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Servicemanual

METTLER TOLEDO
XS XP Precision Balances

Edition 10/2005

Overview of Chapters

Overview of Chapters

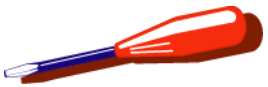
1 Introduction
Using the Servicemanual, Overview of Balances, Platforms and Weighing cells, special types, Document Status

2 Safety
Hazard warnings

3 Spare Parts
Exploded-view drawings and spareparts lists, packaging

4 Checks
Routine checks befor/after maintenance, repairs, and adjustment

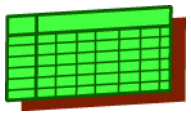
5 Troubleshooting
Problems, causes and remedies



6 Repair
Instructions for repairs

7 LARS
Testing and adjusting the balances with LARS, TDNR lists

8 Adjusting in the Service Menu
Adjustment possibilities without LARS



9 Adjustment Data
Tables of adjustment tolerances and technical data of the balances

10 Accessories
Frequently used accessories

11 Service Aids
Software, interfaces, gages, tools

12 Forms

1 Introduction

List of Contents

1 Service Manual

1.1 Purpose of the Service Manual

The Service Manual provides support to service personnel of Mettler-Toledo, or other persons authorized by Mettler-Toledo, when performing maintenance and repairs on the balances described in this Service Manual.

1.2 Previous Knowledge Required

Persons using the Service Manual must fulfill the following basic knowledge requirements regarding the handling of Mettler-Toledo products and associated software:

- Understanding of the Operating Instructions of the respective balance (siehe CD LabTec serviceexpert oder http://extranet.mt.com LabTec Market Support).
- Experience with LARS (LabTec Repair and Service Software).
- Ability to load new software onto the balance from the Internet using LARS or e-loader (siehe CD LabTec serviceexpert oder http://extranet.mt.com LabTec Market Support).
- Basic knowledge of using Adobe Acrobat Reader®

Mettler-Toledo offers service courses which include this basic knowledge.

1.3 Structure of the Service Manual

The Service Manual is divided into 12 chapters.

The sequence of the chapters largely corresponds to the sequence of the operations for repairing a balance: checking, troubleshooting, repair, and adjustment.

The Service Manual is designed mainly for display on a desktop or laptop computer screen.

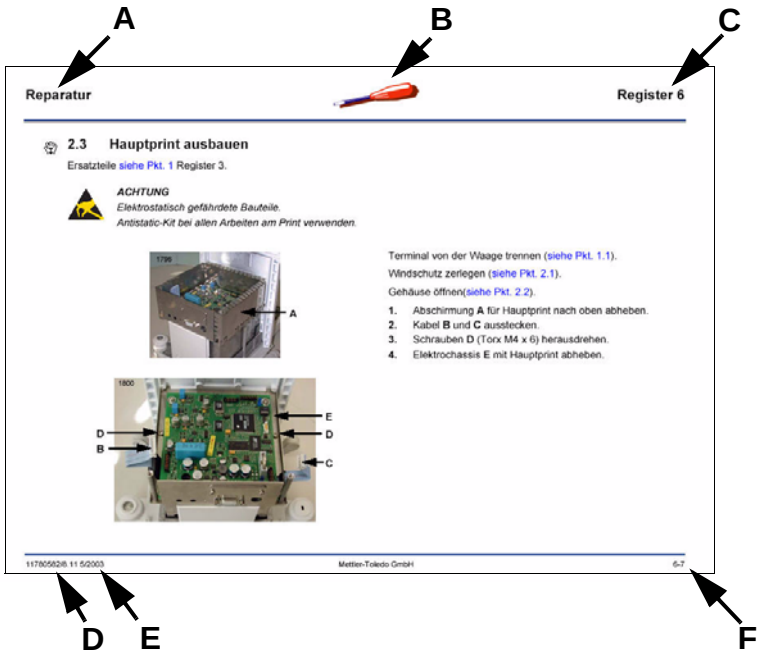
1.3.1 Tables of Contents / Index

For rapid location of the required information, the Service Manual has:

- an overview of the chapters
- an index
- a table of contents for each chapter.

Instructions for using the tables of contents and the index are given in Section 1.4.4 of this chapter.

1.3.2 Page Structure



Header

- **A** Title of the respective chapter
- **B** Icon for the respective chapter
- **C** Chapter number

Text field

Information containing text and illustrations

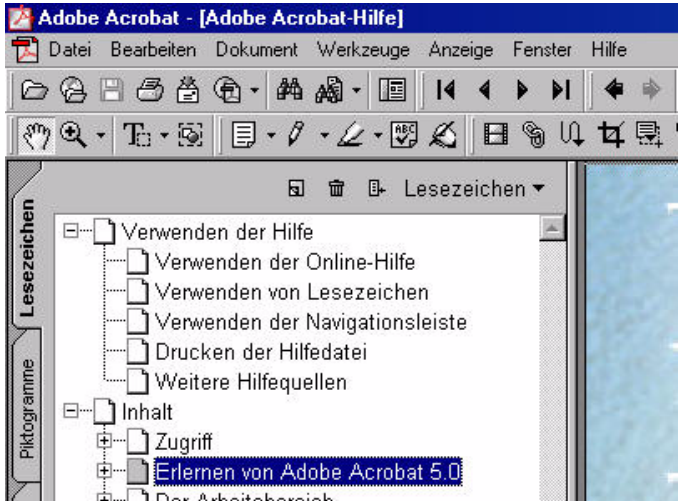
Footer

- **D** Number of the Service Manual
- **E** Issue date (month/year)
- **F** Page number «6-7»
  6 = chapter number
  7 = page number within this chapter

1.4 Navigating in the Screen

For navigation in the Service Manual either the functions of Adobe Acrobat Reader® or hyperlinks located in the document can be used. The two means of navigation can also be used together.

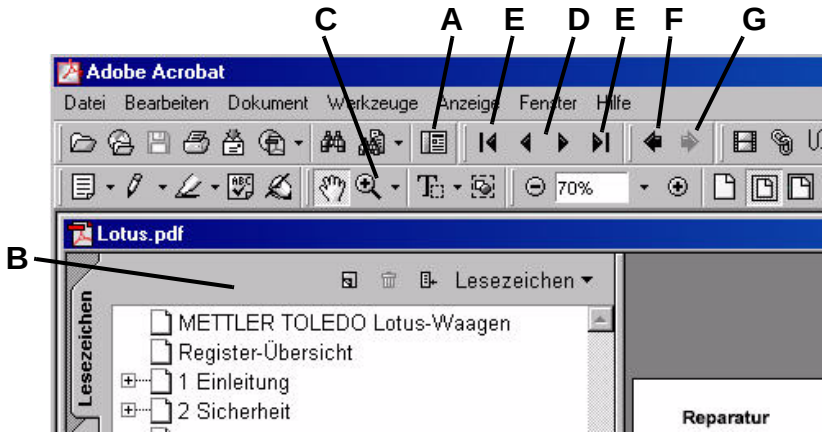
1.4.1 Adobe Acrobat Reader®



To be able to navigate with Adobe Acrobat Reader® you need to know the basic functions of this software. To teach yourself the functions of Adobe Acrobat Reader® :

1. Start the software
2. In the menu bar, click on Help
3. Select Acrobat Help
4. In the help tree, click on Learn Adobe Acrobat.

1.4.2 Navigation with Adobe Acrobat Reader®



The most important functions of the Adobe Acrobat Reader® tool-bar for navigation in the Service Manual are the following:

A Open/close the navigation window **B**

C Zoom

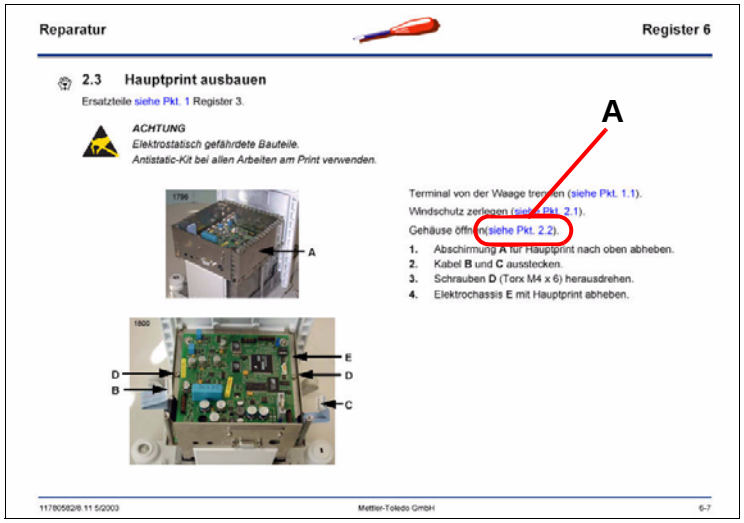
D Page forward/backward

E Go to start/end of document

F Go to Previous View
(e.g. return to the page with the «link origin»)

G Go to Next View
(e.g. from the page with the «link origin»
back to the «linked page»).

1.4.3 Display on a Small Screen

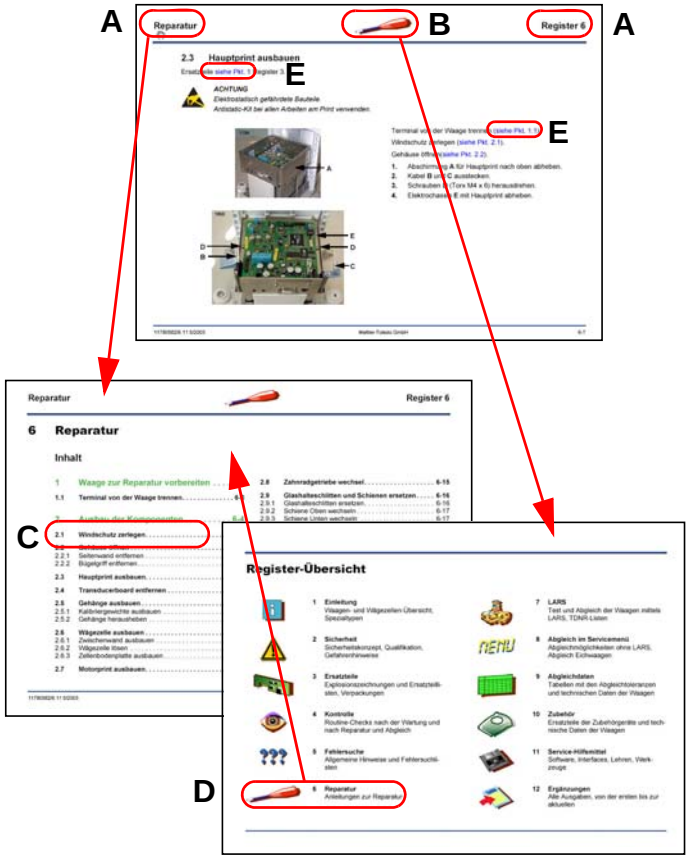


To enable use of a small screen, it can be switched to full-screen mode. The Service Manual is then displayed without the toolbar.

The key combinations required for navigation in full-screen mode are as follows:

Ctrl+L	Switch to full-screen
Esc	Reset to normal view
Ctrl++	Zoom in
Ctrl+-	Zoom out
←→	Page forward/backward
Alt+←	Return to selected hyperlink **A**.

1.4.4 Navigation within the Manual



The Service Manual contains hyperlinks which make direct navigation possible. They can also be used when navigating with the toolbar of Adobe Acrobat Reader® (see Section 1.4.2).

Click on **A**
The table of contents of the respective chapter is displayed.

Click on **B**
The Overview of Chapters is displayed.

Click on **C**
The respective section in the chapter is displayed.

Click on **D**
The table of contents of the respective chapter is displayed.

Click on **E**
The respective cross-reference in this, or another, chapter is displayed.
For clarity, the many links of this type are shown blue.

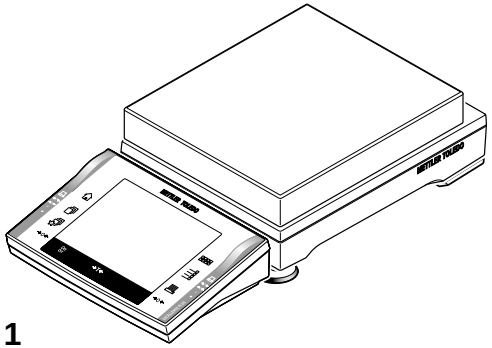
1.5 Paper Printout

A paper printout of the Service Manual can be created with Adobe Acrobat Reader®. The printout in landscape orientation can be on either US Letter or DIN A4 paper size. If scaling of 85% is selected, the margin is sufficiently wide for punching.

To set scaling in Adobe Acrobat Reader®: File/Print/Properties/Layout/Advanced/Graphics/Scaling.

2 Designation Concept

2.1 Terminology



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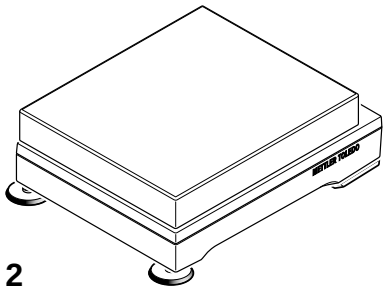
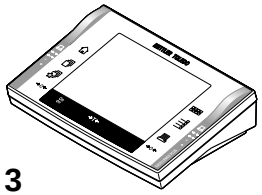


2



3

1 Balance

A system comprising platform and terminal.

2 Platform

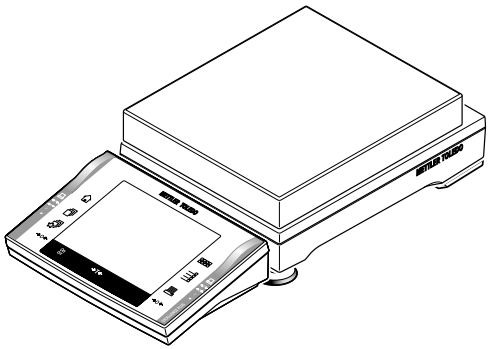
The name for a «balance» when no terminal is mounted or set up next to it. For example, the platform is controlled by a PC with appropriate software.

3 Terminal

The name for the control unit of a balance. A terminal can be mounted onto the platform or set up next to it.

2.2 Designation definition

2.2.1 Balance

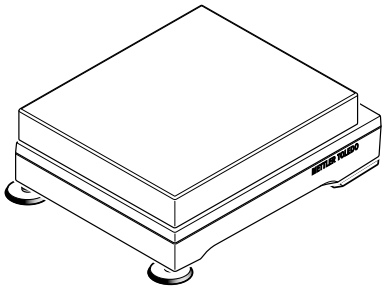


X P 203 S DR / M 21

- Speciality (00...99)
- Certified Balance
- Extension
- Dimension *
- Capacity/Readability
- Type
  consisting of:
  X203S Platform
  P Terminal

*S - small, M - medium, L - Large

2.2.2 Platform

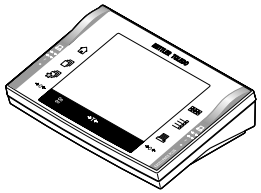


X 203 S DR / M 21

- Speciality (00...99)
- Cert. Platform
- Extension
- Dimension *
- Capacity/Readability
- Type

*S - small, M - medium, L - Large

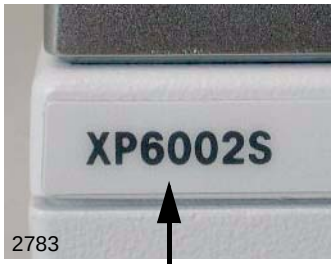
2.2.3 Terminal

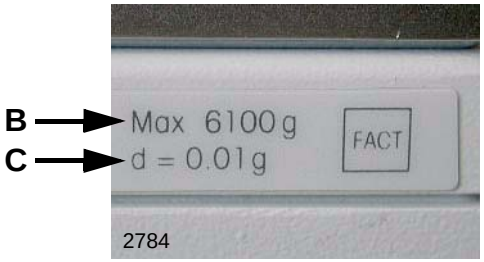


PPT
- Precision Balances
- Line *

*P = Professional, S = Standard

2.3 Model Plate





A Type designation

B Maximum capacity

C Readability

2.4 Type plate

1

3

Fig. 1: Type plate of Balance

Fig. 2: Type plate of Platform

Fig. 3: Type plate of Terminal

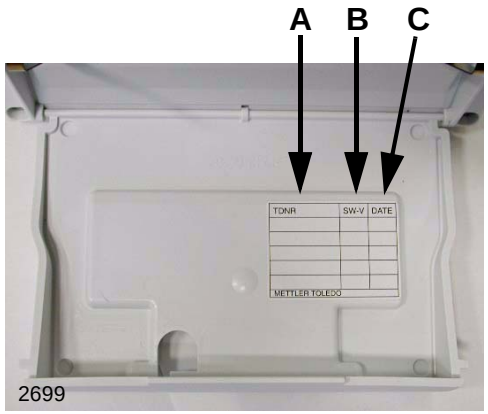
A Serial number (SNR).

B Type definition number (TDNR) of Platform/Terminal when leaving the factory.

Note

If a new TDNR is loaded when servicing is performed, the new number must be entered on the service data plate (Platform and/or Terminal) (see Section 2.5).

2.5 Service Data Plate



A Column for new TDNR.

B Column for new software version.

C Column for date of update.

Service Data Plate see Chapter 11

2.6 Serial number decoding

as of 2004 - example with SNR 1125010001:

11 25 01 0001

- 0001 = consecutive number within a production week
- 01 = production week (01 - 52)
- 25 = production year 2004. Offset = 21 (26 = 2005) etc.
- 11 = production site Switzerland (12 = China)

up to 31.12.2003 production site Switzerland, example with SNR 1118420763:

11 18 42 0763

- 0763 = consecutive number within a production week
- 42 = production week (01 - 52)
- 18 = production year 1999. Offset = 19 (24 = 2005)
- 11 = MTLabTec (Switzerland)

up to 31.12.2003 production site China, example with SNR 1202440020:

12 02 44 0020

- 0020 = consecutive number within a production week
- 44 = production week (01 - 52)
- 02 = production year (05 = 2005)
- 12 = MTCS (China)

3 Type Overview

3.1 XP Balances

3.1.1 XP Balances, Type S (with Draft Shield)

Type	Type (Certif. Balance)		Weighing cell	Terminal PPT	Draft shield
XP204S XP404S XP404SDR	XP204S/A M XP404S/A M XP404SDR/A M		11133013 see Section 5.4, Chapter 3	see Section 2.1, Chapter 3	see Section 3.2, Chapter 3

Spare parts: see Section 4.1, Chapter 3

Type	Type (Certif. Balance)	Weighing cell	Terminal PPT	Draft shield
XP2003SDR	XP2003SDR/A M	11133014 see Section 5.4, Chapter 3	see Section 2.1, Chapter 3	see Section 3.1, Chapter 3
XP5003SDR	XP5003SDR/A M	11133015 see Section 5.5, Chapter 3		
XP203S	XP203S/A M	11133010 see Section 5.5, Chapter 3		
XP603S	XP603S/A M	11133010 see Section 5.5, Chapter 3		
XP603SDR	XP603SDR/A M	11133010 see Section 5.5, Chapter 3		
XP1203S	XP1203S/A M	11133010 see Section 5.5, Chapter 3		

Spare parts: see Section 4.1, Chapter 3

3.1.2 XP Balances, Type S (with Draft Shield Element)

Type	Type (Certif. Balance)	Weighing cell	Terminal PPT
XP1202S	XP1202S/A M	11133011 see Section 5.6, Chapter 3	
XP4002S	XP4002S/A M	11133011 see Section 5.6, Chapter 3	
XP6002S	XP6002S/A M	11133011 see Section 5.6, Chapter 3	
XP6002SDR	XP6002SDR/A M	11133011 see Section 5.6, Chapter 3	see Section 2.1, Chapter 3
XP8002S	XP8002S/A M	11133012 see Section 5.7, Chapter 3	
XP10002S	XP10002S/A M	11133012 see Section 5.7, Chapter 3	
XP10002SDR	XP10002SDR/A M	11133012 see Section 5.7, Chapter 3	

Spare parts: see Section 4.1, Chapter 3

3.1.3 XP Balances, Type S (without Draft Shield Element)

Type	Type (Certif. Balance)	Weighing cell	Terminal PPT
XP4001S	XP4001S/A M	11133011 see Section 5.6, Chapter 3	see Section 2.1, Chapter 3
XP6001S	XP6001S/A M	11133011 see Section 5.6, Chapter 3	
XP8001S	XP8001S/A M	11133012 see Section 5.7, Chapter 3	
XP10001S	XP10001S/A M	11133012 see Section 5.7, Chapter 3	

Spare parts: see Section 4.1, Chapter 3

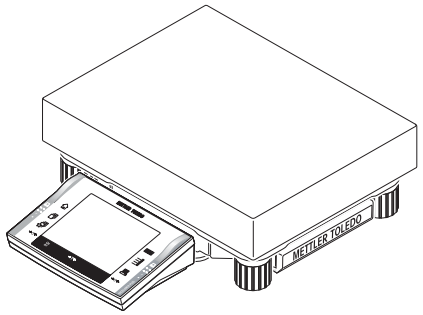
3.1.4 XP Balances, Type M

Type	Type (Certif. Balance)	Weighing cell	Terminal PPT
XP6002MDR	XP6002MDR/A M	11133011 see Section 5.6, Chapter 3	
XP12002MDR	XP12002MDR/A M	11133012 see Section 5.7, Chapter 3	
XP8001M	XP8001M/A M	11133012 see Section 5.7, Chapter 3	
XP8001MDR	XP8001MDR/A M	11133012 see Section 5.7, Chapter 3	
XP12001M	XP12001M/A M	11133012 see Section 5.7, Chapter 3	see Section 2.1, Chapter 3
XP16001M	XP16001M/A M	11133017 see Section 5.8, Chapter 3	
XP20001M	XP20001M/A M	11133017 see Section 5.8, Chapter 3	
XP12000M		11133012 see Section 5.7, Chapter 3	
XP20000M		11133017 see Section 5.8, Chapter 3	

Spare parts: see Section 4.2, Chapter 3

3.1.5 XP Balances, Type L

Type	Type (Certif. Balance)	Weighing cell	Terminal PPT
XP8001L	XP8001L/A M	11133017 see Section 5.8, Chapter 3	
XP16001L	XP16001L/A M	11133017 see Section 5.8, Chapter 3	
XP32001L	XP32001L/A M	11133017 see Section 5.8, Chapter 3	
XP32001LDR	XP32001LDR/A M	11133017 see Section 5.8, Chapter 3	
XP64001L	XP64001L/A M	11133018 see Section 5.9, Chapter 3	see Section 2.1, Chapter 3
XP16000L		11133017 see Section 5.8, Chapter 3	
XP32000L		11133017 see Section 5.8, Chapter 3	
XP64000L		11133018 see Section 5.9, Chapter 3	



Spare parts: see Section 4.3, Chapter 3

3.2 XS Balances

3.2.1 XS Balances, Type S (with Draft Shield)

Type	Type (Certif. Balance)	Weighing cell	Terminal SPT	Draft shield
XS203S	XS203S/A M	11133010 see Section 5.5, Chapter 3	see Section 2.2, Chapter 3	see Section 3.2, Chapter 3
XS403S	XS403S/A M			
XS603S	XS603S/A M			
XS603SDR	XS603SDR/A M			
XS1003S	XS1003S/A M			

Spare parts: see Section 4.4, Chapter 3

3.2.2 XS Balances, Type S (with Draft Shield Element)

Type	Type (Certif. Balance)	Weighing cell	Terminal SPT
XS802S	XS802S/A M	11133011 see Section 5.6, Chapter 3	see Section 2.2, Chapter 3
XS2002S	XS2002S/A M		
XS4002S	XS4002S/A M		
XS4002SDR	XS4002SDR/A M		
XS6002S	XS6002S/A M		
XS6002SDR	XS6002SDR/A M		

Spare parts: see Section 4.4, Chapter 3

3.2.3 XS Balances, Type S (without Draft Shield Element)

Type	Type (Certif. Balance)	Weighing cell	Terminal SPT
XS4001S	XS4001S/A M	11133011 see Section 5.6, Chapter 3	see Section 2.2, Chapter 3
XS6001S	XS6001S/A M	11133011 see Section 5.6, Chapter 3	
XS8001S	XS8001S/A M	11133012 see Section 5.7, Chapter 3	

Spare parts: see Section 4.4, Chapter 3

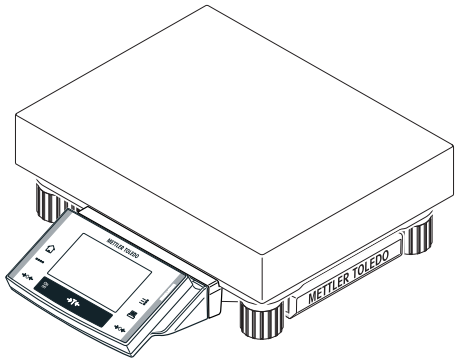
3.2.4 XS Balances, Type M

Type	Type (Certif. Balance)	Weighing cell	Terminal SPT
XS6001M	XS6001M/A M	11133011 see Section 5.6, Chapter 3	
XS6001MDR	XS6001MDR/A M	11133011 see Section 5.6, Chapter 3	
XS10001M	XS10001M/A M	11133012 see Section 5.7, Chapter 3	
XS16001M	XS16001M/A M	11133017 see Section 5.8, Chapter 3	see Section 2.2, Chapter 3
XS10000M		11133012 see Section 5.7, Chapter 3	
XS16000M		11133017 see Section 5.8, Chapter 3	

Spare parts: see Section 4.5, Chapter 3

3.2.5 XS Balances, Type L

Type	Type (Certif. Balance)	Weighing cell	Terminal SPT
XS8001L	XS8001L/A M		
XS16001L	XS16001L/A M		
XS32001L	XS32001L/A M		
XS32001LDR	XS32001LDR/A M	11133017 see Section 5.9, Chapter 3	see Section 2.2, Chapter 3
XS16000L			
XS32000L			



Spare parts: see Section 4.6, Chapter 3

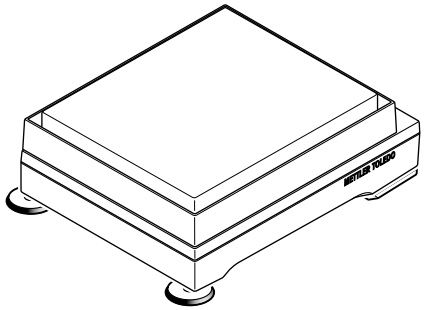
3.3 X Platforms

3.3.1 X Platforms Type S with Draft Shield

Type	Type (Certif. Balance)		Weighing cell	Draft shield	Spare parts
X204S	X204S/A M		11133013 see Section 5.4, Chapter 3	see Section 3.2, Chapter 3	see Section 4.7, Chapter 3
X404S	X404S/A M		11133013 see Section 5.4, Chapter 3		
X404SDR	X404SDR/A M		11133013 see Section 5.4, Chapter 3		
X203S	X203S/A M		11133010 see Section 5.5, Chapter 3	see Section 3.1, Chapter 3	see Section 4.7, Chapter 3
X603S	X603S/A M		11133010 see Section 5.5, Chapter 3		
X603SDR	X603SDR/A M		11133010 see Section 5.5, Chapter 3		
X1203S	X1203S/A M		11133010 see Section 5.5, Chapter 3		
X2003SDR	X2003SDR/A M		11133014 see Section 5.4, Chapter 3		
X5003SDR	X5003SDR/A M		11133015 see Section 5.4, Chapter 3		

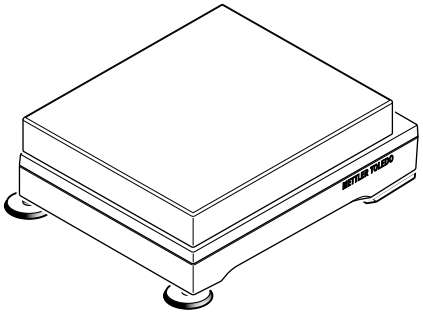
3.3.2 X Platforms Type S with Draft Shield Element

Type	Type (Certif. Balance)	Weighing cell	Spare parts
X1202S	X1202S/A M		
X2002S	X2002S/A M		
X4002S	X4002S/A M	11133011 see Section 5.6, Chapter 3	
X6002S	X6002S/A M		
X6002SDR	X6002SDR/A M		see Section 4.7, Chapter 3
----------	----------	----------	
X8002S	X8002S/A M		
X10002S	X10002S/A M	11133012 see Section 5.7, Chapter 3	
X10002SDR	X10002SDR/A M		



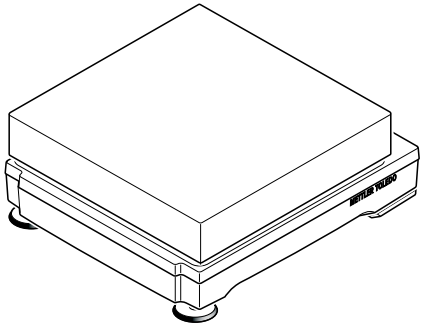
3.3.3 X Platforms Type S without Draft Shield

Type	Type (Certif. Balance)	Weighing cell	Spare parts
X4001S	X4001S/A M		
X6001S	X6001S/A M	11133011 see Section 5.6, Chapter 3	
----------	----------	----------	see Section 4.7, Chapter 3
X8001S	X8001S/A M		
X10001S	X10001S/A M	11133012 see Section 5.7, Chapter 3	



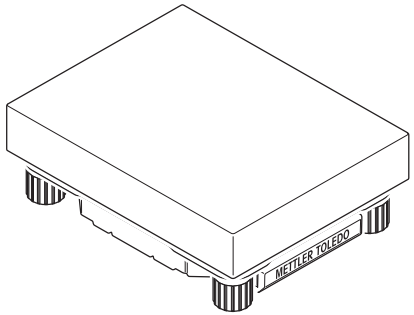
3.3.4 X Platforms Type M

Type	Type (Certif. Balance)	Weighing cell	Spare parts
X12002MDR	X12002MDR/A M	11133012 see Section 5.7, Chapter 3	
X8001M	X8001M/A M	11133012 see Section 5.7, Chapter 3	
X12001M	X12001M/A M	11133012 see Section 5.7, Chapter 3	see Section 4.8, Chapter 3
X20001M	X20001M/A M	11133017 see Section 5.8, Chapter 3	
X12000M		11133012 see Section 5.7, Chapter 3	
X20000M		11133017 see Section 5.8, Chapter 3	



3.3.5 X Platforms Type L

Type	Type (Certif. Balance)	Weighing cell	Spare parts
X16001L	X16001L/A M	11133017 see Section 5.9, Chapter 3	
X32001L	X32001L/A M	11133017 see Section 5.9, Chapter 3	
X64001L	X64001L/A M	11133018 see Section 5.10, Chapter 3	see Section 4.9, Chapter 3
X32000L		11133017 see Section 5.9, Chapter 3	



4 Abbreviations

/A	Certified balance country-specific
c/w	complete with
CW	Clockwise
CCW	Counter clockwise
LARS	LabTec Repair and Service Software
/M	Certified balance EU
PPT	Professional Precision Terminal
SMA	Service Manual
SNR	Serial number
SPT	Standard Precision Terminal
SW	Software
TDNR	Type Definition Number
w/o	without

5 Document Status

Document number	Date of change	Changed pages	Short description of change
11780586 8.12	05/2004	Entire document	First version
11780586A 8.12	09/2004	Entire document	New types (balances, platforms, terminals) added. New components (draft shield, weighing cells) added.
11780586B 8.12	10/2005	in all chapters	miscellaneous small changes, corrections, amendments
		Chapter 1	- New sections: *2.6 Serial number decoding, 3.3 X Platforms, 4 Abbreviations* - New types (L, some M) added
		Chapter 3	- numerous corrections, changes to spare parts lists - X-Platforns, L types, some M types added - new weighing cells added (sections 5.8 to 5.10)
		Chapter 5	Error Messages with appropriate remedy added (section 5.1)
		Chapter 9	New types (L, some M) added
		Index	added

2 Safety

List of contents

1 Safety

1.1 Before starting service work

- Obtain written confirmation that the balance is not contaminated, or that it has been expertly cleaned before service work is started.
- Obtain this confirmation in advance through your service organization.
- Read the Operating Instructions to familiarize yourself with the functions of the balance.
- Observe all safety instructions in this Service Manual.
- Observe any safety instructions received from the customer. Be specially sure to observe safety instructions which are closely related to your service work.

1.2 Pictograms used in this manual

General warning

Warning of an electric voltage

Electrostatically damageable components

Fire hazard

1.3 Text markers used

Warning, Note	Important information regarding handling

1.4 Disposal of service materials and replaced parts

Service materials (cleaning cloths, cleaning agents, etc.) and replaced parts must be disposed of:

- in accordance with the specific customer's regulations
- in accordance with the specific regulations of the respective country.

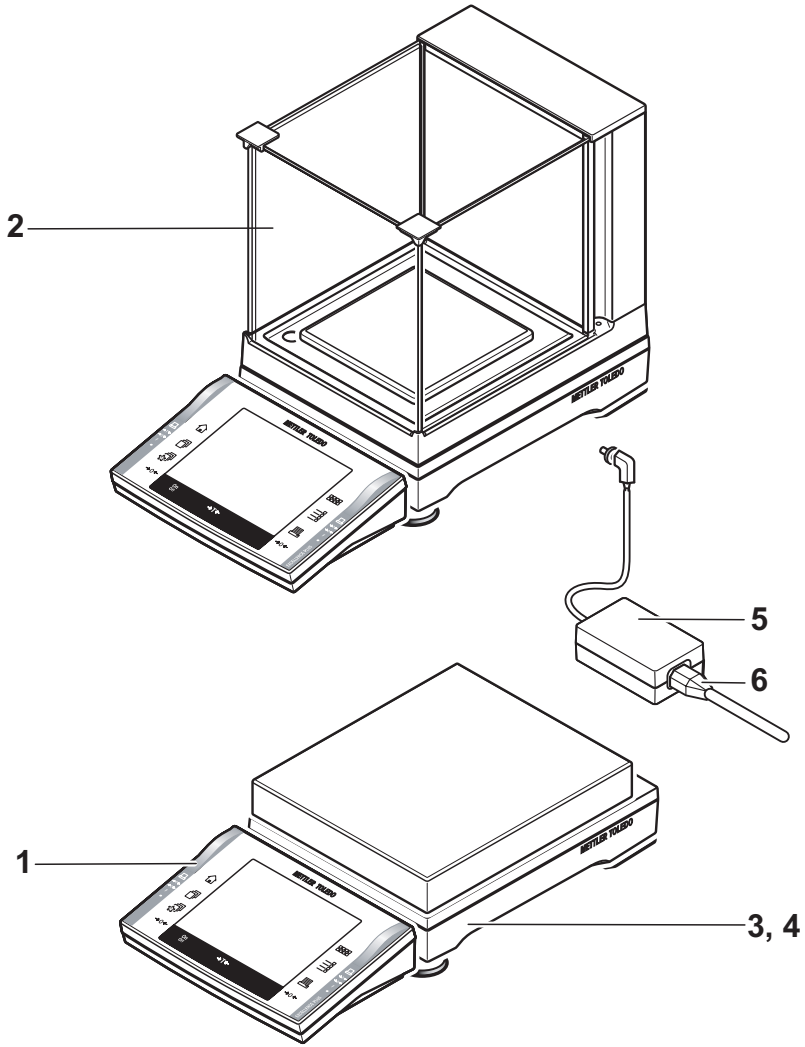
1.5 State of the art

This Service Manual corresponds to the state of the art at the date of issue (e.g. 10/2005).

3 Spare Parts

List of Contents

1 Balance Overview



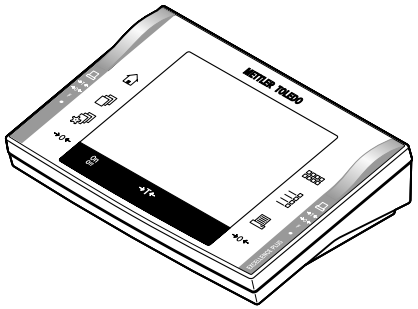
Item	Designation	see
1	Terminal Overview	see Section 2
2	Draft shield Overview	see Section 3
3	Platform overview	see Section 4
4	Weighing cell «MonoBloc» Overview	see Section 5

Item	Designation	Note	Part No.
5	Power supply	for S and M platforms	11132070
6	Line cable S and M platforms	DK	87452
		GB	89405
		USA	88668
		AUS	88751
		SA	89728
		EU (Schuko)	87925
		CH	87920
		I	87457

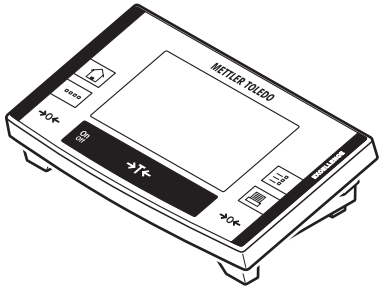
Power supply and Line Cables for L-type balances see parts lists in Section 4.

