

Document Title: VCADS Pro, Operations	Function Group: 900	Information Type: Service Information	Date: 2014/4/28
Profile: WLO, L180G [GB]			

VCADS Pro, Operations

The following VCADS Pro operations are available for function group 9. Operations used when changing or working on components are mandatory.

Operation	Application
90001-3 MID 249 ECU, programming	When changing ECU or only reprogramming
90002-3 MID 249 ECU, campaign	Used when there is a campaign on HW or SW.
91202-3 Lift/Lower, calibration complete	The operation is used for calibrating the lift/lowering function. The operation should be performed when some of the following components have been replaced: Proportional valve, main slides in valves, springs for valve slides, valve housing, complete valve house. Or with incorrect lever response.
91203-3 End position Lift/Lowering, calibration	The operation is used for calibrating the lift/lowering end positions. The operation should be performed when the following components have been replaced or adjusted: Angle sensor for the lifting arms.
91204-3 Tilt In/Out, calibration complete	The operation is used for calibrating the tilt function. The operation should be performed when some of the following components have been replaced: Proportional valve, main slides in valves, springs for valve slides, valve housing, complete valve house. Or with incorrect lever response.
91205-3 End position Tilt In/Out, calibration	The operation is used for calibrating the tilt end positions. The operation is to be performed when some of the following components have been replaced or adjusted: Angle sensor for the lifting arms, angle sensor for the tilt.
91310-3 Hydraulic pump P3, hydraulic pressure, adjust	The purpose of the operation is to by controlling the hydraulic pump P3, make it possible to adjust the stand by pressure or the maximum pressure.
91311-3 LS (load sensing) pressure, sensor value, check	The operations reads the LS-pressure (Load sensing pressure) the sensor signal voltage and power supply.
91402-3 Electric servo Lift-/Lower, test	The purpose of the test is to check the function of the components and connections used in the lift/lower function.
91403-3 Electric servo Tilt In-/Out, test	The purpose of the test is to check the function of the components and connections used in the tilt function.
91404-3 Electric servo 3:rd function, test	The purpose of the test is to check the function of the components and connections included in the 3rd function.
91405-3 Electric servo 4:th function, test	The purpose of the test is to check the function of the components and connections included in the 4th function.
91408-3 Angle sensor values, lift and tilt function check	The purpose of this test is to see the dependence between lift and tilt function and to check that the angle sensor registers the angle change when the function changes position
91411-3 Float position function, current, check	Float position function, current, check is used to check the current required to activate float position.
91601-3 3:rd function, calibration	The operation is used for calibrating the 3:rd function. The operation should be performed when some of the following components have been replaced: Proportional valve, main slides in valves, springs for valve slides, valve housing, complete valve house. Or with incorrect lever response.
91602-3 4:th function, calibration	The operation is used for calibrating the 4:th function. The operation should be performed when some of the following components have been replaced:

Proportional valve, main slides in valves, springs for valve slides, valve housing, complete valve house. Or with incorrect lever response.

92402-3 Attachment lock, test	The purpose of the test is to check the function of the switch and solenoid valve for the attachment lock.
91207-3 Lift and lower function, current values, adjust	This operation makes it possible to make individual adjustments between Min and Max values for start and end currents.
91208-3 Tilt function, current values, adjust	This operation makes it possible to make individual adjustments between Min and Max values for start and end currents.
91611-3 3rd function, current values, adjust	This operation makes it possible to make individual adjustments between Min and Max values for start and end currents.
91612-3 4th function, current values, adjust	This operation makes it possible to make individual adjustments between Min and Max values for start and end currents.

Document Title: Hydraulic system, bleeding	Function Group: 900	Information Type: Service Information	Date: 2014/4/28
Profile: WLO, L180G [GB]			

Hydraulic system, bleeding

Op nbr 900-002

To be considered after replacing hydraulic components:

1. The hydraulic oil tank must be inspected and cleaned from any contaminants.
2. Clean the return oil filter magnetic rod (if applicable).
3. The return oil filter should be inspected and changed if the filter has visible impurities. If the operating time of the machine is over 50% of the normal filter change interval, replace the filter.
4. All hydraulic oil, new and recycled, must be filled via the hydraulic oil tank return filter. In order to be able to re-use the oil, it must be entirely free from debris and contaminants.

