TASKI Service Tool

TASKI swingo 2500/3500 V2

Edition: V2.00/2011

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TASKI Service Tool

1 General

21. February 2011 Edition: V2.00/2011

1 General

1.1 General information

1.1.1 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.

1.1.2 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.

1.1.3 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).

1.1.4 Power source

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

During communication/download the machine will be under power.

1.2 Required material

1.2.1 Tools

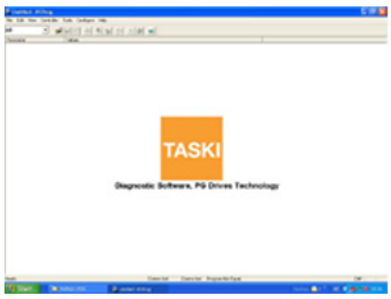
- A standard range of tools is required e.g.
  - Fork spanners
  - Allen keys
  - Torx keys

1.2.2 Material

- According to which Service Tool your are using, the necessary equipment has to be available.

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

TASKI Service Tool



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2 TASKI swingo 2500/3500 V2

2.1 General

2.1.1 Ordering information

- Actual firmware V2.2.18a
- Order No. 4123194 (19604-81)

2.1.2 Content of Service Tool set

- 1x Communication cable
- 1x Jumper P3 for programming the controller in the workshop
- 1x CD to install the software on the PC/Laptop
- 1x User manual

Picture 1: Content of service tool set

2.1.3 Purpose of the Service Tool

The purpose of this Service Tool is to adjust parameters and timers or to read out information from the TRIO controller of TASKI swingo 2500/3500 V2.

Complete functionality for this Service Tool is given on TRIO controllers beginning with version 4. You can find the controller version on the label with the format e.g. D50134.4 (actual version D80851.4) where the number behind the dot stands for version 4. Controllers with a lower version as 4 have limited functionalities, basically just reading out data.

2.2 Installation of the Service Tool

2.2.1 System requirements

- Microsoft windows 95/98, 2000, NT, XP or 7
- CD ROM drive
- 20MB free storage space on hard drive
- Free serial or USB port

2.2.2 How to install the Service Tool

⚠CAUTION *You must have administrator rights in order to install this software. Older versions of this software must be removed before a new installation.*

The installation of the Service Tool is fully automatic. Simply insert the CD into the CD drive, wait a few seconds, then follow the instructions on the screen. Accept the license agreement and complete the installation.

If the CD fails to start automatically just double click “SETUP.EXE” on the CD.

The Service Tool will be automatically installed at the following path on your hard disc:

...|PROGRAMM|RCM PC Programmer|Taski PC Programmer-D51212

When installation is completed an icon will appear on the PC’s desktop and in the Windows START MENU. Double-clicking the icon will start the Service Tool.

The Service Tool default communication port is COM 1. Any other COM port can be selected by using “TOOLS -> OPTIONS -> COM PORT“ within the Service Tool.

Remarks

This Service Tool software is also available in e-spares.

2.3 Connections & operation

2.3.1 How to interact with a controller built in a machine

For programming operations you can connect the Service Tool cable to a controller at any time, regardless of the operating condition of the controller.

The TASKI swingo 2500/3500 must be switched ON before program transfer can begin.

To connect the controller to the PC use the programming cable as follows:

Insert the D-type plug into the serial port or use the USB adapter and plug it into a free USB port. Insert the Molex 4 pin connector into the controller. Switch on the machine.

2.3.2 How to interact with a controller on the desk

Insert the D-type plug into the serial port or use the USB adapter and plug it into a free USB port. Insert the Molex 4 pin connector into the controller, connect the jumper to the connector P3 of the controller. Connect the BATT+ and BATT- connectors of the controller to a 24V DC power supply and switch on the power supply.

2.4 How to operate the Service Tool

⚠CAUTION *Ensure the Service Tool cable has been disconnected from the controller before you start operating the machine.*

2.4.1 Automatic “Switch OFF function” of the controller

When programming a controller be aware that the machine will turn OFF after 5 minutes.

2.4.2 Activate new values of parameters in the controller

To activate new parameter values in the controller you have to reset the controller by

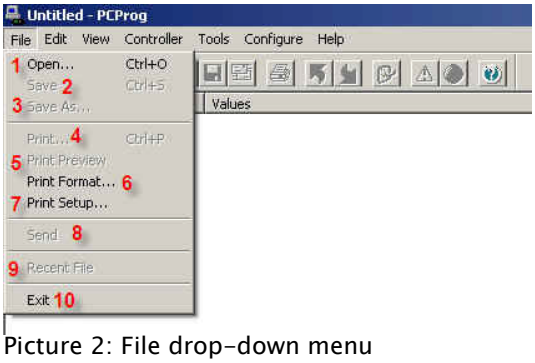
switching the machine ON/OFF.

2.4.3 Explanation of the Service Tool

Remarks

Most of the pull down commands are also available as symbols on the task bar.

