DIAG+

V 4.14

USER GUIDE

Haldex

000 700 255 / 07.05. / Redditch

GB

Contents

Introduction

With **DIAG+** you can use a standard personal computer to read and delete diagnostic codes, program vehicle parameters and End-of-line-Test the **EB+** system.
The PC Interface pod is the hardware to allow communications between a standard PC and a number of diagnostic interfaces. Connections to the PC interface are done through a 9 to 25 way cable connecting to the RS232 port on the computer and a additional cable connecting the diagnostic interface pod to the ECU.
A USB to Serial converter can be used - recommended type 'Roline' (RS 450-3238).
The vehicle parameter data is stored inside the **EB+** ECU. It will remain intact even after electrical power is removed from the **EB+** system.

NB: EB+ Interface Pod is different to the Interface Pod as used on MODAL / MODULAR ABS systems.

Minimum system specification

The minimum PC or Laptop specification to run the **DIAG+** package is as follows:

- Processor - 486 or above
  RAM - 8 Megabytes (16 recommended)
  Hard Drive - 20 Megabytes
  Monitor - 640 x 480 VGA Minimum

- MS Windows 95, 98, ME, XP, NT and 2000

In addition to the above, a CD drive is required for software installation and COM serial port required to connect to the interface pod.

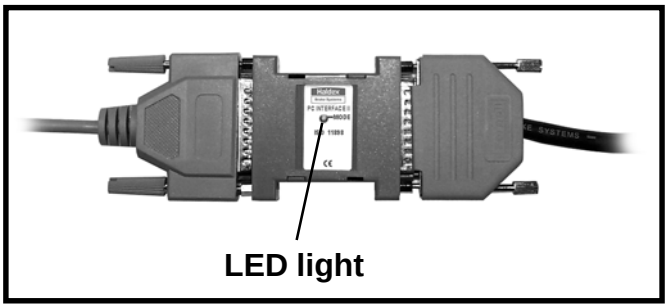
The hardware

The **DIAG+** Interface kit is comprised of the PC Interface pod, together with its connecting cables and a transit case.
The pod is provided with a multi function LED to confirm correct function of the unit as follows:

Red: To indicate that 24V power is connected to the **EB+** ECU.

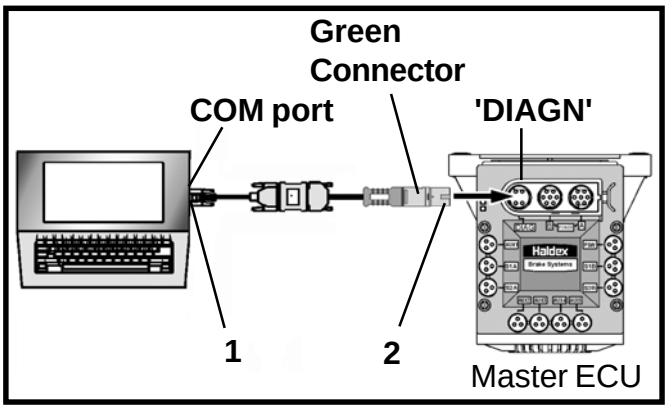
Green: To indicate data is being transmitted.

NB: *During connection the Red and Green alternate.*



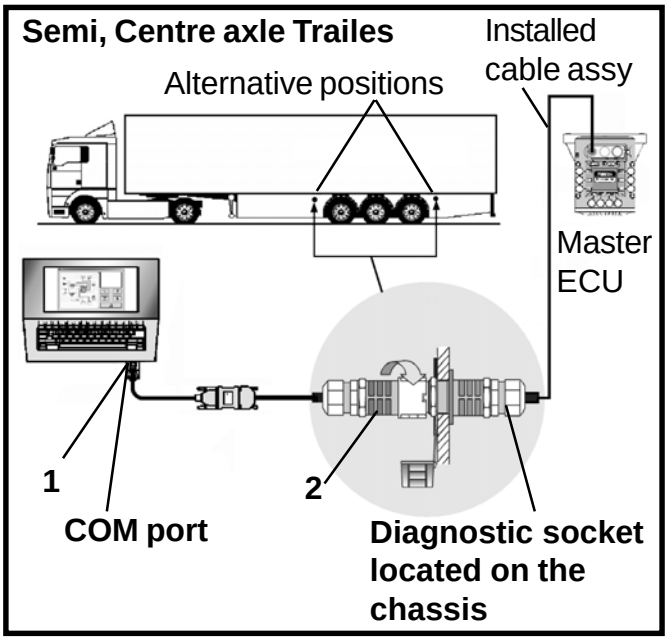
Installation Option 1

Gently push the plug **'1'** into the COM port socket on the back of your PC or Laptop and tighten the screws.
Push the GREEN plug **'2'** into the **EB+** ECU socket marked 'DIAG'.



Installation Option 2

Gently push the plug **'1'** into the COM port socket on the back of your PC or Laptop and tighten the screws.
Push plug **'2'** into the **EB+ Diagnostic socket** located on the chassis.



Power the **EB+** system from an external 24V supply and the LED light on the interface pod should now be on, coloured red. If it is not, please check your connections and try again.

The software

NB: It is possible to install the software without connecting the DIAG+ hardware although no data will be available.

Switch on your machine and enter into the desktop mode of your PC. Insert the **DIAG+** CD into your PC.
Follow the on screen instructions to install the program in the relevant Language.

NB: *For DIAG+ to work, your EB+ system MUST be connected and powered by an ISO7638 power supply.*

The files are installed in the PC folder :

C:\Program Files\Haldex\Diag+

Also Sub folders are installed as follows :
C:\Program Files\Haldex\Diag+\DTC Reports
C:\Program Files\Haldex\Diag+\ECU Setup files
C:\Program Files\Haldex\Diag+\EOLT Reports
Installation is now complete.
Please keep your installation software in a safe place in case you need to reinstall at any point.

ECU Connections - Semi, Centre axle Trailes

Make all required connections to the ECU

3 - Power supply ISO7638.....
4 - Pressure switch PSW.....
5 - Sensor S1A.....
6 - Sensor S1B.....

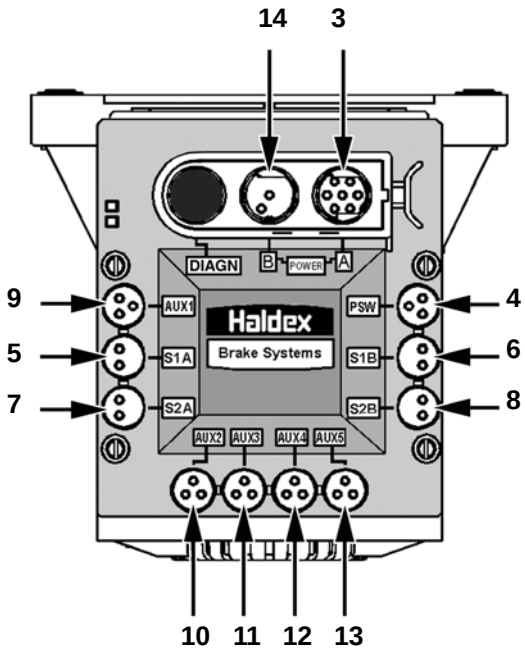
} Minimum required for a 2S/2M system

7 - Sensor S2A
8 - Sensor S2B
9 - AUX1
10 - AUX2
11 - AUX3
12 - AUX4
13 - AUX5

} See page 12 for Options

14 - Backup power supply ISO1185 (24N)

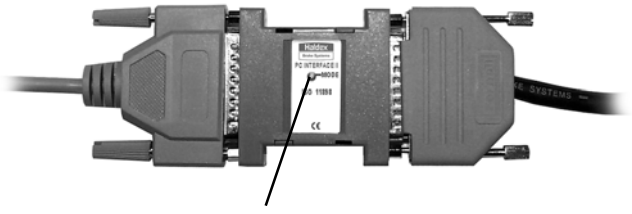
NB: *It is possible to use the DIAG+ software to set the ECU parameters with only the power supply ISO7638 connected, i.e. without any other connections 4 to 14, but diagnostic codes will be logged and will require to be deleted on final vehicle installation.*



Power up the **EB+** ECU. During the self-check procedure the system displays the following functions:

1 - The Trailer EBS warning lamp comes ON and stays ON.
2 - One audible cycle is produced by the EPRV's (EBS valves).

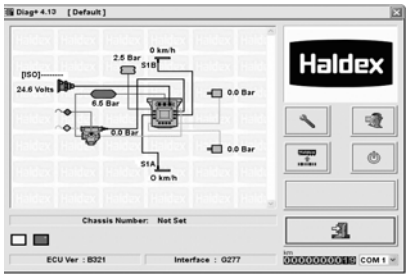
At the same time the LED on the PC interface pod will illuminate 'RED/GREEN' to show that it is receiving a power supply from the ECU.



Red/Green LED

Enter into the **DIAG+** program by the short-cut icon **'15'** created on your desktop. The following 'Normal' screen **'16'** should appear (See page 6 for secondary main screen displays).

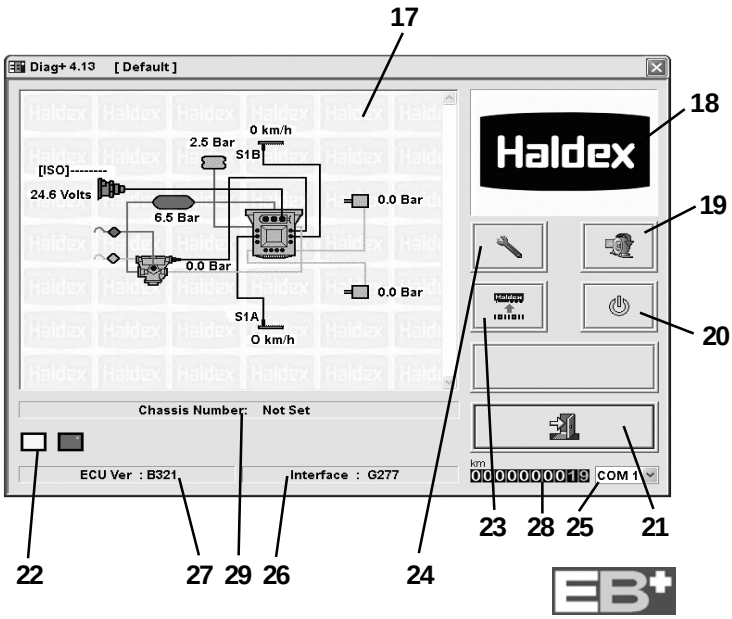
15



16

Understanding the main screen display

17 - Browser window (e.g.. EB+ System layout (EOLT))
18 - Video screen
19 - 'End-of-line Test' (EOLT) procedure
20 - Reset the ECU
21 - Exit the **DIAG+** program
22 - Cab Lamp (Pin 5 - ISO7638) indicator
23 - Read, Setup and Program the ECU
24 - Read/Delete Diagnostic Trouble Codes (DTC)
25 - PC connection port indication
26 - Interface Version number
27 - **EB+** ECU Version number
28 - Odometer reading (Total distance) and
29 - Chassis Number



ECU Connections - Full Trailers

Make all required connections to the Master ECU

3 - Power supply ISO7638.....
4 - Interconnecting cable.....
5 - Pressure switch PSW.....
6 - Sensor S1A.....
7 - Sensor S1B.....
8 - Sensor S2A.....
9 - Sensor S2B.....

} Minimum required for a 4S/3M system

10 - AUX1
11 - AUX2
12 - AUX3
13 - AUX4

} See page 7 for Options

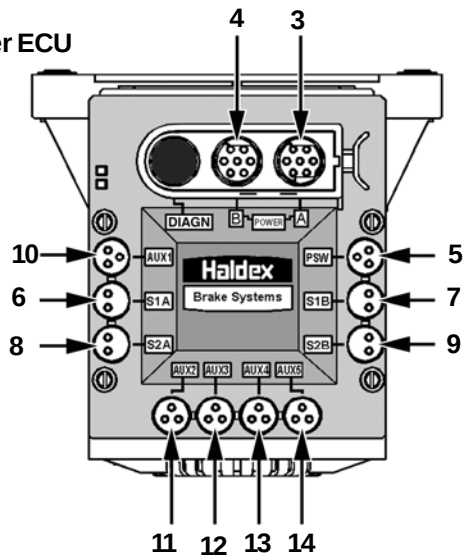
14 - AUX5 - Not Available

Make connection to the Slave ECU

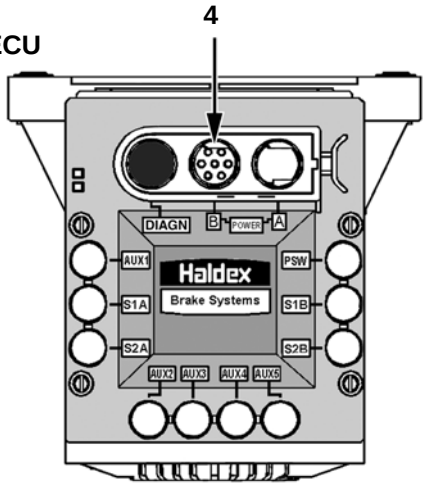
4 - Interconnecting cable..... Minimum required

NB: *It is possible to use the DIAG+ software to set the ECU parameters with only the power supply ISO7638 and Interconnection cable (Master to Slave ECU) connected, i.e. without any other connections 5 to 14, but diagnostic codes will be logged and will require to be deleted on final vehicle installation.*

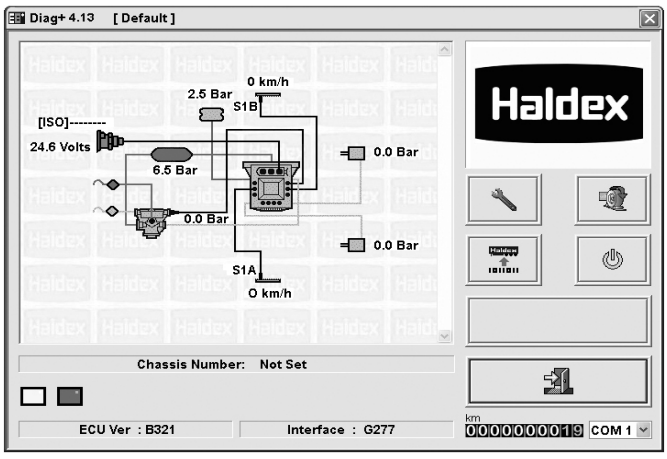
Master ECU



Slave ECU

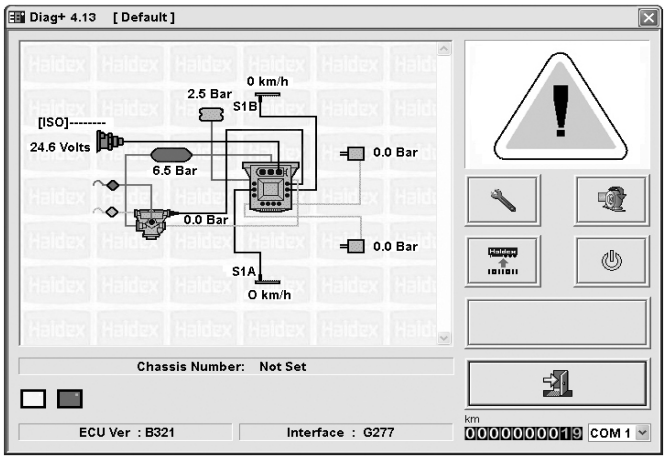


On entering into the **DIAG+** program the following 'Normal' screen should appear appear (See page 6 for secondary main screen displays).

