected
3	X5	Communication	5	Not connected
3	X5	Communication	6	Not connected
3	X5	Communication	7	Not connected
3	X5	Communication	8	Not connected
3	X5	Communication	9	GND
3	X5	Communication	10	GND
4	X6	USB port	1	VCC USB
4	X6	USB port	2	Minus (-)
4	X6	USB port	3	Plus (+)
4	X6	USB port	4	GND

Table 1: Dashboard connections

Pos.	Plug	Description [plug]	Pin	Description [pin]
4	X6	USB port	5 (Housing)	GND
5	S2	Dip-Switch	1	Dip-Switch (0=swingo 4000, 1=swingo 5000)
5	S2	Dip-Switch	2	Dip-Switch
5	S2	Dip-Switch	3	Dip-Switch
5	S2	Dip-Switch	4	Dip-Switch
6	X8	Membrane keypad right	1	LED_CHARGE
6	X8	Membrane keypad right	2	LED_CHARGED
6	X8	Membrane keypad right	3	LED_CHARGE_FAIL
6	X8	Membrane keypad right	4	GND_Ldgrt
6	X8	Membrane keypad right	5	SW_p5Vex(2)
6	X8	Membrane keypad right	6	SW(9)
6	X8	Membrane keypad right	7	SW(10)
6	X8	Membrane keypad right	8	SW(11)
6	X8	Membrane keypad right	9	LED_A_MUX(0)
6	X8	Membrane keypad right	10	LED_A_MUX(1)
6	X8	Membrane keypad right	11	LED_A_MUX(2)
6	X8	Membrane keypad right	12	LED_A_MUX(3)
6	X8	Membrane keypad right	13	LED_A_MUX(4)
6	X8	Membrane keypad right	14	LED_A_MUX(5)
6	X8	Membrane keypad right	15	LED_K(4)

Table 1: Dashboard connections

Pos.	Plug	Description [plug]	Pin	Description [pin]
6	X8	Membrane keypad right	16	LED_K(5)
7	X7	Stop actuator	1	Emergency loop - IN
7	X7	Stop actuator	2	Emergency loop - OUT
8	X9	Membrane keypad left	1	LED_K(0)
8	X9	Membrane keypad left	2	LED_K(1)
8	X9	Membrane keypad left	3	LED_K(2)
8	X9	Membrane keypad left	4	LED_A_MUX(1)
8	X9	Membrane keypad left	5	LED_A_MUX(2)
8	X9	Membrane keypad left	6	LED_A_MUX(3)
8	X9	Membrane keypad left	7	LED_A_MUX(4)
8	X9	Membrane keypad left	8	LED_A_MUX(5)
8	X9	Membrane keypad left	9	Not connected
8	X9	Membrane keypad left	10	SW_p5Vex(1)
8	X9	Membrane keypad left	11	SW_p5Vex(1)
8	X9	Membrane keypad left	12	SW(0)
8	X9	Membrane keypad left	13	LED_A_MUX(0)
8	X9	Membrane keypad left	14	SW_pVex(0)
8	X9	Membrane keypad left	15	SW(1)
8	X9	Membrane keypad left	16	SW(2)
8	X9	Membrane keypad left	17	SW(3)

Table 1: Dashboard connections

Pos.	Plug	Description [plug]	Pin	Description [pin]
8	X9	Membrane keypad left	18	SW(4)
8	X9	Membrane keypad left	19	SW(5)
8	X9	Membrane keypad left	20	SW(6)
8	X9	Membrane keypad left	21	SW(7)
8	X9	Membrane keypad left	22	SW(8)

Table 1: Dashboard connections

6.3 Dashboard service menu

The TASKI swingo 4000/5000 has some dashboard service functions as for example: reset service LED, locking the settings and adjusting maximum cleaning speed. Following you will find the descriptions to it.

6.3.1 Reset service LED

To reset the service hour counter LED you have to perform the following steps:

- Switch ON the machine.
- Service hour counter LED is ON.

Picture 7: Reset service hour LED

- Press the dosing (+) button and dosing (-) button together until the service LED switches OFF.
  - After approximately 2 seconds the service LED starts flashing.
  - After further 2 seconds the service LED goes OFF.
  - Service hour counter is reset.

Remarks

You also can reset the service hour counter with the Service Tool online. Please refer to the Service Tool Manual for this and additional explanations.

⚠CAUTION *If the service LED is not ON and you follow this procedure, then you reset the service hour counter.*

The reason is: if you carry out a service, even if the LED is not ON, then you have the possibility to reset the service hour counter.

6.3.2 Service menu

The service menu is built up in a sequential process. Which means, that the order of the step by step navigation remains the same.

In the service menu you have the possibilities to:

- lock/unlock the water level.
- lock/unlock the brush pressure level.
- adjust the maximum cleaning speed.

To get into the service menu you need to turn ON the machine and make sure that the aggregates are switched OFF. Then you have to perform the following steps:

Remarks

Make sure that the water is not activated (LED OFF).

Picture 8: Insert into service menu

- Press the „ECO“ button and then the water ON/OFF button together.
  - After approximately 2 seconds the water ON/OFF button is flashing.
  - The actual locked water level LED is ON or all LED‘s are OFF.

Remarks

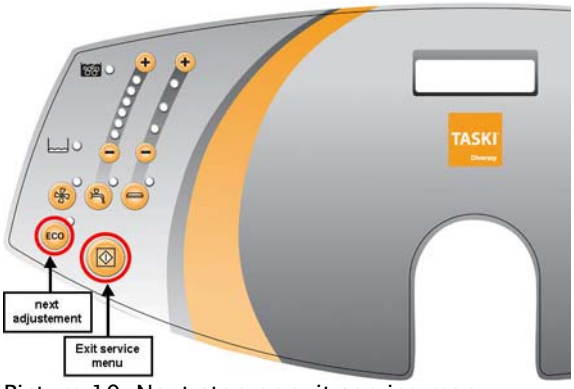
IF all LED‘s are OFF, it means that the adjustment is not locked and the operator can make the adjustment.