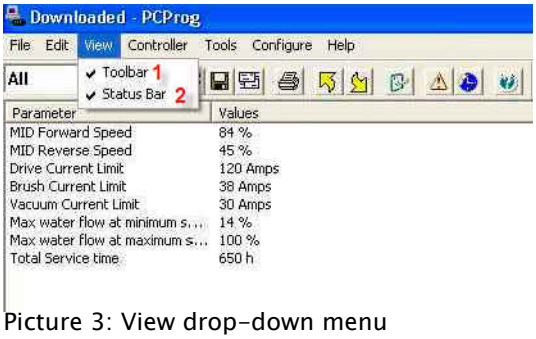
2.4.3.1 The file drop-down menu



Picture 2: File drop-down menu

1 Open an existing parameter file
2 Save a new parameter file with the ending*.prt
3 Save a new parameter file with an ending of your choice
4 Print the parameter file
5 Preview the file before printing
6 Print format parameters can be changed
7 Select and configure printer
8 Prepare an email with the parameter file attached
9 Link to recent opened files
10 Close the Service Tool

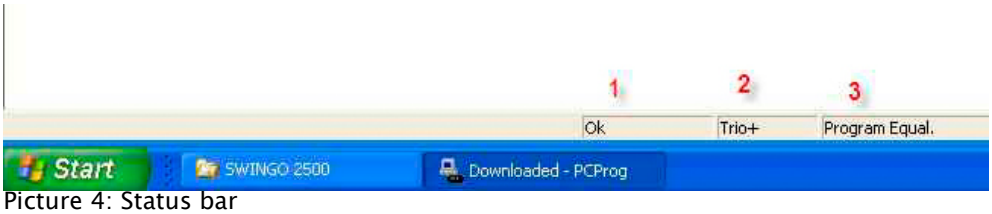
2.4.3.2 The view drop-down menu and status bar



Picture 3: View drop-down menu

1 Tool bar:
Switch the tool bar ON/OFF.
2 Status Bar
Switch the status bar ON/OFF.

Status bar



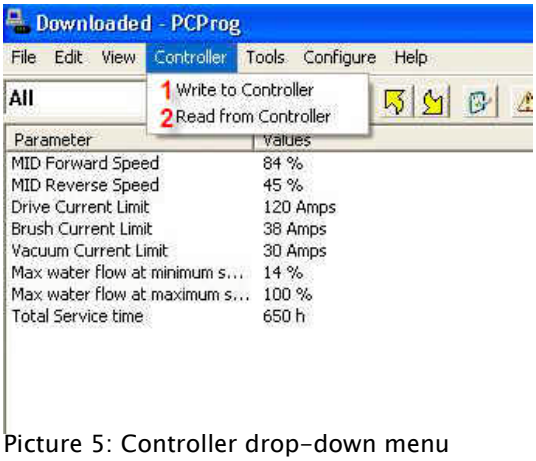
Picture 4: Status bar

1 Status OK:
The controller is connected. “Comms lost” the controller has lost communication to the computer.

2 Status Controller Type:
TRIO type that is currently connected to the computer in this case TRIO+.

3 Status check:
Comparison of parameter files with editor (Service Tool) and machine parameters.
E.g.: If you changed a value in the list and did not download it to the controller then the status will be: „Program Not Equal“. If controller and Service Tool have the same parameter settings the status will be „Program equal“.