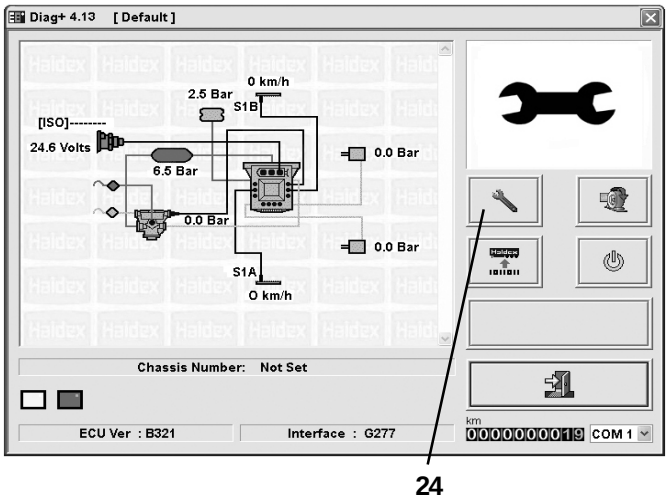


Secondary main screen displays

A flashing 'Warning' symbol indicates EB+ system warning. This alternates with the following symbols:-

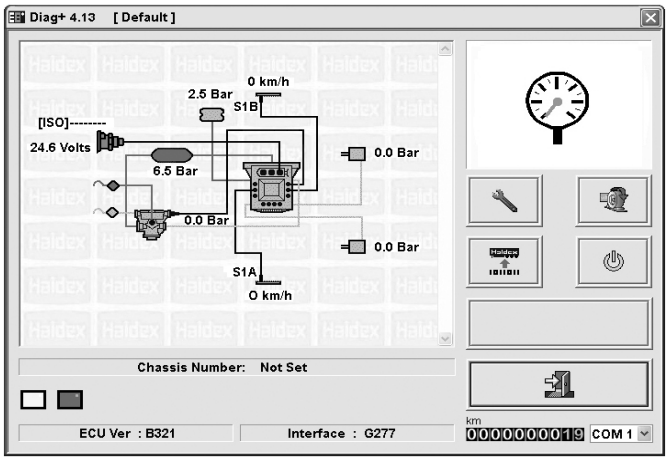


A flashing 'Spanner' symbol. This indicates presence of a **'Active'** Diagnostic Trouble Code.
Click on button  **'24'** to Read/Delete DTC.



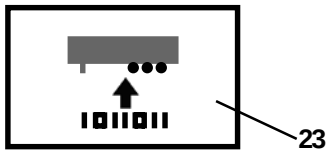
A flashing 'Gauge' symbol. This indicates the reservoir pressure is below 4.5 bar.

NB: *End of line Test reservoir pressure requires to be 1 bar above laden brake output pressure to the Trailer.*



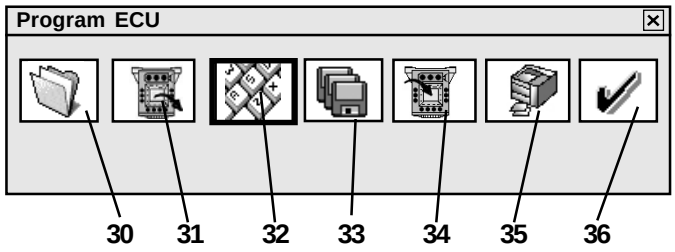
Setting System Parameters

Click button **'23'** Read, Setup and Program the ECU
The following screen will appear.



Understanding the screen display

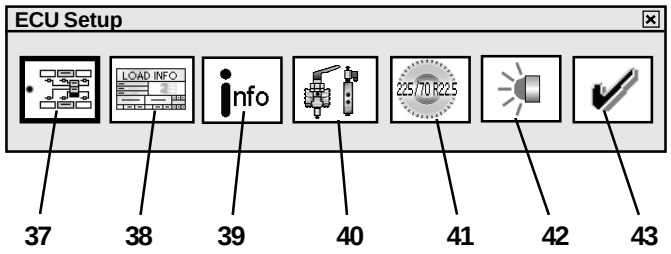
30 - Read ECU Configuration from disc
***NB:** To read this file you must enter the 'Edit' ECU parameters section (32).*
31 - Read Configuration info. from ECU
***NB:** To read this file you must enter the 'Edit' ECU parameters section (32).*
32 - Edit ECU parameters and Configuration
33 - Save ECU Configuration to disc
34 - Program ECU with current Configuration info.
35 - Print current ECU Configuration information - Load Plate
36 - OK - Exit the 'Program ECU' menu



To edit the ECU parameters and Configuration click on button **'32'.** 
The following screen will appear.

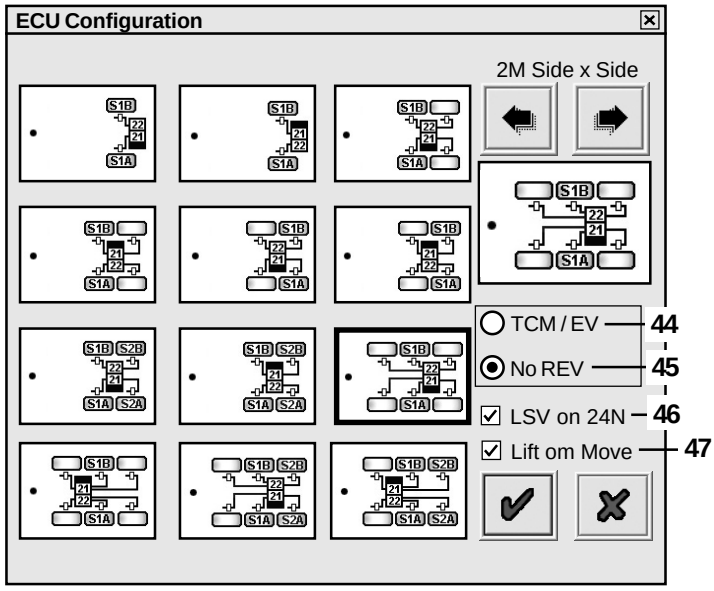
Understanding the screen display

37 - Setup the ECU configuration and layout
38 - Setup loadplate configuration
39 - Display trailer information
40 - Setup aux configuration data
41 - Setup wheelscale configuration
42 - Setup lamp flash configuration
43 - OK - Exit the ECU setup



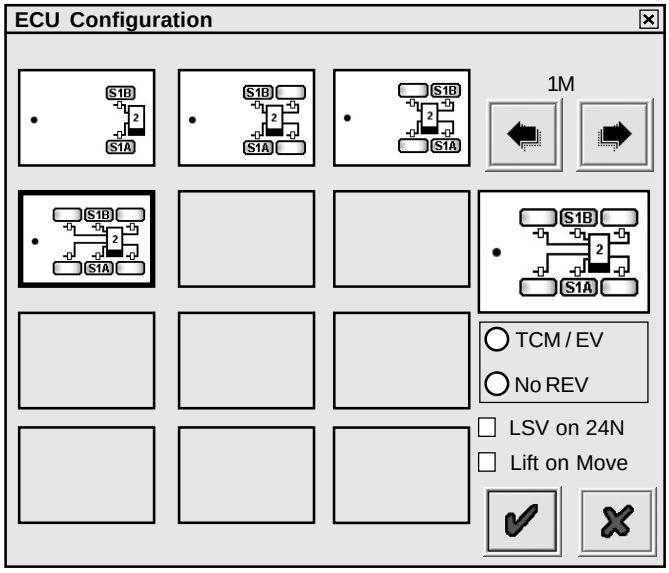
ECU Configuration

Click on button **'37'**  on the ECU setup screen.
The following (1 of 6) screen will appear.
a) 2M Side x Side
b) 1M
c) 2M Axle x Axle
d) 2M Non Integrated
e) 3M Full Trailer
f) 3M Semi Trailer
The configuration group title is shown at the top right of the screen in which below are left and right arrow boxes to enable to toggle between the configuration screens.
See page 8-9 for further screen layouts.
Click on one of the boxes on the left side of the table selecting your system layout. A view on the right side of the table is the chosen **ECU** configuration and layout.
Click on button marked ✔ to accept.
***NB:** The ECU Configuration has a default setting of: 3 Axle trailer, 2 Sensors on centre axle, ECU left hand installation.*
If box **'44'** is selected this adjusts the working parameters in the absence of a REV.
If box **'45'** is selected (as shown) this adjusts the working parameters in the presence of a REV.
If box **'46'** is selected (as shown) Load Sensing function is a vailable together with ABS on Backup powering (ISO1185 (24N)).
If box **'47'** is selected (as shown), any automatic lift axles will not raise until move away (when the lamp goes out). It is to enable roller testing of all axles even when unladen. (***NB:** Use for the UK vehicle test authority*).

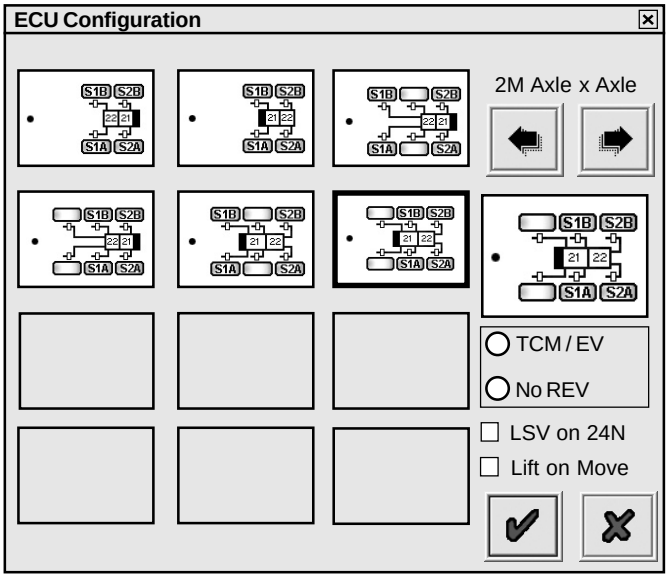


1M configuration screen.

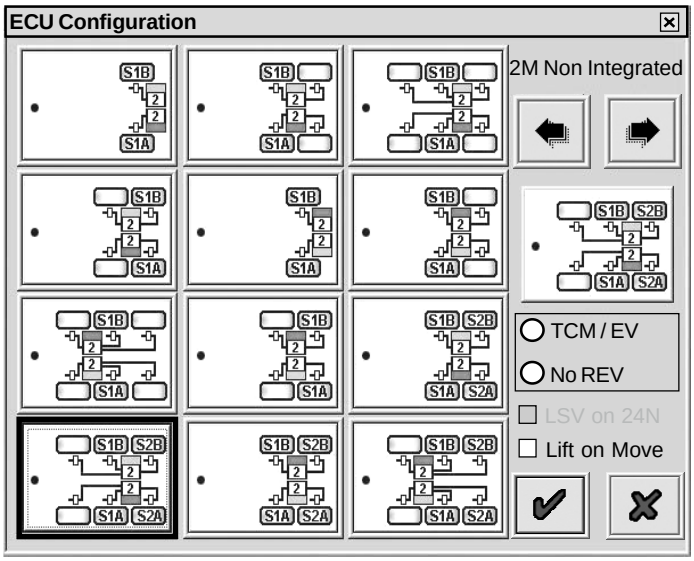
NB: *Position of ECU can be left, right, front or rear.*



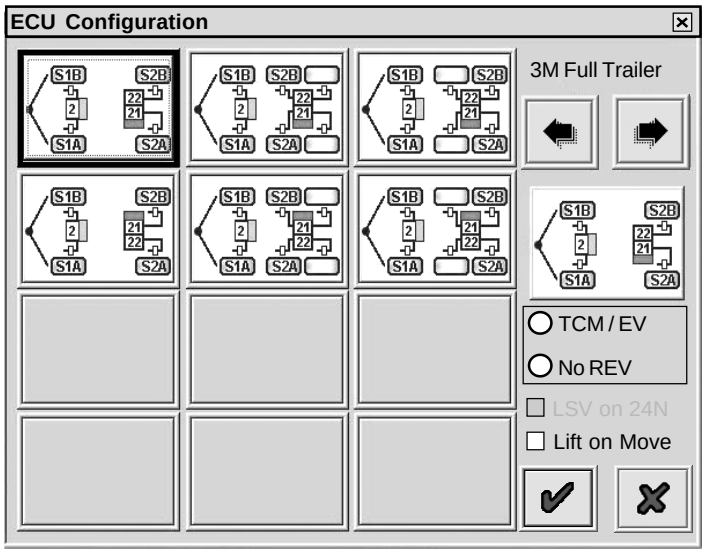
2M Axle x Axle configuration screen.



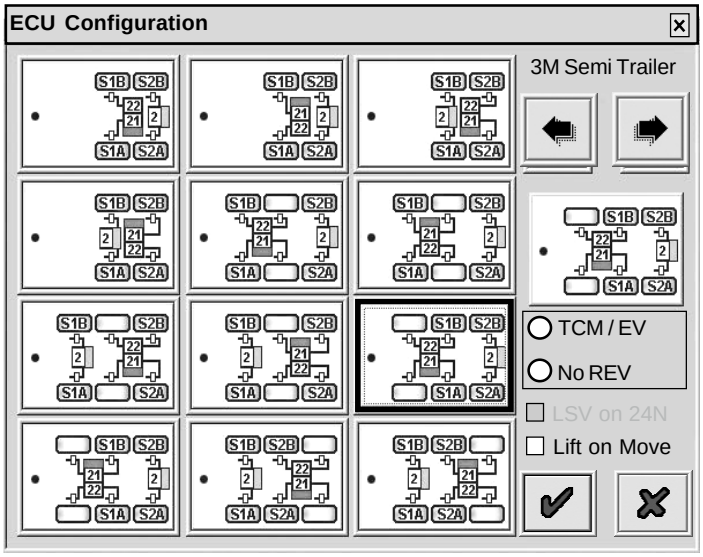
2M Non Intergrated configuration screen.



3M Full Trailer configuration screen.

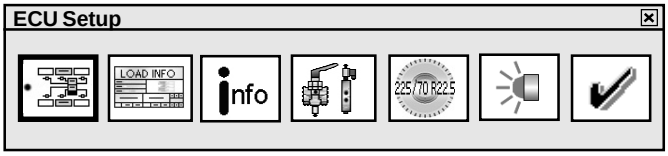


3M Semi Trailer configuration screen.



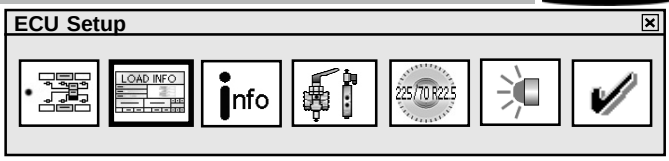
Click on button marked ✔ to accept.

The following screen will appear.

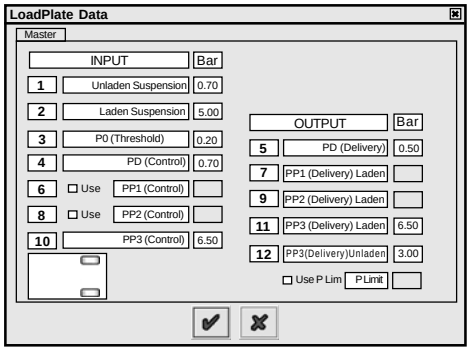


Load Plate Data entry

Click on button 



For Semi and Centre axle Trailers the following screen will appear.