2 Terminal Overview

1

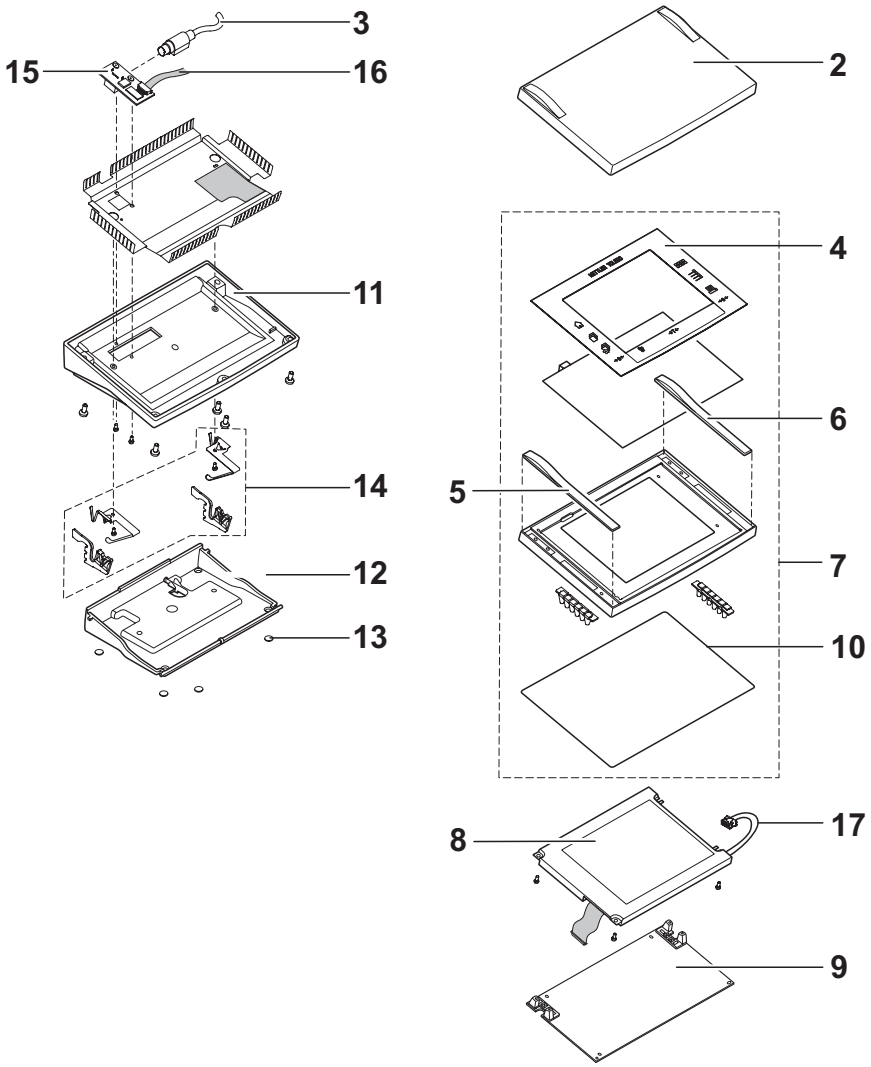


2



Item	Designation	see
1	Terminal PPT	see Section 2.1
2	Terminal SPT	see Section 2.2

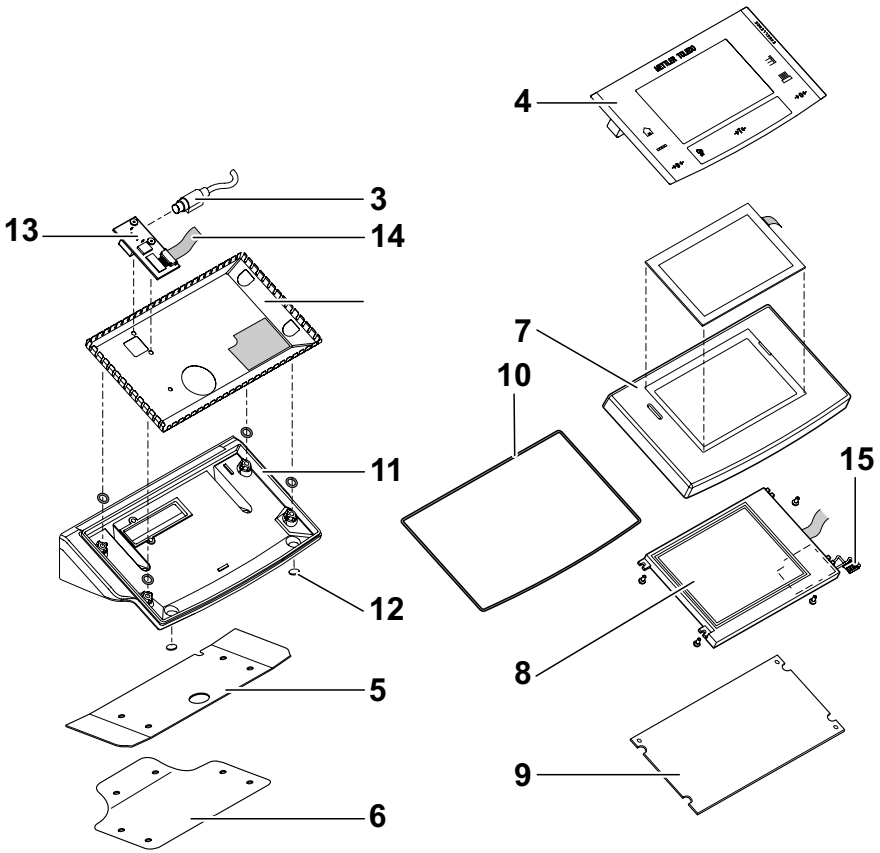
2.1 Terminal PPT



Terminal PPT

Item	Designation	Note	Part No.
1	Terminal complete without Software		11130820
2	Protective Cover Terminal		11132570
3	Cable Terminal	see Platform parts list	
4	Keypad Overlay		11130817
5	Cover left		11130803
6	Cover right		11130804
7	Top Housing	without Item 8, 9, 17	11134040
8	Display Terminal		11600461
9	Terminal PCB		11132020
10	Seal Terminal		11130831
11	Terminal Lower Part		11130811
12	Adj. Foot Plate Terminal		11130812
13	Rubber Feet Terminal		11600356
14	Adjusting lever Terminal		11134041
15	Connect. Terminal		11106918
16	Cable Connect. – Terminal PCB		11600463
17	Cable Display – Terminal PCB		11134542

2.2 Terminal SPT



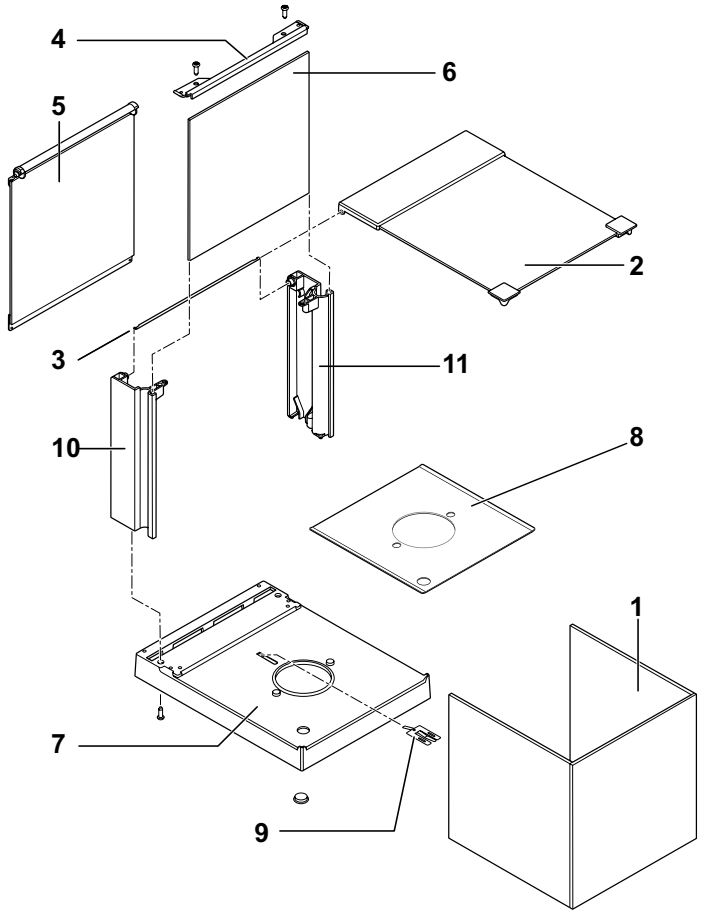
Item	Designation	Note	Part No.
1	Terminal complete without Software		11130710
2	Protective Cover Terminal		11106870
3	Cable Terminal	see Platform parts list	
4	Keypad Overlay		11106564
5	Cover Plate		11130704
6	Connecting Piece		11131089
7	Top Housing	without Item 8, 9, 17	11106831
8	Display Terminal		11100826
9	Terminal PCB		11106830
10	Seal Terminal		11130703
11	Terminal Lower Part		11130701
12	Rubber Feet Terminal		11600356
13	Connect. Terminal		11106918
14	Cable Connect. – Terminal PCB		11600463
15	Cable Display – Terminal PCB		11600226

3 Draft shield Overview

Draft shield «Magic Cube» see Section 3.1

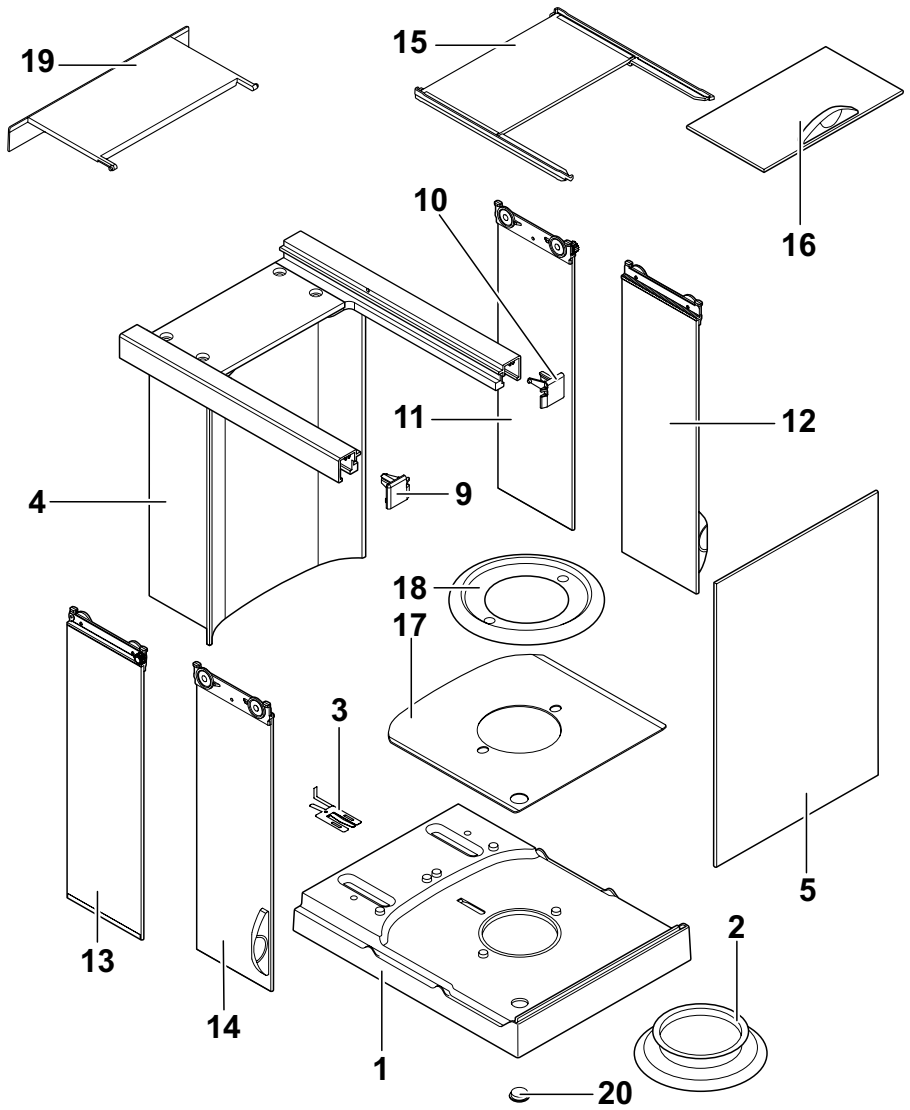
Draft shield with sliding doors see Section 3.2

3.1 Draft shield «Magic Cube»



Item	Designation	Note	Part No.
1	U-Glass MagicCube		11133035
2	Door Top MagicCube		11133036
3	Torsion spring MagicCube		11131633
4	Holder Side-Door MagicCube		11131615
5	Side-Door MagicCube		11133037
6	Rear Panel MagicCube		11131645
7	Bottom MagicCube		11131611
8	Baseplate MagicCube		11131631
9	Contact spring MagicCube		11131632
10	Column left MagicCube		11131613
11	Column right MagicCube		11131612

3.2 Draft shield with sliding doors



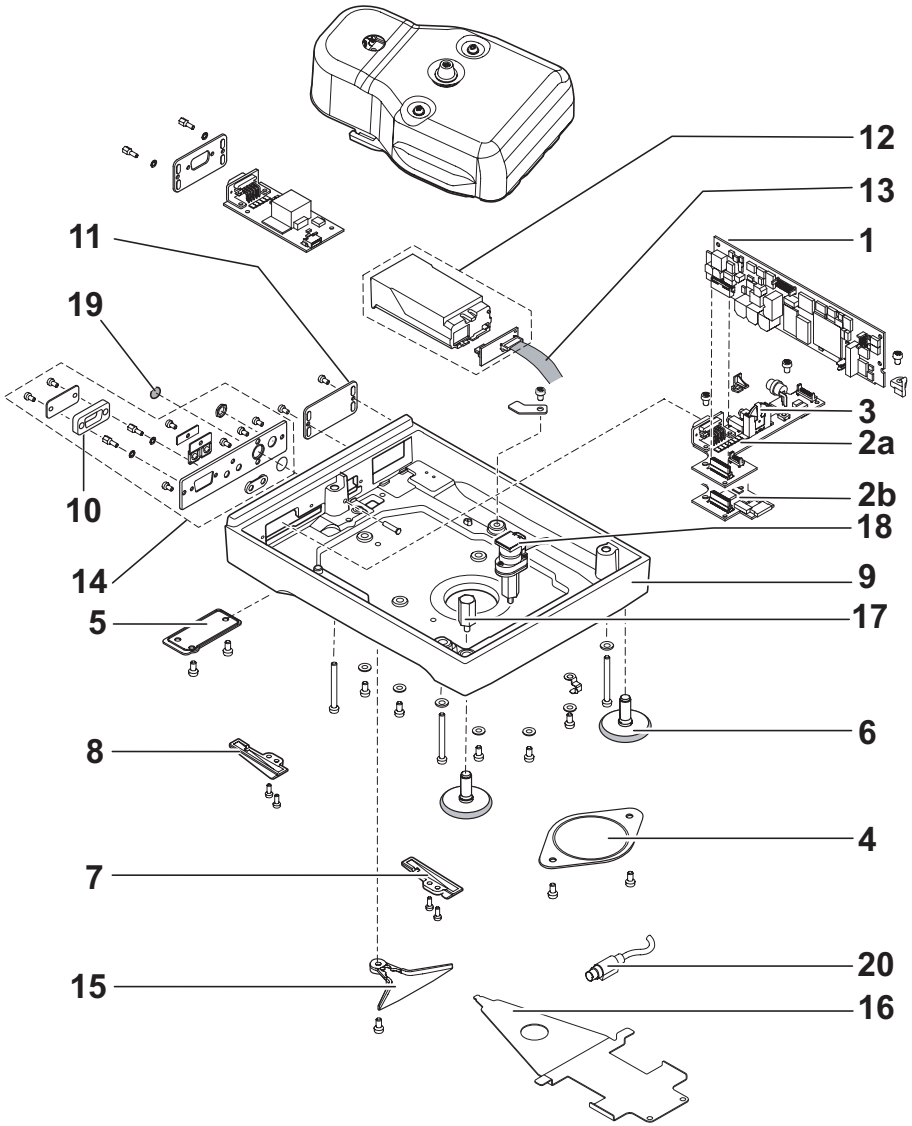
Item	Designation	Note	Part No.
1	Bottom complette		11131525
2	Seal Draftshield only for: XPxx4S, XPxx4SDR		11131551
3	Contact spring		11131556
4	Backplane		11131511
5	Front Glass		11131532
9	Cover right		11131548
10	Cover left		11131549
11	Door back right		11133077
12	Door front right		11133078
13	Door back left		11133079
14	Door front left		11133080
15	Door top back		11133081
16	Door top front		11133082
17	Bottom plate		11131539
18	Draft ring 90 mm		11131531
19	Flap top		11131527
20	Level Window		11131046

4 Platform overview

4.1 XP-Platform Type «S»

Platform Type	see
XP204S, XP404S, XP404SDR	see Section 4.1.1
XP203S, XP603S, XP603SDR, XP1203S, XP2003SDR, XP5003SDR	see Section 4.1.2
XP1202S, XP4002S, XP6002S, XP6002SDR, XP8002S, XP10002S, XP10002SDR	see Section 4.1.3
XP4001S, XP6001S, XP8001S, XP10001S	see Section 4.1.4

4.1.1 Platform for XPxx4S, XPxx4SDR



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2a	Backplane PCB	serial no. < 1126139999	11133086
2b	Backplane Level Control	serial no. > 1126140000	11133087
3	Battery		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot right		11131055
8	Auxiliary Foot left		11131056
9	Bottom Housing		11131010
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder kpl.		11133033
13	Cable Option		11132029
14	Rear Panel kpl.		11131016
15	Coupling Term. Holder		11131019
16	Terminal Holder		11131020
17	Level Holder high		11131045
18	Level Control	serial no. > 1126140000	11133065
19	Cover Service Switch		11131069
20	Cable Terminal	approx. serial no. < 1126279999	11133041
		approx. serial no. > 1126280000	11132039

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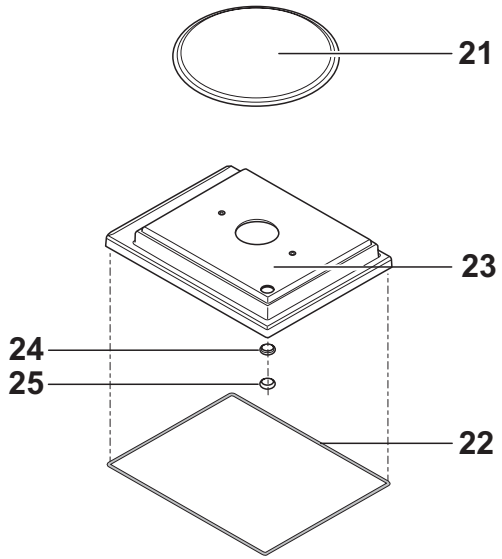

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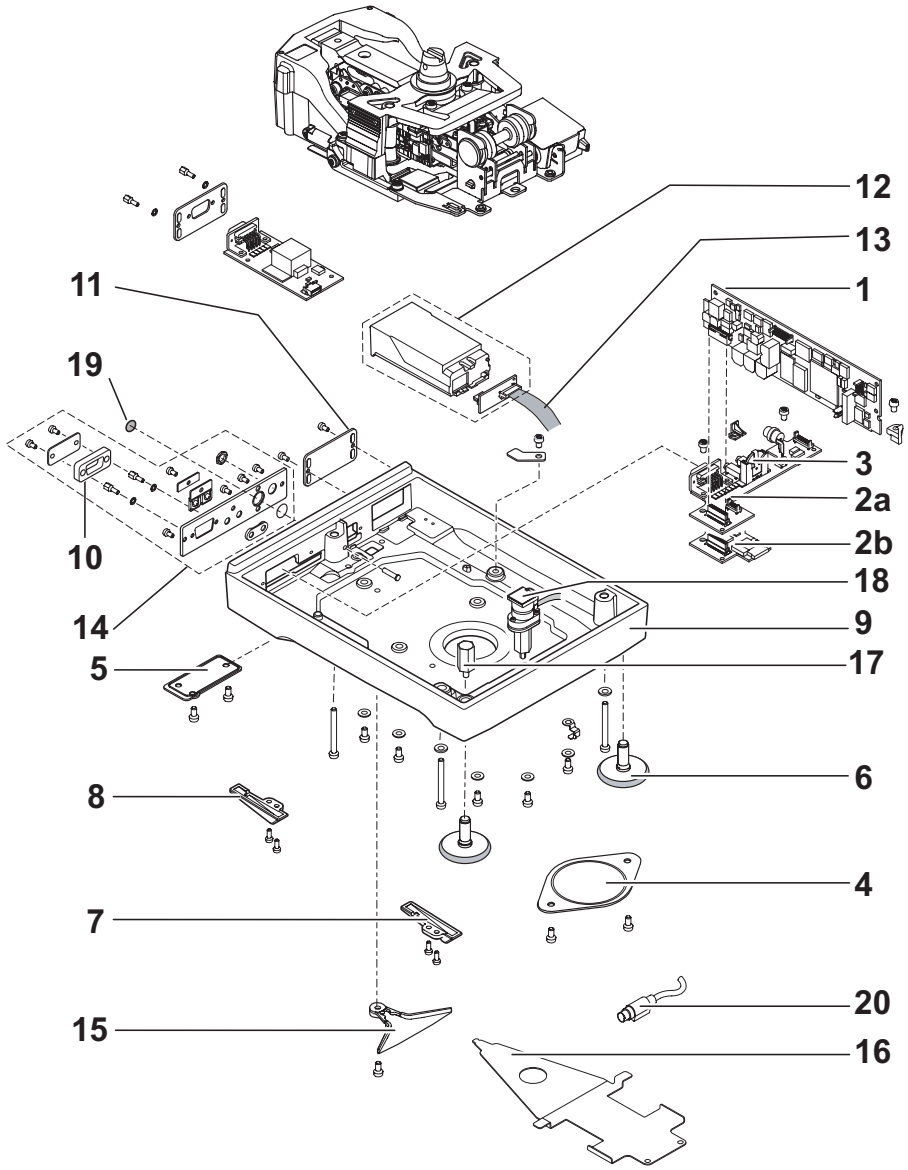
Item	Designation	Note	Part No.
21	Weighing Pan ∅ 90 mm		11133064
22	Seal Housing		11131028
23	Top Housing		11133042
24	Level Window		11131046
25	Level	serial no. < 1126139999	11101335

4.1.2 Platform for XPxx3S, XPxx3SDR, XPxxx3S, XPxxx3SDR



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2a	Backplane PCB	serial no. < 1126139999	11133086
2b	Backplane Level Control	serial no. > 1126140000	11133087
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot left		11131055
8	Auxiliary Foot right		11131056
9	Bottom Housing small		11131010
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder kpl.		11133033
13	Cable Option		11132029
14	Rear Panel compl.		11131016
15	Coupling Term. Holder		11131019
16	Terminal Holder		11131020
17	Level Holder high		11131045
18	Level Control	serial no. > 1126140000	11133065
19	Cover Service Switch		11131069
20	Cable Terminal	approx. serial no. < 1126279999 approx. serial no. > 1126280000	11133041 11132039

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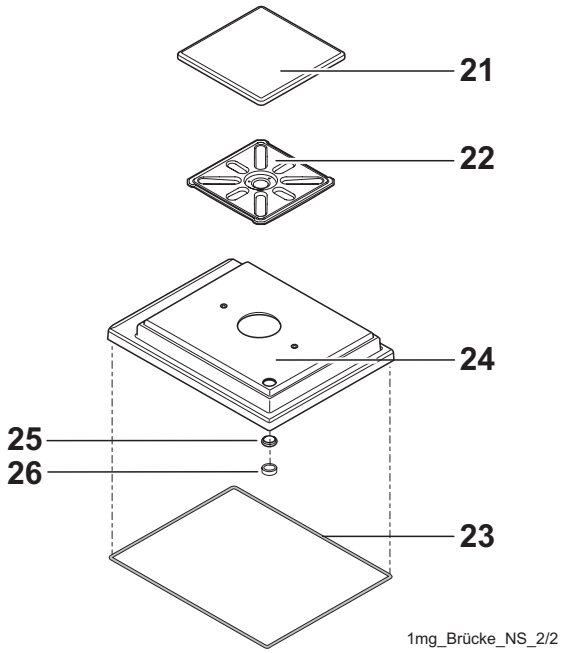

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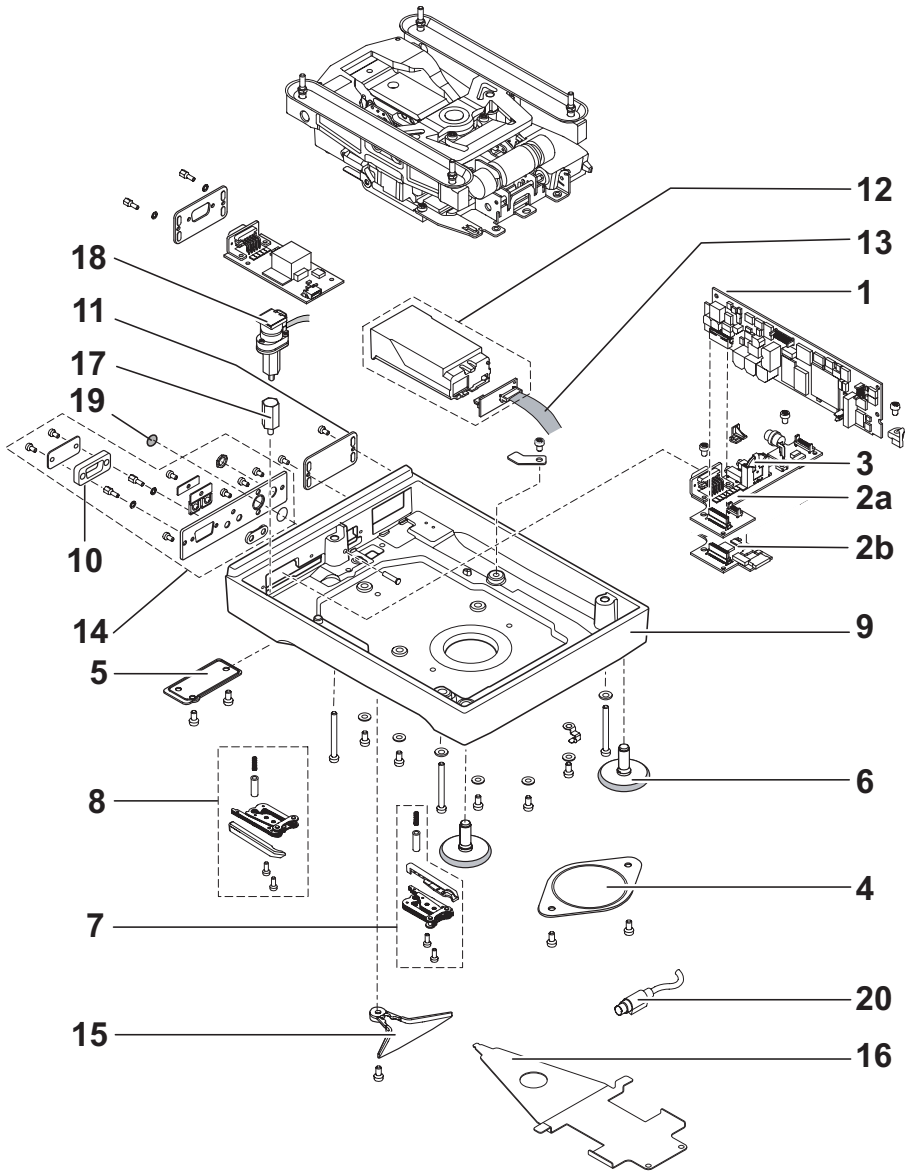
Item	Designation	Note	Part No.
21	Weighing Pan 127 x 127mm		11131022
22	Pan Support 1mg		11133040
23	Seal Housing		11131028
24	Top Housing		11133042
25	Level Window		11131046
26	Level	serial no. < 1126139999	11101335

4.1.3 Platform for XPxx2S, XPxxx2S, XPxxx2SDR, XPxxxx2S, XPxxxx2SDR



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2a	Backplane PCB	serial no. < 1126139999	11133086
2b	Backplane Level Control	serial no. > 1126140000	11133087
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Support Foot right		11133030
8	Support Foot left		11133031
9	Bottom Housing small		11131010
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder compl.		11133033
13	Cable Option		11132029
14	Rear Panel compl.		11131016
15	Coupling Term. Holder		11131019
16	Terminal Holder		11131020
17	Level Holder small		11131044
18	Level Control	serial no. > 1126140000	11133065
19	Cover Service Switch		11131069
20	Cable Terminal	approx. serial no. < 1126279999 approx. serial no. > 1126280000	11133041 11132039

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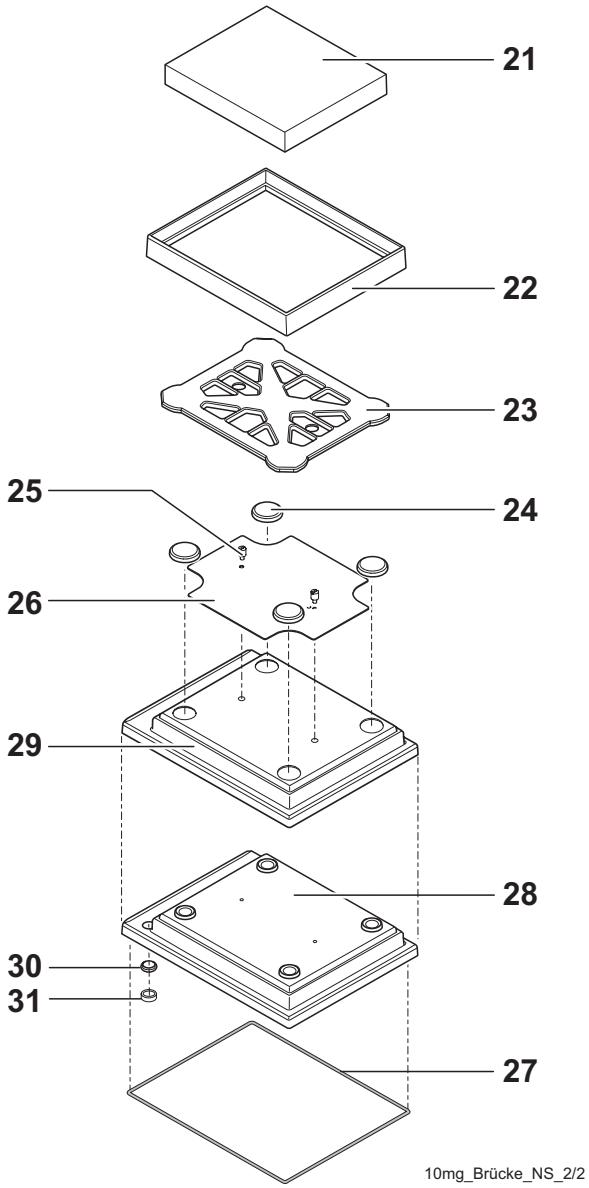
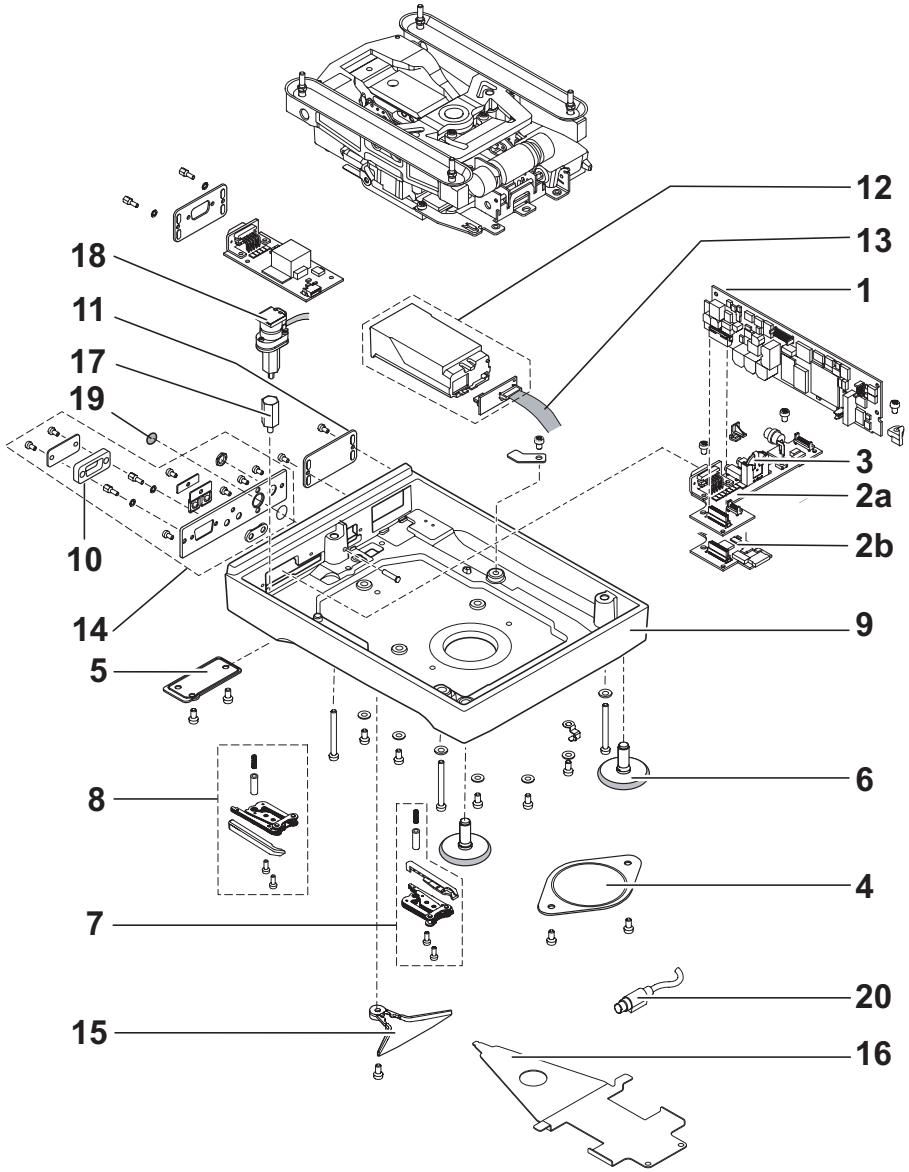


Item 1 - 20

Item	Designation	Note	Part No.
21	Weighing Pan 170 x 205mm		11131030
22	Draft shield element		11131040
23	Pan Support 10mg		11131034
24	Pan Support		11131029
25	Stop Screw		11131073
26	Fastening Plate		11131067
27	Seal Housing		11131028
28	Top Housing		11133043
29	Protective Cover		11133034
30	Level Window		11131046
31	Level	serial no. < 1126139999	11101335

4.1.4 Platform for XPxxx1S



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2a	Backplane PCB	serial no. < 1126139999	11133086
2b	Backplane Level Control	serial no. > 1126140000	11133087
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Support Foot right		11133030
8	Support Foot left		11133031
9	Bottom Housing small		11131010
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder compl.		11133033
13	Cable Option		11132029
14	Rear Panel compl.		11131016
15	Coupling Term. Holder		11131019
16	Terminal Holder		11131020
17	Level Holder small		11131044
18	Level Control	serial no. > 1126140000	11133065
19	Cover Service Switch		11131069
20	Cable Terminal	approx. serial no. < 1126279999	11133041
		approx. serial no. > 1126280000	11132039

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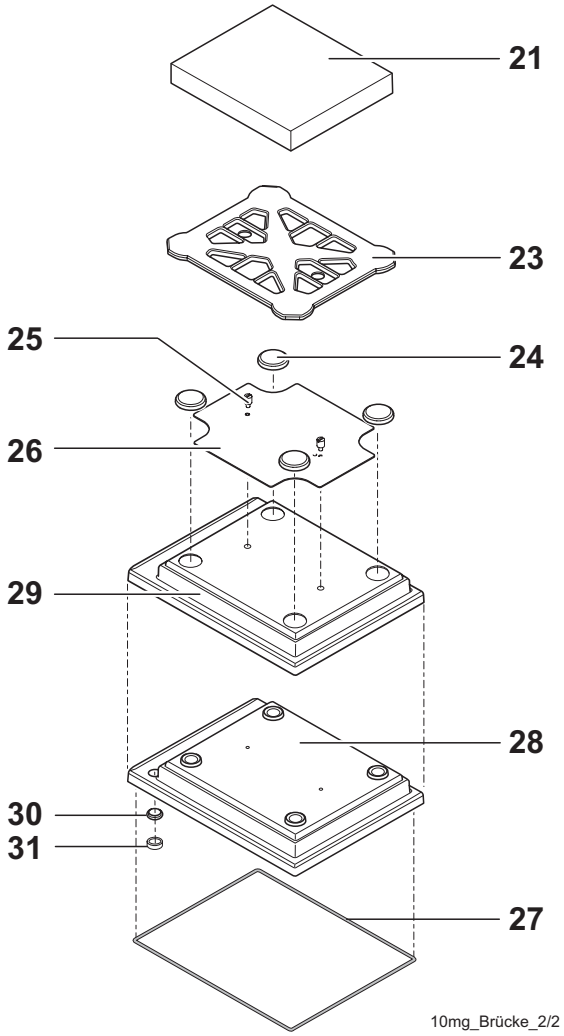

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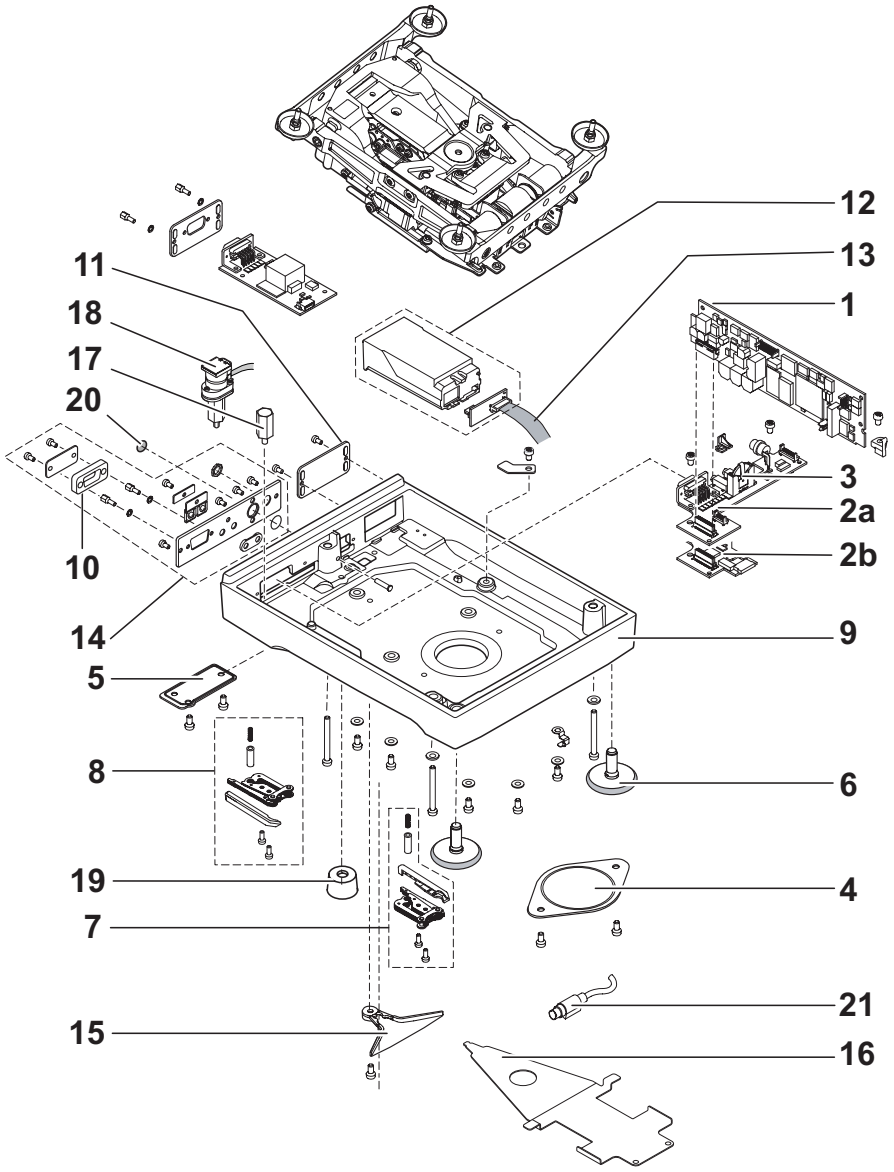
Item	Designation	Note	Part No.
21	Weighing Pan 190 x 223 mm		11131031
23	Pan Support 0.1mg		11131037
24	Pan Support		11131029
25	Stop Screw		11131073
26	Fastening Plate		11131067
27	Seal Housing		11131028
28	Top Housing		11133043
29	Protective Cover		11133034
30	Level Window		11131046
31	Level	serial no. < 1126139999	11101335

4.2 XP-Platform Type «M»

Platform Type	see
XP6002MDR, XP12002MDR XP8001M, XP8001MDR, XP12001M, XP16001M, XP20001M XP12000M, XP20000M	see Section 4.2.1

4.2.1 Platform for XPxxxx0M, XPxxx1M/MDR, XPxxxx1M, XPxxx2MDR



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2a	Backplane PCB	serial no. < 1126139999	11133088
2b	Backplane Level Control	serial no. > 1126140000	11133089
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot right		11133030
8	Auxiliary Foot left		11133031
9	Bottom Housing		11131170
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder compl.		11133033
13	Cable Option		11132029
14	Rear Panel compl.		11131016
15	Coupling Term. Holder		11131019
16	Terminal Holder		11131184
17	Level Holder small		11131044
18	Level Sensor	serial no. > 1126140000	11133065
19	Foot		11106537
20	Cover Service Switch		11131069
21	Cable Terminal	approx. serial no. < 1126279999	11133029
		approx. serial no. > 1126280000	11132052

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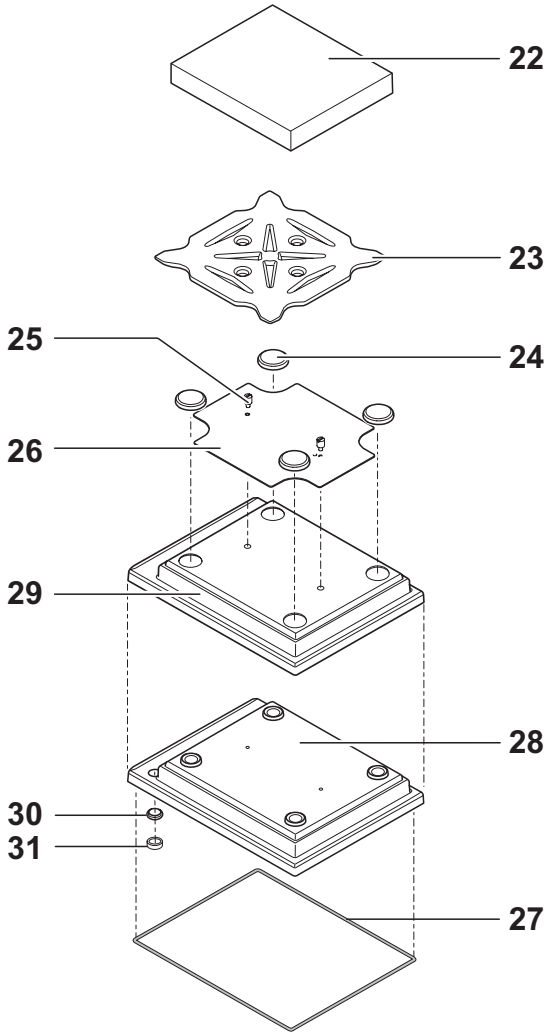

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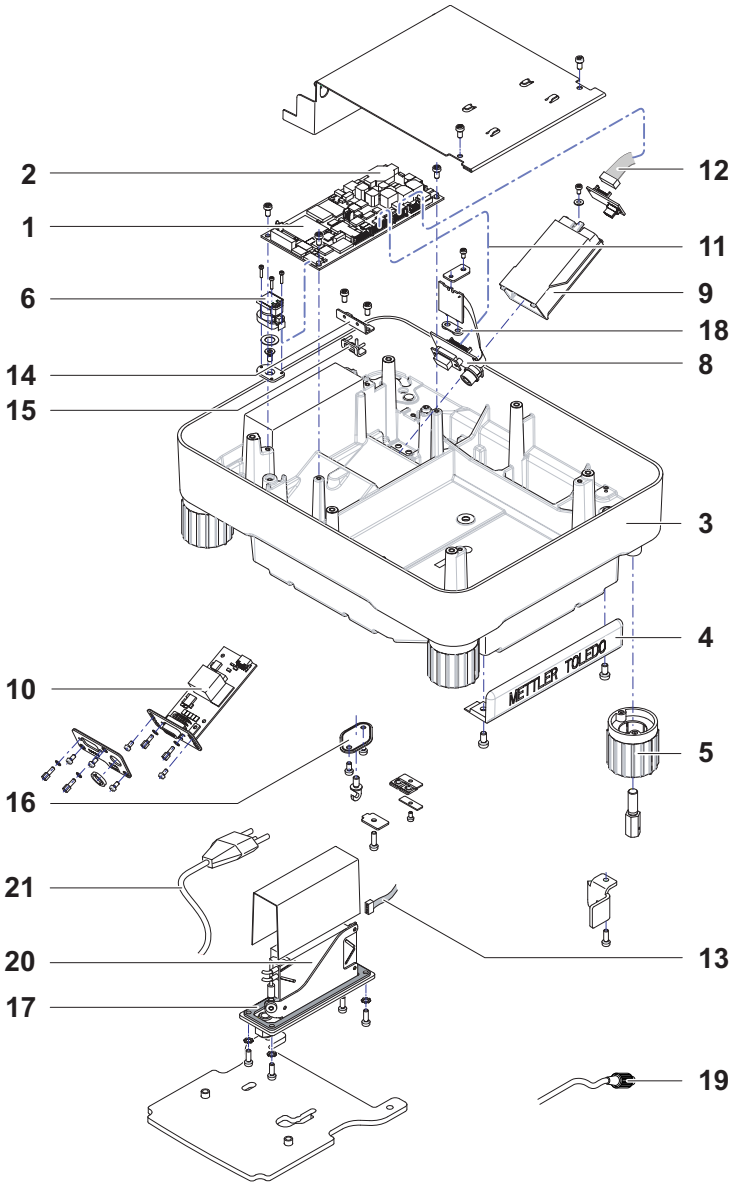
Item	Designation	Note	Part No.
22	Weighing Pan 240 x 240mm		11131173
23	Pan Support		11131172
24	Pan Support		11131029
25	Stop Screw		11131073
26	Fastening Plate		11131182
27	Seal Housing		11131185
28	Top Housing		11133044
29	Protective Cover	Platform + Terminal	11132572
	Protective Cover	Platform only	11132574
30	Level Window		11131046
31	Level	serial no. < 1126139999	11101335

4.3 XP-Platform Type «L»

Platform Type	see
XP8001L, XP16001L, XP32001L, XP32001LDR, XP64001L XP16000L, XP32000L, XP64000L	see Section 4.3.1