Picture 9: Water dosing (+) and (–)

- To adjust the water level you need to press (+) or (–) of the water adjustment.

Remarks

When all LED's are OFF, then it is unlocked.



Picture 10: Next step or exit service menu

- When you have done the adjustments you have two possibilities:
  - By pressing the „ECO" button you get to the next adjustment.
  - By pressing the program button you exit the service menu.

⚠CAUTION *By pressing the program button to exit the service menu the setting is automatically saved.*

- If you pressed the „ECO" button then the brush pressure ON/OFF button is flashing.
- The actual locked brush pressure level LED is ON or all LED's are OFF

Remarks

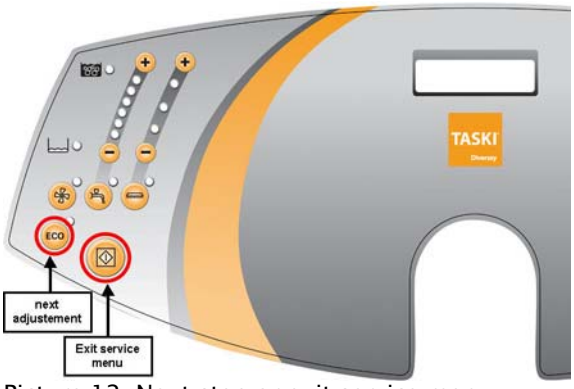
IF all LED's are OFF, it means that the adjustment is not locked and the operator can make the adjustment.

Picture 11: Brush pressure dosing (+) and (–)

- To adjust the brush pressure level you need to press (+) or (–) of brush pressure adjustment.

Remarks

When all LED's are OFF, then it is unlocked.

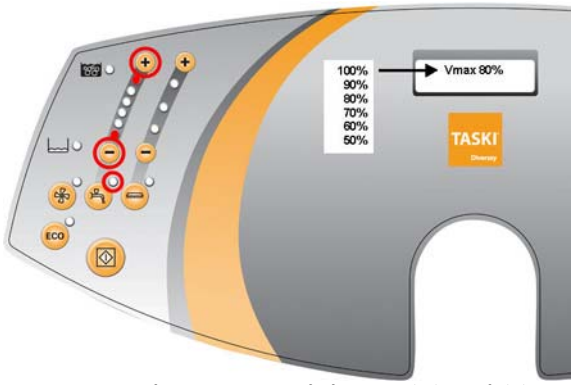


Picture 12: Next step or exit service menu

- When you have done the adjustments you have two possibilities:
  - By pressing the „ECO" button you get to the next adjustment.
  - By pressing the program button you exit the service menu.

⚠CAUTION *By pressing the program button to exit the service menu you saved the setting.*

- If you pressed the „ECO" button then the actual maximum cleaning speed is shown on the display.



Picture 13: Cleaning speed dosing (+) and (-)

- To adjust the maximum cleaning speed value you need to press (+) or (-) of the water level. The LED's besides (+) and (-) are ON to indicate this.
- When you have adjusted the requested value you can exit the service menu by pressing the program button.

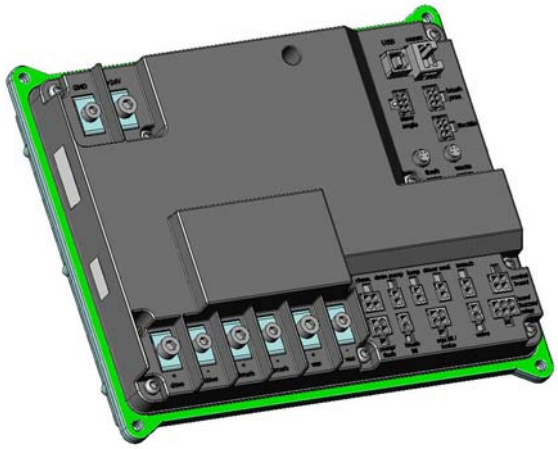
Remarks

The service menu sequence is now finished. If you need to enter/ change again, start from the beginning.

You also can adjust the maximum cleaning speed with the Service Tool online. Please refer to the Service Tool Manual for this and additional explanations.

6.4 Electronics

6.4.1 Removing of electronics

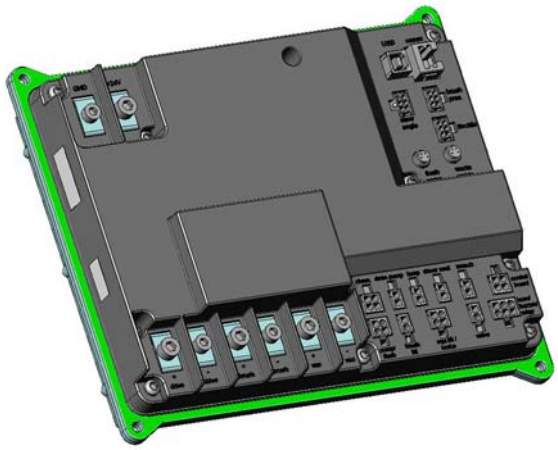


Picture 14: Power electronics

- Remove the seat (03/101) and driver seat cover (03/114) according to chapter REMOVING OF DRVER SEAT COVER (refer to „Mechanical“ section).
- Disconnect the wires and the connectors from power electronics (04/117).
- Loosen the 4 screws (04/101) that fix the power electronics to the support (04/105).
- Remove the power electronics.

