WXT5001-e92031

XT / TS Scale

Sartorius XT / TS Scale
Service Manual

for XT and TS Scales with the small Block System

XT6200
TS6100-0D2
TS12000A-0D2

sartorius

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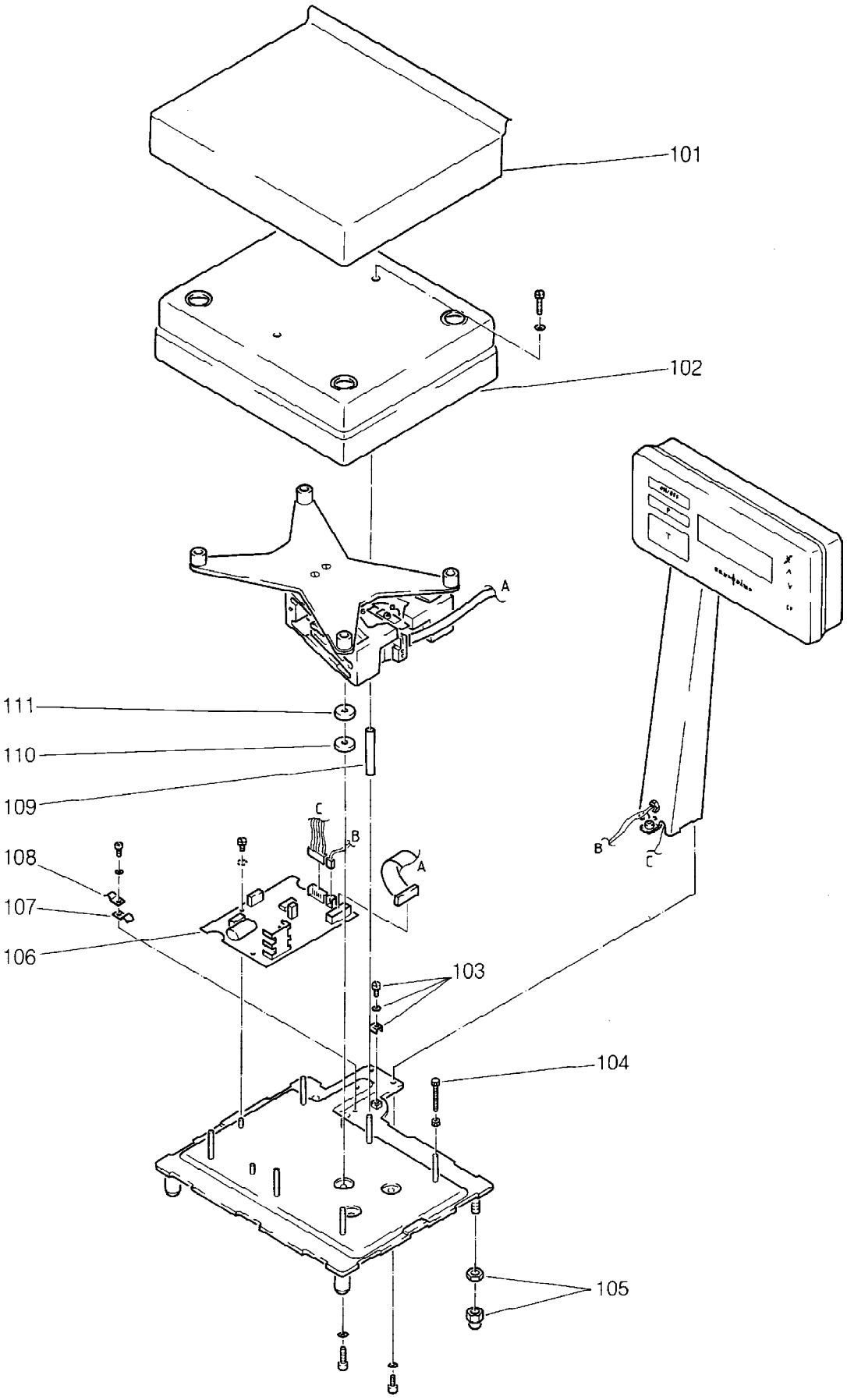
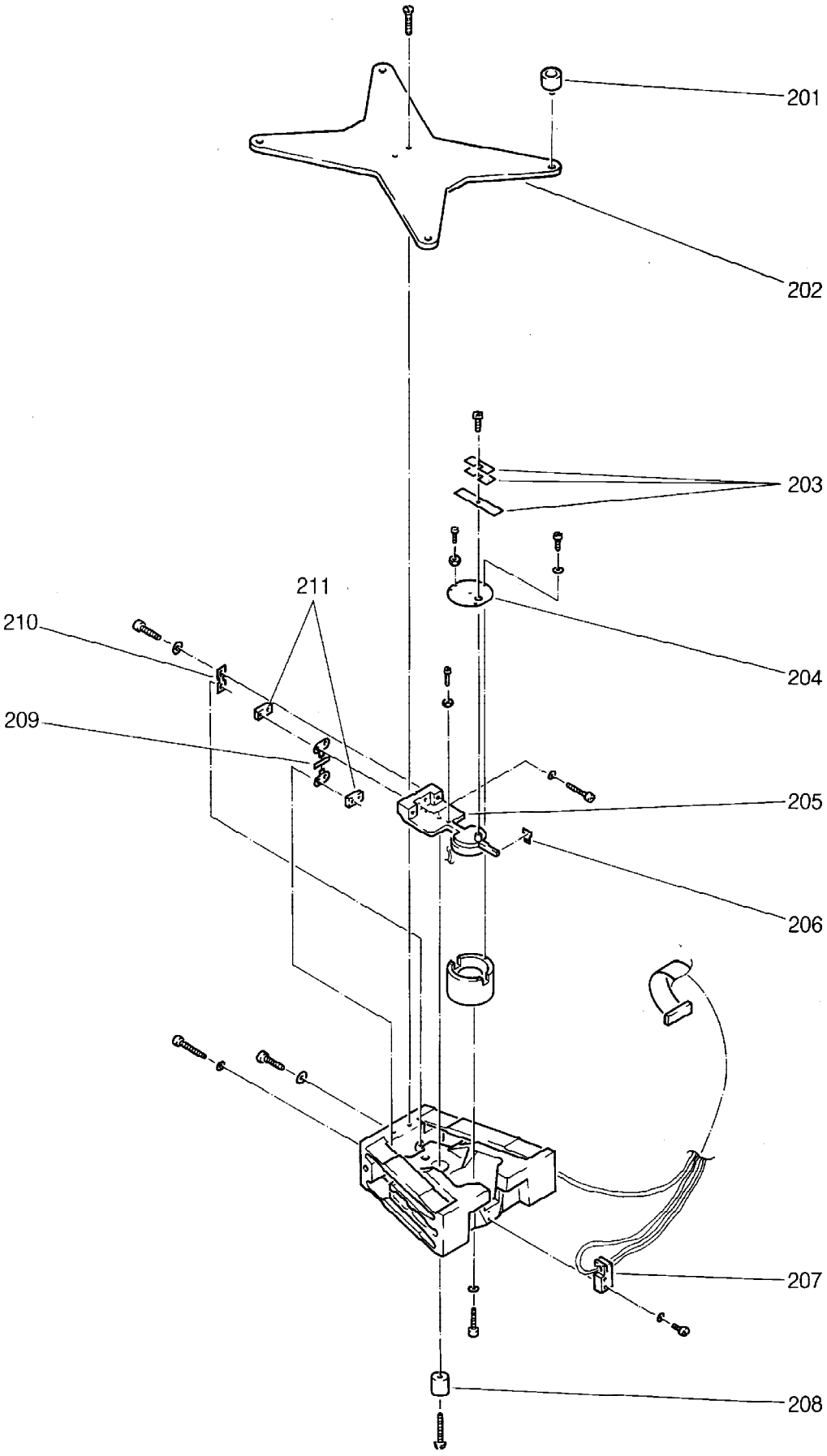
Exploded-View Diagram 1