4.3.1 Platform for XPxxxx0L, XPxxx1L, XPxxxx1L, XPxxxx1LDR



Item	Designation	Note	64 kg
1	Platform L PCB level control		11132105
2	Battery		11106880
3	Bottom Housing		11133101
4	Buffer Protecting Strip		11131215
5	Foot L-Platform		11131235
6	Level Control	with cable	11133065
8	Connection PCB L		11132120
9	Interface Holder compl.		11133033
10	Interface RS, BlueTooth, PS/2 (options)	see Operating Instructions	-
11	Cable 16 pin		11132102
12	Cable Option		11132029
13	Cable 4 pin		11132103
14	Cable Clip		11131222
15	Seal Cable		11131217
16	Hanger Cover		11131186
17	Seal Power Supply		11131230
18	Seal Aux Connector		11131117
19	Cable Terminal		11132124

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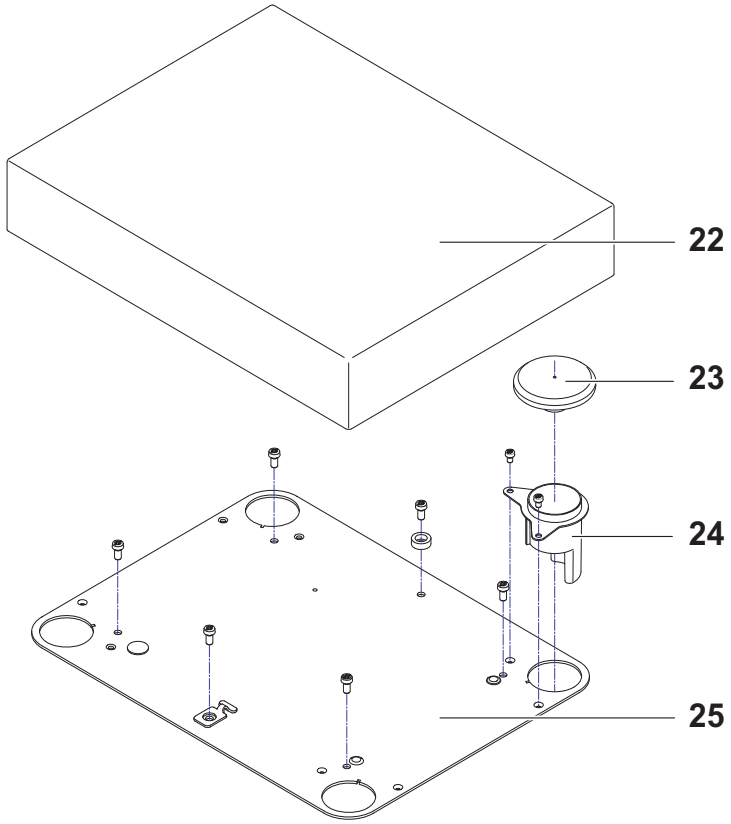

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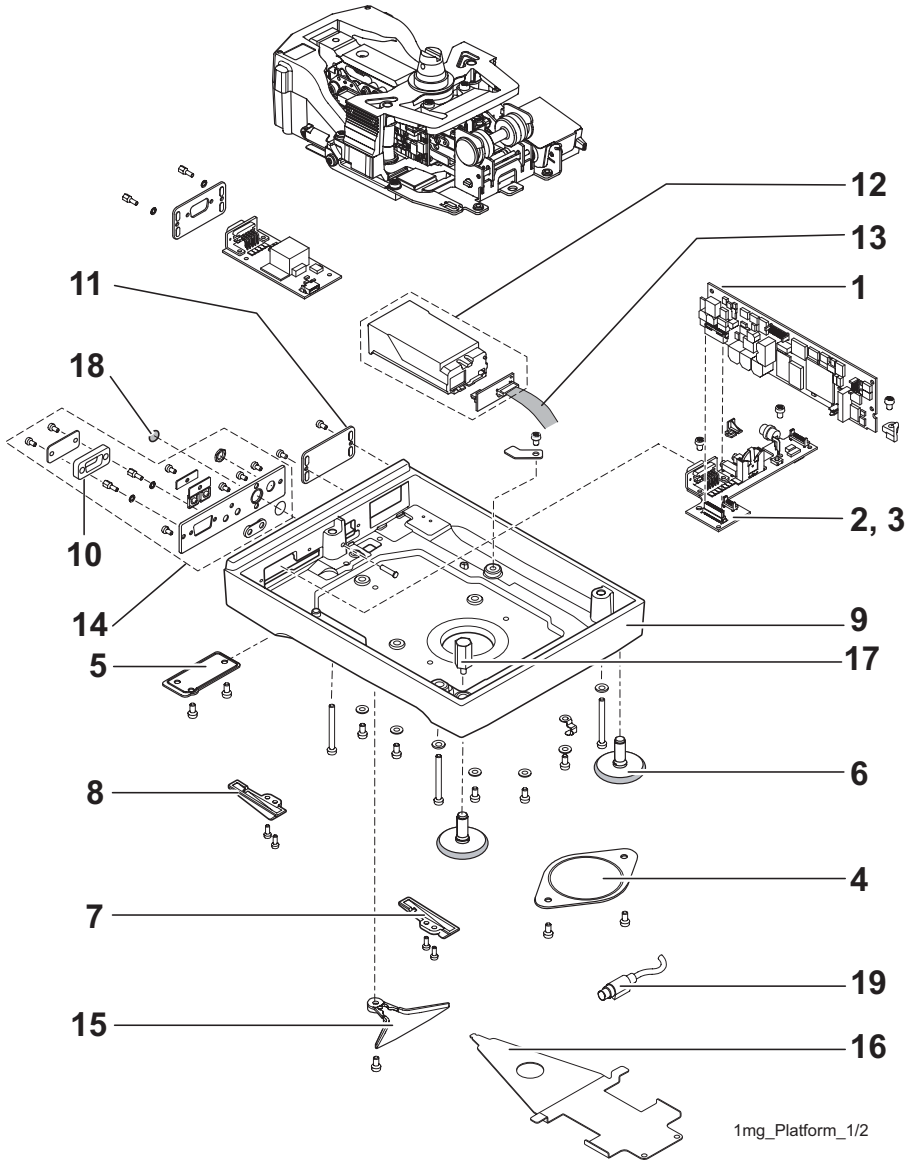
Item	Designation	Note	Part No.
20	Power Supply with Cable Line	CH EU USA IT DK GB AUS ZA IL BR, TH IN	11133110 11133111 11133112 11133113 11133114 11133115 11133116 11133117 11133118 11133119 11133120
21	Cable Line	CH EU USA IT DK GB AUS ZA IL	11132110 11132111 11132112 11132113 11132114 11132115 11132116 11132117 11132118
22	Weighing Pan L 32 kg Weighing Pan L 64 kg		239105 11102124
23	Pan Support		239104
24	Guard Ring		239036
25	Housing Cover L		11131232

4.4 XS- Platform Type «S»

Platform Type	see
XS203S, XS403S, XS603S, XS603SDR, XS1003S	see Section 4.4.1
XS802S, XS2002S, XS4002S, XS4002SDR, XS6002S, XS6002SDR	see Section 4.4.2
XS4001S, XS6001S, XS8001S	see Section 4.4.3

4.4.1 Platform for XSxx3S, XSxx3SDR, XSxxx3S



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2	Backplane PCB		11133086
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot right		11131055
8	Auxiliary Foot left		11131056
9	Bottom Housing		11131010
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder kpl.		11133033
13	Cable Option		11132029
14	Rear Panel kpl.		11131016
15	Coupling Term. Holder		11131019
16	Terminal Holder		11131020
17	Level Holder high		11131045
18	Cover Serviceswitch		11131069
19	Cable Terminal	approx. serial no. < 1126279999 approx. serial no. > 1126280000	11133041 11132039

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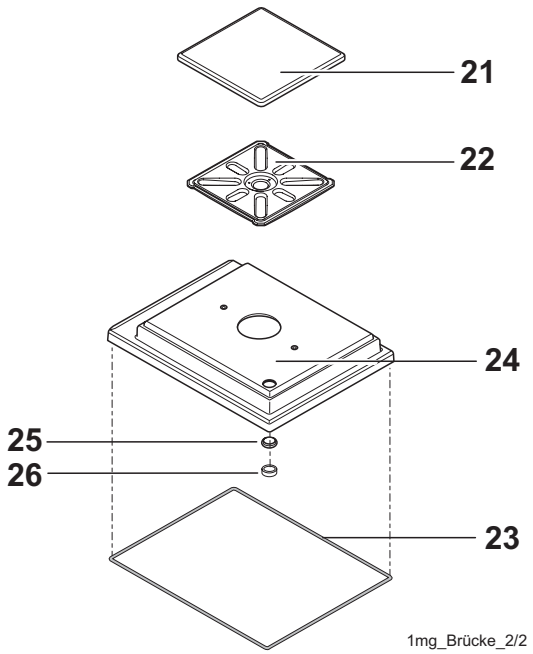
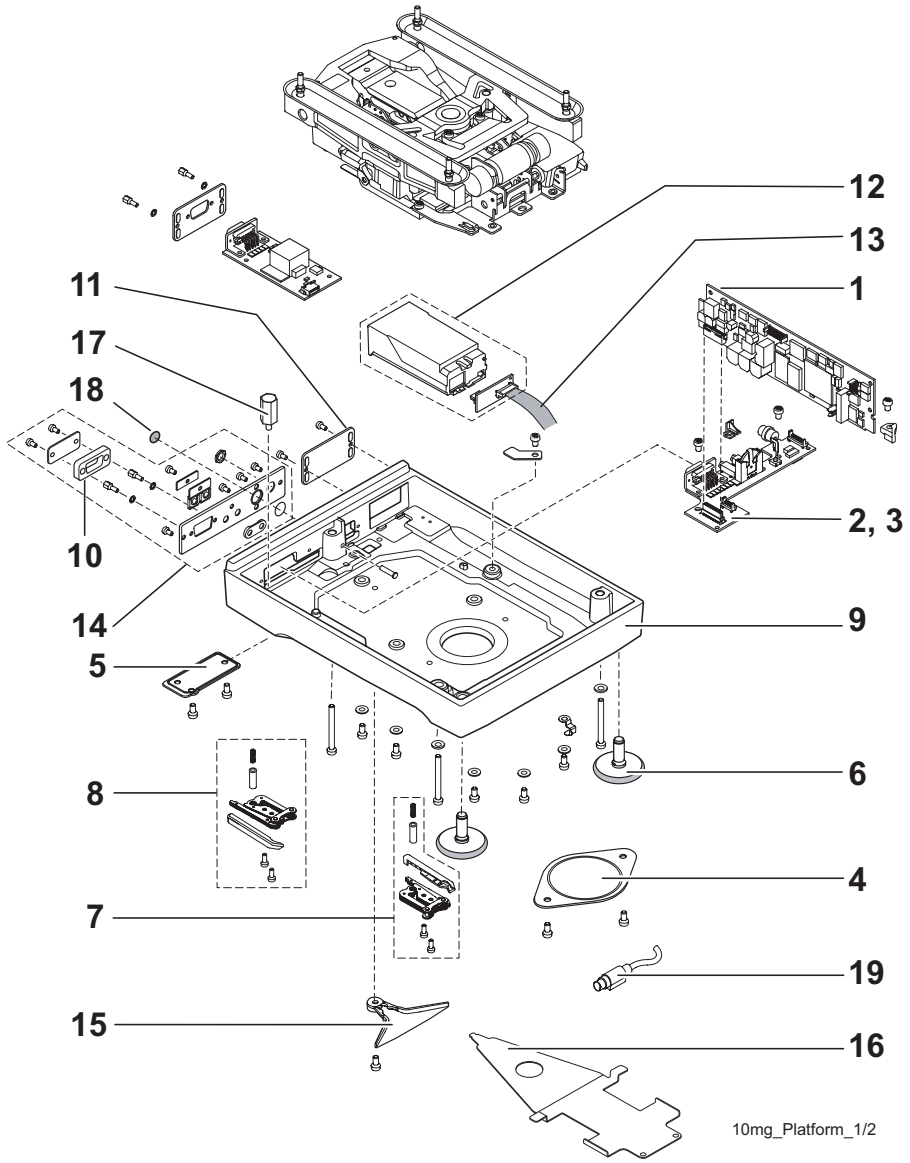


Item	Designation	Note	Part No.
21	Weighing Pan 127 x 127mm		11131022
22	Pan Support 1mg		11133040
23	Seal Housing		11131028
24	Top Housing		11133042
25	Level Window		11131046
26	Level		11101335

4.4.2 Platform for XSxx2S, XSxxx2S, XSxxx2SDR



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2	Backplane PCB		11133086
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot right		11133030
8	Auxiliary Foot left		11133031
9	Bottom Housing		11131010
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder kpl.		11133033
13	Cable Option		11132029
14	Rear Panel kpl.		11131016
15	Coupling Term. Holder		11131019
16	Terminal Holder		11131020
17	Level Holder small		11131044
18	Cover Serviceswitch		11131069
19	Cable Terminal	approx. serial no. < 1126279999 approx. serial no. > 1126280000	11133041 11132039

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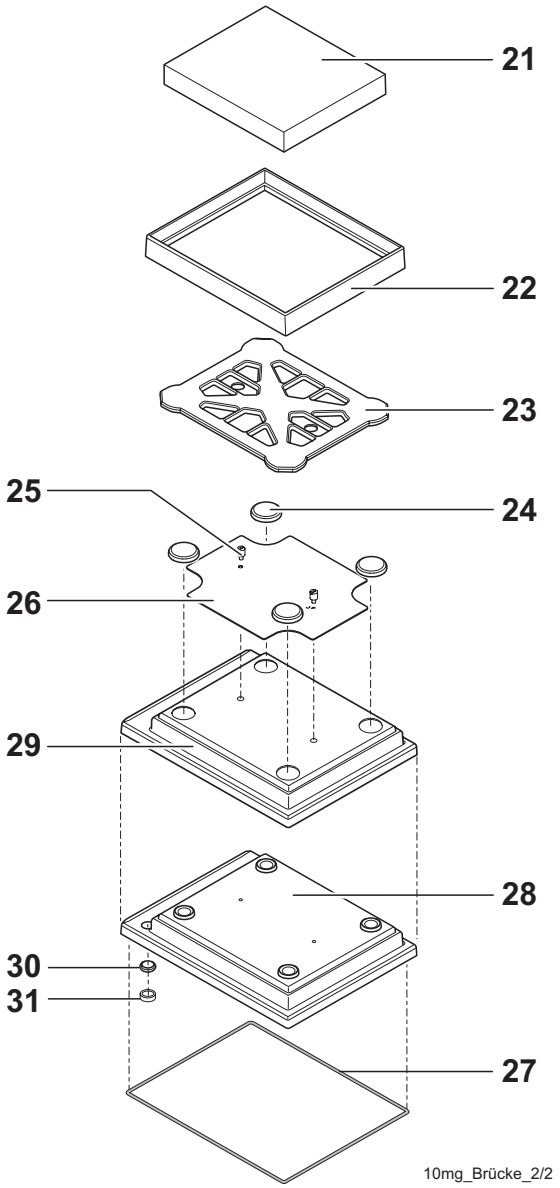

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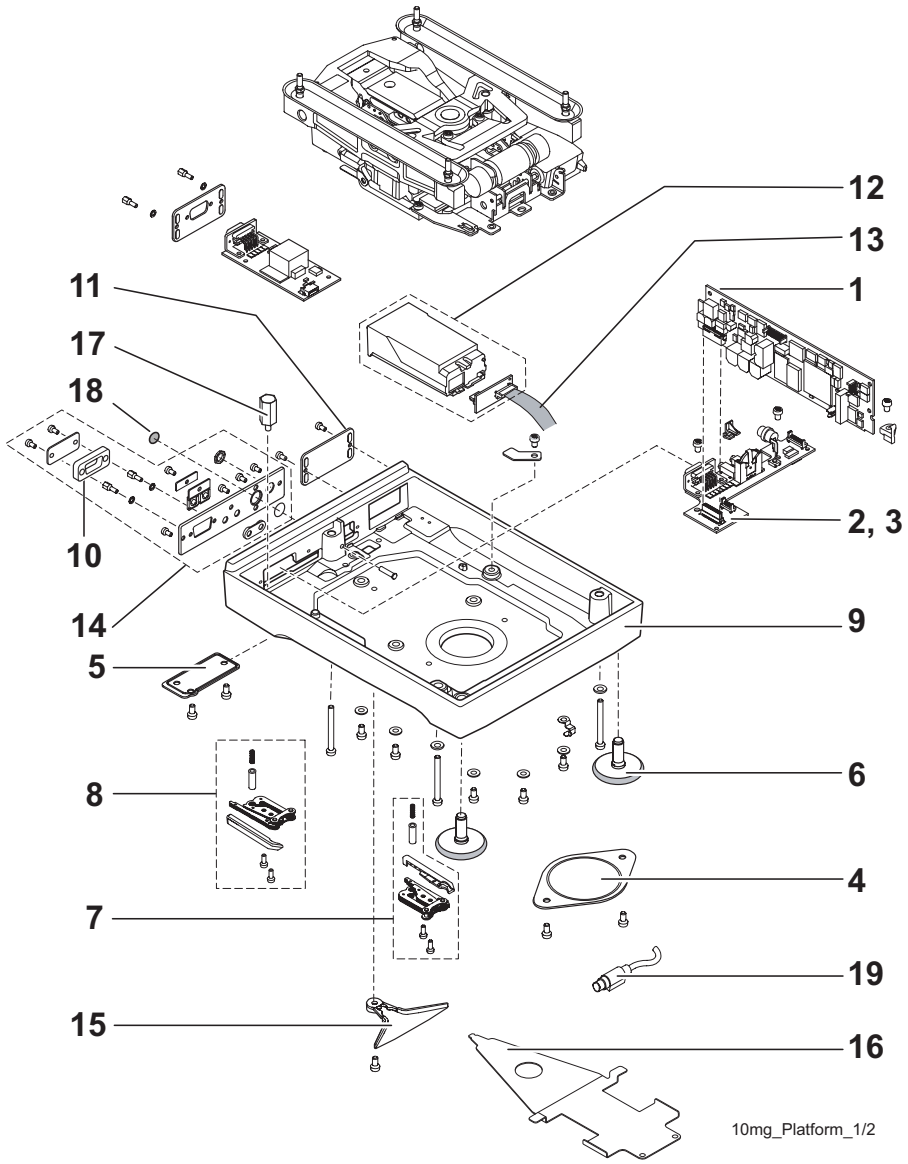
Item	Designation	Note	Part No.
21	Weighing Pan 170 x 205mm		11131030
22	Draft ring		11131040
23	Pan Support		11131034
24	Pan Support		11131029
25	Stop Screw		11131073
26	Fastening Plate		11131067
27	Seal Housing		11131028
28	Top Housing		11133043
29	Protective Cover	Platform only	11133034
	Protective Cover	Platform + Terminal	11132571
30	Level Window		11131046
31	Level		11101335

4.4.3 Platform for XSxxx1S



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2	Backplane PCB		11133086
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot right		11133030
8	Auxiliary Foot left		11133031
9	Bottom Housing		11131010
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder kpl.		11133033
13	Cable Option		11132029
14	Rear Panel kpl.		11131016
15	Coupling Term. Holder		11131019
16	Terminal Holder		11131020
17	Level Holder small		11131044
18	Cover Serviceswitch		11131069
19	Cable Terminal	approx. serial no. < 1126279999 approx. serial no. > 1126280000	11133041 11132039

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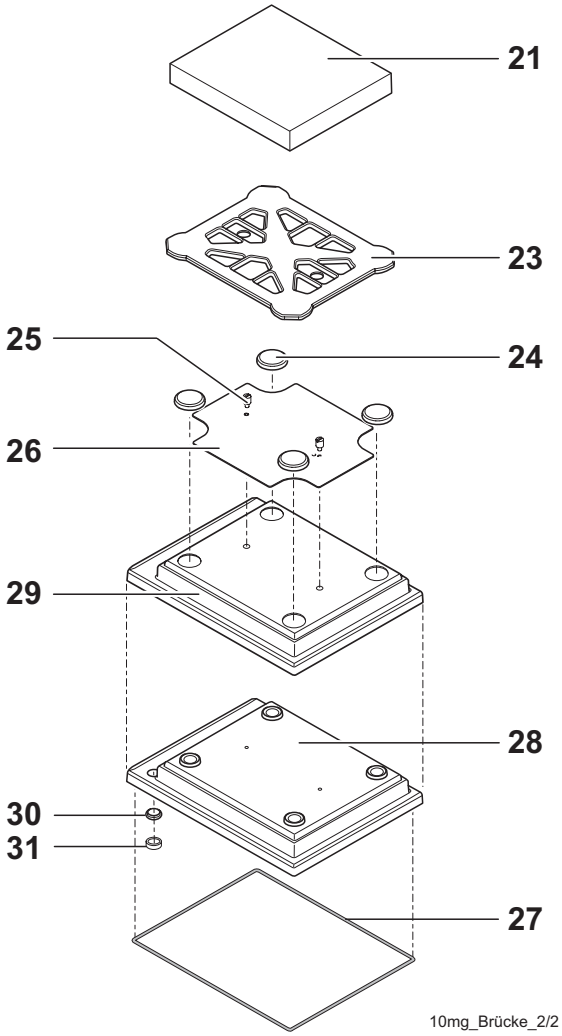

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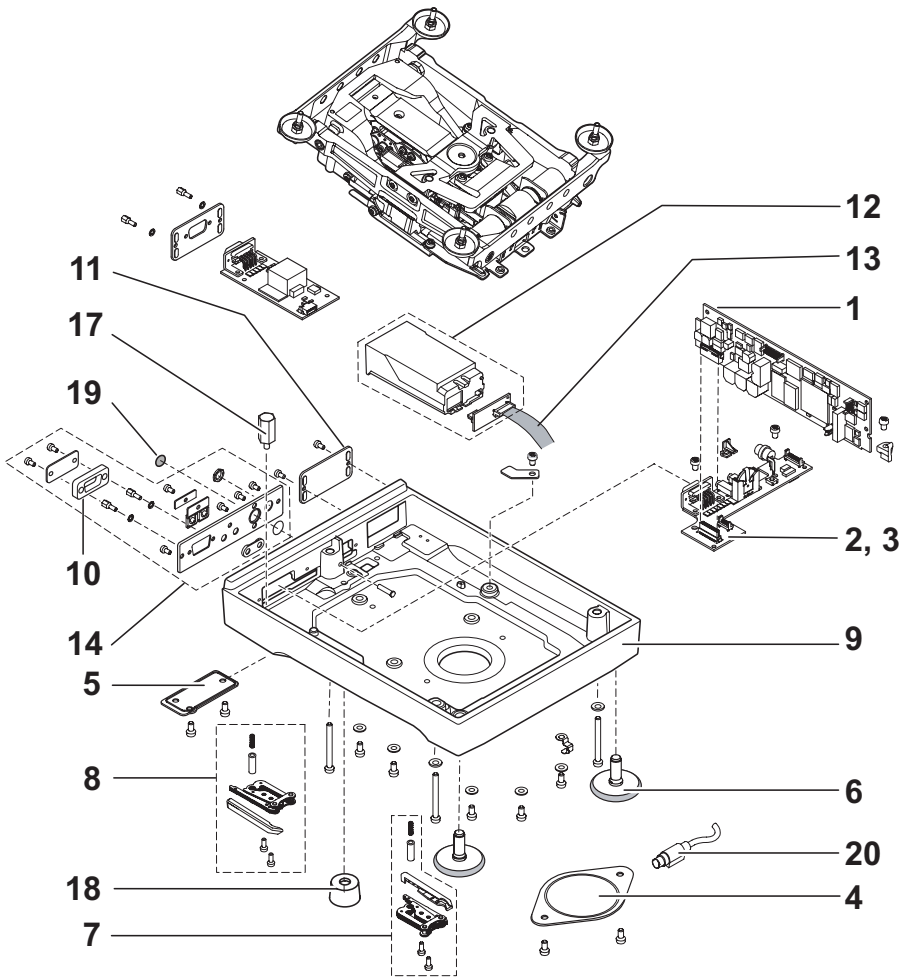
Item	Designation	Note	Part No.
21	Weighing Pan 190 x 223mm		11131031
23	Pan Support		11131037
24	Pan Support		11131029
25	Stop Screw		11131073
26	Fastening Plate		11131067
27	Seal Housing		11131028
28	Top Housing		11133043
29	Protective Cover	Platform only	11133034
	Protective Cover	Platform + Terminal	11132571
30	Level Window		11131046
31	Level		11101335

4.5 XS- Platform Type «M»

Platform Type	see
XS6001M, XS6001MDR, XS10001M, XS16001M XS10000M, XS16000M	see Section 4.5.1

4.5.1 Platform for XSxxxx0M, XSxxx1M, XSxxx1MDR, XSxxxx1M



M_Platform_XS_1/2

Item	Designation	Note	Part No.
1	Platform PCB		11132000
2	Backplane PCB		11133088
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot right		11133030
8	Auxiliary Foot left		11133031
9	Bottom Housing		11131170
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder kpl.		11133033
13	Cable Option		11132029
14	Rear Panel kpl.		11131016
17	Level Holder small		11131044
18	Foot M		11106537
19	Cover Service Switch		11131069
20	Cable Terminal	approx. serial no. < 1126279999 approx. serial no. > 1126280000	11133029 11132052

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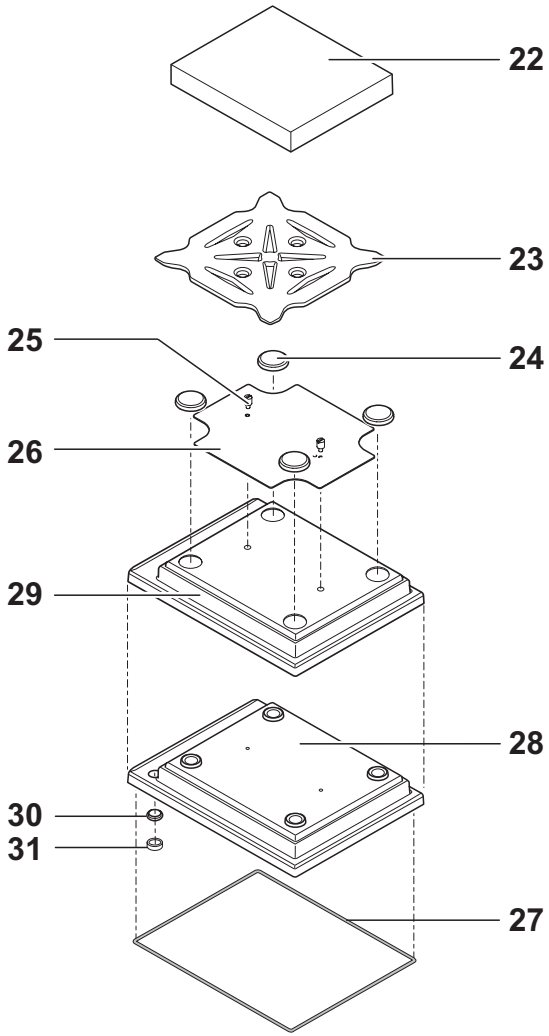

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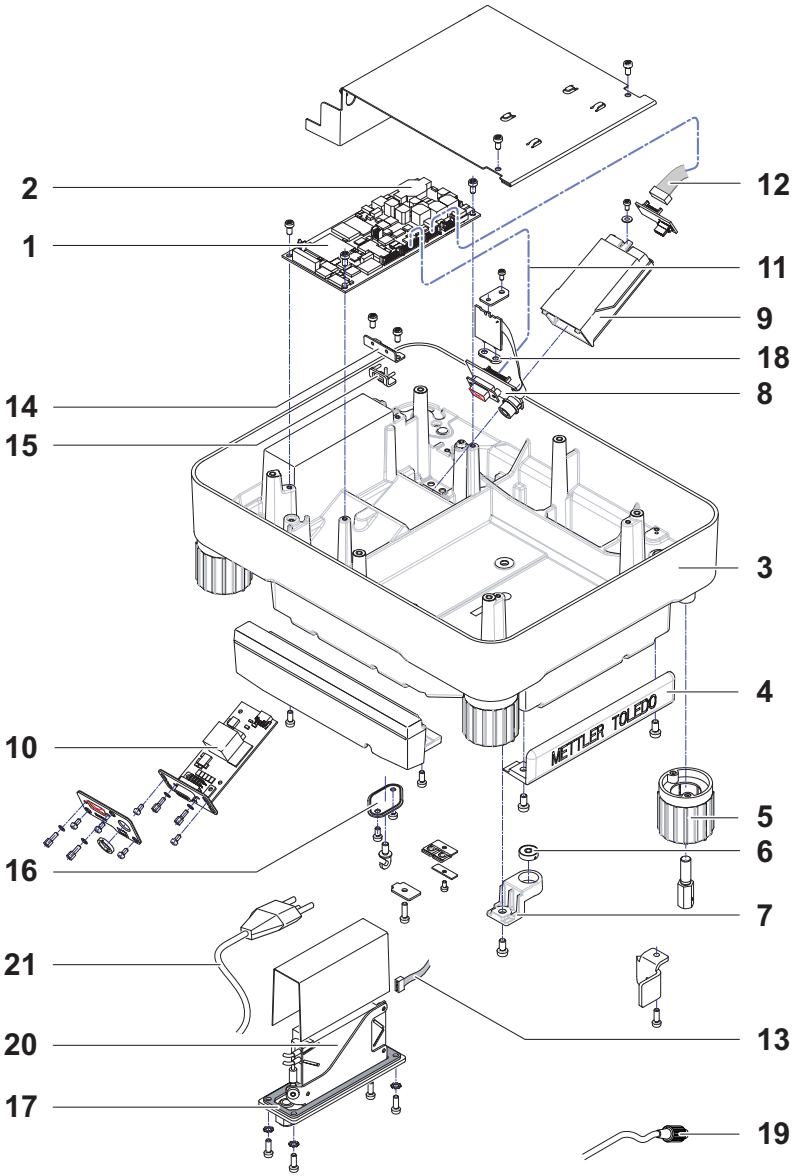
Item	Designation	Note	Part No.
22	Weighing Pan 240 x 240mm		11131173
23	Pan Support		11131172
24	Pan Support		11131029
25	Stop Screw		11131073
26	Fastening Plate		11131182
27	Seal Housing		11131185
28	Top Housing		11133044
29	Protective Cover	Platform + Terminal	11132572
	Protective Cover	Platform only	11132574
30	Level Window		11131046
31	Level		11101335

4.6 XS Platform Type «L»

Balance Type	see
XS8001L, XS16001L, XS32001L, XS32001LDR XS16000L, XS32000L	Section 4.6.1

4.6.1 Platform for XSxxxx0L, XSxxx1L, XSxxxx1L, XSxxxx1LDR



Item	Designation	Note	Part No.
1	Platform L PCB		11132107
2	Battery		11106880
3	Bottom Housing		11133101
4	Buffer Protecting Strip		11131215
5	Foot L-Platform		11131235
6	Level		215053
7	Level Holder L		11131239
8	Connection PCB L		11132120
9	Interface Holder compl.		11133033
10	Interface RS, BlueTooth, PS/2 (options)	see Operating Instructions	-
11	Cable 16 pin		11132102
12	Cable Option		11132029
13	Cable 4 pin		11132103
14	Cable Clip		11131222
15	Seal Cable		11131217
16	Hanger Cover		11131186
17	Seal Power Supply		11131230
18	Seal Aux Connector		11131117
19	Cable Terminal		11132124

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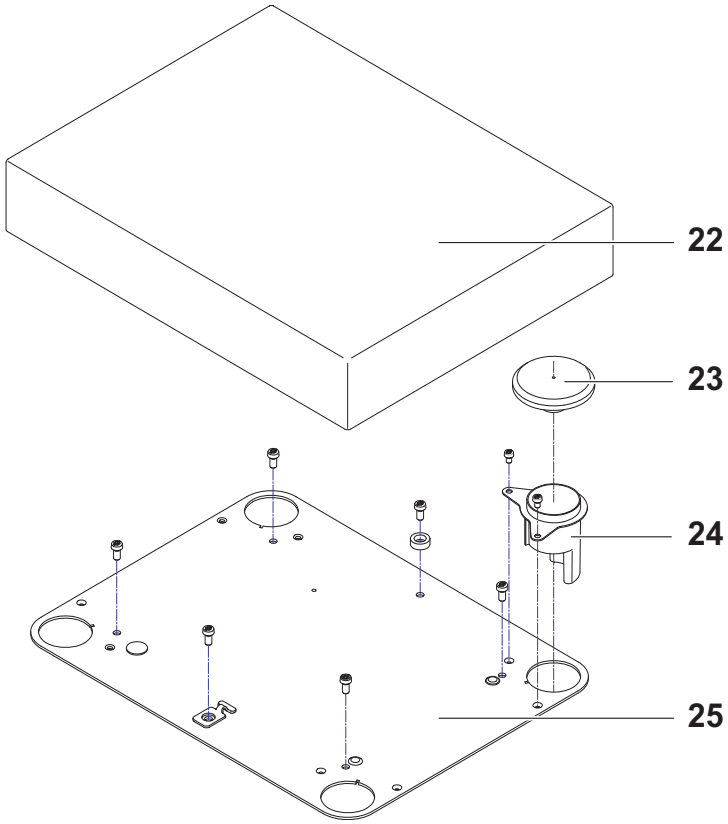

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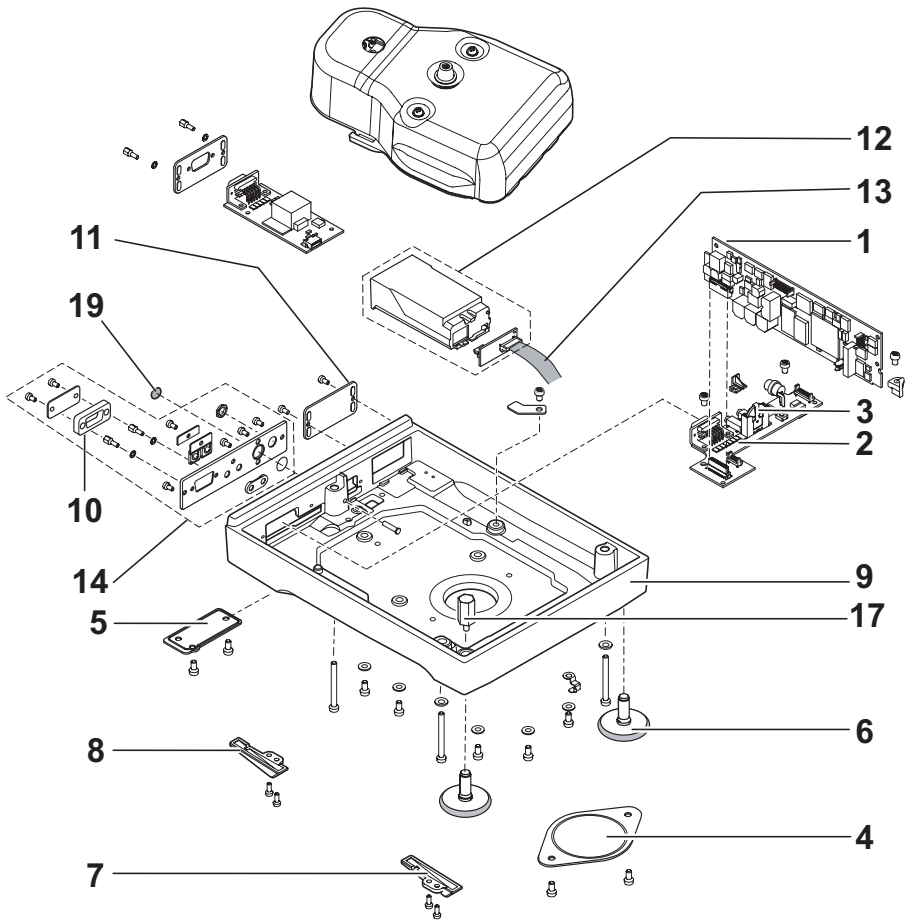
Item	Designation	Note	Part No.
20	Power Supply with Cable Line	CH EU USA IT DK GB AUS ZA IL BR, TH IN	11133110 11133111 11133112 11133113 11133114 11133115 11133116 11133117 11133118 11133119 11133120
21	Cable Line	CH EU USA IT DK GB AUS ZA IL	11132110 11132111 11132112 11132113 11132114 11132115 11132116 11132117 11132118
22	Weighing Pan L 32 kg Weighing Pan L 64 kg		239105 11102124
23	Pan Support		239104
24	Guard Ring		239036
25	Housing Cover L		11131232

4.7 X-Platform Type «S»

Platform Type	see
X204S, X404S, X404SDR	see Section 4.7.1
X203S, X603S, X603SDR, X1203S, X2003SDR, X5003SDR	see Section 4.7.2
X1202S, X2002S, X4002S, X6002S, X6002SDR, X8002S, X10002S, X10002SDR	see Section 4.7.3
X4001S, X6001S, X8001S, X10001S	see Section 4.7.4

4.7.1 Platform for Xxx4S, Xxx4SDR



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2	Backplane PCB		11133086
3	Battery		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot right		11131055
8	Auxiliary Foot left		11131056
9	Bottom Housing		11131010
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder kpl.		11133033
13	Cable Option		11132029
14	Rear Panel kpl.		11131016
15			
16			
17	Level Holder high		11131045
18			
19	Cover Service Switch		11131069

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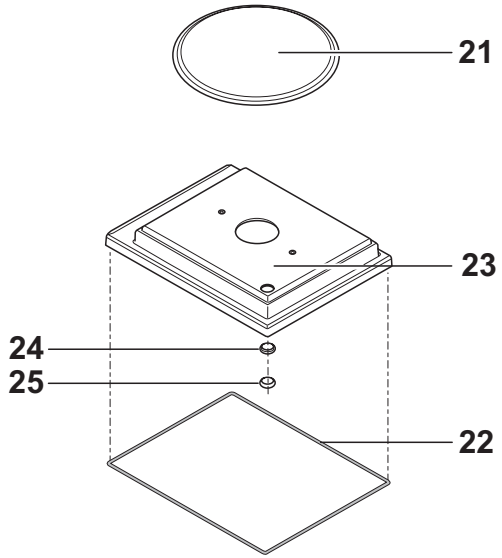

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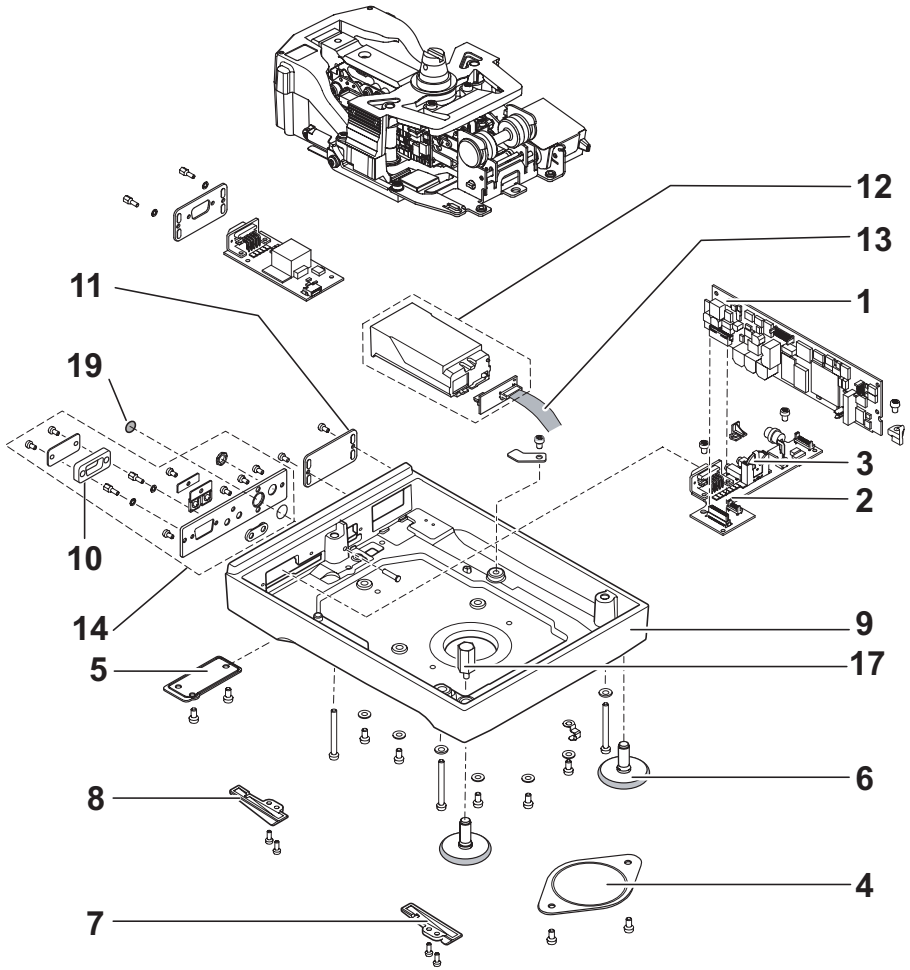
Item	Designation	Note	Part No.
21	Weighing Pan ∅ 90 mm		11133064
22	Seal Housing		11131028
23	Top Housing		11133042
24	Level Window		11131046
25	Level		11101335

4.7.2 Platform for Xxx3S, Xxx3SDR, Xxxx3S, Xxxx3SDR



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2	Backplane PCB		11133086
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot right		11131055
8	Auxiliary Foot left		11131056
9	Bottom Housing		11131010
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder kpl.		11133033
13	Cable Option		11132029
14	Rear Panel kpl.		11131016
15			
16			
17	Level Holder high		11131045
18	Cover Service Switch		11131069
19			
20			