6.4 Electronics

6.4.2 Mounting of electronics



Picture 15: Power electronics

- Position the new power electronics on the support.
- Position and tighten the 4 screws of the power electronics.

⚠CAUTION *Do not tighten the 4 screws to hard as you could deform the cooling device of the power electronics.*

- Connect the wires and the connectors to the power electronics.

⚠CAUTION *Tighten the connectors with the correct torque. Refer to Adjustment or spare parts list.*

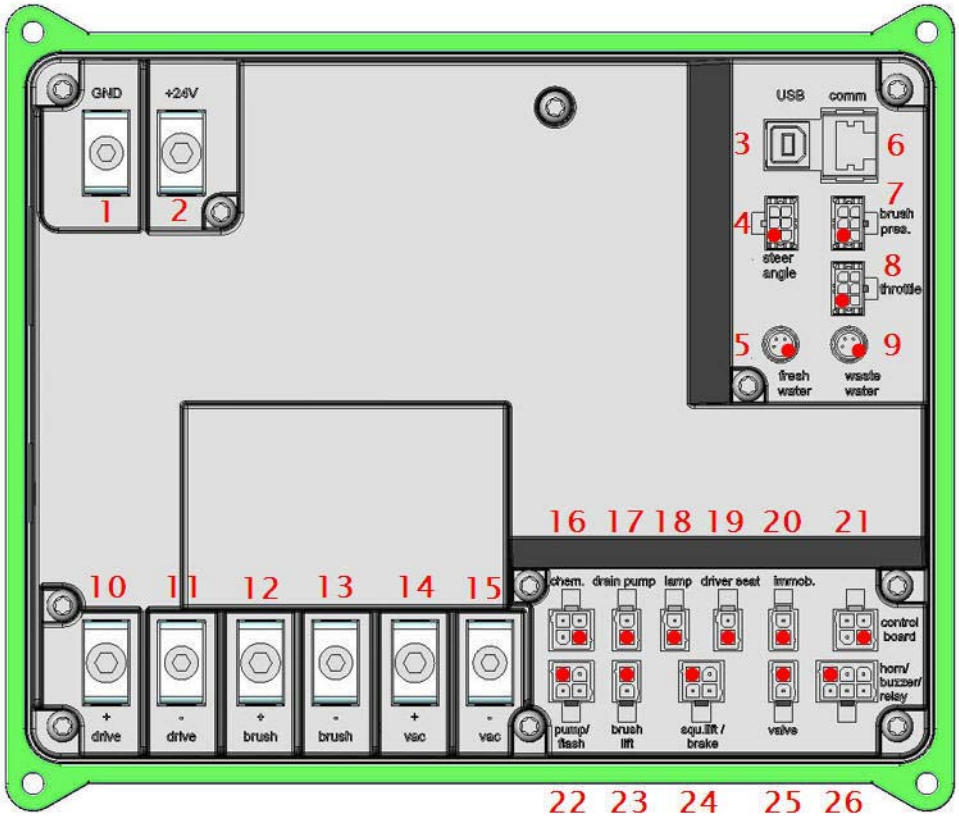
- Mount the driver seat cover and the driver seat according to chapter MOUNTING OF DRIVER SEAT COVER (refer to „Mechanical“ section).

Adjustment

- M5 with 6 Nm
  - GND
  - drive, brush, vac – (minus)
- M6 with 8 Nm
  - +24V
  - drive, brush, vac + (plus)

6.4 Electronics

6.4.3 Connections



Picture 16: Power electronic connections

Please find description of the connections on the following table. The connections are marked in the upper picture (Picture 16: Power electronic connections) with numbers and the pin 1 of the connections is marked with a red dot.

Pos.	Plug	Description [plug]	Pin	Description [pin]
1	X5	Battery - GND	1	GND
2	X2	Battery - 24V	1	Plus (+) 24VDC
3	X20	USB port	1	VCC USB
3	X20	USB port	2	Minus (-)
3	X20	USB port	3	Plus (+)
3	X20	USB port	4	GND
3	X20	USB port	5 (Housing)	GND
4	X27	Steering angle sensor	1	Plus (+) 5VDC
4	X27	Steering angle sensor	2	GND
4	X27	Steering angle sensor	3	Not connected
4	X27	Steering angle sensor	4	Signal steering angle
4	X27	Steering angle sensor	5	Not connected
4	X27	Steering angle sensor	6	Not connected
5	X26	Fresh water sensor	1	Plus (+) 24VDC
5	X26	Fresh water sensor	2	Not connected
5	X26	Fresh water sensor	3	GND
5	X26	Fresh water sensor	4	Signal fresh water sensor
6	X21	Communication	1	CAN_H
6	X21	Communication	2	CAN_L
6	X21	Communication	3	Not connected

Table 2: Power electronics connections

Pos.	Plug	Description [plug]	Pin	Description [pin]
6	X21	Communication	4	Not connected
6	X21	Communication	5	Not connected
6	X21	Communication	6	Not connected
6	X21	Communication	7	Not connected
6	X21	Communication	8	Not connected
6	X21	Communication	9	GND
6	X21	Communication	10	GND
7	X28	Brush pressure sensor	1	Plus (+) 5VDC
7	X28	Brush pressure sensor	2	GND
7	X28	Brush pressure sensor	3	Not connected
7	X28	Brush pressure sensor	4	Not connected
7	X28	Brush pressure sensor	5	Signal brush pressure
7	X28	Brush pressure sensor	6	Not connected
8	X29	Throttle sensor	1	Plus (+) 5VDC
8	X29	Throttle sensor	2	GND
8	X29	Throttle sensor	3	Signal throttle pressure
8	X29	Throttle sensor	4	Not connected
8	X29	Throttle sensor	5	Not connected
8	X29	Throttle sensor	6	Not connected
9	X25	Waste water sensor	1	Plus (+) 24VDC