2.4.3.3 The controller drop-down menu

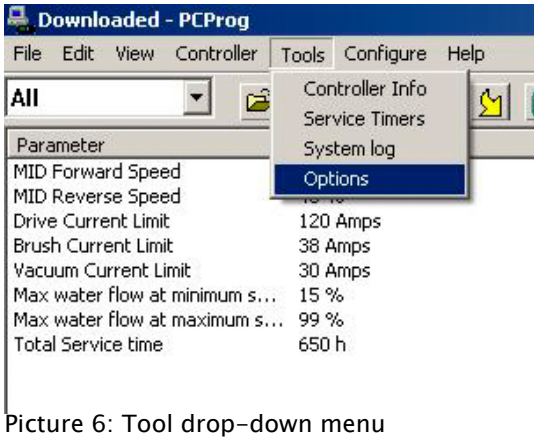


Picture 5: Controller drop-down menu

1 Write to Controller:
Download new values from PC to controller.

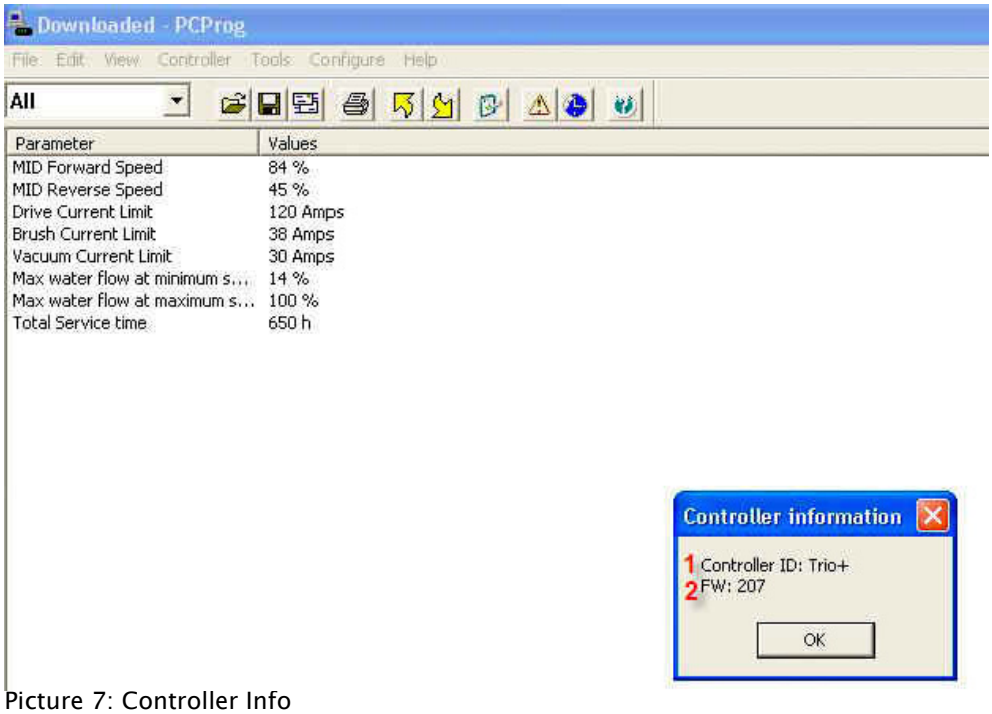
2 Read from controller:
Upload current values from controller to PC.

2.4.3.4 The tool drop-down menu



Picture 6: Tool drop-down menu

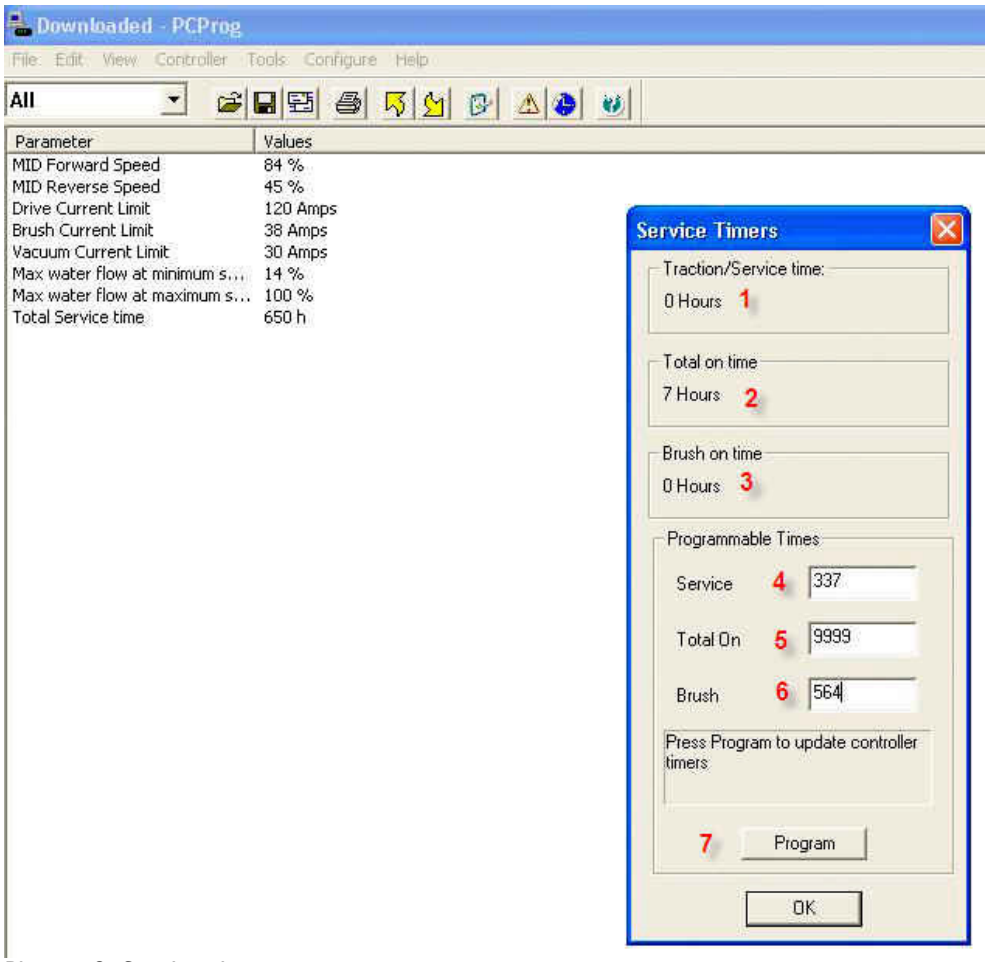
Controller info



Picture 7: Controller Info

1 Controller type
2 Controller firmware revision

Service timers



Picture 8: Service timers

1 Traction/Service time:
Current running hours of the traction unit saved in the controller: This value can be modified under “Programmable Times” “Service”.

2 Total ON time:
Current up time of the machine saved in the controller: This value can be modified under “Programmable Times” “Total On”.

3 Brush ON time:
Current running hours of the brush unit saved in the controller: This value can be modified under “Programmable Times” “Brush”.

Remarks

Programmable timers are usually used to preset the values of a new controller to the values of the replaced one.