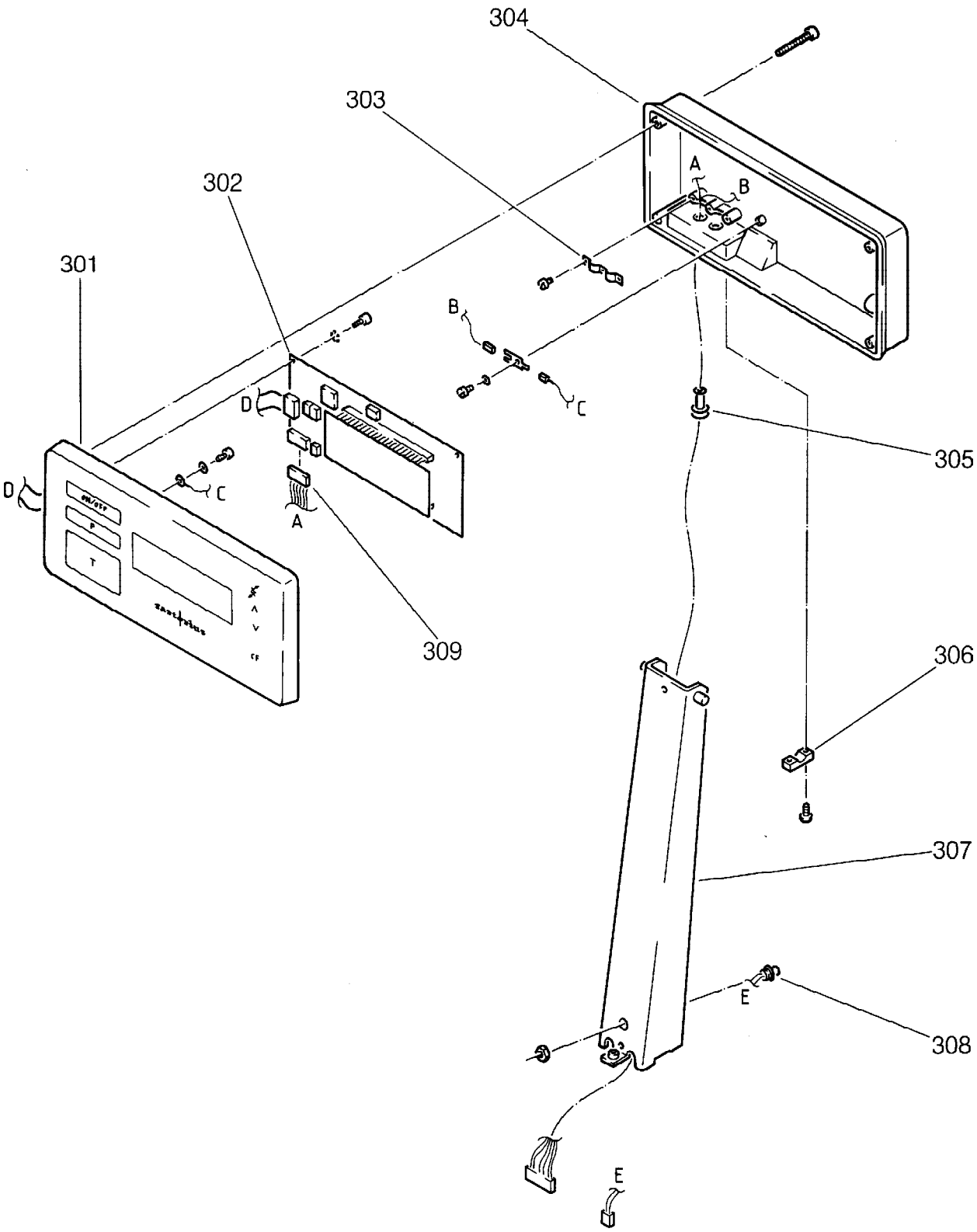
Index	Designation
101	Pan
102	Housing
103	ground connection
105	Levelling foot with nut
106	Analog PCB
107	Cable clamp
108	Cable clamp (main connector)
109	Sleeve
110	Disk, lower
111	Disk, upper

Exploded-View Diagram 2



Index	Designation
201	Stopper
202	Pan support, complete
203	Set of preload weights
204	Magnet cover plate
205	Lever with coil
206	Flag
207	Scanning, complete
208	Weight
209	Coupling band
210	Spring
211	Clamping block

Exploded-View Diagram 3



Index	Designation
301	Front plate
302	Digital PCB
303	Double clamp
304	Rear panel
305	Cable socket
306	Block
307	Support arm, long
308	Main connector, complete
309	Cable

Brief Operating Instructions

This service manual describes the usage and adjustment procedures for the XT - Scales. The adjustment procedures discussed in this manual are alos for use on the TS - Scales (Stamped approved versions). You will find all the adjustment data for that scales in this service manual.

General

This manual is intended for the trained and experienced service technician. Persons not properly trained should not attempt to repair the balance, as success is doubtful. In many cases additional damage is done and results in a more expensive factory repair. It is often found in practice that the scale is not treated as a precision instrument, is operated incorrectly and does not receive the proper care. Problems are often caused by the selection of an unsuitable location. Vibrations, drafts, high temperature as well as a corrosive environment must be connected to a “dirty” power supply e.g. as caused by electric compressors etc.

The scale must be installed in a dry and clean place. Under no circumstances should it be placed in a trough used to collect spilled paint.

The most common malfunctions are:

- **Dried paint between the housing and the pan.**
- **Broken coupling bands caused by rough treatment or improper packing and transport.**
- **Paint or paint thinners entered the weighing cell.**

Key Functions

ON/OFF	Turns the display on and off
T	Tare key (zeroes the display)
⇕	Toggle key for the weighing range
Λ	Increase key
V	Decrease key
CF	Clear funktion key

Definition

Reproducibility

- The displayed values must be within the stated tolerance, if the same weight is repeatedly placed on the scale.

Preload

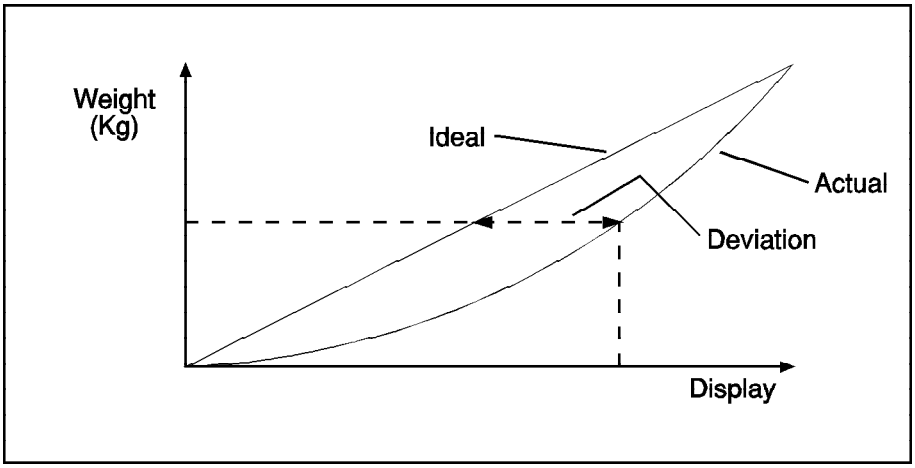
- The weight of the pan support and pan are compensated by the preload weights of the weighing cell. If the preload adjustment is erroneous “L” or “H” will be displayed.

