

## ServiceTool

### Considerations before connecting the ServiceTool to the product

- Disconnect the product from the Mains supply.
- Follow the instructions described in the ServiceTool.

### Contents in ServiceTool

ServiceTool contains complete information concerning:

- How to connect ServiceTool to the product.
- List of functions handled by ServiceTool.
- Instructions for using the functions.

### ServiceTool functions

#### Read out

- Type no., Item no., Serial no., Software versions.

#### Saving files

- It is possible to save text files with information and values from the SERVICE MENU. The files will be saved in a default folder (Saved/beovision10) in the folder where ServiceTool is installed.

#### Software programming

- PW 328 Flash
- FEP Flash
- STBC Table Flash
- System module Flash
- DSM DSP Flash
- DSM FEP Flash
- DVB-HD (using a USB Flash drive)

## Final check after repair

The final check after repair, describes the activities needed to ensure that the product will be returned in perfect condition to the customer.

The contents is:

- AC leakage test.
- Check product information.
- Restore the setup and check connections, picture and sound.
- Final cleaning of the product.

## Insulation test

Each set must be insulation tested after having been dismantled. Make the test when the set has been reassembled and is ready to be returned to the customer.

*Flashovers must not occur during the testing procedure!*

Make the insulation test as follows:

Short-circuit the two pins of the mains plug and connect them to one of the terminals of the insulation tester. Connect the other terminal to ground on the aerial socket.

Note!

To avoid damaging the set it is essential that both terminals of the insulation tester have good contact.

Slowly turn the voltage control of the insulation tester until a voltage of 2.5 kV and max. 10mA is obtained. Maintain that voltage for one second, then slowly turn it down again.

## Monitor information

The scope of this check is to ensure the following:

- The product has maintained the correct identity.
- Is set to correct Option.
- The error counter register is cleared.

Procedure

1. Enter Service Menu – Monitor Service Menu – Monitor Information.
2. Check the serial number is correct.
3. Check Option setting is correct and press **STOP**.
4. Enter the ERROR COUNTERS menu and press **GO** to clear the error counters.

## Customer setup

Remember to inform the customer if any changes have been made in the user setup due to procedures in the Service Manual, such as Connections, Sound, Picture, etc.

Restore the product to the customer setup.

## TV SETUP - OPTIONS

- Connections, such as DVD, STB, VTR
- Sound, such as external speakers
- Picture

Check all sources are working correctly

- Check that picture and sound on all sources are working correctly.
- Check that teletext is working correctly.

#### **Clean the product**

Never use alcohol or other solvents to clean any part of the television, stand or wall bracket!

#### Picture screen

To clean the picture screen, use a mild window cleaning fluid (not containing alcohol). To retain the optimum performance of the screen, make sure that no streaks or traces of the cleaning fluid are left on the screen.

Use white gloves to avoid smudging the screen.

#### Cabinet surfaces

Wipe dust off the surfaces using a dry, soft cloth.

Remove grease stains or persistent dirt with a soft, lint-free, firmly wrung cloth, dipped in a solution of water containing only a few drops of mild detergent, such as washing-up liquid.

The speaker cover may also be cleaned with a soft brush mounted on a vacuum cleaner, set to the lowest level.

## Service Mode

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**Customer Service Menu**

The menu can be accessed by pressing **RED + GO** while the cursor is placed on the **CONNECTIONS** field. Customer Service Menu is meant for users instead of the regular Service Menu. Customer Service Menu includes two sub menus.

**MONITOR INFORMATION**

If you select Monitor Information, the following is presented:  
 Type number; indicates country variant and the main group for the type approval.  
 Item number; the device's componentry and colours are described by means of the number.  
 The type number can be derived from an item number.  
 Serial number (individual number), a unique number for this type of device.  
 Current Option setting  
 SW version for PW328  
 SW version for FEP  
 SW version for FEP BOOTLOADER  
 SW version for STB Controller table (PUC)  
 SW version for DSM FEP  
 SW version for DSM DSP  
 SW version for System Module (n/a if the System Module is not mounted)  
 SW version for BTB Module (n/a if the BTB Module is not mounted)  
 SW version for DVB T/C  
 Firmware version for the LCD panel (TCON)

**ADJUSTMENTS**

In the Adjustments Menu the user/technician can change the WSS setting.  
 Some TV broadcasters transmit a picture format identification, enabling the TV to switch to the proper format automatically when WSS DETECT is ON, if there are WSS codes in the signal.  
 WSS Status: DETECT ON – DETECT OFF – BROADCAST ONLY  
 BROADCAST ONLY: Only switching on signal from the TV tuner.  
 DETECT ON: Switching on signals from all sources TV tuner, DVD playback, and AV sockets.  
 DETECT OFF: Used under certain conditions, e.g. a poor signal-to-noise ratio, the detection may fail, which may entail faulty swithing.  
 AUTO FORMAT: Disable (not possible to change from Customer Service Menu).