WARNING

Hot hydraulic oil and hydraulic oil under pressure may result in severe personal injuries

1. Start the engine and run it at **low idling speed** for approximately 15 minutes without activating hydraulic functions.
2. Carefully actuate all working-hydraulics functions a few times using small lever movements with the engine running at low idling speed.

NOTE!

The hydraulic cylinders should not be operated against their end-of-stroke positions.

3. Raise the boom to its upper end position, without building up pressure.

NOTE!

It is very important that pressure is not built up even though the function is operated to its end position.

4. Lower the boom.
5. Raise the boom until the tilting cylinder is horizontal to the ground.
6. Carefully tilt fully inward without building up a pressure.
7. Turn off the engine.
Fill hydraulic oil in the hydraulic oil tank, if required.
If air bubbles are visible in the tank, leave the engine off for approx. ten minutes.

8. Bleed the brakes, see [520 Brake system, bleeding](#).

9. Raise the boom fully and tilt fully outward.

NOTE!

If the lift cylinders or several components in the hydraulic system have been drained of all hydraulic oil, then the lift cylinders must be bled using the air bleed nipples on the cylinders (1 nipple per cylinder).

10. Lower the boom and stop the engine.
Leave the engine turned off for approx. ten minutes and fill oil in the hydraulic oil tank, if required.
11. Start the engine.
Bleed the steering valve by turning the steering wheel until the machine steers properly.

12. Turn the steering wheel fully to the right respectively the left several times.
13. Stop the engine and leave it turned off for at least 15 minutes.

Test-running

14. Start the engine and run it at **low idling speed**.
Tilt inward and outward until air bubbles are no longer visible in the hydraulic oil tank sight glass.
15. Raise and lower the boom until air bubbles are no longer visible in the hydraulic oil tank sight glass.
16. Increase the engine speed to **high idling speed**.
Carefully test all hydraulic functions (lifting, tilting, steering and brakes) in order to slowly building up pressure in the hydraulic system.
17. If needed, check and adjust standby pressure and working pressure for the hydraulic oil pumps, see [913 Hydraulic pump, checking and adjusting standby pressure and working pressure](#) and [913 Hydraulic pump P3, checking function](#).

Document Title: V2-ECU, MID 249, changing non-programmed ECU	Function Group: 900	Information Type: Service Information	Date: 2014/4/28
Profile: WLO, L180G [GB]			

V2-ECU, MID 249, changing non-programmed ECU

Op nbr 900-031

[VCADS Pro VCADS Pro Service Tool](#)

[88890180 Interface](#)

[88890027 Cable](#)

1. Place the machine in service position 1, see [191 Service position](#).
2. Fold the back-rest forward and remove the rear cab panel.
3. Connect VCADS Pro and run operation 90001-3 MID 249 ECU, programming.
4. Disconnect the connectors from the V2 ECU.

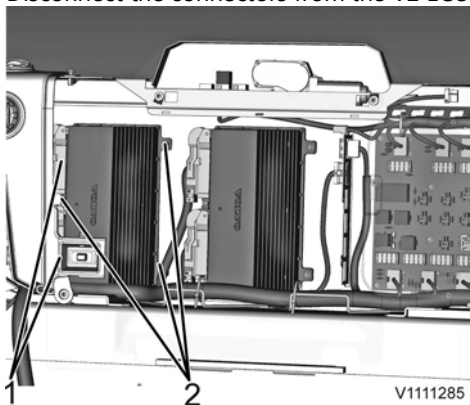


Figure 1

1. Connectors
 2. Bolts
5. Replace the V2 ECU.
 6. Connect the connectors to the V2 ECU.
 7. Turn on the voltage with the battery disconnecter.
 8. Finish the VCADS Pro operation 90001-3 MID 249 ECU, programming.
 9. Run function checks according to [660 Lever steering \(CDC\), functional check](#), [912 Lifting and lowering function](#), [912 Tilt, functional check](#), [916 3rd/4th hydraulic, functional check](#)
 10. Restore the machine.