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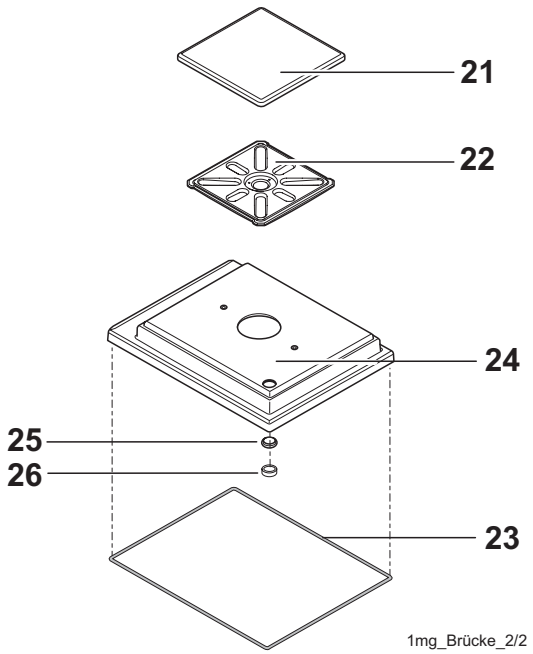
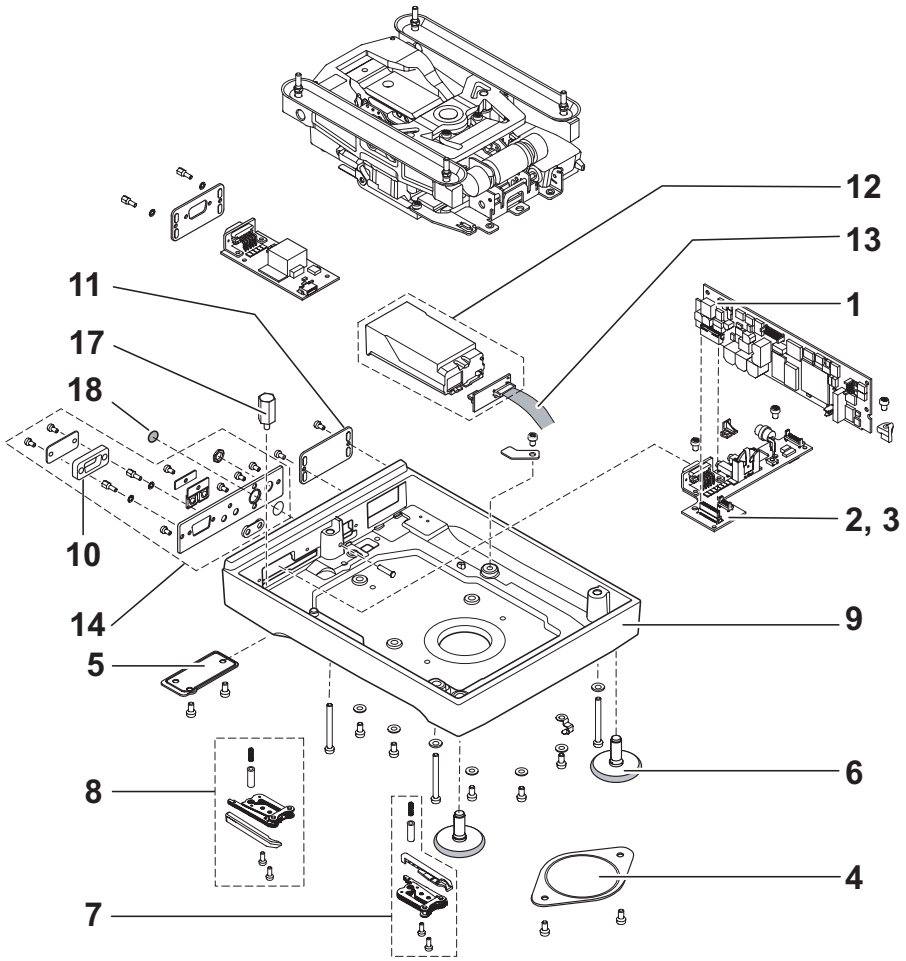


Item	Designation	Note	Part No.
21	Weighing Pan 127 x 127mm		11131022
22	Pan Support 1mg		11133040
23	Seal Housing		11131028
24	Top Housing		11133042
25	Level Window		11131046
26	Level		11101335

4.7.3 Platform for Xxxx2S, Xxxx2SDR, Xxxxx2S, Xxxxx2SDR



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2	Backplane PCB		11133086
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot right		11133030
8	Auxiliary Foot left		11133031
9	Bottom Housing		11131010
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder kpl.		11133033
13	Cable Option		11132029
14	Rear Panel kpl.		11131016
15			
16			
17	Level Holder small		11131044
18	Cover Serviceswitch		11131069
19			
20			

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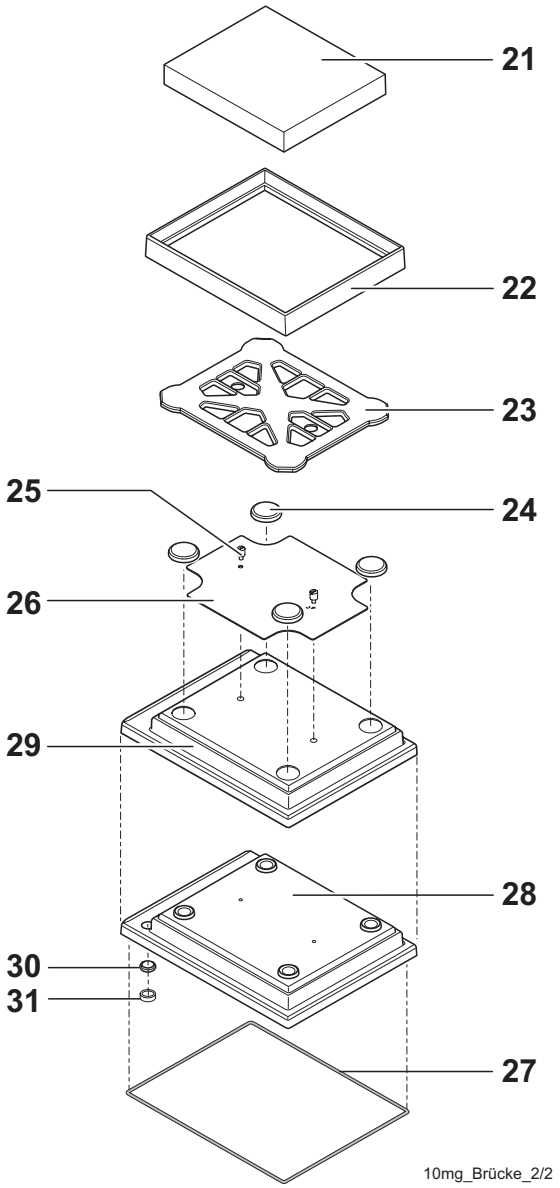

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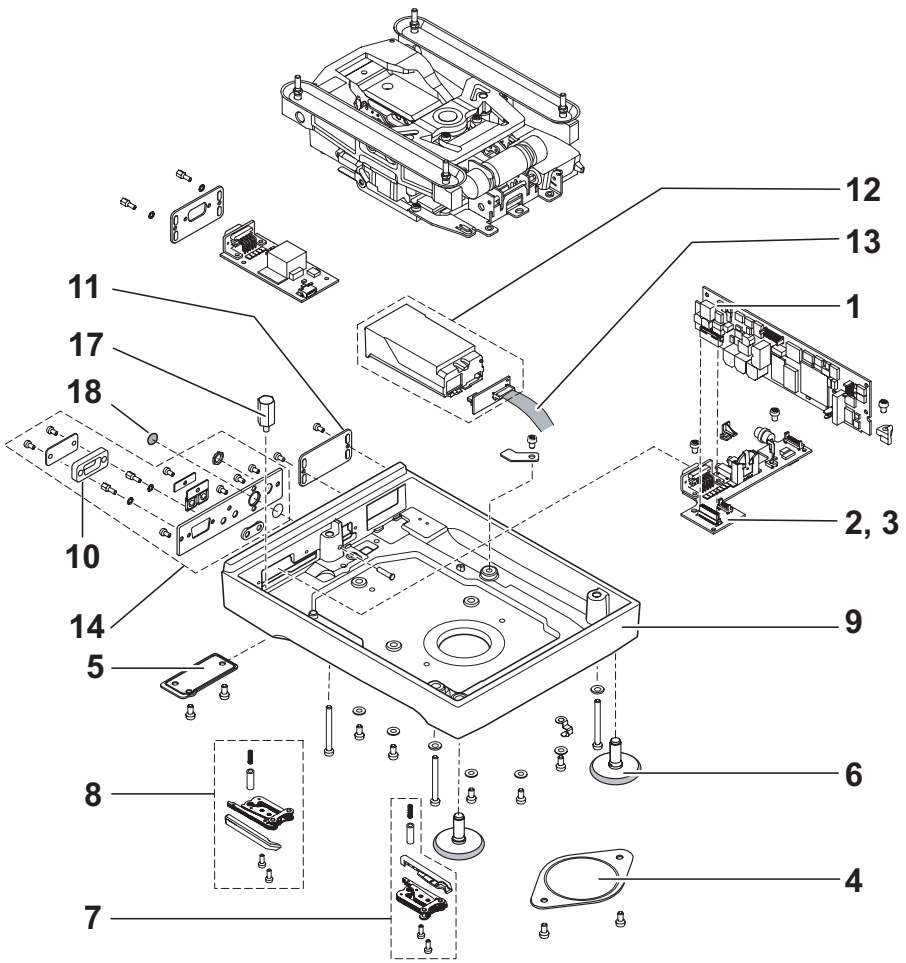
Item	Designation	Note	Part No.
21	Weighing Pan 170 x 205mm		11131030
22	Draft ring		11131040
23	Pan Support		11131034
24	Pan Support		11131029
25	Stop Screw		11131073
26	Fastening Plate		11131067
27	Seal Housing		11131028
28	Top Housing		11133043
29	Protective Cover		11133034
30	Level Window		11131046
31	Level		11101335

4.7.4 Platform for Xxxx1S, Xxxxx1S



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2	Backplane PCB		11133086
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot right		11133030
8	Auxiliary Foot left		11133031
9	Bottom Housing		11131010
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder kpl.		11133033
13	Cable Option		11132029
14	Rear Panel kpl.		11131016
15			
16			
17	Level Holder small		11131044
18	Cover Service Switch		11131069
19			
20			

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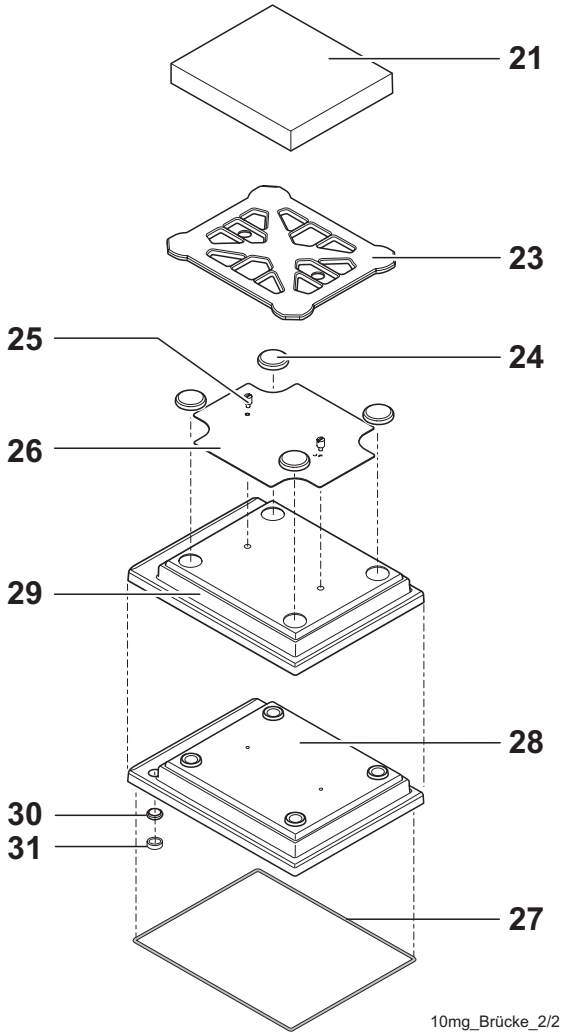

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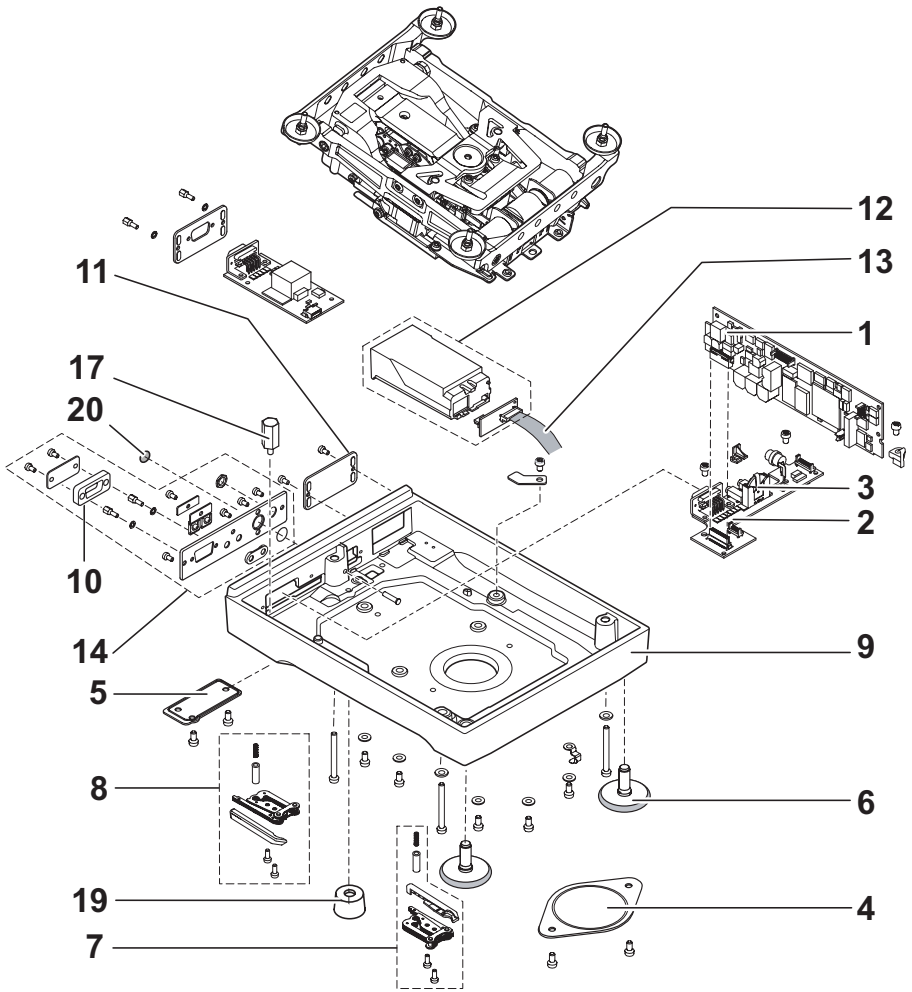
Item	Designation	Note	Part No.
21	Weighing Pan 190 x 223mm		11131031
23	Pan Support		11131037
24	Pan Support		11131029
25	Stop Screw		11131073
26	Fastening Plate		11131067
27	Seal Housing		11131028
28	Top Housing		11133043
29	Protective Cover		11133034
30	Level Window		11131046
31	Level		11101335

4.8 X-Platform Type «M»

Platform Type	see
X12002MDR	see Section 4.8.1
X8001M, X12001M, X20001M	
X12000M, X20000M	

4.8.1 Platform for Xxxxx0M, Xxxx1M, Xxxxx1M, Xxxxx2MDR



Item	Designation	Note	Part No.
1	Platform PCB		11132000
2	Backplane PCB		11133088
3	Batterie		11106880
4	Hanger Cover		11131074
5	Cap Terminal Cable		11131075
6	Levelling Foot		11106323
7	Auxiliary Foot right		11133030
8	Auxiliary Foot left		11133031
9	Bottom Housing		11131170
10	Protection RS-Connector		11133032
11	Cover Opt. Interface		11131071
12	Interface holder kpl.		11133033
13	Cable Option		11132029
14	Rear Panel kpl.		11131016
15			
16			
17	Level Holder small		11131044
18			
19	Foot		11106537
20	Cover Service Switch		11131069

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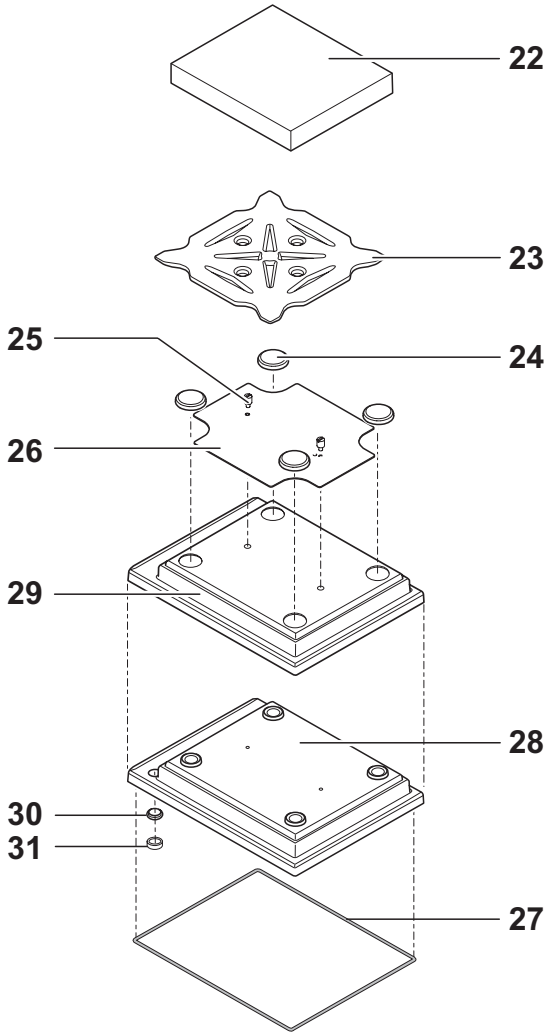

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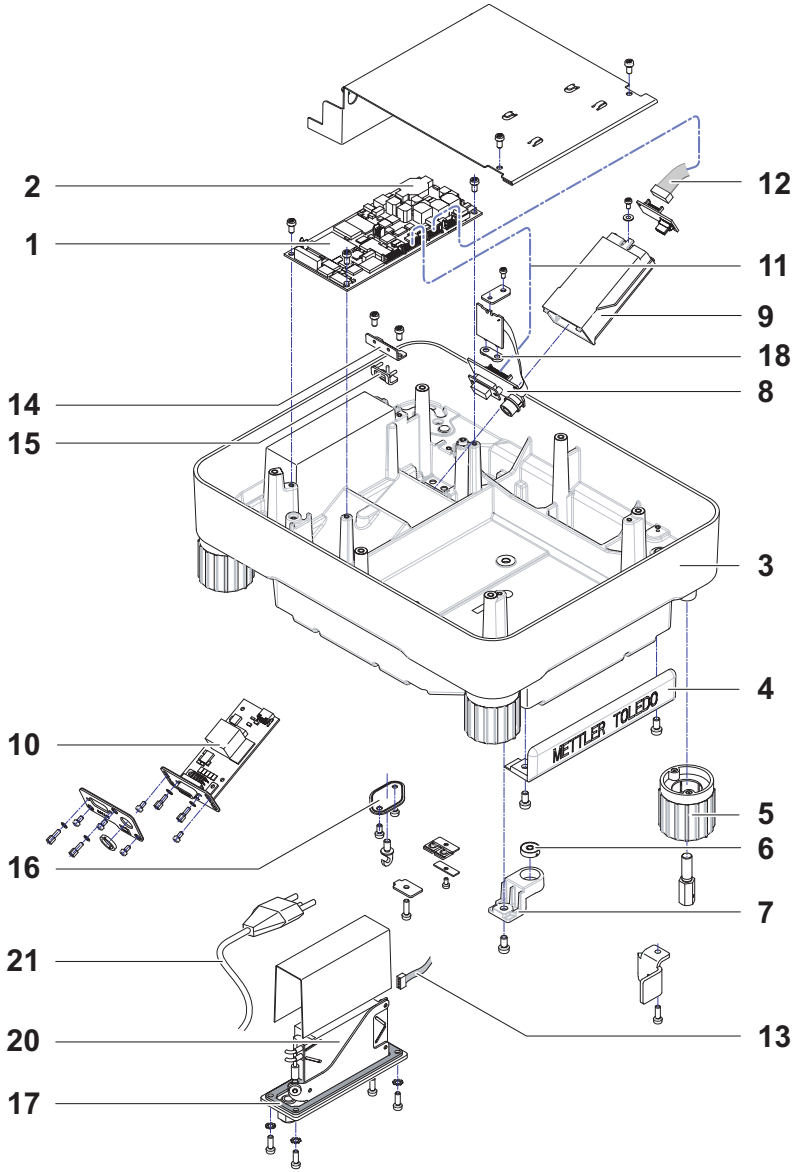
Item	Designation	Note	Part No.
22	Weighing Pan 240 x 240mm		11131173
23	Pan Support		11131172
24	Pan Support		11131029
25	Stop Screw		11131073
26	Fastening Plate		11131182
27	Seal Housing		11131185
28	Top Housing		11133044
29	Protective Cover		11132574
30	Level Window		11131046
31	Level		11101335

4.9 X Platform Type «L»

Balance Type	see
X16001L, X32001L, X64001L	Section 4.9.1
X32000L	

4.9.1 Platform for Xxxxx0L, Xxxxx1L



Item	Designation	Note	Part No.
1	Platform L PCB		11132107
2	Battery		11106880
3	Bottom Housing		11133101
4	Buffer Protecting Strip		11131215
5	Foot L-Platform		11131235
6	Level		215053
7	Level Holder L		11131239
8	Connection PCB L		11132120
9	Interface Holder compl.		11133033
10	Interface RS, BlueTooth, PS/2 (options)	see Operating Instructions	-
11	Cable 16 pin		11132102
12	Cable Option		11132029
13	Cable 4 pin		11132103
14	Cable Clip		11131222
15	Seal Cable		11131217
16	Hanger Cover		11131186
17	Seal Power Supply		11131230
18	Seal Aux Connector		11131117

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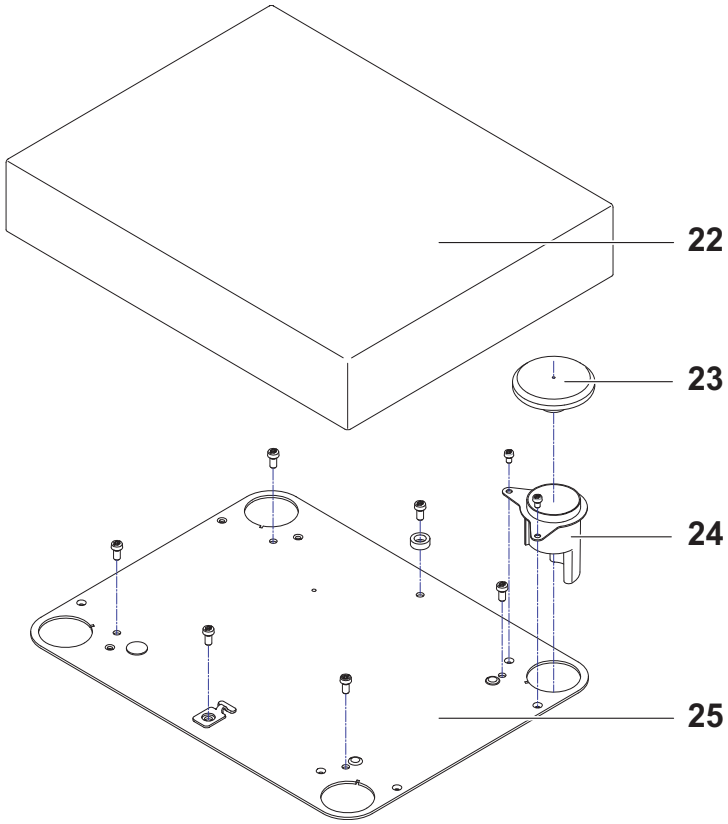

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Item	Designation	Note	Part No.
20	Power Supply with Cable Line	CH EU USA IT DK GB AUS ZA IL BR, TH IN	11133110 11133111 11133112 11133113 11133114 11133115 11133116 11133117 11133118 11133119 11133120
21	Cable Line	CH EU USA IT DK GB AUS ZA IL	11132110 11132111 11132112 11132113 11132114 11132115 11132116 11132117 11132118
22	Weighing Pan L 32 kg Weighing Pan L 64 kg		239105 11102124
23	Pan Support		239104
24	Guard Ring		239036
25	Housing Cover L		11131232

5 Weighing cell «MonoBloc» Overview

5.1 Weighing Cell assignment to XP-Balances

Designation	Part No.	Balance Type	see
Weighing cell compl. 0.1 mg for S-platform	11133013	XP204S, XP404S, XP404SDR	see Section 5.4
Weighing cell compl. 0.1 mg for S-platform	11133014	XP2003SDR	see Section 5.4
Weighing cell compl. 1 mg for S-platform	11133015	XP5003SDR	see Section 5.5
Weighing cell compl. 1 mg for S-platform	11133010	XP203S, XP603S, XP603SDR, XP1203S,	see Section 5.5
Weighing cell compl. up to 6 kg for S and M-platform	11133011	XP4001S, XP6001S, XP1202S, XP4002S, XP6002S, XP6002SDR XP6002MDR	see Section 5.6
Weighing cell compl. 8 to 12 kg for S and M-platform	11133012	XP8001S, XP10001S, XP8002S, XP10002S, XP10002SDR XP12000M XP8001M, XP8001MDR, XP12001M, XP12002MDR	see Section 5.7
Weighing cell compl. 16 and 20 kg for M-platform Overload Protection	11133017 42900822	XP20000M XP16001M, XP20001M	see Section 5.8
Weighing cell compl. 8, 16 and 32 kg for L-platform Overload Protection	11133017 42900821	XP16000L, XP32000L XP8001L, XP16001L, XP32001L, XP32001LDR	see Section 5.9
Weighing cell compl. 64 kg for L-platform	11133018	XP64000L XP64001L	see Section 5.10

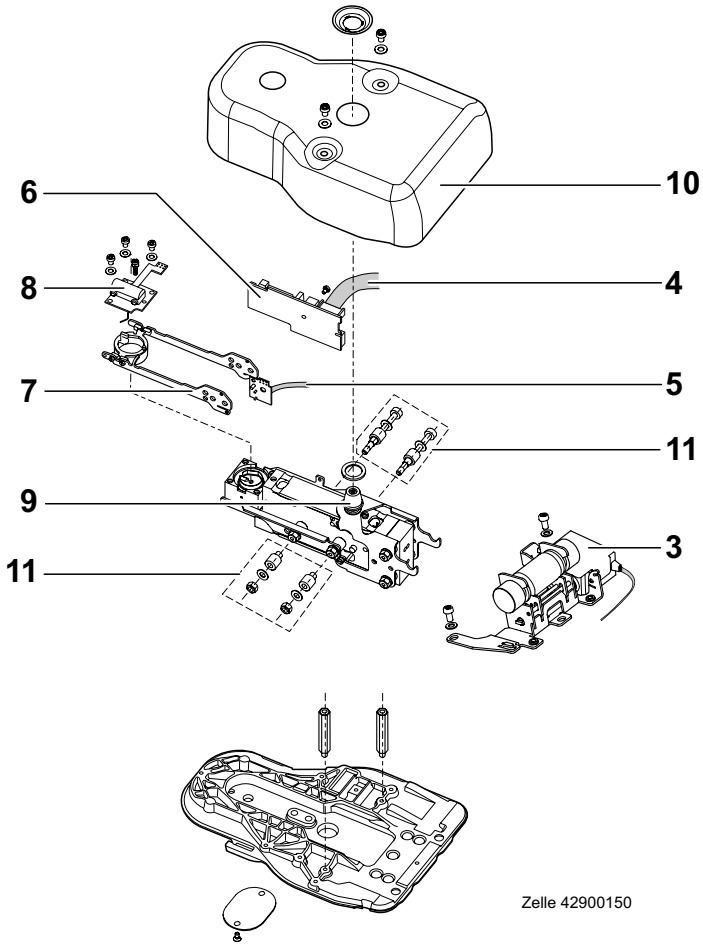
5.2 Weighing Cell assignment to XS-Balances

Designation	Part No.	Balance Type	see
Weighing cell compl. 1 mg for S-platform	11133010	XS203S, XS403S, XS603S, XS603SDR, XS1003S	see Section 5.5
Weighing cell compl. up to 6 kg for S and M-platform	11133011	XS802S, XS2002S, XS4002S, XS4002SDR, XS6002S, XS6002SDR XS4001S, XS6001S XS6001M, XS6001MDR	see Section 5.6
Weighing cell compl. 8 to 12 kg for S and M-platform	11133012	XS8001S XS10001M, XS10000M	see Section 5.7
Weighing cell compl. 16 and 20 kg for M-platform Overload Protection	11133017 42900822	XS16000M XS16001M	see Section 5.8
Weighing cell compl. 8, 16 and 32 kg for L-platform Overload Protection	11133017 42900821	XS16000L, XS32000L XS8001L, XS16001L, XS32001L, XS32001LDR	see Section 5.9

5.3 Weighing Cell assignment to X-Platforms

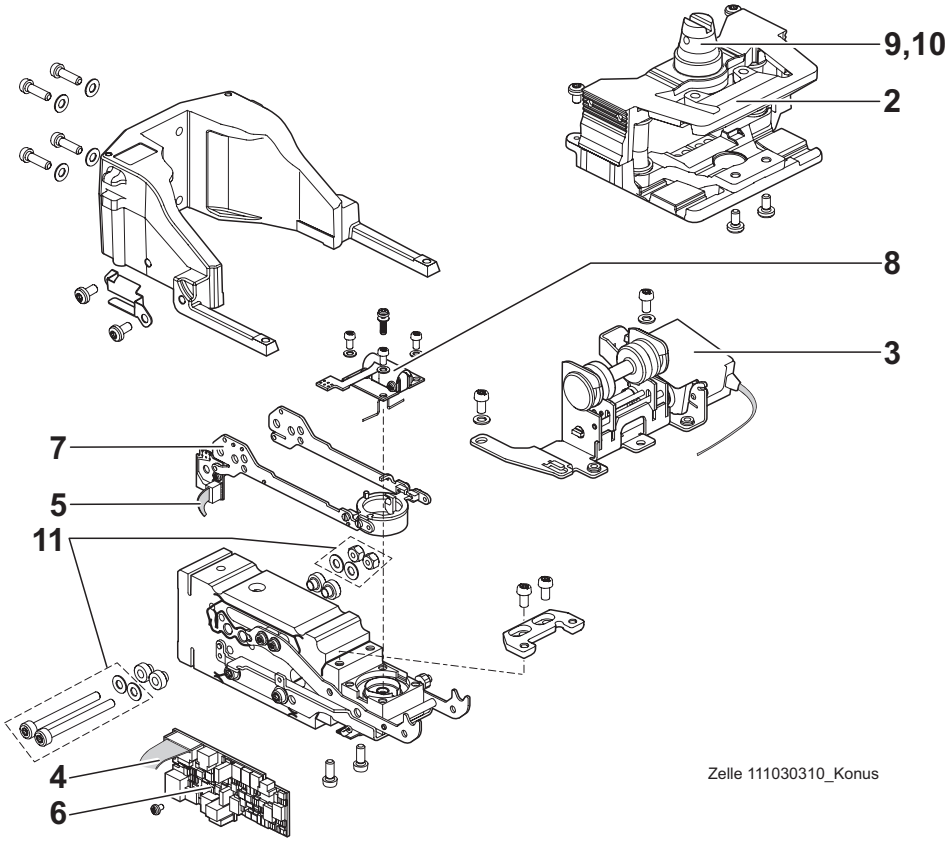
Designation	Part No.	Balance Type	see
Weighing cell compl. 0.1 mg for S-platform	11133013	X204S, X404S, X404SDR	see Section 5.4
Weighing cell compl. 0.1 mg for S-platform	11133014	X2003SDR	see Section 5.4
Weighing cell compl. 1 mg for S-platform	11133010	X203S, X603S, X603SDR, X1203S,	see Section 5.5
Weighing cell compl. 1 mg for S-platform	11133015	X5003SDR	see Section 5.5
Weighing cell compl. up to 6 kg for S and M-platform	11133011	X4001S, X6001S, X1202S, X2002S, X4002S, X6002S, X6002SDR	see Section 5.6
Weighing cell compl. 8 to 12 kg for S and M-platform	11133012	X8001S, X10001S, X8002S, X10002S, X10002SDR X12000M X8001M, X12001M, X12002MDR	see Section 5.7
Weighing cell compl. 16 and 20 kg for M-platform Overload Protection	11133017 42900822	X20000M X20001M	see Section 5.8
Weighing cell compl. 8, 16 and 32 kg for L-platform Overload Protection	11133017 42900821	X32000L X16001L, X32001L	see Section 5.9
Weighing cell compl. 64 kg for L-platform	11133018	X64001L	see Section 5.10

5.4 Weighing cell compl. 0.1 mg for S-platform



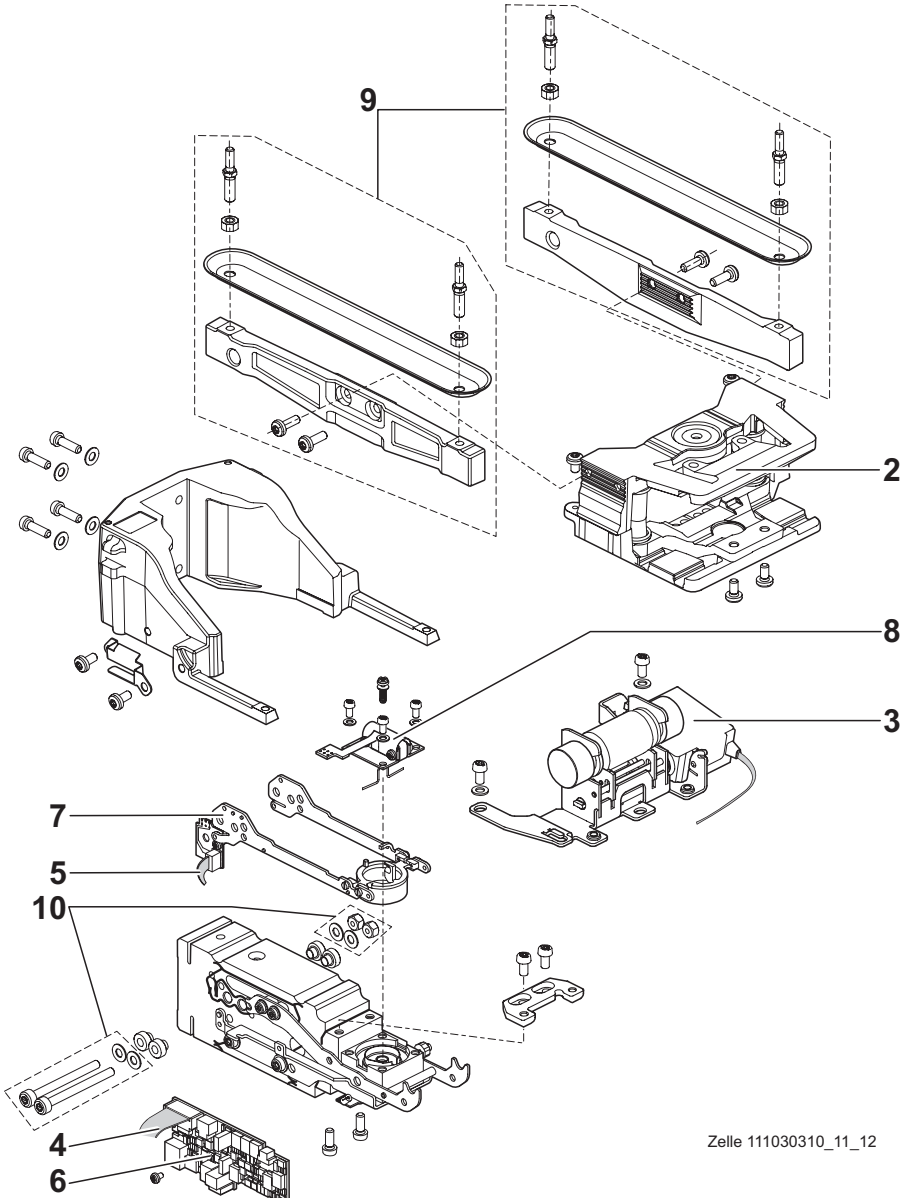
Item	Designation	Cell 11133013 Part No.	Cell 11133014 Part No.
1	Weighing cell «MonoBloc» mounted	11133013	11133014
3	Calibration Drive	42900801	42900801
4	Detector Cable	42900480	42900480
5	Coil Cable	42900481	42900481
6	Cell PCB	42900811	42900811
7	Lever	217400	217400
8	Detection	217401	217401
9	Cone Ferrit Ring	42900820	42900800
10	Cone Cover	42900462	42900428
11	Screw Set «MonoBloc»	42900819	42900819

5.5 Weighing cell compl. 1 mg for S-platform



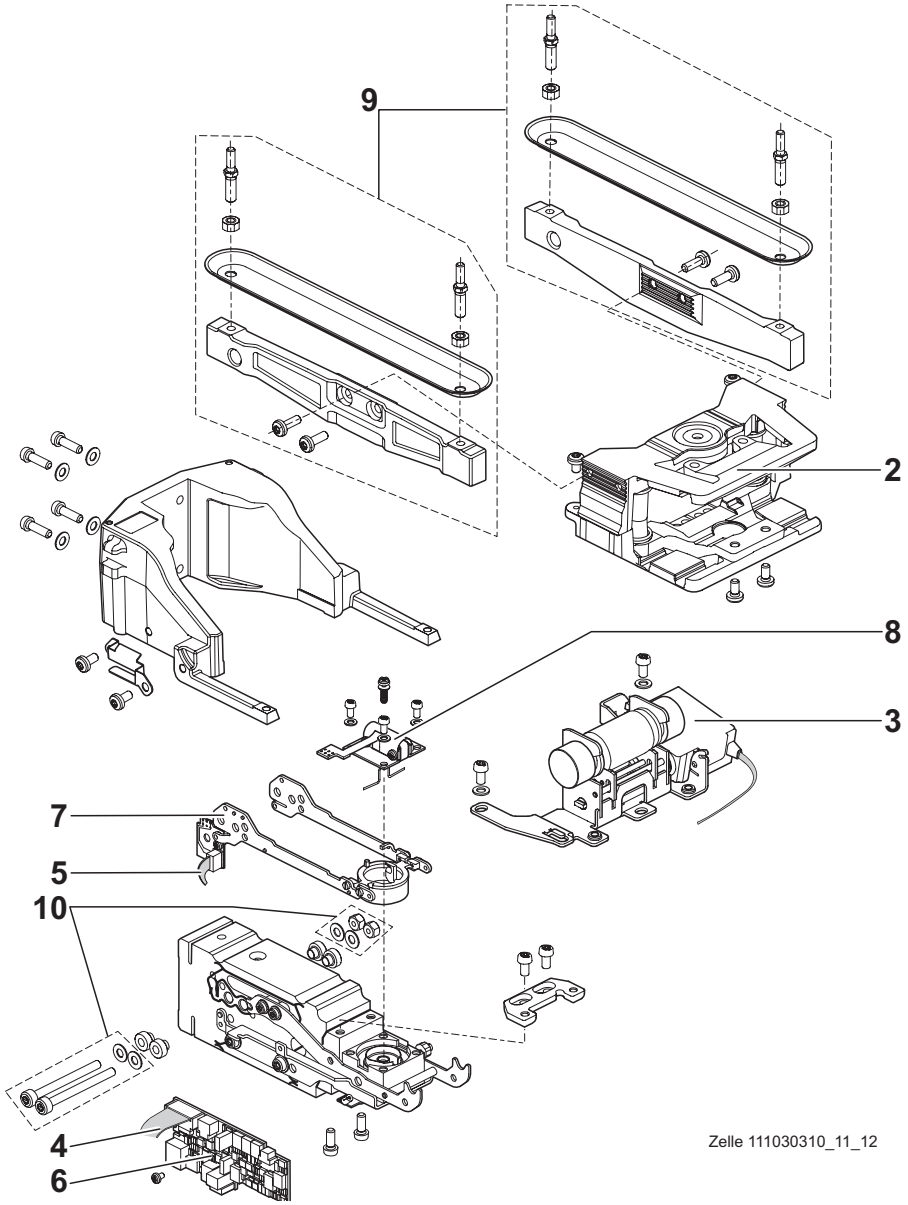
Item	Designation	Cell 11133010 Part No.	Cell 11133015 Part No.
1	Weighing cell «MonoBloc» mounted with Overload Protection	11133010	11133015
2	Overload Protection 1mg	42900803	42900804
3	Calibration Drive	42900801	42900801
4	Detector Cable	42900480	42900480
5	Coil Cable	42900481	42900481
6	Cell PCB 1mg	42900808	42900809
7	Lever	217400	217400
8	Detection	217401	217401
9	Cone Ferrit Ring	42900800	42900800
10	Cone Cover	42900428	42900428
11	Screw Set «MonoBloc»	42900819	42900819