Corner Load

- When loading the weight on different points on the weighing pan the value deviations displayed should be inside the tolerance.

Linearity

- Positive or negative deviations of the actual load are displayed.



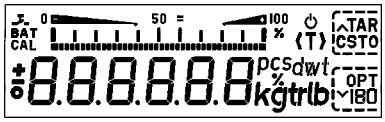
Calibration / Sensitivity

- Adaptation of the weighing range to a reference weight.

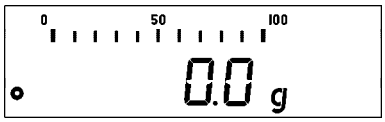
Startup Routine and Error Codes for MP 10.3 Balances

Startup Rountine

After you turn on the balance with the ON/OFF key, the balance processor checks some essential scale functions. The following briefly appear one after the other in the display:



- Display segments light up.



- Display segments are blanked.
- The balance tares automatically, the readout “0,0” is displayed.
- After displaying the stability symbol “g” the scale is ready for operation. In case of failure, an error code will be indicated.

Error Codes:

L	The minimum capacity of the scale has not been reached, e.g. the pan is missing or is improperly positioned, preload adjustment was performed incorrectly, or the weighing cell is defective.
H	The maximum capacity of the scale has been exeeded, e.g., the weight on the pan is too heavy, the scale has been improperly calibrated or preload adjustment was performed incorrectly, or the weighing cell is defective.
E	Internal calculation error (processor attemps to devide the value by “0”).
BAT	When using a battery the operating voltage is too low.
No Display after Turning on	Hardware error, the scale switches off after a while.
Only L, when loaded H	Error in the A/D converter.
Key Symbol	The processor is busy. Turn the balance OFF an then ON again.

Table of Adjustment Data

Model	XT 6200...	TS 6100 - 0D2	TS 12000A - 0D2
Capacity	6202,0 g	6102,0 g	12102,0g
Readability	0,1 g	0,1 g	0,2 g
Reproducibility [1)]	0,05 g	0,1 g	0,2 g
Linearity	0,1 g	0,1 g	0,2 g
Calibration weight	5000 g	5000 g	10000 g
Off-center load test weight	4000 g	4000 g	10000 g
Off-center load testing surface	up to the edge of the pan		
Off-center load tolerance [2)]	0,3 g	0,3 g	0,8 g
Measuring voltage	+1,49 V...-0,29 V	+2,25 V...-2,33 V	+2,25 V...-2,33 V
Preload test weight	5200 g	3000 g	6000 g
Preload voltage	0V +/- 10 mV	0V +/- 10 mV	0V +/- 10 mV

1) Standard deviation according to DIN 1319, Part 3.

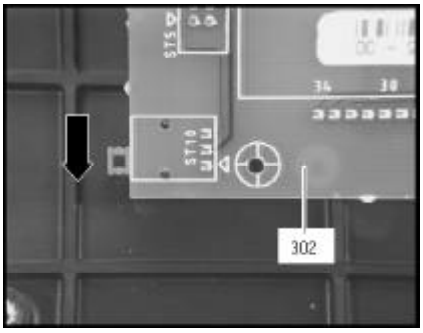
2) The off-center load tolerances are set during production. Since transportation, variations in ambient conditions and measuring procedures can influence the tolerance, deviations up to 2 digits over the given tolerances are permitted upon deliverry of standard scales **(Except for scales for stamp-approval!)**.

Scale Operating Menu

In the menu of the scale operating program, you can change individual settings regarding the weight unit, scale response, display response, data output parameters and application parameters.

For the factory-set menu please refer to the “Overwiew of the MP 10.3 Menu” (see page 15, 16).

Use the “codes” to select the desired functions in the menu of the scale operating program. Each code consists of a left-hand number for the function group and a right-hand number for a function within a group.

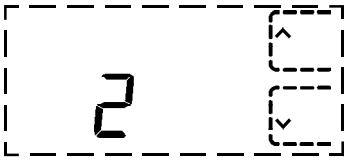


Important Note!
If it is impossible to access the scale operating program then the menu is locked by the jumper. If the menu should be accessibly, then the jumper should be in the lower position (see figure on the left). At XT-Scales the menu access switch is located on the solder side of the digital PCB (302). You must open the display head to expose the menu access switch (please refer to “How to Open the Display Head” on page 18).

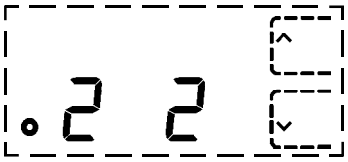
How to Access the Menu of the Scale Operating Program and Change Menu Code Settings

Proceed as follows to access the menu of the scale operating program:

- Switch the balance to the STANDBY mode by pressing the ON/OFF key. Briefly press the T key and the ON/OFF key. Release the T key only after the readout shown on the left apprears in the display.

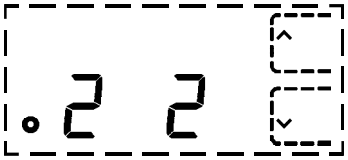


- Press the Λ key to select the next higher function group.
- Press the V key to select the next lower function group.

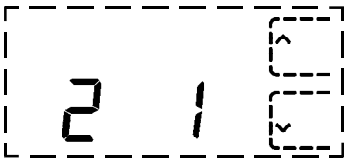


- Press the T key to access the functions within the function group. The set function, identified by **» ° «** is displayed.

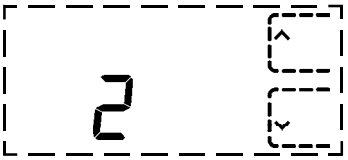
- Press the Λ key to select the next higher function group.
- Press the V key to select the next lower function group.



- To return to the function group without making any changes, you must press the T key for a function which has already been set (identified by **» ° «** in the display).



- To set a new function, please press the T key for the desired function



- Afterwards the program automatically returns to the function group. Now you can select the next function group and change function settings.

To exit the menu of the balance operating program and store the settings, return to the function group by pressing the CF key. If you turn the balance off while the balance operating program is accessed, the changes will not be stored.

Overview of the MP 10.3 / MP 10.5 Menu

1	**Weight Unit W1 (Initial unit)**	
1 - 1	Grams	g
1 - 2	Kilograms	kg
1 - 3	Carats	ct (not for QS 64B)
1 - 4	Pounds	lb
1 - 5	Ounces	oz
1 - 6	Troy Ounces	ozt
1 - 7	Hong Kong taels	tl
1 - 8	Singapore taels	tl
1 - 9	Taiwanese taels	tl
1 - 10	Grains	gr
1 - 11	Pennyweights	dwt
1 - 12	Parts / pound	o
2	**Weight Unit W2 (Conversion unit)**	
2 - 1	Grams	g
2 - 2	Kilograms	kg
2 - 3	Carats	ct
2 - 4	Pounds	lb
2 - 5	Ounces	oz
2 - 6	Troy Ounces	ozt
2 - 7	Hong Kong taels	tl
2 - 8	Singapore taels	tl
2 - 9	Taiwanese taels	tl
2 - 10	Grains	gr
2 - 11	Pennyweights	dwt
2 - 12	Parts / pound	o
	Weighing-in-% Mode (activate using " F2 ")	
2- 13	100.0 %	
2 - 14	100.00 %	
	Parts Counting Mode(activate using " F2 ")	
2 - 15	Reference sample quantity 10, 20, 50 or 100	determination of the reference sample weight according to internal resolution
2 - 16	Reference sample quantity 10, 20, 50 or 100	determination of the reference sample weight according to display resolution
3	**Function Keys**	
3 - 1	no funktion assigned	
3 - 2	Net total / 2nd tare memory	activate using F1
	Over/Under Checkweighing / Classification & Sorting / Filling	
3 - 3	Absolut weight readout (Tolerance limits ± 2,5 %)	Besides the weight display, the Sartorius Graphic guide also appears with a scaled-up middle range between the tolerance limits as an efficient convenience feature to help you during filling and checkweighing.
3 - 4	Readout of the weight difference (Tolerance limits ± 2,5 %)	
3 - 5	Absolut weight readout (Tolerance limits ± 5 %)	
3 - 6	Readout of the weight difference (TTolerance limits ± 5 %)	

