
HAMM Digital Control Systems



Service Tool WinGPI Manual

Drive control and vibration control

of the **DV** tandem rollers

Anti slip control

of the **HD** Rollers with pivoted steering

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6. Operating the WinGPI

Independent of the application the following functions can be used:





NOTICE: For more information, take a look in the WinGPI help.

6.1 Zooming the Graphic Windows

With the standard windows functions (keyboard and mouse), you are able to zoom the graphic windows.

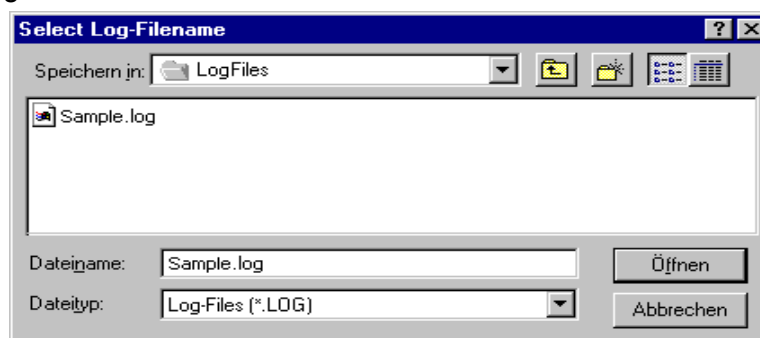
6.2 Data Storage on the Hard disk

With function key **F4** or over the menu Log-Data or the button  data storage to the hard disk will be started. In the current directory a file named GPI0.log (example) will be created and a TC-file specified start line is written into this file. The data from the digital system (max. 20 single data) will be received and stored in the LOG file in ASCII format. Each line includes the incoming data of one sample cycle. The stored data can be interpreted with a spreadsheet. The fixed data for this system is described in the chapter **Log data overview**. During the storage of data the *.log filename is displayed in the title of the WinGPI window.

A second push to the function key **F4** or button  will close the file! You can start new storage directly because the number in the filename will be incremented (GPI1.log). During Data storage, the name of the respective file is shown next to the window name. At the beginning, at the end and during data storage (all 100 data records) a short acoustic signal shows the data storage.

You can rename the filename of the LOG-file with the WinGPI menu **Select Filename**.

Figure 3: Select Log Filename



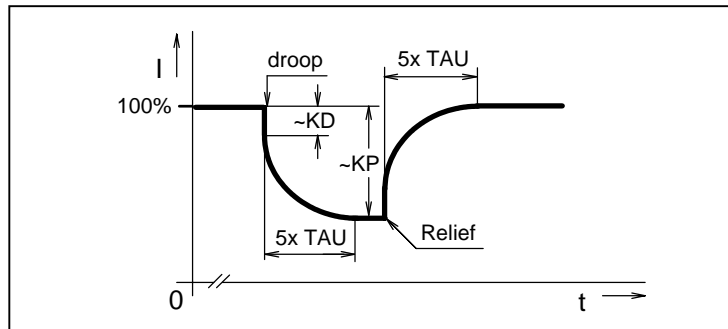
NOTICE: Data storage must be activated via key   (see chapter 10.)



ATTENTION: Error message of the GPI

If the error message “Input Buffer Full!” is displayed during operation, the connected PC cannot process the data in the speed as the digital system is supplying them. In this case, please reduce the transfer rate of the digital system.

Figure 5: Control parameters



- **Drive Current Parameter**

Min. Curr. Offset Forward : valve offset current deadband forward. (mA*10)

Min. Curr. Offset Reverse : valve offset current deadband reverse. (mA*10)

Min. Curr. D : minimum drive current (mA*10)

Offset Forw. 1. / 2. G : offset jump in both gears in forward direction of reversion mode

O R : offset jump in both gears in reverse direction of reversion mode

Max. Curr. D : maximum drive current (mA*10)

Max. Redu : maximum drive current in reduced drive mode (mA*10)

- **Vibration Control Parameter**

Vibro Start Speed : Min. speed to start the vibration. (km/h *10)

Stop Low : Min. speed to stop the vibration. (km/h *10)

High : Max. speed to stop the vibration. (km/h *10)

Vibro Stop Speed N Slow : Stop speed in neutral detection slow ramp (Slow Mode)

N Fast : Stop speed in neutral detection fast ramp (Fast Mode)

Drive Poti Deadband : Deadband of the drive lever in neutral position (%).

Fine Drive Poti Min. : Min speed set by the Fine Drive Potentiometer (%).

OneGear Motor Flag : Usage of a 2 gear motor or constant motor.

Fine Drive 1. Gear Steps : number of speed steps in 1. gear.