5.6 Weighing cell compl. up to 6 kg for S and M-platform



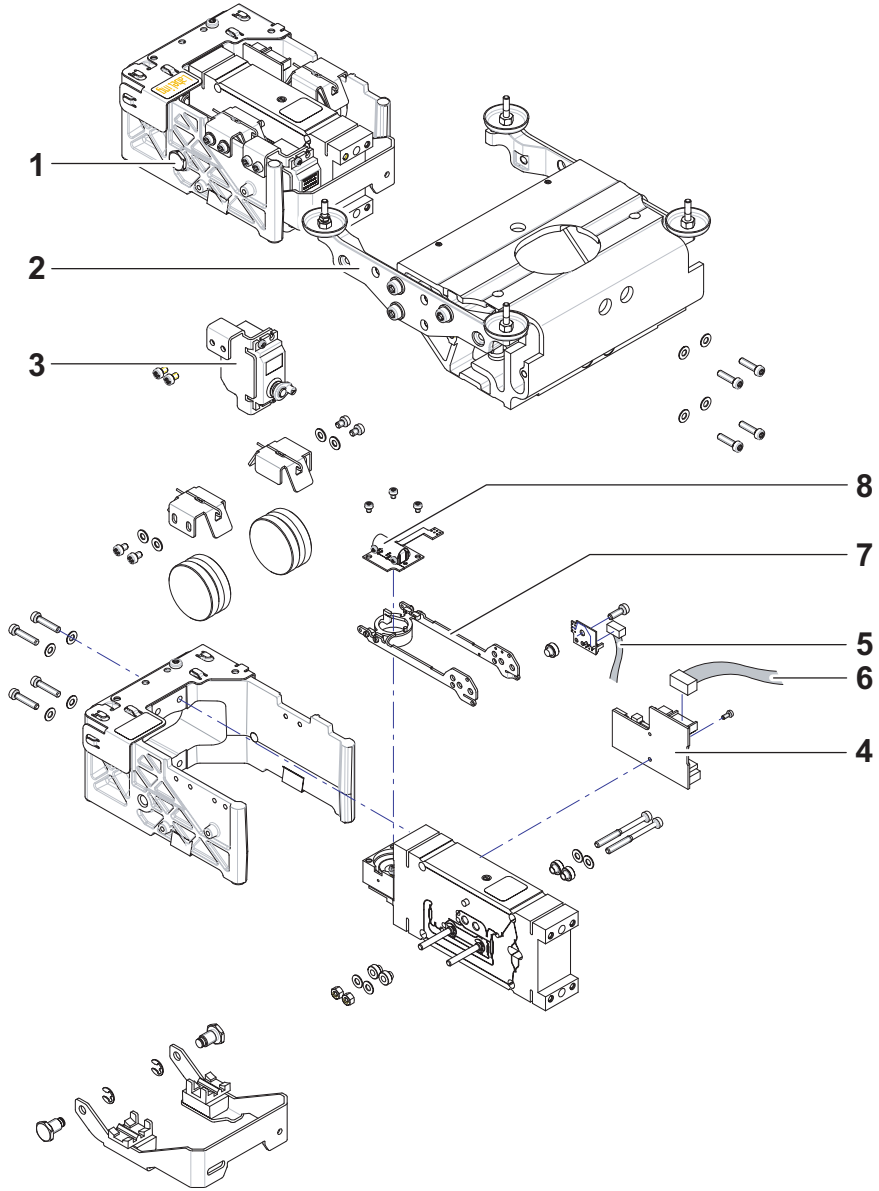
Item	Designation	Note	Part No.
1	Weighing cell «MonoBloc» mounted with Overload Protection		11133011
2	Overload Protection 6kg		42900804
3	Calibration Drive		42900801
4	Detector Cable		42900480
5	Coil Cable		42900481
6	Cell PCB bis 6kg		42900809
7	Lever		217400
8	Detection		217401
9	Four-Point Support left/right for S-platform		42900816
	Four-Point Support left/right for M-platform		42900818
10	Screw Set «MonoBloc»		42900819

5.7 Weighing cell compl. 8 to 12 kg for S and M-platform



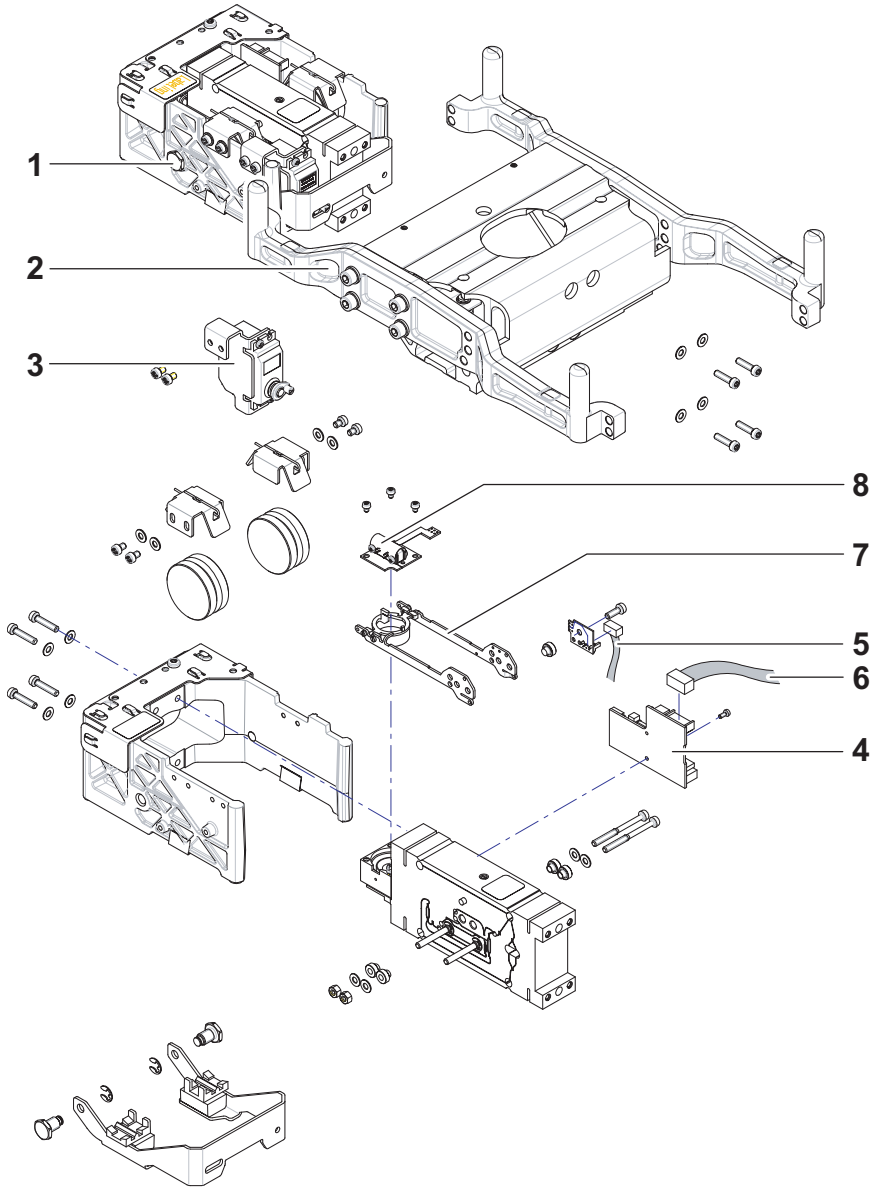
Item	Designation	Note	Part No.
1	Weighing cell «MonoBloc» mounted with Overload Protection		11133012
2	Overload Protection 8-12 kg		42900805
3	Calibration Drive		42900801
4	Detector Cable		42900480
5	Coil Cable		42900481
6	Cell PCB		42900810
7	Lever		217400
8	Detection		217401
9	Four-Point Support left/right for S-platform		42900816
	Four-Point Support left/right for M-platform		42900818
10	Screw Set «MonoBloc»		42900819

5.8 Weighing cell compl. 16 and 20 kg for M-platform



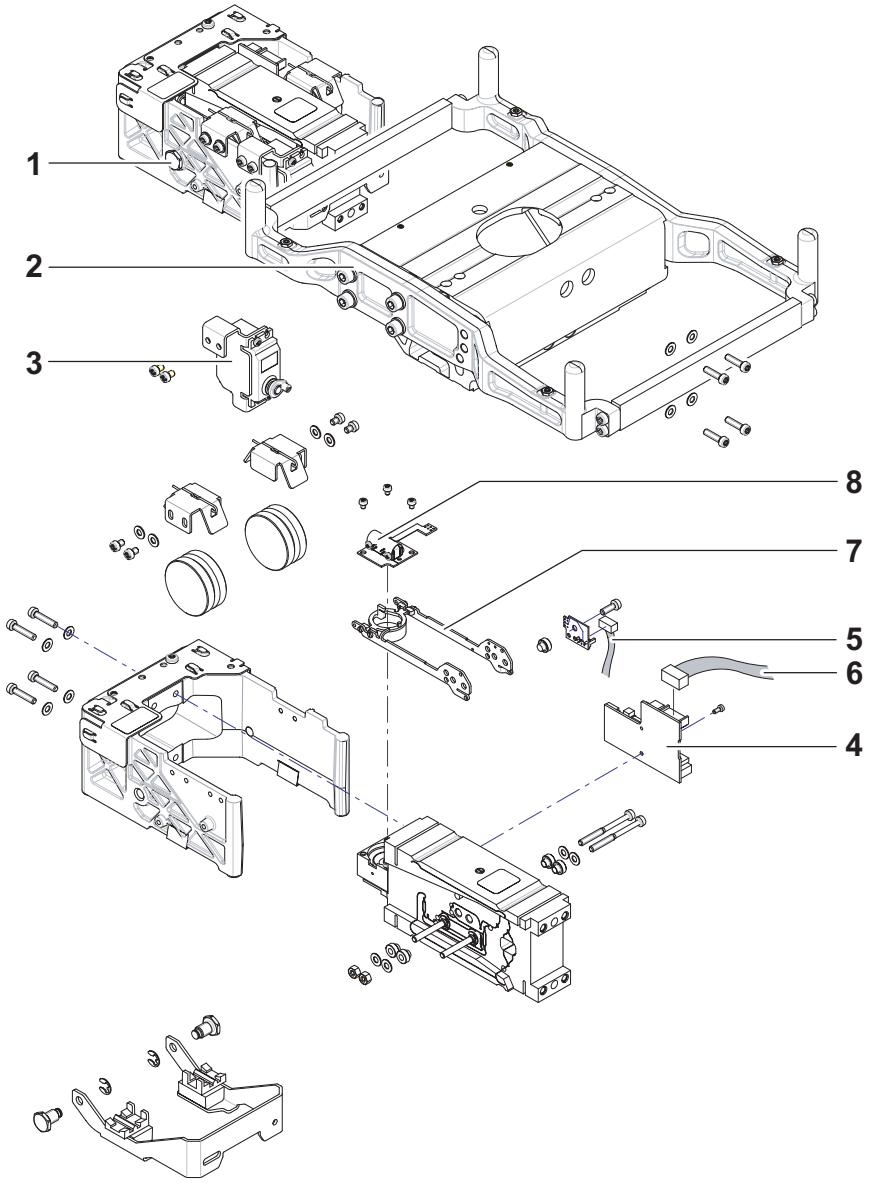
Item	Designation	Note	Part No.
1	Weighing cell «MonoBloc»	without Overload Protection	11133017
2	Overload Protection		42900822
3	Calibration Drive incl. cable		42900340
4	Cell PCB		42900813
5	Coil Cable		42900533
6	Cell Cable		42900534
7	Lever		217400
8	Detection		217401

5.9 Weighing cell compl. 8, 16 and 32 kg for L-platform



Item	Designation	Note	Part No.
1	Weighing cell «MonoBloc»		11133017
2	Overload Protection		42900821
3	Calibration Drive incl. cable		42900340
4	Cell PCB		42900813
5	Coil Cable		42900533
6	Cell Cable		42900534
7	Lever		217400
8	Detector		217401

5.10 Weighing cell compl. 64 kg for L-platform



Item	Designation	Note	Part No.
1	Weighing cell «MonoBloc»		11133018
2	Overload Protection		42900823
3	Calibration Drive incl. cable		42900340
4	Cell PCB		42900813
5	Coil Cable		42900533
6	Cell Cable		42900534
7	Lever		217400
8	Detector		217401

6 Model Plate, Packaging

6.1 Model Plate XP-Balance

6.1.1 XP-Balance Type «S»

Balance	Part No.	Balance	Part No.	Balance	Part No.	Balance	Part No.
XP4001S	11130456	XP1202S	11130448	XP203S	11130440	XP204S	11130404
XP6001S	11130457	XP4002S	11130450	XP603S	11130441	XP404S	11130400
XP8001S	11130466	XP6002S	11130451	XP603SDR	11130444	XP404SDR	11130471
XP10001S	11130467	XP6002SDR	11130452	XP1203S	11130446		
		XP8002S	11130460	XP2003SDR	11130391		
		XP10002S	11130461	XP5003SDR	11130387		
		XP10002SDR	11130462				

6.1.2 XP-Balance Type «M»

Balance	Part No.	Balance	Part No.	Balance	Part No.	Balance	Part No.
XP12000M	11130361	XP8001M	11130375	XP6002MDR	11130383		
XP20000M	11130340	XP8001MDR	11130371	XP12002MDR	11130379		
		XP12001M	11130365				
		XP16001M	11130336				
		XP20001M	11130338				

6.1.3 XP-Balance Type «L»

Balance	Part No.	Balance	Part No.	Balance	Part No.	Balance	Part No.
XP16000L	11130351	XP8001L	11130341				
XP32000L	11130352	XP16001L	11130343				
XP64000L	11130353	XP32001L	11130345				
		XP32001LDR	11130347				
		XP64001L	11130349				

6.2 Model Plate XS-Balance

6.2.1 XS-Balance Type «S»

Balance	Part No.	Balance	Part No.	Balance	Part No.	Balance	Part No.
XS4001S	11130864	XS802S	11130852	XS203S	11130842		
XS6001S	11130866	XS2002S	11130854	XS403S	11130844		
XS8001S	11130868	XS4002S	11130856	XS603S	11130846		
		XS4002SDR	11130858	XS603SDR	11130848		
		XS6002S	11130860	XS1003S	11130850		
		XS6002SDR	11130862				

6.2.2 XS-Balance Type «M»

Balance	Part No.	Balance	Part No.	Balance	Part No.	Balance	Part No.
XS10000M	11130876	XS6001M	11130870				
XS16000M	11130879	XS6001MDR	11130872				
		XS10001M	11130874				
		XS16001M	11130877				

6.2.3 XS-Balance Type «L»

Balance	Part No.	Balance	Part No.	Balance	Part No.	Balance	Part No.
XS16000L	11130888	XS8001L	11130880				
XS32000L	11130889	XS16001L	11130882				
		XS32001L	11130884				
		XS32001LDR	11130886				

6.3 Model Plate Platform

6.3.1 Platform Type «S»

Platform	Part No.	Platform	Part No.	Platform	Part No.	Platform	Part No.
X4001S	11130458	X1202S	11130449	X203S	11130442	X204S	11130402
X6001S	11130459	X2002S	11130484	X603S	11130443	X404SDR	11130396
X8001S	11130468	X4002S	11130453	X603SDR	11130445	X404S	11130398
X10001S	11130469	X6002S	11130454	X1203S	11130447		
		X6002SDR	11130455	X2003SDR	11130393		
		X8002S	11130463	X5003SDR	11130389		
		X10002S	11130464				
		X10002SDR	11130465				

6.3.2 Platform Type «M»

Platform	Part No.	Platform	Part No.	Platform	Part No.	Platform	Part No.
X12000M	11130363	X8001M	11130373	X12002MDR	11130377		
X20000M	11130894	X12001M	11130367				
		X20001M	11130892				

6.3.3 Platform Type «L»

Platform	Part No.	Platform	Part No.	Platform	Part No.	Platform	Part No.
X32000L	11130906	X16001L	11130897				
		X32001L	11130899				
		X64001L	11130903				

6.4 Packaging

6.4.1 XP-Balance Type «S»

Balance Type XPxx4S

Item	Designation	Note	Part No.
1	Packaging 1mg		11133052
2	Export Carton1mg		11132834
3	Packaging Draft shield		11133054
4	Export Carton Draft shield		11132867

Balance Type XPxx3S

Item	Designation	Note	Part No.
1	Packaging 1mg		11133048
2	Export Carton 1mg		11132834
3	Packaging Draft shield		11133054
4	Export Carton Draft shield		11132867

Balance Type XPxx2S

Item	Designation	Note	Part No.
1	Packaging 10mg		11133046
2	Export Carton		11132839

Balance Type XPxx1S

Item	Designation	Note	Part No.
1	Packaging 0.1g		11133047
2	Export Carton		11132839

6.4.2 XP-Balance Type «M»

Balance Type XPxxxM

Item	Designation	Note	Part No.
1	Packaging		11133055
2	Export Carton		11132879

6.4.3 XP-Balance Type «L»

Balance Type XPxxxxL

Item	Designation	Note	Part No.
1	Packaging		11133057
2	Export Carton		11132912

6.4.4 XS-Balance Type «S»

Balance Type XSxx3S

Item	Designation	Note	Part No.
1	Packaging 1mg		11133053
2	Export Carton 1mg		11132834
3	Packaging MagicCube		11133049
4	Export Carton MagicCube		11132824

Balance Type XSxx2S

Item	Designation	Note	Part No.
1	Packaging 10mg		11133050
2	Export Carton		11132839

Balance Type XSxx1S

Item	Designation	Note	Part No.
1	Packaging 0.1g		11133051
2	Export Carton		11132839

6.4.5 XS-Balance Type «M»

Balance Type XSxxxM

Item	Designation	Note	Part No.
1	Packaging		11133056
2	Export Carton		11132879

6.4.6 XS-Balance Type «L»

Balance Type XSxxxxL

Item	Designation	Note	Part No.
1	Packaging		11133057
2	Export Carton		11132912

6.4.7 Platform Type «S»

Platform Xxx4S

Item	Designation	Note	Part No.
1	Packaging 1mg		11133052
2	Export Carton1mg		11132834
3	Packaging Draft Shield		11133054
4	Export Carton Draft Shield		11132867

Platform Xxx3S

Item	Designation	Note	Part No.
1	Packaging 1mg		11133048
2	Export Carton1mg		11132834
3	Packaging Draft Shield		11133054
4	Export Carton Draft Shield		11132867

Platform Xxx2S

Item	Designation	Note	Part No.
1	Packaging 10mg		11133046
2	Export Carton		11132839

Platform Xxx1S

Item	Designation	Note	Part No.
1	Packaging 0.1g		11133047
2	Export Carton		11132839

6.4.8 Platform Type «M»

Platform XxxxM

Item	Designation	Note	Part No.
1	Packaging		11133055
2	Export Carton		11132879

6.4.9 Platform Type «L»

Platform XxxxxL

Item	Designation	Note	Part No.
1	Packaging		11133057
2	Export Carton		11132912

6.4.10 Draft shield

Draft shield with sliding doors

Item	Designation	Note	Part No.
1	Packaging Draft shield		11133054
2	Export Carton Draft shield		11132867

Draft shield MagicCube

Item	Designation	Note	Part No.
1	Packaging MagicCube		11133049
2	Export Carton MagicCube		11132824

4 Checks

List of Contents

1 Checklists

Before you start work on the balance, check the model plate and the type plate (see Section 2.3, Section 2.4, Chapter 1) to ensure that the balance in front of you is the balance which should be serviced.

WARNING

Standby circuit.
The balance is energized when it is connected to the power supply. This is the case even if the display is switched off.

1.1 Maintenance checklist

1.1.1 Visual check

1 Check that all necessary parts have been supplied.

2 Check the condition of the following parts:
- Housing and display
- Keypad
- Weighing pan and pan support, draft shield
- Model plate
- Leveling feet and level indicator
- Protective cover

WARNING

Danger of electric current.
Disconnect AC adapter from power supply.

- Power supply and cable
- Interface and data transmission cable
- Auxiliary display.

1.1.2 Function check

1 Connect balance to power supply.
Check functioning of:
- Display and Keypad
  see Section 2.1 or Section 2.2, Chapter 5.

2 Check calibration drive.

3 If equipped with level, level balance.

4 Acclimatize balance, approx. 2 hour.
Only necessary:
- if the balance has been without voltage for a long time.
- if the AC adapter was unplugged (balance, outlet socket).

5 Check adjustment of balance using the following Tests (see Chapter 9):
- Hysteresis
- Cornerload
- Repeatability
- Linearity
- Sensitivity.

6 If appropriate, check peripheral instruments.

1.2 Checklist for cleaning

WARNING

Danger of electric current.

Disconnect power cable between AC adapter and balance before starting work on the balance or Terminal.

External cleaning

WARNING

Do not use cleaning agents which contain solvents or abrasives.

Cleaning agents must not enter the balance, Terminal, or AC adapter.

Clean housing, draft shield, and weighing chamber with a soft cloth and a small amount of mild, commercially available cleaning agent.

Internal cleaning

WARNING

Do not blow near the Weighing cell!

Dust may enter the magnet system.

Remove dust with a dry or slightly damp brush, or with a soft, non-fibrous cloth.

Clean the magnet recess see Section 6.1.3, Chapter 6.

Clean adjustment weight and/or weight support with alcohol.

After cleaning

Check the balance's repeatability! If it is outside the tolerance (see Chapter 9), this may be due to brush hairs or dust fibers caught in moving parts.

1.3 Checklist for repairs and adjustments

1 Troubleshooting
- Troubleshooting (see Chapter 5).
- Test using LARS LabTec Repair and Service Software, (see Chapter 7).

2 Repairs
- see Chapter 6.

3 Adjustment
- Note down or print out user settings.
- Adjust balance so that the Adjustment data, see Chapter 9, is observed.
- Cornerload adjustment (see Section 7.2, Chapter 7)
- The necessary adjustments, such as linearization or Service adjustment CAL for each type of balance are given as a service procedure in the LARS Help text LARS, (see Chapter 7).

4 Final procedures
- Reinstate user settings.
- Connect peripheral devices if necessary.
- Complete certification tasks Adjustments in service menu.

5 Troubleshooting

List of Contents

1 Error Messages - Remedy

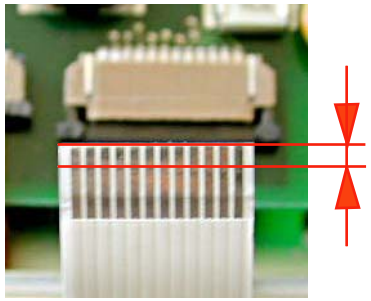
Error Message	Possible cause	Diagnostic	Remedy
Program memory defect	Flash memory error of the terminal PCB	-	Replace terminal PCB see Section 5.1.5, Chapter 6
Error 4	Standard Calibration has not been performed	-	Perform Standard Calibration in service mode
Error 6	Data missing; either Cell Parameter or TDNR	TDNR must be correctly displayed	Reload Cell Parameter Reload TDNR

2 Error Symptoms - Recovery

2.1 Display is dark

Error symptom	Possible cause	Diagnostic	Remedy
Display is dark	**1.** Balance on standby.	-	Press «On» key.
	2. Power plug not connected.	Check	Plug in power plug.
	3. AC adapter not connected to balance.	Check	Plug in AC adapter.
	4. AC adapter is faulty.	Green LED on AC adapter does not light.	Replace AC adapter (see Section 1, Chapter 3).
	5. Connector socket on balance is corroded or faulty.	Check	Replace connector socket (Backplane PCB).
	6. Power outage in building supply.	• Plug AC adapter into other socket. • Check socket with phase tester. • Plug in a different electrical device.	Inform person responsible (building electrician).
	7. Incorrect AC adapter.	Check that input data on type plate match the power supply values.	Select correct AC adapter (see Section 1, Chapter 3).
	8. Terminal cable not plugged in.	• Check plugged connection on Terminal. • Check plugged connection on balance.	• Plug in Terminal cable (see Section 5.1.8, Chapter 6). • Plug in Terminal cable.
	9. Terminal cable faulty.	Check optically and electrically (kinks, check continuity, ring through).	Replace Terminal cable.
	10. Display faulty.	-	Replace display (see Section 5.1.6, Chapter 6).
	11. Terminal software not loaded.	• Establish connection to LARS/Service Mode. • Terminal software version is not displayed e.g. SW version bridge 1.00f SW version Terminal 1.10.	Load Terminal software with E-loader II http://extranet.mt.com.

2.2 Keypad does not function

Error symptom	Possible cause	Diagnostic	Remedy
Keypad does not function	**1.** Terminal is dark.	see Section 2.1	-
	2. Keypad or touch-screen is not plugged in.	Check plug connection on Terminal.	Plug ribbon cable into Terminal (see Section 5.1.4, Chapter 6).
	3. Keypad faulty.	Plug in a new keypad (without affixing it first). If it functions, the existing keypad is faulty. If it does not function, see Pos. 5 and 6.	Replace Keypad (see Section 5.1.6, Chapter 6).
	4. Touch screen faulty.	-	Replace Top Housing (see Section 5.1.4, Chapter 6).
	5. Faulty contacts on ribbon cable.	• Contact coating is scratched off. • Contact pin in socket is distorted. 	• Cut 1 mm off ribbon cable with scissors. The ribbon cable penetrates further into the socket. • Replace the keypad.
	6. Terminal PCB faulty.	-	Replace Terminal PCB (see Section 5.1.4, Chapter 6).

2.3 Display drifts, increases and decreases alternately

Error symptom	Possible cause	Diagnostic	Remedy
Increases and decreases alternately	**1.** Vibrations at the workplace.	Place beaker with tap water on the weighing bench. Vibrations cause ripples on the water surface.	• Protect weighing location against vibrations (vibration absorber, etc.). • Set weighing parameters coarser (e.g. change «Environment» from «Very stable» to «Stable»). • Find a different weighing location (by agreement with customer).
	2. Drafts.	• Check that draft shield is closed. • Check for gaps in draft shield.	• Close draft shield. • Set weighing parameters coarser (e.g. change «Environment» from «Very stable» to «Stable»).
	3. Internal calibration weight is jammed.	Actuate adjustment motor from Service Mode or LARS. The weight display changes and becomes stable.	Insert adjustment weights correctly (see Section 3.3, Chapter 6).
	4. Magnet system soiled.		Clean magnet system (see Section 6.1.3, Chapter 6).
	5. Loose screws on the measuring cell.		Check correct seating of the screws (see Section 6.2, Chapter 6).
	6. Moving part touching measuring cell.		Check (see Section 6.2, Chapter 6).

2.4 Display unstable, constantly drifts into plus or minus

Error symptom	Possible cause	Diagnostic	Remedy
Display constantly drifts into plus or minus	**1.** Sun or other heat source shines directly onto the balance.	Is any sun shade (blinds, curtains, etc.) available?	Select location according to Operating Instructions (customer responsibility).
	2. Weighing sample absorbs moisture or evaporates moisture.	• Is the weighing result with a test weight stable? • Sensitive weighing samples e.g. paper, cardboard, wood, plastic, rubber, liquids.	• Use aids. • Cover weighing sample.
	3. Weighing sample is electrostatically charged.	• Is the weighing result with a test weight stable? • Sensitive weighing samples e.g. plastic, powder, insulating materials.	• Increase air humidity in weighing chamber (45% - 50%). • Use ionizer.
	4. Weighing sample is hotter or colder than the air in the weighing chamber.	Weighing operation with test weight does not show this effect.	Bring weighing sample to room temperature before weighing.
	5. Balance has not yet reached thermal equilibrium.	• Was there a power outage? • Was the AC adapter unplugged (balance, socket)	Acclimatize balance for approx. 2 hours.
	6. Internal adjusting weight is jammed.	Actuate the adjustment motor from Service Mode or LARS. The weight display changes and becomes stable.	Insert adjustment weight correctly (see Section 3.3, Chapter 6).
	7. Detector soiled or faulty.		Check, replace (see Section 6.1.1, Chapter 6).
	8. Magnet system soiled.		Clean magnet system (see Section 6.1.3, Chapter 6).
	9. Loose screws on the measuring cell.		Check correct seating of the screws.

2.5 Display shows overload or underload

Error symptom	Possible cause	Diagnostic	Remedy
Display shows overload or underload	**1.** Incorrect weighing pan.	Slightly lift or press weighing pan. The weight display appears.	Attach correct weighing pan.
	2. Missing weighing pan.		Attach correct weighing pan.
	3. Incorrect zero point at switch-on.		• Switch off balance. • Unplug power cable and plug in again.
	4. Incorrect TDNR.	Input TDNR in LARS «Data» «Type definition» and check whether the balance type matches	Load TDNR (see Section 3.4, Chapter 7).
	5. Weight support/adjusting weight are jammed.		see Section 3.3, Chapter 6
	6. Incorrect measuring cell built in.	Check whether the part number of the new measuring cell matches the respective balance (see Section 3, Chapter 6)	Build in correct measuring cell.
	7. Lever short-circuits to ground.	Measure the resistance between the coil contact and the measuring cell chassis. >100 kΩ o.k.	Replace lever (see Section 6.1.2, Section 6.2.1, Chapter 6).
	8. Balance PCB faulty.		Replace balance PCB (see Section 6.4, Chapter 6).
Display switches between overload and underload	Balance operated with test SW	Test SW with time-switch set to end at 1 Aug 2005	Sort termerror symptoms recoveries remedy: Set date to before 1.8.2005 Long term remedy: Load current Standard SW using e-loader

2.6 Display flashes «0.00000»

Error symptom	Possible cause	Diagnostic	Remedy
Display flashes «0.00000»	**1.** Lever cannot move freely, touches fixed parts.	• Switch off balance. • Unplug power cable. • Remove weighing pan. • Press lightly on pan support. Typical click of the measuring cell must be audible.	Check measuring cell.
	2. Ribbon cable not plugged into balance or faulty.	Check all cable connections on the balance PCB and cell PCB.	Plug in ribbon cable.
	3. Current-conducting strips are touching, badly soldered or broken.	Use measuring instrument to check continuity (ring through).	Replace current-conducting strips (see Section 6.2.1, Item 7, Chapter 6).
	4. Coil short-circuits to ground, short-circuits otherwise, or is interrupted.	Measure resistance.	Replace lever (see Section 6.1.2, Section 6.2.1, Chapter 6).
	5. Balance PCB faulty.		Replace balance PCB (see Section 6.4, Chapter 6).

2.7 Taring not possible

Error symptom	Possible cause	Diagnostic	Remedy
Taring not possible	**1.** Vibrations at the workplace.	• Press Tare again. • Display unstable.	see Section 2.4

2.8 Adjustment with internal calibration weights not possible

Error symptom	Possible cause	Diagnostic	Remedy
Internal calibration not possible	**1.** Weighing pan is loaded.	Check	Unload (empty) weighing pan.
	2. Dead load too small.		Check tolerance values in Service Mode and compare with tolerance table (see Chapter 9).
	3. Adjustment weight is jammed or outside the supporting position.	• Lower the internal weights from Service Mode or LARS. • If the display remains unstable, raise the internal weights and place external weights in position. If the display is stable the adjusting weight is jammed. If the display is unstable, see Section 2.3.	see Section 3.3, Chapter 6.
	4. Adjusting motor is faulty.	No sound from motor.	• Plug in cable to motor. • Replace motor PCB. • Replace motor.

2.9 Excessive hysteresis

Error symptom	Possible cause	Diagnostic	Remedy
Excessive hysteresis	**1.** Hair, dust fibers, or dirt between fixed and moving parts.		Check
	2. Detector soiled or faulty.		Check, replace (see Section 6.1.1, Chapter 6).
	3. Magnet system soiled.		Clean magnet system (see Section 6.1.3, Chapter 6).
	4. Loose screws on the measuring cell.		Check correct seating of the screws.

2.10 Corner load cannot be set

Error symptom	Possible cause	Diagnostic	Remedy
Corner load cannot be set	**1.** Excessive hysteresis.	Check hysteresis: • Touch empty weighing pan and raise slightly Display does not return to original value. • Place weight on pan and touch weighing pan without moving weight.	see Section 2.9
	2. Corner load coarse adjustment was not done.		Perform coarse adjustment (see Section 7.2, Chapter 6).

2.11 Linearity cannot be adjusted

Error symptom	Possible cause	Diagnostic	Remedy
Linearity cannot be adjusted	**1.** Incorrect switch-on zero point.		• Switch off balance. • Unplug power cable and plug in again.
	2. Excessive hysteresis.		see Section 2.9
	3. Corner load too high.		Check, adjust (see Section 7.2, Chapter 6).
	4. Balance PCB faulty.		Replace balance PCB (see Section 6.4, Chapter 6).
	5. Adjustment parameters outside permitted range.	-	Reload cell data (see Chapter 7).
	6. Incorrect coarse adjustment.	Perform CAL (Service menu or LARS).	Mandatory sequence of adjustments: • CAL • LIN • Std CAL • CAL

6 Repair

List of Contents

1 Preparing the Balance for Repair

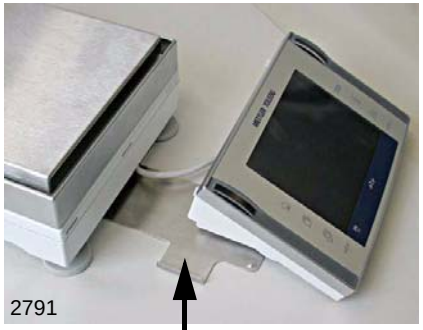
WARNING

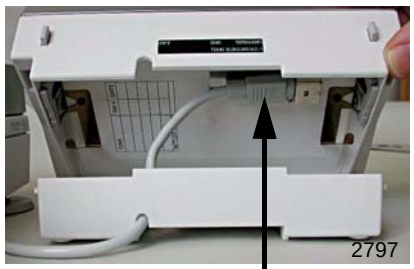
Hazard from electric current.

Unplug power supply cable before starting work on scale or Terminal.

1.1 Separate Terminal from Platform

1.1.1 PPT Terminal S and M platform





1 Lift the Terminal out of the Terminal holder **A**.

Note

Do not scratch the display. Do not place the Terminal on the edges of the Terminal holder. Protect the display with a soft cloth.

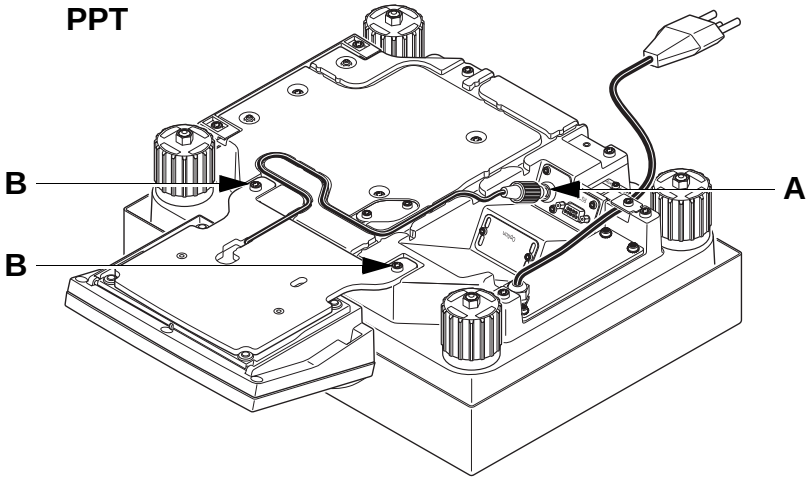
2 Pull out the Terminal holder **A**.

3 Swivel the Terminal adjustment unit upward.
Press both locking buttons **B** simultaneously. The adjusting foot swivels up.

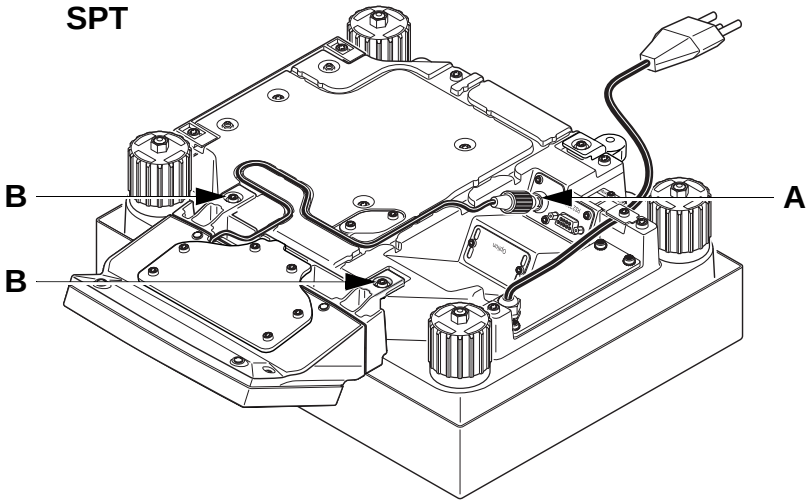
4 Unplug Terminal cable **C** and pull back through the hole.

1.1.2 PPT/SPT Terminal L platform

PPT



SPT



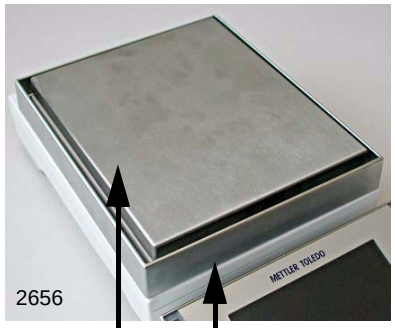
1 Disconnect Terminal Cable **A**.

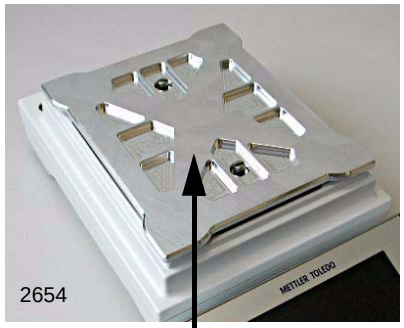
Note

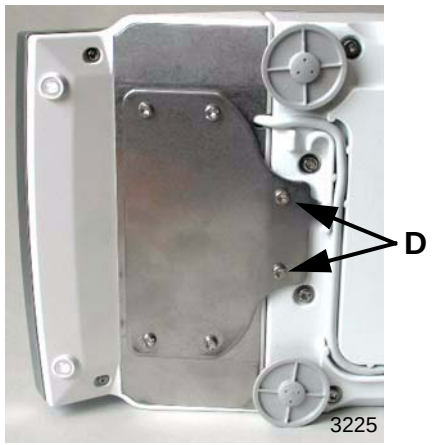
Protect the display with a soft cloth in order not to scratch it.

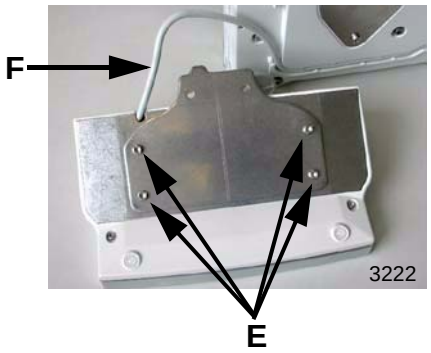
2 Unscrew the Terminal (2 screws **B**) from the Housing Bottom.

1.1.3 SPT Terminal S and M platform









1 Remove draft shield element **A** weighing pan **B** and platform support **C**.

2 Turn balance on its side.

3 Unscrew and remove screws **D**.

Note

Hold the terminal firmly while unscrewing and removing screws **D**.

4 Lift terminal cable out of groove.

5 Place the terminal in front of the platform with its display facing down.

Note

Do not scratch the display. Protect the display with a soft cloth.

6 Unscrew and remove screws **E**.
- Lift off the connecting plate and cover plate.

7 Unplug terminal cable **F**.

1.2 Remove draft shield/draft shield element and weighing pan

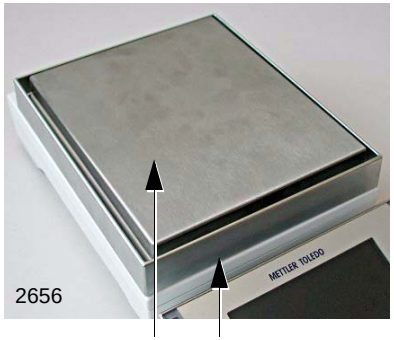
1.2.1 Balance with draft shield «Magic Cube»

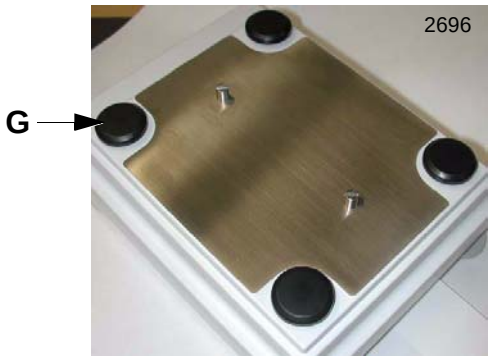
1. Open door top of draft shield.
2. Remove U-glass **A** and put aside.
3. Remove weighing pan **B** and pan support **C**.
4. Close door top and remove complete draft shield.

1.2.2 Balances with draft shield with sliding doors

1. Open sliding doors of draft shield.
2. For rectangular weighing pans:
   - Remove weighing pan, element and pan support or element.
3. For round weighing pans:
   - Remove weighing pan , and pan support.
4. Close sliding doors and remove complete draft shield.

1.2.3 Balance with/without draft shield element





1 Remove draft shield element **A** and weighing pan **B**.

2 Remove pan support **F** and the four pan mounts **G**.

Note

The pan support can become jammed on the cone (Xxx4, Xxx3). The pan support can be removed by lightly moving it backward and forward.

2 Removing the components

2.1 Important Note

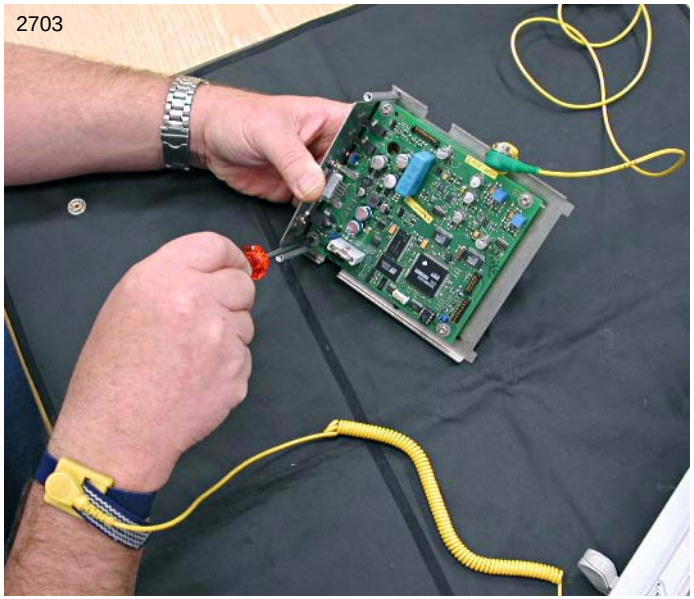
All repairs described are for an «S» type balance, platform, weighing cell.

A special notation is provided if different procedures are needed for repairing other balance types («M») and their variants.

For example:

- Balance types S and M with cone support

2.2 Working on Electrostatic Sensitive Devices



WARNING

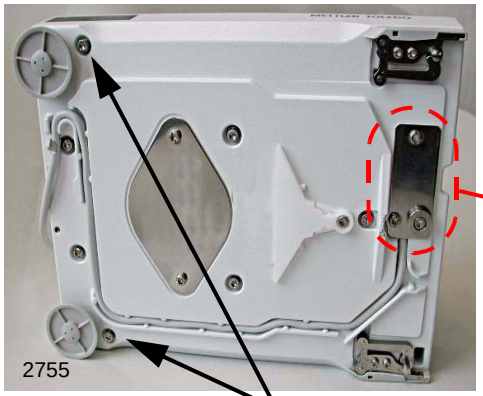
Electrostatic sensitive devices

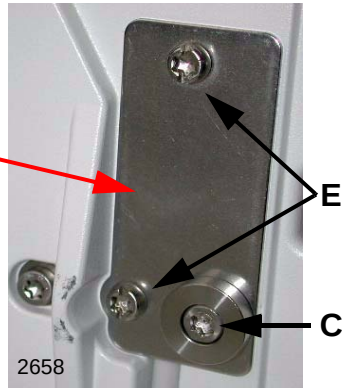
Always use antistatic kit when working on electronic components (see Section 1, Chapter 11).