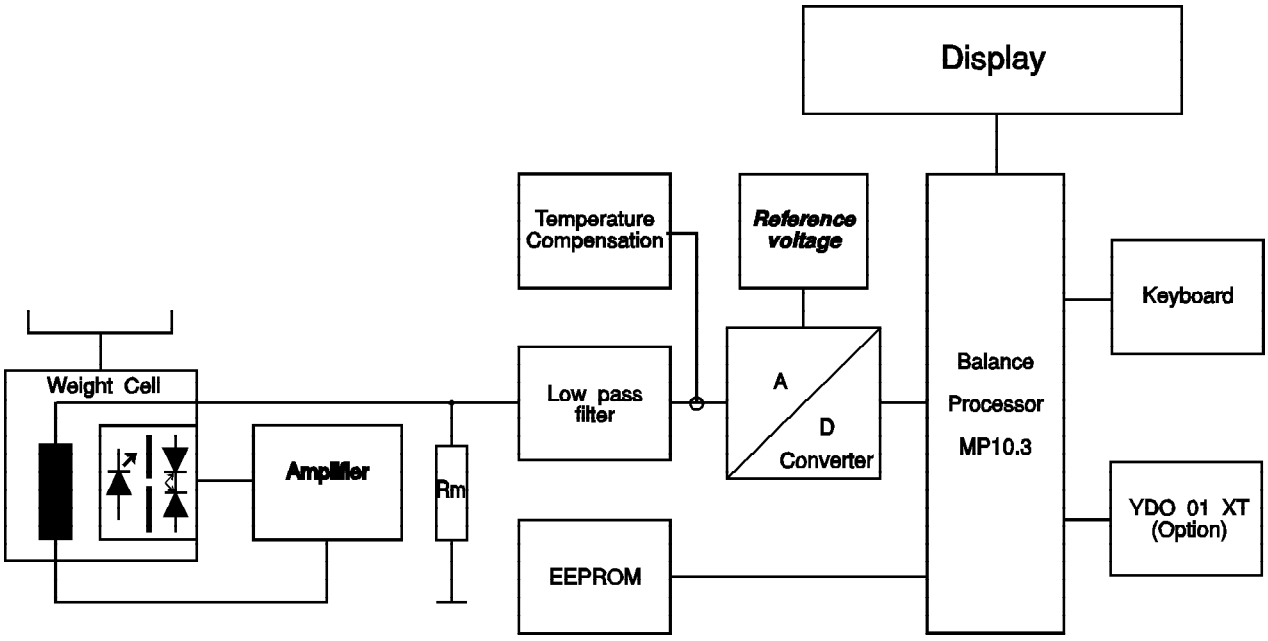
4	**Ambient Conditions**		
4 - 1	very stable		
4 - 2	stable		
4 - 3	unstable		
5	**Stability Range**		
5 - 1	0.25 digit		
5 - 2	0.5 digit		
5 - 3	1 digit		
5 - 4	2 digits		
5 - 5	4 digits		
5 - 6	8 digits		
5 - 7	16 digits		
5 - 8	32 digits		
6	**Tare Parameter**		
6 - 1	without stability		
6 - 2	at stability		
7	**Auto Zero**		
7 - 1	OFF		
7 - 2	ON		
8	**Data Output Parameters**		
8 - 1	output upon external print command regardless of stability		
8 - 2	output upon external print command at stability		
8 - 3	Automatic output synchronous with display regardless of stability		
8 - 4	Automatic output synchronous with display at stability		
9	**Auto Off / Backlighting**		
	Automatic Shutoff	**Backlighting**	
9 - 1	ON	OFF	
9 - 2	OFF	OFF	
9 - 3	ON	ON	
9 - 4	OFF	ON	
10	**Linear Range Display / Sartorius Graphic Guide**		
10 - 1	ON		
10 - 2	OFF		

Description of the Functions

Operating Principle

The operation of the Sartorius XT Scales is based on the principle of “electromagnetic force compensation”. A weight placed on the pan causes a current to flow in the compensation coil. The current is increased until the electromagnetic force causes by the coil is equivalent to the gravitational force of the weight. This is achieved by a zero indicator (capacitive scanner) and a control amplifier. The coil current also flows through a precision resistor (consisting of 4 single resistors). The voltage across this resistor is therefore proportional to the measured weight. This voltage is converted into a digital signal in the analog/ digital converter and then passed on to the microprocessor. The measured value is available at the data output in serial form. The display is directed by the microprosessor.

Block Diagram



Adjusting the Scale

Before you begin to adjust the balance, allow to warm up for at least 30 minutes and run a function test.

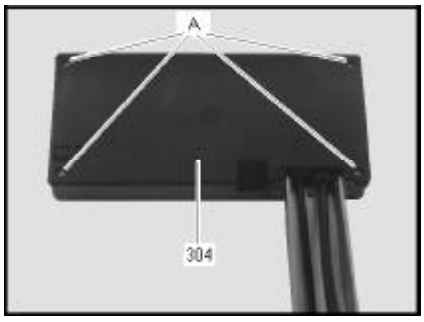
Important Note!
The numbers next to the components (e.g. analog PCB 106) refer to the exploded-view diagrams on pages 4 to 8.

Adjustment Sequence

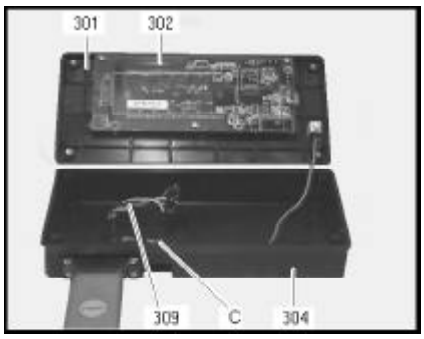
Adjust the overload stops
Adjust the preload
Check the off-center load
Adjust the linearity
Calibrate the balance

How to Open the Display Head

You only need to open the display head in case of an exchange of the digital PCB or in case to unlock the menu access switch.



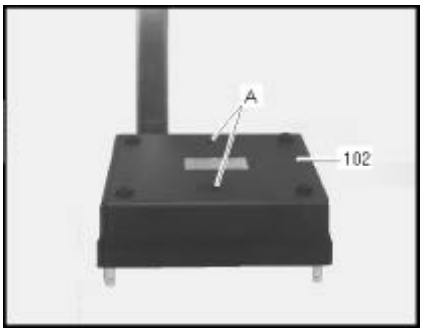
- Disconnect the scale from line power.
- Remove the 4 screws (A) from the rear panel of the display head (304).



