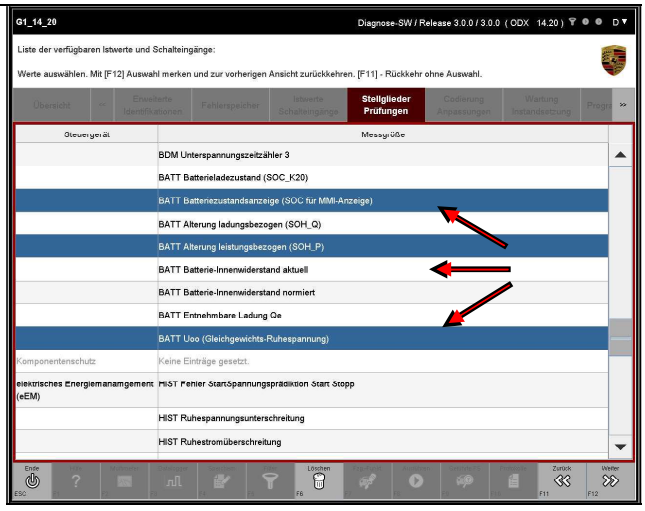
2. All measured variables of the previously in the control unit List or control device overview selected control devices listed. For the / those previously in the function group Actuators / tests selected actuator / routine, individual measured variables are already pre-marked.

   Now click on the measured variables whose measured values are also displayed want to get.

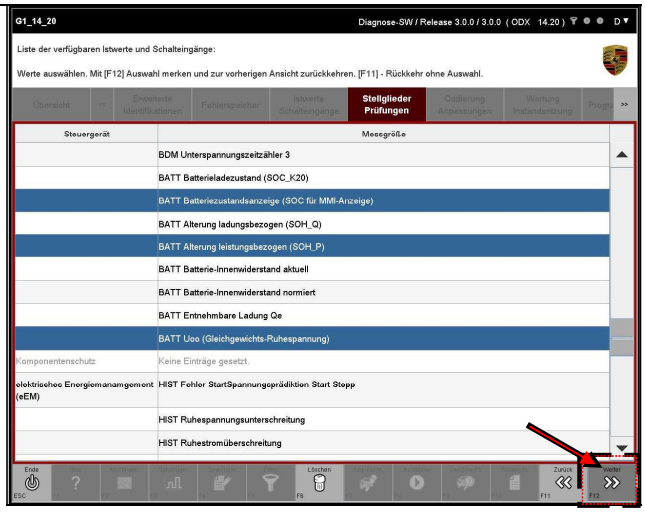


Preselected elements can only be deselected in E mode.
This preselection cannot be deleted in P and V mode. However, you may be able to add further measured variables to this preselection.

3. Then press the <F12> key to accept the selection and return to the screen of the

   Actuators / exams to arrive.

   If you do not want to accept the selection, press the <F11> key. You will then also get to the screen of the Actuators / tests back, but without displaying further measured values. Any selections made are included discarded.



The selection made is stored in a user-specific filter when you confirm with <F12>. This filter is retained even after the diagnostic application is terminated or after a new installation. So if you call up the same control unit again at a later point in time, you will? depending on which control units were selected in the control unit list and in the control unit overview - the last selections made are displayed again on the selection screen.

If you have selected fewer or different control devices in the control device overview, you will be offered either fewer or different selections.

8.6 Coding / adjustments

This chapter describes how you can write codes. In principle, you can choose between manual and automatic coding. The following therefore first describes how to select and activate a coding type. Depending on the selection of the coding type, you then have the option of either performing the coding automatically or first setting individual coding values manually and then writing them.

8.6.1 Action-specific buttons in this function group

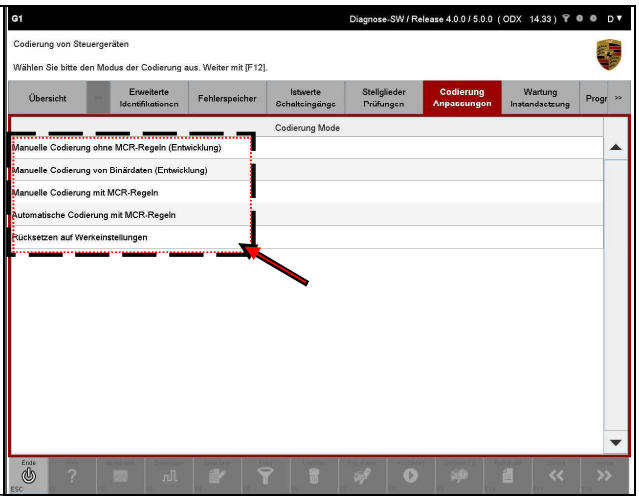
Coding / adjustments			
button	Label	Icon	description
F8	To write		A code is written by pressing the <F8> key. The behavior described applies to the manual coding mode without MCR rules (development).
F8	Save on computer		By pressing the <F8> key, assigned coding values are initially saved temporarily. In the last step, the respective characteristic is finally written. The behavior described applies to all coding modes except manual coding without MCR rules (development).

8.6.2 Display of the coding types

1. Display the list of installed control units and select the desired control units:

   ►See chapter 8.1.

2. Select the function group in the menu bar Coding / adjustments. A list of possible coding modes is displayed.

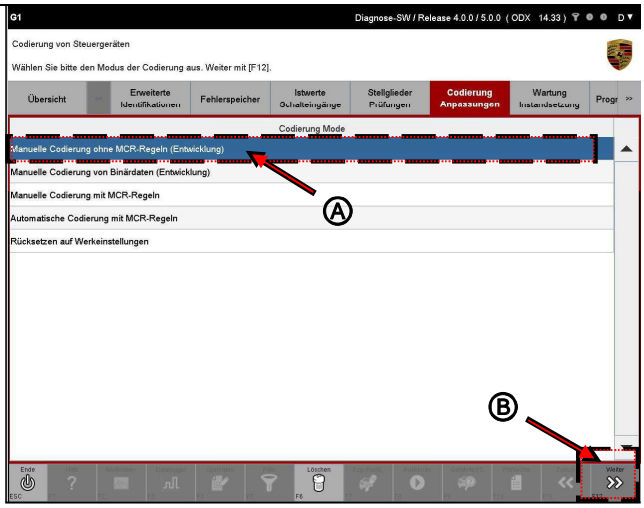


8.6.3 Manual coding without MCR (development)

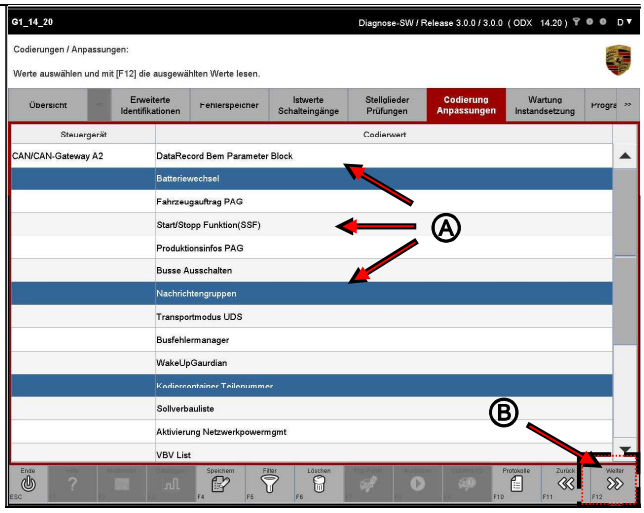
With the coding type Manual coding without MCR (development) you have to set and code the individual coding values yourself, as no MC rules (machine-readable coding rules) are evaluated.

1. Display the list of coding types: See chapter 8.6.2.
   ▶

2. Select the type of codingManual coding without MCR rules (development) (A) and confirm the selection with <F12> (B).

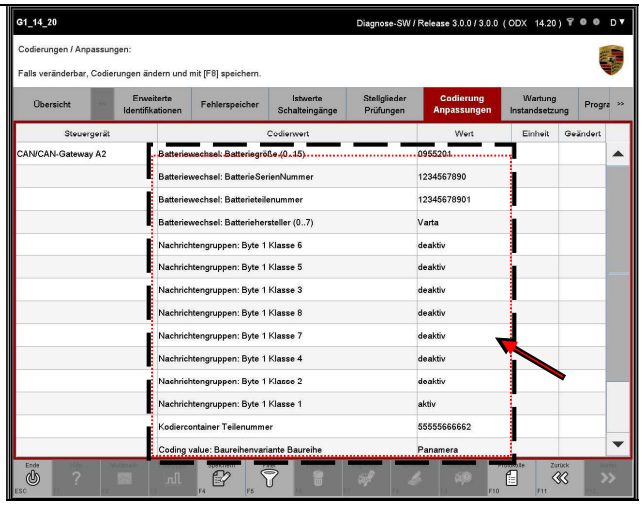


3. You now have the option of selecting individual or all coding values (A). Confirm your selection with <F12> (B).



All coding values of the control unit have been selected for the display and further description. For this purpose, all elements of the list were marked and the selection confirmed with <F12>.

4. A list of possible coding values for the control unit appears.



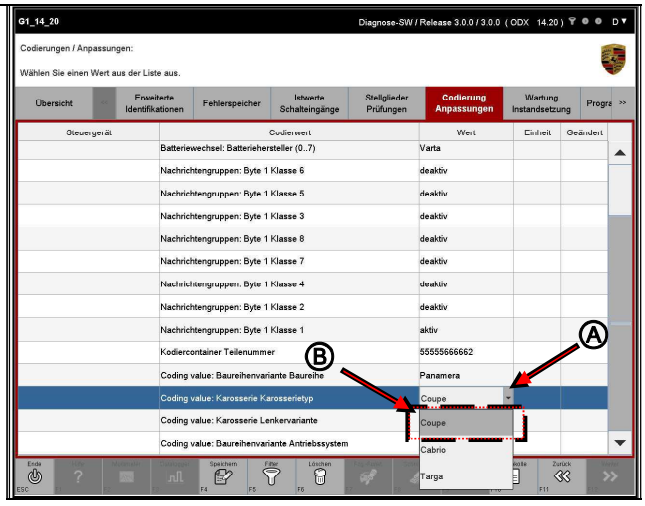
Depending on the type of coding, you can change the coding value in two different ways:

Variant 1: Changing the coding value via a drop-down menu

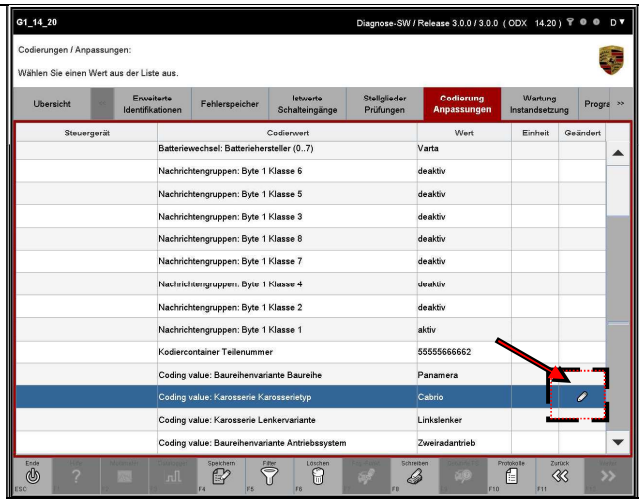
5. If the coding value can be changed and if the selected coding has several fixed coding values, these are listed in a selection menu.

   Click in the value field of the coding (A).

   Select from the drop-down menu that opens offered values select the coding value that you want to write (B).



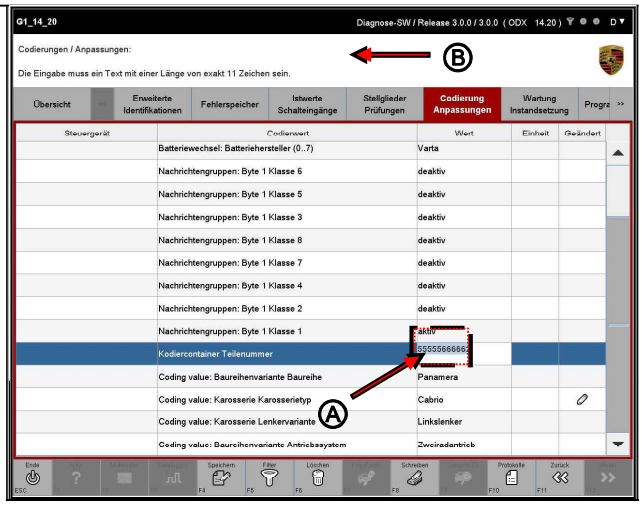
6. A change in value will
by the icon in the column
Changed shown.