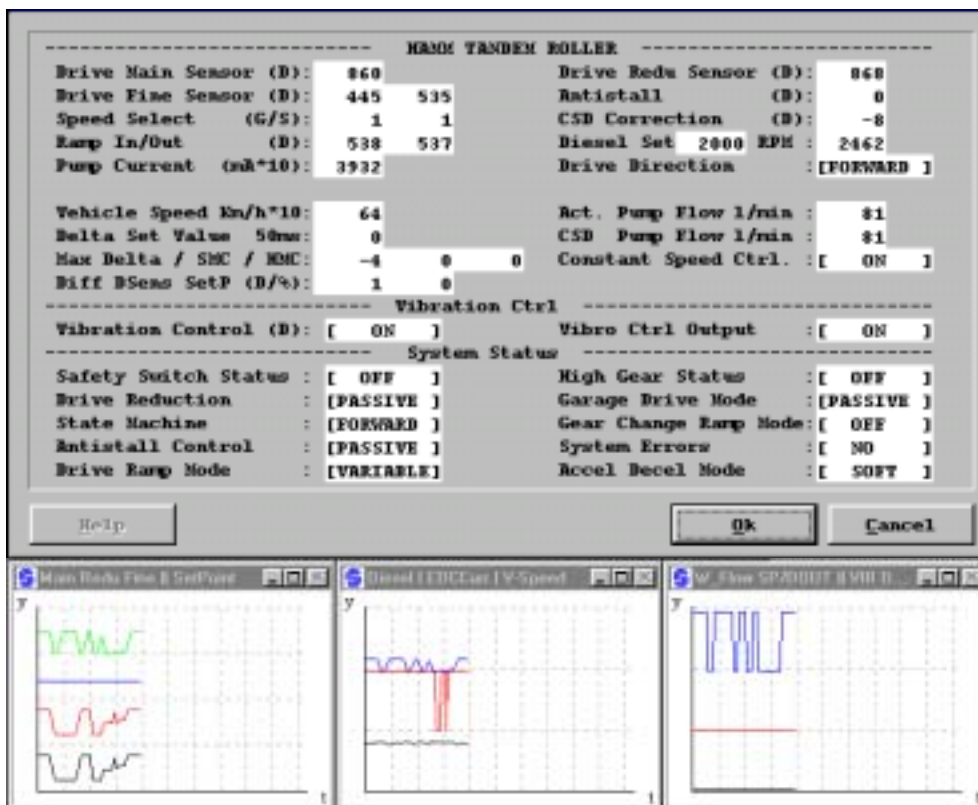
2. Gear : number of speed steps in 2. gear.

real : real number of steps in 2. gear.

9. Run Screens

9.1 Data Main Screen

This screen is displayed by selecting <0> and in the Main Menu or is hit on the keyboard in Run Mode. Hit to enter the Setup Mode.



- In the upper part of the screen alphanumeric system data is visible.
- **System Data**
 - Drive Main Sensor** : Main drive sensor digital input value.
 - Drive Redu Sensor** : Redundant drive sensor digital input value.
 - Drive Fine Sensor** : Fine drive potentiometer digital input value/internal input value (digits, max 1023)
 - CSD Correction** : Internal digital value for constant speed correction.
 - Speed Select** : Speed selection: Gear selection (1,2); Fine drive step (1..12)
 - Setpoint Value / Dr.** : Internal speed setpoint (direct / ramped value). (digit)
 - Diesel Set RPM** : Antistall diesel RPM setpoint / actual diesel RPM.
 - Curr. Drive** : Drive output current (mA * 10).
 - Drive Direction** : Drive direction [FORWARD]; [NEUTRAL]; [REVERSE].