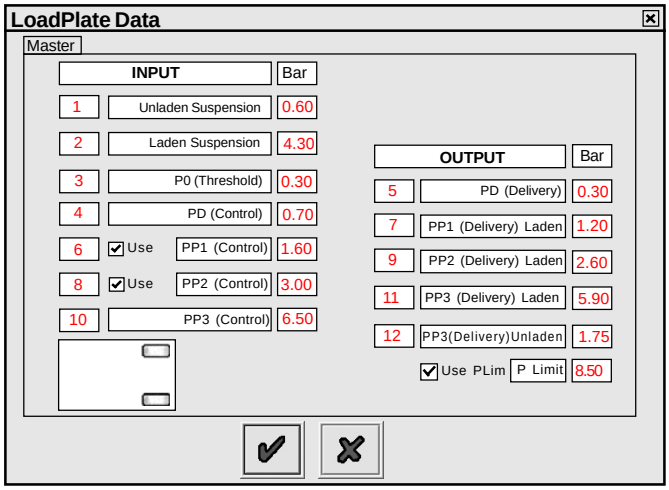


The screen shows a set of default values (1 to 5 and 10 to 12) which require to be entered in accordance to the vehicles brake calculation.

Highlighting the appropriate box enables you to edit the value or pressing the tab button on your PC will step through, one by one, the various boxes to be edited or selected.

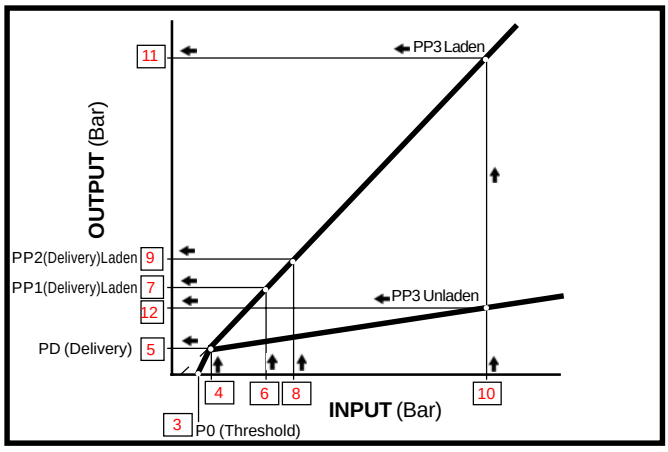
The following example shows values entered from a HALDEX brake calculation as shown below.
***NB:** If values **6, 7, 8,** and **9** are required (see brake calculation example below) To enter the values click on ☐Use boxes.*

6	☑ Use	PP1 (Control)	1.60	7	PP1 (Delivery) Laden	1.20
8	☑ Use	PP2 (Control)	3.00	9	PP2 (Delivery) Laden	2.60



If value **'P Limit'** is required, this limits the pressure at the brake chambers to the value selected which must be >=5.00 bar (***NB:** not derived from brake calculation).*
To enter the values click on ☐ Use P Lim box (default value is 8.50 bar).

Click on button marked ✔ to accept.



The graph shows the brake demand pressure (INPUT) values are in relation to the brake delivery pressure (OUTPUT) values.

Haldex brake calculation

Input datas for the EBS-Modulator EB+:

Axle	control pr. Axle load unladen (Kg)	pm Bag press. unladen (bar)	6.50 bar Brake press. unladen (bar)	control pr. Axle load laden (Kg)	pm Bag press. laden (bar)	P0 (3)	PD (4)	(6)	(8)	(10)	Brake press. laden (bar)
		(1)	(12)		(2)						(5) (7) (9) (11)
1	1150	**0.60**	**1.75**	8000	**4.30**	0.00	**0.30**	**1.20**	**2.60**	**5.90**	**bar**
2	1150	0.60	1.75	8000	4.30	0.00	0.30	1.20	2.60	5.90	bar
3	1150	0.60	1.75	8000	4.30	0.00	0.30	1.20	2.60	5.90	bar

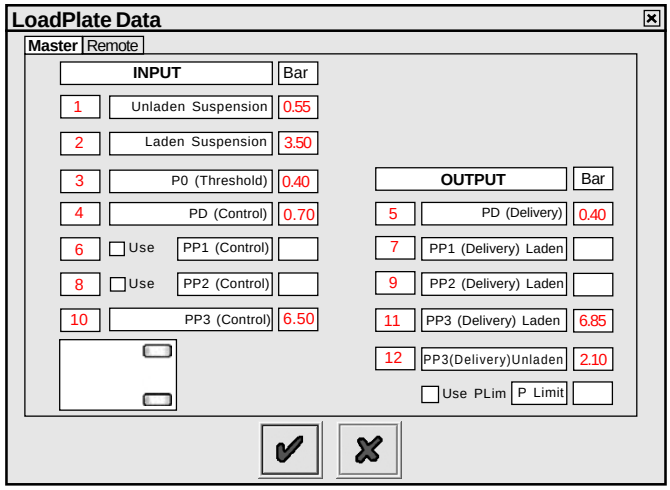
***NB:** Items 6,7,8,and 9 vary according to Brake calculation (i.e. Drum brakes to Disc brakes)*

Load Plate Data entry

For Full Trailers the following screen will appear.

The screen shows a set of default values For a Master and a Remote ECU which require to be entered in accordance to the vehicles brake calculation.

The following examples shows values entered from a HALDEX brake calculation as shown below.



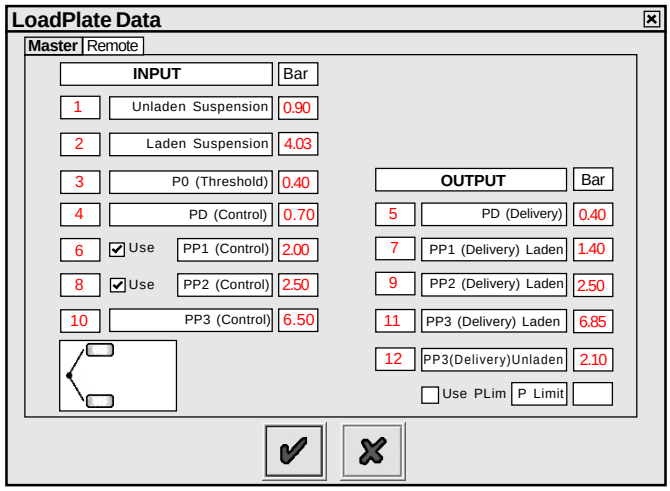
Click on button marked ✔ to accept

Haldex brake calculation - Master ECU

Input datas for the EBS-Modulator EB+:

						3 P0	4 PD	10 P3	
RAG	control pr.	pm	6.50 bar	control pr.	pm	0.40	0.70	6.50	bar

Axle	Axle load unladen (Kg)	1 Bag press. unladen (bar)	12 Brake press. unladen (bar)	Axle load laden (Kg)	2 Bag press. laden (bar)	Brake press. laden (bar)	5	11	
1	1700	0.55	2.10	9000	3.50	0.00	0.40	6.85	bar



Click on button marked ✔ to accept

Haldex brake calculation - Remote ECU

Input datas for the EBS-Modulator EB+:

						3 P0	4 PD	6 P1	8 P2	10 P3	
FAG	control pr.	pm	6.50 bar	control pr.	pm	0.40	0.70	2.00	2.50	6.50	bar

Axle	Axle load unladen (Kg)	1 Bag press. unladen (bar)	12 Brake press. unladen (bar)	Axle load laden (Kg)	2 Bag press. laden (bar)	Brake press. laden (bar)	5	7	9	11	
1	2350	0.90	2.10	10000	4.03	0.00	0.40	1.40	2.50	6.85	bar

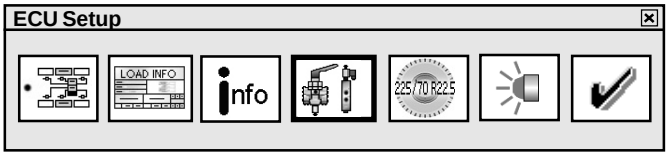
Setting Auxiliaries

The following parameters have default settings as shown below :
Auxiliaries - Not used (Unused)
Wheel Scaling - 306 rev/KM, 520 Rdyn (mm) and 100 No. of teeth exciter
Lamp Sequence - ON/OFF

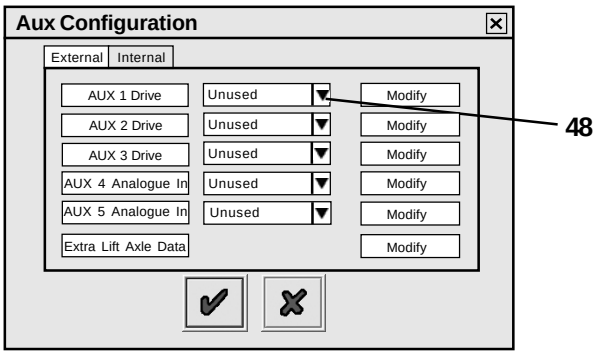
If these are correct go to page 18 (Trailer information)

Click on button 

The following screen will appear.

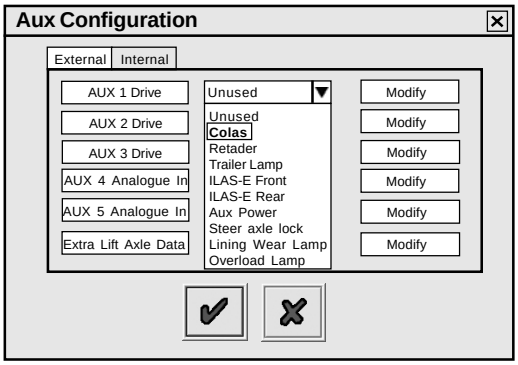


The screen shows the various Auxiliary connections that can be used (i.e. AUX 1 to 3, 4 and 5). Clicking on arrow **'48'** displays a listing of options that can be selected.

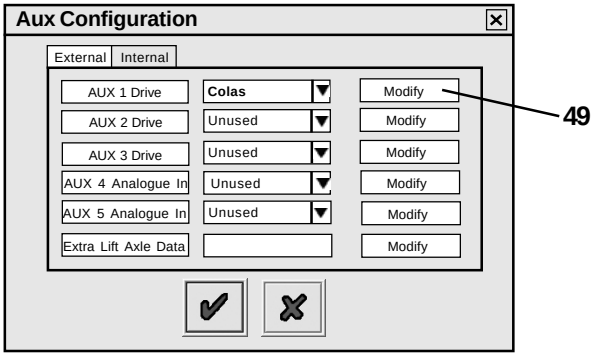


Selecting options

COLAS (on Aux 1)
Highlight option and click to select it. The required parameters for that option are automatically set.



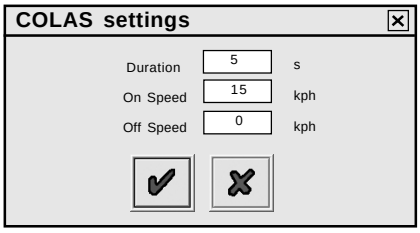
To view the set parameters click on button marked Modify **'49'.**



Example COLAS (AUX 1,2 & 3)
The following screen will appear modify the values as required.

Duration : Time Colas solenoid is energised (Default 5s)
On Speed : The output to the Colas will be switched ON (Default 15 Kph)
Off Speed : The output will be switched OFF either when the vehicle decelerates below the 'Off Speed' or when 'Duration' has been exceeded, whichever happens first. (Default 0 Kph)

***NB:** By setting the 'Duration' to 0 sec. this now becomes a speed signal and a 'On and Off Speed' has to be set.*



Click on button marked ✔ to accept.

Example ILAS®-E (AUX 1,2 & 3)

Auto raise / auto lower.

The following screen will appear, modify the values as required.

Drop : The pressure where the ILAS solenoid is de-energised resulting the axle to drop. (Default - 90% of Laden suspension pressure)

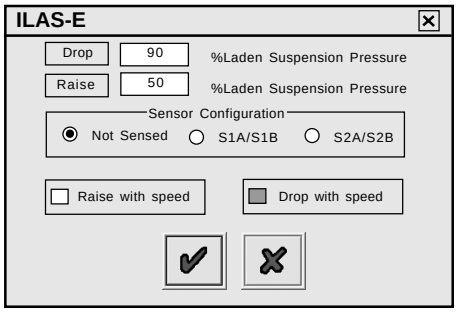
Raise : The pressure where the ILAS solenoid is energised resulting for the axle to raise. (Default - 50% of Laden suspension pressure)

Sensor Configuration : Disables the wheel speed signal when a sensed axle is raised. (Default - Not Sensed)

Raise with speed, Drop with speed are further options that can be selected when the drop and raise pressures are reached.

NB: *For installations with* ILAS®-E *use*:

- Front lift axle only = **ILAS-E Front**
- Middle lift axle only = If lifting it weights the king pin then **ILAS-E Front**
- Rear lift axle only = **ILAS-E Rear**
- Two axles lifted i.e. Front and Rear = **ILAS-E Front + ILAS-E Rear**



Example ILAS®-E Manual (AUX 2 & 3)

Manual = Manual raise / auto lower. Requires a 24V signal/switch on the yellow wire of the 3 core AUX cable.

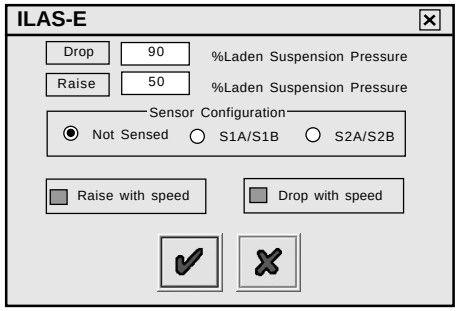
The following screen will appear, modify the values as required.

Drop : The pressure where the ILAS solenoid is de-energised resulting the axle to drop. (Default - 90% of Laden suspension pressure)

Raise : The pressure where the ILAS solenoid is energised resulting for the axle to raise. (Default - 50% of Laden suspension pressure)

Sensor Configuration : Disables the wheel speed signal when a sensed axle is raised. (Default - Not Sensed)

Raise with speed, Drop with speed Options are not valid.



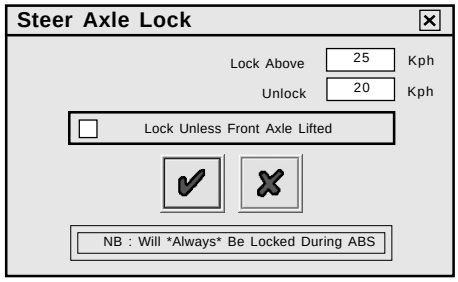
Example Steer Axle Lock (AUX 1,2 & 3)

The following screen will appear modify the values as required.

Lock Above : Speed at which the steer axle locks (Default 25 Kph)

Unlock : Speed at which the steer axle unlocks (Default 20 Kph)

Lock Unless Front Axle Lifted : The steer axle is set to lock and unlocks when the front axle is lifted in order to maintain turning circle.

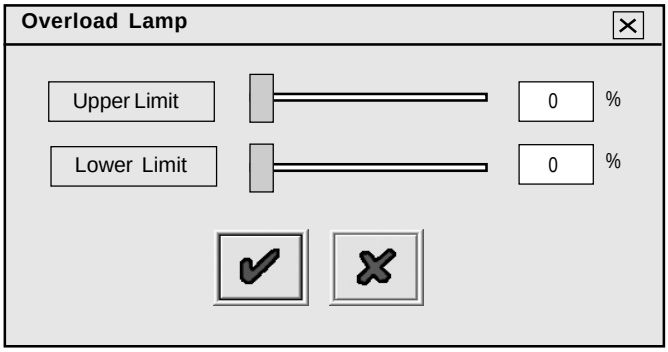


Example Overload Lamp (AUX 1,2 & 3)
For Semi / Centre axle Trailers

This gives a 24V output when the trailer load goes above the set limits. The following screen will appear modify the values as required.

