Technical Manual

TASKI

swingo

755B ECO

Diversey

for a cleaner, healthier future™

Edition: V1.10/2010

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Technical Manual

1 Foreword

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

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 a 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 Conclusion

We are convinced that the new Technical Training concept together with the Technical Manual 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, implemented 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 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 work 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 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 degrees, that can be most damaging to electrical devices and other industrial, commercial and consumer products.

Static electricity, a natural phenomenon and consequently electrostatic discharge are the primary causes 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 or jamming of machinery.

Almost any material can generate static electricity. The ability to store or unload the charge depends on the type of material.
Static can damage devices, which can result in immediate product failure to operate. In contrast, static damage can go undetected for a period of time and the results are product failure once the product is in service.
Electrostatic fields are associated with charged objects.
The degree of severity of ESD events is contingent upon 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.*

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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.*

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4 Technical data

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4 Technical Data

4.1 Machine range

SKU	Description	Version	Series
7516823	swingo 755B ECO		01
7516825	swingo 755B ECO	BMS EURO	01
7517022	swingo 755B ECO	BMS SEV	01
7516827	swingo 755B ECO	BMS UK	01
7517179	swingo 755B ECO	BMS DK	01

Table 1: Machine range

4.2 Technical Information

4.2.1 Machine profile

Pos.		Value
Theoretical performance (at 3.0 km/h)	(m²/h)	1290
Practical performance	(m²/h)	750
Working width	(mm)	430
Squeegee width	(mm)	690
Solution tank	(l)	40
Recovery tank	(l)	40

Table 2: Machine profile

4.2.2 Technical data

Pos.		Value
Noise level (ECO mode)	(dB(A))	64 (<60)
Vibration	(m/s2)	< 0.5
Approvals		CE/CB Test cert./ ÖVE
Nominal consumption	(W)	900
Power drive motor	(W)	-
Power suction motor	(W)	106
Voltage	(V)	24
Battery capacity max. (maintenance-free / wet)	(Ah)/C5	50/ 70
Battery autonomy max. (70 Ah maintenance free battery)	(h)	max. 2.0
Internal charger		BMS
Protection class - BMS model		Class 1
Protection class - Non BMS model		Class 3

Table 3: Technical Data

4.2.3 Machine speed

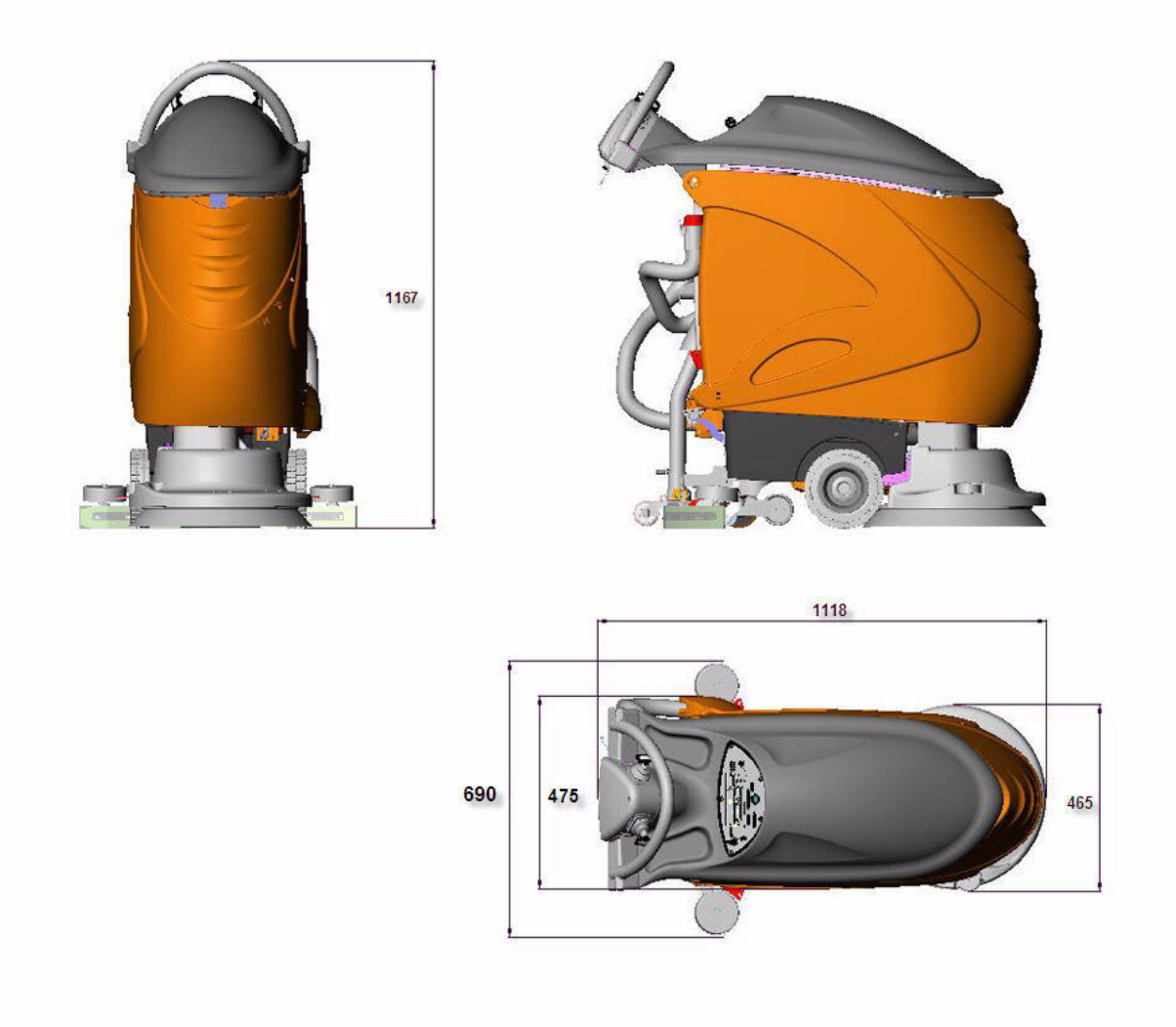
Pos.		Value
Transportation speed	(km/h)	3.0
Cleaning speed	(km/h)	3.0
Ramp max.	(%)	2

Table 4: Technical Data

4.2.4 Dimensions and weights

Pos.		Value
Dimensions	L/W/H (mm)	1118 x 475 x 1167
Door pass through with (without squeegee)	(mm)	690
Battery compartment	L/W/H (mm)	350 x 330 x 240
Net weight (without) batteries; empty tank	(kg)	65
Weight, ready to use	(kg)	155
Max. floor pressure front	(N/mm2)	0.34
Wheel diameter front	(mm)	200
Wheel diameter - castor	(mm)	100

Table 5: Dimensions and weights



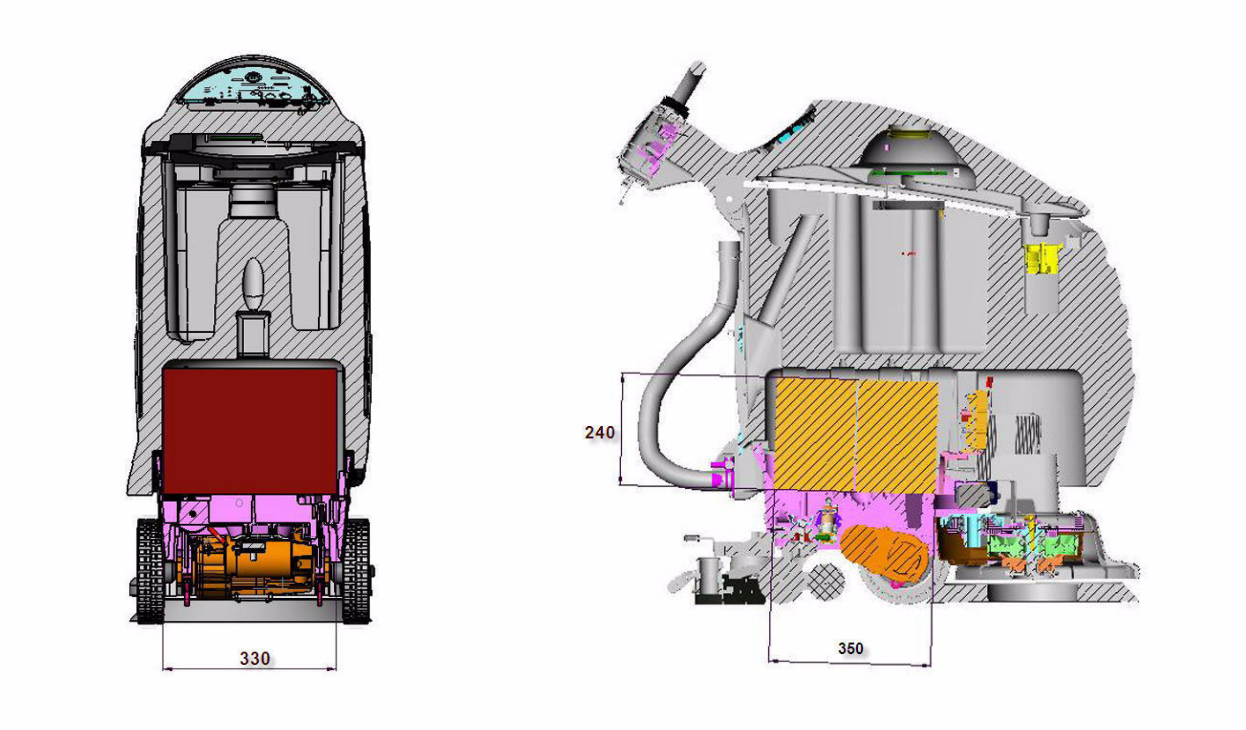
Picture 1: Dimensions

4.2.5 Battery

4.2.5.1 Battery compartment

Pos.		Value
Battery compartment	L/W/H (mm)	350 x 330 x 240

Table 6: Battery compartment



Picture 2: Battery compartment

4.2.5.2 Battery specifications

⚠CAUTION

Please use batteries from Excide/Sonnenschein, as this is our preferred partner.

BMS is only for dry (gel) batteries.