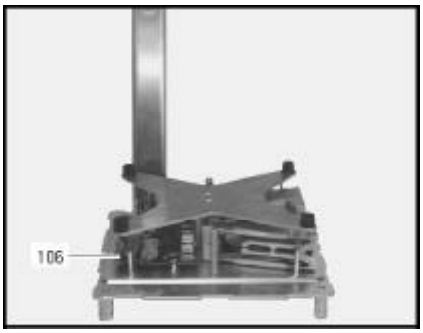
- Pull the front plate (301) with the digital PCB (302) slightly out of the rear panel of the display head (304).
- Unplug the connecting cable (309) from the analog PCB (106) and the digital PCB (302) and remove the protective conductor connection (C).
- Remove the front plate (301) with the digital PCB (302).

How to Open the Scale

The scale must be opened in case of a Linearity adjustment, an overload stops adjustment, an exchange of the analog PCB or a repair of the weight cell.



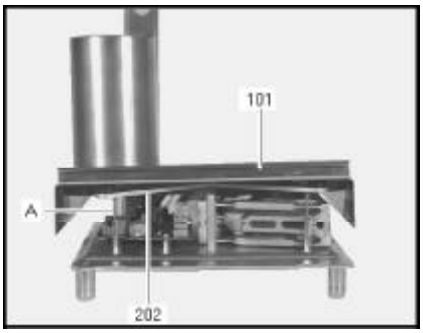
- Disconnect the scale from line power and remove the pan (101).
- Remove the 2 exposed screws (A).
- Remove the cover (102) and set it aside.



- Now are the analog PCB (106), the potentiometer necessary for linearity adjustment the overload stops(A) and the load cell (B) are exposed.

Overload Stops Adjustment

XT-Scales are containing 4 overload stops.
The overload stops are located as well on the base plate as below the 4 pan support corners. These 4 screws are checked with nuts.

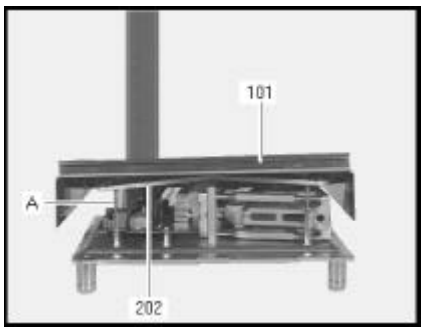


- Open the scale.
- Replace the pan (101).
- Load a weight of 8 kg d = 80 mm on the pan corner.
- Screw the overload screw (A) until it touches the pan support (202); (value displayed has to change).
- Load a weight of 6,5 kg on the pan corner. The overload screw should not touch the the support (no change of the value displayed).
- Check the overload screw with the nut.
- Adjust the 4 corners.

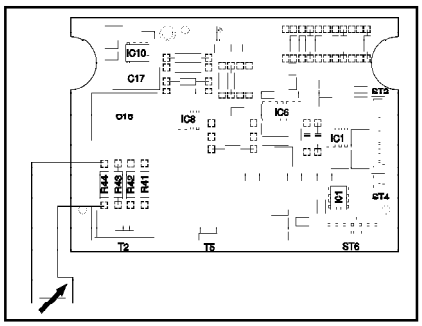
Preload Adjustment

The adjustment of the preload affects the display at the minimum and maximum of the weighing range.
With a wrong adjustment the display will show » L « or » H «.
If you apply a small weight on the pan and if the preload is to small the display will show » L «.
If you apply the maximum weight on the pan and if the preload is to big the display will show » H «.

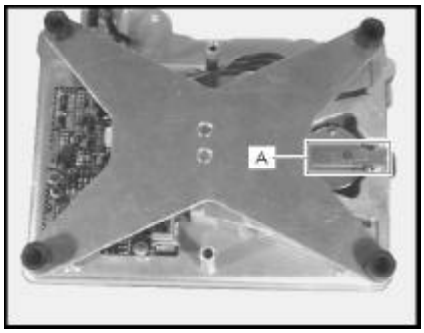
How to Adjust the Preload



- Open the scale (see page 19).
- Replace the pan (101).



- Connect the voltmeter parallel to the precision resistors R141 - R144.
- Center a weight of 5200 g on the pan.
- A preload amplitude of 0 V +- 10 mV must be shown. In case that the amplitude is not inside the tolerances indicated, please readjust the scale.



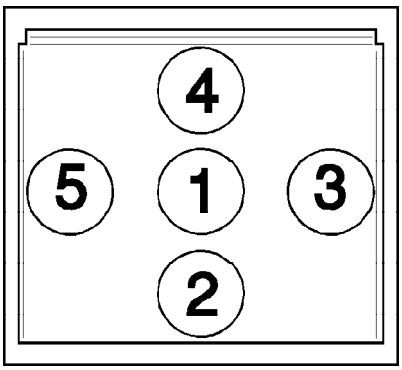
- For this purpose use the set of adjustment weights (A) (spare part number 69U61025 - set of adjustment weights).
- The preload weights are located at the end of lever where they are screwed above the magnet cover plate.
- Add or remove plates to adjust the preload weight.

Preload Data

Model	Preload test weight	Preload voltage	Preload tolerance
XT 6200	5200 g	0 V	+/- 10 mV
TS 6100-0D2	3000 g	0 V	+/- 10 mV
TS 12000A-0D2	6000 g	0 V	+/- 10 mV

Off-Center Load Check

How to Check the Off-Center Load



- Turn the scale ON.
- Center the off-center load test weights on the weighing pan (position 1).
- Tare the scale.
- Place the test weights in turn in positions 2 and 5 and write down the values displayed.
- Compare the values displayed with the indicated tolerances.

Data of Off-Center Load

Model	Off-Center Load Test Weight	Off-Center L. Test. Surface	Off-Center Load Tol.
XT 6200 [1)]	4000 g	up to the edge of the pan	0,3 g
TS 6100-0D2	4000 g	up to the edge of the pan	0,3 g
TS 12000A-0D2	10000 g	up to the edge of the pan	0,8 g

[1)] The off-center load tolerances are set during production. Since transportation, variations in ambient conditions and measuring procedures can influence the tolerance, deviations up to 2 digits over the given tolerances are permitted upon deliverry of standard scales **(Except for scales for stamp-approval!)**.

Off-Center Load Adjustment

To adjust the off-center load, you must have special knowledge about the Block System which cannot be explained in detail in this manual.
However, adjustment of the off-center load is covered in the corresponding service training course. For more information, please contact Sartorius AG in Göttingen, Germany, or the Sartorius Training Center.

Adjusting the Linearity

How to Check the Linearity

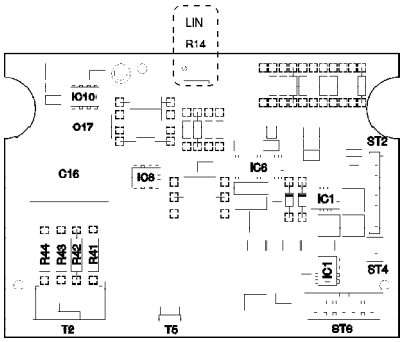
- Check the linearity for the entire weighing range in increments of 1000 g.
- Compare the values displayed with the tolerances indicated below. If the deviations are larger, the linearity must be adjusted.

Linearity Data:

Model	Capacity	Linearity
XT 6200	6200 g	<=± 0,1 g
TS 6100 - 0D2	6100 g	<=± 0,1 g
TS 12000A - 0D2	12000 g	<=± 0,2 g

How to Adjust the Linearity

Important Note !
The adjustment procedure is only ment for the XT - Scales.