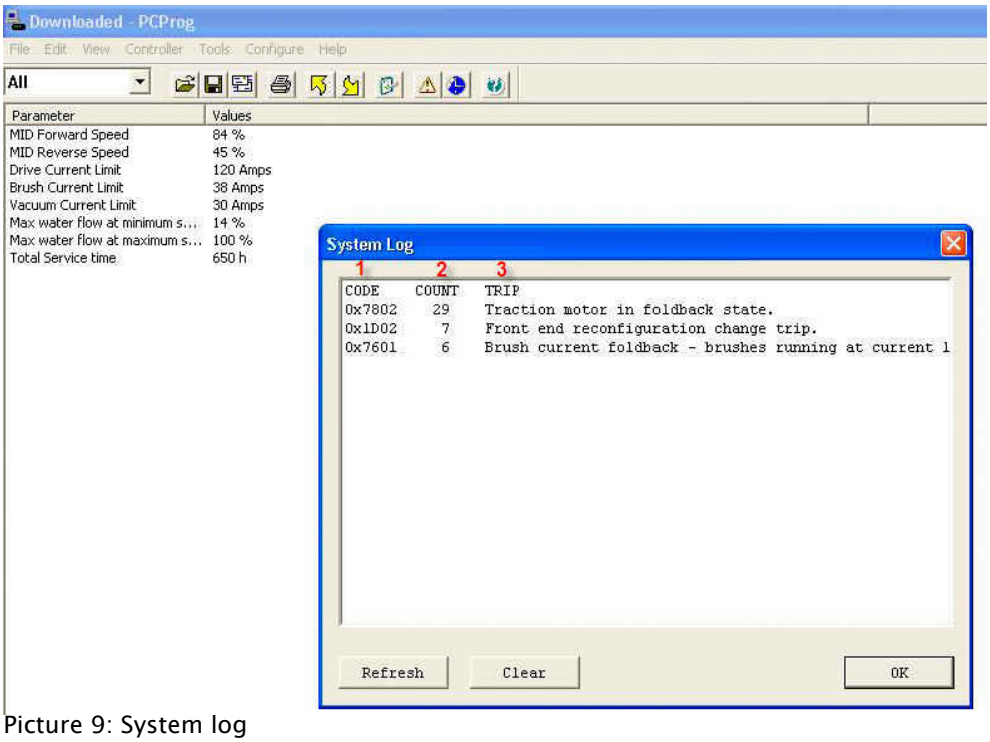
4 Service:
Programs the new value for “Traction/Service”.

5 Total On:
Programs the new value for “Total On time”.

6 Brush:
Programs the new value for the “Brush On time”.

7 Program button:
Downloads the values set under “Programmable Timers” to the controller.

System Log



Picture 9: System log

1 CODE:
ERROR code display:
Can show up to 8 different codes. The ninth code will then take the place of one, the tenth code will then take the place of two and so on.

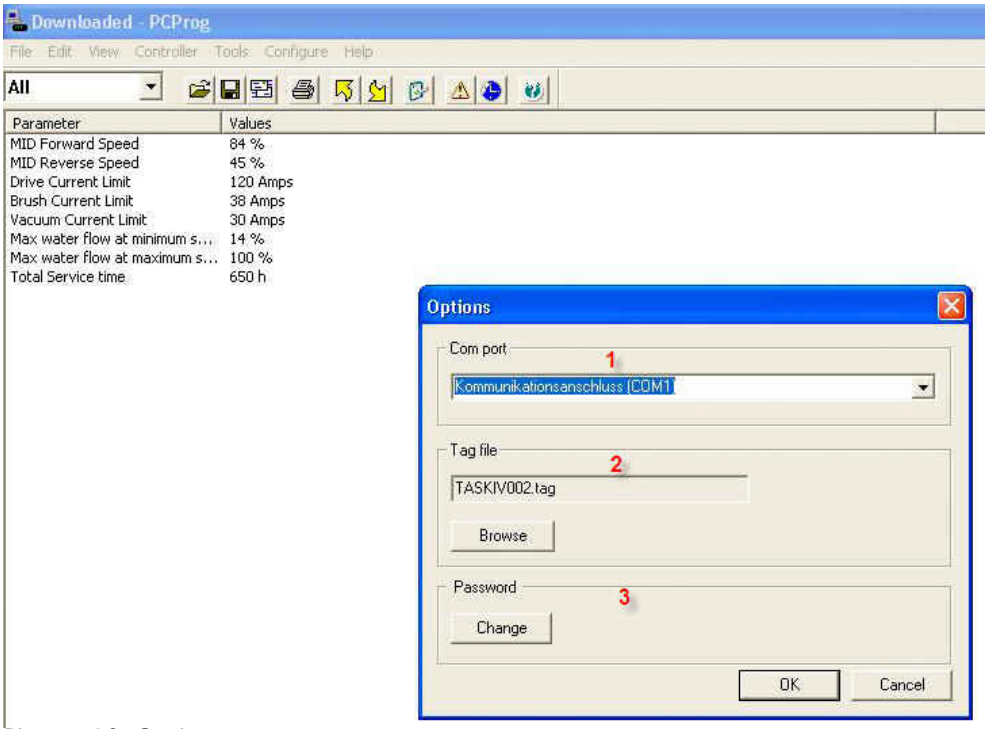
2 COUNT:
Shows the amount of times an ERROR occurred: The maximum count is 255.