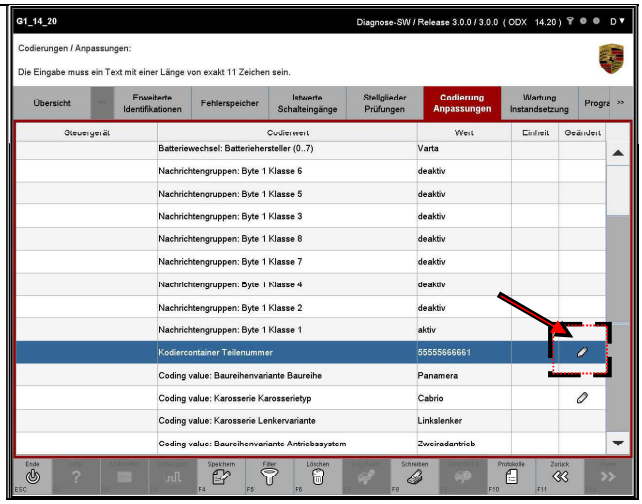
Variant 2: Changing the coding value through manual entry

7. If the coding value cannot be changed via a drop-down menu, however, you can change the coding value by clicking in the coding value field and entering the desired coding value manually (A).

In the information area, you will find help with inputting (B).

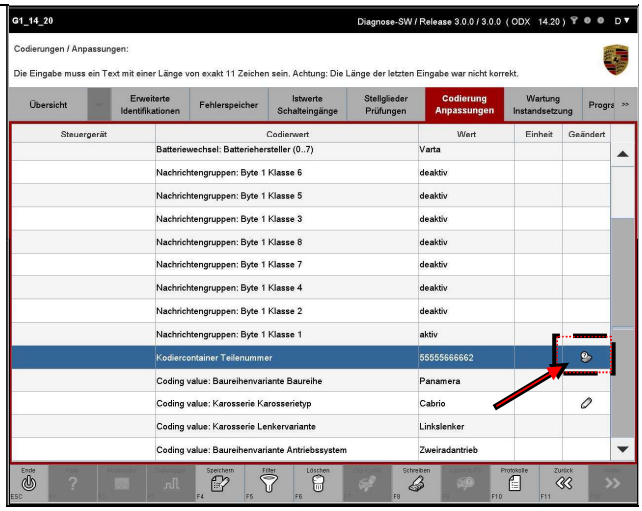


8. A change in value will
by the icon in the column
Changed shown.



Note and tip

9. If the value entry is incorrect, because e.g. B. the format of the value is incorrect, this is indicated by the - Icon in the column Changed displayed and the original value entered again.



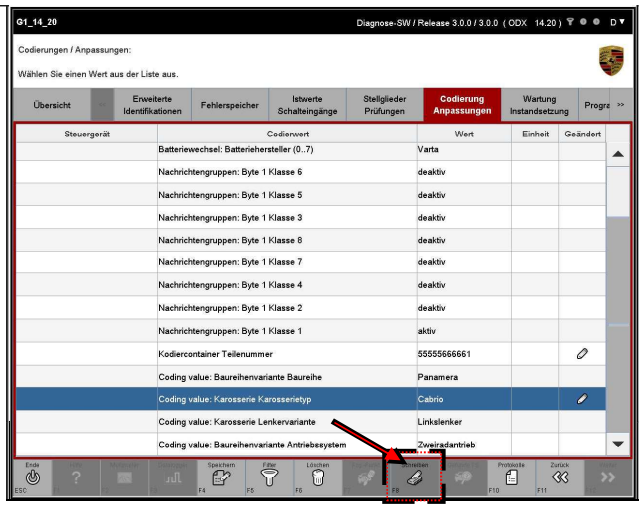
Restoring the original value:

If you want to undo your entry, you have two options:

- They carry the original value of the coding back in the value field a. The identification by the icon next to the value field is turned off.
- You choose a different function group, e.g. B. Overview, and then activate the Coding / Adaptation function group again. All value changes that you have made will be discarded.

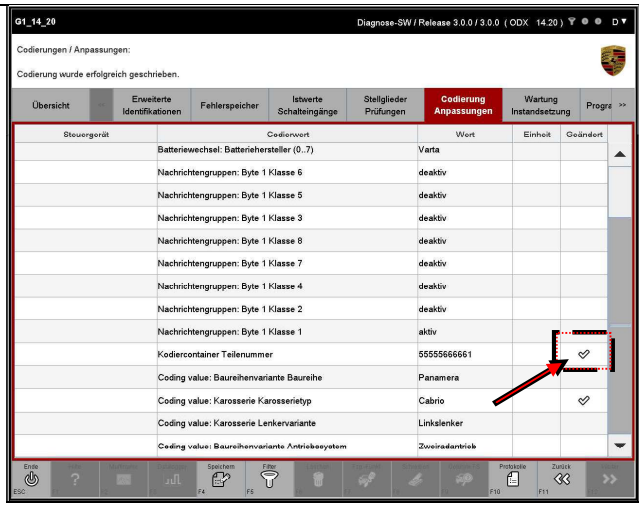
Proceed further

10. To write the changed value of the coding, press the <F8> key.



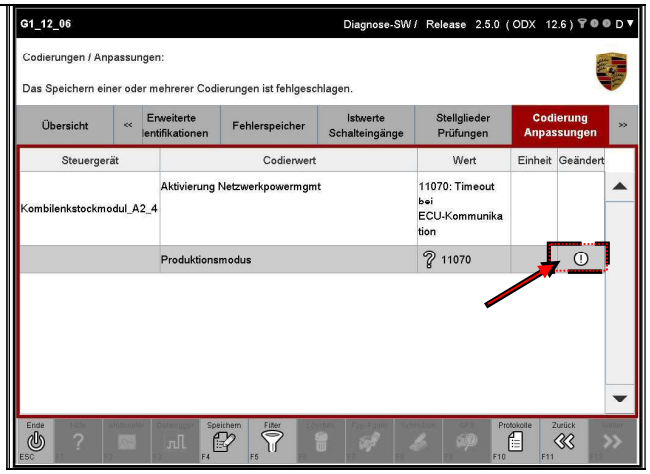
After writing

11. The successful adoption of the new value is confirmed by a ✓?? Icon displayed.



12. If a value of an encoding has not been written successfully, this is indicated by the ⓘ - Icon in the column Changed displayed. If necessary, try to write the value again or call the help function.

    If the message text in the information area is not completely legible due to the lack of space, you can view it by clicking on Details display.



Details of the error description:

The values are checked in part - e.g. B. with texts that are too long - only when writing the coding. In the info area, the information about the reason why the data could not be written is displayed behind the display of the permitted input value.

The information area is currently only updated after changing the selection of the coding marked with an error icon.

Example: If a coding with an error has already been selected, the error description is not shown directly. Only after this line has been deselected and selected again is the reason for the error displayed in the info area.

Some values of the codes are not written in the current state of the control unit display, although no problems are displayed. The reason for this is that the control unit responded positively to a value request, but did not write the value. The cause can here z. B. in a flash memory problem of the control unit.

The value is determined by the runtime system. This is e.g. B. the case with some dates. The date can be changed, but when it is written, the entered value is replaced by the runtime system.

8.6.4 Manual coding with MCR

With the coding type Manual coding with MCR (manual coding with machine-readable coding rules), the required data, which is written into the control unit, is determined via a selection of equipment features. You must also enter some vehicle data by hand in advance. The data to be written are automatically written to the control unit after a subsequent confirmation.

You must enter the following information in one of the following steps:

- ▶ Product key
- ▶ country code
- ▶ Model year

You should therefore have the information you need to hand.

Number groups and their meaning:X:

Exclusive

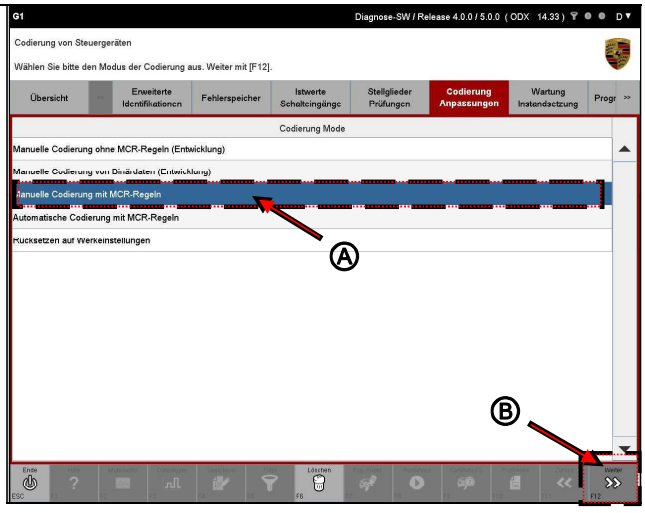
M: Additional equipment

Z: Tequipment

PR: Additional equipment at VW (and model type Cayenne)

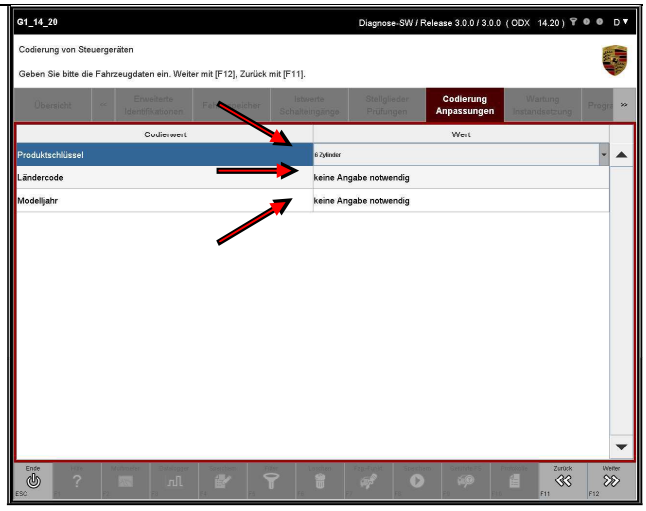
1. Display the list of coding types: See chapter 8.6.2.
   ▶

2. Select the type of coding Manual coding with MCR (A) and confirm your selection by pressing the <F12> (B) key.



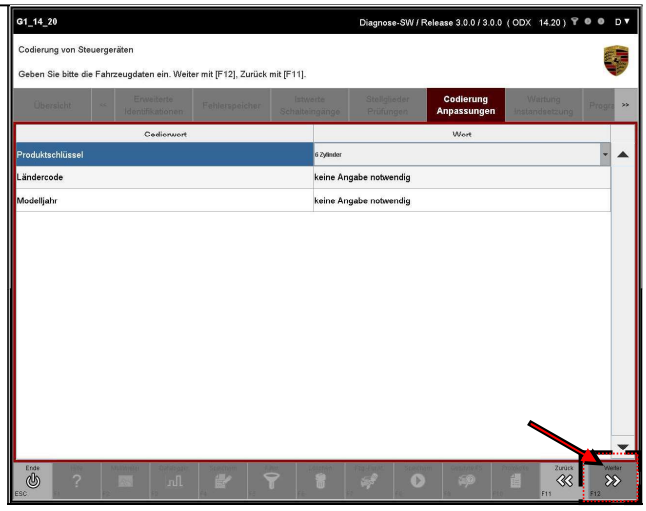
3. You must now enter the following data:
   - Product key
   - country code
   - Model year

   To do this, click in the corresponding input field in the column value and enter the value.



4. Once you have entered all values, confirm your entry by pressing <F12>.

   If you want to cancel the process, press the <F11> key. You then come back to the list of coding types.



In the following, you must assign the valid equipment features for the control units in the selection.

Depending on the data availability and control unit variant, the characteristics are assigned in two consecutive screens.

Proceed as follows:

Assigning equipment features without family affiliation

Note on screen content:

The equipment features of the value group that are valid for this control unit are displayed on the next screen. A feature is assigned directly by selecting and deselecting individual coding values.

A characteristic is made up of two entries:

- The coding number with designation in the column Coding value.
- Presence of the feature in the vehicle order in the columnBuilt in. If a feature is set, this is indicated by an icon symbolizes, if the feature is not set, the cell is empty.

In addition, the column Changed shows whether the status (installed / not installed) of a feature has been changed.