Table 2: Power electronics connections

Pos.	Plug	Description [plug]	Pin	Description [pin]
9	X25	Waste water sensor	2	Not connected
9	X25	Waste water sensor	3	GND
9	X25	Waste water sensor	4	Signal waste water sensor
10	X3	Drive motor	1	Plus (+)
11	X6	Drive motor	1	Minus (-)
12	X1	Brush motor	1	Plus (+)
13	X7	Brush motor	1	Minus (-)
14	X4	Vacuum motor	1	Plus (+)
15	X8	Vacuum motor	1	Minus (-)
16	X23	JFit (Option)	1	Plus (+) 24VDC
16	X23	JFit (Option)	2	Plus (+) 24VDC
16	X23	JFit (Option)	3	Signal JFit
16	X23	JFit (Option)	4	GND
17	X14	Drain pump (Option)	1	Plus (+) 24VDC
17	X14	Drain pump (Option)	2	GND
18	X13	Front lamp (Option)	1	Plus (+) 24VDC
18	X13	Front lamp (Option)	2	GND
19	X24	Seat switch	1	Signal seat switch
19	X24	Seat switch	2	GND
20	X32	Immobiliser	1	Emergency IN

Table 2: Power electronics connections

Pos.	Plug	Description [plug]	Pin	Description [pin]
20	X32	Immobiliser	2	Emergency OUT
21	X22	Dashboard	1	Plus (+) 24VDC
21	X22	Dashboard	2	GND
21	X22	Dashboard	3	Emergency IN
21	X22	Dashboard	4	Not connected
22	X34	Warning light (Option)	1	WL_Out (24VDC)
22	X34	Warning light (Option)	2	GND
22	X34	Pump	1	DP_Out (24VCD)
22	X34	Pump	2	GND
23	X19	Brush lowering motor	1	BAS_Out (+)
23	X19	Brush lowering motor	2	BAS_Out (-)
24	X33	Brake	1	FST_Out (24VDC)
24	X33	Brake	2	GND
24	X33	Squeegee lowering motor	1	SDAS_Out (+)
24	X33	Squeegee lowering motor	2	SDAS_Out (-)
25	X17	Magnetic valve	1	DV_Out (24VDC)
25	X17	Magnetic valve	2	GND
26	X35	Horn	1	Hupe_Out
26	X35	Horn	2	GND
26	X35	Buzzer	1	Buzzer_Out

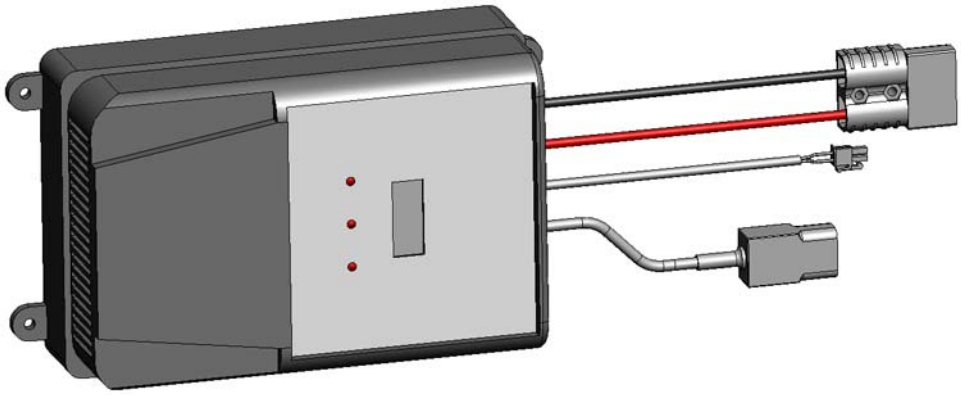
Table 2: Power electronics connections

Pos.	Plug	Description [plug]	Pin	Description [pin]
26	X35	Buzzer	2	GND
26		Power relay	1	
26		Power relay	2	

Table 2: Power electronics connections

6.5 Charger

6.5.1 Removing of charger

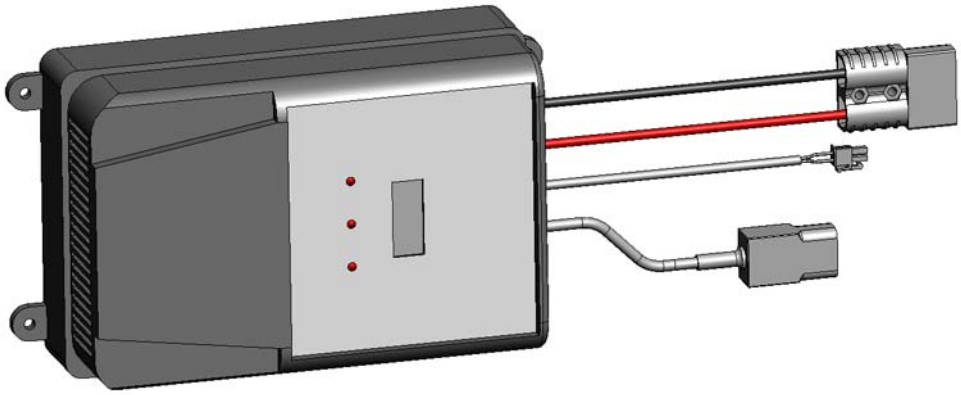


Picture 17: Charger

- Remove the seat (03/101) and driver seat cover (03/114) according to chapter REMOVING OF DRIVER SEAT COVER (refer to „Mechanical“ section).
- Disconnect the plug to the battery connector (04/102).
- Disconnect the plug to the mains, situated underneath the charger.
- Disconnect the plug on the power electronics marked „INHIBIT RELAY CABLE“.
- Remove the 4 screws of the charger from the back support (04/105).
- Remove the charger.