HAMM Digital Control Systems



Roller Drive Control System

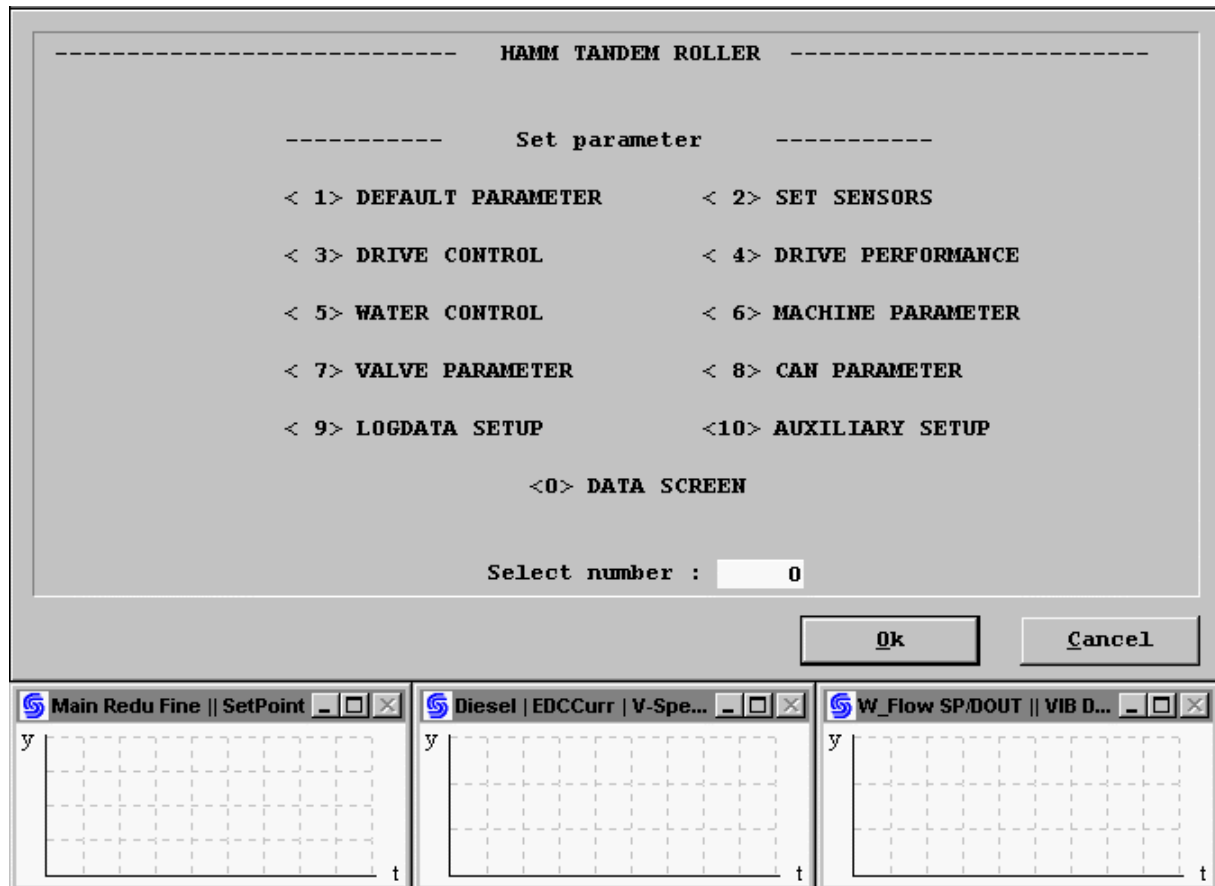
DV 8 SUPER



Operation manual for the

Service Tool WinGPI


7.4 Main Menu

After the **Check System Screen** the **Main Menu** appears.



- You select the sub menus for parameter setting by entering the menu number (number plus )
- Each sub menu is described in detail on the following pages. If no setup of machine parameters is required simply enter <0> and  to enter **Run Mode** and switch to the **Data Screens** (see chapter 10).

8.6 Machine Parameter Setup Menu

This submenu will be shown if you select number <6> and  in the **Main Menu**.





```

----- Machine Setup Parameter -----

Pump Volume           (Unit ccm/rev) : 55
Motor Volume 1. Gear  (Unit ccm/rev) : 1259
Motor Volume 2. Gear  (Unit ccm/rev) : 630
Motor Quantity        : 4
Motor Shift           : 1

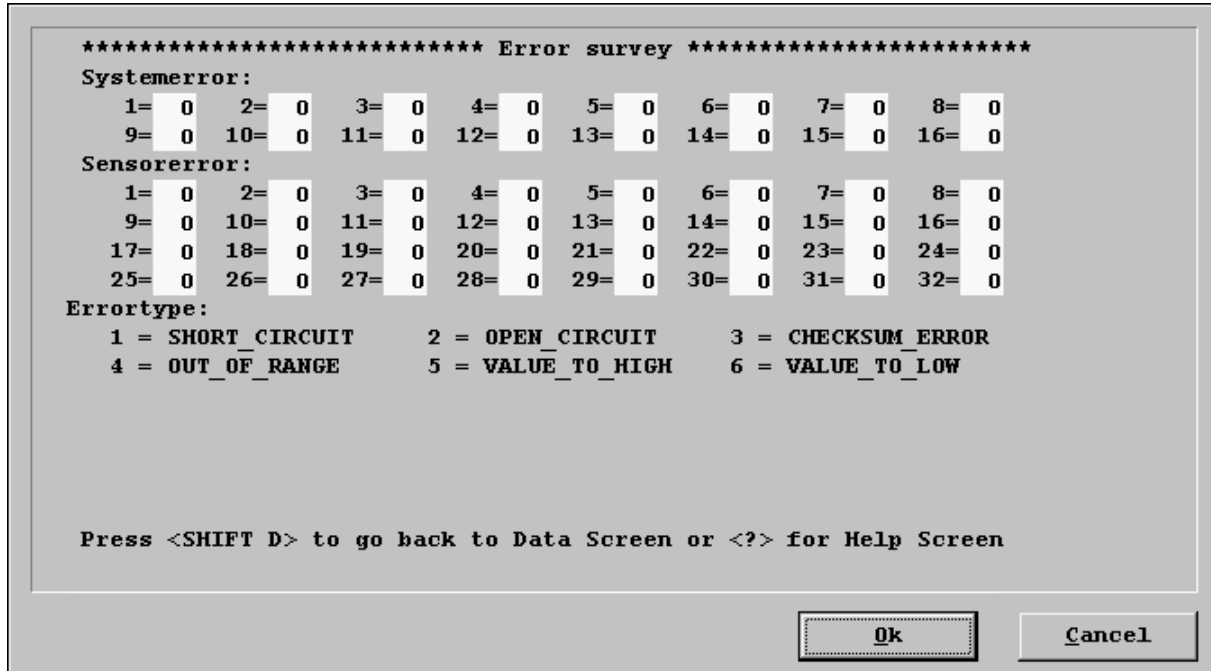
Roll Tire Diameter    (Unit mm) : 1200

<ESC> - Abort  <TAB> - next Parameter  <RETURN> - OK
  