NB: *Overload lamp works with ONLY THE MAIN (master ECU) Valve suspension Input.*

For Full trailers see **'Remote Overload Lamp'** Page 16



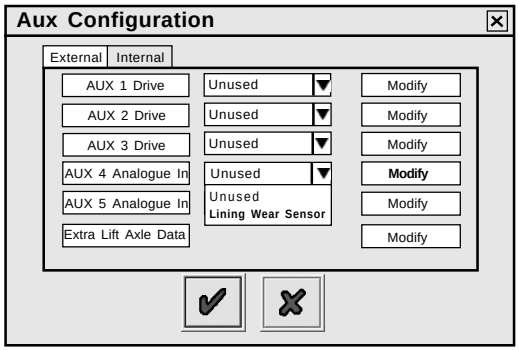
Lining Wear Lamp (AUX 1,2 & 3)

This gives a 24V output to a warning lamp when a lining wear sensor is worn.
NB: *This can only be selected after AUX 4 Option*

AUX 4 - Option

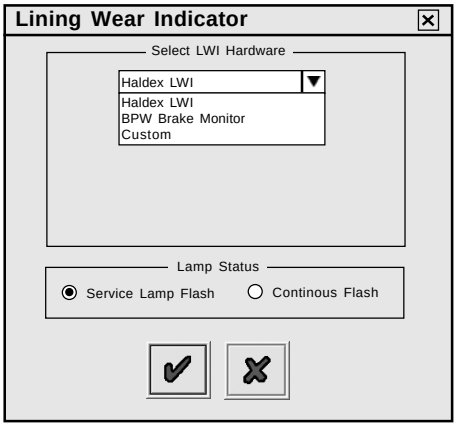
Selet 'Lining Wear Sensor'

To view extra options and parameters click on button marked Modify on 'AUX 4' line.



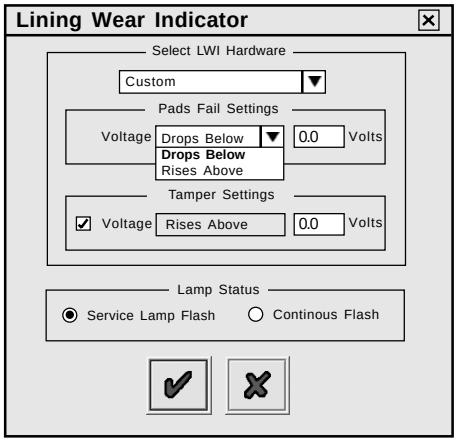
The following screen appears.
From the menu 'Select LWI Hardware' select type required from the pull-down menu. 'Haldex LWI' and 'BPW Brake Monitor' are pre-programmed options and no other data is required.
'Custom' allows entry of user settings (see Custom screen below).

The **'Service Lamp Flash'** is set as default. A sequence of three lamp flashes on ECU power up.
'Continuous Flash' causes the flashing to continue until the vehicle is first driven away from rest.



The Custom screen allows the user to enter custom voltage settings as to an alternative manufacturer lining wear system used.

N.B. *As the pads wear the input voltage can rise or drop. If the lining wear sensor is tampered (i.e.short circuited) the input voltage rises.*



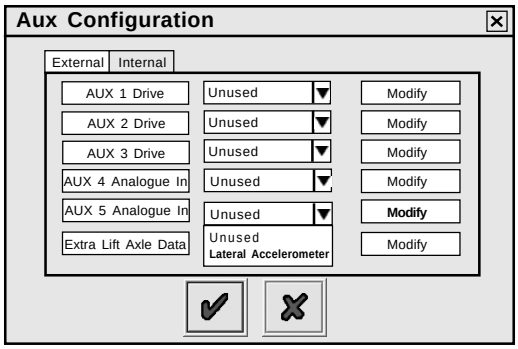
Lateral Accelerometer (EB+ Stability) for 2M Systems ONLY

Support for External Accelerometer

AUX 5 - Option

On the following ECU part Nos.
812 001 301 Version A256 or later
812 001 201 Version A256 or later
This AUX Configuration must be used.

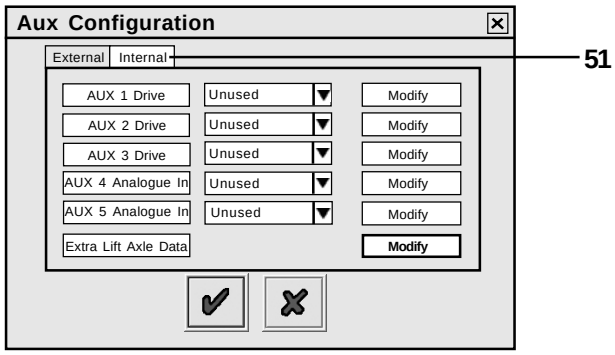
Select 'Lateral Accelerometer' to calibrate EB+ Stability.



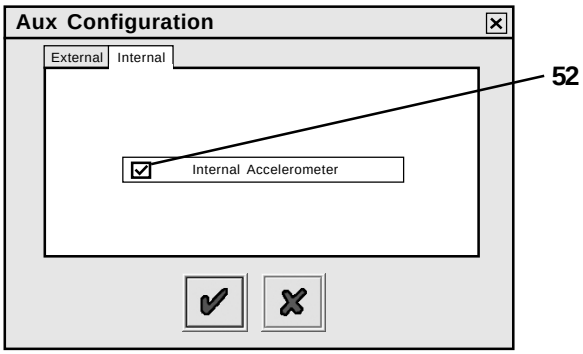
Support for Internal Accelerometer

On the following ECU part Nos.
812 013 001
812 012 001
This AUX Configuration must be used.

To set the parameters click on button **'51'** marked **'Internal'**



The following screen will appear.
Click on box **'52'** to select Internal Accelerometer Installation.
NB: *A additional Auxiliary test runs specifically for the Internal Accelerometer (see page 29* ***'INT'*** *test)*



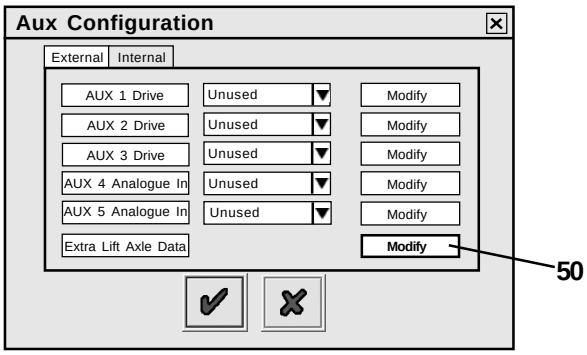
Reaction to Various Configuration Possibilities

Make sure the correct Aux Configuration is chosen i.e. External mounted on **AUX 5** or **Internal** (within the ECU).
Errors that will occure are as follows:

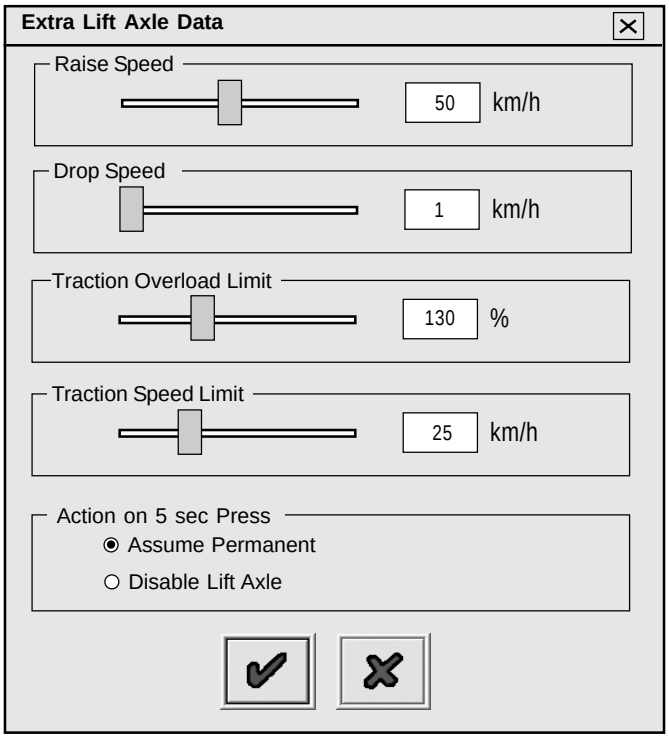
- Accelerometer will not work.
- A stability sensor DTC will be recorded.

Extra Lift Axle data menu

To view a set of parameters click on button marked **'Modify' '50'.**



The following screen will appear.



Raise Speed
If the option RAISE WITH SPEED is set for ANY lift axle, then the axle will not lift before the set speed (The default is 50 km/h).
Example is for manoeuvring before getting on to the highway.

Drop Speed
If the option DROP WITH SPEED is set for ANY lift axle, then the axle will drop automatically the vehicle speed falls below the set speed (The default is1 km/h).

Traction Overload limit
The Traction Assist axle will drop once the suspension reaches this value, based on % of laden setting. An INFORMATION icon is displayed above 130% to ask the user to check the design weights for the remaining axle(s) as thelegal limit is 130% of design weight. (The default is 130%).

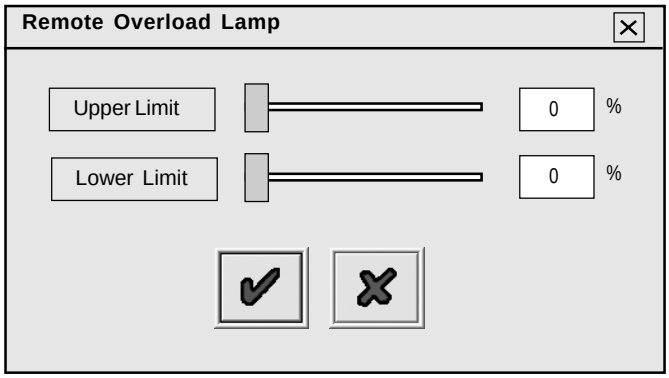
Traction Speed limit
The Traction Assist axle will drop once the vehicle speed increases above the value (The default is 25 km/h). A warning icon is displayed above 30 km/h to indicate that this is above the legal limit.

Action on 5 sec Press
Normally, when the Lift Axle Switch has been pressed for 5 s, the system assumes that the switch is a PERMANENT type, not a MOMENTARY type.
If this option is selected then the system will ALWAYS assume that the switch is MOMENTARY an will disable (lower) all lift axles until the system is next re-powered (ignition off).

Remote Overload Lamp (AUX 1,2 & 3) For Full Trailers (4S/3M system)

This gives a 24V output when the trailer load goes above the set limits, and off below Lower limit. The following screen will appear modify the values as required.

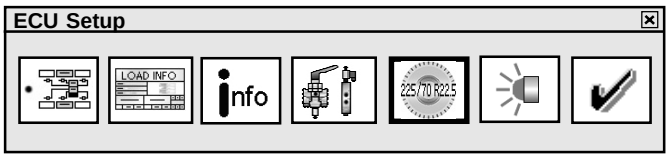
***NB:** Remote overload lamp works with ONLY THE REMOTE (slave ECU) Valve suspension Input.*



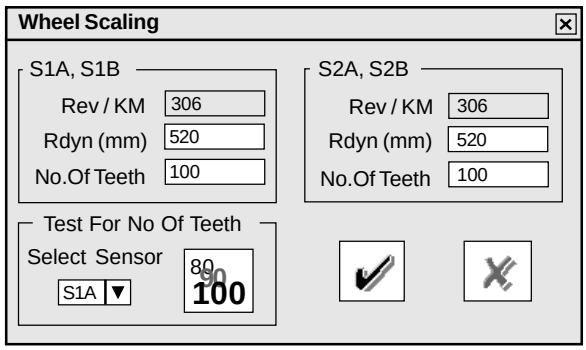
Setting Wheel Scaling

Click on button 

The following screen will appear.



The screen shows the default value of a tyre size of 306 revs/km, 520 Rdyn (Dynamic rolling radius - mm) with a 100 tooth exciter installed. This value covers tyre sizes from 19.5" to 22.5" and sets the correct ABS function and odometer of the system.
NB: *If the tooth number is not 100 the wheel scale factor on the Info Centre will read a different value.*
Click on button marked ✔ to accept.



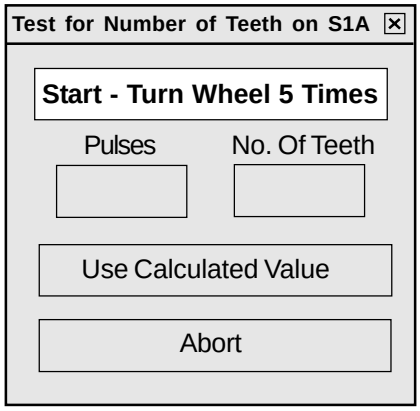
Test for number of teeth

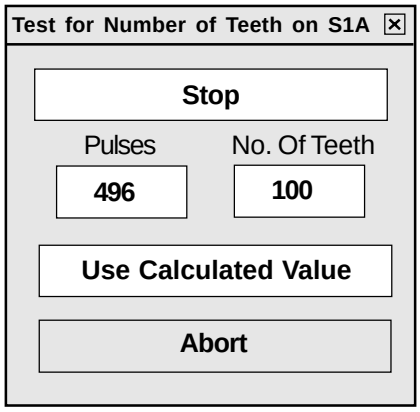
Click on button 

Click on button marked **'Start - Turn Wheel 5 Times'**
Rotate the Select Sensed wheel 1rev / 2sec, five times.
The Pulses box automatically records during the wheel rotation procedure.
After 5 turns, click on button marked **'Stop'**
The **'No. Of Teeth'** box indicates the value.
Click on button marked **'Use Calculated Value'** if required to use in wheel scaling above or note the value for information purposes.

Click on **'Abort'** to exit.

Repeat for any other selected sensor



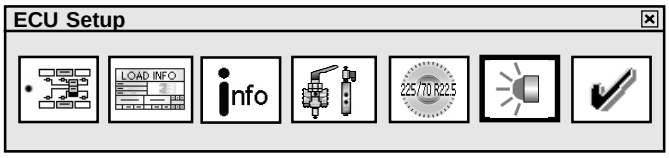


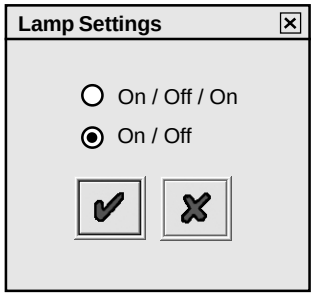
Lamp Settings

Click on button 

The following screen will appear.
The screen shows the two options of flash sequence for the trailer EBS warning lamp.
The ON/OFF sequence is set as a default.
Click on button marked ✔ to accept.

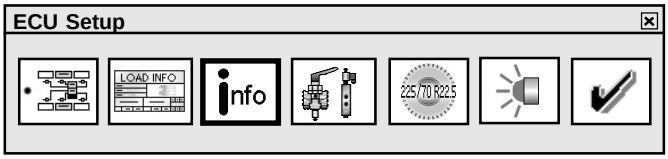
NB: *The ON/OFF lamp sequence change will only be visible if system air pressure is above 4.5 bar.*





Info - Trailer information

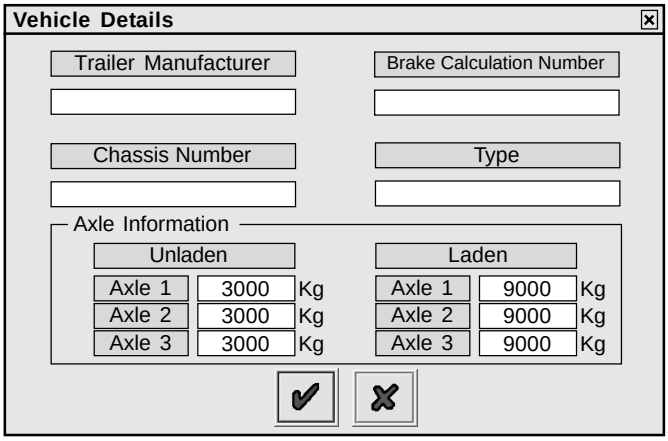
Click on button 



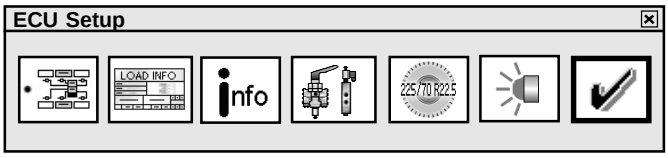
The following screen will appear.
Enter details of :
Trailer Manufacturer (19 characters)
Brake Calculation Number (16 characters)
Chassis Number (17 characters)
Type (12 characters)
Axle Information - Load of axle/s installed on the trailer.
(Default values are: Unladen =3000 Kg, Laden=9000Kg)

This information is stored in the ECU and can be printed out on the End-of-line Test report and load plate.