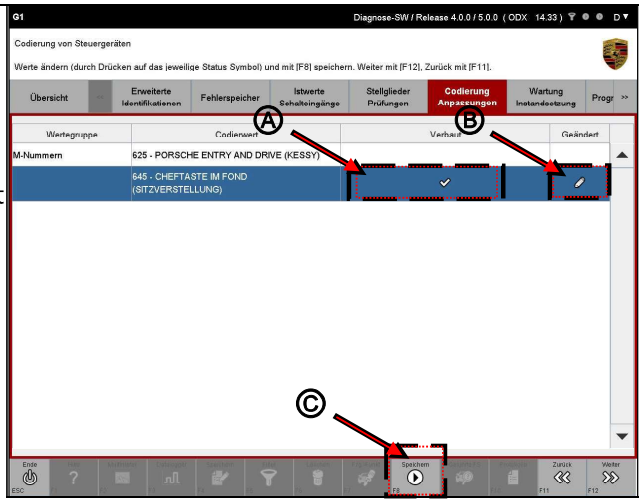
For a better overview you can, if necessary, carry out a column sorting (general description of the column sorting, see chapter 10.5).

5. To mark a characteristic as available, click in the corresponding cell in the column Built in (A).

   The change of a characteristic is first shown in the column Changed marked with an icon (B).

   To temporarily save the list of contents to be coded, press the <F8> (C) key. Note: No data is yet written to the control unit during this step.

   If you would like to change your selection, click again in the corresponding field.



6. Press the <F12> key.

   With <F11> you come back to the input of the vehicle data.

Assigning features with family affiliation

Note on screen content:

The equipment features of the value groups are displayed in the form of a grouping / family affiliation.
The individual value groups (X, M, Z, PR numbers) are listed below one another.

A characteristic is made up of three entries:

- Family name (e.g. Steering variants, main headlights etc.) in the column Family.
- Name of the feature (e.g. 601 - BIXENON) in the column Value.
- Mark the value to be coded in the column Changed. Is a Feature set, this is symbolized by an icon, if the feature is not set, the cell is empty.

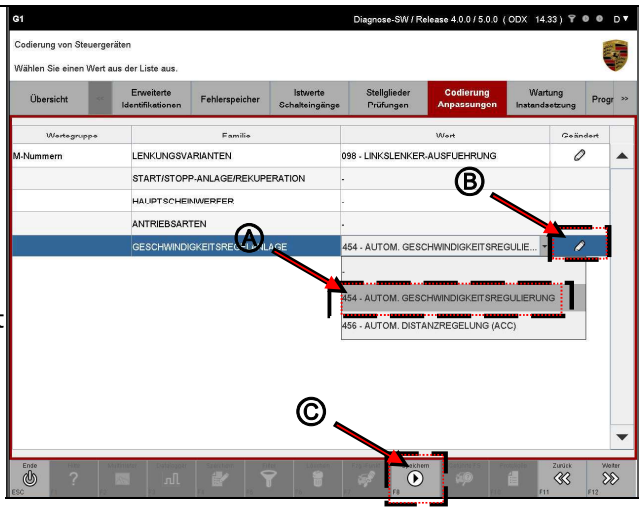
For a better overview you can, if necessary, carry out a column sorting (general description of the column sorting, see chapter 10.5).

7. To mark a characteristic as available, click in the corresponding cell in the column value and select the feature from a drop-down menu (A). If you choose the empty entry, the characteristic will not assigned.

   The change of a characteristic is first shown in the column Built in marked with an icon (B).

   To temporarily save the list of contents to be coded, press the <F8> (C) key. Note: No data is written to the

   Control unit written.



8. If you would like to change your selection, click again in the corresponding field.

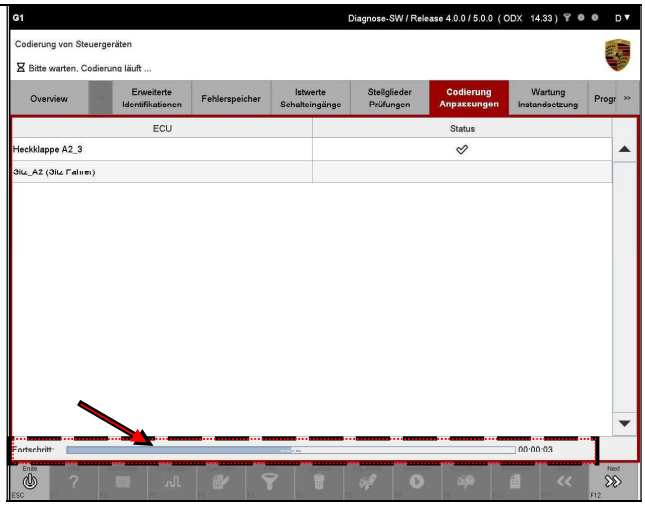
9. Press the <F12> key.

   With <F11> you come to the previous screen.

10. Coding starts.

    A progress bar in the lower area of the screen informs you about the status of the coding.

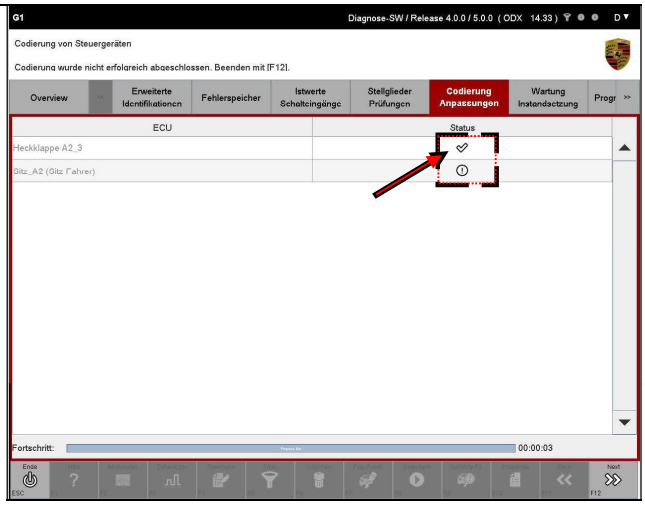
    If necessary, the elapsed time is displayed to the right of the status bar (display of the time next to the
    Status bar, see chapter 6.1.3.7.6).



After writing

11. If the coding of the control units was successful, the column status an icon is displayed for each element.

    If, instead, an error occurred while coding a control unit, this is indicated by an icon next to the unsuccessfully coded control unit in the Status column.



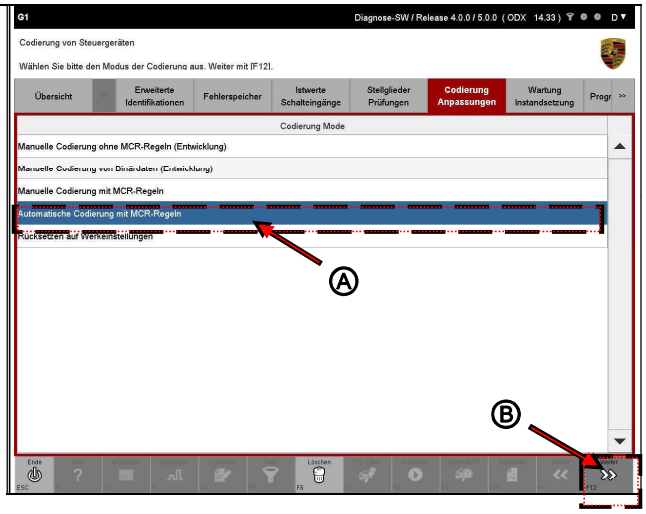
12. After coding, you can switch to another function group via the menu bar.

8.6.5 Automatic coding with MCR

In contrast to manual coding, you can use Automatically(automatic coding with MC rules) do not set any characteristics or coding values yourself. The necessary data to be coded are determined automatically. All you have to do is confirm that the data is correct. The coding then starts automatically. All necessary vehicle data (product key, country code, model year) are read out of the vehicle in advance.

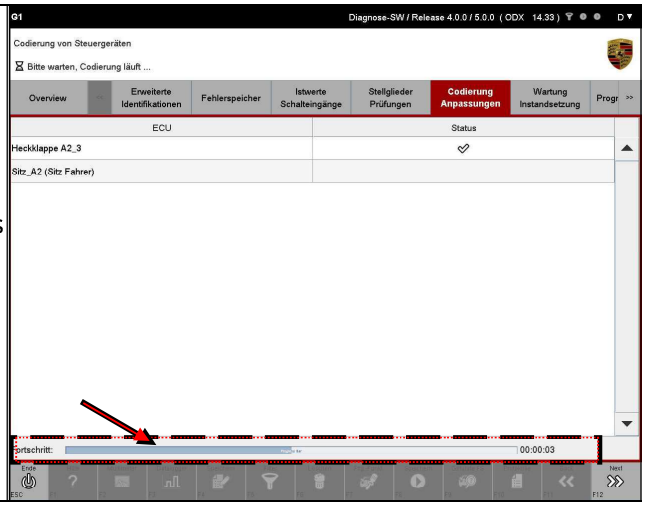
1. Display the list of coding types: See chapter 8.6.2.
   ▶

2. Select the type of coding
   Automatic coding
   with MCR rules and confirm your selection by pressing the <F12> key.



3. Coding starts.

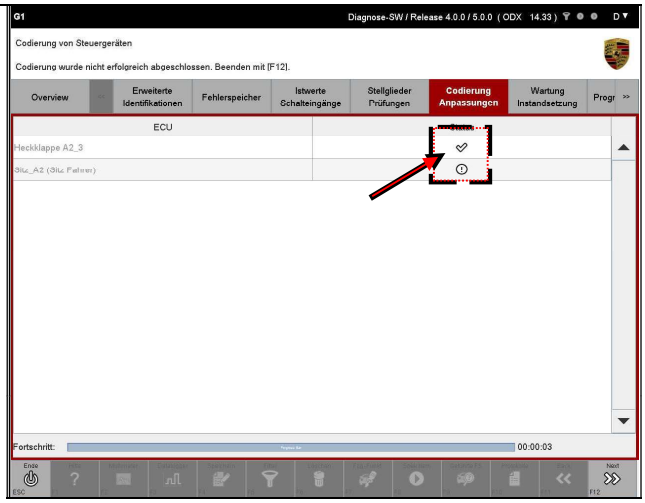
   A progress bar in the lower area of the screen informs you about the status of the coding. If necessary, the elapsed time is displayed to the right of the status bar (showing the Time display next to the Status bar, see chapter 6.1.3.7.6).



After writing

4. If the coding of the control units was successful, the column status for each element an icon is displayed.

   If, instead, an error occurred while coding a control unit, this is shown next to the unsuccessfully coded control unit in the Status column indicated by an icon.



5. After coding, you can switch to another function group via the menu bar.

8.6.6 Reset to factory settings

The operation of the coding type Reset to factory settingsdiffers, except for the different calls in the selection screen of the Coding types, not the operation of the coding type Automatic coding with MCR rules.

With both types, only different data will be written to the control unit.

For further information on content and operation:

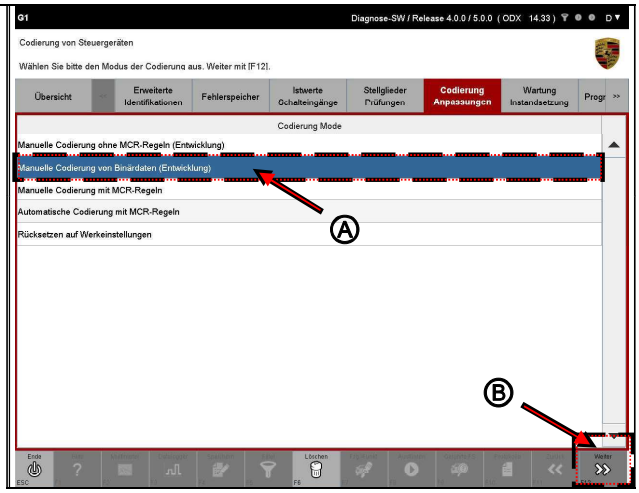
►See chapter 8.6.5.

8.6.7 Manual coding of binary data (development)

By means of the coding type Manual coding of binary data (development) you have the option of coding a control unit using more extensive binary packages. The binary packages are collected in the form of data records. After selecting a record and then selecting the corresponding data package (data files), the data can be written.

1. Display the list of coding types: See chapter 8.6.2.
   ▶

2. Select the coding type Manual Coding of Binary files (development)and confirm your selection by pressing the <F12> key.