- Open the scale (see page 19).
- Place the preload (6200 g) on the weighing pan and write down the value displayed. Unload the scale.
- Place one half of the load (3100 g) on the pan and write down the value displayed.
- Compare the readouts and calculate the difference.
- By twisting the linearization potiometer please readjust the half of the calculated difference (keep half of the load on the pan).

Example: Entire load 6199,4 g = - 0,6 g (to the nominal value)
Half of the load 3100,2 g = + 0,2 g (to the nominal value)

Difference - 0,8 g
Half of the difference - 0,4 g

adjust from 3100,2 to 3099,8 g (- 0,4 g)

- Check the linearity using the given example above and if necessary readjust the scale.
- After you have adjusted the linearity, close the scale.

Calibrating the Scale

XT Scales can be calibrated in two different ways.

1. Calibration in the Weighing Mode

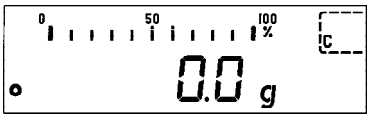
Here, calibration is performed in the same manner as for other Sartorius Balances and Scales. In the process, XT Scales only accept calibration weights wich are within a tolerance range of 2 % of the calibration weight value.

2. Calibration in the Gross Mode

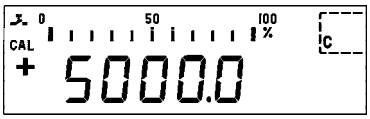
Here, the tolerance limits are eliminated and XT Scales accept any calibration weight which is above the zero point threshold (approx. 20 % of the maximum load). This is often required for servicing the scale, e.g., after adjusting the preload, after exchanging the parameter EEPROM, after exchanging the analog PCB or after repairing the weight cell.

Calibrating in the Weighing Mode

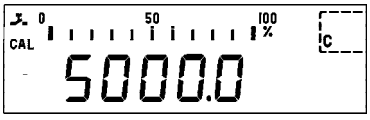
- Switch the scale to the STANDBY mode by pressing the ON/OFF key.
- Unload the scale (clear the pan).



- Hold down the Λ key an press the ON/OFF key until the readout shown on the left appears in the display.
- Tare the scale and press again the Λ key.



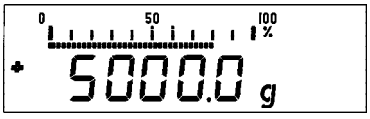
- The calibration weight now appears in the display along with the **»+«** sign without unit indicators.



- Center the required weight on the weighing pan.
- If this weight is correct, the **»+«** sign will disappear.

Explanaition of the plus and minus signs:

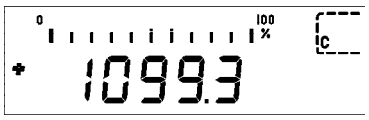
»+«	- the loaded calibration weight is too light,
»-«	- the loaded calibration weight is too heavy
or	
»+« or **»-«** disappears	- the loaded calibration weight is within the tolerance range and is accepted.



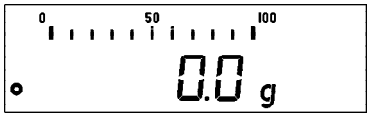
- The **»+«** sign indicates the end of calibration procedure and the analog display along with the unit indicator reappears.

How to Access the Gross Mode

- Switch the scale to the STANDBY mode by pressing the ON/OFF key.
- Unload the scale (clear the pan).



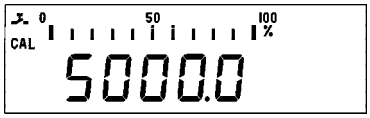
- Press the Λ and T key while turning on the scale with the ON/OFF key. Release T key only after the readout shown on the left is displayed.
- A positive value without a weight unit symbol is displayed.



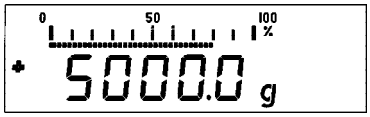
- To exit the gross mode, press the ON/OFF key twice.

Calibrating in the Gross Mode

- Switch the scale to the gross mode.



- To start the calibration routine, press the Λ key.
  The calibration weight is displayed without a plus or a minus sign and without a weighing unit symbol.
- Center the required calibration weight on the pan.



- The **»+«** sign, the weighing unit symbol and the analog display indicate the end of the calibration procedure.
- Afterwards, the scale is in the weighing mode.

Repairing the Scale

When repairing Sartorius XT-Scales, we recommend that you exchange complete component groups if an electronical defect is located because the analog and digital PCB's are surface mounted with various components according to SMD (Surface Mounted Devices) technology. It is not possible to exchange surface-mounted components without using special tools. Therefore, SARTORIUS supports this type of service by exchanging defective PCB's at ecconomical prices.

The following component groups or individual parts may be exchanged using standard tools and equipment:

analog PCB
digital PCB
parameter EEPROM
LCD
data interface

For a transfer from the old analog PCB to the new analog PCB:

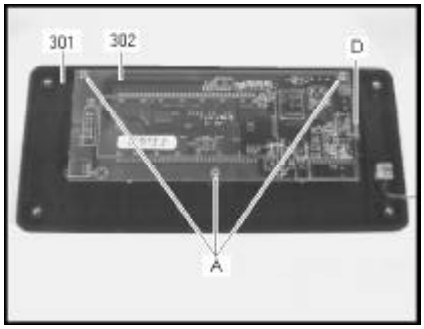
resistors for TC (temperature coefficient) compensation

If your workshop is equipped with the special tools for exchanging surface-mount components, you may repair PCB's at the component level. In this case, the table of test points (on page 28) and the overview of test points (on page 29) will help you to more quickly locate any defective components.
After repairing the balance, check the balance functions over a long time period, if possible. Pay special attention to drift and calibration.

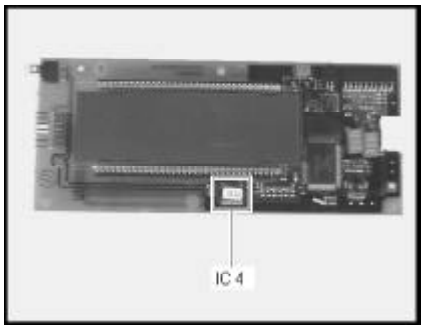
Important Note!
The numbers next to the components (e.g. analog PCB (106)) refer to the exploded-view diagrams from pages 4 trough 8.

Important Note!
In this service manual a repair of the weighing cell is not explained in detail. You find detailed information of repairing the weight cell of the block system in the seperate service manual.

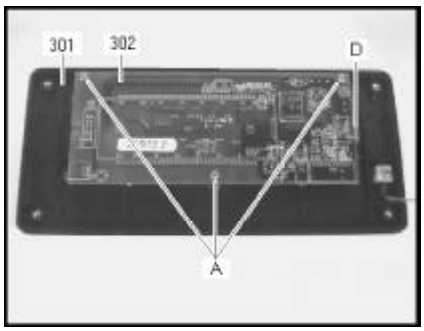
How to Exchange the Digital PCB



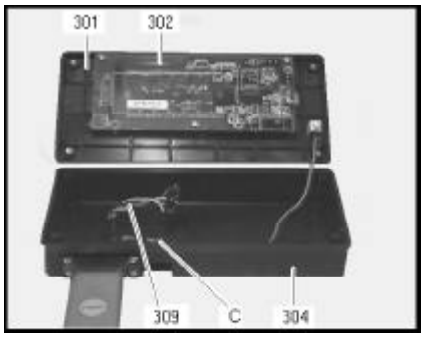
- Open the display head (see page 18).
- Unscrew (A) the digital PCB (302) from the front plate (301) and unplug the connecting cable (D) from the keyboard foil.