6.5 Charger

6.5.2 Mounting of charger

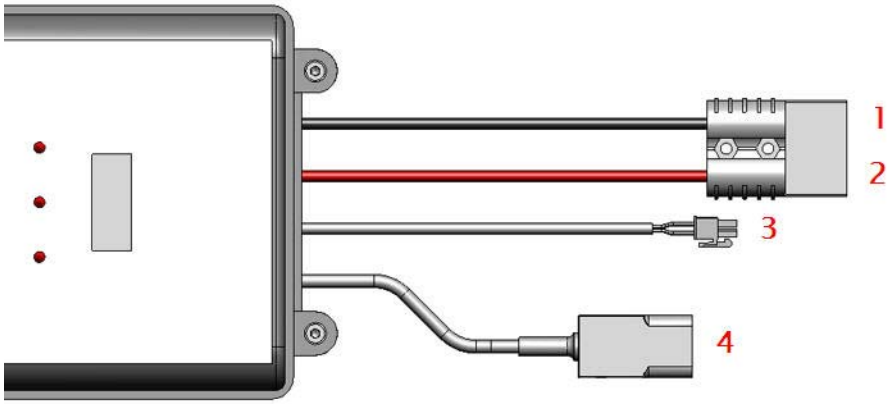


Picture 18: Charger

- Position the new charger.
- Position and tighten the 4 screws.
- Connect the plug to the power electronics marked „immob“.
- Connect the plug for the mains.
- Connect the plug to the battery connector.
- Mount the driver seat cover and the driver seat according to chapter MOUNTING OF DRIVER SEAT COVER (refer to „Mechanical“ section).

6.5 Charger

6.5.3 Connections



Picture 19: Charger connections

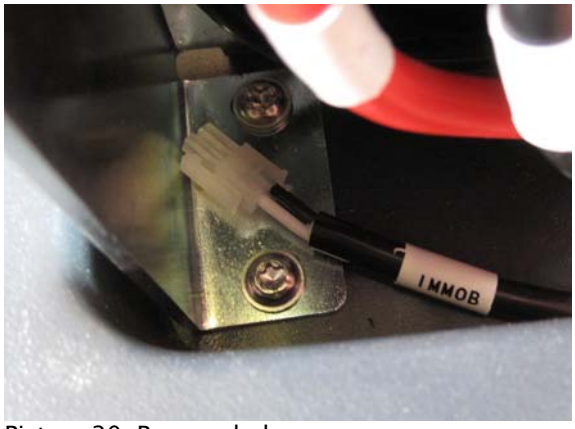
Please find description of the connections on the following table. The connections are marked in the upper picture (Picture 19: Charger connections) with numbers.

Pos.	Plug	Description [plug]	Pin	Description [pin]
1		Battery supply	-	Battery - (Minus, black wiring)
2		Battery supply	-	Battery + (Plus, red wiring)
3		Charger	1	Emergency loop In - Relay charge
3		Charger	2	Emergency loop Out
4		Main power	1	Main power 230 V/ 50 Hz
4		Main power	2	Main power 230 V/ 50 Hz

Table 3: Charger connections

6.5.4 Internal-/external charger

- To operate a machine without the charger (removed charger) you have to position the prepared plug marked „IMMOB“ onto the power electronics.
- This is to ensure that the emergency loop is closed.



Picture 20: Prepared plug

⚠CAUTION *The machine does not work without connected charger or connected plug.*

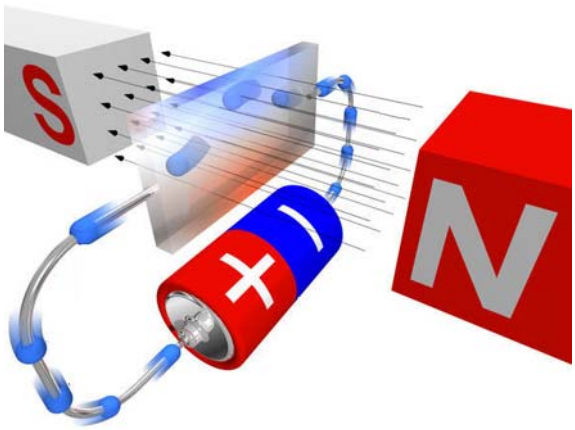
Remarks

During trouble shooting it can be helpful to use the plug to ensure that the problem is not caused by the charger.

6.6 Hall sensors

6.6.1 Description

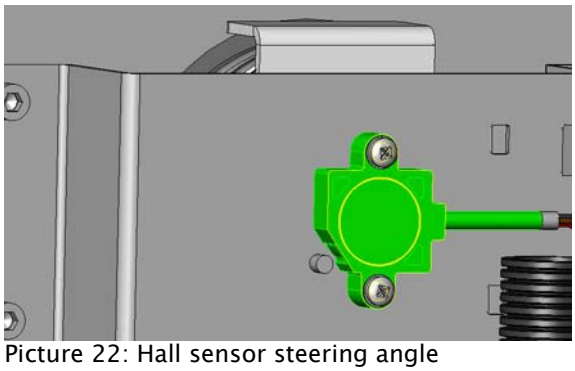
The Hall effect refers to the potential difference (Hall voltage) on opposite sides of a thin sheet of conducting or semiconductor material in the form of a 'Hall bar' (or a van der Pauw element) through which an electric current is flowing, created by a magnetic field applied perpendicular to the Hall element. Edwin Hall discovered this effect in 1879. (Source: http://www.answers.com/topic/hall-effect)



Picture 21: Hall effect

6.6 Hall sensors

6.6.2 Removing of hall sensor steering angle



Picture 22: Hall sensor steering angle

- Remove the seat (03/101) and driver seat cover (03/114) according to chapter REMOVING OF DRIVER SEAT COVER (refer to „Mechanical“ section).
- Remove the 6 screws (04/109) for the foot board (04/120).
- Remove the two screws (06/105) and the two washers (06/104) of the hall sensor (06/102).
- Remove the hall sensor for steering angle.
- Thread out the cable to the power electronics (04/117).
- Disconnect the plug to the power electronics.