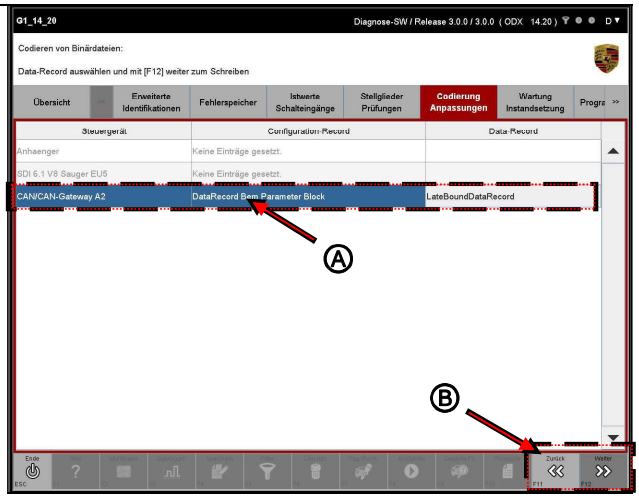


Note on selection:

You can only select exactly one configuration record of an ECU for the further actions; multiple selection is not possible.

3. Select the appropriate configuration record (A).

   If there are several data records (entries made by the ODX data are given, LateBoundDataRecords) you can make the selection via a drop-down menu in the field DataRecordand then click on the record.
   Confirm your selection with <F12> (B).
   With <F11> you come back to the list of coding types (B).



Note on behavior:

If you cannot select any elements in the binary coding working screen or if the content of the binary file is not displayed after selecting an element, reload the working screen. Proceed as follows:

- Press the <F11> key.
- Select the corresponding data file again in the previous screen.
- Confirm your choice with <F12>.

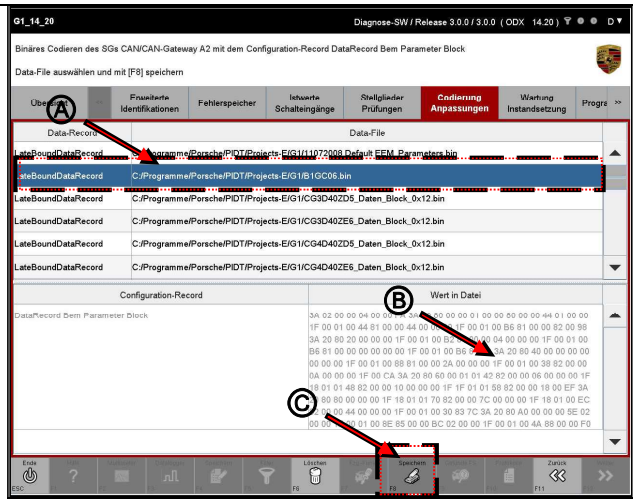
4. The binary coding working screen is displayed.

   Click the desired data file in the upper area of the Working screens on (A).

   The content of the file is shown in the lower area in the column value shown in hexadecimal notation (B).

   To write the file to the control unit, press the <F8> (C) key.

   With <F11> you come back to the selection of the data records.



Note on checking the written data:

The correctness of the data is not checked (e.g. by reading out and checking the data again from the control unit), only whether the control unit has acknowledged the writing positively.

5. You will be informed of the result of the write process in the information area. With <F11> you come back to the selection of the data records.
   You can call up additional functions by selecting one of the function group buttons in the menu bar.

8.7 Maintenance / repair

This chapter describes how you can carry out processes that are required for commissioning certain control devices and functions.

In the maintenance / repair function group, you have the option of calling up ECU-specific processes. ECU-specific processes are processes that cannot be implemented generically from the ODX data. Rather, they are guided processes that are geared towards a control unit.

The actual processes are only described in this chapter by way of example, since the diagnostic application guides you with the respective process with appropriate information in the form of notes.

8.7.1 Calling the function group

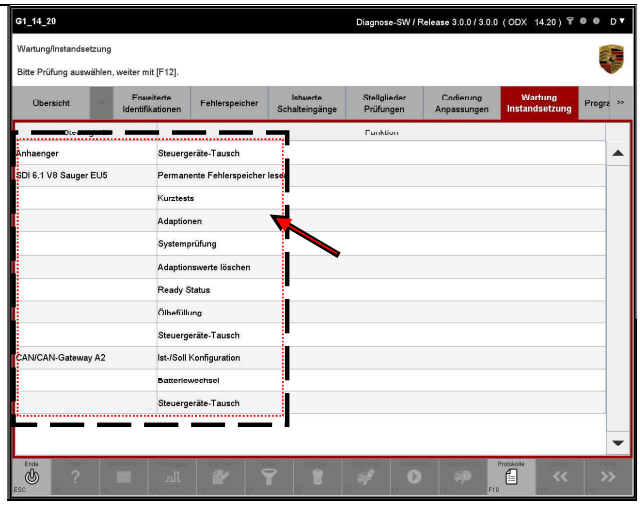
1. Display the list of installed control units and select the desired control units:

   ►See chapter 8.1.

2. Select the function group Maintenance / Repair.

3. A list is displayed in which the processes are listed that are available for the selected control units.

   If there is no specific process for the selected control unit, no process is displayed in the list.



8.7.2 Example: control unit replacement

The control unit exchange function is offered for all control units within the maintenance / repair function group. If you select this function, all relevant codes and identifications for an ECU replacement are first read and stored in a file. The data in this file can then be written to a new control unit. This gives you the option of writing the coding at a later point in time.

Note on exchange:

The control unit to be replaced must be replaced by a control unit of the same ECU variant, as coding values may have to be copied that are only available for specific variants.

8.7.2.1 Action-specific buttons for this function

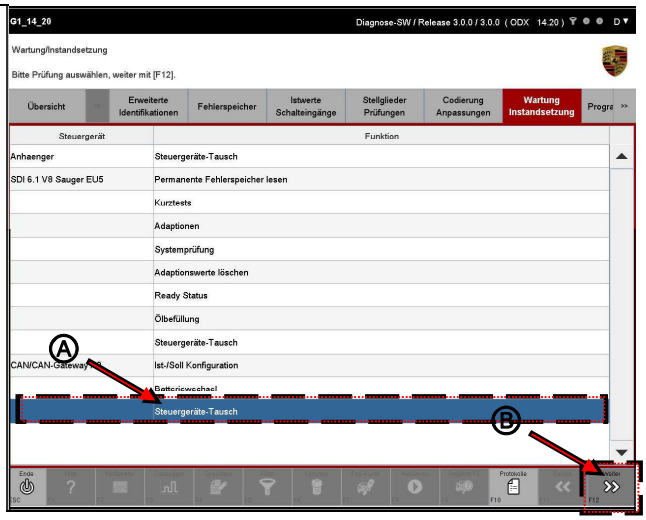
Exchange of control units			
button	Label	Icon	description
F8	Read		By pressing the <F8> key, the relevant data of the control unit to be replaced is read.
F8	To write		By pressing the <F8> key, the previously read and temporarily stored data from the old control unit are written to the new control unit.

8.7.2.2 Calling up the control unit exchange function

The CAN_CAN_Gateway control device was selected for the following steps and subsections.

1. Call up the function group Maintenance / Repair: See chapter 8.7.1▶

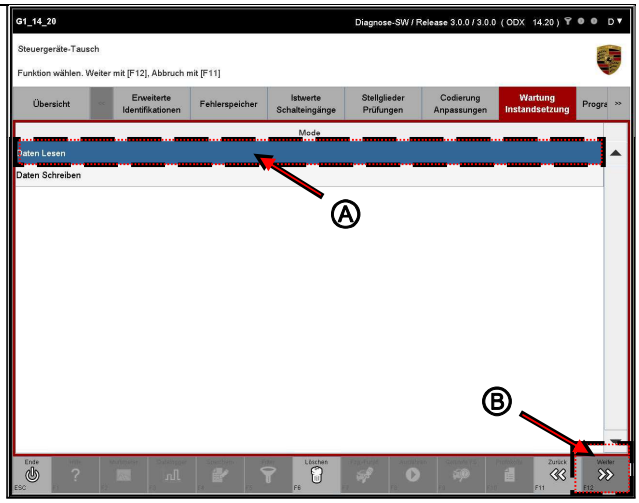
2. Select in the columnfunction the function for the corresponding control unit
   Exchange of control units (A) and press the <F12> key (B).



8.7.2.3 Exchange of control units: read data

1. Call up the control unit exchange function: See ►chapter 8.7.2.2

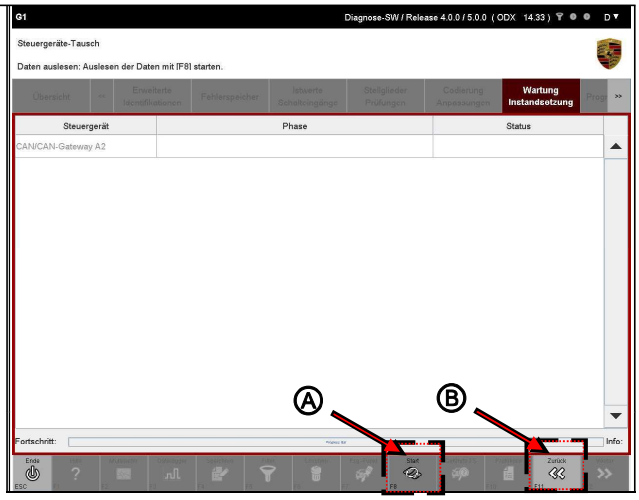
2. Select the mode Read data (A) and press the <F12> key (B).



3. The control unit replacement work screen is displayed. To start reading out the data, press the <F8> (A) key.

   With <F11> you come back to the list of the modes of the control unit exchange (B).

   Please note the following note.



Note on canceling the readout process:

If you have started the readout process and would like to cancel it, press the <F8> key (icon) after the readout has started.

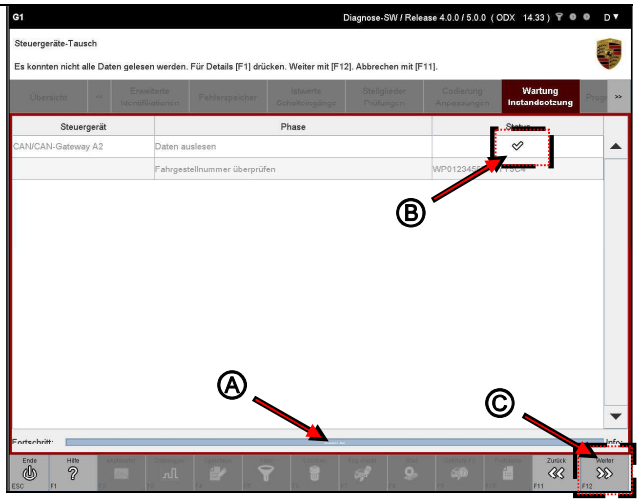
The data for this control unit are then not temporarily stored in a file for subsequent or subsequent writing.

If you would like to write relevant data for the control unit replacement to the new control unit in the further course, you have to carry out the reading process again.

4. The relevant data from the control unit are read out. A progress bar informs you about the progress of the reading process (A).

   If the reading out of the data was successful, this is done in the work richly indicated by an icon (B).

   After the readout process is complete, press the <F12> (C) key. You come back to the list of modes of the control unit exchange function.



Behavior of the application in the event of an abort or error in the write process

If you have canceled the readout process or if an error has occurred, an icon is displayed in the Status column.
Then press the <F11> key to go to the list of modes of the function Exchange of control units get.

8.7.2.4 Control unit exchange: Write data

Precondition:

You must have read out the relevant data for the relevant control unit:

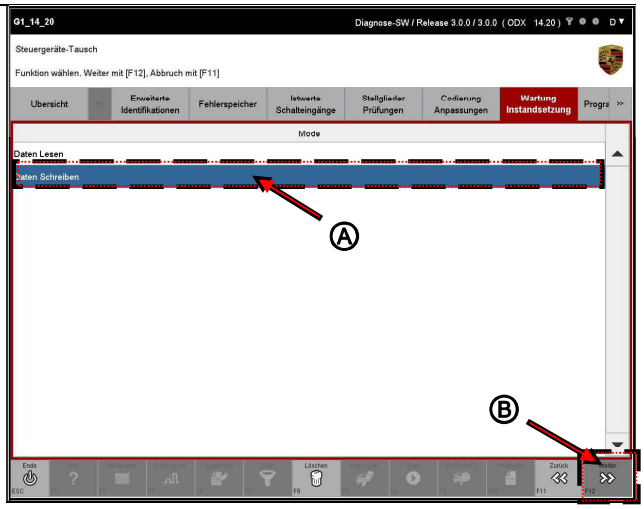
►See chapter 8.7.2.3

Note on writing the data:

If there is no valid file with control unit data or if the chassis numbers read out do not match, only basic data is written. The VIN-B and the production number are then assigned default values.