```

- This menu allows setting the Machine **Setup Parameter**.
 - The  key will set the cursor to the next input position. The marked parameter can be changed. At the last item a  will set the cursor to the first one.
 - If all parameters are correct push  at the last item. Now the parameters will be stored in the digital system.
 - If you push **ESC** this menu is left without storing the new values in the digital system.
 - After selecting **ESC** or  you enter the **Main Menu**.
- **Machine Parameters**
 - Pump Volume** : Displacement of the drive pump (cc per RPM)
 - Motor Volume 1. Gear** : Displacement of the motor in 1st gear (cc per RPM)
 - Motor Volume 2. Gear** : Displacement of the motor in 2nd gear (cc per RPM)
 - Motor Quantity** : Number of drum motors
 - Motor Shift** : two position motor „shift“ (1) or constant motor „no shift“ (0)
 - Roll Tire Diameter** : Drum diameter (mm)

9.4 Error Survey Screen

This **Error Survey Screen** is displayed when entering in the **System Data Screen**.



- Error numbers of 16 system errors and 32 free determinable sensor errors .
- There is a help screen available to find the relationship between error number and sensor. Press to access the **Error Help Screen**. (see chapter 9.5)
- After the error list, return to the **System Data Screen** with the key combination.

The error type is shown behind the error number:

- 0 = no error
- 1 = short circuit in the peripheral circuit
- 2 = open circuit in the peripheral circuit
- 3 = Checksum error (Parameter)
- 4 = out of range
- 5 = value too high
- 6 = value too low

Figure 1: SAUER-SUNDSTRAND logo



5. Select and load a TCF-file (see figure 2).


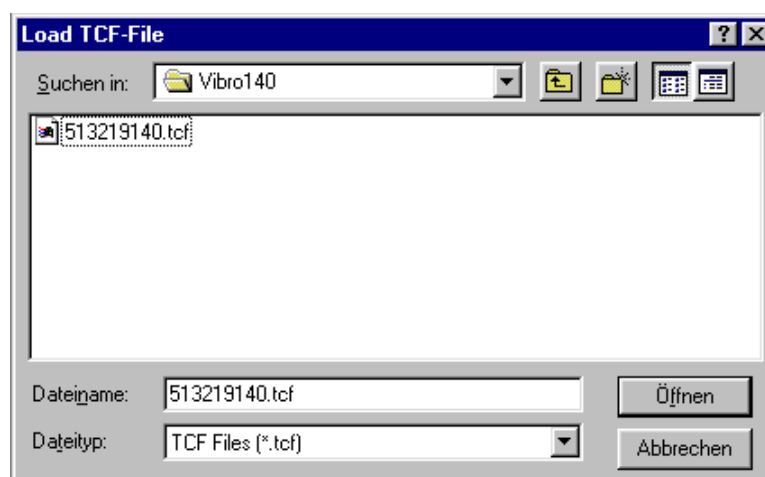
Use Menu **File Open TCF-File** or use the button 

Figure 2: Terminal Control Files (TCF)



6. Turn on ignition to give power to the SUSMIC.

The first screen appears (see **Chapter WinGPI Setup Introduction**).