For the correct connection of the batteries, pay attention to the voltage of each battery and the correct connection. Therefore refer to e-spares.

Supplier	Type	Voltage	Ah	Length [mm]	Width [mm]	Height [mm]	Weight [kg]
Excide	Sonnenschien GF12050	12	50	278	175	190	20
Excide	Sonnenschien GF12070	12	70	330	171	236	28

Table 7: Dry (gel) batteries

4.2.6 Charger

Pos.		Value
Primary	V	100 - 240
Primary	Hz	50 - 60
Secondary	V	24
Secondary	A	9
Protection type		1 (2)
Approval		UL
Cable length / BMS cable	(m)	3

Table 8: Charger

4.2.7 Brush system

Pos.		Value
Brush system	(mm)	1x 430
Brush motor	(W)	750
Brush speed	(rpm)	160
Brush pressure max.	(kg)	40

Table 9: Brush system

4.2.8 Suction power

Pos.		Value
Vacuum motor	(W)	490
Max. air flow	(l/s)	32
Max. vacuum	(mbar)	118
Max. vacuum	(kPa)	11.8

Table 10: Suction power

4.2.9 Additional

Pos.		Value
Brush lifting		mechanical
Squeegee lifting		mechanical

Table 11: Additional

4.3 Accessories & Additional parts

4.3.1 Accessories

SKU	Article
7510829	Pad drive harpoon grip 430 mm
8504750	Scrubbing brush standard 430 mm
8504800	Scrubbing brush washed concrete 430 mm
8504780	Scrubbing brush abrasive 430 mm
4122528	Blade front small
4122529	Blade back small

Table 12: Accessories

4.3.2 Additional parts

SKU	Article
4127203	Blades front Type 712 3mm (Closed front blade)
4127070	Double back blades (56/2.5 x 750)
4124749	External hour counter for battery models
4122526	PU traction wheel (brown)
4122746	PU wheels (green, supergrip)
4122563	Castor wheel blue (option for 755/855)
4122527	PU castor wheel 100

Table 13: Additional parts

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5 Mechanical

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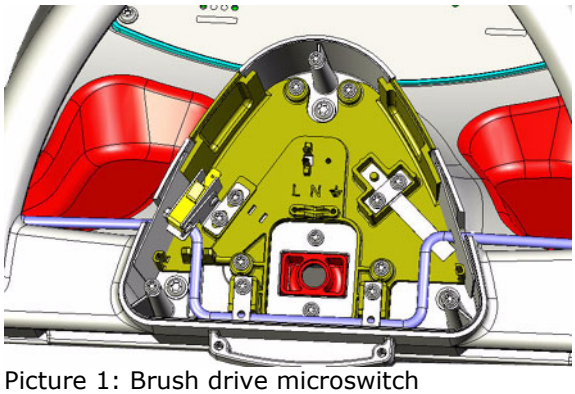
5 Mechanical

5.1 Mechanical sequences

5.1.1 Handle/Upper part

5.1.1.1 Replacing of microswitch



Picture 1: Brush drive microswitch

Remove

- Remove the 3 screws of the cover.
- Remove the cover.
- Remove the two screws of the microswitch support.
- Disconnect wires from microswitch.
- Remove the two fixation screws and nuts for the microswitch.
- Remove microswitch.

Mount

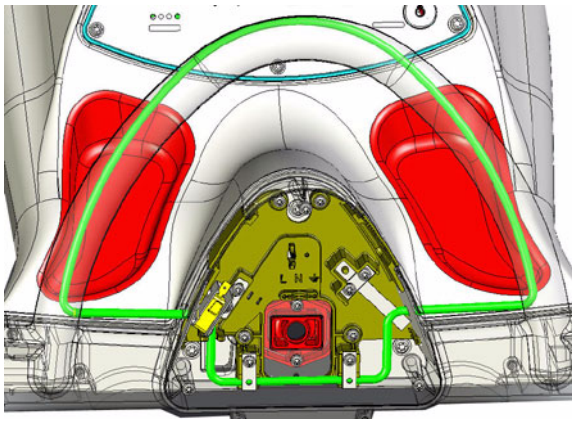
- Build in new microswitch.
- Position fixation screws and tighten slightly.
- Mount microswitch support.
- Adjust switching position of the microswitch.

Adjustment

The microswitch shall switch when the lever is moved the half way.

- Tighten the screws.
- Connect the microswitch wires to the microswitch.
- Test if the microswitch is functional when applying the brush switch levers.
- Assemble the cover.
- Tighten the cover with the 3 screws.

5.1.1.2 Replacing of brush drive lever bracket



Picture 2: Brush drive lever

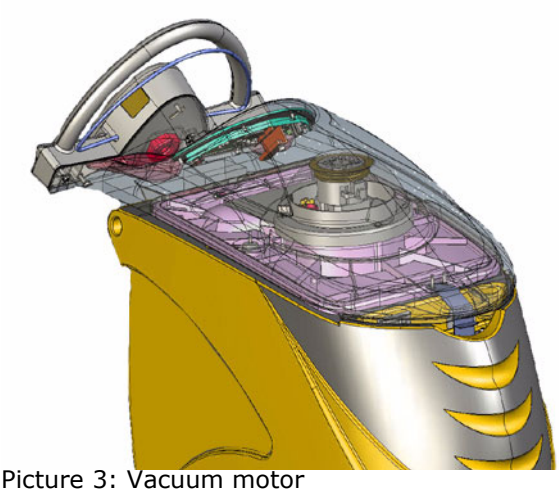
Remove

- Remove microswitch according to chapter REPLACING OF MICROSWITCH.
- Unscrew flat spring fixation.
- Remove flat spring (01/118).
- Unscrew brush drive lever clamps fixation.
- Remove both brush drive lever clamps (01/117).
- Remove brush drive lever.
- Unscrew brush drive lever bracket (4 screws).
- Remove brush drive lever bracket.

Mount

- Mount brush drive lever bracket.
- Fix the brush drive lever bracket on the handle.
- Mount brush drive lever.
- Position brush drive lever clamps and fix them with the screws.
- Position the flat spring.
- Mount the clamps fixation.
- Mount and fix microswitch holder.
- Complete assembling according to the chapter REPLACING OF MICROSWITCH.

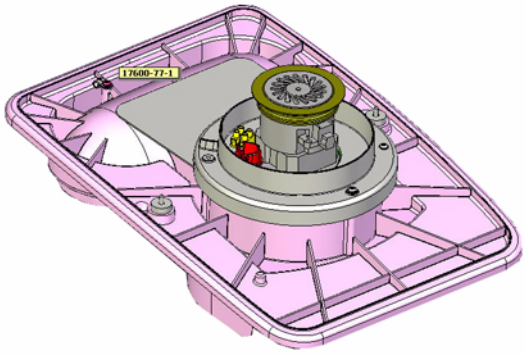
5.1.1.3 Replacing of vacuum motor



Picture 3: Vacuum motor

Remove

- Open the tank cover.
- Loosen the screw on the tank cover on the support side (RH).
- Loosen the screw on the other side (LH).
- Close the tank cover.
- Open the tank cover without base plate.



Picture 4: Base plate

- Disconnect vacuum motor wires from connection block.
- Remove sealing of vacuum motor to tank cover.
- Remove capacitor from motor.
- Unscrew the 3 screws of the vacuum motor protection plate.
- Remove the vacuum motor protection plate.
- Remove vacuum motor fixation sealings.
- Remove vacuum motor.
- Remove bottom sealing of the vacuum motor.

Mount

- Position bottom sealing of the vacuum motor.
- Build in vacuum motor.
- Position vacuum motor fixation sealings.
- Assemble vacuum motor protection plate.

Remarks

Ensure that the vacuum motor sealings are proper positioned before assembling the protection plate back.

- Position and tighten the vacuum motor protection plate fixation.

Remarks

Ensure that the turn protection is placed (spin protection).

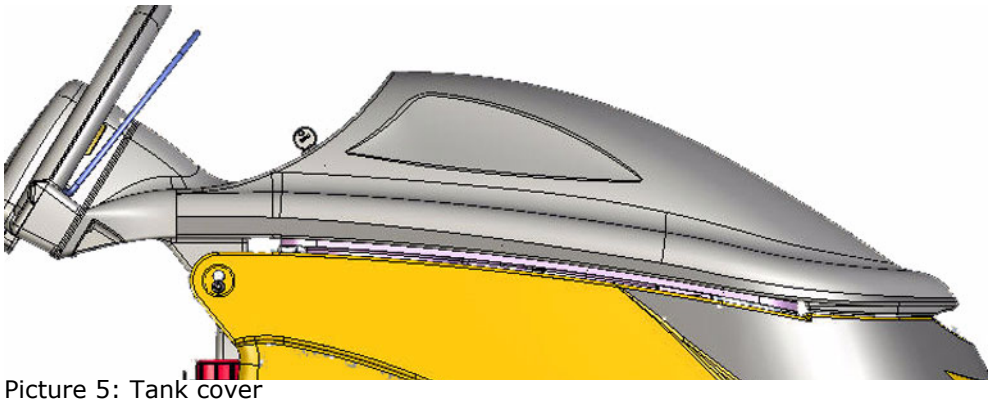
- Assemble capacitor.
- Position top sealing of vacuum motor.
- Connect vacuum motor wires to connection block.
- Close tank cover and position it on the base plate.
- Open tank cover together with base plate.
- Use the tank cover support.
- Tighten base plate fixation on the LH side.
- Tighten base plate fixation on the tank support side (RH).

⚠CAUTION *Tighten the fixation rubbers smoothly.*

Remarks

Check at the end if the vacuum motor top sealing is positioned properly, therefore unscrew and remove the dashboard and check.