1. Call up the control unit exchange function: See ►chapter 8.7.2.2

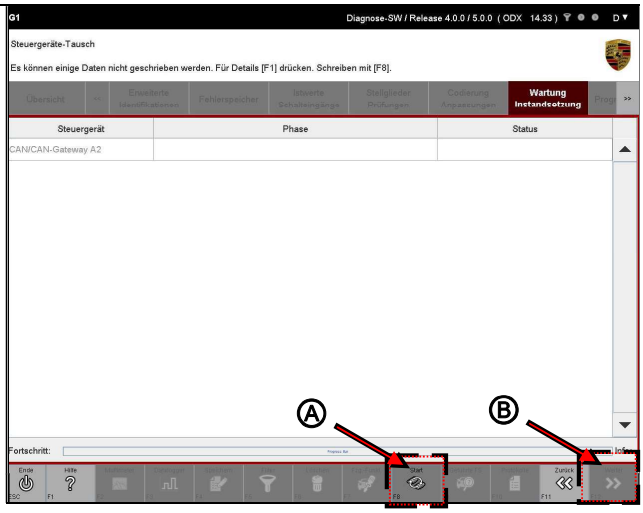
2. Select the mode Write data (A) and press the <F12> key (B).



3. The control unit replacement work screen is displayed. To start writing the data, press the <F8> key.

With <F11> you come back to the list of the modes of the control unit exchange.

You may get further information via <F1>. Please note the following note.



Warning about canceling the write process:

If you have started the writing process and would like to cancel it, press the <F8> key (icon) after the writing process has started.

Canceling the writing has the consequence that the modeRead data stored data records are not completely written. This results in an incompletely flashed control unit. In order to be able to continue using this control unit, it must be completely flashed.

To completely flash the control unit ...

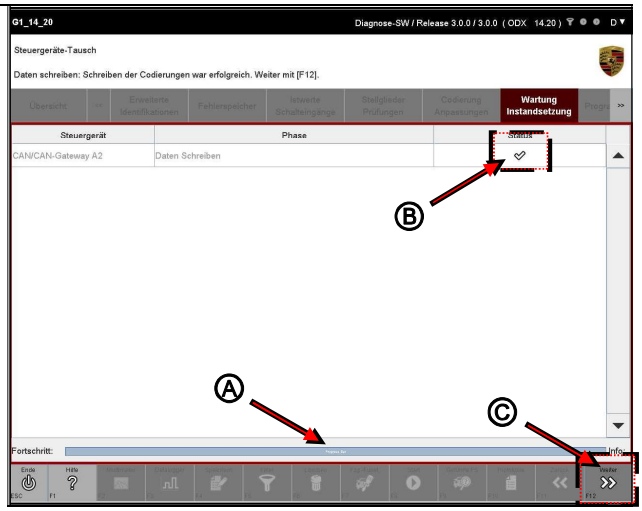
- . . . repeat the process again if necessary or
- . . . program the controller manually (Function group Extended Identifications or Coding / Adaptation).

4. The relevant data of the control unit are written. A progress bar informs you about the progress of the Writing process (A).

   If the writing of the data was successful, this is done in the working area indicated by an icon shows (B)

   After the writing process is complete, press the <F12> (C) key.

   You come back to the list of modes of the control unit exchange function.



Behavior of the application in the event of an abort or error in the write process

The following typographical errors can occur:

- Codings that cannot be written due to reading errors
- the writing process was stopped prematurely by pressing the <F8> (Stop) key
- Only basic data has been written.

In these cases, an icon is displayed in the Status column. Press then press <F11> (B) to go to the list of modes of the functionExchange of control units get.

8.7.3 PXML interpreter

In addition to vehicle and control unit-specific processes, commissioning processes that were created with the PASDT are displayed within the maintenance / repair function group. These processes are available in PXML format and are carried out by a PXML interpreter.

These processes are called up in the maintenance / repair function group as usual as in Sections 8.7.1 and 8.7.2. described, the interpreter uses the diagnostic application to display the processes. There are only differences in operation within a process: With the PXML interpreter, user interactions take place within the work area of the diagnostic application and are not carried out using the buttons on the control bar.

After the end of the respective sequence, a jump is made back to the list of the sequences valid for the control unit.

Restriction:

The following functions are not available for processes that are executed with the PXML interpreter:

- Ignition detection
- VCI change
- Control bar is up to the <ESC> ?? Button grayed out.
- Switching the displayed texts into the respective national language (multilingualism: see chapter 10.10)

Both features are switched off for the duration of the process and are only available when you return to the list of processes valid for the control unit.

8.8 Log services

This chapter describes how you can execute a request. A request is used to describe the sending of a service, in this case a protocol service, to a control unit.

It also describes how you can save a request and call up a saved request.

8.8.1 Action-specific buttons in this function group

Decision question			
button	Label	Icon	description
F8	Carry out		By pressing the <F8> key, you send a request to the control unit.
Decision question			
button	Label	Icon	description
F11	no		By pressing the <F11> key, you cancel an action with a query (e.g. an error memory should not be deleted as originally specified). The <F11> key shown only occurs in combination with the <F12> key shown in the next line.
F12	Yes		By pressing the <F12> key, you confirm an action with a query (e.g. error memory should be deleted). The <F12> key shown only occurs in combination with the <F11> key shown in the previous line.

8.8.2 Display of the log services

1. Display the list of installed control units and select a control unit:

   ►See chapter 8.1.

   Or:

   Call up the function group Protocol Services directly in the menu bar.

Note on screen content:

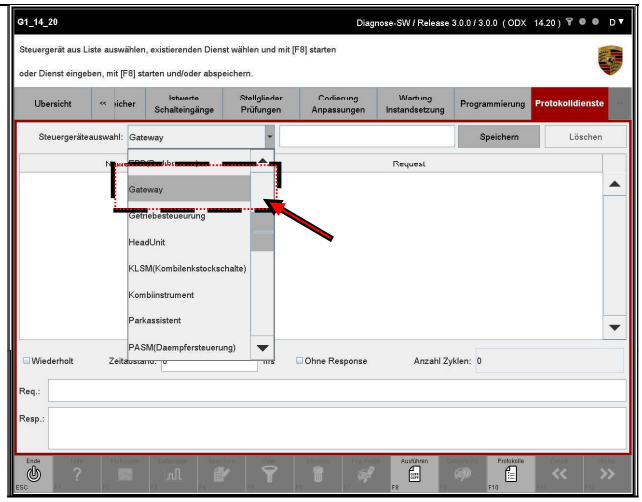
The screen of the protocol services function group appears.

Depending on which variant you selected in step 1, a preselection is made in the drop-down menu Control unit selection:

- If you have a control device in the selection and call up the function group Protocol services in the menu bar, the control device is already preselected in the drop-down menu.
- If you have several control units in the selection and call up the function group Protocol services in the menu bar, the control unit that comes first alphabetically is already preselected in the drop-down menu.
- If you do not have a control device in the selection and you call up the function group protocol services in the menu bar, there is no preselection.

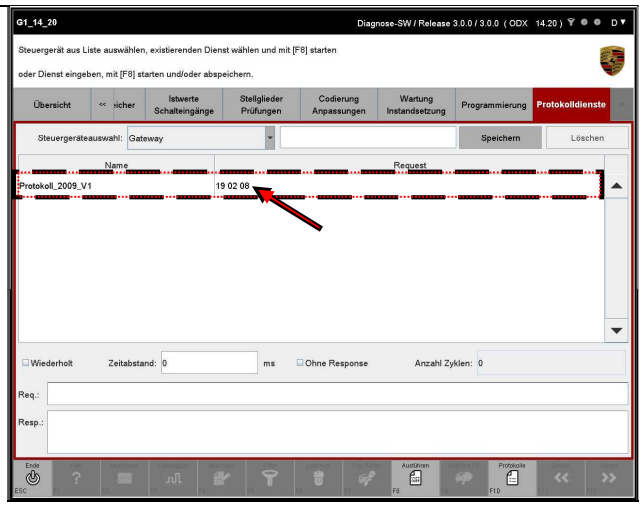
2. If you do not have a control unit in the selection, choose one From the drop-down menu.

   If you have previously selected a control unit, this is already preselected and does not have to be selected additionally (see note on screen content).



3. All requests saved so far are listed in the table for the selected control unit.

   If no requests have been saved beforehand, the table is empty.



8.8.3 Execution of a request after manual entry

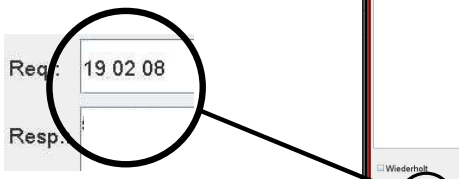
1.Call up the function group Protocol services and select a control device if necessary:
►See chapter 8.8.2.

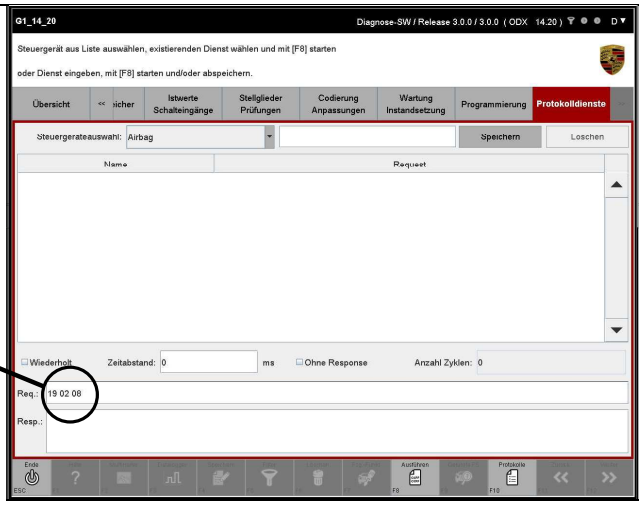
A request is entered in hexadecimal notation. Separate each number with a space.

Example:

19 02 08

2. Enter a request in hexadecimal notation in the Request field.



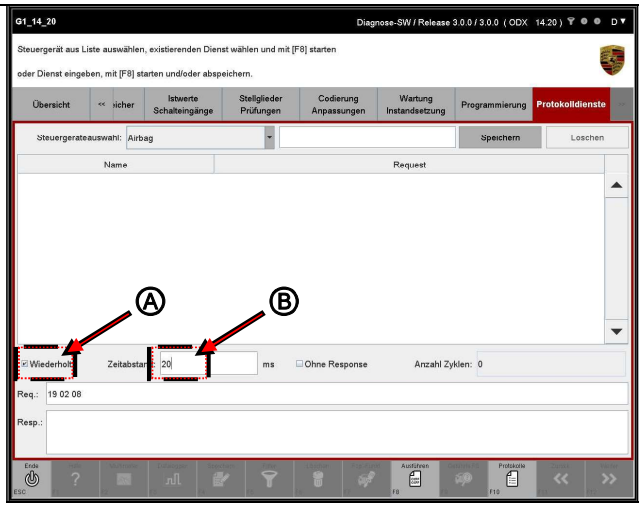


Option 1: cyclical repetition

3. If you want the entered request to be repeated cyclically, click in the field next to the option

Repeated (A).
When this option is selected, a check mark appears in the radio button (Wiederholt).

Then enter the time interval between the repetition in milliseconds (B).
In the example, a time interval of 20 ms was entered.

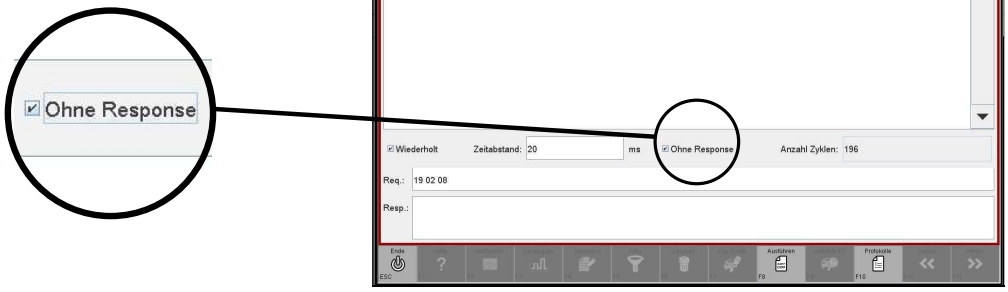


Option 2: No response from the control unit

You have the option of sending a protocol service (request) to the control unit without having to wait for a corresponding response (response from the control unit to this service).

The display in the response field then remains empty. To do this, proceed as follows.

4. Click in the field next to the option Without response (A). If this option has been selected, a tick appears in the option field (see detail).