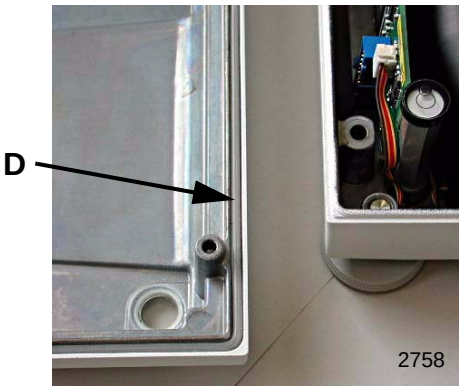
- When removing and installing the Weighing cell, neither the detector board nor the cable contacts may be touched.
- If no workplace with ESD protection is available, always touch the bottom housing or any other metal part of the balance before any contact with the electronics. Following this action, the board and the balance are at the same electrical potential as the person performing the work.
- Boards which are returned for repair must be packaged in the original antistatic packaging regardless of the fault.
- EEPROMs kept outside the balance must be stored on conductive foam.
- If soldering work is performed on the boards, a soldering iron isolated from the power supply (isolating transformer) is recommended.

Components which are sensitive to electrostatic discharge are marked with an ESD protection symbol.

2.3 Open Platform







Separate Terminal from Platform see Section 1.1

Remove draft shield/draft shield element and weighing pan see Section 1.2.

1 Tip the Platform onto its side.

2 Unscrew and remove screws **B** and **C** (Torx M4 x 40).
- Screws **B** with washers.
- Screws **C** without washers.

3 Stand Platform on its feet and remove cover.

Note

The inserted seal **D** can tear when removing the cover. Also replace the distorted housing seal.

Spare part see Section 4, Chapter 3.

Do not unscrew screws **E**.

2.3.1 Remove protective cover

Balance types «S» and «M» with cone support.

1 Slacken screws **A** (Torx M3 x 6) on the protective cover.

2 Push protective cover lightly in direction of arrow and lift off.

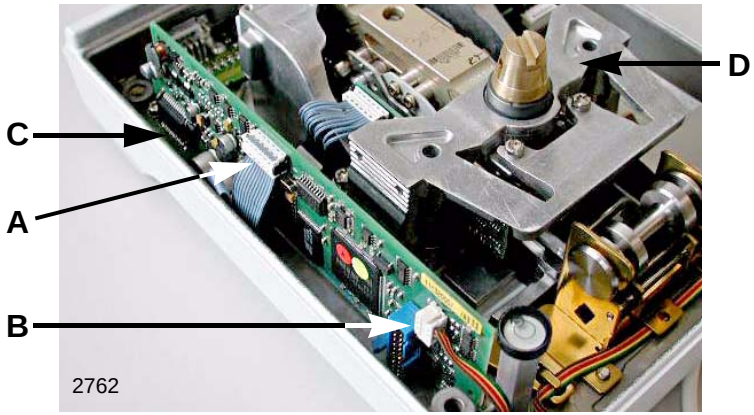
2.4 Remove «MonoBloc» Weighing cell with calibration drive

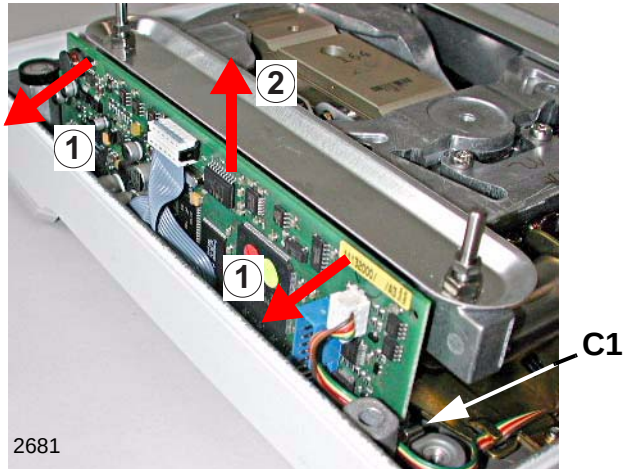
WARNING

Electrostatic sensitive devices.

Always use antistatic kit when working on electronic components (see Section 2.2).

2.4.1 Remove Platform PCB





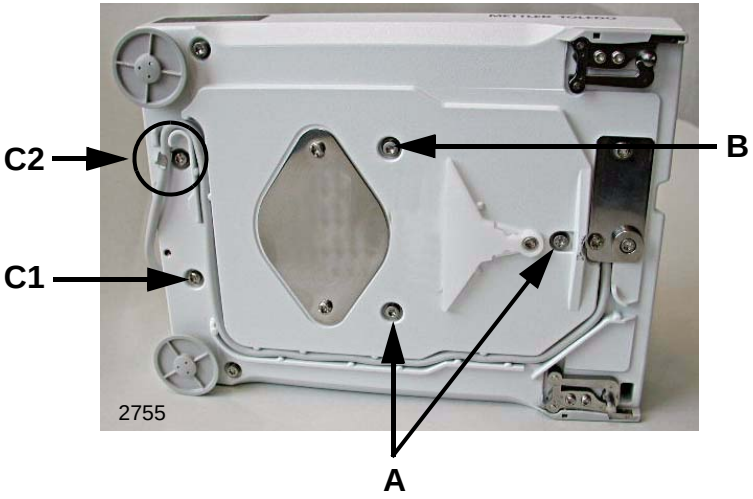
Open Platform see Section 2.3

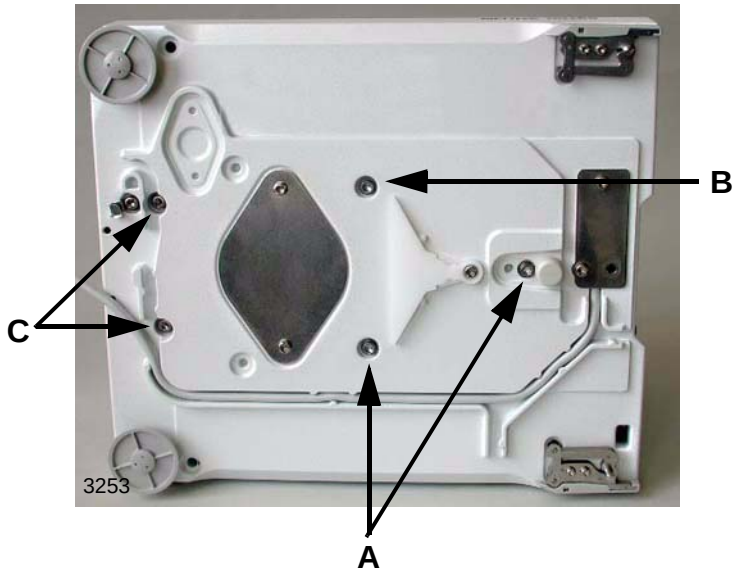
1 Unplug plugs **A** and **B** from the Platform PCB.

2 Carefully pull the Platform PCB up and out of the plug connection **C** to the backplane PCB. Press clip **C1** outward.

Note

On Platforms with 4-point support, tip the Platform PCB lightly outward (arrow1) and pull up (arrow2) and out of the plug connector **C**.





2.4.2 Remove Weighing cell

1 Remove Platform PCB (see Section 2.4.1).

2 Tip the platform onto its side.

3 Hold the weighing cell on the supporting section.

Balance Type «S»

4 Unscrew and remove five screws on the underside.
- Screws **A** and **B** (Torx M4 x 12)
- Screws **C1** and **C2** (Torx M4 x 6)
  Screw **C2** with Cable holder.

Balance Type «M»

4. Unscrew and remove five screws on the underside.
- Screws **A** and **B** (Torx M4 x 12)
- Screws **C** (Torx M4 x 6)

Note

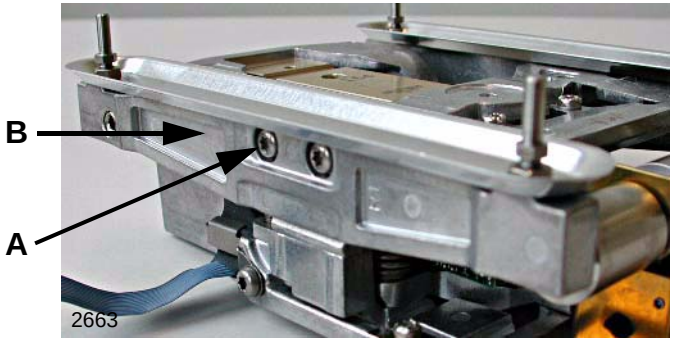
At first, only slacken screw **B**. Unscrew and remove screws **A** and **C** or **C1, C2**. When unscrewing screw **B**, take care that the bottom housing does not tip.

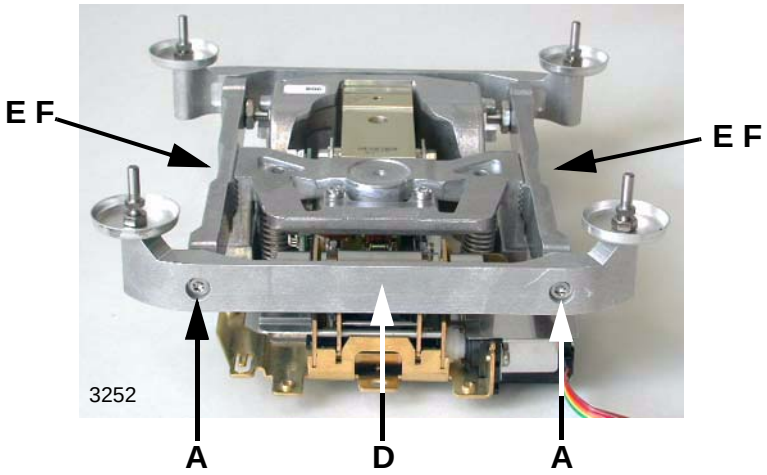
5 Stand the bottom housing on its feet. Lift the «MonoBloc» Weighing cell out of the bottom housing.

Note

The «MonoBloc» Weighing cell cannot be laid flat on a level surface because the hook for below-the-balance weighing projects underneath.

2.5 Separate «MonoBloc» Weighing cell from calibration drive





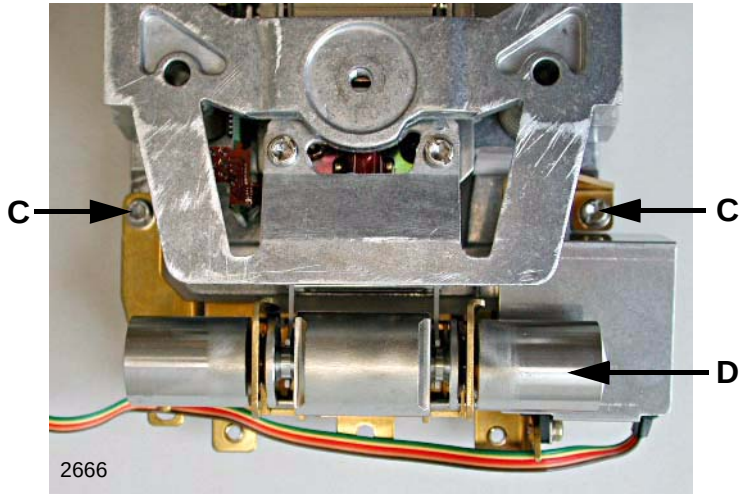
Remove «MonoBloc» Weighing cell with calibration drive see Section 2.4.

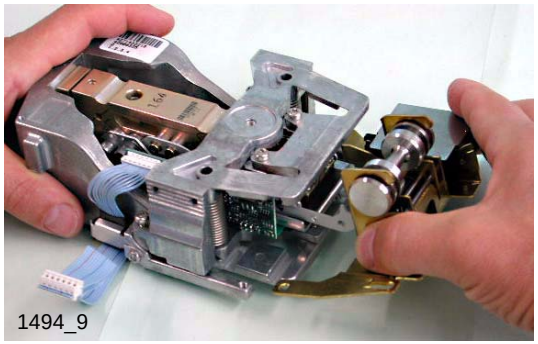
Balance types «S» with 4-point support

1 Unscrew and remove screws **A** (Torx M4 x 12).
2 Remove 4-point support **B**.

Balance types «M» with 4-point support

3 Unscrew and remove screws **C** (Torx M4 x 12).
4 Remove both connectors **D**.
5 Unscrew and remove screws **E** (Torx M4 x 8).
6 Remove both sides of 4-point support **F**.





All balance Types

1 Unscrew and remove screws **C** (Torx M4 x 8).

2 Hold the «MonoBloc» Weighing cell on the supporting section.

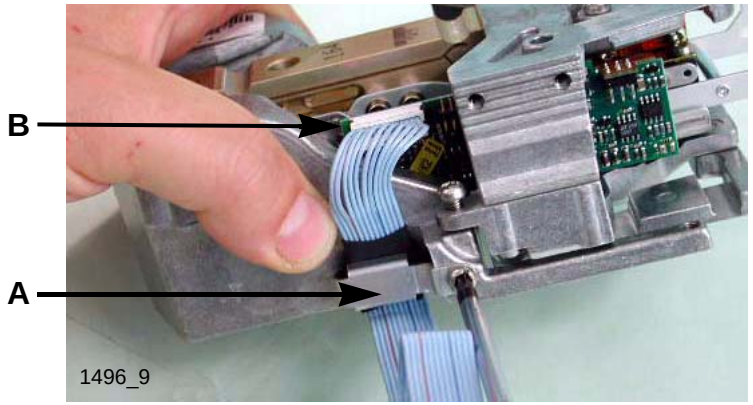
3 Lift the calibration drive and separate from the «MonoBloc» Weighing cell.

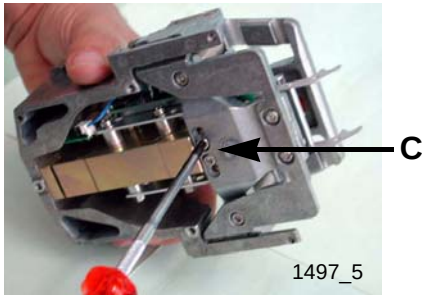
Note

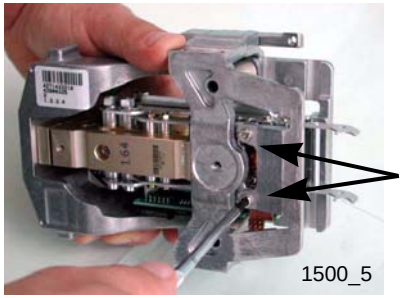
Never touch the weight **D** with bare hands.

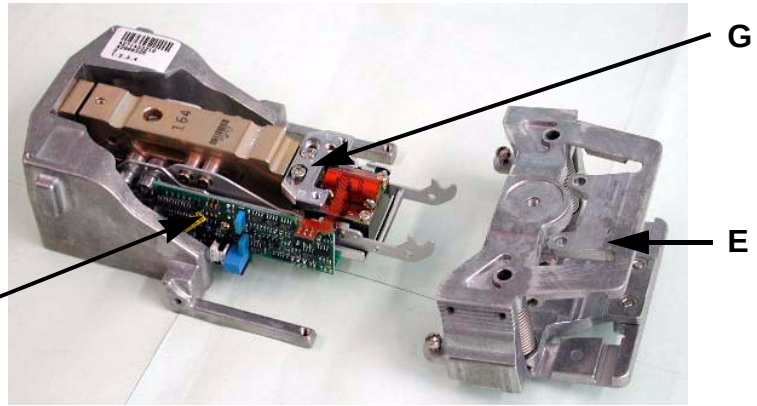
If the calibration weight has been touched, clean it with alcohol.

2.6 Remove overload protection





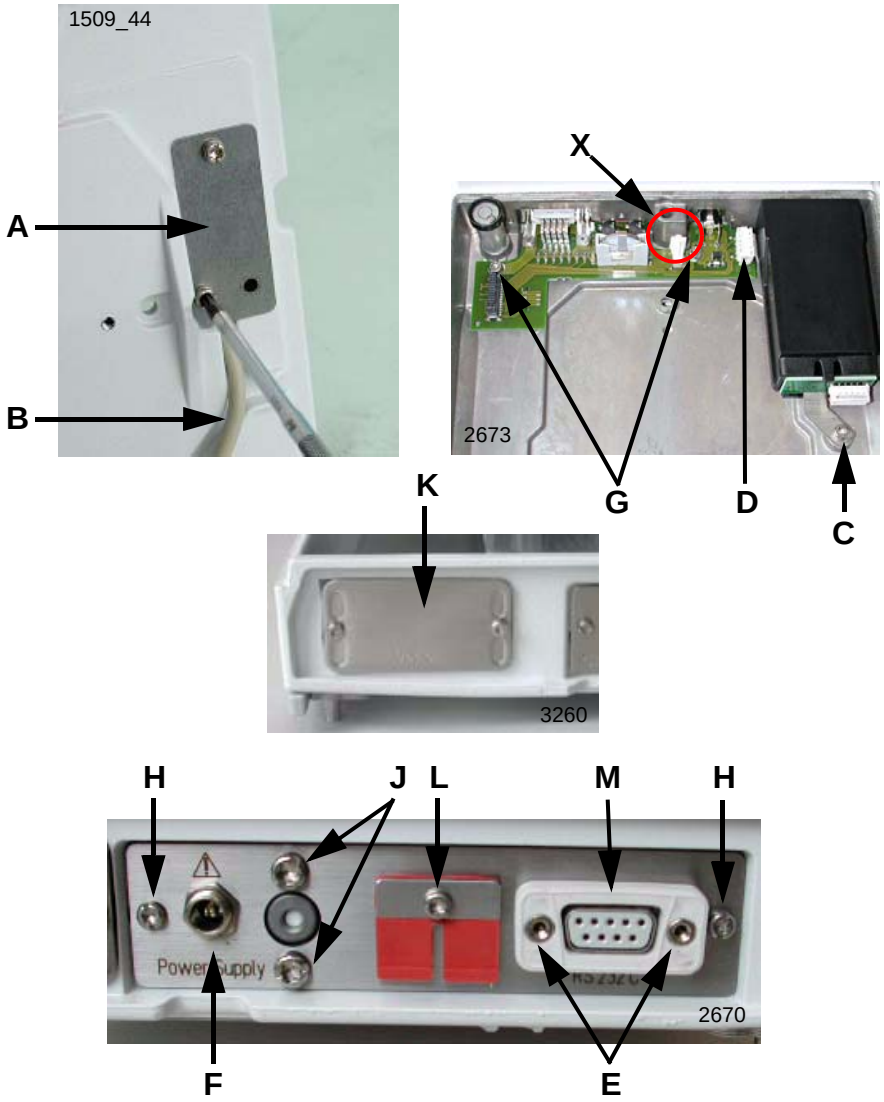




Separate «MonoBloc» Weighing cell from calibration drive see Section 2.5.

1. Release holder **A** for ribbon cable and unplug ribbon cable from cell PCB **B**.
2. Unscrew and remove screws **C** (underneath, Torx M4 x 10) and screws **D** (on top, Torx M4 x 10).
3. Carefully pull off the overload protection **E** to the side. Do not damage the cell PCB **F**.
4. Unscrew and remove holder **G**.

2.7 Remove backplane PCB and rear panel



Remove «MonoBloc» Weighing cell with calibration drive see Section 2.4.

Remove backplane PCB

1. Unscrew and remove the cover **A** on the underside of the Platform and unplug the Terminal cable **B**.
2. Unscrew and remove screw **C** (Torx M4 x 6) to release the interface holder.
   If an option is installed, remove this first. Otherwise, remove cover plate **K**.
3. Unplug the interface cable **D** from the backplane PCB.
4. Unscrew and remove nuts **E** from the RS232 socket.
5. Unscrew and remove nut **F** from the power supply socket.
6. Unscrew and remove screws **G** (Torx M4 x 6) and remove the backplane PCB.

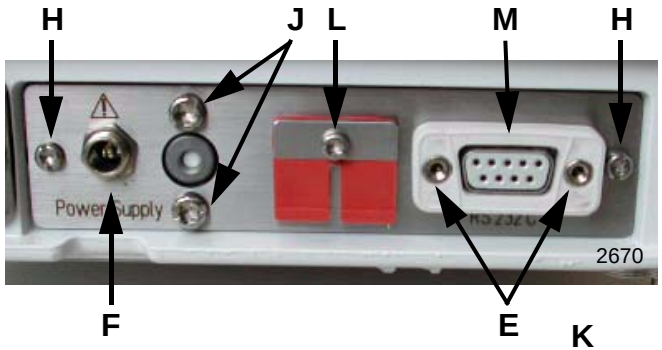
Note

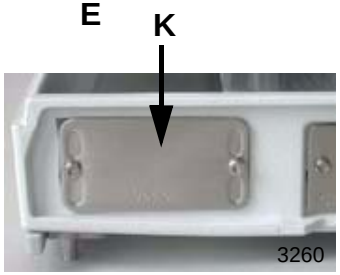
The certification pin **X** can easily fall out of the guide. Remove rear panel.

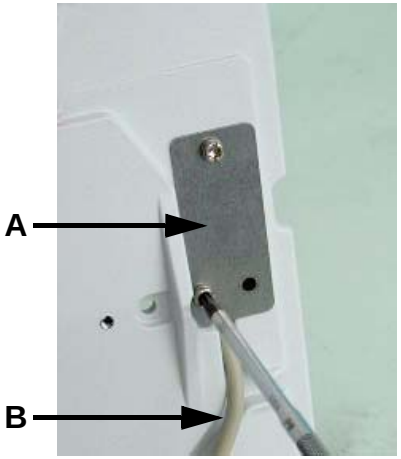
1. Unscrew and remove cover of RS232 socket.
2. Pull seal **M** off the RS232 socket.
3. Unscrew and remove nuts **E** from the RS232 socket.
4. Unscrew nut **F** from the power supply socket.
5. Unscrew and remove screws **H** (Torx M3 x 6), **J** (Torx M4 x 6)and **L** (Torx M3 x 6) and remove the rear panel.

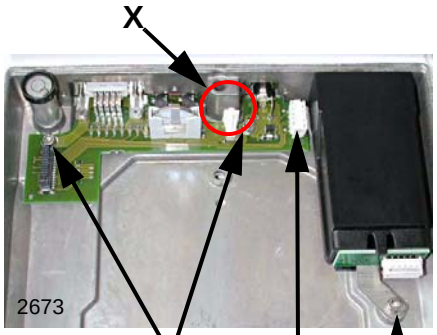
3 Installing the Components

3.1 Install rear panel and backplane PCB









Install rear panel

1 Insert rear panel and fasten with screws **H** (Torx M3 x 6), **J** (Torx M4 x 6) and **L** (Torx M3 x 6).

2 Screw nut **F** onto the power supply socket.

3 Screw nut **E** onto the RS232 socket.

4 Place seal **M** over the RS232 socket.

5 Screw cover onto the RS232 socket.

Install backplane PCB

6 Check that the certification pin **X** is inserted.

7 Insert backplane PCB.

8 Screw nut **F** onto the power supply socket.

9 Screw nuts **E** onto the RS232 socket.

10 Backplane PCB fasten with screws **G** (Torx M4 x 6).

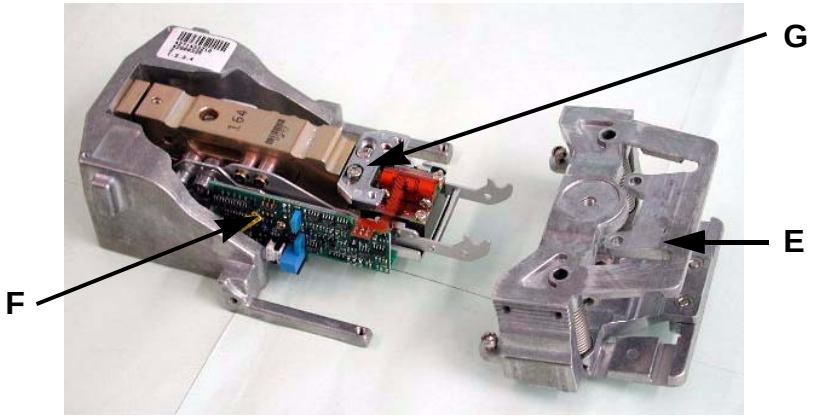
11 Insert options cable **D** into the backplane PCB.

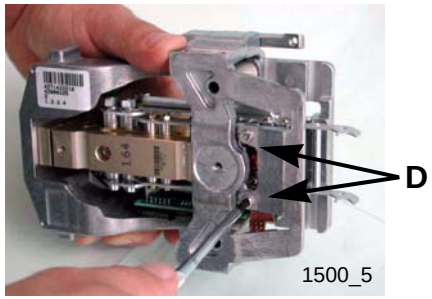
12 Fasten interface holder by screwing in screw **C** (Torx M4 x 6).
If an option had been inserted install it, or close the interface holder with Cover **K** (screws UNC4-40x4).

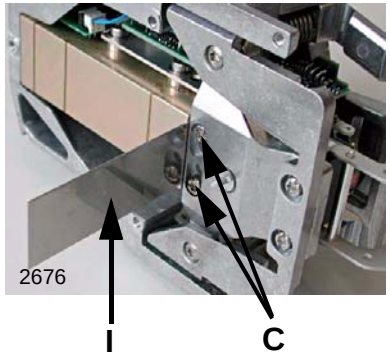
13 Plug in Terminal cable **B** and screw cover **A** tightly onto the underside of the Platform.

14 If a new battery has been installed, set new battery expiry date in LARS (+ 5 years). See also Section 3.8.

3.2 Install the overload protection







1 Screw holder **G** tight. Align with 0.5 mm spacer strip **I**.

2 Carefully push overload protection **E** into position and align. Do not damage cell PCB **F**.

3 Insert screws **C** (Torx M4 x 10). Do not tighten.

Align

To align the overload protection **E** parallel to the «MonoBloc», before tightening the screws **C** (Torx M4 x 10) insert the 0.5 mm spacer strip **G** as shown at left.
Align the overload protection symmetrically by eye.

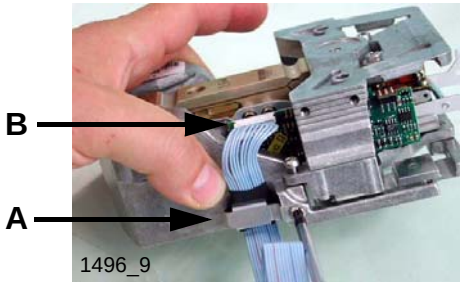
4 Fasten screws **C** tight.

5 Screw in screws **D** (Torx M4 x 10).

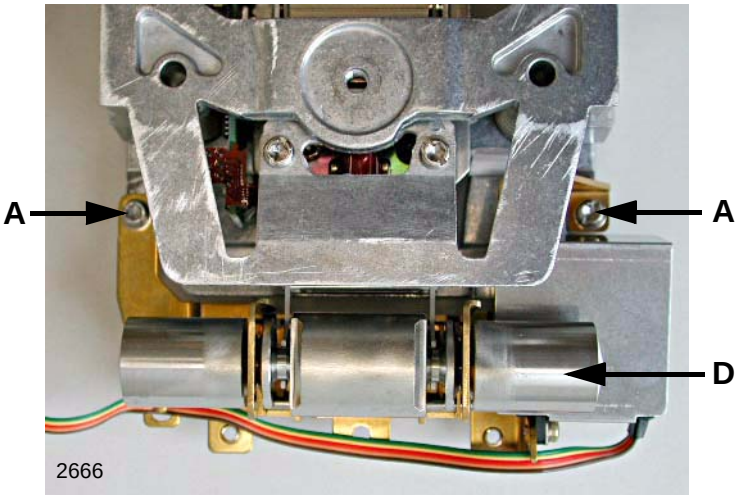
6 Remove spacer strip **I**.

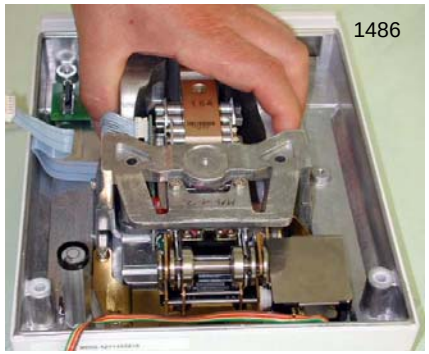
7 Plug ribbon cable onto the cell PCB **B**.

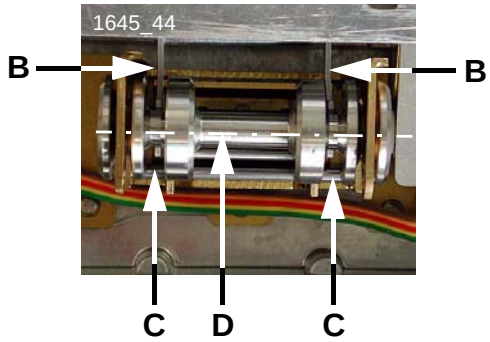
8 Fasten ribbon cable with holder **A**.



3.3 Assemble «MonoBloc» Weighing cell and calibration drive







1 Insert calibration drive into the «MonoBloc» Weighing cell.

Note

The calibration drive rests on the hanger **B** of the «MonoBloc» Weighing cell. Do not press.

2 Insert screws **A** (Torx M4 x 8). Do not tighten.

3 Insert the «MonoBloc» Weighing cell with the calibration drive into the bottom housing. Hold only by the Shackle. Do not fasten screws.

4 Align calibration drive with «MonoBloc» Weighing cell:

- Longitudinal axis
  Hangers **B** must lie centered in the groove **C** of the calibration weight **D**.
- Transverse axis
  The center line **D** of the calibration weight must lie centered in the openings of hanger **B**.

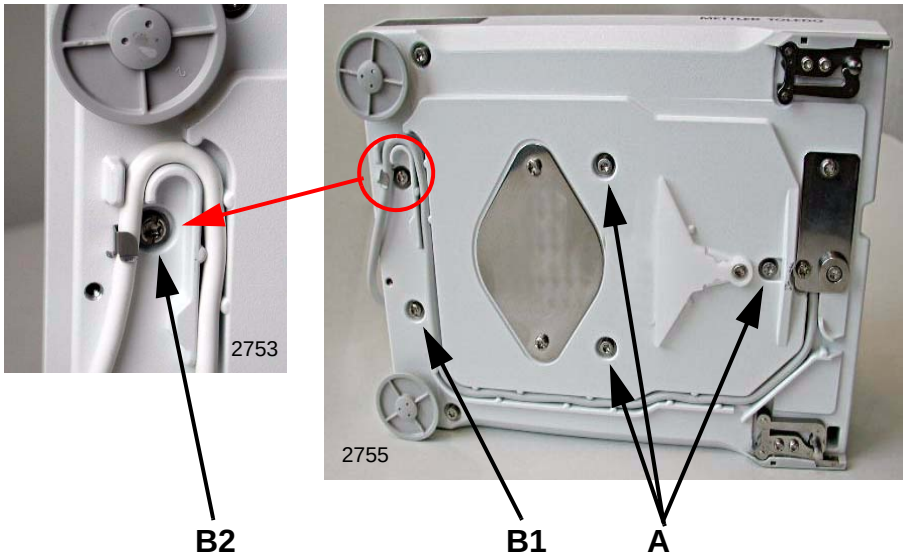
5 Lower the calibration weight.

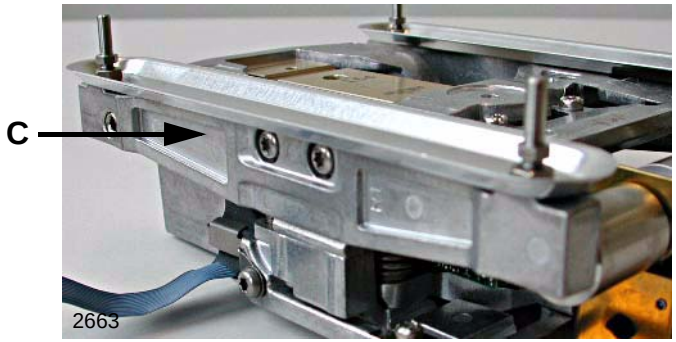
- To do this, the balance must be electrically complete and connected to the power supply.
- The calibration weight must be lowered into the hangers **B** with no displacement either longitudinally or laterally.

6 Fasten screws **A** tight.

3.4 Install «MonoBloc» Weighing cell with calibration drive

3.4.1 Balance types «S» install Weighing cell





1 Hold Platform by the shackle of the Weighing cell and tip to the side.

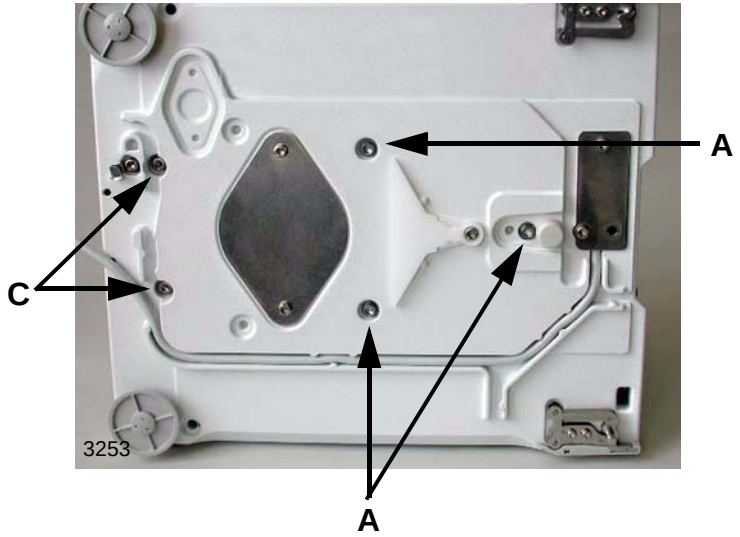
2 Screw in five screws. **Do not screw tight.**
- Screws **A** with spring washer (Torx M4 x 12)
- Screws **B1** and **B2** with spring washer (Torx M4 x 6)
  Screw **B2** with cable holder.

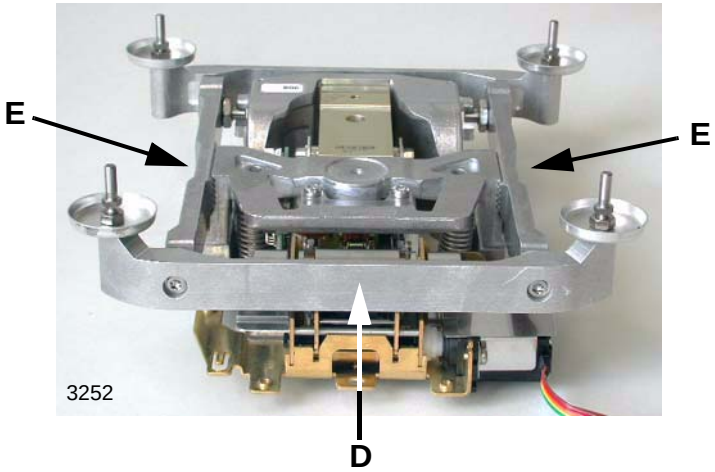
3 Align «MonoBloc» Weighing cell parallel to one edge of the bottom housing.
Only hold the «MonoBloc» Weighing cell by the shackle.

4 Tighten screws **A**, **B1, B2** (see Section 7.2.1).

5 Screw support **C** tight.

3.4.2 Balance types «M» install Weighing cell





1 Hold Platform by the shackle of the Weighing cell and tip to the side.

2 Screw in five screws. **Do not screw tight.**
- Screws **A** with spring washer (Torx M4 x 12)
- Screws **B** with spring washer (Torx M4 x 6)
  Screw **B2** with cable holder.

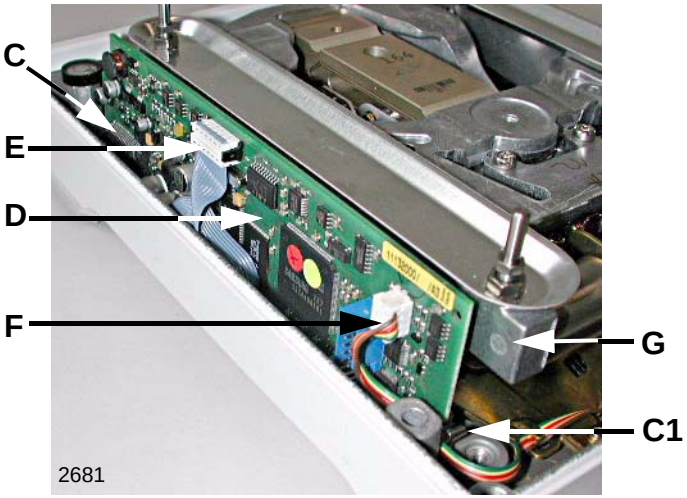
3 Align «MonoBloc» Weighing cell parallel to one edge of the bottom housing.
Only hold the «MonoBloc» Weighing cell by the shackle.

4 Tighten screws **A** and **B** (see Section 7.2.1).

5 Fasten both sides of 4-point support **E** with screws.

6 Fasten connectors **D** with screws. with 4-point support

3.4.3 Install Platform PCB



1 Insert Platform PCB **D**, plug connector **C** and clip **C1**.

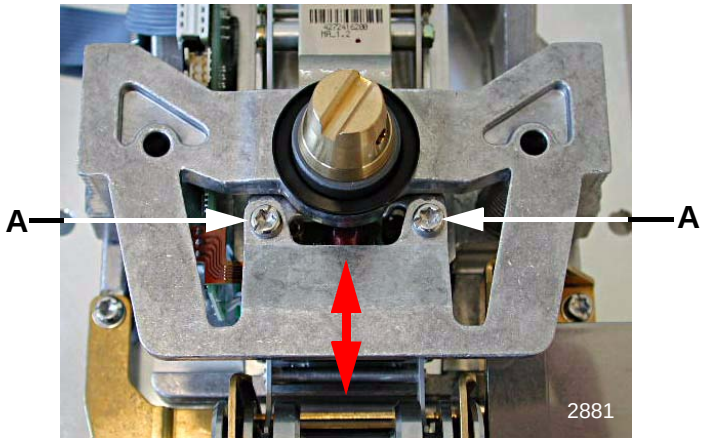
2 Plug plugs **E** and **F** onto the Platform PCB.

Note

New Platform PCB - Load Data see Section 4.3, Chapter 7

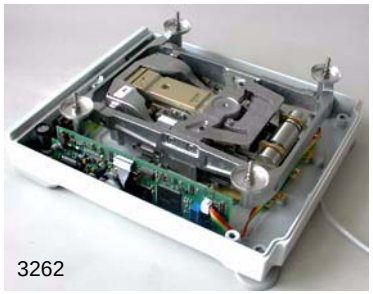
3.4.4 Adjust horizontal position of weighing pan

Balance types «S» and «M» with cone support



1 Slacken screws **A** then screw in again slightly.
2 Place pan support into position.
3 Visually check horizontal position of pan support relative to housing.
4 Lift pan support off and press lightly on overload protection (arrow) to adjust horizontal position.
5 Tighten screws **A**.
6 Visually check horizontal position of pan support.
7 Repeat adjustment if necessary.

Balance types «S» and «M» 4-point support



1 Place pan support on pan mounts.

2 Visually check the horizontal position of the pan holder relative to the housing.

3 Set the horizontal position by adjusting the four locating pins **C**.
After adjusting the locating pins, secure them with the locking nuts **D**.

4 Visually check the horizontal position of the pan support.

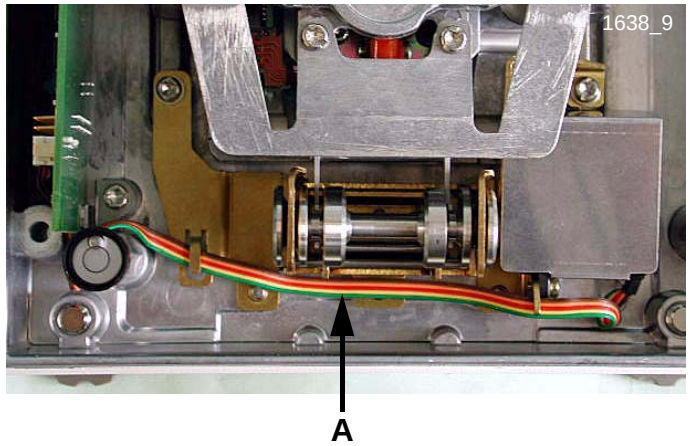
5 Repeat adjustment if necessary.

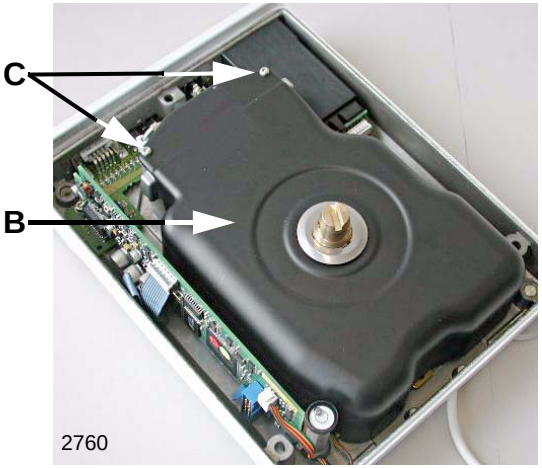
Note

Turn the pan support through 180° in horizontal plane. Check that the pan support rests on the pan mounts without wobbling.

3.5 Place protective cover into position

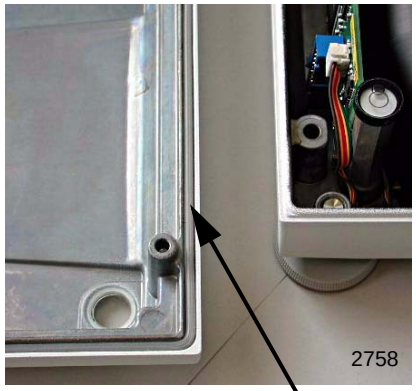
Balance types «S» and «M» with cone support.