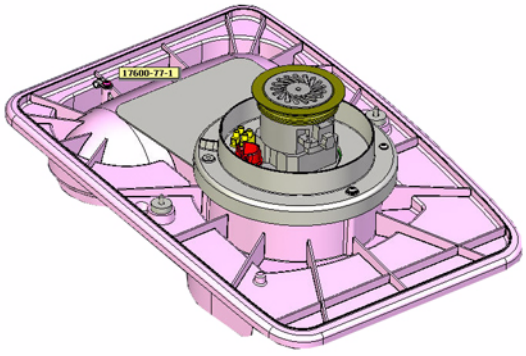
5.1.1.4 Replacing of tank cover



Picture 5: Tank cover

Remove

- Unscrew dashboard fixation.
- Remove dashboard and disconnect all cables.
- Remove microswitch according to chapter REPLACING OF MICROSWITCH.
- Remove brush drive lever according to chapter REPLACING OF BRUSH DRIVE LEVER BRACKET.
- Weave out microswitch cable.
- Unscrew the six screws of the handle fixation to the tank cover.
- Remove handle from tank cover.
- Unscrew rear panel.
- Remove rear panel.
- Open the tank cover.
- Loosen the screw on the tank cover on the support side (RH).
- Loosen the screw on the other side (LH).
- Close the tank cover.
- Open the tank cover without base plate.



Picture 1: Base plate

- Disconnect vacuum motor cable at connection block (cable to

dash board).
- Remove cable fixation at base plate.
- Thread out cables from tank cover.
- Close tank cover.
- Remove fixation screw of axle on one side.
- Push out axle (09/101).
- Remove complete cover.
- According to what you need to exchange, remove the existing parts from the tank cover and place it on the new one.

Mount (Drilling of hole for tank cover axle)

⚠CAUTION *Assemble the tank cover lock at the end of the sequence.*

- Position the base plate on the new tank cover.
- Fix the base plate on the tank cover.
- Position the tank cover including base plate correctly on the tank.

⚠CAUTION *Make sure that the sealings are nicely positioned.*

- Drill the hole for the tank axle without pressing the tank cover down onto the tank (drill with 10 mm).
- Mount the tank cover axle.
- Fix the axle the screw.

Remarks

Ensure that the flap is positioned between the tank and the base plate.

- Open tank cover.
- Thread in cable to the tank cover.

Remarks

Ensure that the cable is positioned that way, that it can not be squeezed by the tank cover.

- Fix cables on the base plate.
- Connect vacuum motor to the connection block (cable from dashboard).
- Close tank cover and position it on the base plate.
- Open tank cover together with base plate.
- Use the tank cover support.
- Thighten base plate fixation on the LH side.
- Thighten base plate fixation on the tank support side (RH).

Remarks

Check at the end if the vacuum motor top sealing is positioned

properly, therefore unscrew and remove the dash board and check.

- Open tank cover.
- Assemble tank cover lock.

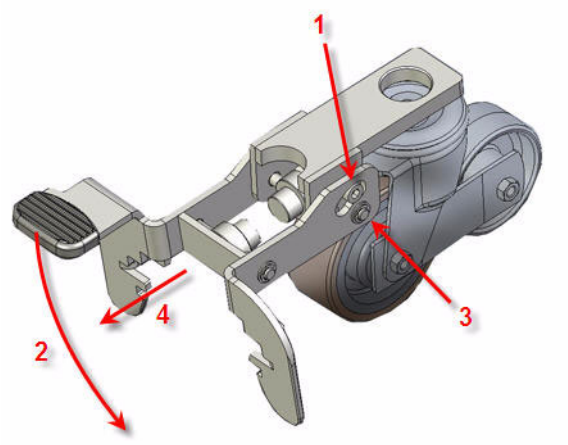
Adjustment

Adjust the tank cover lock and ensure a proper opening and closing of the tank cover.

- Assemble the rear panel.
- Assemble handle on the tank cover with the six screws.
- Complete assembling according to the chapter REPLACING OF BRUSH LEVER BRACKET.
- Complete assembling according to the chapter REPLACING OF MICROSWITCH.

5.1.2 Squeegee lowering mechanism

5.1.2.1 Replacing of squeegee bracket spring



Picture 2: Squeegee lowering

Remove

- Remove the squeegee from the fixation.
- Remove the tool from the brush drive unit.

1 Remove screws (03/103) from support (03/101).

2 Put the bracket in working position (down).

Remarks

Lift up the rear of machine and incline it to the front to loosen the tension of the spring.

3 Remove one circlip of rear axle.

- Remove the rear axle.

4 Remove pressure spring.

Mount

- Assemble new pressure spring.
- Assemble the rear axle.
- Position the circlip on the rear axle.

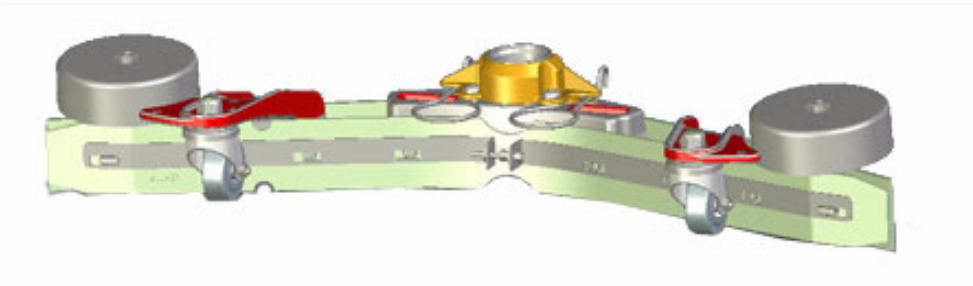
⚠CAUTION *Ensure that the slide bearings are proper positioned.*

- Move the squeegee bracket to semi transport position.
- Assemble the screws.

Service

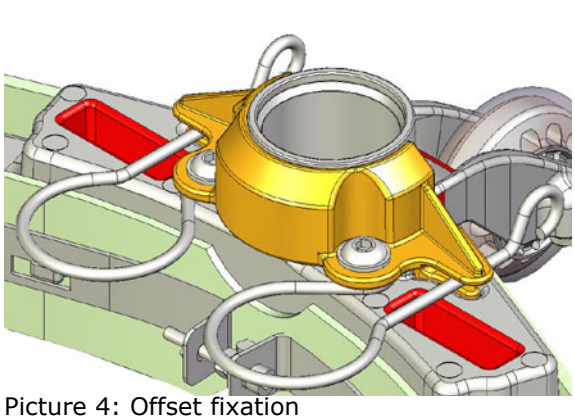
Apply lubricant locking on the screws (03/103).

5.1.3 Squeegee



Picture 3: Squeegee

5.1.3.1 Replacing of fixation spring



Picture 4: Offset fixation

Remove

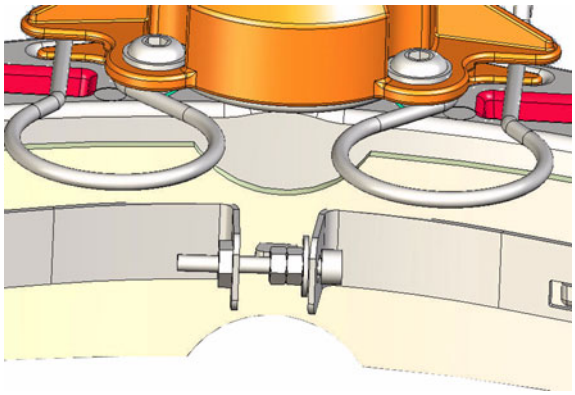
- Unscrew the 2 screws of the offset fixation.
- Remove the offset and the spring.
- Remove the spring from the offset.

Mount

- Assemble the new spring on the offset.
- Assemble the offset and the spring on the squeegee.
- Mount the screws of the offset.

5.1.3.2 Replacing of front blade

Remove

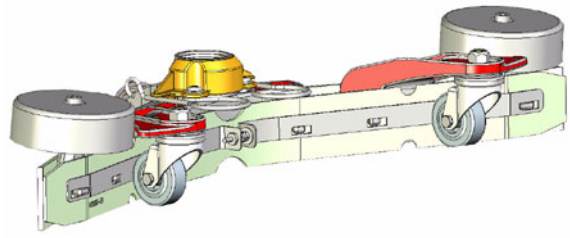


Picture 5: Front blade fixation

- Tighten fixation screw until the tightening strap can be removed (the pressure to the outer sides of the squeegee body will be reduced).
- Remove front blade.

Mount

- Position new front blade.



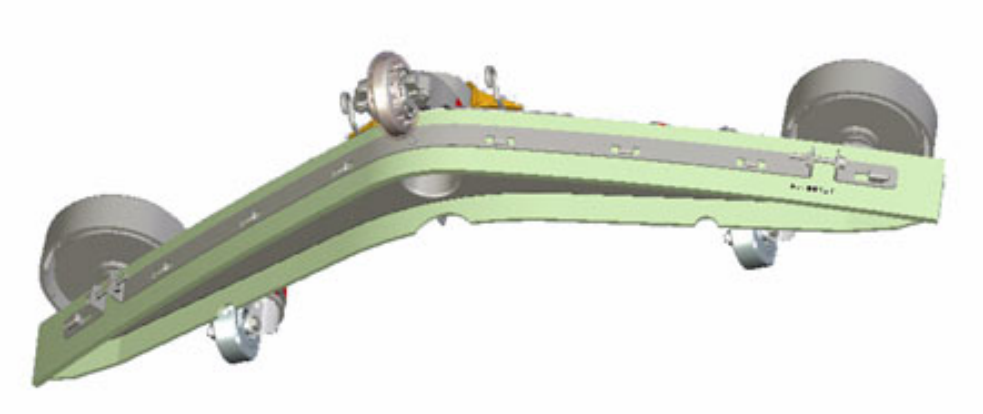
Picture 6: Tightening strap front blade

- Position tightening strap.
- Untighten fixation screw until the blade is proper fixed on the squeegee body.

⚠CAUTION *Ensure that the tightening strap is positioned correct (thin part to the bottom).*

If you over tighten the tightening strap it can bulge.

5.1.3.3 Replacing of back blade



Picture 7: Back blade

Remove

- Untighten the fixation screws on both sides to release the pressure.
- Remove the back blade.

Mount

- Position new back blade.
- Position tightening strap.
- Thighten fixation screws until the blade is proper fixed on the squeegee body.