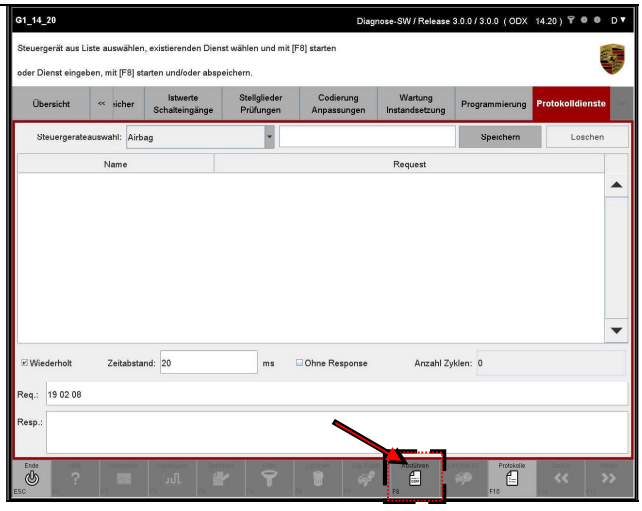
Proceed further

The cyclical repetition of the request was activated for the next steps. The time interval between two requests is ?? as entered in step 3 - 20ms.

5. Press the <F8> key to send the request.

With a cyclical execution of the service (see option 1 - ?? Cyclical repetition ??) you must explicitly end the execution with <F8>.

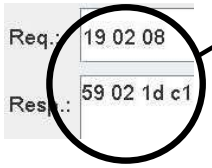
If the request has only been executed once, it stops automatically and you do not have to press the <F8> key.

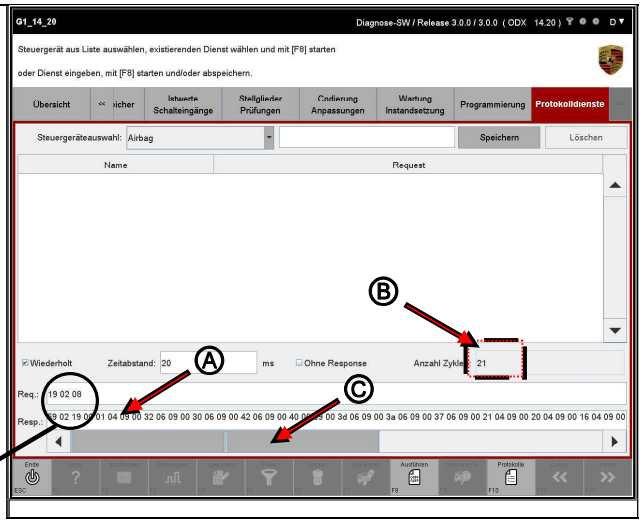


6. If you have the optionWithout response (If you have not selected option 2), the result of the request is displayed in the response field (A).

   If you have activated cyclical updating, the number of cycles that have elapsed is displayed (B).

   If necessary, you can use the scroll bar to move the display area of the response field (C).





8.8.4 Saving a request

1.Call up the control unit protocol services function and select one if necessary group:

►See chapter 8.8.2.

A request is entered in hexadecimal notation. Each number is separated by a space.

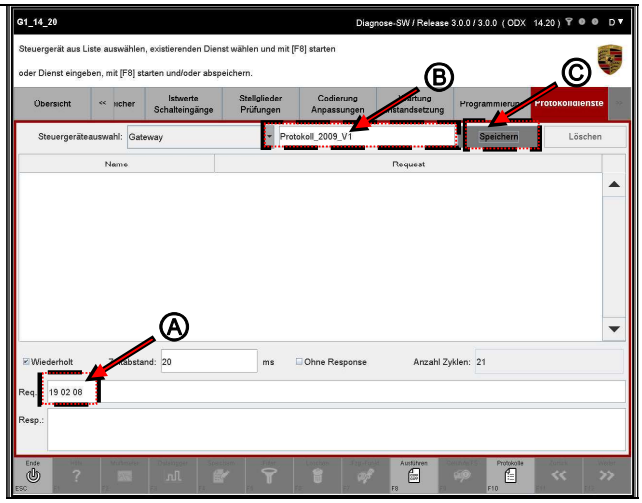
Example:

19 02 08

2. Enter a request in hexadecimal notation in the Request field (A).

Assign a name to the request by entering an appropriate abbreviation in the name text field. In the example, the name ?? Protokoll_2007_V1 ?? selected (see screenshot) (B).

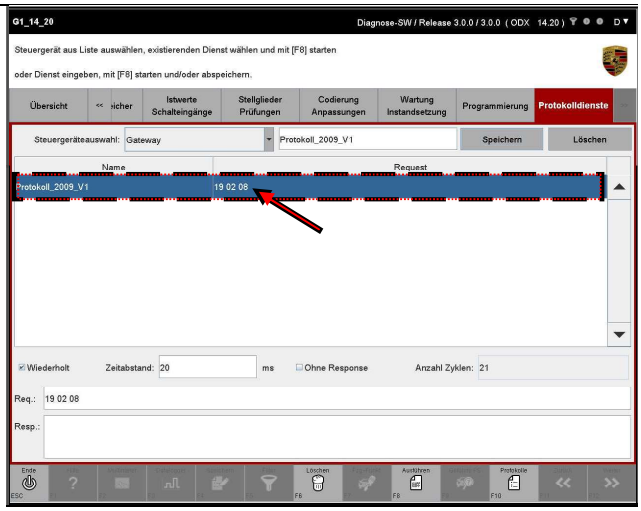
Save your input ?? Request and name of the request ?? for the currently selected control unit by pressing theSave on computer-Buttons (C).



Note on storage:

Please note that the type of execution (repeated, time interval) is not saved when saving. Only the hexadecimal request is saved under a name.

3. Once you have saved the request, it will be kept in a list for the selected control unit.



Proceed further

Note: Behavior with already assigned names

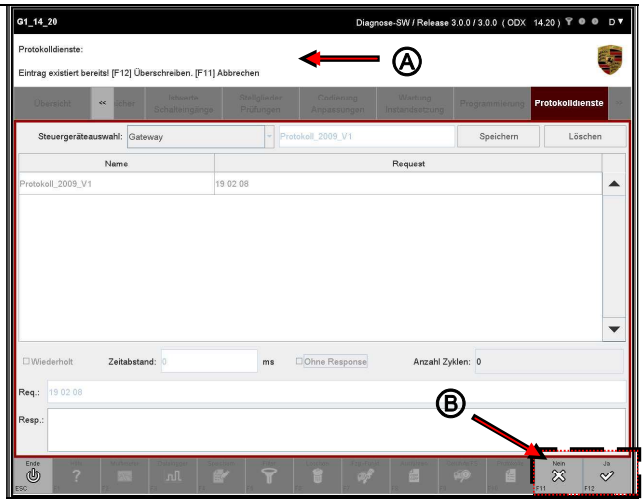
If the name you have chosen for the request has already been taken, the system will point this out to you. In this case, a query appears in the information area of the screen as to whether you want to overwrite the already saved request with the new request.

This is shown again in the screenshot of step 4.

4. If a request has already been saved under this name, you must explicitly confirm that you are using the existing one Want to overwrite the request (A).

   You have the following options (B):

   - With <F11> you reject overwriting. You will then be returned to the list of possible executables Requests displayed.
   - Confirm the query with <F12> and the old request will be overwritten with the new request.

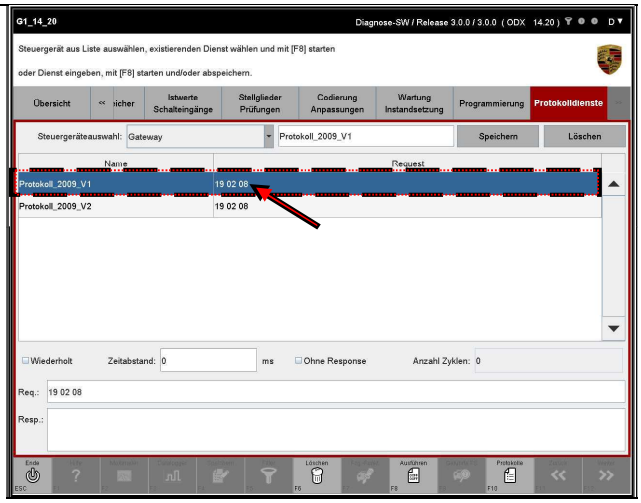


8.8.5 Deleting a saved request

1.Call up the control unit protocol services function and select one if necessary group:
►See chapter 8.8.2.

2. Highlight the entry that you want to delete.

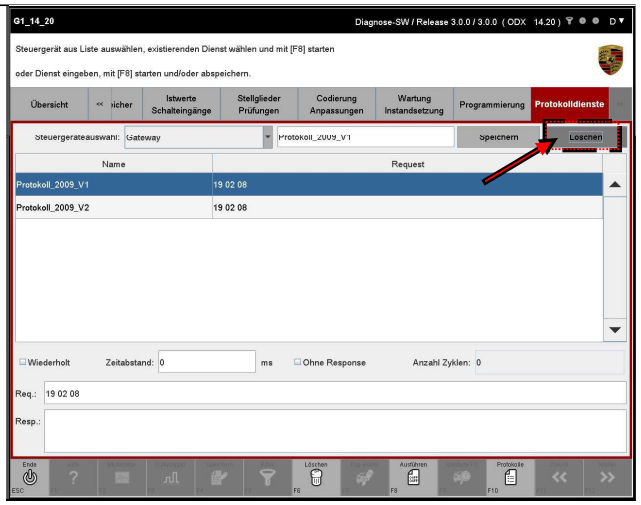
The selection can be canceled again by pressing the <F6> key.



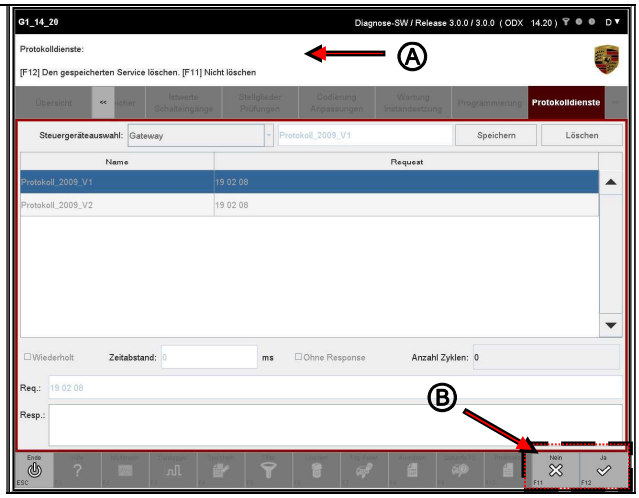
If you want to delete several entries, carry out the following steps 3 to 5 several times.

You can only delete one entry at a time.

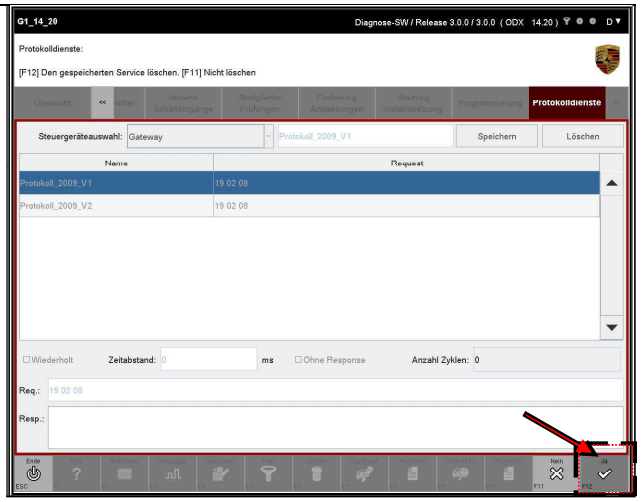
3. To delete the highlighted entry, then press the Extinguish-Button.



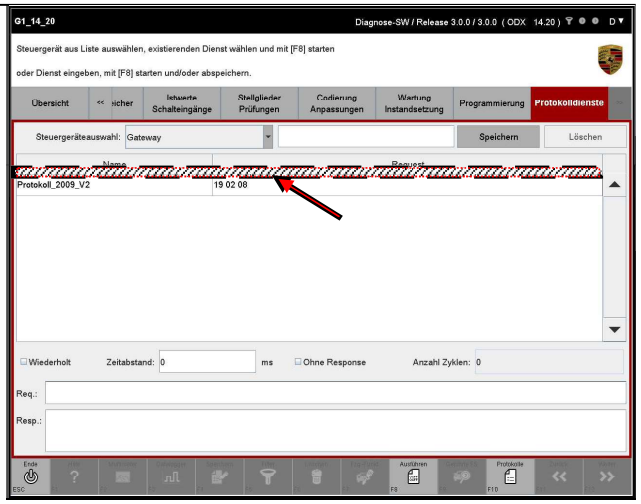
4. A query appears asking you to delete the selected the selected protocol service must confirm (A). You have the following options (B):
   - Cancel the process with <F11>. You are returned to the list of protocol services for the selected control unit.
   - With <F12> you confirm that you want to delete the request.