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8.2.3 Valve Deadband Setup

Select **2** and **←** in the **Sensor Setup Menu**, after selecting **1** and **←** in the **Sensor Setup Ask Screen**. In this menu, it is possible to setup the valve deadband for vibration pump (Big Amplitude/Small Amplitude)



NOTICE: Run the diesel at high idle, to use run time conditions.

```

----- read valve current -----

PPU_Freq_Front      : 0          PPU_Freq_Rear      : 0
Active amplitude    : [ NONE ]   Current (mA*10)    : 2

MinCurrentPump     : 190
MinCurrentDiffSmall : 0          MinCurrentDiffBig  : 0
ValveBigDeadband   : 0          ValveSmallDeadband : 0

Use following keys for control:

<M> = Memory (store)      <Q> = Quit without store
<+> = Increase current    <-> = Decrease current
<B> = Big Amplitude       <S> = Small Amplitude
<N> = Neutral

! You can only save the new Values if you set both new !
! Otherwise the settings will be ignored !

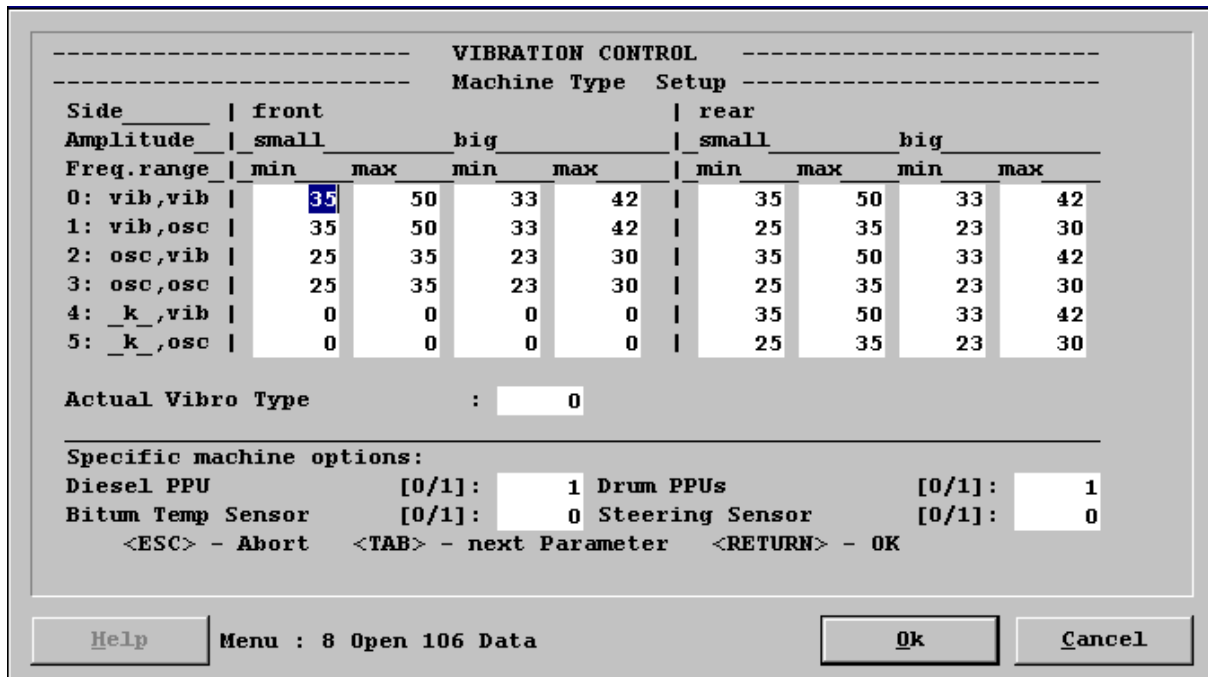
Ok Cancel

```

- **Deadband current for the big amplitude:**
Press **** to select the big amplitude. Increase the current with the **<+>** key, until the vibration starts. Decrease the current with the **<->** key until the vibration stops.
- **Deadband current for the small amplitude:**
Press **<S>** to select the small amplitude. Increase the current with the **<+>** key, until the vibration starts.
- **Accept actual currents:**
Press the **<M>** key, if all data are set. The values will be accepted, if both setup currents are set, otherwise ignored.
- **Leave the menu:**
Press the **<Q>** key, to leave the menu.

8.8 Machine Type Setup Menu

This submenu will be shown if you select number <8> and in the **Main Menu**.



- This menu allows to change the vibro type and the frequency ranges.

Actual Vibro Type : Work mode:
 (Vibration = vib or Oscillation = osc) for front and rear
 See the list and select.