Document Title: V2-ECU, MID 249, changing pre-programmed ECU	Function Group: 900	Information Type: Service Information	Date: 2014/4/28
Profile: WLO, L180G [GB]			

V2-ECU, MID 249, changing pre-programmed ECU

Op nbr 900-032

[VCADS Pro VCADS Pro Service Tool](#)
[88890180 Interface](#)

1. Place the machine on level ground.
2. The new control unit has basically adjusted parameters for the machine. If it is possible to read out customer parameters, connect VCADS Pro and run the operation VCADS Pro, 17030-3 - Parameter, programming. Save all read parameters to job card.
The operation is used for reading out customer parameters from the old control unit in order to be able to compare with parameters in the new control unit.
3. Check that the start key is in position 0.
4. Fold the backrest forward and remove the rear panel in the cab.
5. Remove the V2-ECU by loosening the screw between the connectors and completely removing the other two screws.

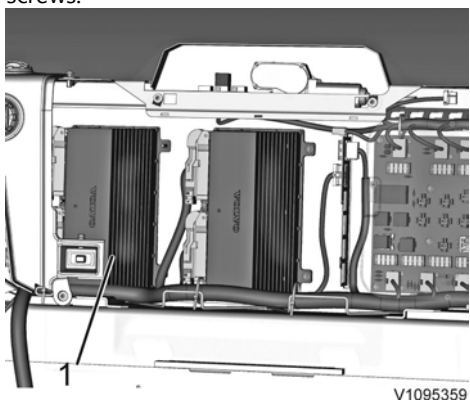


Figure 1

1. V2-ECU
6. Install the new V2-ECU and its connectors.
7. Turn the start key to position 1.
8. If it was possible to read out customer parameters from the old control unit, these shall be compared to the parameters in the new control unit.
 - Connect VCADS Pro and run operation 17030-3 Parameter, programming. Save all read parameters to job card.
 - Compare the parameter settings on the job cards.
 - Run the operation 17030-3 Parameter, programming and change customer parameters according to job

cards for the old control unit.

9. Reinstall the rear panel.
10. Run function checks according to [660 Lever steering \(CDC\), functional check](#), [912 Lift, functional check](#), [912 Tilt, functional check](#), [916 3rd/4th hydraulic, functional check](#).

Document Title: Error codes when calibrating	Function Group: 910	Information Type: Service Information	Date: 2014/4/28
Profile: WLO, L180G [GB]			

Error codes when calibrating

During calibration with the VCADS Pro service tool, the error codes listed below may occur. Check **Service Bulletins** in FGI 366 to make sure that the machine has the correct software and hardware configuration.

Error code	Error code description	Possible cause	Check/Action
Cal 001	The lever lockout is activated.	The action is performed incorrectly. The lever lock is defective.	Check the lever lock, see Check-measuring or I/O-list
Cal 002	The lever was not moved far enough.	The action is performed incorrectly. The lever for the function in question is defective.	Check the lever and cable harness for the function in question, see <ul style="list-style-type: none"> ○ Lift/lower, 302 FX1024, description and measuring ○ Tilt, 302 FX1025, description and measuring ○ 3rd function, 302 SE9147, description and measuring ○ 4th function, 302 SE9148, description and measuring ○ Comfort Drive Control, CDC (lever steering), 302 SE6601, description and measuring
Cal 003	The lever was moved in the wrong direction.	The action is performed incorrectly.	
Cal 004	The lever was released during the test.	The action is performed incorrectly.	
Cal 005	The lever for the function in question is defective.	The lever for the function in question is defective.	Check the lever and cable harness for the function in question, see <ul style="list-style-type: none"> ○ Lift/lower, 302 FX1024, description and measuring ○ Tilt, 302 FX1025, description and measuring ○ 3rd function, 302 SE9147, description and measuring

- 4th function, [302 SE9148, description and measuring](#)
- Comfort Drive Control, CDC (lever steering), [302 SE6601, description and measuring](#)