Remarks

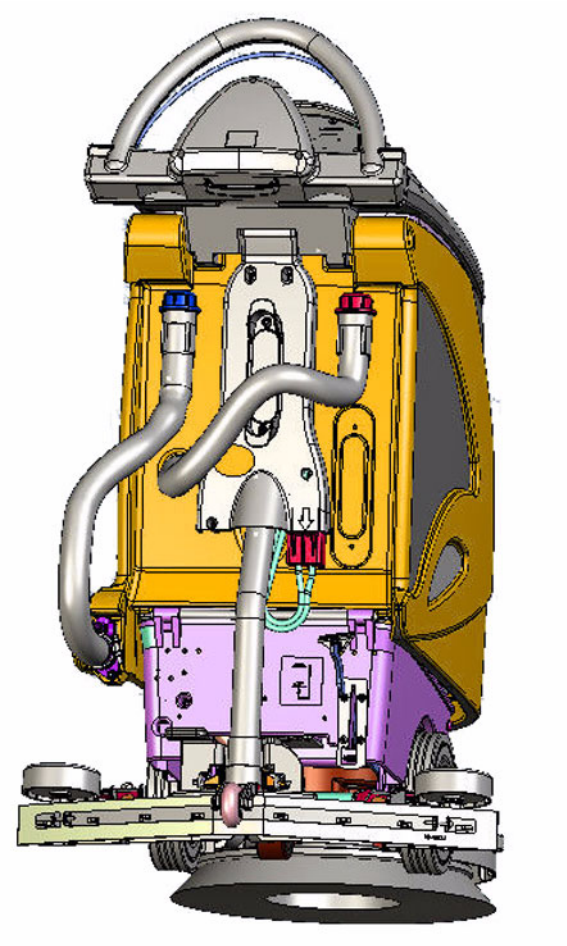
Pay attention that the tightening strap is positioned in the centre.

⚠CAUTION *Ensure that the tightening strap is positioned correct (thin part to the bottom).*

If you over tighten the tightening strap it can bulge.

5.1.4 Lower part & tank

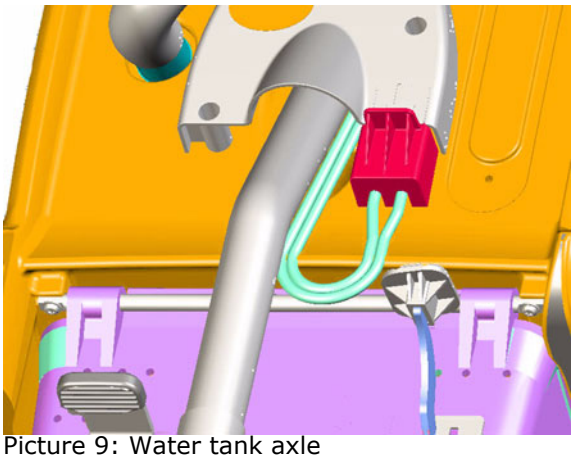
5.1.4.1 Replacing of tank



Picture 8: Tank

Remove

- Remove tank cover according to chapter REPLACING OF TANK COVER.
- Remove fresh water hose from tank.
- Remove rear panel.
- Unscrew charger jack from rear panel.
- Unlock battery compartment by removing screws from locking system.
- Open the battery compartment.
- Thread out wiring and hoses to the battery compartment.
- Close battery compartment.



Picture 9: Water tank axle

- Remove water tank fixation screws.
- Remove water tank from axle.
- Remove the existing parts from the tank and place it on the new one.

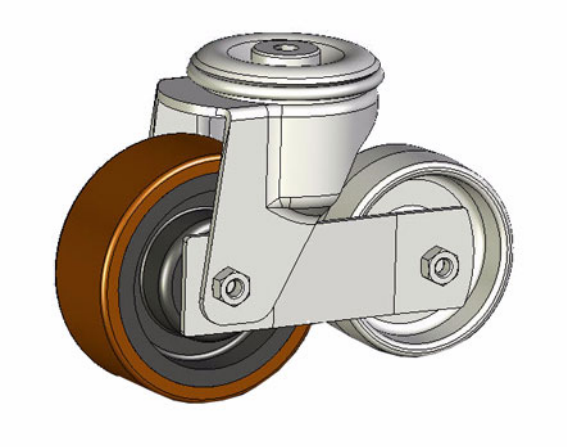
Mount

- Position the new water tank on the axle.
- Fix the water tank onto the axle with the two screws.
- Open the battery compartment.
- Thread in cables from the battery compartment.
- Assemble charger jack on the rear panel.
- Connect fresh water hose to the water tank.
- Assemble tank cover according to chapter REPLACING OF TANK COVER.
- Adjust battery compartment lock.
- Lock the battery compartment on both sides with the screws from the locking system.

Adjustment

Ensure that the screws of the lock can be properly positioned.

5.1.4.2 Replacing of castor wheel



Picture 10: Castor wheel

Remove

- Unlock battery compartment on the LH side by removing the screw from the locking system.
- Lay the machine on the LH side.
- Unlock battery compartment on the RH side by removing the screw from the locking system.
- Open the battery compartment.
- Untighten the fixation screw with a 19 mm fork spanner.
- Remove the complete castor wheel and squeegee support.

Mount

- Assemble castor wheel and squeegee support according to e-spares.
- Tighten the fixation screw with a 19 mm fork spanner.
- Lock battery compartment on the RH side with the screw of the locking system.
- Lift up the machine.
- Lock battery compartment on the LH side with the screw of the locking system.

Adjustment

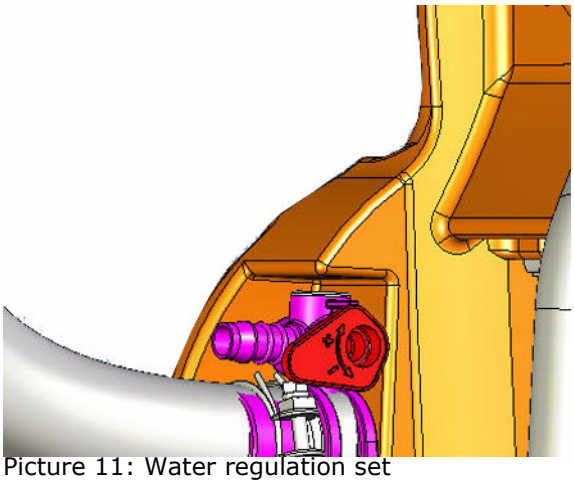
Tighten the screw with 70 Nm.

Service

Apply gear/bearing lubricant (05/134) on the bush (05/114).

Apply adhesive locking (05/133) on screw (05/104).

5.1.4.3 Replacing of water regulation set



Picture 11: Water regulation set

Remove

- Untighten fresh water draining hose clamp.
- Remove fresh water draining hose from water regulation set.
- Remove fresh water hose from water regulation set.

⚠CAUTION *Ensure that no water is in the fresh water system before you disconnect the hose.*

- Remove water regulation set fixation screw.
- Remove water regulation set.

Mount

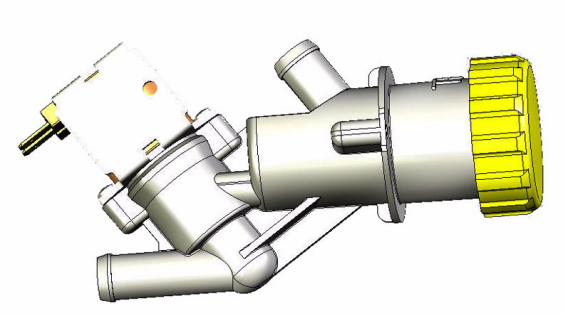
- Mount new water regulation set.

⚠CAUTION *The diameter of the water outlet on the tank shrinks as soon the outlet stub or water regulation set is removed.*

Replace the outlet stub immediately the water regulation set.

- Position new water regulation set fixation screw.
- Connect fresh water to the water regulation set.
- Position clamp on fresh water draining hose.
- Position fresh water draining hose on the water regulation set.
- Tighten the fresh water draining hose clamp.

5.1.4.4 Replacing of filter 24V



Picture 12: Filter 24V

Remove

- Remove filter cover of filter 24V.

⚠CAUTION *Ensure that no water is in the fresh water system before you disconnect the hoses.*

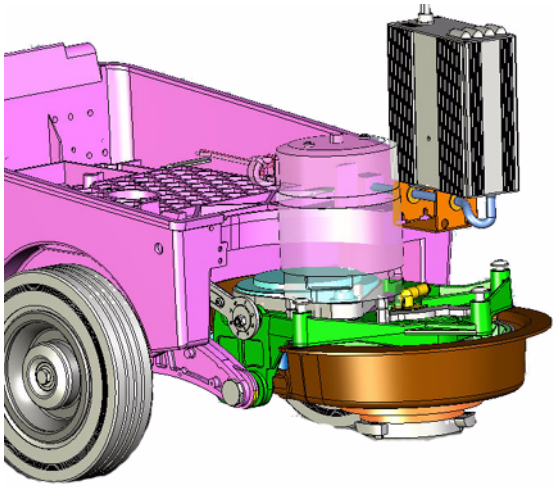
- Remove fixation screws from chassis.
- Thread out filter 24V from the chassis.
- Disconnect the fresh water connection.
- Disconnect the wires from coil.
- Remove complete filter 24V.

Mount

- Take new filter 24V.
- Connect wires to coil.
- Connect fresh water hoses to the filter 24V.
- Thread in the filter 24V on the chassis.
- Position fixation screws an tighten them.
- Position filter cover on the filter 24V.

5.1.5 Brush drive unit

5.1.5.1 Replacing of brush drive unit



Picture 13: Brush drive replacing

Remove

- Unscrew brush housing fixation screws.
- Remove the brush housing from the brush drive unit.
- Disconnect the fresh water hose from the brush drive unit.
- Disconnect the brush motor wires from the connection block.
- Remove self locking nuts on the LH and RH from the cradles.
- Remove self locking nut at eccentric disc.
- Remove the eccentric disc.
- Remove the bolt and eccentric shaft.

⚠CAUTION *Make sure that you hold the brush drive unit firmly.*

- Pivot the complete brush drive unit out.

Mount

- Position the brush drive unit on the cradles.
- Position the bolt and the eccentric shaft.
- Position the eccentric disc.