Maschinenspezifische Optionen:
Diesel PPU : Flag for diesel PPU (1/0).
 CSD only with diesel PPU. Without PPU, no diagnostics for the Diesel

Drum PPU : Flag for drum PPU (1/0).
 Closed loop is only possible with installed PPU. Without PPU, no regulation. If Diesel and drum are not active, it is control

Bitum Temp Sensor : Sensor for bitumen temperature (0/1).

Steering Sensor : Then display option decide to this flag.

9.2 Internal Check Screen

This *Internal Check Screen* is displayed when entering   in Run Mode.

```

----- VIBRATION CONTROL -----
----- Internal Voltage ----- DIG -- U*10 -- Status ---
Sensor Supply Voltage (VSEN) : 514 50 [ O.K. ]
Bat. Supply Voltage (VSEN) : 426 135 [ O.K. ]

----- Output Current ----- DIG -- mA*10 -- Status ---
Check Valve Output Current : 1 1 [ O.K. ]



ValveType : [ EDC ] DieselPPUInstalled : 1
DrumPPUsInstalled : 1

Software Version : 100 System Ident Number : 513219
RtosVersionNo : 27 LibVersionNo : 25
Software Date : 27 . 10 . 1999

Press <SHIFT D> to go back to Data Screen

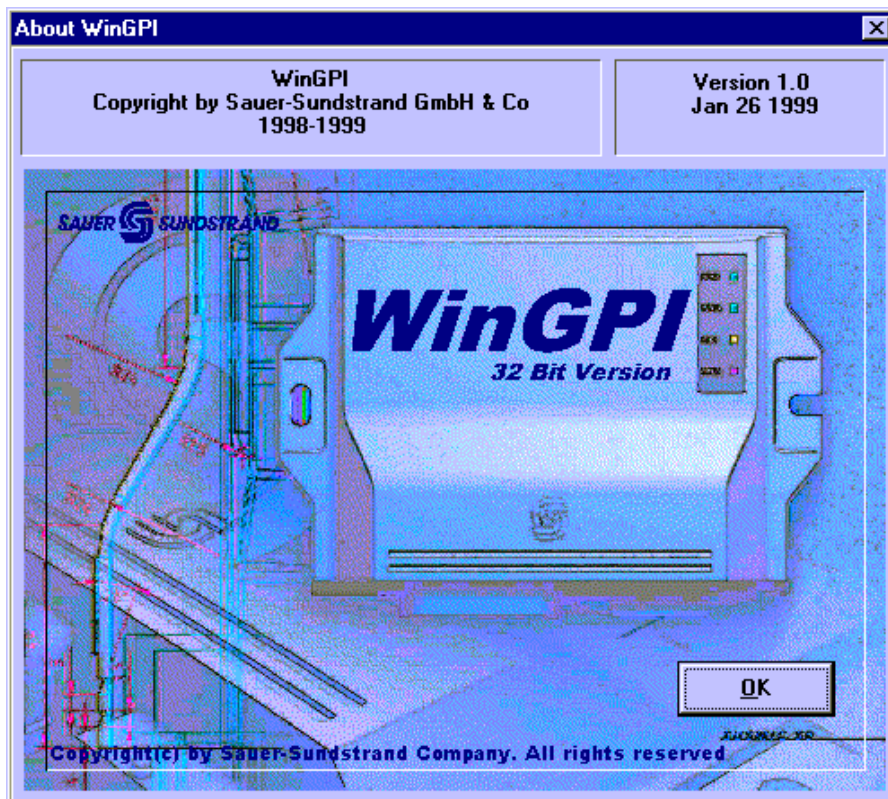
Ok Cancel

```

- This screen shows the internal system data.
- There are the digital values, the calculated physical values and the status.
- Return to the **System Data Screen** with the   key combination.

Sensor Supply Voltage	:	Sensor voltage (V)
Bat. Supply Voltage	:	Internal supply voltage of the system (V)
Check Valve Output Current	:	Valve current (mA*10)
Valve Type	:	Selected valve (EDC / PROP)
DieselPPUInstalled	:	Status of the diesel PPU
Valve Type	:	Status of the drum PPU
Software Versions Number	:	Software version
System Ident Number	:	Software ident number
RTOS Versions Number	:	Version of the operating system