3 TRIP:
Short description of the meaning of the ERROR code.

Remarks

With the “Refresh” button you can reload the log buffer. With the “Clear” button you can clear the log buffer with “OK” you close the window.

Options



Picture 10: Options

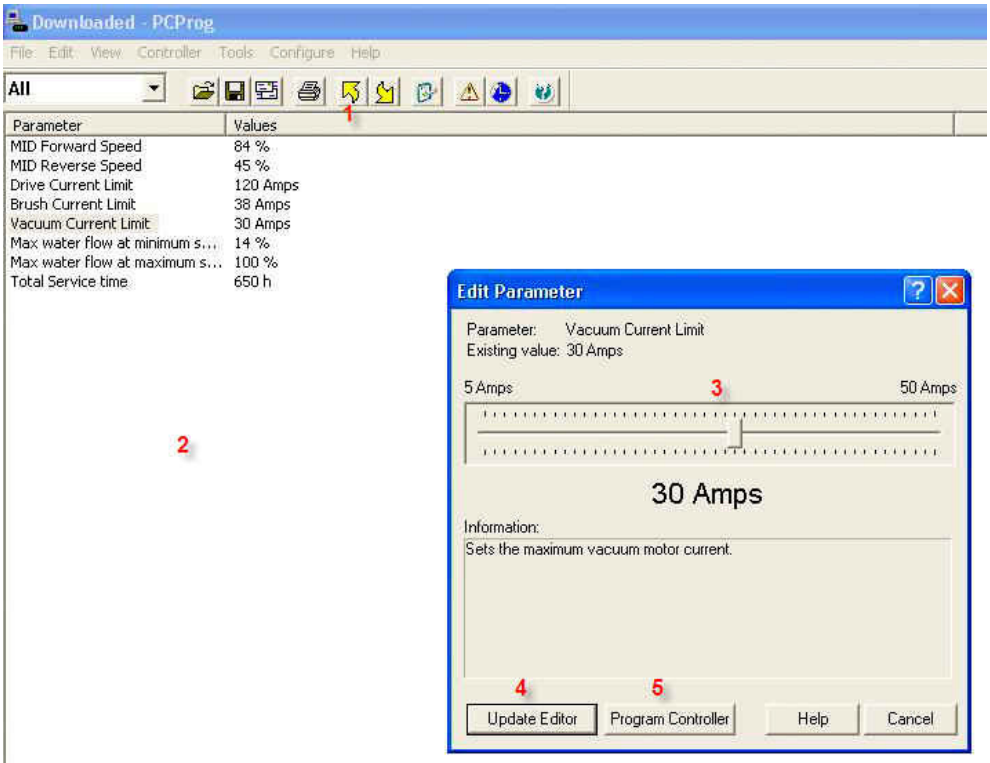
In the case that you have to use a USB port you will have to change the COM port in the above shown window under “Com port”.

1 Com port:
Select the communication port you wish to use.

2 Tag file:
Intended to be used only for developer version of the Service Tool.

3 Password:
Intended to be used only for developer version of the Service Tool.

2.4.3.5 Editing parameters



Picture 11: Editing parameters

1 Write to controller:
Writes the current data from the “EDITOR” to the controller.

2 Editor display:
Shows the set values that will be down loaded to the controller in case of a “write to controller” action.

3 Slide bar:
Here you can set the value that you wish to download to the controller.

4 Update Editor:
Writes the set value to the editor.

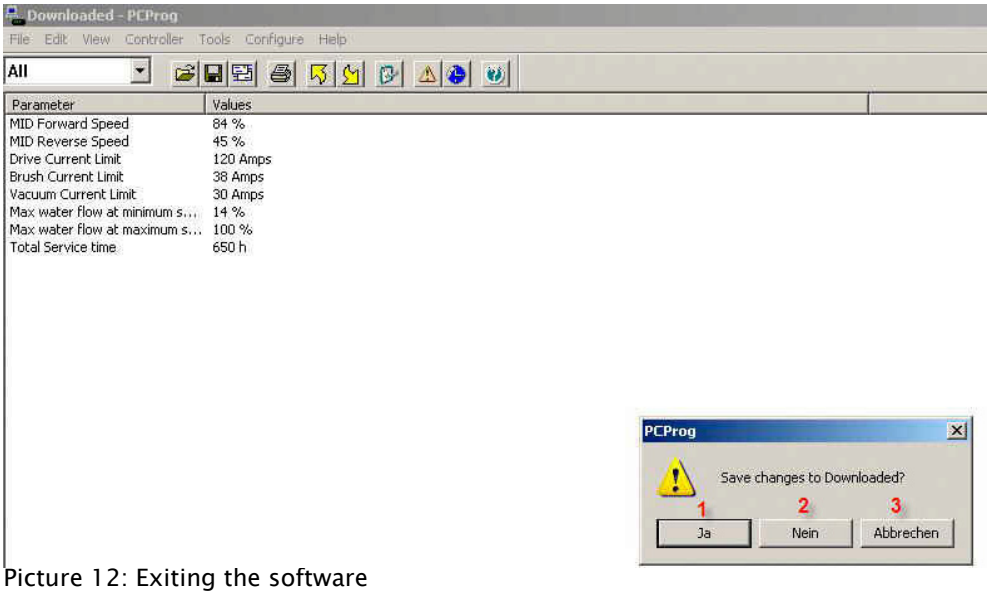
5 Program controller:
Writes the set value to the controller.