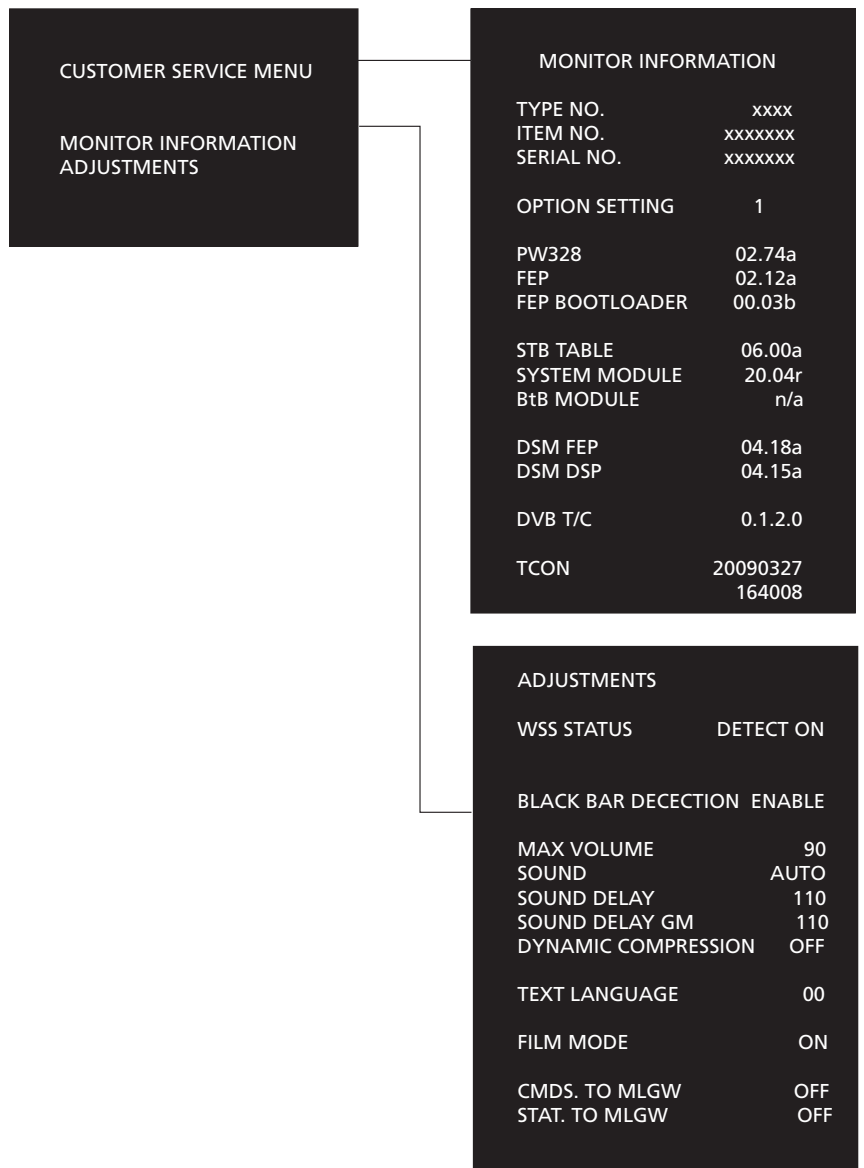
BLACK BAR DETECTION	ENABLE - DISABLED
MAX. VOLUME	0 - 90
SOUND	AUTO - PRO LOGIK II MOVIE - PRO LOGIK II MUSIC - DTS NEO:6 CINEMA - DTS NEO:6 MUSIC
SOUND DELAY	000 - 160
SOUND DELAY GM	000 - 160
DYNAMIC COMPRESSION	ON - OFF
TEXT LANGUAGE	00 - 06
FILM MODE	ON/OFF

- CMDS. TO MLGW (Master Link Gate Way) ON/OFF
- Reroute all LIGHT and CONTROL commands to ML.
  - It is recommended only to have one product in a room with this setting to ON.
  - Three or more products in a room can cause failure on ML.

- STAT. TO MLGW (Master Link Gate Way) ON/OFF
- Can be set ON for enabling sending SSI (SourceSystemInfo) and RSI (RenderStateInfo) to MLGW, and OFF for disabling this feature.
  - Shall only be On if status to a Creston control panel is needed.

- AUTO STANDBY ON/OFF
- If AUTO STANDBY is ON, the TV enters standby when it has not been operated for 4 hours.