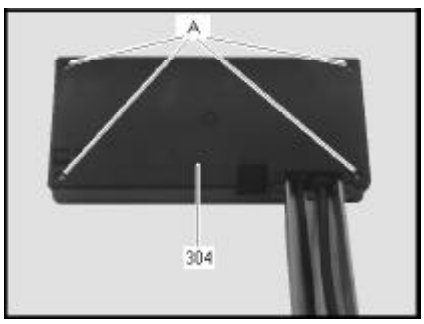
- Now the parameter EEPROM (IC4) must be transferred from the old digital PCB to the new digital PCB (302).



- Place the new digital PCB (302) in the front plate (301) and plug the connecting cable (D) back to the keyboard foil.
- Fasten the digital PCB (302) to the front plate (301) using the 3 screws (A).

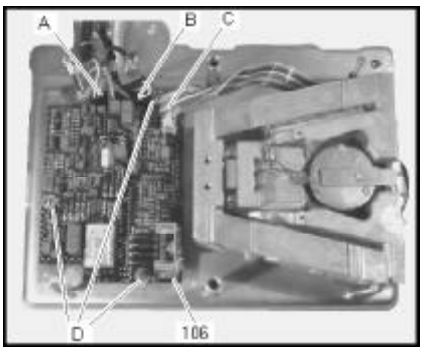


- Plug the connecting cable (309) from the analog PCB (106) back to the digital PCB (302) and plug the protective ground cable (C) and if necessary the data interface connection back.

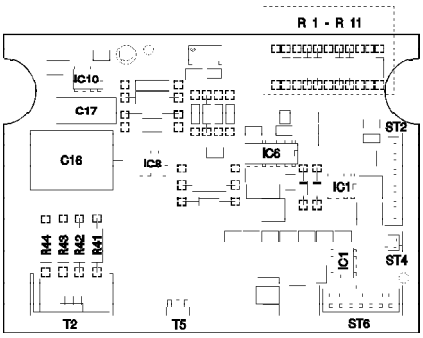


- Replace the front plate (301) along with the digital PCB (301) in the rear panel of the display head (304) and fasten them from the back using the 4 screws (A).
- Now the scale is ready to operate.

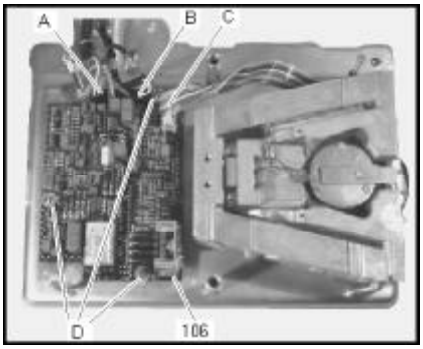
How to Exchange the Analog PCB



- Open the scale (see page 19).
- Unplug the system interface cable (A), main connection cable (B) and connecting cable (C) from the analog PCB (106) to the digital PCB (302).
- Remove the 3 fastening screws (D) and remove the defective analog PCB.

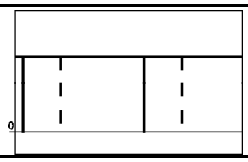
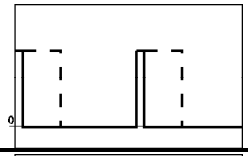
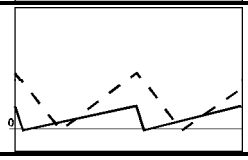


- Transfer the following resistors from the old analog PCB to the new analog PCB (106):
  resistors R1 bis R11 (if they are present) for TC compensation.



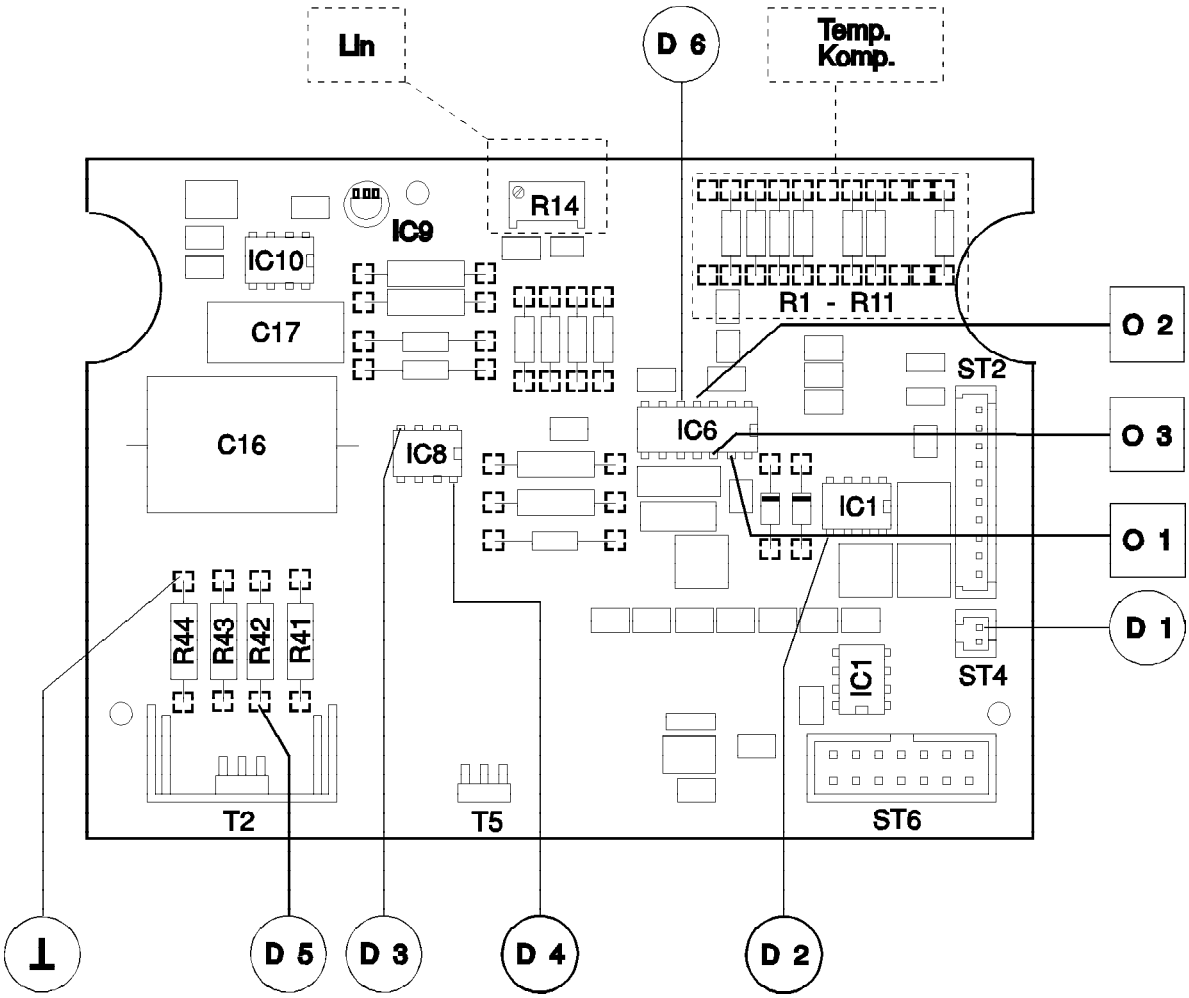
- Fasten the new analog PCB (106) on the base plate using the 3 screws (D).
- Reconnect the system connection cable (A), main connection cable (B) and plug the connecting cable (C) from the analog PCB (106) back to the digital PCB (302).
- Afterwards close the scale.