5. If you want to delete the log service, confirm the query by pressing the <F12> key.



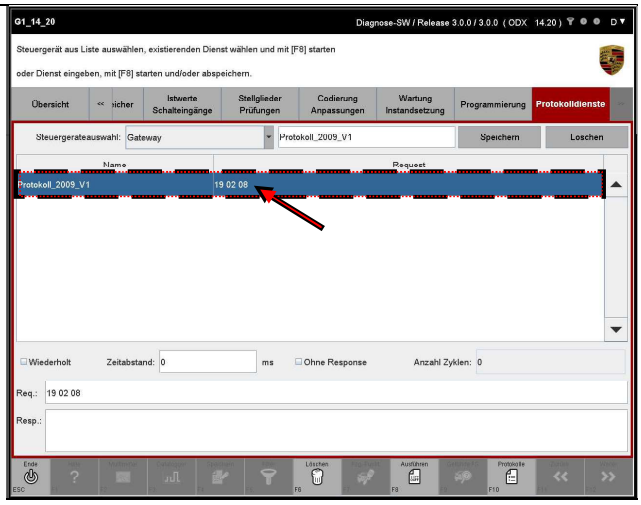
6. The selected request is then deleted and the list of available requests is updated.



8.8.6 Executing a saved request

1.Call up the function group Protocol services and select a control device if necessary:
►See chapter 8.8.2.

2. Select the request that you want to carry out in the list.

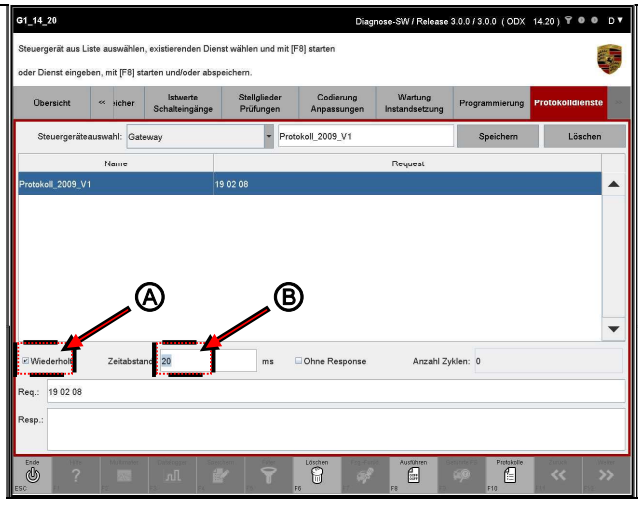


Option 1: cyclical repetition

You have the option of repeating an entered request cyclically. If you have selected this option, the results display in the response field will be updated cyclically after execution.

3. Click in the field next to the option Repeated (A). When this option is selected, a check mark appears in the radio button (☑ Wiederholt).

Then enter the time interval between the repetition in milliseconds (B).

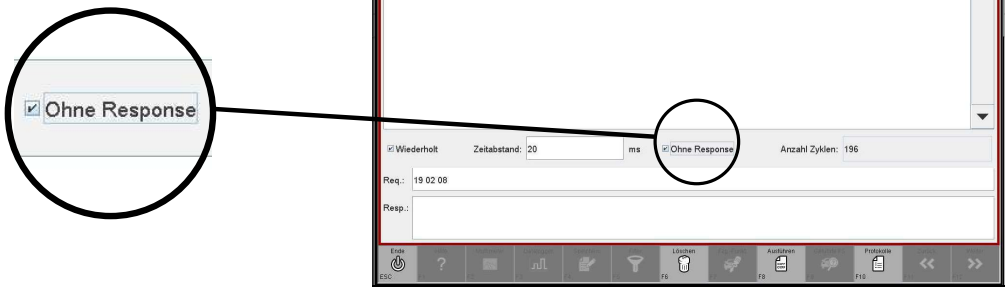


Option 2: No response from the control unit

You have the option of sending a protocol service (request) to the control unit without having to wait for a corresponding response (response from the control unit to this service).

The display in the response field then remains empty. To do this, proceed as follows.

4. Click in the field next to the option Without response (A). If this option has been selected, a tick appears in the option field (see detail).

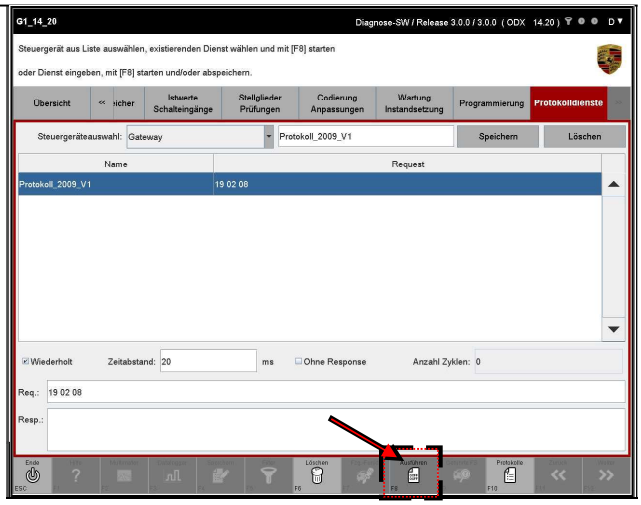


Proceed further

5. Press the <F8> key to send the request.

With a cyclical execution of the service (see option 1 - ?? Cyclical repetition ??) you must explicitly end the execution with <F8>.

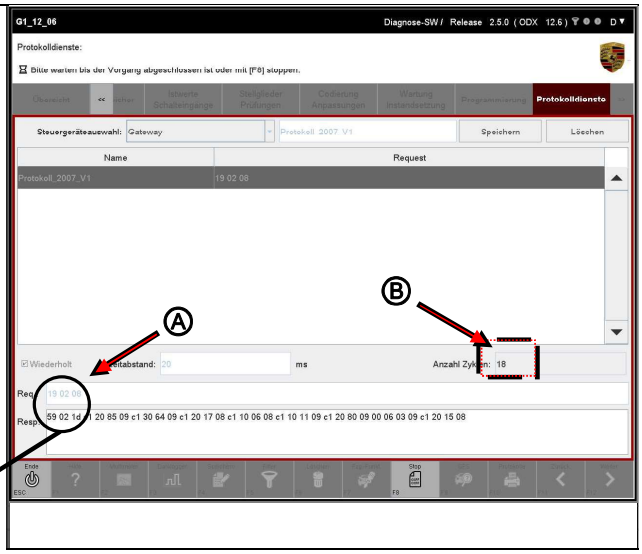
If the request has only been executed once, it stops automatically and you do not have to press the <F8> key.

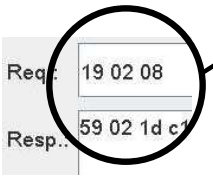


6. If you have the optionWithout response (If you have not selected option 2), the result of the request is displayed in the response field (A).

   If you have activated cyclical updating, the number of cycles that have elapsed is displayed (B).

   If necessary, you can use the scroll bar to move the display area of the response field (C).





8.9 programming

This chapter describes how you can program a control device. The following first describes how you select and activate a programming type. Depending on the type of programming selected, the control unit is then programmed automatically or manually. The way in which a control unit is programmed is therefore similar to the coding of a control unit within the Coding / Adjustments function group (see Section 8.6).

8.9.1 Action-specific buttons in this function group

Entering vehicle data			
button	Label	Icon	description
F8	Save on computer		Assigned equipment features are temporarily saved by pressing the <F8> key.
Program			
button	Label	Icon	description
F8	Save on computer		By pressing the <F8> key, a selected control device is programmed using a flash job.

8.9.2 Display of the programming types

Note on availability:

If no data record of flash rules has been stored for the selected control device, not all programming types will be offered to you. Then only the programming type is available to youProgramming without flash rule (development) to disposal.

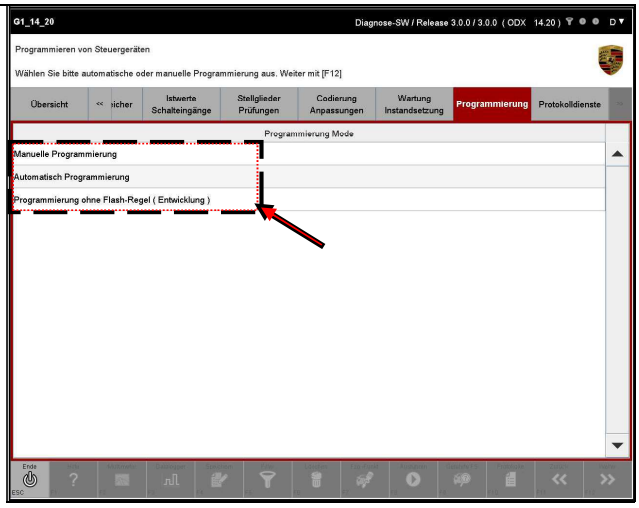
1. Display the list of installed control units and select a control unit:

   ►See chapter 8.1.

   In the following example, the control device PDCC was selected.

2. Select the function group in the menu bar
   Programming.

   A list of the possible programming types is displayed.



8.9.3 Manual programming

If a data record of flash rules has been stored for the control unit, you have the option Manual programming to disposal. The manual programming process is divided into two parts:

1. Determination of a valid flash rule
2. Programming the control unit

1. Determination of a valid flash rule

What is being done?

In the following steps you must first enter some data and then select or deselect various equipment features. This data is used to determine whether there is a valid flash rule in the data record stored for the control unit. If there is no valid flash rule, you cannot program the control unit and the programming process is aborted.

Necessary data:

You must enter the following information in one of the following steps:

- ►Product key
- ►country code
- ►Model year
- ►Chassis number

You should therefore have the information you need to hand.

Number groups and their meaning:X:

Exclusive

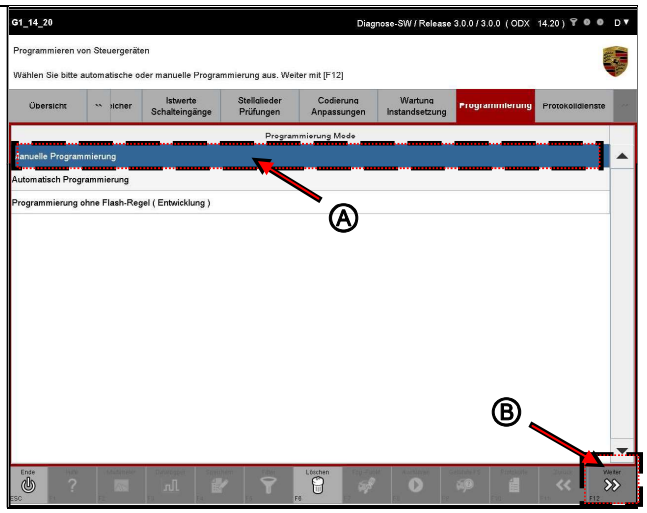
M: Additional equipment

Z: Tequipment

PR: Additional equipment at VW (and model type Cayenne)

1. Display the list of possible programming types: See chapter 8.9.2.
   ▶

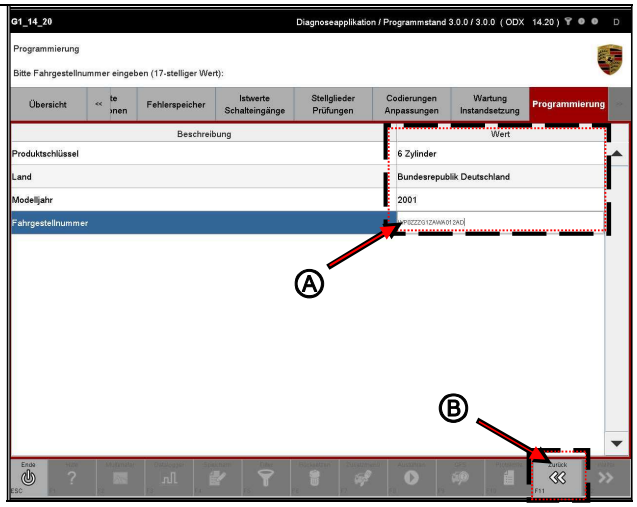
2. Select the type of programming Manual programming (A) and press the <F12> (B) key.