Figure 1: SAUER-SUNDSTRAND logo



5. Select and load a TCF-file (see figure 2).


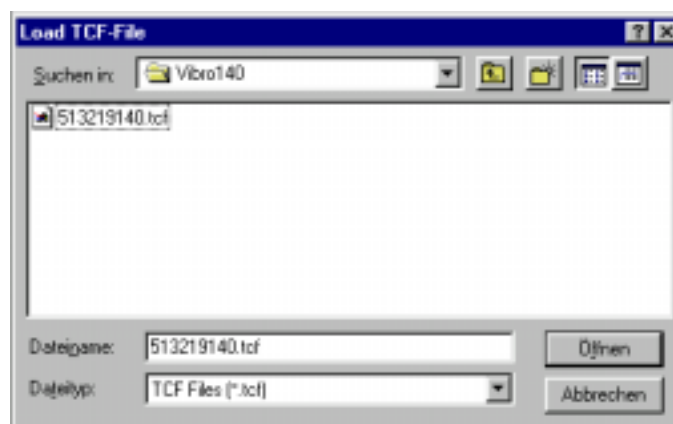
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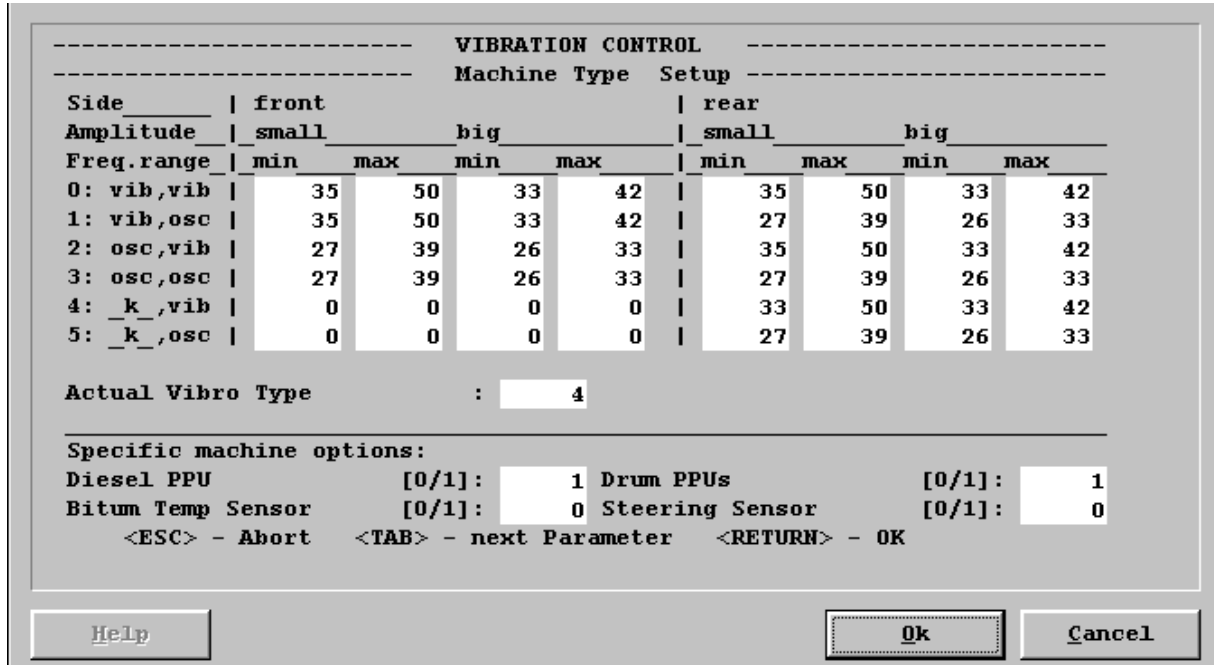
Ok Cancel

```

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- **Accept actual currents:**
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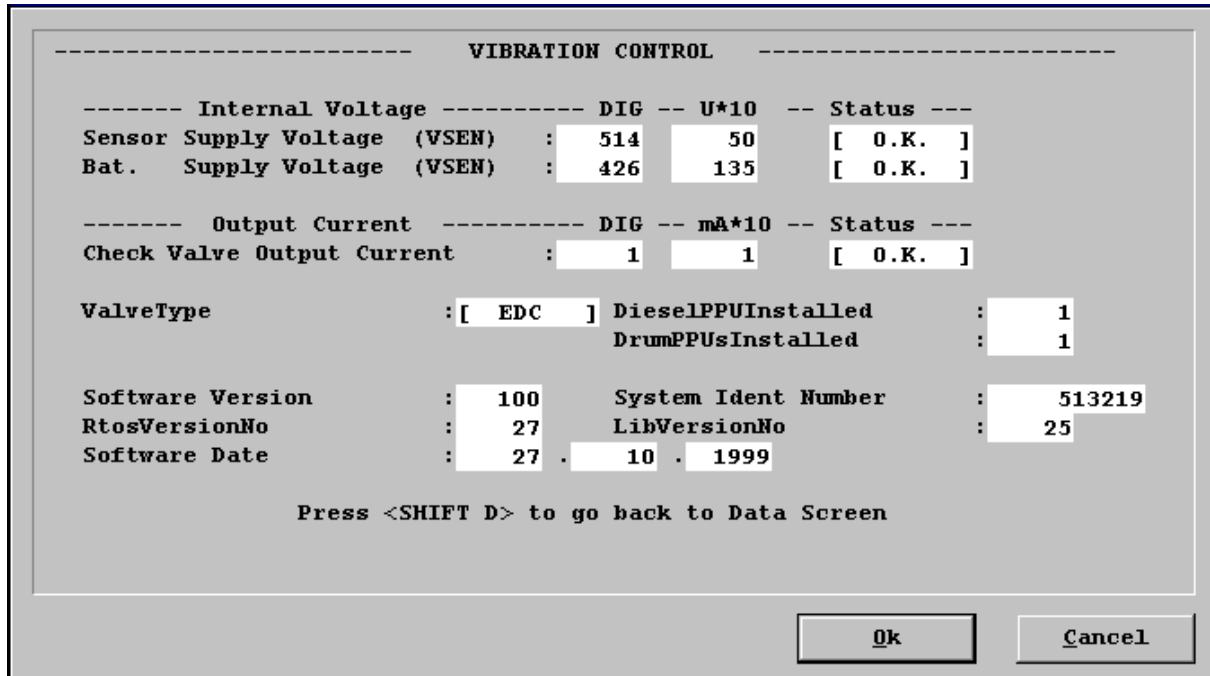
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Check Valve Output Current	:	Valve current (mA*10)
Valve Type	:	Selected valve (EDC / PROP)
DieselPPUInstalled	:	Status of the diesel PPU
Valve Type	:	Status of the drum PPU
Software Versions Number	:	Software version
System Ident Number	:	Software ident number
RTOS Versions Number	:	Version of the operating system




- After successful update, the SUSMIC system starts automatically and the first window is the **"Warning screen"**.
- After actuating key , the **"System Information Screen"** is displayed. Here you can see details about indent and version number of the actualized software.

4. Reading in of sensors and input of system parameters



- Confirm the **"System Information Screen"** with key .
- You reach the start check screen **"Check System Parameter"**.
- After quitting the start check screen by pressing key , the main menu: **"Set parameter"** is displayed on the screen.

4.1 Default Control Parameter (= Setting of the standard parameters)

- By pressing  and key , you select the Standard Parameter Set-up Menu **"Default Control Parameter"**. Here you set the machine type as well as the system parameters to pre-defined values.

Enter  for DV8 *or*
 for DV6 and confirm with key .








If there is **no** change, you return to the main menu with input of  and .
=>This is valid for all further windows!

4.2 Sensor Set-up



- Back in the main menu **"Set parameter"** enter  and confirm with key .

4.2.1 Set Drive Tandem (= Reading in of the drive lever sensor)



- Followed by the menu: **"Sensor Set-up"**, enter  for drive lever sensors **"Set Drive Tandem"** and confirm with key .