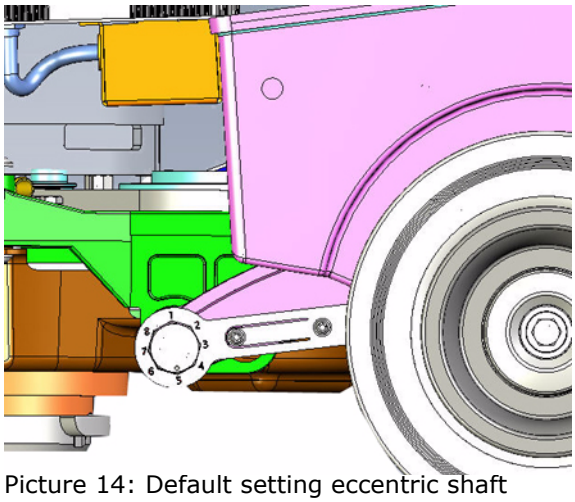
Adjustment

Default setting:
Eccentric disc (07/116): Position 4
Eccentric shaft (07/110): Position 5

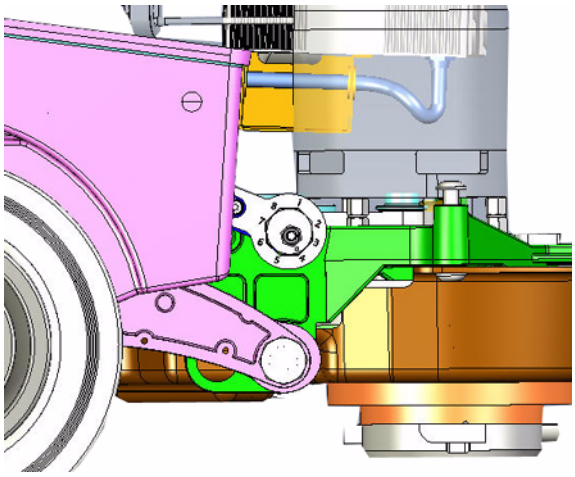
Remarks

Based on data from the application department (Muenchwilen) the

default setting is as mentioned. Changing this setting will not bring an improvement of the cleaning performance.



Picture 14: Default setting eccentric shaft



Picture 15: Default setting eccentric disc

- Position a new self locking nut (M8) at the eccentric disc.
- Position two new self locking nuts (M8) at the bold and the eccentric shaft.
- Thighten all self locking nuts.

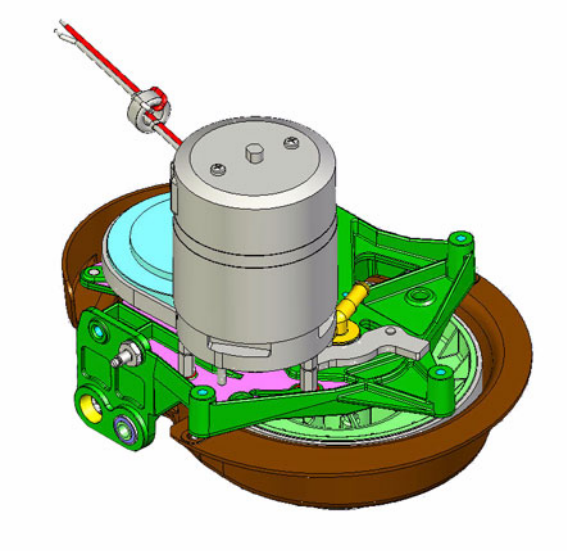
⚠CAUTION *Do not use the locking lever (07/116) to tighten the eccentric shaft (07/110)*

- Connect the brush motor to the connection block.

⚠CAUTION *Connect the wires of the brush motor and the cable strand matching the colours.*

- Connect the fresh water hose to the brush drive unit.
- Position the brush housing on the brush drive unit.
- Position the brush housing screws and tight them.
- Close and lock battery compartment and lock it with the screws of the looking system.

5.1.6 Brush drive

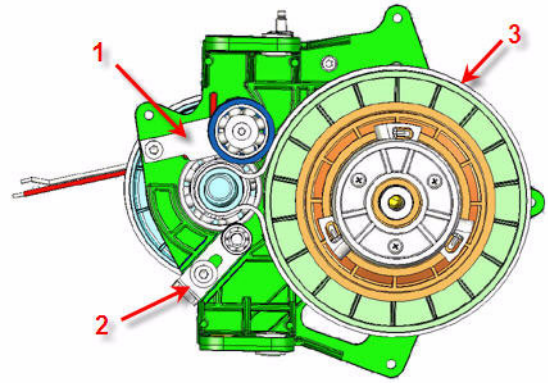


Picture 16: Brush drive

5.1.6.1 Replacing of brush belt - New setup

Remove

- Remove brush drive unit according to chapter REPLACING OF BRUSH DRIVE UNIT.
- Position brush drive unit upside down.
- Remove the three screws (08/137) of cover.
- Remove the cover (08/129).



Picture 17: Remove belt - New setup

1 Untighten belt tensioning roller and remove it.
2 Remove the small tensioning roller.
3 Remove the belt.

Mount

- Position new belt carefully.
- Mount the small tensioning roller and push it to the limit.
- Thighten the fixation screw of the small tensioning roller.
- Position the tensioning roller on the brush base plate.
- Position the fixation screw and tighten it only as much as required to move over the brush base plate nozzle.
- Move the tensioning roller with a 17 mm fork spanner over the nozzle on the brush base plate.

Remarks

If you can not get over the nozzle you can adjust the small tensioning roller slightly.

- Thighten the fixation screw of the tensioning roller completely.
- Position the cover on the brush drive unit.
- Position and tighten the fixation screws of cover.

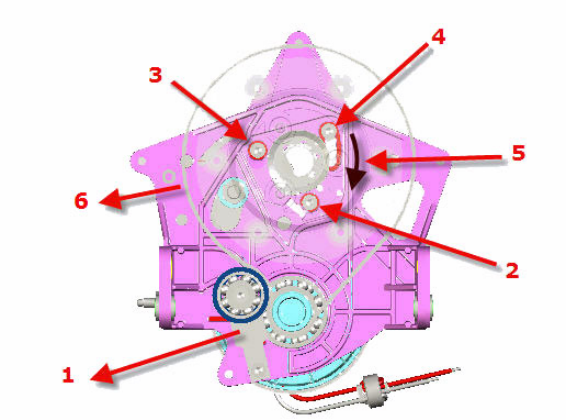
⚠CAUTION *Ensure that the belt does not touch the cover.*

- Complete assembling according to the chapter REPLACING OF BRUSH DRIVE UNIT.

5.1.6.2 Replacing of brush belt - Old setup

Remove

- Remove brush drive unit according to chapter REPLACING OF BRUSH DRIVE UNIT.
- Position brush drive unit upside down.
- Remove the three screws (08/137) of the cover.
- Remove the cover (08/129).
- Remove the tool coupling fixation screws (08/136).
- Remove coupling and catch (08/131) from brush drive pulley.



Picture 18: Remove belt - old setup

1 Remove the belt tensioning roller.
2 Remove the screw of the triangular support (8/124).

Remarks

Turn the pulley until you find the screw to remove.

3 Untighten as much as possible the screw of the triangular support.
4 Untighten as much as possible the screw of the triangular support.

Remarks

If the belt is already removed you can also remove the pulley to get to the screws of the triangular support.

5 Move the axle (08/124) over the positioner/nozzle on the brush base plate.
6 Remove belt.

Mount

- Position the new belt.
- Tension the belt by moving the lever (08/143) with a 17 mm fork spanner to the working position.

Remarks

Ensure that the fresh water angled nipple is correct positioned before you position the belt.

- Position the screws of the triangular support (8/124) and tighten them.
- Position the tensioning roller on the brush base plate.
- Position the fixation screw of the tensioning roller and tighten it only as much as required to move over the brush base plate nozzle.
- Move the tensioning roller with a 17 mm fork spanner over the nozzle on the brush base plate.
- Thighten the fixation screw of the tensioning roller completely.
- Position the brush coupling on the brush pulley.
- Position the fixation screws.

Service

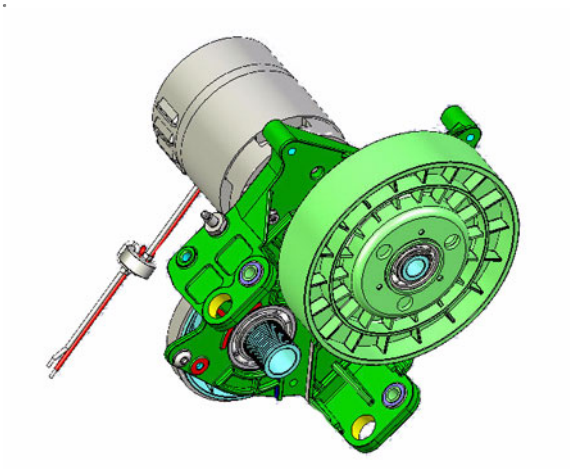
Thighen the coupling fixation screws (8/136) with 2.3 Nm

- Position the cover on the brush drive unit.
- Position and tighten the fixation screws.

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

- Complete assembling according to the chapter REPLACING OF BRUSH DRIVE UNIT.

5.1.6.3 Replacing of pulley - New setup



Picture 19: Brush pulley

Remove

- Remove brush drive unit according to chapter REPLACING OF BRUSH DRIVE UNIT.
- Remove brush belt according to chapter REPLACING OF BRUSH BELT - NEW SETUP.
- Remove the three screws (08/136) of the coupling.
- Remove the coupling from brush drive pulley.
- Remove the catch (08/131).
- Remove the centre plug (08/134) and the sealing ring (08/130).
- Remove the retaining ring (08/141).
- Remove the pulley (08/127).

Mount

- Mount the new pulley.
- Position the retaining ring.

Service

Apply lubricant on the sealing ring (08/130).

- Position the sealing ring and the centre plug.
- Position the catch.
- Position the coupling.
- Fix the coupling with the three screws.

Service

Thighen the screws (8/136) with 2.3 Nm.

- Complete assembling according to the chapter REPLACING OF BRUSH BELT - NEW SETUP.
- Complete assembling according to the chapter REPLACING BRUSH DRIVE UNIT.

5.1.6.4 Replacing of pulley - Old setup

Remove

- Remove brush drive unit according to chapter REPLACING OF BRUSH DRIVE UNIT.
- Remove brush belt according to chapter REPLACING OF BRUSH BELT - OLD SETUP.
- Position brush drive unit upside down.
- Remove the centre plug (08/134) and the sealing ring (08/130).
- Remove the retaining ring (08/141).
- Remove the pulley (08/127).