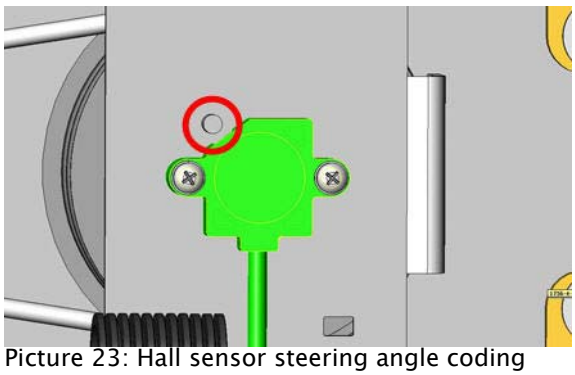
6.6 Hall sensors

6.6.3 Mounting of hall sensor steering angle

- Position the new hall sensor for steering angle.

⚠CAUTION

Ensure that you mount the correct hall sensor for steering angle. The hall sensors are coded and delivered with the magnet and plug.



Picture 23: Hall sensor steering angle coding

- Mount the two screws and washers for the hall sensor steering angle.
- Thread in the cable to the power electronics.
- Mount the plug onto the power electronics.
- Mount the foot board and fix it with the 6 screws.
- Mount the driver seat cover and the driver seat according to chapter MOUNTING OF DRIVER SEAT COVER (refer to „Mechanical“ section).

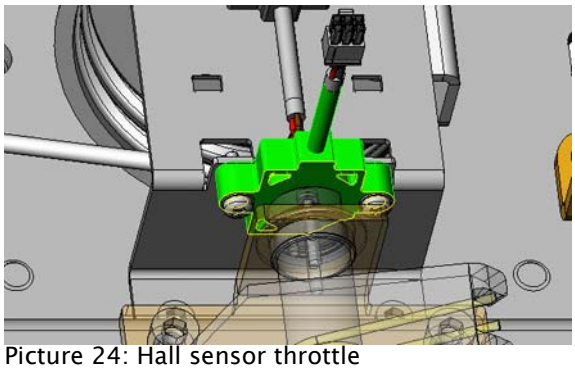
Remarks

If in any case the hall sensor steering angle would not work correctly the machine would still run but only in a defined slower speed.

For error codes, please refer to the Service Tool Manual.

6.6 Hall sensors

6.6.4 Removing of hall sensor throttle



Picture 24: Hall sensor throttle

- Remove the seat (03/101) and driver seat cover (03/114) according to chapter REMOVING OF DRIVER SEAT COVER (refer to „Mechanical“ section).
- Remove the 6 screws (04/109) for the foot board (04/120).
- Remove the 4 screws (06/106) for the sensor bracket (06/101).

Remarks

Pull the sensor bracket up so you get easier access to the hall sensor throttle.

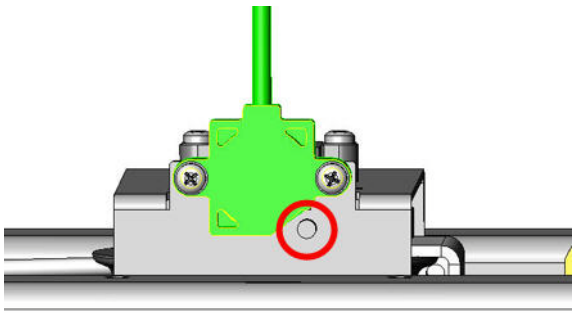
- Remove the two screws (06/105) and the two washers (06/104) of the hall sensor (06/103).
- Remove the hall sensor for throttle.
- Thread out the cable to the power electronics (04/117).
- Disconnect the plug to the power electronics.

6.6 Hall sensors

6.6.5 Mounting of hall sensor throttle

- Position the new hall sensor for throttle.

⚠CAUTION *Ensure that you mount the correct hall sensor for throttle. The hall sensors are coded and delivered with the magnet and plug.*



Picture 25: Hall sensor throttle coding

- Mount the two screws and washers for the hall sensor throttle.
- Mount the bracket and fix it with the 4 screws.
- Thread in the cable to the power electronics.
- Mount the plug onto the power electronics.
- Mount the foot board and fix it with the 6 screws.
- Mount the driver seat cover and the driver seat according to chapter MOUNTING OF DRIVER SEAT COVER (refer to „Mechanical“ section).

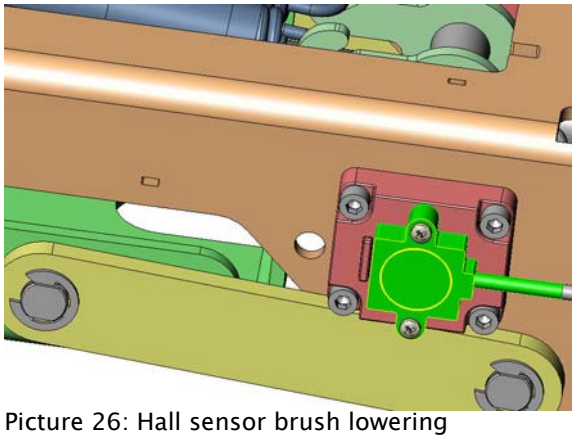
Remarks

If in any case the hall sensor throttle would not work correctly the machine would not run because of a security case.