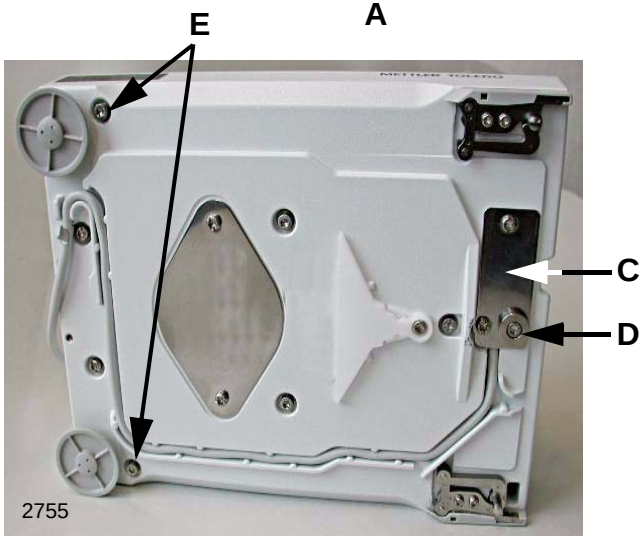




1. Install the ribbon cable **A** to the calibration drive as shown in the photo.
2. Place protective cover **B** into position.
3. Screw in screws **C** (Torx M3 x 8).

3.6 Close Platform





1 Insert seal **A** in groove of cover.

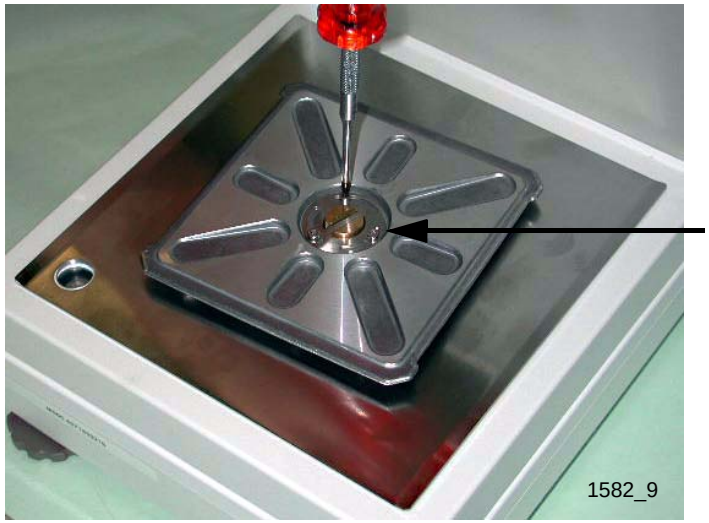
2 Place cover into position. Turn Platform on its side.

3 Screw in screws **B** and **C**:
- Screws **B** (Torx M4 x 40) without spring washer.
- Screws **C** (Torx M4 x 40) with spring washer.

Replace terminal cable, see Section 3.9

3.7 Adjusting pan support

Balance types «S» and «M» with cone support and rectangular weighing pan.



Adjust parallelism of weighing pan and Platform

1 Place pan support on cone.

2 (Visually) check parallelism of pan support to an edge of the Platform.

3 Adjust the parallelism
- Slacken three screws **A**
- Turn pan support
- Tighten screws **A**.

Align horizontally with housing

1 Level Platform with leveling screws.

2 Place pan support and weighing pan into position.

3 Check alignment of weighing pan to housing (no level indicator).

4 Adjust alignment (see Section 3.4.4).

3.8 Change Battery

ATTENTION

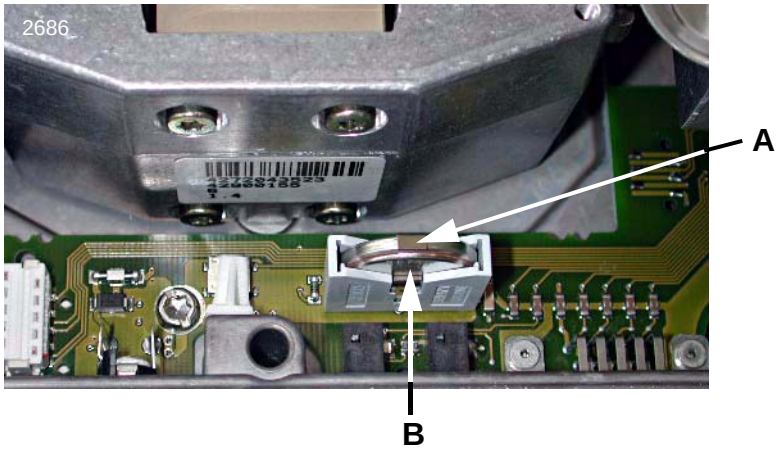
Hazard from electric current.

Unplug power supply cable before starting work on scale or Terminal.

WARNING

Electrostatic sensitive devices.

Always use antistatic kit when working on electronic components (see Section 2.2).



Note

- Replace battery every 5 years.
- After replacing it, set new battery expiry date in LARS (+ 5 years).

1 Open Platform see Section 2.3.

2 Press contact spring **A** slightly to the side and hold.

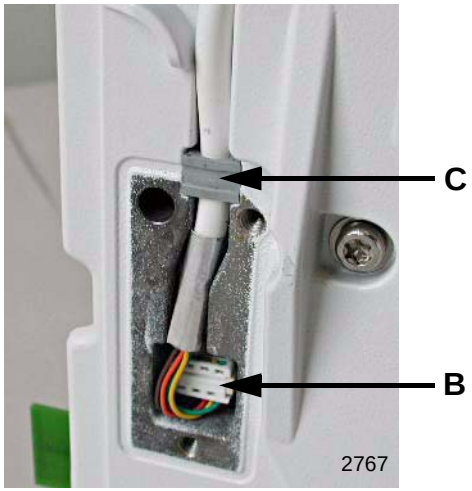
3 Change battery **B**.

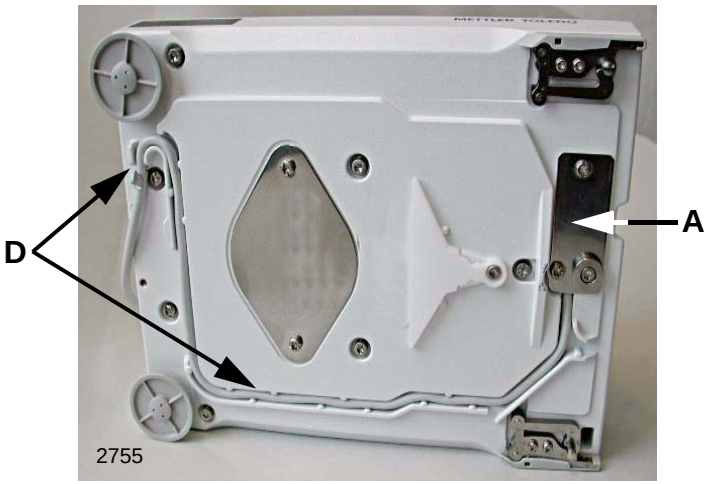
4 Secure battery with contact spring.

Note

Do not dispose of batteries with trash.
Batteries must be disposed of according to local national regulations.

3.9 Replace terminal cable





Separate Terminal from Platform see Section 1.1.

Remove draft shield/draft shield element and weighing pan see Section 1.2.

1 Tip the platform onto its side.

2 Unscrew plate **A**.

3 Unplug and replace terminal cable **B**.
- Carefully position seal **C** (photo).

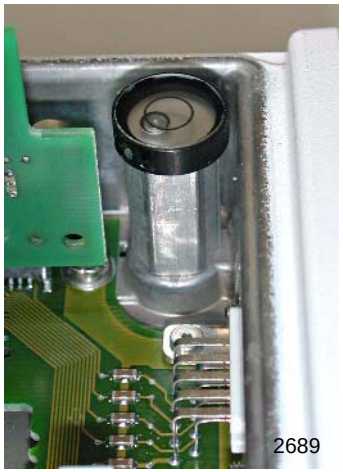
4 Put plate **A** into position and screw in.

Note

The seal on plate **A** must not be torn. Spare part, see Section 2, Chapter 3.

5 Insert terminal cable into groove D.

3.10 Remove level indicator

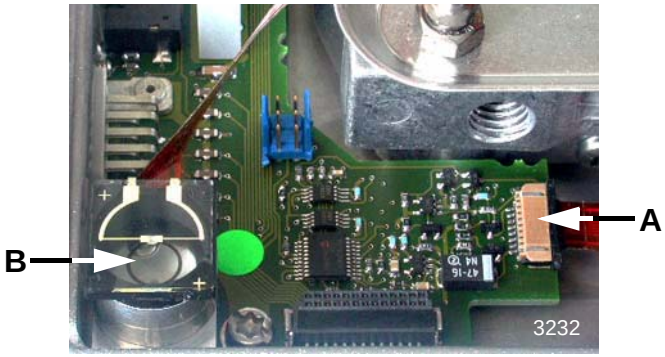


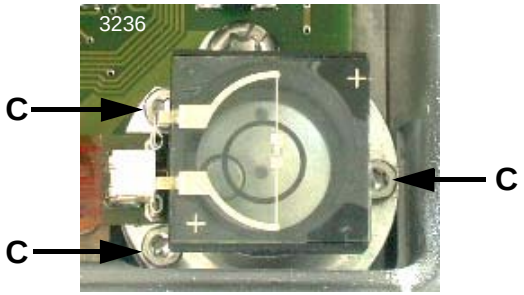
Open Platform see Section 2.3.

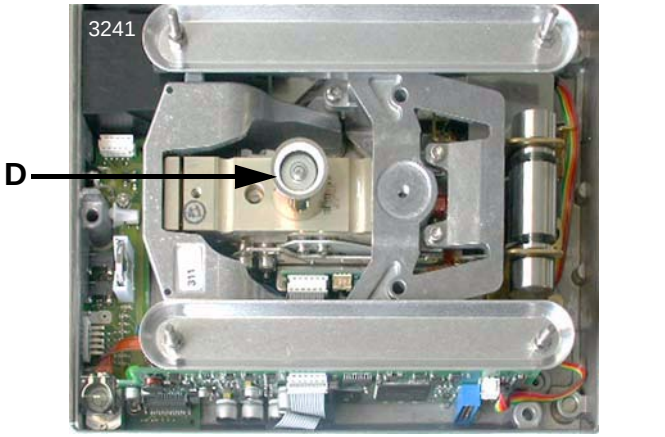
1. Remove level indicator. (**Avoid knocks**, they can destroy the «MonoBloc» Weighing cell.)
2. Completely clean the level indicator seating of all traces of grease and adhesive.
3. Place the test level on the «MonoBloc» and level the Platform. Remove the test level.
4. Install the new level indicator:
   - Apply a thin layer of adhesive.
   - Place the level indicator in position and align it so that the air bubble is in the center.

Close Platform see Section 3.6.

3.11 Replace tilt sensor







Open Platform see Section 2.3

Removal

1 Remove platform PCB (see Item 2.4.1).
2 Release fastener on plug connector **A**. Unplug ribbon cable.
3 Unscrew tilt sensor **B** (three screws **C**).

Installation

1 Insert new tilt sensor **B**.
- Screw in the three screws **C**, 2 revolutions each.

2 Plug in ribbon cable and fasten **A**.
3 Install platform PCB (see Item 3.4.2.)
4 Adjust tilt sensor.
- Place service level **D** on the monobloc.
- Level the platform by referring to the service level.
- Secure support feet.
- Adjust the tilt sensor by carefully turning the screws **C**. The air bubble must be in the center.
- Check. The air bubbles on the service level and the tilt sensor must be in the center.

5 Remove service level.

Close Platform see Section 3.6.

4 Repair draft shield

Draft shield «Magic Cube» see Section 4.1

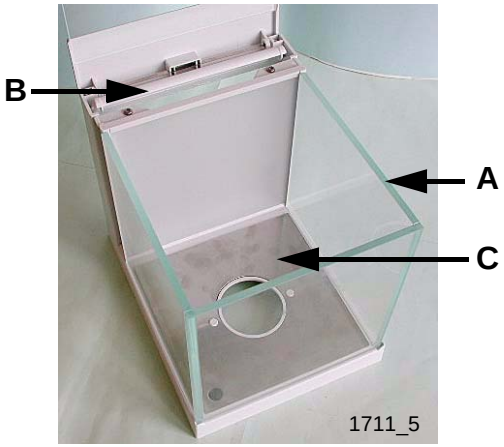
Draft Shield with Sliding Doors see Section 4.2

4.1 Draft shield «Magic Cube»

Spare parts see Section 3.1, Chapter 3

To replace the U-glass and side door if it has been inserted, it is not necessary to remove the draft shield from the Platform.

4.1.1 Dismantle draft shield



1 Remove draft shield from Platform.

2 Remove washer **A**.

3 If side door **B** is not inserted in the draft shield, remove it from its out-of-use position.

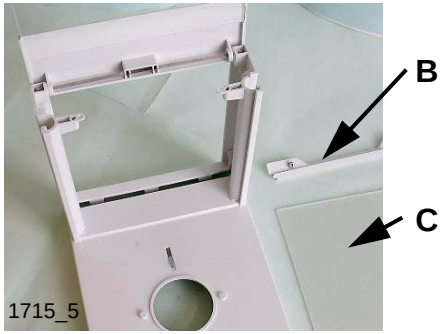
4 Remove base plate **C**.

4.1.2 Replace side door spring

1 Unscrew and remove screws **A** (Torx K40 x 12).

2 Lift side door spring **B** up and off.

4.1.3 Replace rear glass wall

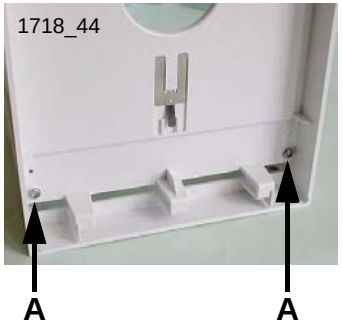


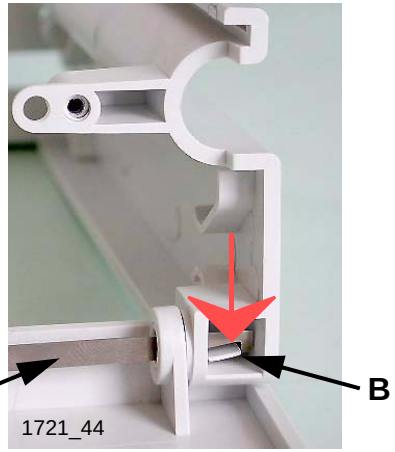
Replace side door spring **B** see Section 4.1.2

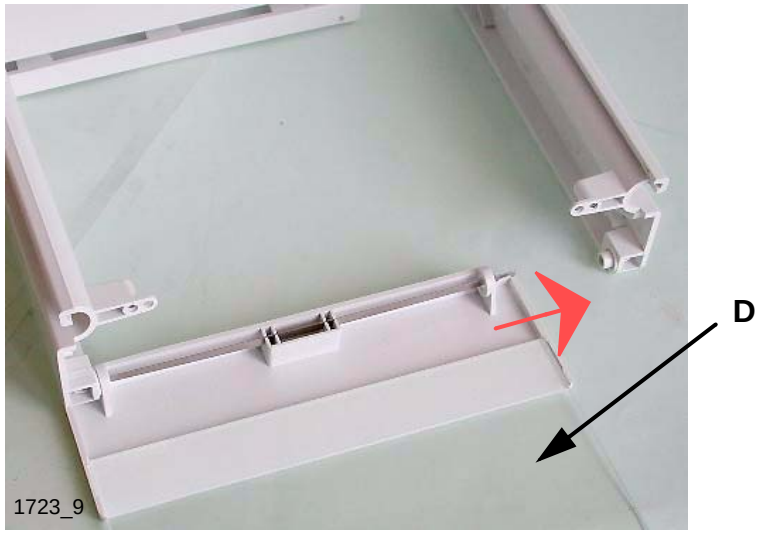
1 Pull rear glass wall **C** up and out of the side guides.

2 Insert new rear glass wall and fasten side-door spring with screws.

4.1.4 Replace top door







Replace side door spring see Section 4.1.2.

Replace rear glass wall see Section 4.1.3.

1 Carefully tip the draft shield toward the back.

2 Unscrew and remove one screw **A** (Torx K40 x 12) on the underside of the draft shield and thereby release the respective support.

Remove torsion spring

1 Press the lock **B** of the torsion spring **C** on the top of the released support in the direction of the arrow.

2 Pull the support sideways and off the torsion spring.

3 Pull the top door **D** off the fixed support along with the torsion spring **C**.

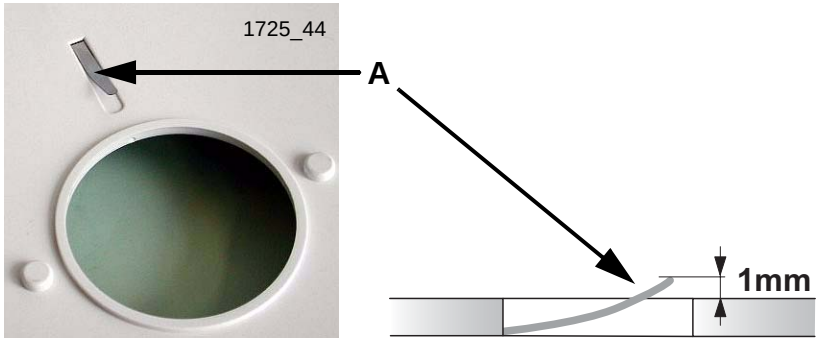
Install torsion spring

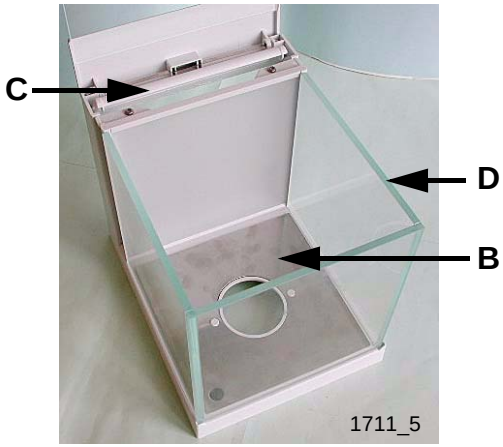
1 Insert the torsion spring **C** into the new top door **D**.

2 Insert the top door into the fixed support along with the torsion spring. The torsion spring must engage in the latch **B**.

3 Insert the removed support (latch **B** of the torsion spring must engage) and screw onto the underside of the draft shield **A**.

4.1.5 Assemble draft shield





1 Install side door spring (see Item 4.1.2) and rear glass wall (see Item 4.1.3).

2 Bend metal lug **A** (grounding) slightly upward.

3 Insert baseplate **B**.

4 Insert side door or place in out-of-use position **C**.

5 Place U-glass **D** in position.

Clean draft shield

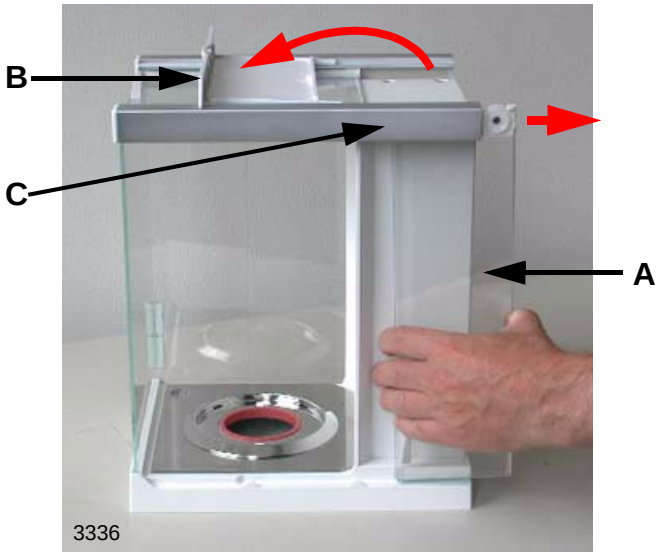
Remove finger marks from glass surfaces with normal commercial glass cleaner and a soft cloth.

4.2 Draft Shield with Sliding Doors

Spare Parts see Section 3.2, Chapter 3

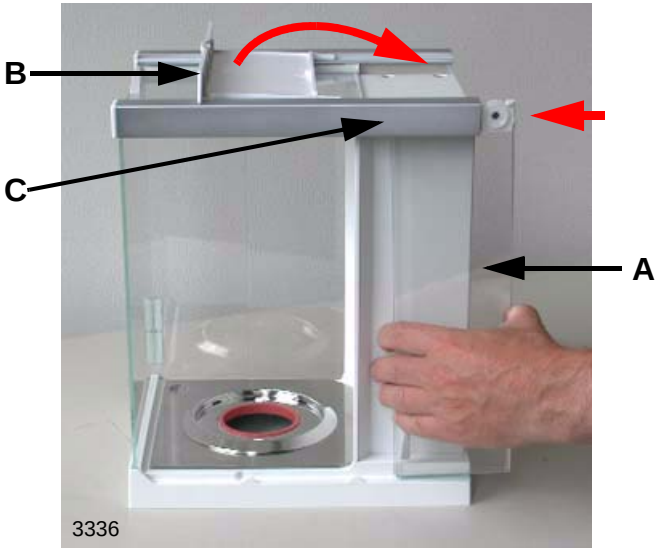
Remove the draft shield from the platform for all cleaning and repair work.

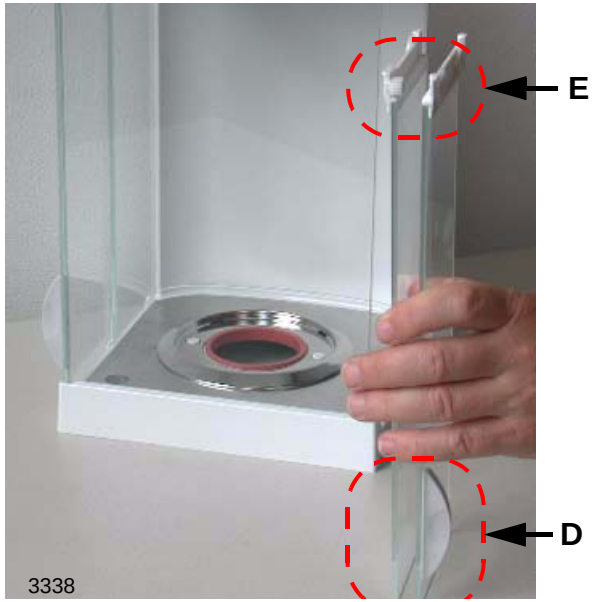
4.2.1 Replace sliding doors



Removal

1. Slide each sliding door **A** toward the «back» until it stops.
2. Tilt flap **B** to the «front».
3. Hold both parts of each sliding door and pull them out of the guide **C**.





Installation

1 Tilt flap **B** to the «front».

2 Hold together both parts of each sliding door **A**.
- Handle **D** outside, toothed wheel **E** inside.

3 Push both parts into the guide **C** together.
- Until they are felt to be stopped.

4 Tilt flap **B** towards the «back» and snap audibly into place.

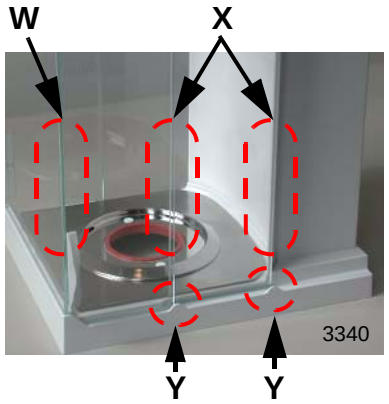
Check

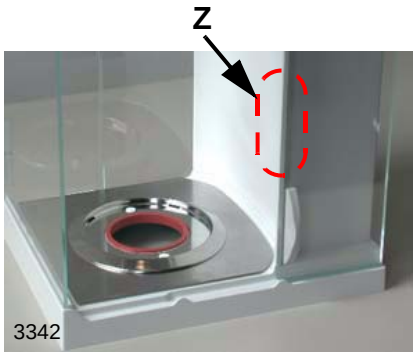
Close sliding doors:

- Closes flush with the front glass **W**.
- Both parts of the side glass and the rear panel overlap **X**.
- The side glasses are inside the projections **Y**.

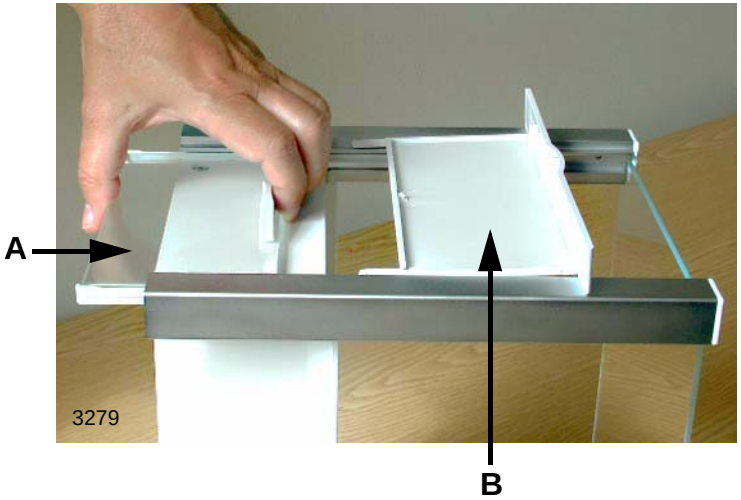
Open sliding doors:

- Both parts of the sliding doors and the rear panel must fit flush **Z**.





4.2.2 Replace top glass



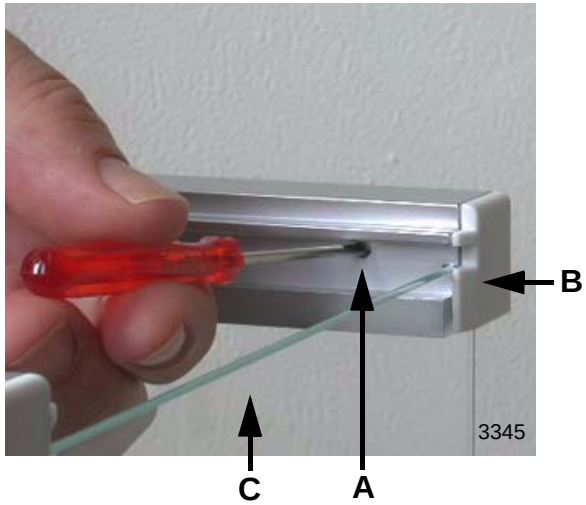
Removal

1 Push top glass **A** towards the «back» until it stops against flap **B**.
2 Tilt flap **B** towards the «front».
3 Hold both parts and pull them out of the guide.
4 Lift the parts away from each other.

Installation

1 Tilt flap **B** towards the «front».
2 Hold both parts of the top glass and push them into the guide.
3 Push in the top glass until it is next to flap **B**.
4 Tilt flap **B** towards the «back» and snap it audibly into place.
5 Close the top glass.

4.2.3 Replace front glass



1 Push top glass and sliding doors towards the "back" until they stop.

2 Press in cam **A** of cap **B**.
- With a blunt instrument.

3 Pull off cap **B** on both sides.

4 Lift up front glass **C**.

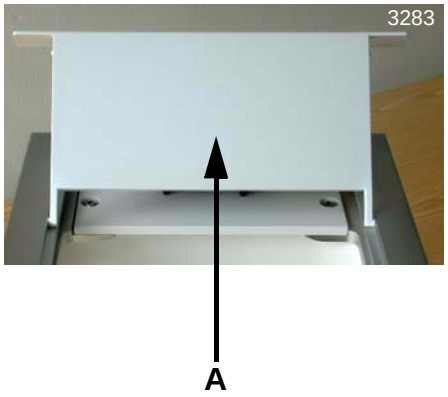
5 Insert front glass **C**.
- The front glass must fit exactly into the guide on the bottom.

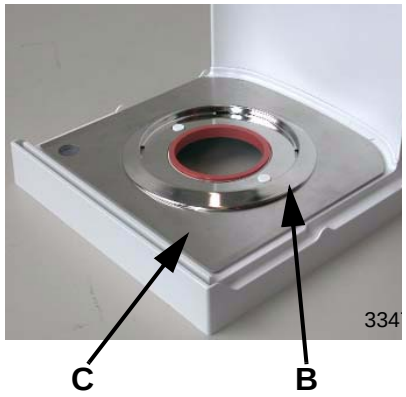
6 Insert cap **B** on both sides.
- Snap cam **A** into place.

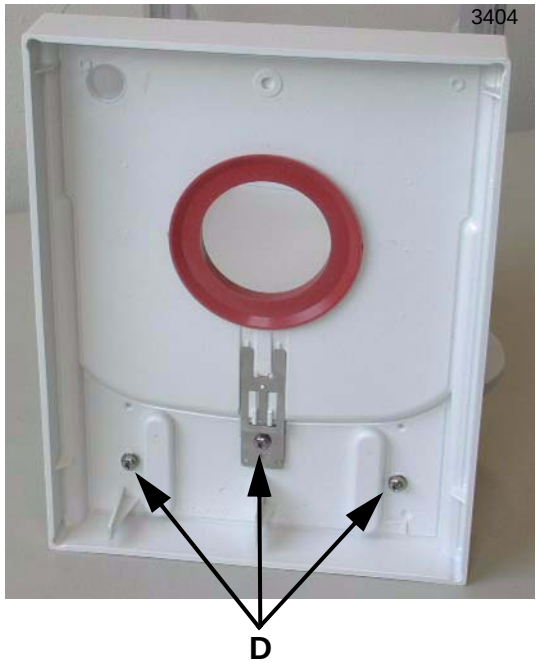
Check

- The side glasses must close against the front glass with no gap.
- The side glasses and top glass overlap the front glass.

4.2.4 Completely disassemble / reassemble the draft shield







Disassemble

Replace sliding doors see Section 4.2.1

Replace top glass see Section 4.2.2

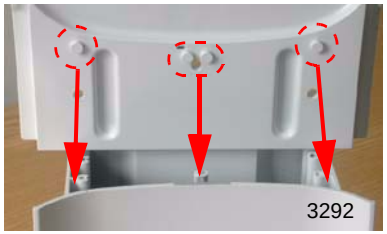
Replace front glass see Section 4.2.3

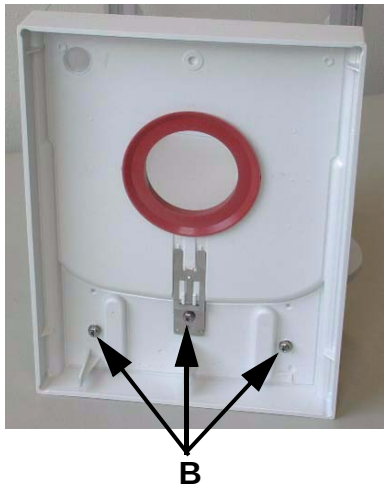
1 Take flap **A** off its hinges.
- Carefully press hinges toward each other and remove flap.

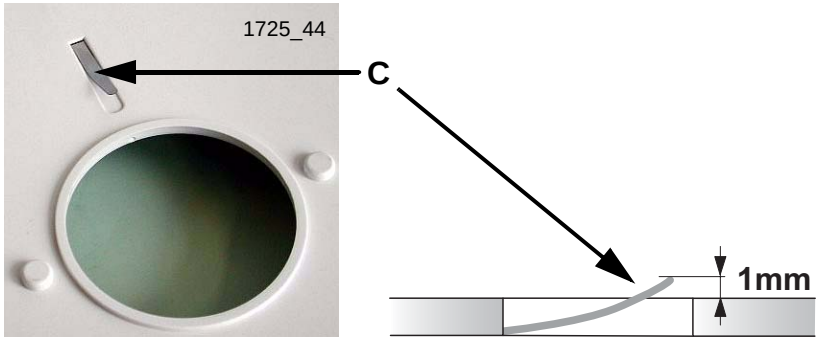
2 Remove draft shield element **B** and bottom plate **C**.

3 Lay draft shield on its rear panel.

4 Unscrew and remove screws **D** and separate the draft shield base from the rear panel.







Reassemble

5 Lay rear panel and draft shield base on a smooth surface and assemble.
- The pegs **A** fit into the profile of the rear panel and thereby center the base and rear panel.

6 Fasten base with screws.
- Screw in the 3 screws (Torx M4x10 with washer). Do not tighten.
- Align base and rear panel (check).
- Tighten 3 screws **B**.

7 Insert base plate.
- Bend metal strip **C** (grounding) slightly upward.

8 Insert ring seal.

9 Stand draft shield on its base and complete with draft shield element and all glasses.

5 Repair Terminal

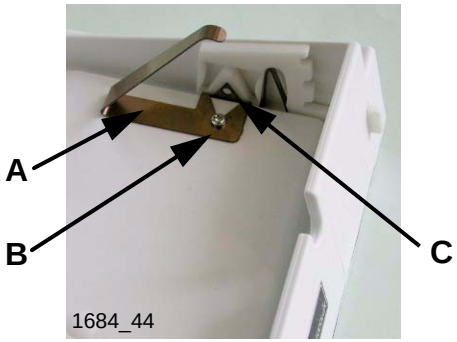
PPT Terminal see Section 5.1

SPT Terminal see Section 5.2

WARNING

Hazard from electric current.

Unplug power supply cable before starting work on balance or terminal.



5.1 PPT Terminal

Spare Parts see Section 2.1, Chapter 3

5.1.1 Prepare Terminal for repair

Separate Terminal from Platform (see Section 1.1).

5.1.2 Change the adjusting lever

Note

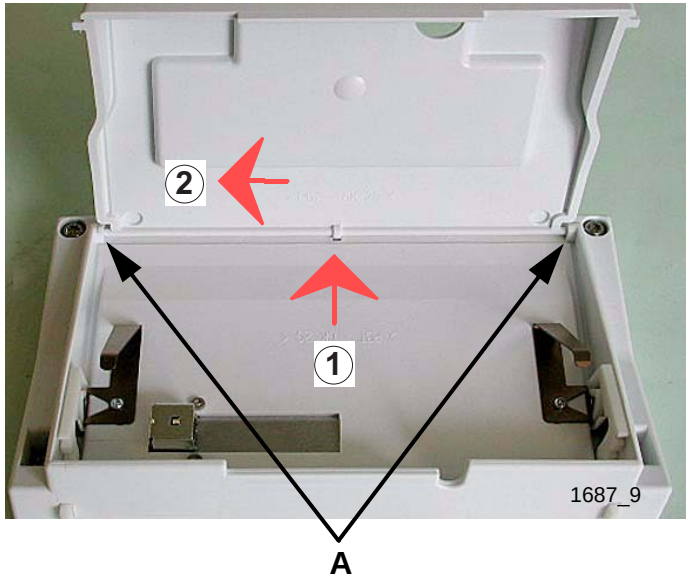
The latches **A** on the left and right have to be installed differently (Spare Parts see Section 2.1, Chapter 3).

1 Unscrew and remove screw **B** (Torx K25 x 6).

2 Remove latch and replace with new latch (metal spring and plastic part are supplied as spare-part set).
Plastic pin **C** must engage in the hole in the metal spring.

3 Screw in screw **B** (Torx K25 x 6).

5.1.3 Replace adjusting-foot plate



1 Completely open the Terminal.

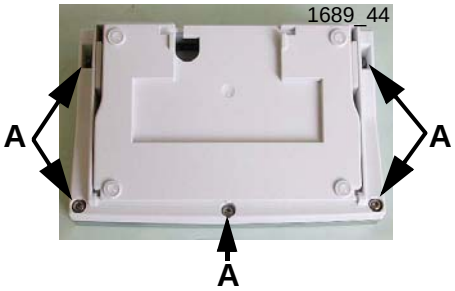
2 At the point indicated, press the adjusting-foot plate lightly outward and move it sideways.
The adjusting foot plate can then be released from the swivel points **A**.

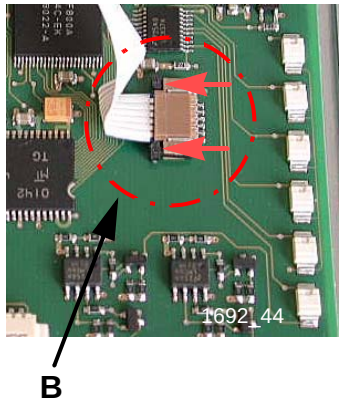
5.1.4 Open/close Terminal

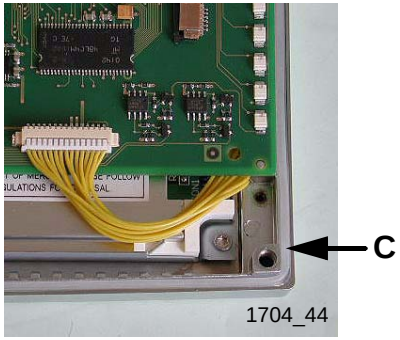
WARNING

Electrostatic sensitive devices.

Always use antistatic kit when working on electronic components (see Section 2.2).







Remove adjusting lever see Section 5.1.2.

Remove adjusting- foot see Section 5.1.3.

Open

1. Unscrew and remove the screws **A** (Torx M4 x 10).
2. Raise the bottom part of the Terminal.
3. Release the fastener **B** of the plug connector (direction of arrow) and unplug the ribbon cable.

Close

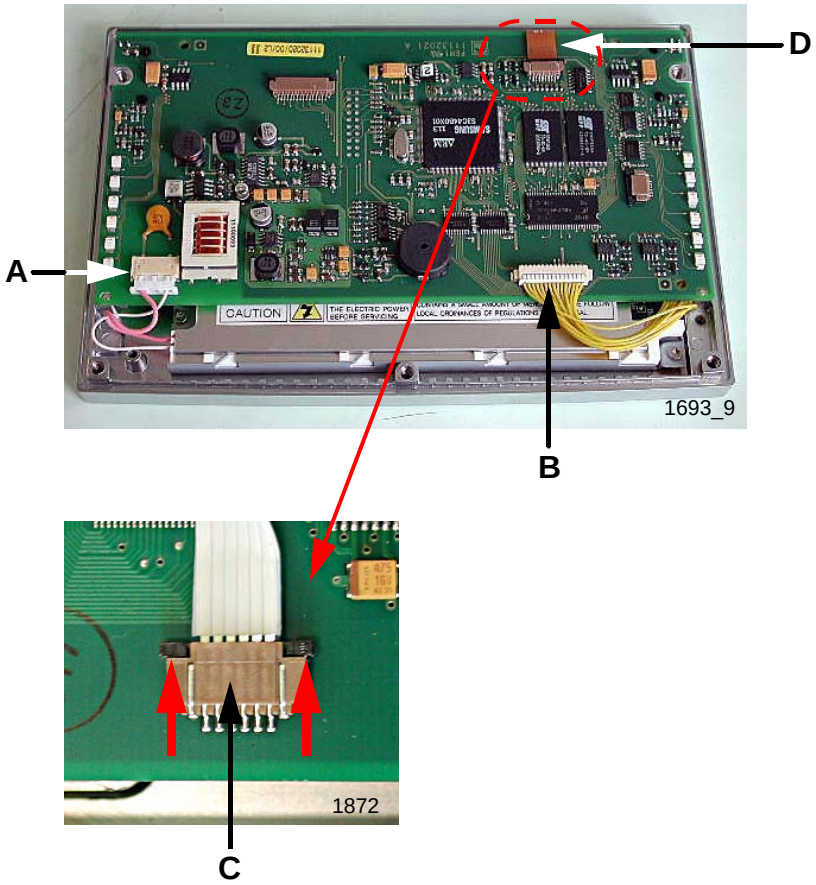
1. Insert ribbon cable and secure **B**.
2. Insert seal **C** in the groove provided (see Chapter 3, Section 2.1).
3. Place bottom part of Terminal into position.
   The toothed screening plate must lie against the inside of the top housing.
4. Screw in screws **A** (Torx M4 x 10).

5.1.5 Remove/install Terminal PCB

WARNING

Electrostatic sensitive devices.

Always use antistatic kit when working on electronic components (see Section 2.2).



Open/close Terminal see Section 5.1.4.

Remove

1 Unplug plugs **A** and **B**.

2 Release fastener of plug connector **C** (direction of arrow) and unplug ribbon cable **D**.

3 Raise Terminal PCB and put aside.

Install

1 Insert Terminal PCB. Do not pinch ribbon cable **D**.

2 Insert ribbon cable and secure.

3 Insert plugs **A** and **B**.

4 Close Terminal, see Section 5.1.4.

Note

New Terminal PCB - Load Data see Section 4.3, Chapter 7

5.1.6 Remove/install Display

WARNING

Display is very easily scratched.
Avoid finger marks and dust.
If cleaning is required, use only a soft cloth (as for spectacles).
Do not use paper.

Remove/install Terminal PCB see Section 5.1.5.

Remove

1 Unscrew and remove screws **A** (Torx M2,5 x 5).
2 Lift display **B** out and put it aside carefully.

Install

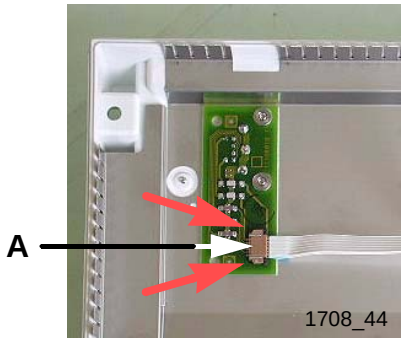
1 Insert display **B** and align.
2 Tighten screws **A** (Torx M2,5 x 5).
3 Install Terminal PCB see Section 5.1.5.

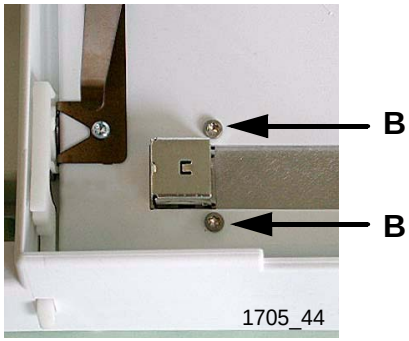
5.1.7 Replace Terminal socket/connector PCB

WARNING

Electrostatic sensitive devices.

Always use antistatic kit when working on electronic components (see Section 2.2).