To ensure that the data is written down to the controller you MUST use the write to controller button (1).

2.4.3.6 Handling single parameters

If you only want to see the specific parameter from one aggregate, then select the required parameter from the drop down menu.

2.4.3.7 Exiting the Service Tool



Picture 12: Exiting the software

1 Ja: Yes
2 Nein: No
3 Abbrechen: Cancel

When closing the Service Tool, you will be asked whether or not you want to save the parameters on the PC. According to your wish select “Yes”, “No” or “Cancel”.

2.5 Explanation of parameters

Parameters	Default values	Min.	Max.	Remarks
Mid Forward Speed	84%	0%	100%	Set maximum speed for forward direction
Mid Reverse Speed	45%	0%	100%	Set maximum speed for backwards direction
Drive Current Limit	120A	20A	150A	Set error level for max. current on drive motor
Brush Current Limit	38A	10A	100A	Set error level for max. current on brush motor
Vacuum Current Limit	30A	5A	50A	Set error level for max. current on vacuum motor
Max. water flow at minimum speed	14%	0%	100%	Adjust the amount of solution used at min. speed
Max. water flow at maximum speed	100%	0%	100%	Adjust the amount of solution used at max. speed
Total Service time	650h	0h	10000h	Set service timer (when the service LED should turn on)

Table 1: Parameter explanation

2.6 Additional information

2.6.1 Turtle mode

The turtle mode is always 50% of the maximum speed, regardless of the “Mid Forward Speed” setting.

2.7 ERROR code list

2.7.1 Scrubber System Faults External to TRIO+

2.7.1.1 Error code group

- 00XX EPROM
- 01XX EPROM
- 02XX EPROM
- 07XX Foil keyboard control
- 08XX Throttle
- 0AXX Battery/EPROM/Processor/ Firmware
- 0BXX EPROM/Processor/Firmware
- 13XX Over current P2 plug
- 14XX Short circuit P2 plug
- 15XX Solenoid breaks
- 16XX Battery
- 17XX Internal relays
- 18XX Processor
- 1BXX Processor
- 1DXX Parameter list
- 1EXX Switch-OFF sequence
- 21XX Processor/Firmware
- 2CXX Battery
- 2FXX Throttle adjustment
- 31XX Short circuit P2 plug/traction/ internal
- 32XX Processor/EPROM
- 36XX Processor
- 3AXX Optometry conflict
- 75XX LCD communication
- 76XX Brush motor
- 77XX Brush motor
- 78XX Traction motor
- 79XX Short circuit P3 plug
- 80XX Service mode

2.7.1.2 Error codes

00XX EPROM

Fault description	Corrective action	0003								
A controller error has been detected.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.	X								

Table 2: 00XX EPROM

01XX EPROM

Fault description	Corrective action	0100								
A controller error has been detected.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.	X								

Table 3: 01XX EPROM

02XX EPROM

Fault description	Corrective action	0204									
A controller error has been detected.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.	X									

Table 4: 02XX EPROM

07XX Foil keyboard control

Fault description	Corrective action	0706									
A fault has been detected on the input switch wiring.	Check for shorts on foil keyboard and tank level signal wiring. Check for contamination on connectors. Check brush deck position potentiometer.	X									

Table 5: 07XX Foil keyboard control

08XX Throttle

Fault description	Corrective action	0811	0812	0813	0814	0815	0816	0817	0818		
A throttle error has been detected.	Check throttle wiring for short, or open circuits. Repair, or replace as necessary. If the problem persists, try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.	X	X	X							
A throttle error has been detected.	Check throttle wiring for short, or open circuits. Repair, or replace as necessary. If the problem persists, try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.				X	X	X	X			
2 active throttle signals have been detected by both the controller and LCD modules.	Check for foreign objects / contamination of 3-way connector on LCD module.								X		

Table 6: 08XX Throttle

0AXX Battery/EPROM/Processor/Firmware

Fault description	Corrective action	0A01									
A loss of power has been detected.	Check battery connections. Re-cycle power.	X									

Table 7: 0AXX Battery/EPROM/Processor/Firmware

0BXX EPROM/Processor/Firmware

Fault description	Corrective action	0B02	0B0B								
A possible controller fault has been detected.	Disconnected batteries, wait for 30 seconds then reapply power and switch on. If the fault persists, then replace the controller	X	X								