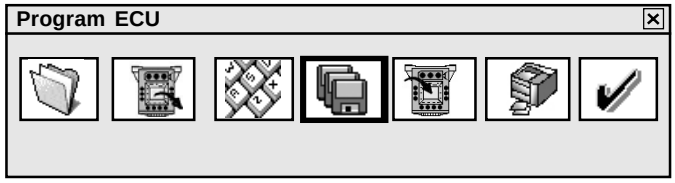
Click on button marked ✔ to accept.



'ECU setup' is complete (ECU parameters settings **not sent to ECU** - see next step).
Click on button marked ✔ to accept.

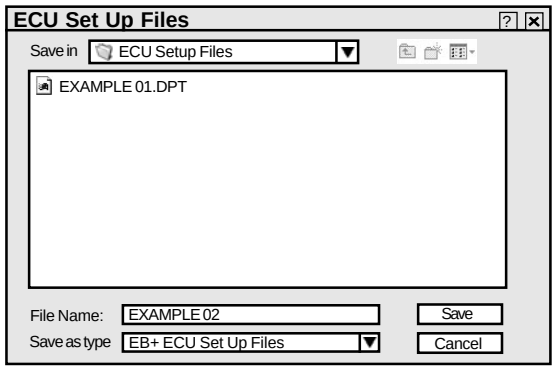


Saving the ECU parameters

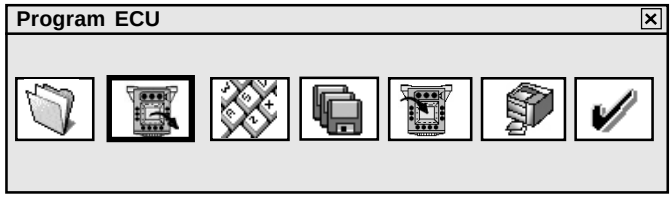


OPTION 1
Saving the ECU parameters file to disc
Click on button 

The following screen will appear.
A file name (e.g. EXAMPLE 01 saved as type .DPT) can be entered in position **'File Name'** and stored in the **C:\Program Files\Haldex\Diag+\ECU Setup files** folder.
Click on button **'Save'** to store the file.

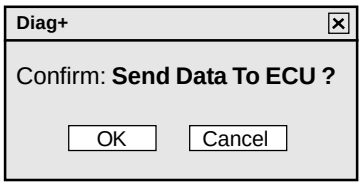


***NB:** The saved EB+ ECU parameter file can be used for future programming of ECU's (which require the same parameters) by recalling the file from the 'Open EB+ ECU File' button (number '30' see page 7).*



OPTION 2
Programming the ECU
Click on button  This activates the sending of the edited parameters file to the ECU.

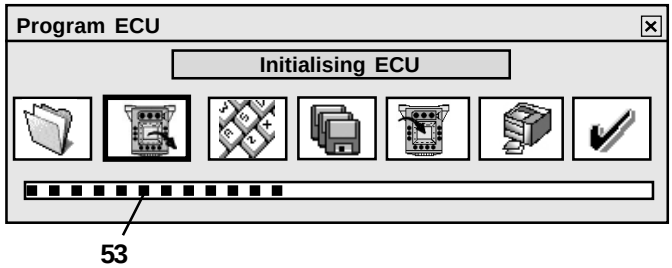
***NB:** At 90% progress all the DTC's are deleted and the ECU is reset.*

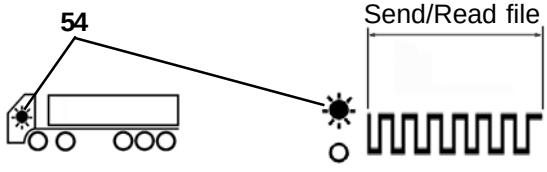


The status of this process is shown in the following ways:

53 - A bar indicator fills the progress box on the 'Program ECU' screen

54 - The trailers EBS warning lamp function is -
a) ON - ECU not programmed
b) FLASHING - programmed ECU (with an 'ECU setup' installed)

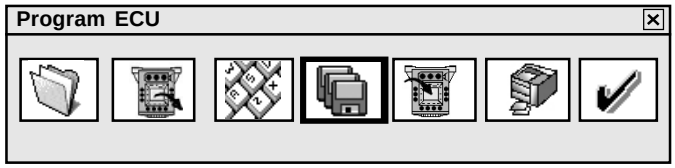




***NB:** The trailers EBS warning lamp is ON*

This completes the programming of the ECU.

The following screen will appear.



Click button  to view or print a label with the current ECU configuration information (Load plate label).

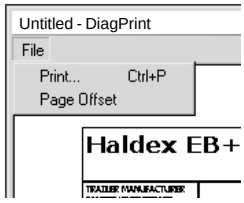
Print label using Haldex blank label 028 5301 09.

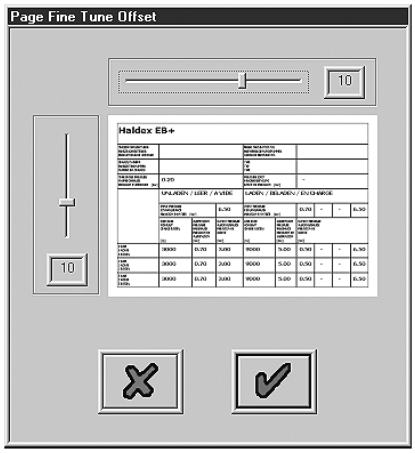
Use Laser printer only and refer to manufacturers information on printing a A5 size paper.
After installation spray on a clear lacquer (or a hard varnish) to protect the printed surface.

Example label for a Semi or Centre axle Trailer

EB+	ADR TÜ.EGG.094-04			4S/2M		S1A S1B	520mm 100t	S2A S2B	520mm 100t
TRAILER MANUFACTURER FAHRZEUGHERSTELLER PRODUCTEUR DE VEHICULE	12345678901234567890			BRAKE CALCULATION NO. BREMSBERECHNUNGSNUMMER CALCUL DE FREINAGE NO.		12345678901234567890			
CHASSIS NUMBER FAHRGESTELLNUMMER NUMERO DE CHASSIS	12345678901234567			TYPE TYP TYPE		123456789012			
THRESHOLD PRESSURE ANSPRECHDRUCK PRESSION D'APPROCHE [bar]	0.20			PRESSURE LIMIT DRUCKBEGRENZUNG LIMITE DE PRESSION [bar]		-			
	UNLADEN / LEER / A VIDE			LADEN / BELADEN / EN CHARGE					
	INPUT PRESSURE EINGANGSDRUCK PRESSION D'ENTRÉE [bar]		6.50	INPUT PRESSURE EINGANGSDRUCK PRESSION D'ENTRÉE [bar]		0.70	-	-	6.50
	AXLE LOAD ACHSLAST CHARGE ESSIEU [kg]	SUSPENSION PRESSURE BALGDRUCK PRESSION DE SUSPENSION [bar]	OUTPUT PRESSURE AUSGANGSDRUCK PRESSION DE SORTIE [bar]	AXLE LOAD ACHSLAST CHARGE ESSIEU [kg]	SUSPENSION PRESSURE BALGDRUCK PRESSION DE SUSPENSION [bar]	OUTPUT PRESSURE AUSGANGSDRUCK PRESSION DE SORTIE [bar]			
1 AXLE 1 ACHSE 1 ESSIEU	3000	0.70	3.00	9000	5.00	0.50	-	-	6.50
2 AXLE 2 ACHSE 2 ESSIEU	3000	0.70	3.00	9000	5.00	0.50	-	-	6.50
3 AXLE 3 ACHSE 3 ESSIEU	3000	0.70	3.00	9000	5.00	0.50	-	-	6.50

To align the print on the blank paper to be within the cut out margins use from the top menu 'File', 'Page Offset' command.





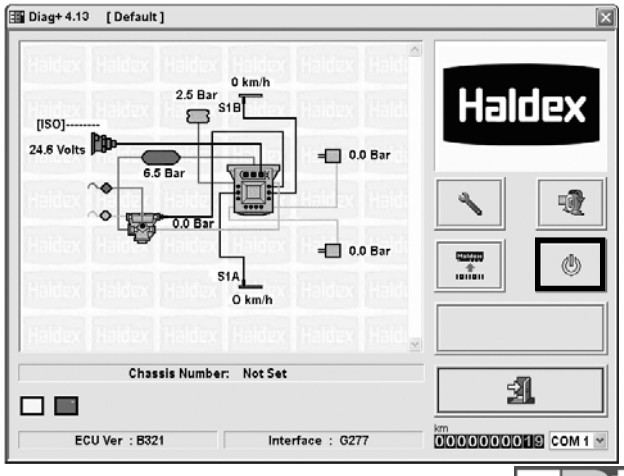
The following screen will appear. Use the vertical/ horizontal sliders to make the adjustment for the appropriate printer.

On completion of the label printing Click on button ✔ to on the appropriate screens return to the main screen.

Example label for **Full Trailer**

EB+	ADR TÜ.EGG.094-04				4S/3M		S1A S1B	520mm 100t	S2A S2B	520mm 100t
TRAILER MANUFACTURER FAHRZEUGHERSTELLER PRODUCTEUR DE VEHICULE	TRAILER EXAMPLE				BRAKE CALCULATION NO. BREMSBERECHNUNGSNUMMER CALCUL DE FREINAGE NO.		12345			
CHASSIS NUMBER FAHRGESTELLNUMMER NUMERO DE CHASSIS	12345				TYPE TYP TYPE		12345			
THRESHOLD PRESSURE ANSPRECHDRUCK PRESSION D'APPROCHE [bar]	1 AXLE 1 ACHSE 1 ESSIEU	0.40	2/3 AXLE 2/3 ACHSE 2/3 ESSIEU	0.40	PRESSURE LIMIT DRUCKBEGRENZUNG LIMITE DE PRESSION [bar]		1 AXLE 1 ACHSE 1 ESSIEU	8.50	2/3 AXLE 2/3 ACHSE 2/3 ESSIEU	8.50
	UNLADEN / LEER / A VIDE				LADEN / BELADEN / EN CHARGE					
	AXLE LOAD ACHSLAST CHARGE ESSIEU [kg]	SUSPENSION PRESSURE BALGDRUCK PRESSION DE SUSPENSION [bar]	OUTPUT PRESSURE AUSGANGSDRUCK PRESSION DE SORTIE [bar]		AXLE LOAD ACHSLAST CHARGE ESSIEU [kg]	SUSPENSION PRESSURE BALGDRUCK PRESSION DE SUSPENSION [bar]	OUTPUT PRESSURE AUSGANGSDRUCK PRESSION DE SORTIE [bar]			
	INPUT PRESSURE EINGANGSDRUCK PRESSION D'ENTRÉE [bar]		6.50		INPUT PRESSURE EINGANGSDRUCK PRESSION D'ENTRÉE [bar]		0.70	-	-	6.50
1 AXLE 1 ACHSE 1 ESSIEU	2380	0.55	2.10		10000	3.50	0.40	-	-	6.85
	INPUT PRESSURE EINGANGSDRUCK PRESSION D'ENTRÉE [bar]		6.50		INPUT PRESSURE EINGANGSDRUCK PRESSION D'ENTRÉE [bar]		0.70	2.00	2.50	6.50
2 AXLE 2 ACHSE 2 ESSIEU	1700	0.90	2.10		9000	4.00	0.40	1.40	2.50	6.85
3 AXLE 3 ACHSE 3 ESSIEU	1700	0.90	2.10		9000	4.00	0.40	1.40	2.50	6.85

Reset the ECU by clicking button  or switch power to the ECU OFF but **DO NOT EXIT THE DIAG+ PROGRAM**



Setting the trailer EBS warning lamp.

After Resetting wait 10 secs before proceeding further. Observe the trailer EBS warning light. The warning lamp should display what has been set in the 'Lamp Setting' section of the ECU Setup.

NB: *If the EBS warning light comes ON and stays ON and the main screen displays as on page 6 there are Diagnostic Trouble Codes (DTC) present which need to be cleared see page 22 or if the system air pressure is below 4.5 bar.*

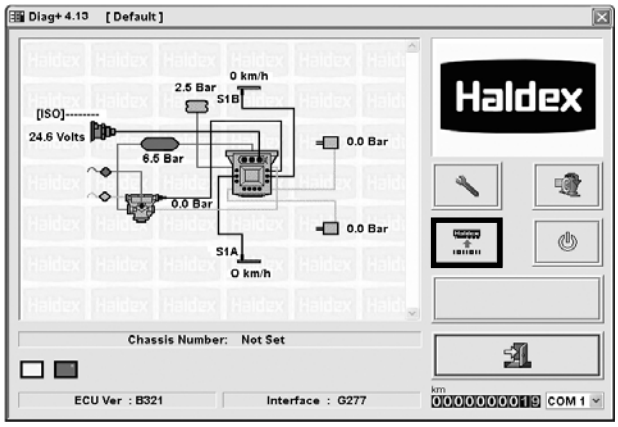
Click on the button  on Main screen **'A'** also 

on DTC's, Lining Wear and Modification Records screen **'B'** to show any stored DTC's

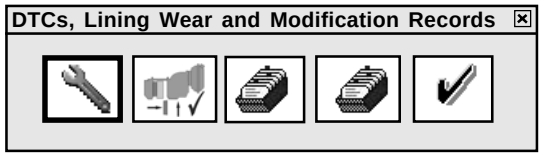
If there are no DTC's detected the following screen will appear.

Click on button ✔ to accept

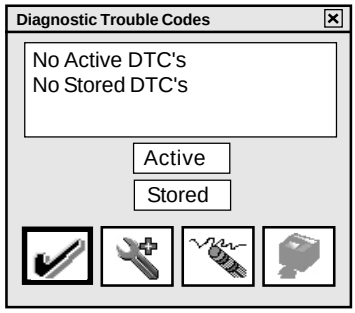
EXIT THE DIAG+ PROGRAM.