Mount

- Mount the new pulley.
- Position the retaining ring.

Service

Apply lubricant on the sealing ring (08/130)

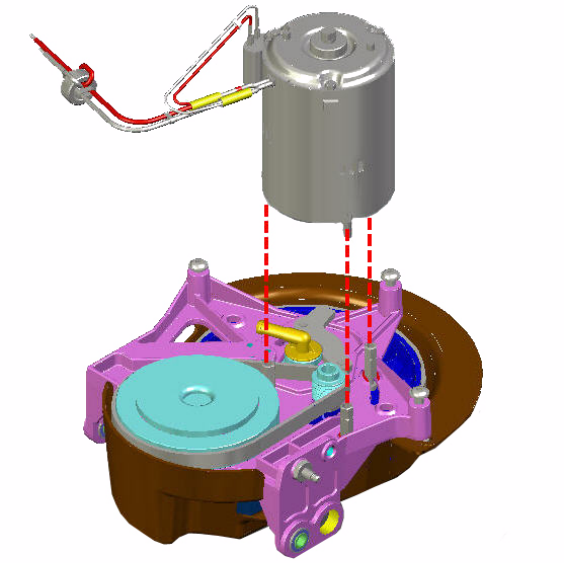
- Position the sealing ring and the centre plug.
- Position the catch.
- Position the coupling.
- Fix the coupling with the three screws.

Service

Thighen the screws (8/136) with 2.3 Nm.

- Complete assembling according to the chapter REPLACING OF BRUSH BELT - OLD SETUP.
- Complete assembling according to the chapter REPLACING OF BRUSH DRIVE UNIT.

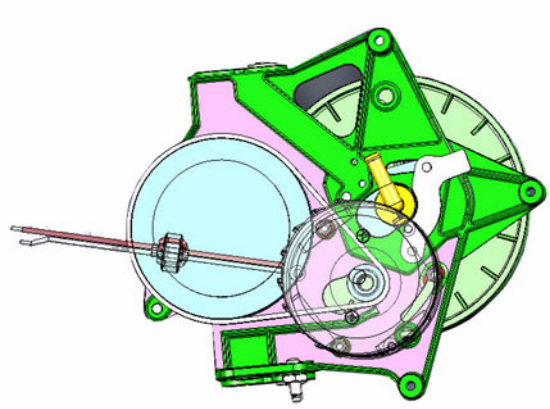
5.1.6.5 Replacing of motor & motor belt



Picture 20: Motor belt

Remove

- Remove brush drive unit according to chapter REPLACING OF BRUSH DRIVE UNIT.
- Remove brush belt according to chapter REPLACING OF BRUSH BELT - NEW SETUP/OLD SETUP.
- Remove brush pulley according to chapter REPLACING OF PULLEY - NEW SETUP/OLD SETUP.
- Remove the two screws (09/134) and the one counter head screw (09/135).
- Remove the motor and the motor belt.



Picture 21: Motor belt

Mount

- Position the new motor/new belt.

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

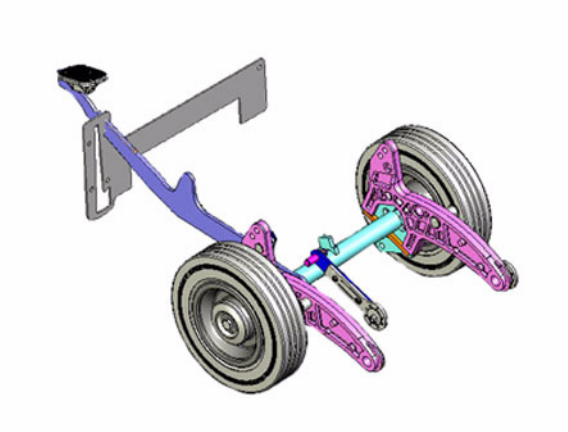
- Insert the counter head screw.
- Position the two other screws.

Service

Apply adhesive looking on the screws (09/134).

- Tension the belt.
- Tighten all screws.
- Complete assembling according to the chapter REPLACING OF PULLEY - NEW SETUP/OLD SETUP.
- Complete assembling according to the chapter REPLACING OF BRUSH BELT - NEW SETUP/OLD SETUP.
- Complete assembling according to the chapter REPLACING OF BRUSH DRIVE UNIT.

5.1.7 Tool lowering unit



Picture 22: Tool lowering unit

5.1.7.1 Replacing of foot lever

Remove

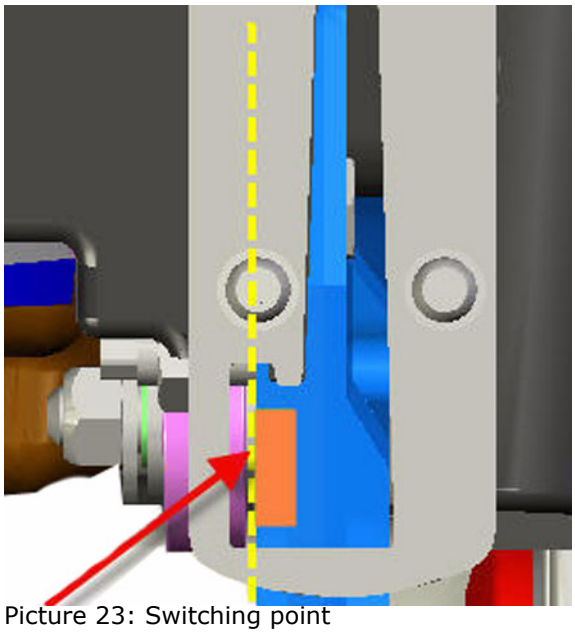
- Lay the machine to the LH side.
- Remove the pressure spring (06/112)
- Unplug microswitch.
- Unscrew microswitch fixation.
- Remove microswitch.
- Remove wheel on RH side.
- Remove retaining ring (07/107).
- Remove axle (07/112) on RH side.
- Pull the cradle out so you can reach the counter screw (07/127).
- Remove nuts (07/113) and (07/126).
- Remove the foot lever (07/104).

Mount

- Build in new foot lever.
- Position and tighten nuts (07/113) and (07/126).
- Position cradle and foot lever in the correct position.
- Assemble axle (07/112).
- Assemble microswitch and adjust accordingly.

Adjustment

The foot lever switch has to apply when the foot lever passes the centre of the LH side of the stop plate squeegee (07/102)



Picture 23: Switching point

- Connect microswitch to wires.
- Position pressure spring.
- Lift up machine.

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6 Electrical

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6 Electronic

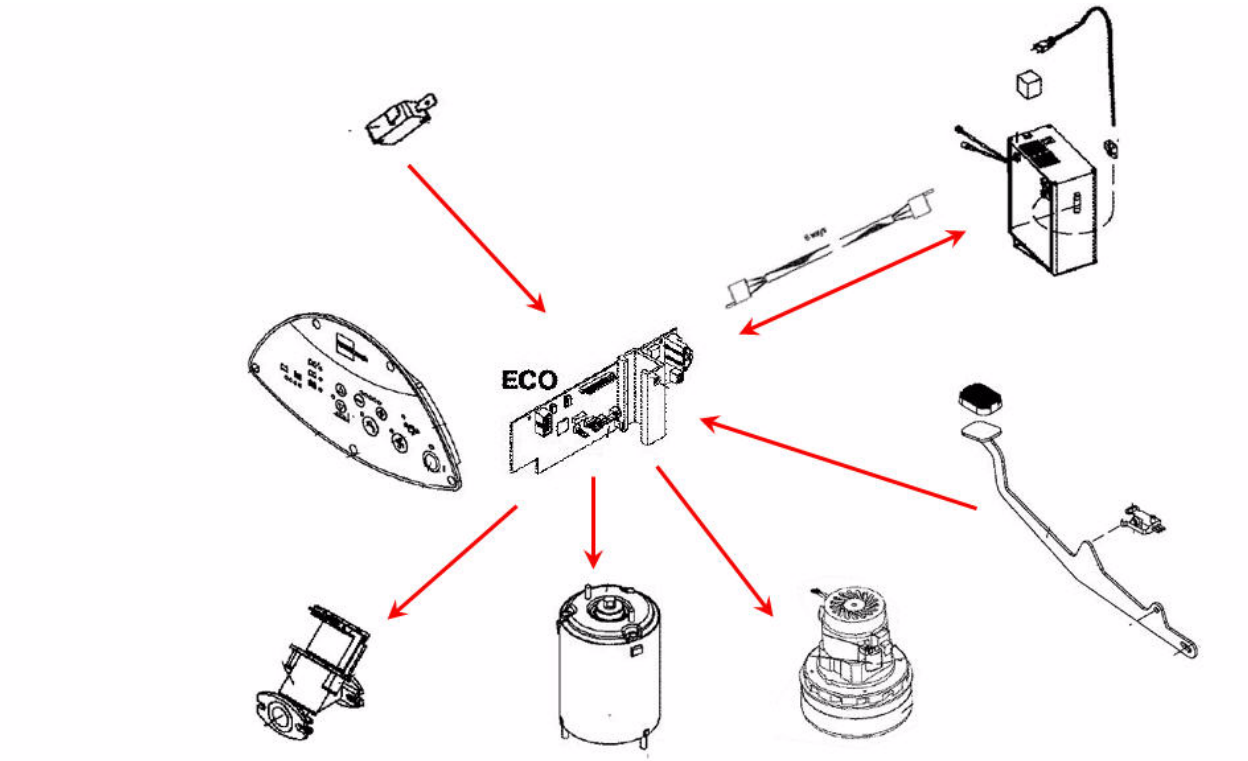
6.1 System architecture

⚠CAUTION *Disconnect/remove batteries before you work on the machine.*

6.1.1 General

- The firmware of the electronics can not be exchanged.
- 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 electronics.