Table 8: 0BXX EPROM/Processor/Firmware

13XX Over current P2 plug

Fault description	Corrective action	1311	1312	1313	1314	1318	131C	1321	1322	1331	1332
Excessive current has been detected on the brush unit linear drive output, the peak current has exceeded 21A.	Check if brush unit is not jammed or damaged, also check the brush unit linear drive wiring, then cycle power.	X									
Excessive current has been detected on the squeegee linear drive output, the peak current has exceeded 21A.	Check if squeegee is not jammed, or damaged, also check the squeegee linear drive wiring, then cycle power.		X								
Excessive current has been detected on the pump output.	This could be related to a faulty pump, or it's associated wiring. Check for a blockage, or obstruction in pipes.			X							
Excessive current has been detected on the magnetic valve output.	This could be related to a faulty magnetic valve, or it's associated wiring. Check for a blockage, or obstruction in pipes.				X						
Excessive current has been detected on the warning beacon.	Check for a faulty beacon, or it's associated wiring.					X					

Table 9: 13XX Over current P2 plug

Fault description	Corrective action	1311	1312	1313	1314	1318	131C	1321	1322	1331	1332
Excessive current has been detected on the alarm circuit output.	This output signal, which operates an alarm, has exceeded 2 Amps. Check for a faulty device, or it's associated wiring.						X				
Excessive current has been detected on the brush unit linear drive output.	12 Amps has been detected for more than 1 second on the brush unit linear drive output. Check if brush unit deck is not jammed, or damaged. Check associated wiring.							X			
Excessive current has been detected on the squeegee linear drive output.	12 Amps has been detected for more than 1 second on the squeegee linear drive output. Check if squeegee linear drive is not jammed or damaged. Check associated wiring.								X		
Excessive current has been detected on the internal traction relay.	Check for short circuits on the traction wiring. If the problem persists, then replace the controller									X	
Excessive current has been detected on the internal output relay.	Check for short circuits on all of the output wiring. If the problem persists then replace the controller.										X

Table 9: 13XX Over current P2 plug

14XX Short circuit P2 plug

Fault description	Corrective action	1411	1412	1413	1414						
The brush unit linear drive, has been detected as being shorted to +ve.	Check for contamination on the actuator connections. Check for a short circuit in the wiring harness.	X									
The brush unit linear drive, has been detected as being shorted to 0V.	Check for contamination on the actuator connections. Check for a short circuit in the wiring harness.		X								
The squeegee linear drive has been detected as being shorted to +ve.	Check for contamination on the actuator connections. Check for a short circuit in the wiring harness.			X							
The squeegee linear drive has been detected as being shorted to 0V.	Check for contamination on the actuator connections. Check for a short circuit in the wiring harness.				X						

Table 10: 14XX Short circuit P2 plug

15XX Solenoid breaks

Fault description	Corrective action	1500	1507								
A fault has been detected with the solenoid brake.	Check wiring to the solenoid brake. Repair or replace as necessary.	X									
Excessive current on the solenoid brake has been detected.	Check wiring to the solenoid brake. Repair or replace as necessary.		X								

Table 11: 15XX Solenoid breaks

16XX Battery

Fault description	Corrective action	1600									
The battery voltage has been detected as too high.	Check if the battery is overcharged or damaged. Check all battery cabling and connections are in good order. Disconnect the charger if connected.	X									

Table 12: 16XX Battery

17XX Internal relays

Fault description	Corrective action	1704	1705	1706							
A possible controller fault has been detected.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.	X									
A possible controller fault has been detected. Traction relay check failed.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.		X								
A possible controller fault has been detected. Brush & vacuum relay check failed.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.			X							

Table 13: 17XX Internal relays

18XX Processor

Fault description	Corrective action	1800	1802								
A possible controller fault has been detected.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller	X	X								

Table 14: 18XX Processor

1BXX Processor

Fault description	Corrective action	1B20	1B21								
A possible controller fault has been detected.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.	X									
A possible controller fault has been detected.	Check squeegee is not jammed, or damaged, also check the actuator wiring, then cycle power.		X								

Table 15: 1BXX Processor

1DXX Parameter list

Fault description	Corrective action	1D02									
The controller has been successfully re-programmed.	Power cycle to resume operation.	X									

Table 16: 1DXX Parameter list

1EXX Switch-OFF sequence

Fault description	Corrective action	1E03	1E04	1E06							
An inhibit has been activated.	Fix whatever condition is causing the inhibit signal. This could be related to the interface box, solution or waste water sensor.	X	X								
An active inhibit has been detected, or there could be a fault.	Fix whatever condition is causing the inhibit signal. This could be related to the interface box, solution or waste water sensor. Check switch wiring to ensure.			X							

Table 17: 1EXX Switch-OFF sequence

21XX Processor/Firmware

Fault description	Corrective action	2102	2103								
A possible controller fault has been detected.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.										

Table 18: 21XX Processor/Firmware

2CXX Battery

Fault description	Corrective action	2C00	2C01								
The battery voltage has been detected as being too low. The threshold for this test is 16V.	Check condition of batteries and ensure the cabling is in good order. Charge batteries.										
The battery voltage has been detected as being too low. The threshold for this test is 14V.	Check condition of batteries and ensure the cabling is in good order. Charge batteries.										