A

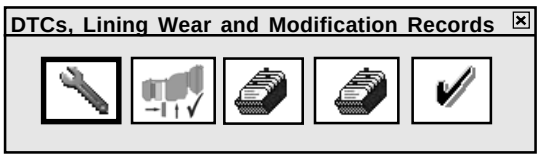


B

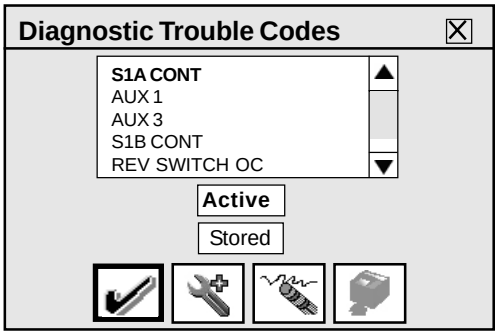


Reading/Deleting diagnostic codes

(a) Click on the button  on Main screen also 
on DTC's, Lining Wear and Modification Records screen

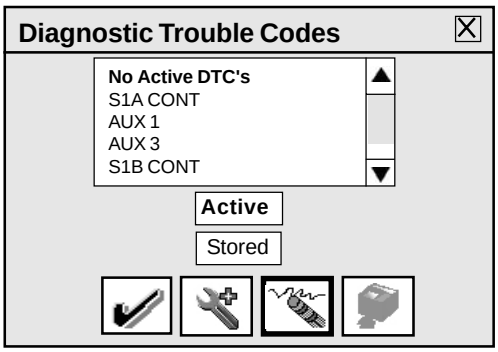


The following screen's will appear.
Screen Option 1:
If there is a Current DTC it will be displayed in red 1st on the list. If there are other DTC's listed they have been stored in the ECU memory.
Repair the current DTC and re-enter the DTC screen.

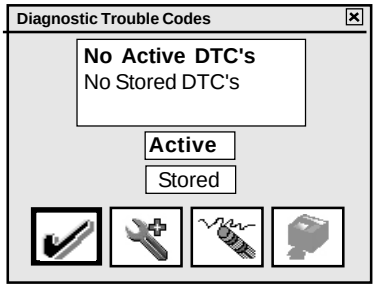


Screen Option 2:
If there is NO Current DTC it will display 'No Active DTC's' in Green. Any other DTC's are stored which can be deleted.

(b) Click on the button marked  to delete the Stored DTC's

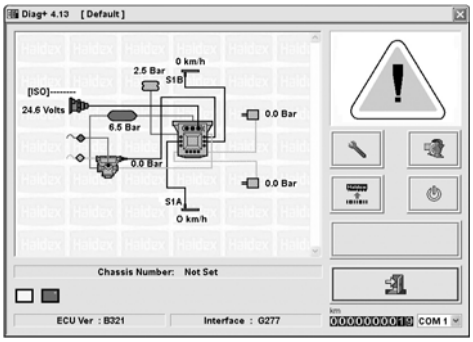


(c) The following screen will appear.
Click button marked  to exit.

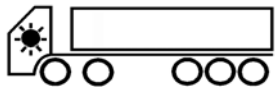


The 'DIAG+' main screen will appear.

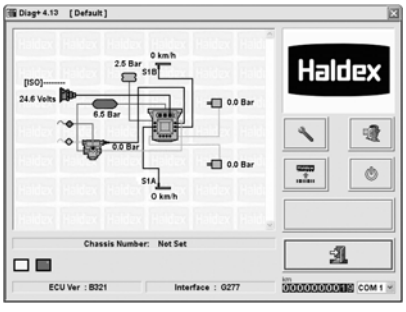
(d) Reset the ECU by clicking button  or switch power to the ECU OFF but **DO NOT EXIT THE DIAG+ PROGRAM.**



(e) Observe the trailer EBS warning light. The warning lamp should display what has been set in the 'Lamp Setting' section of the ECU Setup.
NB: *If the EBS warning light comes ON and stays ON there are DTC's present which need to be cleared as above or if the system air pressure is below 4.5 bar..*

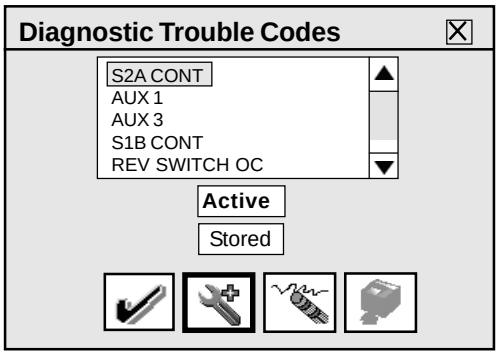


The following screen will appear and should display no DTC's
NB: *If further DTC's are present repeat procedure* ***(b)*** *to* ***(e)***
EXIT THE DIAG+ PROGRAM.

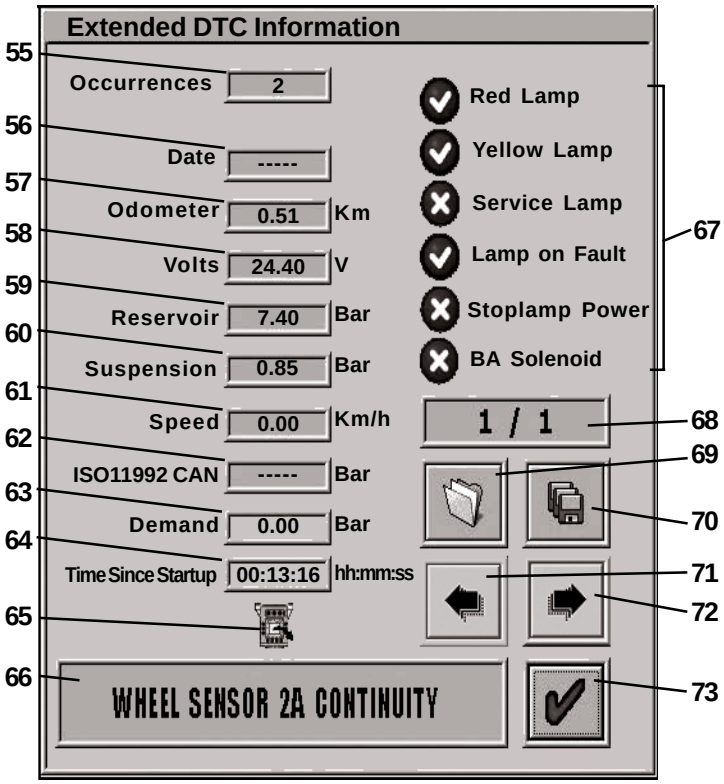


Reading Extended diagnostic codes

On Active and Stored DTC's double click on any DTC and select button  to display the extended DTC information.



The following screen appears.



Understanding the main screen display

55 - The number of times the DTC occurred (Max 255 events). The event is logged every time the ECU is powered.

The following data relates to the 1st time the DTC occurred.

56 - Date reading. Recorded when a Info Centre is installed. Updated every 10 mins. (Example shows no Info Centre)

57 - Odometer reading (Total distance)

58 - Volts Reading

59 - Reservoir pressure (Full information available on ECU ver A272 onwards)

60 - Suspension bag pressure (Full information available on ECU ver A272 onwards)

61 - Speed at which the DTC occurred (Example shows vehicle stationary)

62 - Electric control line pressure CAN lines pins 6,7 on ISO 7638 (Example shows a 5 pin ISO 7638 installed)

63 - Pressure reading on the Service (Yellow) line while braking.

64 - Total time, from ECU power up, when DTC occurred.

65 - Flashing Icons:

 DTC from ECU

 DTC from file

66 - Description of DTC

67 - Status Flags of signal requests and system information refer to Haldex for further interpretation.

68 - Order and quantity of DTC/s

69 - Read Extended DTC file from disc
NB: *To read this file you must enter the 'Extended DTC Information' screen.*

70 - Save Extended DTC file to disc.

71 - Backward (if more than one DTC)

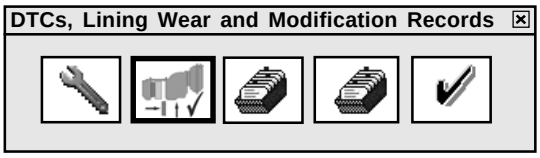
72 - Forward (if more than one DTC)

73 - Exit

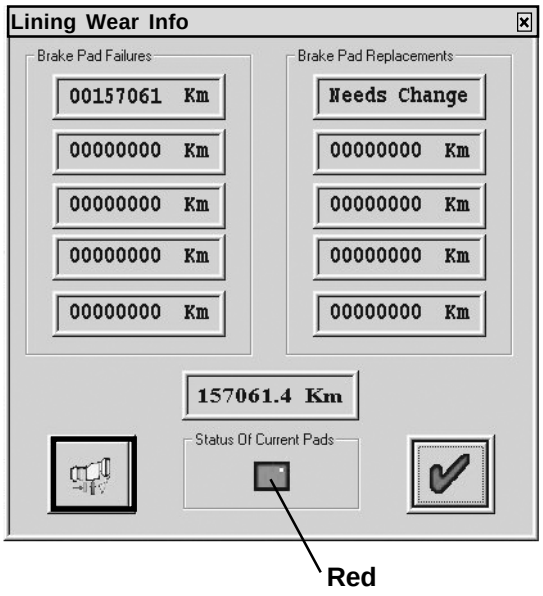
Reading Lining Wear Sensor

NB: ***This feature must be set in AUX Configuration - see page 14, AUX 4 -Option.***

Click on the button  and check if a DTC '**AUX 4**' is listed. If identified click on button  to enter the lining wear info screen.
The following screen's will appear which lists the history of the changes of Linings **(last five recorded)**.



The left hand column records when the brake pads (lining wear sensor) has worn. The right hand column records or indicates when the brake pads have been replaced or require replacing.



If the **'Status of current pads'** indication is coloured **Red** and the Info indicates **'Needs Change'** exit Diag+ switch power off to ECU and repair appropriate lining/s.

Re-enter to Diag+ and **'Lining Wear Info' screen.**

Click button marked 

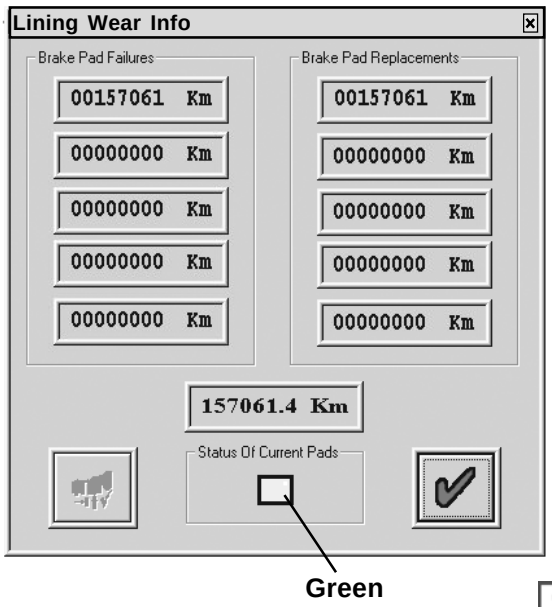
The following screen appears. Click on button marked 'OK'.
The following should occure:
a) In the Brake Pad Replacments column the 'Needs Change' is replaced by a figure in Km.
b) The 'Status Of Current Pads' indicator changes from Red to Green.

On 'Lining Wear Info' screen click Button marked  to exit to Main screen.

NB: *Diagnostic code 'Aux4' is deleted automatically.*

When linings are in good condition or to review the 'Lining Wear Info' screen enter as described above.
The following screen will be displayed.
The **'Status of current pads'** indication is coloured **Green**

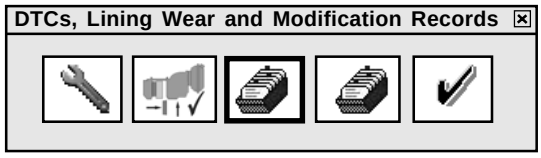
Record any necessary details for future reference.



Reading Modification Record

Click on the button  on Main screen also 

'BLUE box 'on DTC's, Lining Wear and Modification Records screen

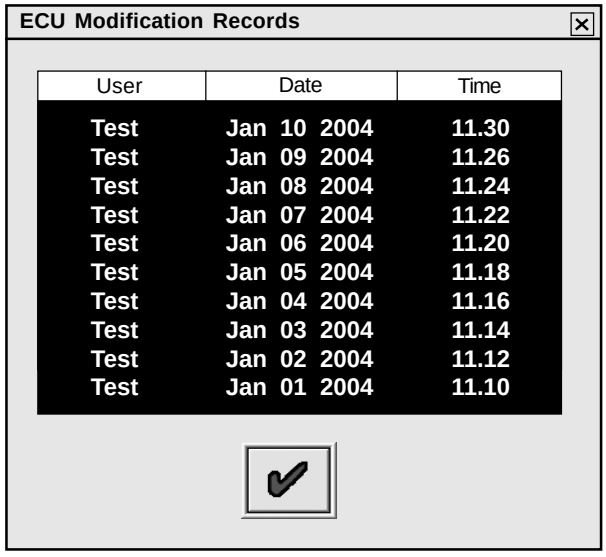


The following screen appears.

This is a record of when the ECU has been programmed.

The user can be the computers name or log on name or 'Info C' representing Info Centre. The display shows up to ten recent users.

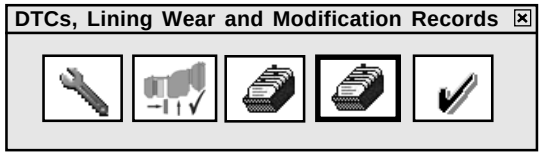
Click button marked  to exit.



Reading History of Flash Programming Of ECU

Click on the button  'RED box '

on DTC's, Lining Wear and Modification Records screen

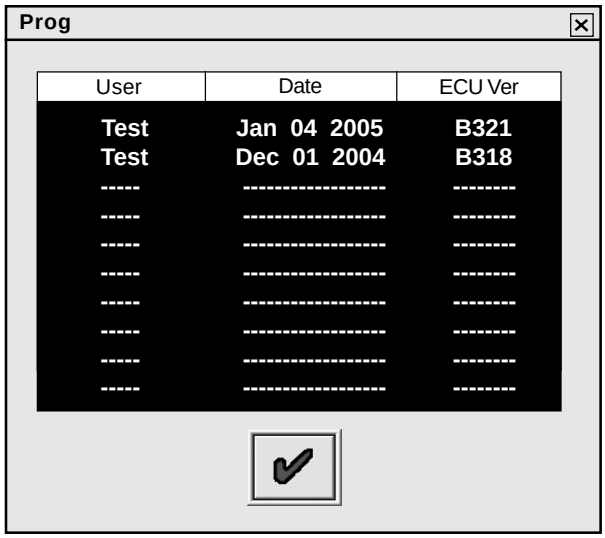


The following screen appears.

Works by displaying the last ten Flash Programming Events, sorted most recent first, in the same manner as DIAG+ Programming Record. When the ECU flash memory is reprogrammed to version B310/B311 or later, a record is made in the ECU memory (containing details of the computer used, the date and the ECU version).

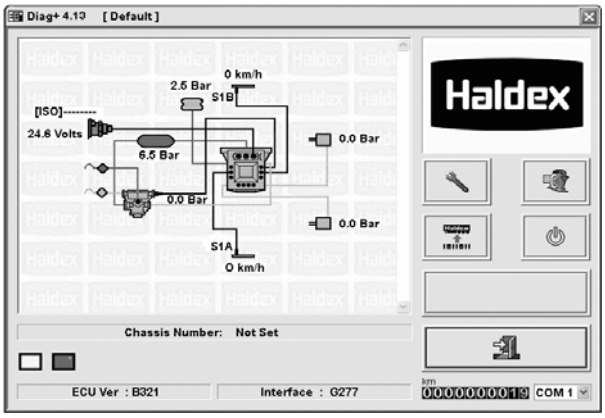
NB: *Records from older ECU versions will display a message of 'No data available !' .*

Click button marked  to exit.