Cal 006	All levers are not in neutral position.	One of the levers does not return to middle position because it is binding or blocked.	<p>Check the levers' position using the following operations in VCADS Pro. If the machine is equipped with Comfort Drive Control, CDC (lever steering), that lever should also be checked.</p> <ul style="list-style-type: none"> ○ Lift/lower, 91402-3 Electric servo Lift-/Lower, test . ○ Tilt, 91403-3 Electric servo Tilt In-/Out, test . ○ 3rd function, 91404-3 Electric servo 3:rd function, test . ○ 4th function, 91405-3 Electric servo 4:th function, test . ○ Comfort Drive Control, CDC (lever steering), 64595-3 Electric servo lever steering, test. <p>for CDC: If the machine is equipped with electric servo, also check the position of these levers.</p>
Cal 007	The function is missing in the control unit.	Internal error in the ECU or incorrect parameter value.	<p>Reprogram the control unit, see 90001-3 MID 249 ECU, programming in VCADS Pro. If the problem remains, replace the control unit, see 900 V2-ECU, MID 249, changing non-programmed ECU or 900 V2-ECU, MID 249, changing pre-programmed ECU .</p>
Cal 008	The test item is missing in the test.	Internal error in the ECU or in the software.	<p>Reprogram the control unit, see 90001-3 MID 249 ECU, programming in VCADS Pro. If the problem remains, replace the control unit, see 900 V2-ECU, MID 249, changing non-programmed ECU or 900 V2-ECU, MID 249, changing pre-programmed ECU .</p>
Cal 009	Incorrect signal from the LS pressure sensor.	The sensor or sensor's cable harness is defective or damaged.	<p>Check the sensor and the cable harness, see 302 SE9119, description and measuring .</p>

Cal 010	Incorrect signal from lift/lower function's angle sensor.	The sensor or sensor's cable harness is defective or damaged.	Check the sensor and the cable harness, see 302 SE9116, description and measuring .
Cal 011	Incorrect signal from the tilt function's angle sensor.	The sensor or sensor's cable harness is defective or damaged.	Check the sensor and the cable harness, see 302 SE9117, description and measuring .
Cal 013	Too high LS-pressure is registered when the test is started.	Malfunction/defect in the hydraulic system that causes a too high LS-pressure.	Check the LS-sensor and the cable harness, see 302 SE9117, description and measuring Check PWM-valve for function in question Check LS-pressure with VCADS Pro test no., 91402-3 Electric servo lift/lower, test.
Cal 015	The test was started at an incorrect starting point.	The action is performed incorrectly. The function was not in end-position, may be clearance in the angle sensor. Incorrect signal from angle sensor.	Check the sensor and cable harness for the function in question, see <ul style="list-style-type: none"> ○ Lift/lower, 302 SE9116, description and measuring ○ Tilt, 302 SE9117, description and measuring ○ Comfort Drive Control, CDC (lever steering), 302 SE6401, description and measuring
Cal 016	Sufficiently high LS-pressure has not been reached during the test.	Malfunction/defect in the hydraulic system that causes a too low LS-pressure.	Check PWM-valve for function in question. Check the system for LS-pressure. Check LS-pressure with VCADS Pro no., 91402-3 Electric servo lift/lower, test
Cal 017	The current exceeds maximum end current. Sufficiently high LS-pressure has not been reached during the test.	Failure in PWM-valve. Failure in float mode function in the control valve. Malfunction/defect in the hydraulic system that causes a too low LS-pressure.	Check PWM-valve for function in question. Check the system for LS-pressure. Check LS-pressure with VCADS Pro no., 91402-3 Electric servo lift/lower, test
Cal 018	Float mode is not activated within approved current interval.	Failure in float mode function in the control valve.	Check the spring in the control valve for the float mode function. Check the system for LS-pressure.
Cal 019	Lift arms are not within approved test range.	The action is performed incorrectly. Incorrect signal from lift/lower function's angle sensor.	Check the sensor and the cable harness, see 302 SE9116, description and measuring .
Cal 501	Speed of the lift arms is higher in calibration step 2 than in step 1.	Defective spring in solenoid valve.	Repeat test. Check PWM-valve for function in question.

Thank you so much for reading.
Please click the “Buy Now!”
button below to download the
complete manual.



After you pay.

You can download the most
perfect and complete manual in
the world immediately.

Our support email:

ebooklibonline@outlook.com