Table 19: 2CXX Battery

2FXX Throttle adjustment

Fault description	Corrective action	2F01									
The throttle has been detected as being displaced at start-up.	Power cycle ensuring that the throttle is in the neutral position.	X									

Table 20: 2FXX Throttle adjustment

31XX Short circuit P2 plug/traction/internal

Fault description	Corrective action	3100	3101	3102	3104						
A possible controller fault has been detected.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.	X	X	X	X						

Table 21: 31XX Short circuit P2 plug/traction/internal

32XX Processor/EPROM

Fault description	Corrective action	3200	3201	3210	3211	3213	3214				
A possible controller fault has been detected.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.	X	X	X	X	X					
A possible controller fault has been detected.	Fix whatever condition is causing the inhibit signal. This could be related to the dirty water tank full switch, or the clean water tank empty switch.						X				

Table 22: 32XX Processor/EPROM

36XX Processor

Fault description	Corrective action	3601	3602	3603	3608	3609	360A	360B	360C	360D	360E
A possible controller fault has been detected.	Try disconnecting the batteries, wait for 30 seconds, then reapply power and switch on. If the fault is still exhibited, then replace the controller.	X	X	X	X	X	X	X	X	X	X

Table 23: 36XX Processor

3AXX Parameter conflict

Fault description	Corrective action	3A00									
A parameter has been programmed with an illegal value.	Program controller with default factory parameter file and power cycle.	X									

Table 24: 3AXX Parameter conflict

75XX LCD communication

Fault description	Corrective action	7500									
The communications have timed out between the Trio+ and LCD Modules.	Check wiring and connections between the Trio+ and LCD module. If the fault persists, then replace the Trio+ or LCD module.	X									

Table 25: 75XX LCD communication

76XX Brush motor

Fault description	Corrective action	7600	7601	7602	7603	7604	7605				
The brush motor has been detected as open circuit.	Check brush motor connections and wiring. Check motor carbon brushes.	X									
Excessive brush current has been detected.	Check brush unit for foreign objects. Check brush motors rotate freely. Check brush motors for binding, or bent shafts. Check operation of deck raise and lower.		X	X	X						
Inhibit 2 active. This is likely to be inhibiting the brushes.	This is a warning to indicate that an inhibit is active. Check positioning and wiring of the inhibit switch.					X					
Excessive brush current detected on start-up.	Check brush unit for foreign objects. Check brush motors rotate freely. Check brush motors for binding, or bent shafts. Check operation of brush unit raise and lower.						X				

Table 26: 76XX Brush motor

77XX Vacuum motor

Fault description	Corrective action	7700	7701	7702	7703						
The vacuum motor has been detected as open circuit.	Check vacuum motor connector is correctly inserted. Check vacuum motor and wiring for continuity. Check motor carbon brushes.	X									

Table 27: 77XX Vacuum motor

Fault description	Corrective action	7700	7701	7702	7703						
Excessive vacuum current has been detected.	Check vacuum motor for obstructions or blockages. Check vacuum motor rotates freely. Check motor for binding or bent shafts.		X								
Excessive vacuum current has been detected.	Check vacuum motor and wiring for short circuits. Check motor rotates freely.			X	X						

Table 27: 77XX Vacuum motor

78XX Traction motor

Fault description	Corrective action	7800	7801	7802	7803	7880					
The traction motor has been detected as open circuit on start-up.	Check connections to traction motor.	X									
Excessive traction current detected.	Check traction motor and wiring for short circuit.		X								
Traction motor output is in foldback.	Check vehicle is not overloaded, or being driven on too steep an incline. Check traction motor for obstructions. Check traction motor rotates freely. Check motor for binding or bent shafts.			X							
Internal signals relating to the traction motor drive have become unreliable. Likely to be caused by noise.	Check connections to the traction motor. If the fault is still exhibited, then replace the controller.				X						
Traction speed switch inputs are not at the expected levels.	Check wiring to the traction speed selection switch.					X					

Table 28: 78XX Traction motor

79XX Short circuit P3 plug

Fault description	Corrective action	7900	7901								
Emergency Stop input has been activated.	Check wiring to the E-Stop switch.	X									
Belly button has been activated.	Check wiring to the belly button switch.		X								

Table 29: 79XX Short circuit P3 plug

80XX Service mode

Fault description	Corrective action	8000									
Indicates successful activation of the service mode.	Power cycle to exit service mode.	X									

Table 30: 80XX Service mode

TASKI Service Tool

3 Revision

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3 Revision

Date	Chapter	Content	Description	Revision
30.04.2010	6	swingo 2500/3500 V2	New error code list	V1.10
30.04.2010	6	swingo 2500/3500 V2	USB adapter picture removed	V1.10
27.07.2010	all	all	Using FM9	V1.10
09.11.2010	5	swingo 350/755/855/1255	Adjusted General chapter	V1.20
10.11.2010	5	swingo 350/755/855/1255	Added TASKI swingo 350	V1.20
11.11.2010	6	swingo 2500/3500 V2	Adjusted vacuum motor in error list	V1.20
11.11.2010	all	all	new TASKI logo	V1.20
16.02.2011	all	all	Separated from whole book, only 2500/3500	V2.00
18.02.2011		Forward, Elementary	Removed as not necessary for each description	V2.00

Table 1: Revision

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4 Glossary

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5 Notes

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