Table of Test Points

Pos	Test Point	Instrument	Meas. Range / Setting	Readout
D1	Input voltage	Digital voltmeter	20 V DC	approx. + + 7,5 V
D2	Supply voltage	Digital voltmeter	20 V DC	approx. - 7,5 V
D3	Supply voltage	Digital voltmeter	20 V DC	approx. - 7,5 V
D4	Supply voltage	Digital voltmeter	20 V DC	approx. + 5 V
D5	Amplifier output	Digital voltmeter	2 V DC	+ 1,49 V ... - 0,29 V
D6	Reference voltage	Digital voltmeter	20 V DC	approx. + 2,8 V
O1	Comparator output	Oszillosope	2 V / Div. DC 0,5 ms / div.	
O2	Comparator voltage	Oszilloscope	1 V / Div. DC 0,5 ms / div.	
O3	Discharge voltage	Oszilloscope	2 V / Div. DC 0,5 ms / div.	
	Ground			

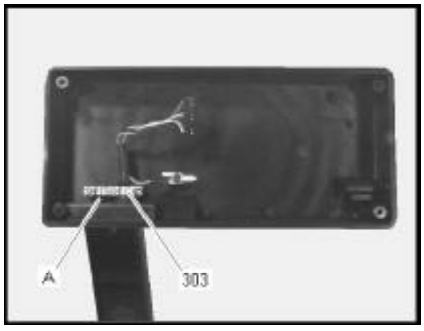
Overview of the Test Points

SAT 6695-2

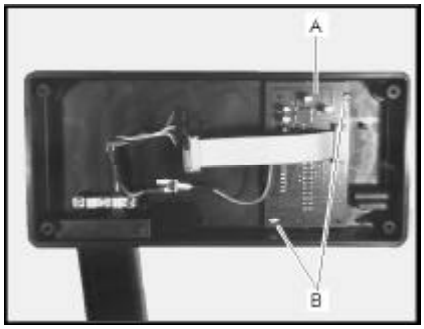


Data Interface YDO 01 XT

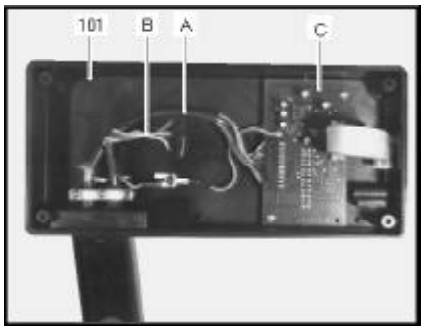
How to Install the Data Interface YDO 01 XT



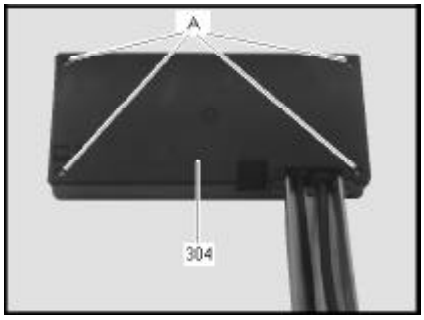
- Open the display head (see page 18).
- Unscrew the cable clamp (303).
- Remove the stopper (A).



- Screw the data interface PCB (A) to the rear panel of the display head (304) using two screws (B) and connect the shield.



- Insert the data output cable (A) in the rear panel of the display head (301) and tighten the seal.
- Fasten the data output cable (A) and the system interface cable (B) using the cable clamp (303).
- Plug the data output cable (A) to the data output PCB (C).



- Replace the front plate (301) along with the digital PCB (302) in the rear panel of the display head (304) and fasten them from the back using the 4 screws.
- Now the scale is ready to operate.

General Specifications

Type of interface	Serial data point to point connection
Operating mode	Asynchronous, simplex
Standard	V 24 - V 28, RS 232 C-S
Handshake line	Clear to Send (CTS)
Initialization	External or automatic print command depending on the Code selected (8 1 bis 8 3)
Character coding	7 Bit ASCII
Transmission rate	1200 Baud
Parity	Odd
Synchronization	1 start bit, 1 stop bit

Data Output Format **(not for stamped approved versions)**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
±			Z	Z	Z	Z	Z	Z	Z		%	-	-		
	-	-		.	.	.	.	.		-	k	g	-	CR	LF
-											d	w	t		

1st character	Plus or minus sign or space
2nd and 3rd character	Space
4th to 10th character	Digit, space or decimal point
11th character	space
12th to 14th character	symbol, letter or space
15th character	Carriage return
16th character	Line feed

Data Output Parameters

Codes 8-1 to 8-3

Data can be transferred to the output port depending in the particular stability state of the load cell (stability parameter). You can choose to have data transferred at stability or regardless of stability. If you opt to have data transferred only when load cell has stabilized, an output command will remain stored until the system has stabilized.

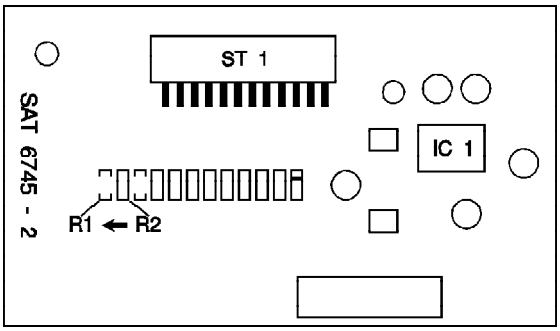
For the auto print setting, weight data are in an interval of 0,2 seconds continously transferred. If you have additinally selected the stability parameter for this option, only data with a stability symbol will be output.

When using the auto print setting the display sequence will never be faster than 0,2 seconds.

Data is output continously the moment you turn on the power. To stop and start automatic data transfer, press the print key.

Data Output and Pin Assignment

Each signal received by the RxD line will tare the scale. Should the signals on the RxD line be interpreted as Print orders, the resistor on position R2, on the data output PCB (SAT 6745-2), must be soldered on the position R1 (R2 = 0 ohms). The position R2 will remain empty.



Female Interface Connector:
25-position D submini DB25S, with screw lock hardware for cable gland.
Male Connector Required:
25-pin D submini DB25S, with integrated shielded cable clamp assembly (Amp type 826 982 - 1) and fastening screws (mate screws for female screw lock, Amp type 164 868 - 1).

Pin Assignment

Interface Connector	Connector ST1 on Digital PCB	Description	Direction
Pin 1	ST1 / 1	Internal ground	
Pin 2	ST1 / 10	Data Output (TxD)	Output
Pin 3	ST1 / 11	Data Input (RxD)	Input
Pin 4	-	Not connected	
Pin 5	ST1 / 9	Clear to Send (CTS)	Input
Pin 6	-	Internal ground	
Pin 7	ST1 / 1	Íntern al ground	
Pin 8	ST1 / 1	Internal ground	
Pin 9	-	Not connected	
Pin 10	-	Not connected	
Pin 11	-	Not connected	
Pin 12	-	Not connected	
Pin 13	-	Not connected	
Pin 14	ST1 / 1	Internal ground	
Pin 15	ST1 / 12	Print	Input
Pin 16	ST1 / 5	Tare	Input
Pin 17	ST1 / 6	Connected	
PIn 18	ST1 / 7	Connected	
Pin 19	ST1 / 4	Connected	
Pin 20	ST1 / 2	Data Terminal Ready (DTR)	Input
Pin 21	-	Not connected	
Pin 22	-	Not connected	
PIn 23	-	Not connected	
Pin 24	-	Not connected	
Pin 25	-	Not connected	Output