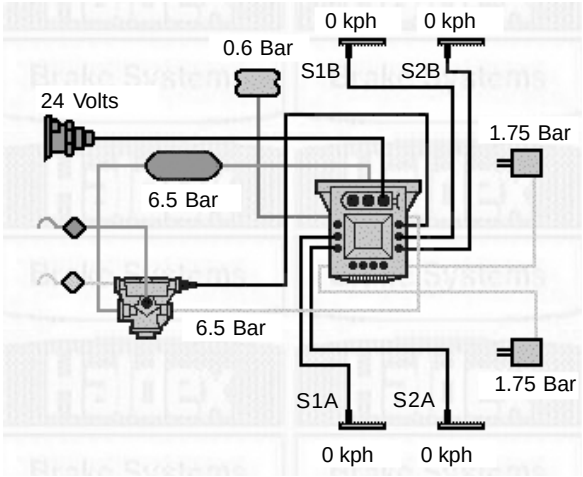
Reading system pressures, speeds and voltage

Connect Emergency and Service pressure lines. Observe the values of the system pressures and voltage on the browser window which shows the schematic of the EB+ system.

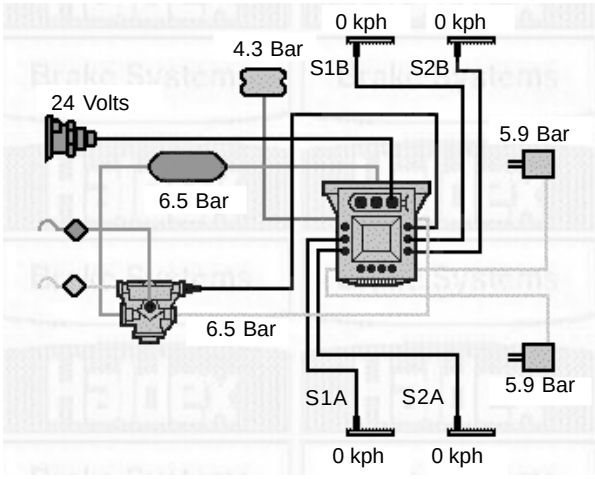


Example : the following should be displayed

*1) Pressure values are from the Load Plate Data entry shown on page 10 for an **Unladen trailer**. The reservoir pressure is shown as 6.5 Bar minimum but can be whatever is used in the workshop.*



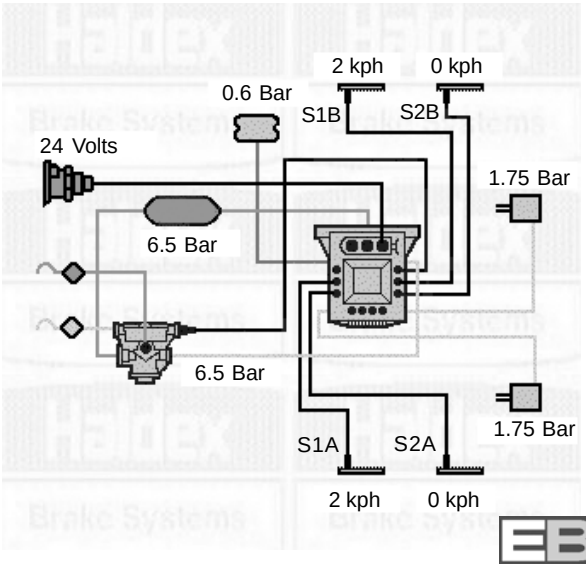
*2) Pressure values are from the Load Plate Data entry shown on page 10 for a **Laden trailer**.*



On rotation of the sensed wheels the speed value will be displayed.

Example:

1 rev / 2 sec (30 rpm) ≃ 4 kph for 80 tooth
5 kph for 90 tooth
6 kph for 100 tooth



Clear all Active or Stored Diagnostic Trouble Codes before proceeding with End-of-Line Test.
NB: When the ECU is initially programmed all DTC's are deleted (see Page 22 - Option 2)

End-of-Line Test Procedure

(a) Click on the button on main screen.

The following screen's will appear.

With the correct interface and ECU versions used **Ensure Warning notes**.
Continue Test, click to proceed with next step.

The 'View/print' and 'Save to file' buttons are initially disabled. They are enabled under the following conditions:-
a) Completion of an EOLT
b) An existing EOLT file is opened (.eol) ('View/print' only)

'Embedded Software Version' screen
If the interface or ECU are not compatible (i.e. wrong versions) Click to quit the EOLT procedure.
Update appropriate version.

'WARNING' screen
If there is no pressure measured at PORT 41 check installation piping.

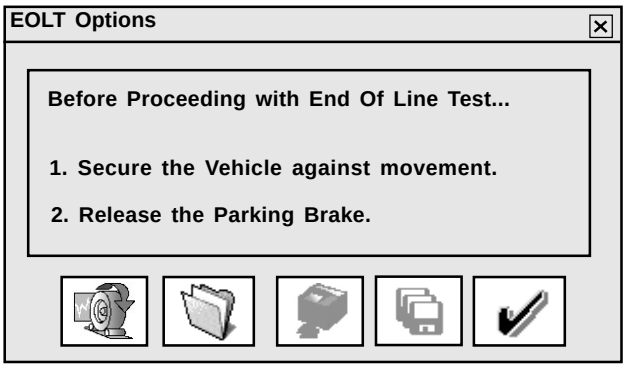
EOLT Initialisation
A listing of tests are shown. The boxes marked ☑ indicate the tests to be carried out. The tests can be selected or de-selected as required.
If the **'Pause Between Tests'** option is not selected, the selected tests screen will run automatically after each test has been carried out.
If the **'Operators Name'** option is selected, it will enable a name to be entered in the area below. This will be recorded on the EOLT report.

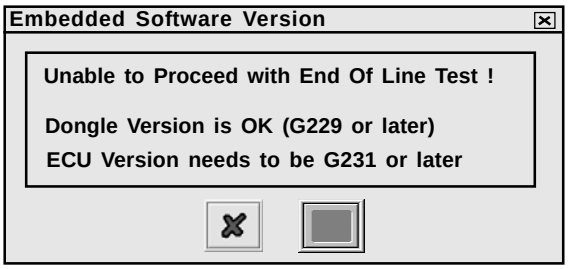
NB: *The Screen display as shown is relevant to a 2 Modulator system. The Sensor-Modulator tests is a combination of the Sensor output to the correct Modulator.*

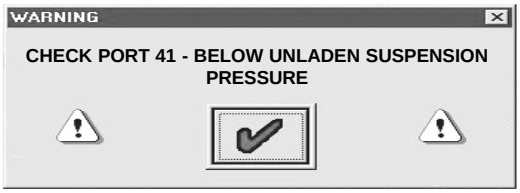
Sensor Test
Rotate each wheel through 3 revolutions in 5 seconds.

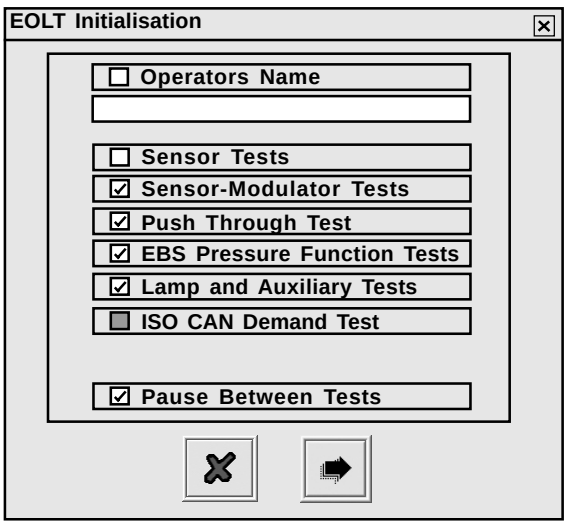
Result section:
YELLOW indicates wheel spinning fast enough.
GREEN indicates test passed.
RED indicates DTC generated during test.

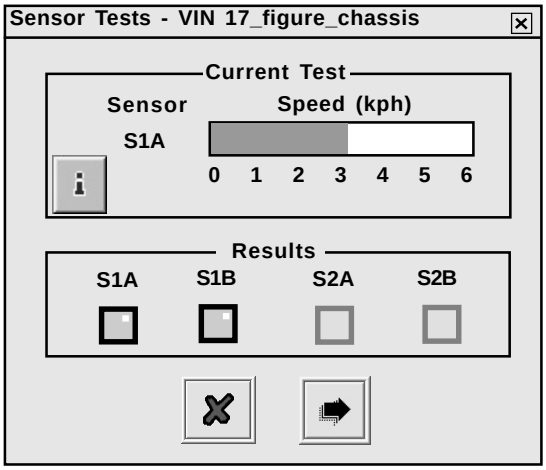
NB: *On each of the following test screens there is a button marked . This gives on-screen information about test to be carried out.*
If the trailer information has been entered (see page 18 - 'Info') with the Vehicle Ident Number then this will be displayed in the tiltle bar of each test as 'VIN 17_figure_chassis' .





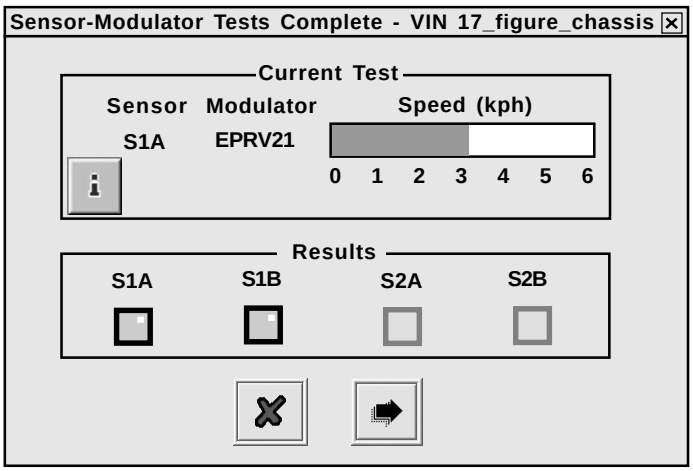






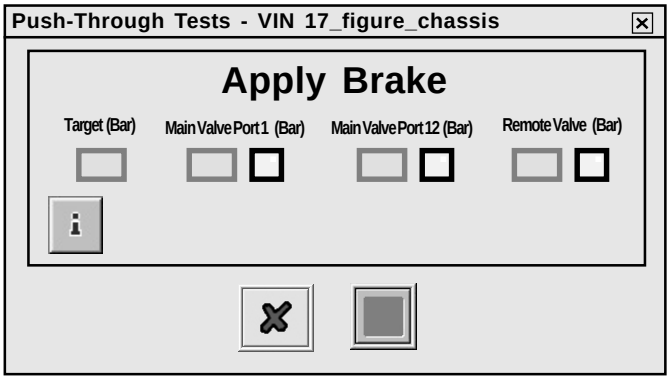
Sensor- Modulator Test
Rotate each wheel through 1 revolutions in 2 seconds.
The system should brake the spinning wheel.

Result section:
YELLOW indicates wheel has moved.
GREEN indicates test passed.
RED indicates test failed.



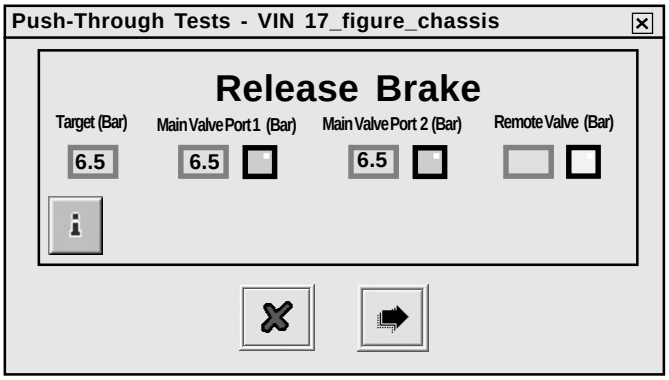
Push Through Pressure Test

APPLY BRAKE
The system should be forced into
push-through condition (approx. 1:1) and the delivery pressures will be measured.



RELEASE BRAKE
The TARGET pressure is a calculated value.
The 'Main Valve Port 1' and 2 boxes displays the actual pressure that is measured at the EPRV.
For 3M systems the actual pressure is displayed in the 'Remote Valve' box.

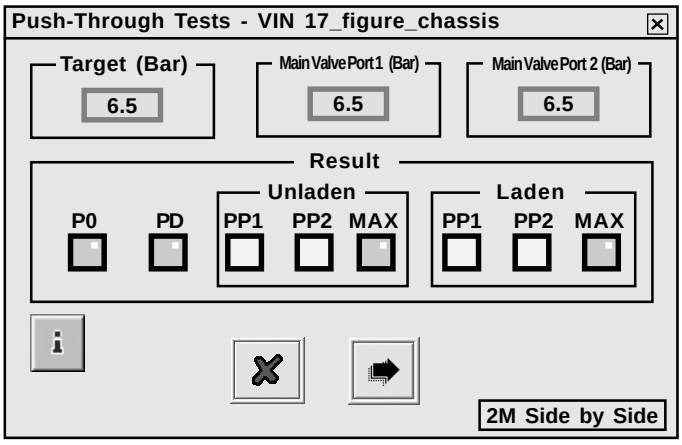
Result section:
YELLOW indicates test started.
GREEN indicates test passed.
RED indicates test failed.



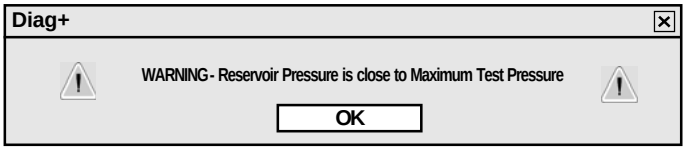
EBS Pressure Function Test (Automatic test)
The system will be forced to simulate various load conditions and control pressures. The delivery pressures will be measured and compared with the target pressures.

Result section:
YELLOW indicates test started.
GREEN indicates test passed.
RED indicates test failed.

NB: *The example shows the screen as for a 2M Side by Side installation.*
For 3M a two screens appear '3M Master 'and '3M Remote'



NB: *Before this test a Warning screen may appear. Make sure that there is the required air pressure in the reservoir to carry out the test. Failure results may occur on the output values (P3) if the value measured (-0.3 bar min.) is below the target value.*



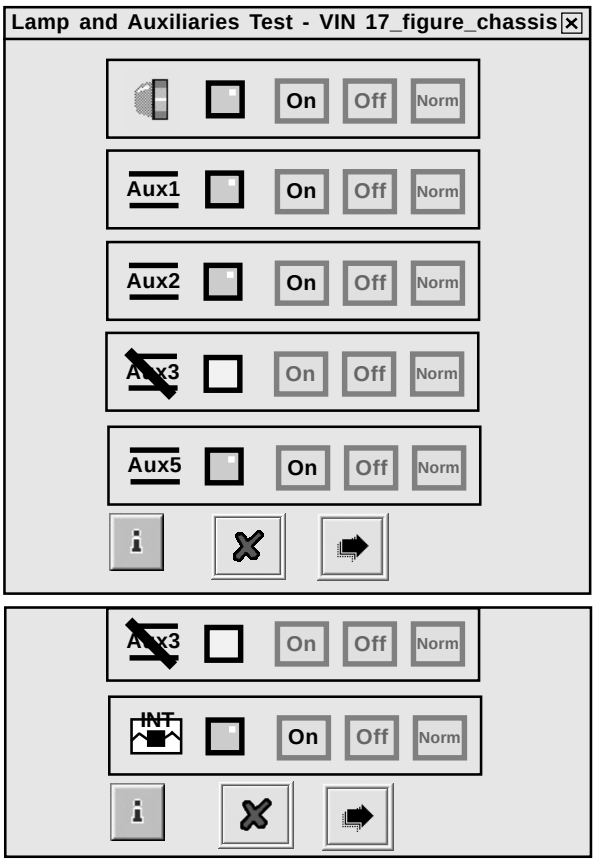
Lamp and Auxiliaries Test (Automatic test)
The Cab Lamp and any auxiliaries will be forced ON then OFF, and monitored to determine the correct response. Once correctly tested, the lamp or auxiliary can be switched manually without affecting test results.
To switch to manual testing click on the 'On' button the 'Off' and 'Norm' buttons are highlighted, Toggle between the 'On' and 'Off'. The 'Norm' resets to automatic mode.