Customer Service Menu



## Service mode in general

The menu overview appendix provides an overview of the menus as they appear in the software. The menu items are generally self-explanatory so you can gain a general overview by studying this page closely. In addition to the menus, some extra functions under service mode, are described in the following subsections.

### Access to Service Menu

The Service Menu must be activated while the TV SETUP menu is displayed. From this initial state, the Service Menu is activated in the following way:

Beo4: the Service Menu is activated by pressing **0 0 GO** within 3 s.

### Deactivating Service Menu

When you exit the Service Menu (standard menu operation), the device is normal.

### Option programming

Option programming can only be carried out using a Beo4.

Option 0 IR receiver is switched off - no remote control

Option 1 Main room. The product will only respond to its own codes - audio codes or video codes

Option 2 Main room. The product will respond to both audio codes and video codes

Option 4 Link room product in the main room. Remote commands must be prefixed with 'Link'

Option 5 Link room. The product will only respond to its own codes - audio codes or video codes

Option 6 Link room. The product will respond to both audio and video codes

Note: Option 2, 5, and 6 only available with System Module mounted.

## Navigation

Beo4	Possible actions
<b>MENU</b>	Select menus
<b>GO</b>	Selects the submenu that a cursor is on Accepts a menu, which results in entered values being saved and the menu being exited Activates functions, for example start/stop DVD Deletes incorrect registrations in the monitor information menu and exits the menu
▲	Moves the cursor up Returns to the previous menu when the cursor is at the top Modified data is not saved
▼	Moves the cursor down Selects a submenu in some cases
◀	Modifies data
▶	Modifies data
<b>STOP</b>	Backs up through menus
<b>0-9 Digit</b>	Modifies data
<b>EXIT</b>	Exits all menus

## Service Menu

This menu is used to select the device area in which service must be carried out/ information can be found.

## Monitor Service Menu

This menu is used to access the monitor's underlying Service Menus.

## MONITOR INFORMATION

If you select MONITOR INFORMATION, the following is presented:

- Type number; indicates country variant and the main group for the type approval.
- Item number; the device's componentry and colours are described by means of the number.
- The type number can be derived from an item number.
- Serial number (individual number), a unique number for this type of device.
- Current Option setting
- SW version for PW328
- SW version for FEP
- SW version for FEP BOOTLOADER
- SW version for STB Controller table (PUC)
- SW version for DSM FEP
- SW version for DSM DSP
- SW version for System Module (n/a if the System Module is not mounted)
- SW version for BTB Module (n/a if the BTB Module is not mounted)
- SW version for DVB T/C (n/a if the DVB-HD Module is not mounted)
- Firmware version for the LCD panel (TCON)



**SERVICE COUNTERS**

The following service counters are presented in the menu:

Service counter	Unit	Comments
Audio	0-9999 days	Monitor switched on
Boot counter	0-9999 times	Number of times the device has received mains voltage
Video	0-9999 days	Monitor switched on
On	0-9999* 10 times	Number of times the device is switched on (both audio and audio/video mode)

**PICTURE ADJUSTMENTS**

It is possible to adjust the picture parameters as listed in submenus below:

ADC ADJUSTMENTS

WHITE POINT ADJUSTMENTS

PICTURE OFFSETS

AUTO PICTURE CONTROL

SCALER MENU

TEST PATTERN

ADAPTIVE BACKLIGHT

Each parameter value is automatically saved after adjustment.

When you edit data, the lower half of the menu and the Current Value parameters disappear. This is in order to allow more of the screen to be shown, providing a better basis for adjustment.

**ADC ADJUSTMENT**

In this menu, the following settings can be made:

RED OFFSET	0-255
GREEN OFFSET	0-255
BLUE OFFSET	0-255
RED GAIN	0-255
GREEN GAIN	0-255
BLUE GAIN	0-255
AUTO BLACK LEVEL	0-001
VIDEO AGC	0-001
CLAMP DELAY	000-001
PLL PHASE	000-000

## WHITE POINT ADJUSTMENTS

RED GAIN	000-255
GREEN GAIN	000-255
BLUE GAIN	000-255

GREY POINT	
RED OFFSET	000-100
GREEN OFFSET	000-100
BLUE OFFSET	000-100
BLUE STRETCH	000-001

## PICTURE OFFSETS

BRIGHTNESS	0000-0063
COLOUR	0000-0063
CONTRAST	0000-0063

CURRENT VALUES	
BRIGHTNESS	0000
COLOUR	0000
CONTRAST	0000
SCALER CONTRAST	0000
AUTO CONTRAST OFFSET	0000
TINT	0000

## AUTO PICTURE CONTROL

In this menu the light sensor can be switched on and off and the current ambient light values can be seen.