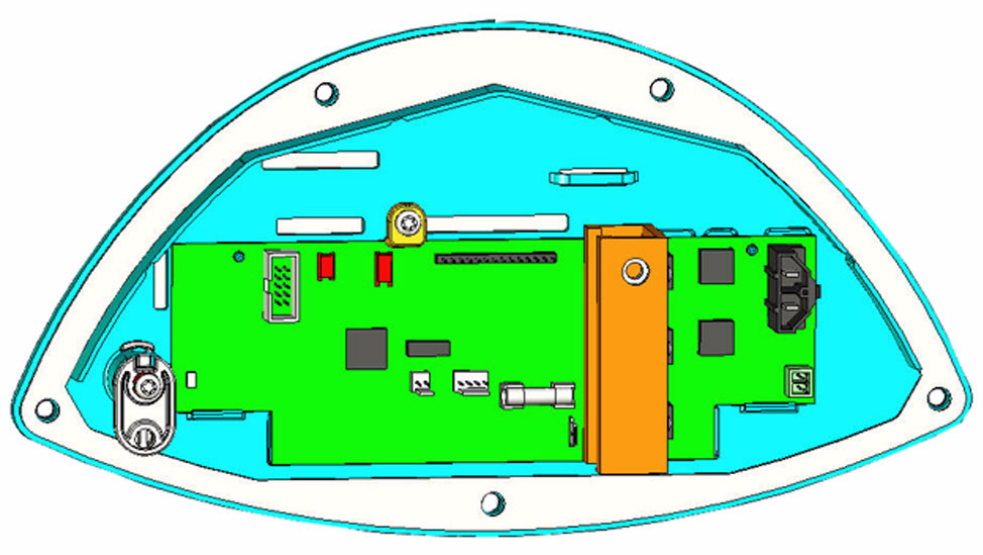
6.1.2 System overview



Picture 1: System overview

6.2 Components

6.2.1 Dashboard



Picture 2: Dashboard

6.2.1.1 Replacing of dashboard

Remove

- Remove the 5 dashboard screws.
- Dismount dashboard from machine.
- Disconnect all electrical connections.

Mount

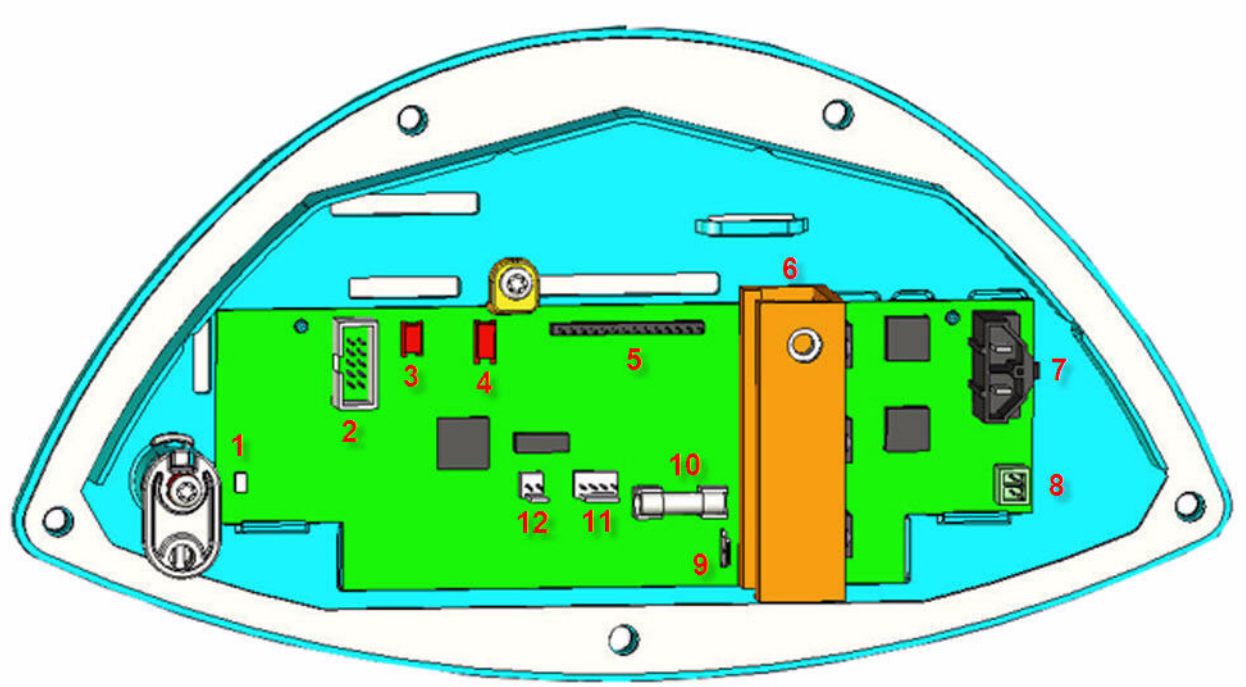
- Connect electrical connections to dashboard.
- Mount dashboard on machine.
- Fix the dashboard with the 5 screws to the machine.

⚠CAUTION *Tighten the connectors with the correct torque.*

Adjustment

- M6 (02/145) with 6 Nm
  - Battery plus

6.2.1.2 Connections



Picture 3: Dashboard connection

Pos.	Plug	Description [plug]	Pin	Description [pin]
1	S1	Switch ON hall sensor	1	Switch ON hall sensor
2	J7	Programming port	1	GND
2	J7	Programming port	2	Reset
2	J7	Programming port	3	SEC CLK
2	J7	Programming port	4	+5V
2	J7	Programming port	5	P5
2	J7	Programming port	6	VPP
2	J7	Programming port	7	SCK
2	J7	Programming port	8	Not connected
2	J7	Programming port	9	Not connected
2	J7	Programming port	10	Not connected
3	X3	Brush operation microswitch	1	Not connected
3	X3	Brush operation microswitch	2	Not connected
3	X3	Brush operation microswitch	3	Brush micro switch IN
3	X3	Brush operation microswitch	4	Brush micro switch IN
4	X1	Communication charger	1	Emergency loop (Jumper NON BMS)
4	X1	Communication charger	2	Emergency loop (Jumper NON BMS)
4	X1	Communication charger	3	GND
4	X1	Communication charger	4	LED charging

Table 1: Dash board connector description

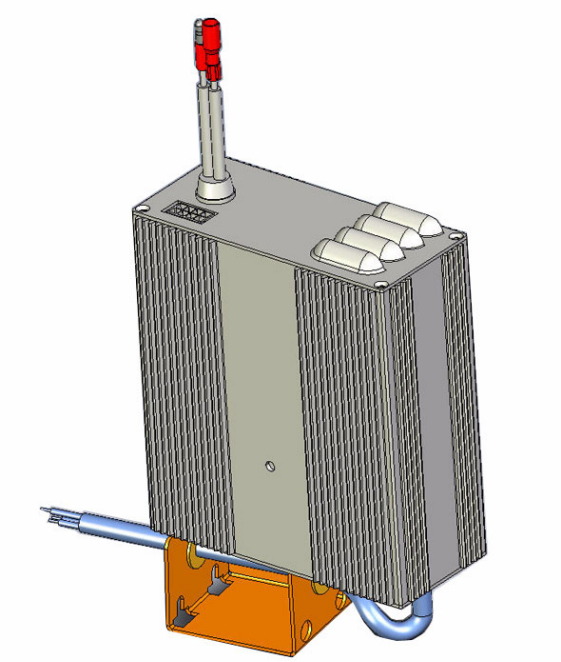
Pos.	Plug	Description [plug]	Pin	Description [pin]
4	X1	Communication charger	5	LED charging failure
4	X1	Communication charger	6	LED charged
5	X10	Membrane keypad	1	+5V
5	X10	Membrane keypad	2	LED Service
5	X10	Membrane keypad	3	Vacuum motor
5	X10	Membrane keypad	4	LED vacuum motor
5	X10	Membrane keypad	5	Dosing
5	X10	Membrane keypad	6	LED dosing
5	X10	Membrane keypad	7	LED brush unit working position
5	X10	Membrane keypad	8	LED battery full
5	X10	Membrane keypad	9	LED battery empty
5	X10	Membrane keypad	10	LED charged
5	X10	Membrane keypad	11	LED charging
5	X10	Membrane keypad	12	LED charging failure
5	X10	Membrane keypad	13	GND
5	X10	Membrane keypad	14	Shield
6	P1	Battery power	1	Battery power
7	J103	Brush motor plus	1	Brush motor plus
7	J103	Vacuum motor plus	2	Vacuum motor plus
8	J102	Magnetic valve OUT	1	Magnetic valve OUT

Table 1: Dash board connector description

Pos.	Plug	Description [plug]	Pin	Description [pin]
8	J102	Brush position switch IN	2	Brush position switch IN
9	J104	GND	1	GND
10	F101	Fuse 315mA	1	Fuse
11	X4	Service Tool communication port	1	+5V
11	X4	Service Tool communication port	2	RX
11	X4	Service Tool communication port	3	RX
11	X4	Service Tool communication port	4	GND
12	X5	External hour counter	1	Time counter
12	X5	External hour counter	2	+24V

Table 1: Dash board connector description

6.2.2 Charger



Picture 4: Charger

6.2.2.1 Replacing of charger

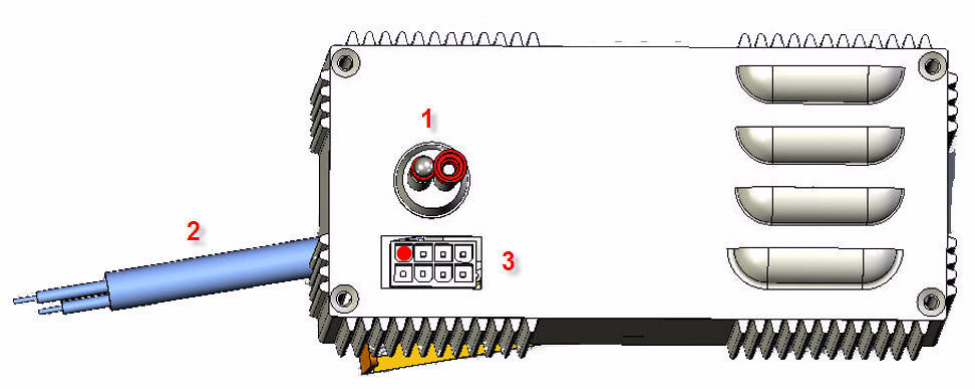
Remove

- Remove connector from charger.
- Disconnect battery connection and thread out wires.
- Unscrew main cord connection and thread out cable.
- Remove charger by untighten screws at the bottom.