- This is followed by a safety check, enter  for **YES** and confirm with key .
- Followed by the menu: **"Drive Tandem Sensor"**




- After successful update, the SUSMIC system starts automatically and the first window is the **“Warning screen”**.
- After actuating key  , the **“System Information Screen”** is displayed. Here you can see details about ident and version number of the actualized software.

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- By pressing  and key  , you select the Standard Parameter Set-up Menu **“Default Control Parameter”**. Here, you set the machine type as well as the system parameters to pre-defined values.

Enter  for DV8 *or*
 for DV6 and confirm with key  .







If there is no change, you return to the main menu with input of  and  .

=> This is valid for all further windows!

4.2 Sensor Set-up

- Back in the main menu: **“Set parameter”** please enter  and confirm with key  .

4.2.1 Set Freq Main (= Reading in of the frequency sensors)

- Menu: **“Sensor Set-up”** will be started. Enter  for the frequency sensor **“Set Freq Main”** and confirm with key  .
- This is followed by a safety check, enter  for **YES** and confirm with key  .

4.1 Default Control Parameter <1> (= Setting of the standard parameters)

- By pushing and key , you select the standard Parameter Set-up Menu **"Default Control Parameter"**. Here, you set the machine type as well as the system parameters to pre-defined values.

Enter for HD 70 or
 for HD 75 or
 for HD 90 / HD 150 TT or
 for HD 120 and confirm with key .



If you want to exit ***without*** change, you return to the main menu with input of and .

=>This is valid for all further windows!

4.2 Wheel Parameter <2>

- Back in the main menu: **"ANTISPIN Set parameter"** enter and confirm with key .
- This is followed by the Wheel Parameter Set-up Menu **"Wheel parameter"**. Here, some basic settings have to be carried out. With key (tabulator) the individual parameters can be selected. Should a parameter be changed, mark the old value and enter a new value.

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