The light sensor can be checked, by covering the light sensor so that the TV thinks it is dark, the light read out should go to zero. If there is no reaction, the light sensor may be defective.

LIGHT SENSE	ON
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LIGHT SENSOR READ -OUT	
LIGHT	
LIGHT (LUX)	

## SCALER MENU

B/W level expander	000-001
CUEC/ICP	000-001
Frame rate modulation	000-002
Flesh tone correction	000-031
Film mode	000-001

3 : 2 film sensitivity	001-007
2 : 2 Film sensitivity	001-007
Pixel boost	000-001
DCS	000-001
DCTI	000-002
Peaking	000-020
Spatial noise filter	000-015
Luma Temp noise filter	000-031
Low angle interpolation	000-004
3 D comb filter	000-002
XCXL	000-004
TCON film mode	000-

## TEST PATTERNS

In this menu you can show test pictures for investigating possible dead points on the screen. In the Test Patterns menu, the interactions are as follows:

The up/down arrow switches between the two colour screens – when they are on, and also when you scroll between them in the Test Patterns menu.

Use **GO** or **WIND** or **REWIND** to activate the test patterns and **GO** deactivate the colour screens.

### TEST PATTERNS

WHITE  
 GREY 75%  
 GREY 50%  
 GREY 25%  
 BLACK  
 RED  
 GREEN  
 BLUE  
 YELLOW  
 MAGENTA  
 CYAN

## ADAPTIVE BACKLIGHT

In this menu, the following settings can be made:

BL High	000-999
BL Low	000-999
Front glass	Grey glass (grey contrast screen) Grey AR glass (grey anti reflex screen) Clear glass (not used) Clear AR glass (not used) No glass (not used)

## FAN ADJUSTMENTS

In this menu, the following settings can be made:

Fan full speed temp	45-64
Fan stop speed temp	36-50
Fan PWM min.	16-39
Fan PWM max.	20-41

The following can be read out:

Fan 1 speed	2057 RPM
Fan 2 speed	2002 RPM
Temperature 1:	42c
Temperature 2:	24c

#### ERROR COUNTER

Tuner	000
Light Sense	000
HDMI Rx	000
Fan IC	000
Fan	000
Audio Decoder	000
Audio Processor	000

#### RESET TO FACTORY SETTINGS

##### **Warning!**

The reset to factory settings command is activated directly when the menu is highlighted.

If the menu item 'RESET TO FACTORY SET.' is selected, and **GO** is pressed, the reset is carried out.

Following parameters are affected, when the device is reset:

- Option is programmed to 1.
- AV1, AV2, AV3 are configured as 'NONE'.
- Volume preset is configured to default.
- Bass, treble and balance are configured to default.
- Brightness, contrast and colour adjustments are configured to default.
- Stored TV and Radio programs are deleted.
- First install menu will be shown next time the device is switched on.
- Menu language English.
- Light sense on.
- Loudness off.

#### TV SERVICE MENU

CN SOUND	ON - OFF
TUNER AGC BGDKI	000 - 031
TUNER AGC L	000 - 031

#### TCON

NUMBER OF RESETS COUNTED	READ ERROR
RESET PERFORMED BY SW	000000

#### DVB SERVICE

DVB CONNECTED	YES - NO
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#### GEOMETRY ADJUSTMENTS LCD

There is no access to geometry adjustments from the Service Menu or the Customer Service Menu.

## PRODUCT TYPE

In the product type menu it is possible to set up which mechanical type, hardware type, and LCD panel type that is mounted in the product. It is important that all settings are correct.

MECHANICAL TYPE	BV10-40 – BV10-46 – BV8-40	
HARDWARE TYPE	C2	Used in BV8-40 type 9560
	C2.2	Used in BV10-40 type 9570 and BV10-46 type 9565
	C2.3	Used in BV10-40 MKII type 9572-9573, BV10-46 MKII type 9566-9567 and BV8-40 MKII type 9562-9563
LCD PANEL TYPE	LTA400HG01	Used in BV10-40 type 9570-9573
	LTA460HG02	Used in BV10-46 type 9565-9567
	LTA460HQ04	Used in BV10-46 type 9565-9567
	LTA400HC09	Used in BV8-40 type 9560
	LTA400HG02	Used in BV8-40 type 9562-9563

In the upper right corner on the back of the LCD display there is a label where the LCD display version is written.



PUC TYPE                   ENABLED - DISABLED

When ENABLED there is no analog tuner, no video distribution and no DVB.  
Used in BV10-40 MKII type 9573, BV10-46 MKII type 9567 and BV8-40 MKII type 9563.

## AUDIO SERVICE

HP DETECT                   DSM - GPIO

Must be GPIO on hardware type C2 and C2.2.  
Must be DSM on hardware type C2.3.

Service Menu