Mount

- Position charger and tighten screws at the bottom.
- Thread in main cord and fix it to the connection block.
- Thread in battery wires and connect accordingly to the colours.
- Connect the communication cable to the charger.

6.2.2.2 Connections



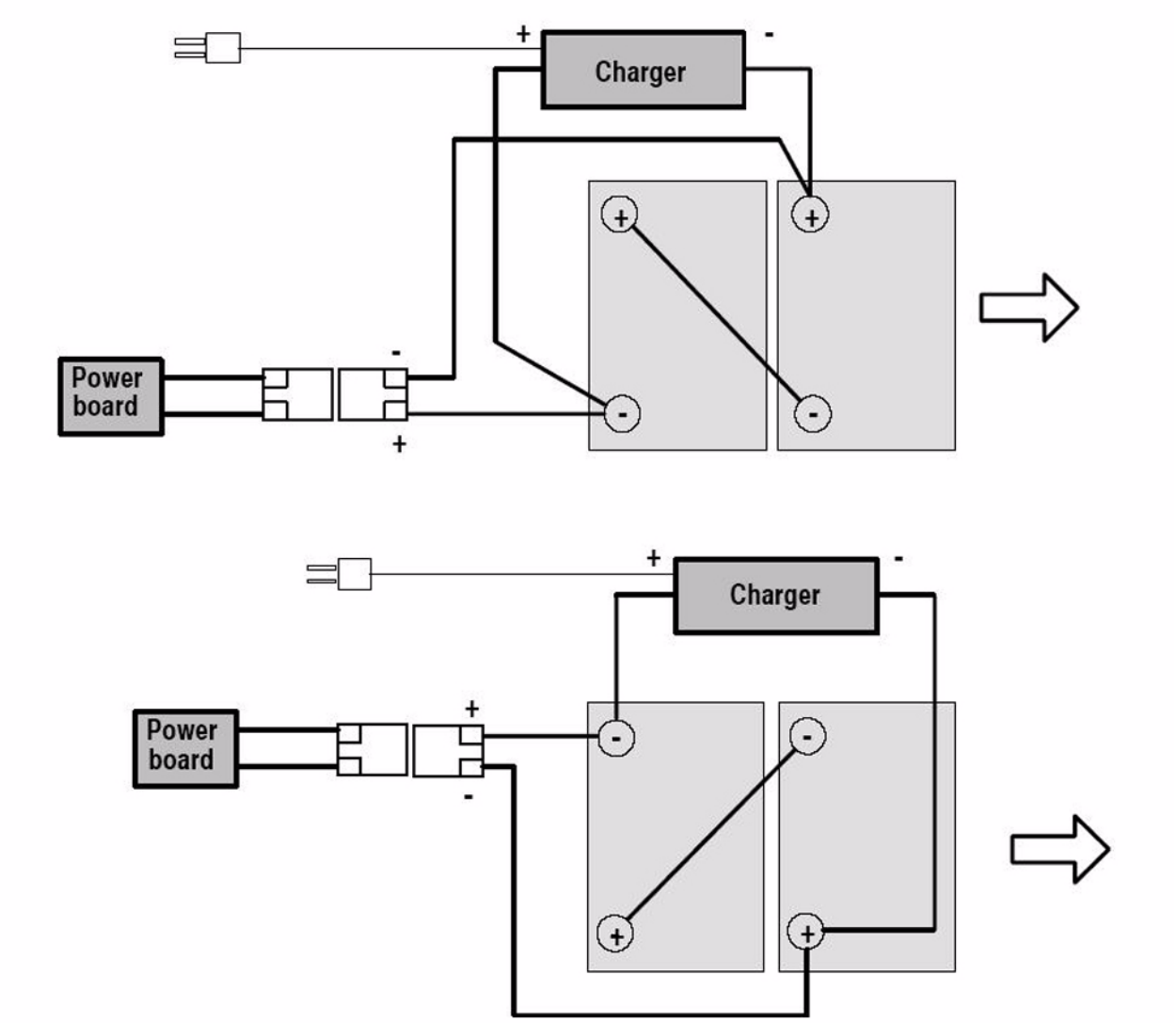
Picture 5: Charger connectors

Pos.	Plug	Description [plug]	Pin	Description [pin]
1	B1	Battery charge (red)	1	Battery charge - Plus (+)
1	B1	Battery charge (black)	2	Battery charge - Minus (-)
2	S3	Power main cord	1	Phase
2	S3	Power main cord	2	Neutral
2	S3	Power main cord	3	GND
3	X7	Charger communication	1	Not connected
3	X7	Charger communication	2	Not connected
3	X7	Charger communication	3	Emergency loop IN
3	X7	Charger communication	4	Emergency loop OUT
3	X7	Charger communication	5	GND
3	X7	Charger communication	6	Information charge failed
3	X7	Charger communication	7	Information charge
3	X7	Charger communication	8	Information charged

Table 2: Charger connector description

6.3 Schematics/System

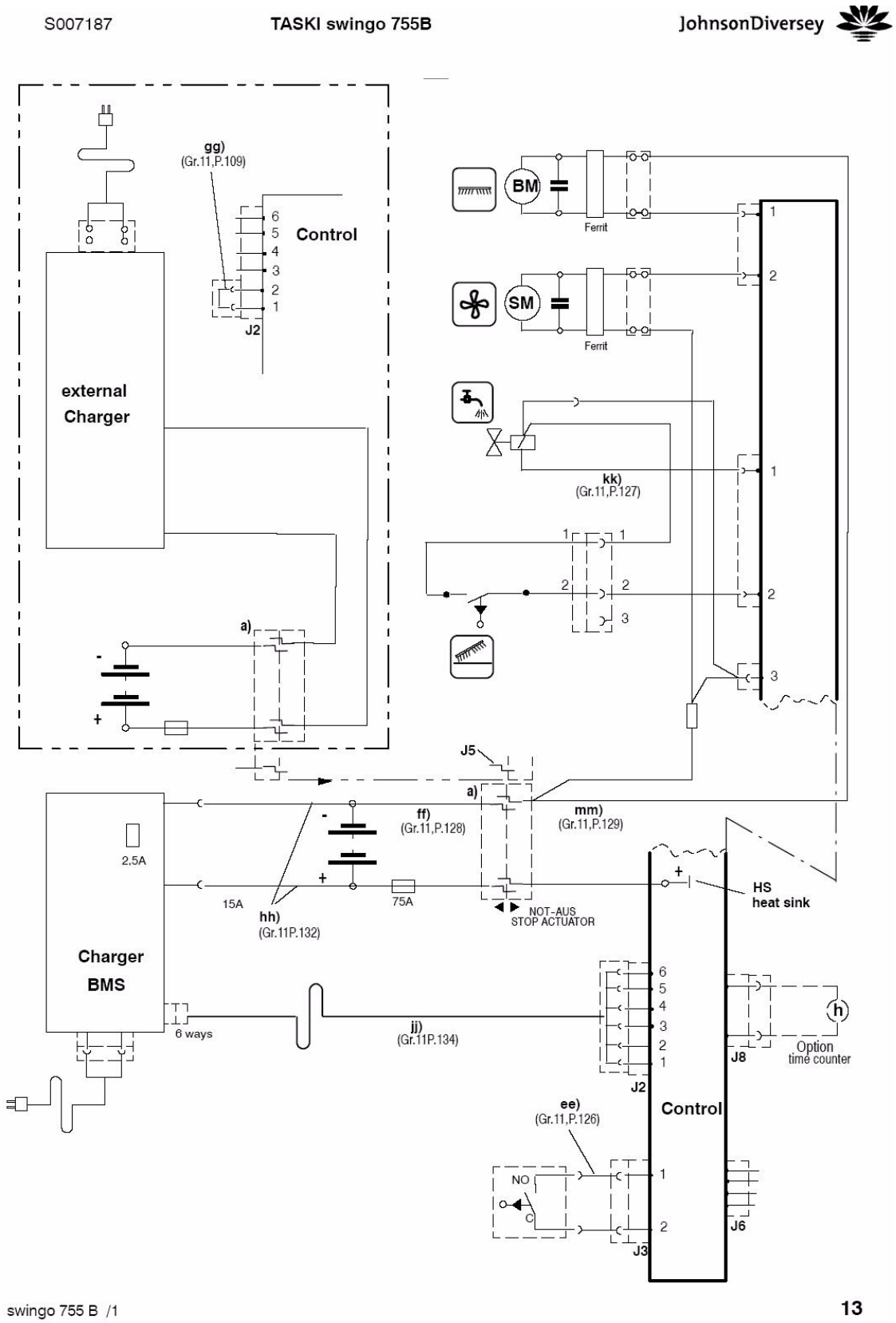
6.3.1 Battery connection



06.0 swingo 755 B ECO - electronics.fm

Picture 6: Battery connection

6.3.2 Electrical schematic



Picture 7: Electrical schematic

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7 Additional information

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7 Additional information

7.1 Available GTS Newsletter/Instructions

Newsletter	Date of issue	Topic/Modification	Machine version	Serial number	Tool	SKU tool

Table 1: Newsletters/Instructions

Technical Manual

8 Revision

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8 Revision

Date	Chapter	Content	Description	Revision
02.03.2010	General	General	Created new chapter „General“	V 1.10
02.03.2010	Technical Data	Machine dimensions and weights	Data adjusted	V 1.10
02.03.2010	Mechanical Sequences	Mechanical	Procedures adjusted	V 1.10
02.03.2010	Mechanical Sequences	Required material	Removed from chapter „Mechanical Sequences“	V 1.10
02.03.2010	Mechanical Sequences	General	Removed from chapter „Mechanical Sequences“	V 1.10
02.03.2010	Electrical Sequences	Required material	Removed from chapter „Electrical Sequences“	V 1.10
02.03.2010	Electrical Sequences	General	Removed from chapter „Electrical Sequences“	V 1.10
02.03.2010	Troubleshooting	General	Removed chapter „Troubleshooting“	V 1.10

Table 1: Revision

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9 Appendix

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Glosser

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10 Notes

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