For error codes, please refer to the Service Tool Manual.

6.6 Hall sensors

6.6.6 Removing of hall sensor brush lowering



Picture 26: Hall sensor brush lowering

- Remove the seat (03/101) and driver seat cover (03/114) according to chapter REMOVING OF DRIVER SEAT COVER (refer to „Mechanical“ section).
- Remove the two screws (07/115) and the two washers (07/120) of the hall sensor (07/116).
- Remove the hall sensor for brush lowering unit.
- Thread out the cable to the power electronics (04/117).
- Disconnect the plug to the power electronics.

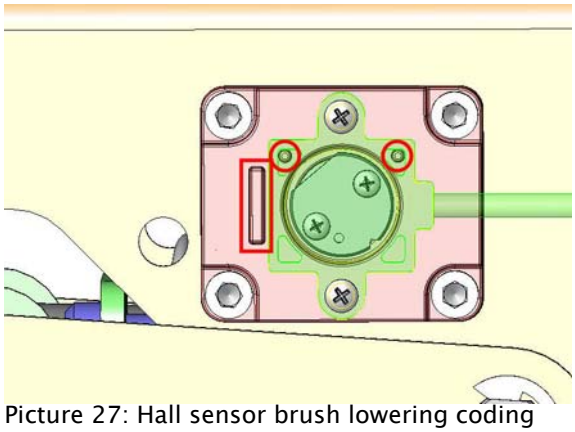
6.6 Hall sensors

6.6.7 Mounting of hall sensor brush lowering

- Position the new hall sensor for brush lowering unit.

⚠CAUTION

Ensure that you mount the correct hall sensor for brush lowering unit. The hall sensors are coded and delivered with the magnet and plug.



Picture 27: Hall sensor brush lowering coding

- Mount the two screws for the hall sensor brush lowering.
- Thread in the cable to the power electronics.
- Mount the plug onto the power electronics.
- Mount the driver seat cover and the driver seat according to chapter MOUNTING OF DRIVER SEAT COVER (refer to „Mechanical“ section).

Remarks

If in any case the hall sensor brush lowering unit would not work correctly the unit would go to the upper position or not move because of a security case.

For error codes, please refer to the Service Tool Manual.

6.7 Power relay

6.7.1 Removing of power relay

Picture 28: Power relay

- Remove the seat (03/101) and driver seat cover (03/114) according to chapter REMOVING OF DRIVER SEAT COVER (refer to „Mechanical“ section).
- Remove the two screws (04/112) and the washers (04/111) of the power relay (04/110).
- Disconnect the wires and plugs.
- Remove the power relay.

6.7 Power relay

6.7.2 Mounting of power relay

Picture 29: Power relay

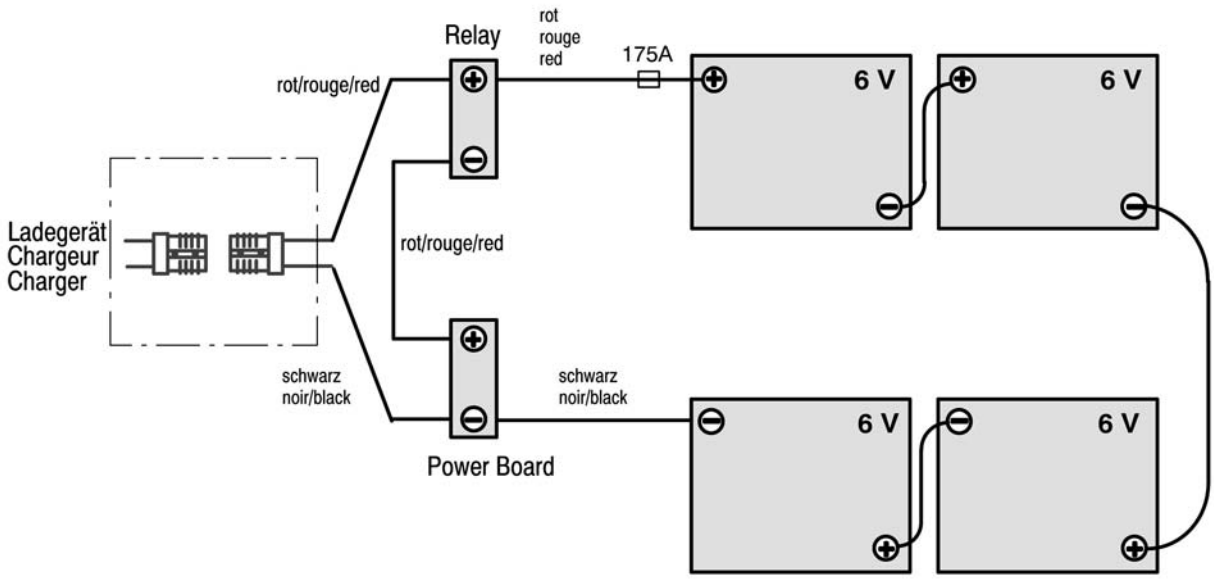
- Position the new power relay.
- Mount the two screws and washers for the power relay.
- Connect the wires and the plugs.
- Mount the driver seat cover and the driver seat according to chapter MOUNTING OF DRIVER SEAT COVER (refer to „Mechanical“ section).

Remarks

Ensure that you mount the existing parts (e.g. diode) back onto the power relay.