3. You must first enter the vehicle data.

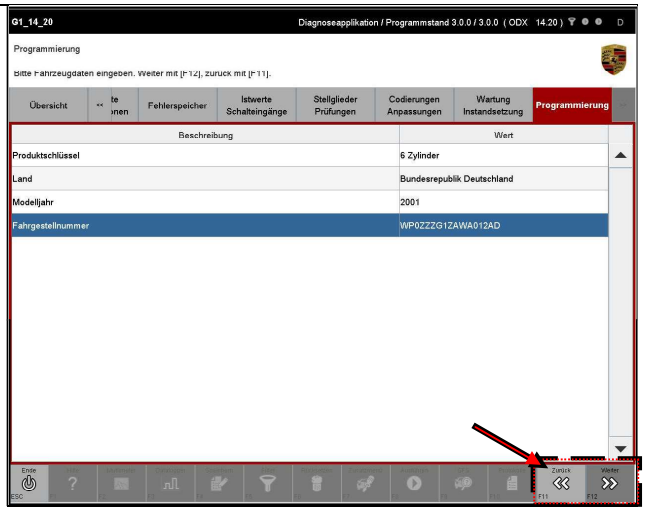
   To do this, click in the corresponding input field in the columnvalue and enter the value or select it from a drop-down menu (A).

   If you want to cancel manual programming, press the <F11> key. You will then return to the list of programming types (B).



4. Once you have entered all values, confirm your entry by pressing <F12>.

   If you want to cancel manual programming, press the <F11> key. You will then be returned to the list of programming types.



In the next screen you have to assign the valid equipment features for the control devices in the selection.

Depending on the data availability and control unit variant, the characteristics are assigned in two consecutive screens.

Proceed as follows.

Assigning equipment features without family affiliation

Note on screen content:

The equipment features of the value group that are possible for this control unit are displayed on the next screen. A feature is assigned directly by selecting and deselecting individual values.

A characteristic is made up of two entries:

- The coding number with designation in the column Coding value.
- Presence of the feature in the vehicle order in the columnBuilt in. If a feature is set, this is indicated by an icon symbolizes, if the feature is not set, the cell is empty.

In addition, the column Changed shows whether the status (installed / not installed) of a feature has been changed.

For a better overview you can, if necessary, carry out a column sorting (general description of the column sorting, see chapter 10.5).

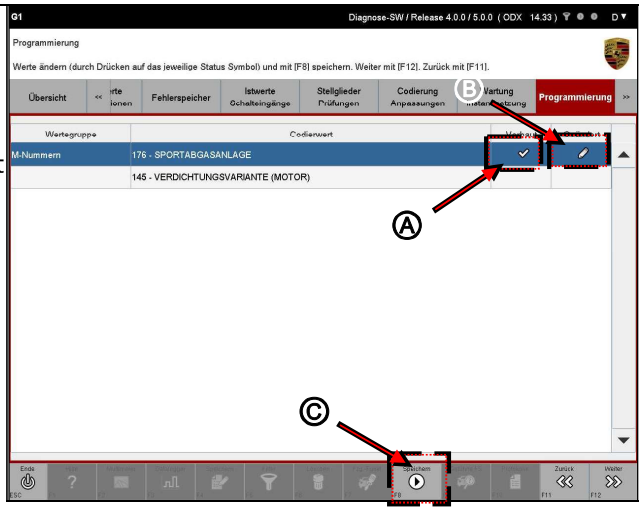
5. To set a characteristic, click in the corresponding cell in the column Built in (A).

   The change of a characteristic is first shown in the column Changed marked with an icon (B).

   To temporarily save the list of contents to be programmed, press the <F8> (C) key.

   Note: No data is yet written to the control unit during this step.

   If you would like to change your selection, click again in the corresponding field.



6. Press the <F12> key.

   With <F11> you come to the previous screen.

Assigning equipment features with family affiliation

Note on screen content:

The equipment features of the value groups are displayed in the form of a grouping / family affiliation.
The individual value groups (X, M, Z, PR numbers) are listed below one another.

A characteristic is made up of three entries:

- Family name (e.g. Steering variants, main headlights etc.) in the column Family.
- Name of the feature (e.g. 601 - BIXENON) in the column Value.
- Mark the value to be coded in the column Changed. Is a Feature set, this is symbolized by an icon, if the feature is not set, the cell is empty.

For a better overview you can, if necessary, carry out a column sorting (general description of the column sorting, see chapter 10.5).

7. To mark a characteristic as available, click in the corresponding cell in the column value and select the feature from a drop-down menu (A). If you choose the empty entry, the characteristic will not assigned.

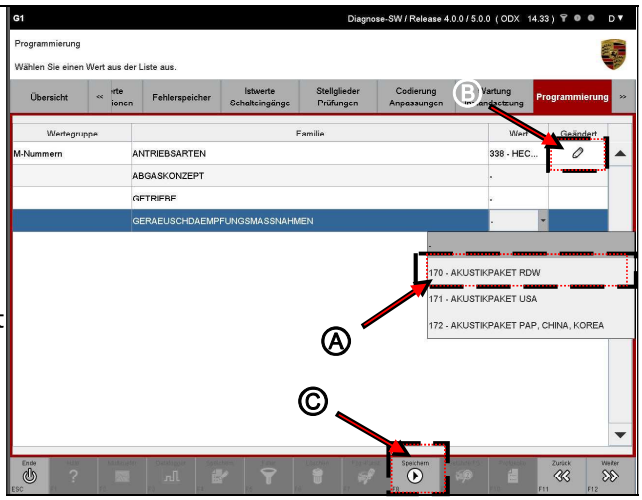
   The change of a characteristic is first shown in the column Built in marked with an icon (B).

   To temporarily save the list of contents to be programmed, press the <F8> (C) key.

   Note: No data is written to the

   Control unit written.

   If you would like to change your selection, click again in the corresponding field.



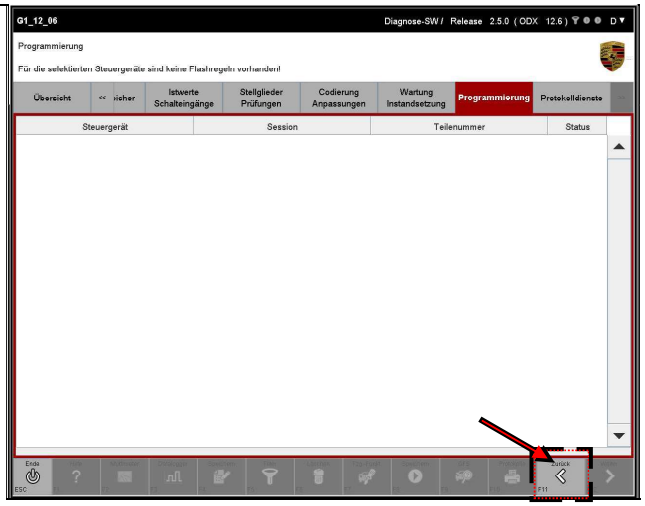
8. Press the <F12> key.

   With <F11> you come to the previous screen.

Exception handling: No suitable set of rules was found

If no valid Flash rules are found on the basis of the data entered and the selected features, programming is aborted at this point. The following screen is then displayed:

9. Press <F11> to return to the list of programming types.



2. Programming the control unit

Note on screen content:

If a valid flash rule has been found, all control devices including their available data containers that are required to process this flash rule are displayed in the next screen.

It can happen that in addition to the control devices in the selection - i.e. the control devices that you have selected in advance - other control devices are displayed in the work area. These control units must then also be flashed so that a consistent data status can be ensured.

The programmable data containers are listed in the Session column.

When the screen is called up, the version of the software in the control unit is automatically checked. The software version of the software in the control unit is compared with the software version of the data container listed in the work area. The result of this test is shown in the columnstatus issued.

A distinction is made between the following cases when checking whether it is up-to-date:

- Not up-to-date: The software of the control unit is not up-to-date. The software contained in the data container is more up-to-date than the software in the control unit.
- Current: The versions of the software programmed in the control unit and those in the data container are identical.
- More up-to-date: The version of the software in the control unit is newer than the version that has been stored in the data container.

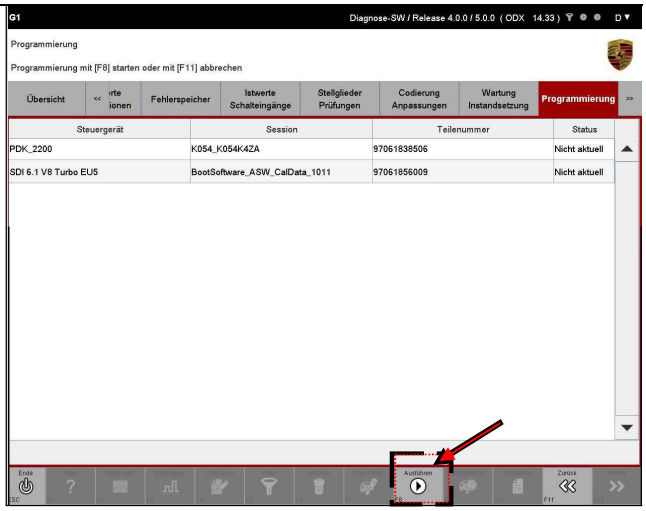
Note:

It is not possible to flash a selection of data containers. All data containers listed in the work area are always flashed, as there can be dependencies between the software versions of different control units.

This also means that if the flash process fails, the entire flash process is aborted on the first control unit in the list.

10. To start programming, press the <F8> key.

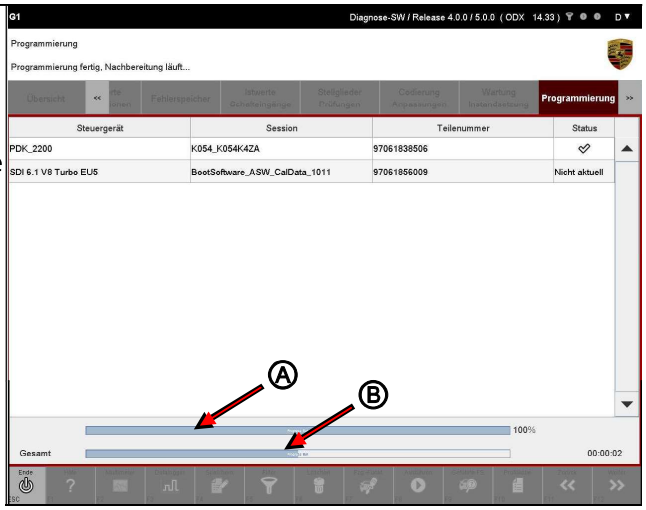
    With <F11> you come back to the list of programming types.



11. Two progress bars inform you about the progress of the programming:

    The upper progress bar shows the progress in processing a flash session (A).

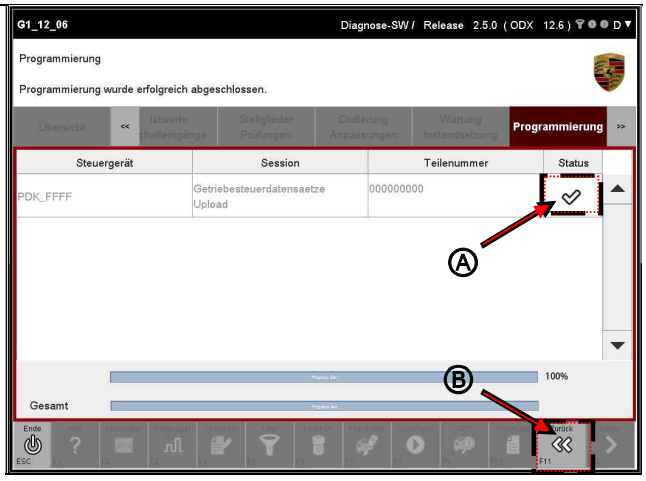
    The lower bar symbolizes the overall progress of the programming (B).



After writing

12. If the programming was successful, after each control device in the column Status an icon is displayed (A).

    With <F11> you come back to the list of programming types (B).



Error when programming several control units

13. Is an error while programming a control unit occurred, this is next to the unsuccessfully programmed Control unit in the Status column with a ?? Icon displayed (A).

    If you still want to continue programming for the next control unit, you have to confirm this. They have following options (B).
    * With <F11> you break the Process. You come back to the list of programming types.
    * With <F12> you confirm that The programming want to continue. The next control unit is then programmed.