Result section:
YELLOW indicates test started.
GREEN indicates test passed.
RED indicates test failed.

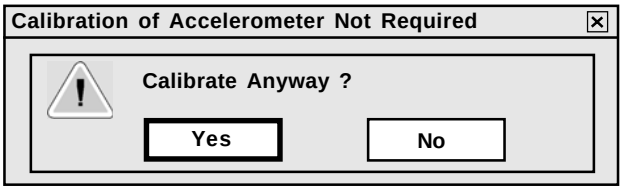
AUX5 tests the (External) Lateral Accelerometer (EB+ Stability) if selected in the AUX Configuration option (see page 14).
If the test failes refer to EB+ Stability installation Instructions 000 700 287 and check chassis installation.

OR

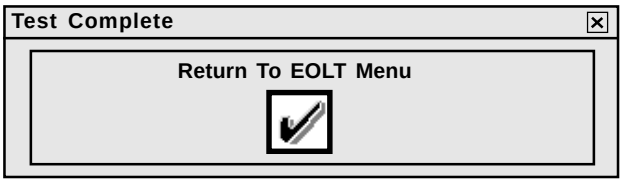
INT tests the Internal Lateral Accelerometer (EB+ Stability) if selected in the AUX Configuration option **'Internal'** (see page 16).
If the test failes refer to EB+ Installation Instructions 000 700 240 and check chassis installation.



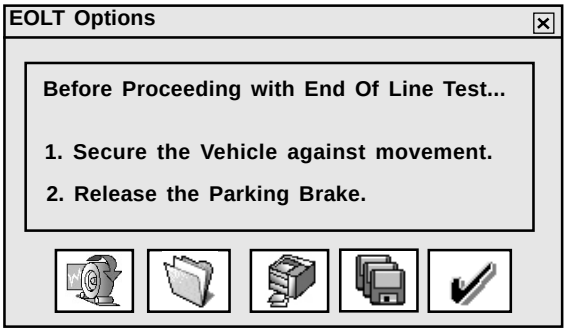
If EITHER Lateral Accelerometer has ALREADY BEEN PROGRAMMED, then an option is given to skip the calibration step, e.g.repeat EOLT no longer on level ground. The following screen appears



Click on button marked ✔ to accept.



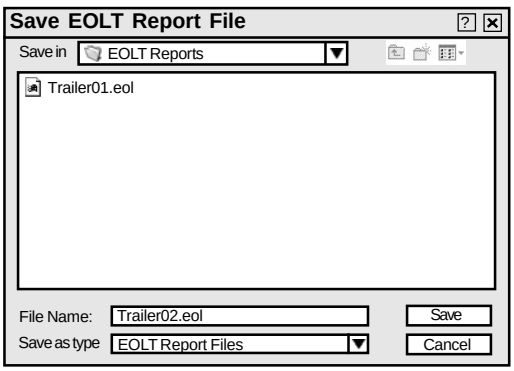
The following screen appears



EOLT Reports
The End of line Test report can be viewed by selecting the button. If required the report can then be printed.

By selecting the button a report file can be saved.

A file name relevant to the vehicle tested (e.g. TRAILER01 saved as type .eol) can be entered in position **'File Name'** and stored in the **C:\Program Files\Haldex\Diag+\EOLT Reports** folder.



NB: *The EOLT report can only be viewed within DIAG+ program in the EOLT section (refer to page 27 - Sec a)*

Haldex EB+ End of Line Test Report

HALDEX EB+ END OF LINE TEST REPORT	
ECU Configuration	2S : 2M ECU Right
Vehicle Ident Number	Not Set
Manufacturer	Not Set
ECU Serial Number	B7850_50
Odometer (km)	0
Date (DD:MM:YY)	12:01:05
Time	10:02

Sensor Tests			Not Applicable
S1A	S1B	S2A	S2B
-	-		

Sensor-Modulator Tests			Failed
S1A	S1B	S2A	S2B
Not Applicable	Not Applicable		

Push Through Tests		Not Applicable
P21(Main)	P22(Main)	P2(Rem)
-	-	

EBS Pressure Tests				Not Applicable
Test	Target	P21(Main)	P22(Main)	P2(Rem)
Threshold	-	-	-	
PP1 [U]	-	-	-	
PP1 [L]	-	-	-	
PP2 [U]	-	-	-	
PP2 [L]	-	-	-	
PP3 [U]	-	-	-	
PP3 [L]	-	-	-	

Auxiliary Tests		Not Applicable
AUX	TYPE	Result
Lamp	-	-
Aux 1	No Aux	-
Aux 2	No Aux	-
Aux 3	No Aux	-
Aux 5	No Aux	-
Lat Acc Internal	Not Fitted	-

Operator's Name	
Signature	

If a diagnostic trouble code not listed below is displayed check for intermittent sensor and wiring faults.

DTC DISPLAYED

ECU TIME OUT	No supply on ignition switched line.
or	***Possible causes:***
NO LINK	Truck fuse blown.
	Open circuit B -. ISO7638 not connected
	SENSOR GROUP
S1A CONT	1A Sensor/wiring open or short circuit
S1B CONT	1B Sensor/wiring open or short circuit
S2A CONT	2A Sensor/wiring open or short circuit
S2B CONT	2B Sensor/wiring open or short circuit
	INTERMITTENT LOW SENSOR OUTPUT GROUP
S1A SIGNAL	1A Sensor signal fault
S1B SIGNAL	1B Sensor signal fault
S2A SIGNAL	2A Sensor signal fault
S2B SIGNAL	2B Sensor signal fault
	Possible causes:
	Loose sensor, connection, bracket or exciter. Damaged exciter.
	Maladjusted sensor or worn sensor cable insulation.
	LOW SENSOR OUTPUT GROUP
S1A OUTPUT	1A Sensor system fault
S1B OUTPUT	1B Sensor system fault
S2A OUTPUT	2A Sensor system fault
S2B OUTPUT	2B Sensor system fault
	Possible causes:
	Sensor worn, maladjusted sensor, wiring open or short circuit
	BRAKE APPLY SOLENOID GROUP
BRK APPLY SC	Brake apply solenoid short circuit
BRK APPLY OC	Brake apply solenoid open circuit
BRK APPLY SC DRIVE	Brake apply solenoid short circuit permanently energised
BRK APPLY UNSPEC	Brake apply solenoid control circuit fault
	EPRV 21 HOLD AND DUMP SOLENOID GROUP
EPRV 21 HOLD SC	Modulator 21 hold solenoid short circuit
EPRV 21 DUMP SC	Modulator 21 dump solenoid short circuit
EPRV 21 HOLD OC	Modulator 21 hold solenoid open circuit
EPRV 21 DUMP OC	Modulator 21 dump solenoid open circuit
EPRV 21 HOLD SC DRIVE	Modulator 21 hold solenoid short circuit permanently energised
EPRV 21 DUMP SC DRIVE	Modulator 21 dump solenoid short circuit permanently energised
EPRV 21 HOLD UNSPEC	Modulator 21 hold solenoid control circuit fault
EPRV 21 DUMP UNSPEC	Modulator 21 dump solenoid control circuit fault

DTC DISPLAYED	
	EPRV 22 HOLD AND DUMP SOLENOID GROUP
EPRV 22 HOLD SC	Modulator 22 hold solenoid short circuit
EPRV 22 DUMP SC	Modulator 22 dump solenoid short circuit
EPRV 22 HOLD OC	Modulator 22 hold solenoid open circuit
EPRV 22 DUMP OC	Modulator 22 dump solenoid open circuit
EPRV 22 HOLD SC DRIVE	Modulator 22 hold solenoid short circuit permanently energised
EPRV 22 DUMP SC DRIVE	Modulator 22 dump solenoid short circuit permanently energised
EPRV 22 HOLD UNSPEC	Modulator 22 hold solenoid control circuit fault
EPRV 22 DUMP UNSPEC	Modulator 22 dump solenoid control circuit fault
	DEMAND PRESSURE TRANSDUCER GROUP
DEMAND SC	Service line pressure transducer short circuit
DEMAND OC	Service line pressure transducer open circuit
	DELIVERY PRESSURE TRANSDUCER GROUP
EPRV 21 DEL SC	Modulator 21 delivery pressure transducer short circuit
EPRV 21 DEL OC	Modulator 21 delivery pressure transducer open circuit
EPRV 22 DEL SC	Modulator 22 delivery pressure transducer short circuit
EPRV 22 DEL OC	Modulator 22 delivery pressure transducer open circuit
	ONE WHEEL WITH SLOW RECOVERY GROUP
EPRV 21 SLOW REC	Slow recovery of one wheel of modulator 21
EPRV 22 SLOW REC	Slow recovery of one wheel of modulator 22 ***Possible causes:*** Slow brake release, foundation brake mechanical faults, dry bearings, broken spring, restricted piping Check for kinks and blockages etc. Incorrect piping, Wiring. Modulator fault. Sensor wiring crossed across an axle.
	RESERVOIR PRESSURE TRANSDUCER GROUP
RESR SC	Reservoir pressure transducer short circuit
RESR OC	Reservoir pressure transducer open circuit
HIGH RES PRESURE	Reservoir pressure above 9.5 bar
	SUSPENSION PRESSURE TRANSDUCER GROUP
SUSP SC	Suspension pressure transducer short circuit
SUSP OC	Suspension pressure transducer open circuit
SUSP LOW	Suspension pressure values outside operating range
	PRESSURE SWITCH GROUP
REV SWITCH SC	Relay emergency valve pressure switch short circuit
REV SWITCH OC	Relay emergency valve pressure switch open circuit
REV SWITCH PNEUMATIC	Relay emergency valve pressure switch pneumatic fault
REV SWITCH SIGNAL	Relay emergency valve pressure switch failed to activate

DTC DISPLAYED

	ISO11992 (CAN) ELECTRICAL SIGNAL GROUP
PNEUMATIC DEMAND LOSS	No corresponding pneumatic demand pressure
TOWED CAN DEMAND LOSS	CAN line (pin 6 and 7 on ISO7638) fault
TOWED CAN CONTROL LOSS	CAN line (pin 6 and 7 on ISO7638) data fault
	SUPPLY VOLTAGE GROUP
PWR ISO7638 FAIL	Power loss on pin 1 or 2 (ISO7638)
PWR LO VOLT	Supply voltage at ECU less than 19v when brake apply solenoid energised
PWR HI VOLT	Supply voltage at the ECU greater than 32v
PWR UNSPEC	Internal ECU fault
	ECU GROUP
ECU EE ERR	Internal ECU fault or ECU not programmed
ECU PARAM ERR	Internal ECU fault or ECU not programmed
ECU EE UNSPEC	Internal ECU fault or ECU not programmed
	AUXILIARY COMPONENTS GROUP
AUX1	Auxiliary 1 system/wiring open or short circuit
AUX2	Auxilliary 2 system/wiring open or short circuit
AUX3	Auxilliary 3 system/wiring open or short circuit
AUX4	Auxilliary 4 system/wiring open or short circuit
AUX5	Auxilliary 5 system/wiring open or short circuit
	LINING WEAR GROUP
BRAKE PADS	Lining wear wiring open circuit
	LATERAL ACCELEROMETER
LAT ACC OC	Lateral accelerometer wiring open circuit
LAT ACC SC	Lateral accelerometer wiring short circuit
LAT ACC SIGNAL	Lateral accelerometer signal fault
	SLAVE VALVE GROUP
SLAVE VALVE SENSOR	Pressure transducers open or short circuit
SLAVE VALVE MODULATOR	Hold, Dump or Brake Apply solenoid open or short circuit
SLAVE VALVE CABLE	Link cable open or short circuit
SLAVE VALVE SLOW REC	Slow recovery of one wheel of slave valve
SLAVE SUSP LOW	Suspension pressure values outside operating range

Note: If a DTC is displayed and after following recommended procedure the ECU should be replaced.

Screen 1
On appearance of this screen the following areas need to be checked:

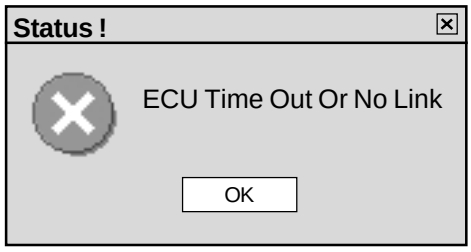
a) The receive and transmit buffers have been disabled on your PC. Check the COM port properties.

b) Another program that uses the COM posrt is open. Check the bottom of your PC screen and close any other programs.

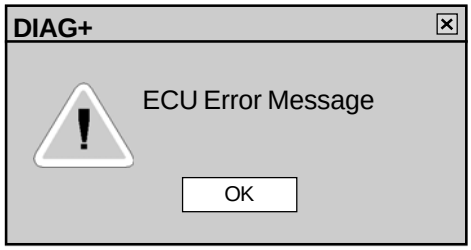
Screen 2
On appearance of this screen the following areas need to be checked:

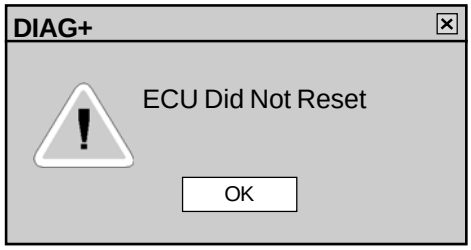
a) Connections loose. Check that each plug is firmly connected.

b) LED light off on PC Interface pod. Check power supply to the ECU from the ISO7638 (or similar 24v supply) is on.



Screen 3
On appearance of this screens the system is still in system supplier mode (i.e. a command was requested within 10 secs of clicking the Reset button (Page 4, button **'20'**).
Switch power OFF and ON to trailer.





If you do have problems, please contact the **HALDEX DIAG+** Helpdesk on +44 1527 499 499.

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Haldex

The Haldex Group is a global supplier of proprietary products for trucks, cars and industrial vehicles, with special emphasis on performance and safety. The Group is organized in Divisions which focus on their respective product niche:

Haldex Brake Systems supplies ABS and brake components for heavy vehicle air brakes.

Haldex Barnes Hydraulics supplies gear pumps and hydraulic systems for power steering and lifting functions on industrial vehicles and trucks.

Haldex Garphyttan Wire supplies specially steel-alloyed wire products mainly for applications in combustion engines.

Haldex Traction Systems supplies 4WD systems for cars and trucks.

Sales companies are established in Europe, North and South America and Asia. Production takes place in 9 factories in USA, 9 factories in Europe and 1 joint venture in India.
The Haldex Group is listed on the Stockholm Stock Exchange.

Haldex

www.brake-eu.haldex.com

Company Vision

We use our demonstrated competence to provide innovative components, systems and service for trucks, trailers and buses, that lower life cycle costs and improve vehicle safety. Haldex wants to become the first choice business partner of commercial vehicle manufactures world wide in the areas of braking and suspension control systems with special emphasis on heavy commercial vehicles.

Total Support

A uniquely wide range of services is available from Haldex. These include expert consultancy for braking and suspension development, brake calculations, type approvals and application engineering.
The aim is accurate specification for manufactures and low cost of owner ship for the operator.
Full aftermarket support includes a Worldwide parts distribution and service network, on-line technical advice, field visits and installation/ maintenance training held on-site or at Haldex facilities.

Research and Development

Continual, heavy investment in Research and Development is carried out in response to ever increasing commercial, legislative, environmental, performance and technological demands.

Quality and Production Standards

The very latest production technology ensures the very highest quality standards.
All production sites are ISO 9001 approved.