6.8 Schematics

6.8.1 Battery connection

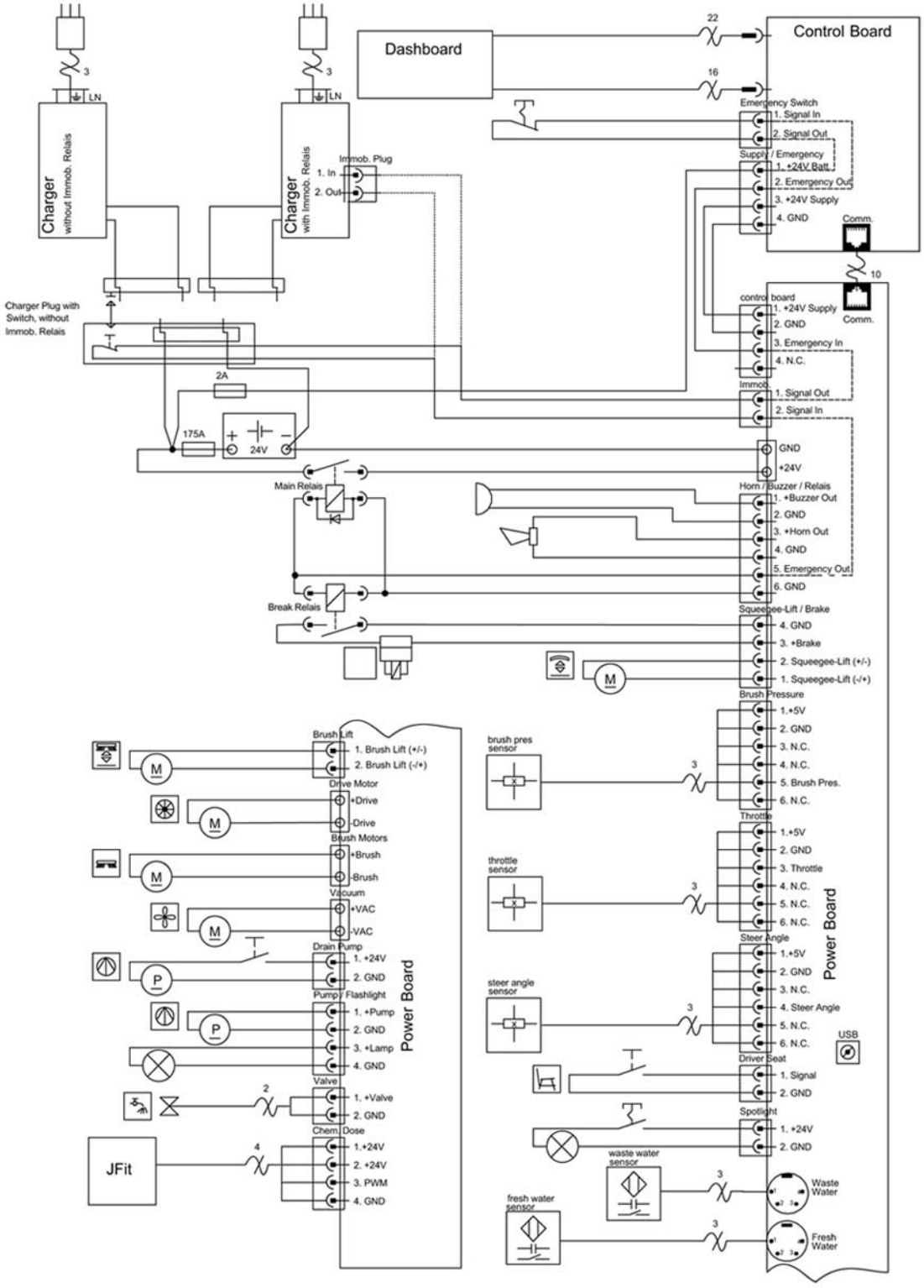


Picture 30: Battery connection

06.28.15 schematics - battery connection - 4000_5000_V1.00.fm

6.8 Schematics

6.8.2 Electrical schematics



Picture 31: Electrical schematic

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7 Additional information

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7 Additional information

7.1 Available GTS Newsletter/Instructions

⚠CAUTION *To find the up to date available GTS Newsletters and instructions refer to e-spares.*

Newsletter	Date of issue	Machine	Subassembly	Topic/Modification	Serial number
2011/09	08.06.2011	TASKI swingo 1850/4000	Squeegee	Blades and castor wheels of the squeegee	3202/1000
2011/11	22.06.2011	TASKI swingo 1250B, 1255, 1650, 1850, 4000	Brush unit	Pulley set	Q2/11
2011/01	11.07.2011	TASKI swingo 4000	Electronic	Firmware update version 1.11	1104
2011/02	03.10.2011	TASKI swingo 4000	Gearbox	Wheel fixation	1180
2011/03	16.12.2011	TASKI swingo 4000	Chassis	Bars to protect machine from tip-ping	1279
2011/24	21.12.2011	TASKI swingo 4000	Tank	Gasket for waste water sensor	1366
2012/17	21.06.2012	TASKI swingo 4000, 5000	Electronic	New firmware version 1.13	1731/0148

Table 1: Newsletters/Instructions

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8 Revision

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8 Revision

Date	Chapter	Content	Description	Revision
04.07.2012	Title pages	Title pages of all chapters	Added the TASKI swingo 5000 and naming	1.00
20.07.2012	Technical Data	Technical information	Added the values and pictures for the TASKI swingo 5000	1.00
23.07.2012	Mechanical	The whole chapter	Added TASKI swingo 5000	1.00
23.07.2012	Electrical	The whole chapter	Added TASKI swingo 5000	1.00
23.07.2012	Additional information	GTS Newsletter/Instruction	Added GTS Newsletter/Instruction	1.00
19.09.2012	Index	Sequence	Sequence corrected, also in the single files	1.01

Table 1: Revision

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9 Appendix

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Glossar

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10 Notes

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