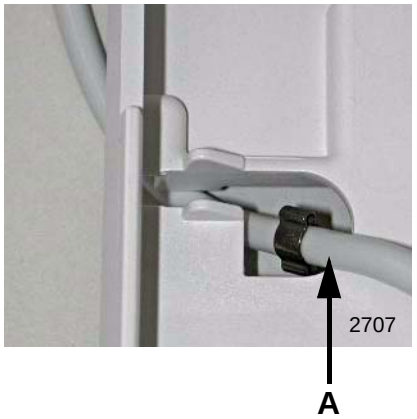
Open/close Terminal see Section 5.1.4.

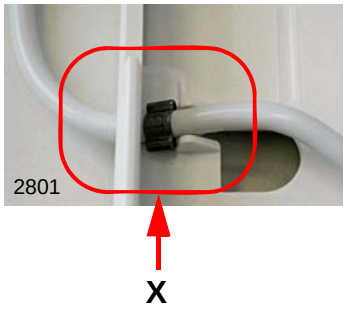
1. Release fastener **A** on connector PCB (direction of arrow) and unplug ribbon cable.
2. Unplug and remove screws **B** (Torx M2,5 x 6).
3. Replace Terminal socket.
4. Insert ribbon cable and secure.

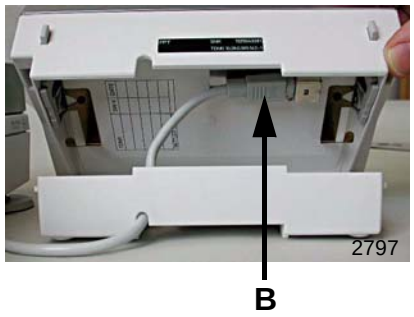
5.1.8 Connect Terminal and Platform

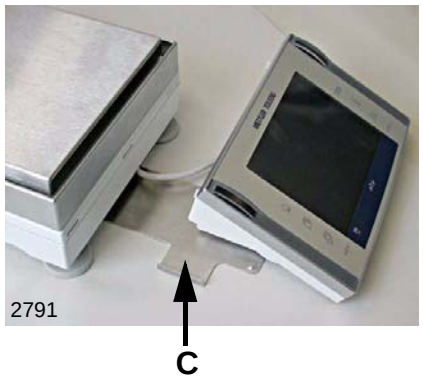
WARNING

Do not kink the Terminal cable.









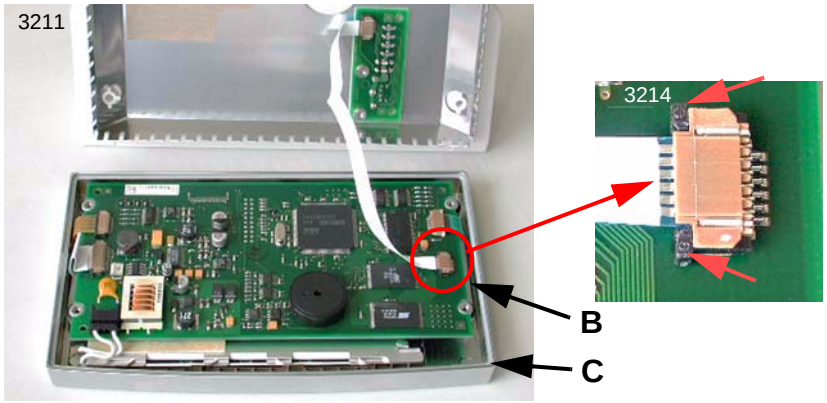
1. Pull the Terminal cable **A** through the hole in the adjusting foot.
2. Pull Terminal cable back until pull-through protector **X** engages.
3. Plug in the Terminal cable **B**.
4. Close the adjusting foot.
5. Push the Terminal holder **C** under the Platform and engage it.
6. Place the Terminal on the Terminal holder.

5.2 SPT Terminal

Spare Parts, see Section 2.1, Chapter 3

5.2.1 Prepare Terminal for repair

Separate Terminal from Platform (see Section 1.1.3).



5.2.2 Open/close Terminal

WARNING

Electrostatic sensitive devices.
Always use antistatic kit when working on electronic components (see Section 2.2).

Open

1. Unscrew and remove the screws **A** (Torx M4 x 10).
2. Raise the bottom part of the Terminal.
3. Release the fastener **B** of the plug connector (direction of arrow) and unplug the ribbon cable.

Close

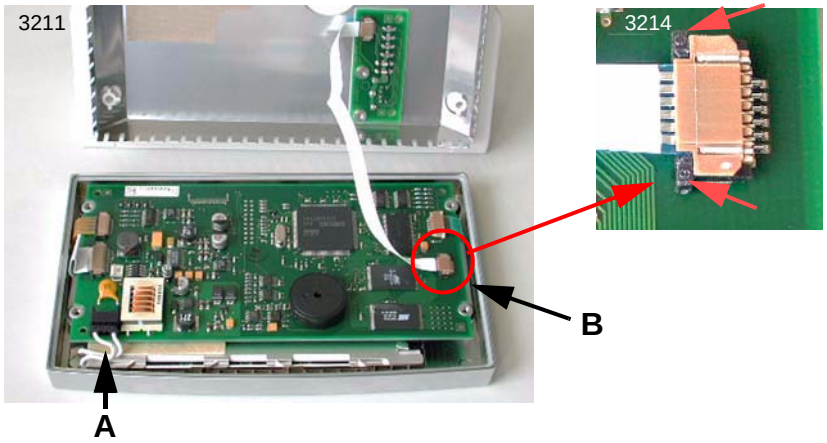
1. Insert ribbon cable and secure **B**.
2. Insert seal **C** in the groove provided (see Chapter 3, Section 2.1).
3. Place bottom part of Terminal into position.
   The toothed screening plate must lie against the inside of the top housing.
4. Screw in screws **A** (Torx M4 x 10).

5.2.3 Remove/install Terminal PCB

WARNING

Electrostatic sensitive devices.

Always use antistatic kit when working on electronic components (see Section 2.2).



Open/close Terminal see Section 5.2.2

Remove

1 Unplug plug **A**.
2 Release fastener of plug connector **B** (direction of arrow) and unplug ribbon cable.
3 Raise Terminal PCB and put aside.

Install

1 Insert Terminal PCB. Do not pinch ribbon cable.
2 Insert ribbon cable and secure.
3 Insert plugs **A**.
4 Close Terminal.

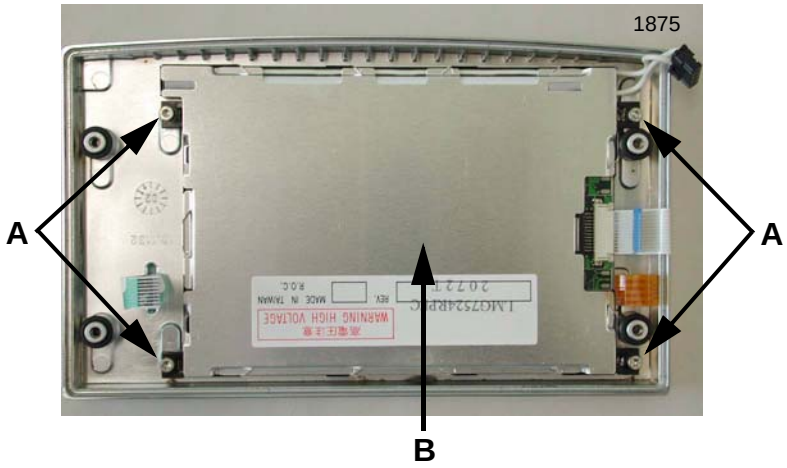
Note

New Terminal PCB - Load Data see Section 4.3, Chapter 7

5.2.4 Remove/install Display

WARNING

Display is very easily scratched.
Avoid finger marks and dust.
If cleaning is required, use only a soft cloth (as for spectacles).
Do not use paper.



Remove/install Terminal PCB see Section 5.2.3.

Remove

1 Unscrew and remove screws **A** (Torx M2,5 x 5).
2 Lift display **B** out and put it aside carefully.

Install

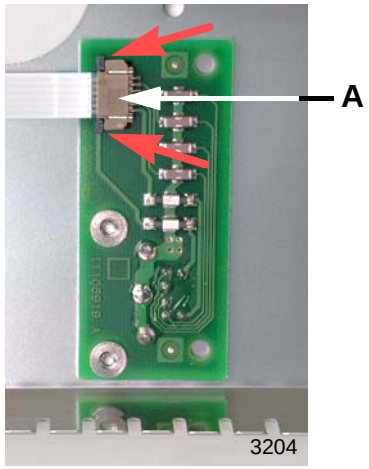
1 Insert display **B** and align.
2 Tighten screws **A** (Torx M2,5 x 5).
3 Install Terminal PCB.

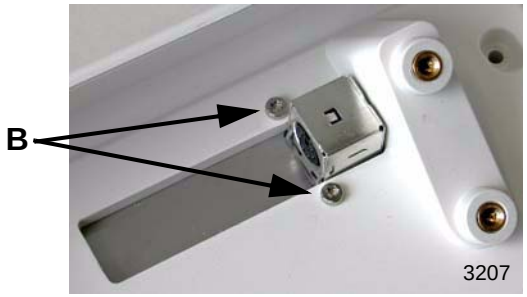
5.2.5 Replace Terminal socket/connector PCB

WARNING

Electrostatic sensitive devices.

Always use antistatic kit when working on electronic components (see Section 2.2).





Open/close Terminal see Section 5.2.2.

1. Release fastener **A** on connector PCB (direction of arrow) and unplug ribbon cable.
2. Unplug and remove screws **B** (Torx M2,5 x 6).
3. Replace Terminal socket.
4. Insert ribbon cable and secure.

6 Check/repair «MonoBloc» Weighing cell

WARNING

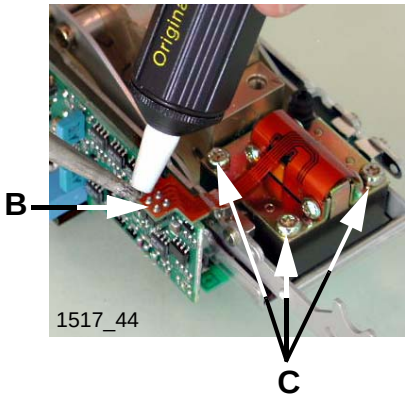
Electrostatic sensitive devices.

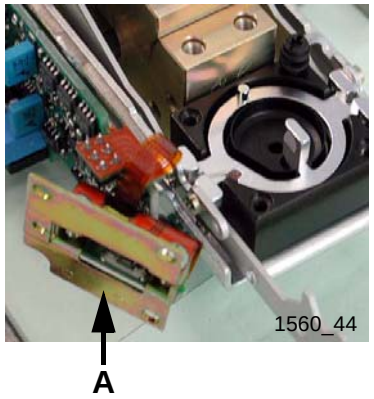
Always use antistatic kit when working on electronic components (see Section 2.2).

6.1 Dismantle «MonoBloc»

Spare Parts see Section 5, Chapter 3

6.1.1 Remove detector





1 If the detector **A** needs to be replaced:
- Unsolder flexprint **B**.

2 Slacken the fastening screws **C** of the detector.

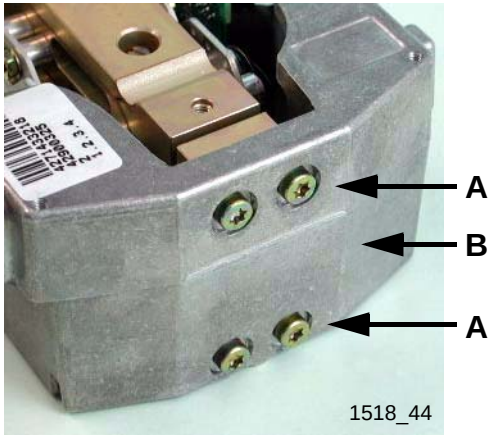
3 Lift the detector **A** which is held by the magnetic field and fold it aside.

Install detector, see Section 6.2.2.

Note

If the detector is replaced, the height stop must be checked and possibly readjusted (see Section 7.1).

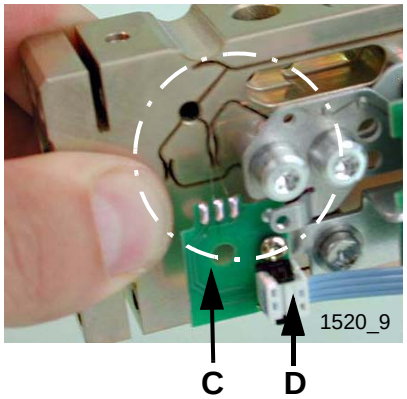
6.1.2 Remove lever

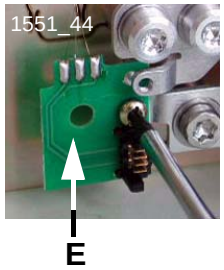


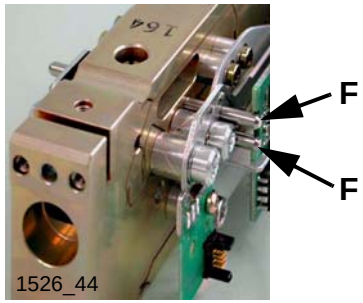
1 Unscrew and remove the fastening screws **A** (Torx M4 x 14) from the shackle **B** and remove the «MonoBloc» from the shackle along with the lever.

Note

The fastening screws **A** are screwed very tight (5Nm). If necessary, lever the screwdriver with a pipe wrench.







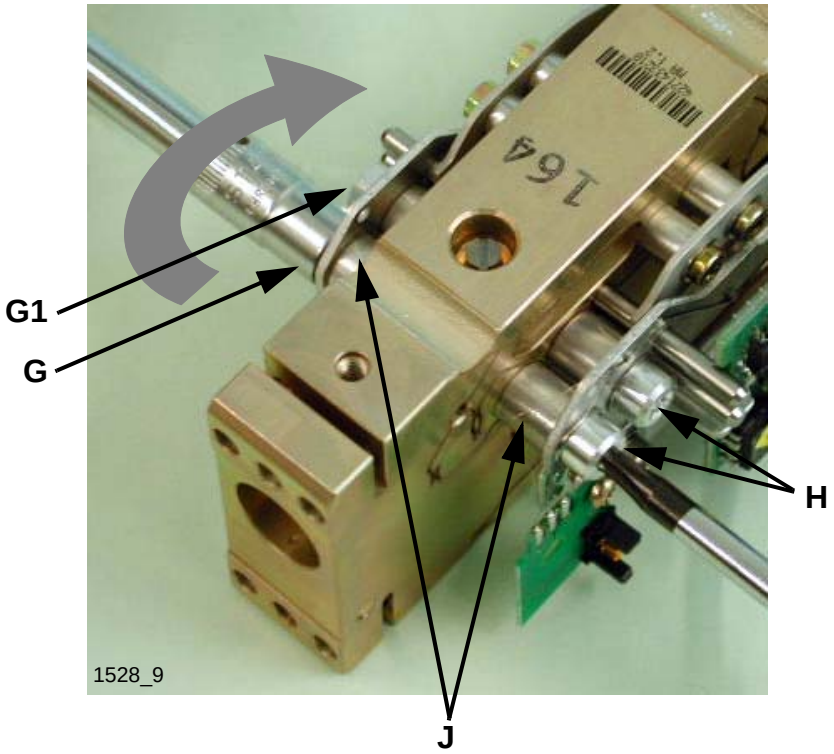
WARNING

*Only hold the «MonoBloc» by the back end. Do not damage the three coil wires **C** on the contact PCB.*

2 Pull out plug **D**.

3 Slacken the contact print **E** from the holder and screw it tightly onto the lever.

4 Insert 2 centering pins **F** from the gage set into the holes provided.



WARNING

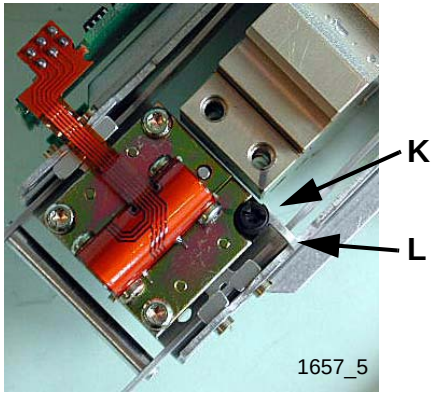
Only load the lever in the direction of the arrow, so that the flexible bearing is not compressed!

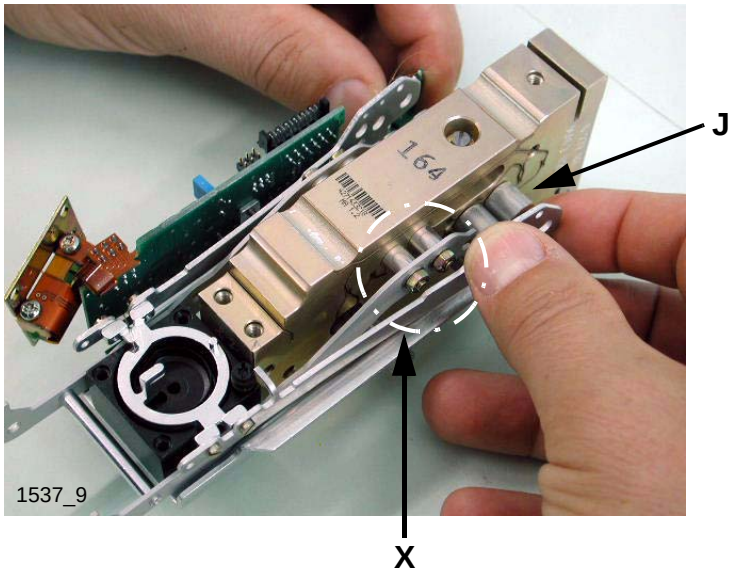
5 Carefully slacken the nuts **G** in the direction of the arrow, holding the screw heads **H** only to stop them turning. Do not turn the screw heads. To release the nuts **G1**, push the centering pin slightly back.

6 Remove the screws.
Do not confuse the 4 aluminum lugs **J**! Mark them if necessary.

Note

The screws **H** and nuts **G** are made from aluminum. Every time they are unscrewed, they must be replaced with corresponding new screws and nuts. Screws and nuts are both contained in the screws set with Part No. 42900819 (see Section 5, Chapter 3).





7 Mark the position of the height-adjusting screw **K** with a pencil. Turn the height-adjusting screw so that the lever **L** can be pulled out.

8 Slacken the detector and swivel to the side (see Item 6.1.1).

9 Pull out the centering pin.

10 Carefully pull out the lever and spread it if necessary so that it can minimal pass over the screws/nuts at **X**.

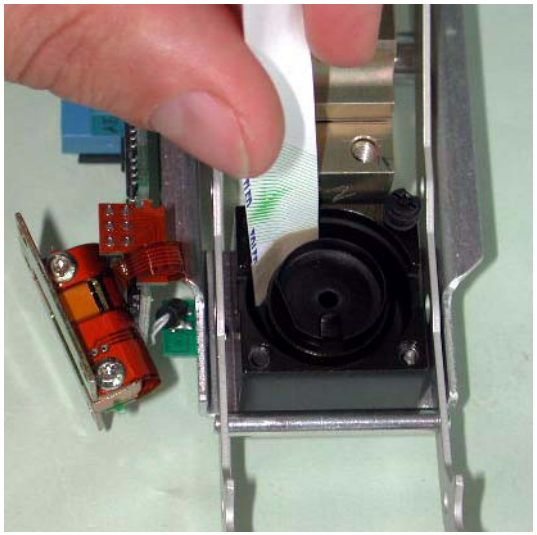
Note

Do not confuse the 4 aluminum lugs **J**! Mark them if necessary.

When replacing the lever, if any dead weight is screwed onto the old lever, transfer it to the new lever.

Install the lever, see Section 6.2.1.

6.1.3 Clean the magnet recess

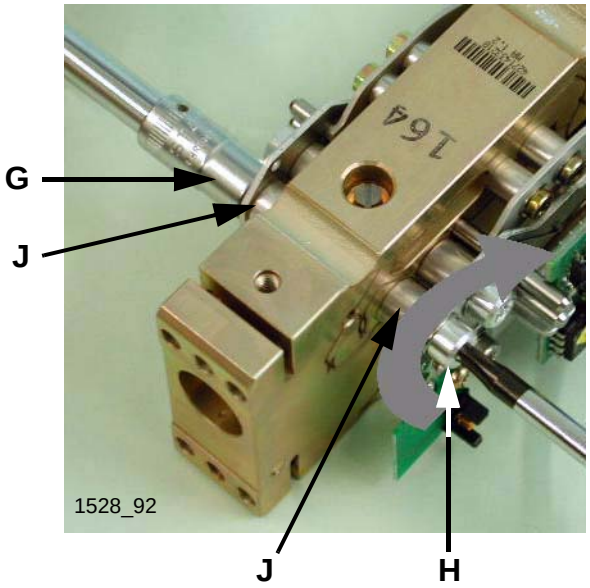


1 Affix double-sided adhesive tape to one end of a strip of card (e.g. part of a business card).

2 Clean the magnet recess.

6.2 Assemble the «MonoBloc»

6.2.1 Install the lever



WARNING

Only load the lever in the direction of the arrow, so that the flexible bearing is not compressed.

*Ensure correct positioning of the aluminum sleeves **J**.*

Insert the screws correctly (see photo at left).

1 Lay the lever in the specified position, spreading it if required.

2 Check that the aluminum lugs are correctly positioned.

3 Insert centering pins in the holes provided.

Note

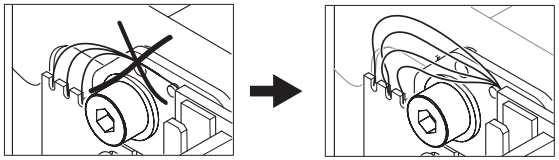
The screws **H** and nuts **G** are made from aluminum. Every time they are unscrewed, they must be replaced with corresponding new screws and nuts. Screws and nuts are both contained in the screws set with Part No. 42900819 (see Section 5, Chapter 3).

4 Carefully tighten the screws **H** in the direction of the arrow (tightening torque 1.8 Nm), holding the screw heads **G** only to stop them turning.
Do not turn the screw heads!

5 Tighten the screws **H** alternately.

Note

Take care that the lever is centered in the magnet recess and does not make contact at the sides.



6 Separate the contact PCB from the lever and screw it tightly to the holder.

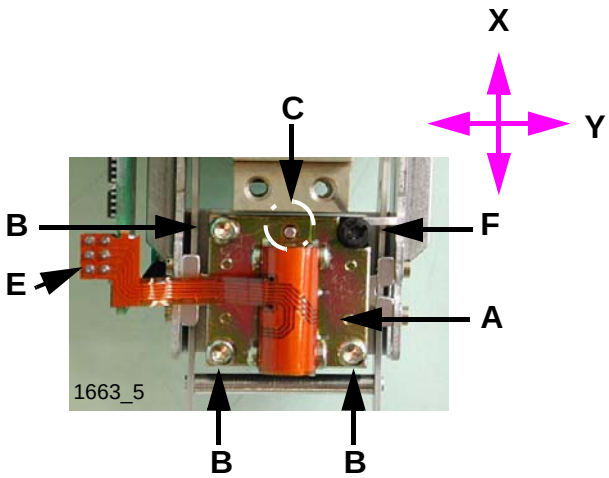
7 Fan out the coil wires (sketch).

Note

If the coil wires touch each other, hysteresis effects of several digits can occur.

8 Pull out the centering pins.

6.2.2 Install detector



1 Place detector **A** in position. Screw in screws **B** but do not tighten yet.

2 Center detector on the side stops **C**.
- Longitudinal direction **X**
  Move the detector in the longitudinal direction **X** until the side stop **C** is positioned in the center of the drilled hole.
- Lateral direction **Y**
  Move the detector in the lateral direction **Y** until the side stop **C** is positioned in the center of the drilled hole.

3 Tighten the screws **B** alternately by equal amounts.

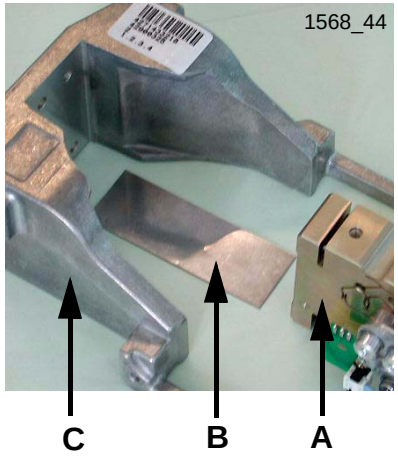
Check

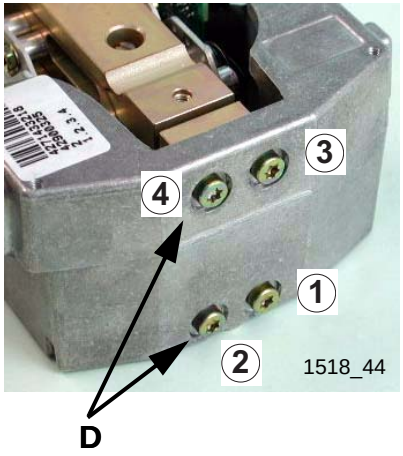
Move the lever within the lever stop **F**. The side stop must not touch the detector.

4 If necessary, solder the flexprint **E** to the cell PCB.

5 Adjusting Vertikal stop see Section 7.1.

6.2.3 Screw the «MonoBloc» and shackle together





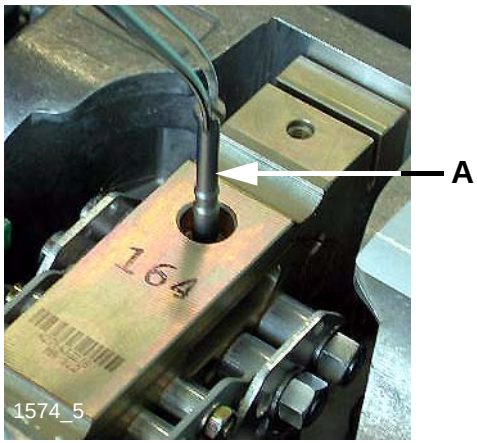
1 Lay the «MonoBloc» **A** on the spacer strip **B** (0.5 mm).

2 Screw on to the shackle **C**.
- Press the «MonoBloc» and shackle onto the supporting surface.
- Insert screws in the sequence shown (1 - 4).
- Tighten the screws in the same sequence (1 - 4). Tightening torque for all four screws **D** is 5 Nm.

Note

The hook of the below-the-balance weighing attachment projects. Place the cell so that the hook projects over the edge of the bench.

6.3 Clean the drilled hole in the shock protector



1 With a screwdriver slacken the shock protector **A** approx. ¼ turn counterclockwise.

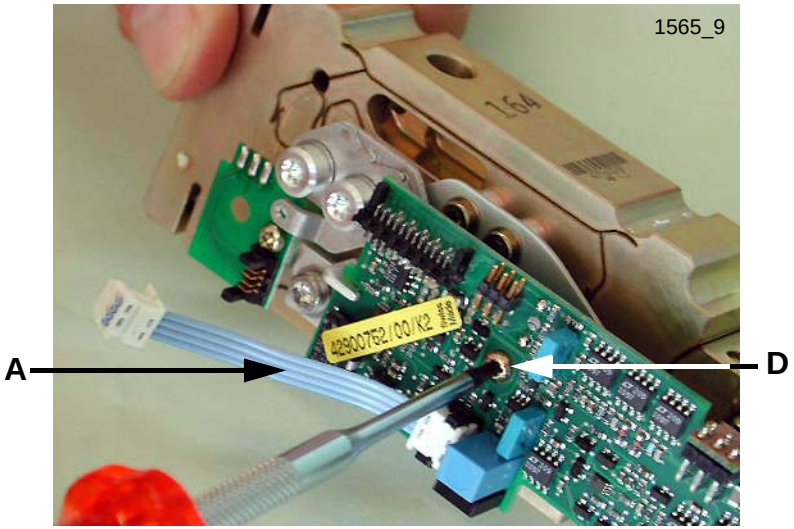
2 Pull the shock protector up and out.

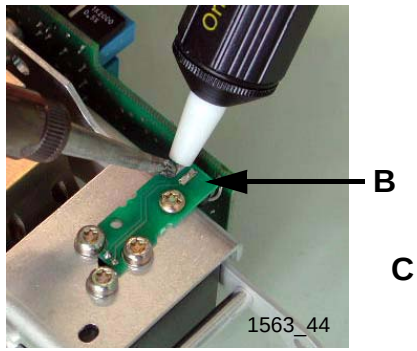
3 Check that the drilled hole is free of dirt.
- Clean.

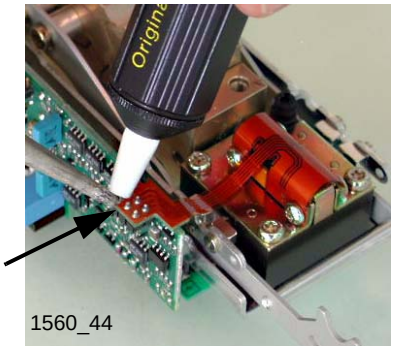
4 Insert the shock protector.
- The machined edges on the shock protector must point away from the magnet.
- Insert the shock protector as far as the stop.

5 With a screwdriver tighten the shock protector.

6.4 Replace the cell PCB







Separate «MonoBloc» Weighing cell from calibration drive see Section 2.5.

Remove overload protection see Section 2.6.

Separate the «MonoBloc» from the shackle see Section 6.1.2, Pos. 1.

1 Unplug cable **A**.

2 Unsolder connection **B** to the temperature sensor.

3 Unsolder flexprint **C**.

4 Remove screw **D** and replace cell PCB.

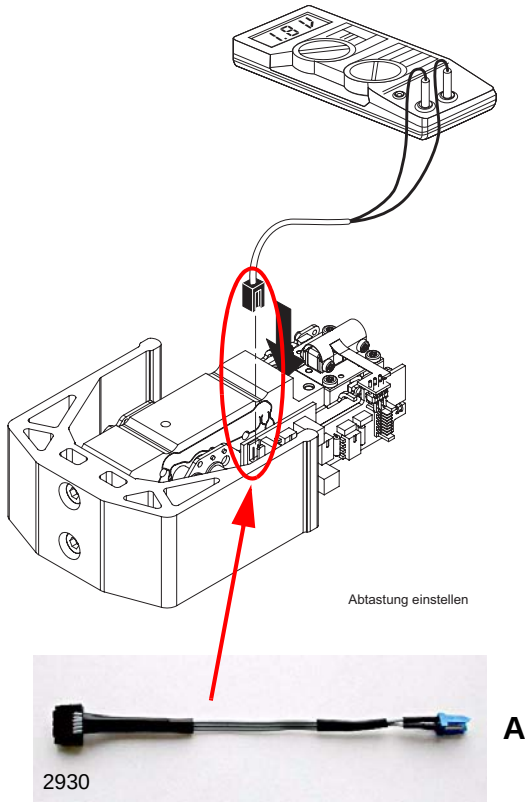
5 Load new cell data see Section 3.4, Chapter 7.

Note

First turn the self-tapping screw **D** counterclockwise until it engages in the first thread. Only then tighten it clockwise.

7 Adjust the «MonoBloc» Weighing cell

7.1 Vertical stop



A

Note

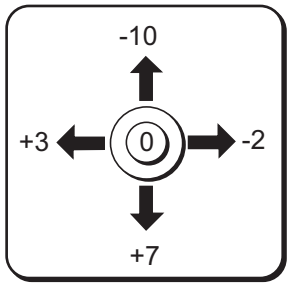
If the detector is changed, it may be necessary to readjust the vertical stop.

1 Preparation
- The measuring cell remains in the balance housing.
- Switch off balance.
- The ribbon cable of the detector board remains plugged into the cell board.
- Plug the 6-pin plug of the detector cable **A** (see Section 1, Chapter 11) into the cell PCB and use the service cable to connect it to the voltmeter (DC range).

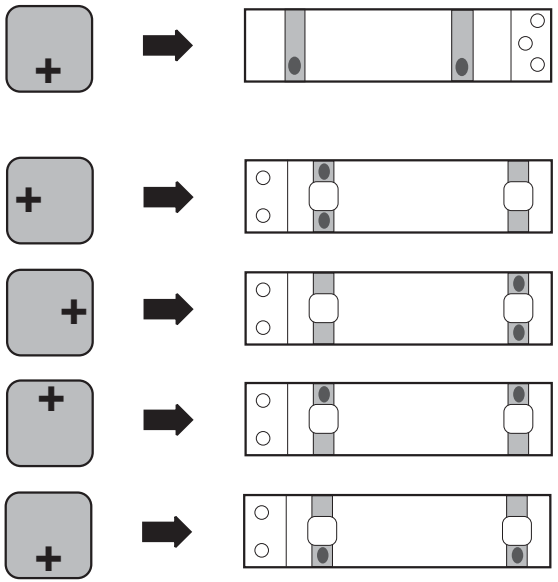
2 Adjusting vertical stop
- Switch on balance.
- Press coil lever down (the lever is at the bottom of the vertical stop).
- Note voltage value.
- Lift coil lever until it touches the height stop.
- Note voltage value.

If the two voltage values either side of zero are not of the same magnitude but, e.g. +3 V and -2 V, the vertical stop must be adjusted until the values are symmetrical.
Voltage range: ±1 - 6V
Asymmetry: max. ± 10% of Voltage range

7.2 Cornerload



Eckenlast kontrollieren



Checking the cornerload

1. Place test weight in the middle of the weighing pan and tare.
2. Move test weigh to the weighing pan edge and note down/print out display values witch differ from zero with sign (see examples).
3. Compare display values with cornerload tolerances (see Chapter 9).

Adjusting the cornerload

The «MonoBloc» measuring cell is not adjusted by means of the cornerload screws, but by removing material from its top.

This is achieved by a few strokes with a round needle file exerting slight pressure.

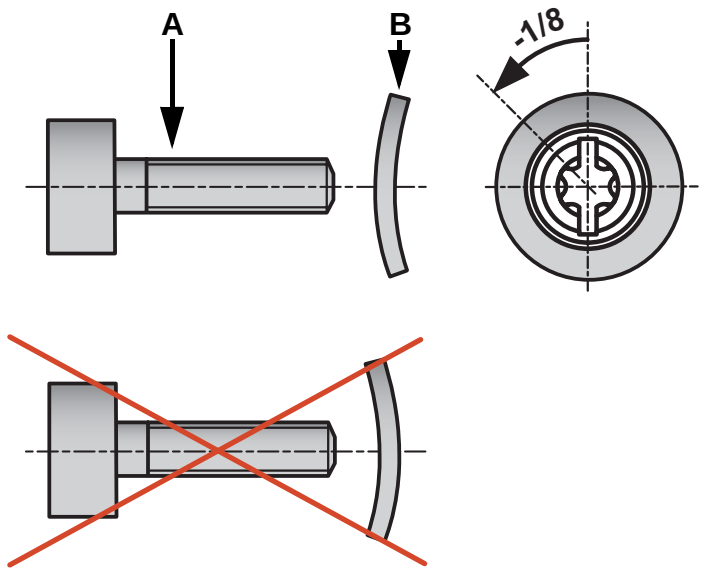
WARNING

Do not file right at the outside at the flexible bearing positions.

On completion of the adjustments, clean filing sites by removing swarf with adhesive tape.

Filing must be performed at one or two of the marked positions as described in the below table.

7.2.1 Correctly tighten screw with spring washer



- Correctly assemble spring washer **B** and screw **A** (sketch).
- Use correct screwdriver to screw in screw until definite resistance is felt.
- Unscrew screw by 1/8 of a turn.
- If a torque screwdriver is available, set it to 60 Ncm.

7 LARS

List of Contents

1 LARS Installation

LARS = LabTec Repair and Service Software

1.1 Requirements

- The balance types described in this document require **LARS V1.72** or later.
- USB dongle LARSLock 

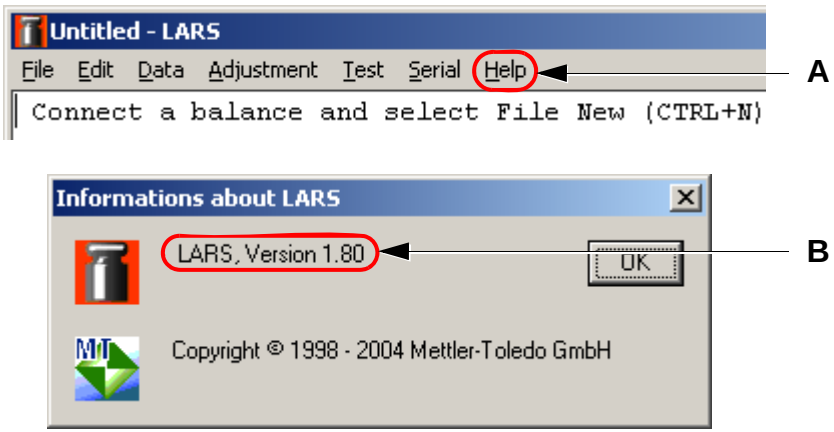
, part number 11107505.

WARNING

Before you install LARS from the ServiceExpert CD, please check on the LMS home page whether you have the latest version of the LARS software.

Make sure that you have authorization to perform software installations on your laptop/PC. If you do not have this authorization, ask your system supporter to install the software for you.

1.2 Software-Check



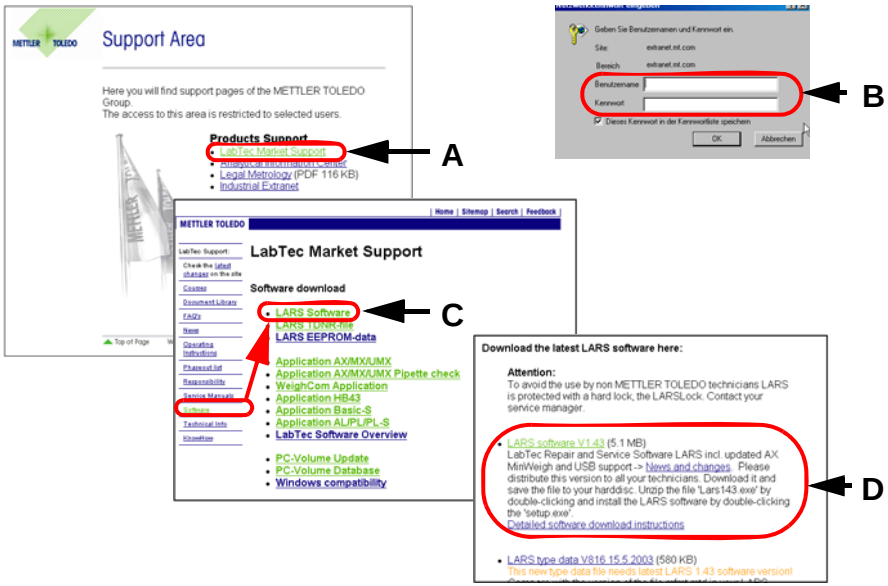
1. Double-click on  .
2. Click on «Help» **A** and then on «Info».

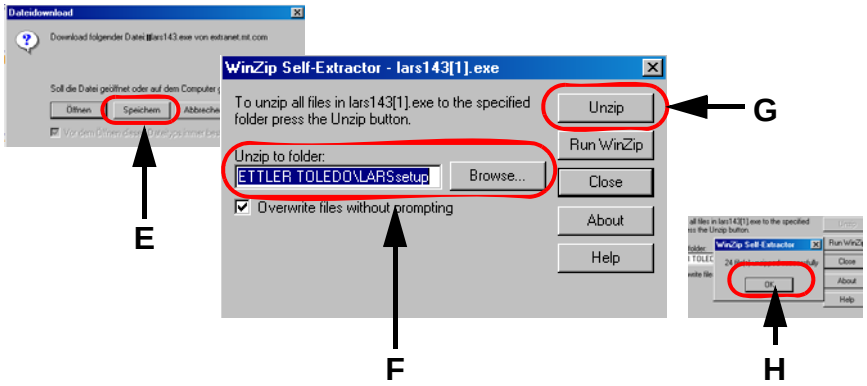
The About LARS window opens. The currently installed version is displayed **B**.

If the installed software is not the current version (Internet), the new version must be installed on the laptop/PC.

New software versions are available on the Internet (see Section 1.3).

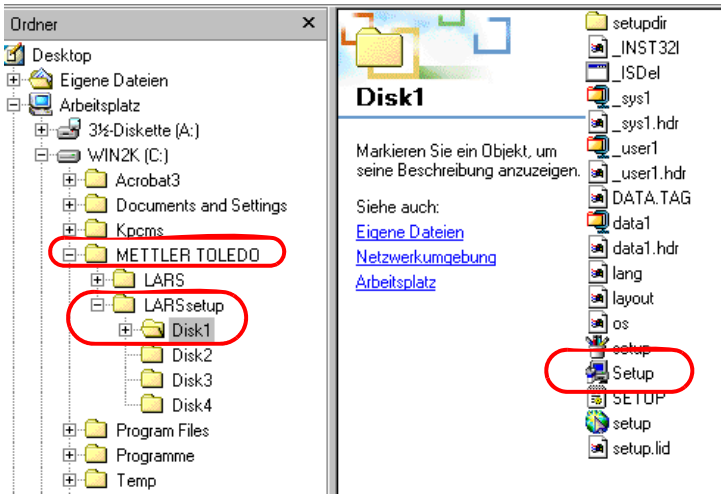
1.3 Software download from the Internet





1. Click on the link http://extranet.mt.com (Labtec Market Support).
2. Click on LabTec Market Support **A**.
3. Enter user name and password **B**.
4. Click on Software and then on LARS Software **C**.
   The most recent version of the LARS software is shown at the top of the list **D**.
5. Select the link of the software version you wish to download.
6. Click on Open **E**.
7. The storage location **F** is displayed. This can be accepted (recommended), or selected according to your own system organization.
8. Click on Unzip **G**.
   The individual files are saved in the selected storage location.
9. Click on OK **H**. Close the WinZip window.

1.4 Software-Installation



1. Open the METTLER TOLEDO folder.
2. Open the LARSsetup Disk1 folder.
3. Click on  icon.

The installation procedure now starts. Follow the instructions of the installation program.

2 Connecting balance to Laptop/PC

1. Switch off balance and Laptop/PC.
2. Connect the balance by means of a RS9–RS9 cable to the serial port COM of the Laptop/PC.
   If no serial port is available, get a RS9–USB adapter.
3. Connect the dongle LARSLock to the Laptop/PC.

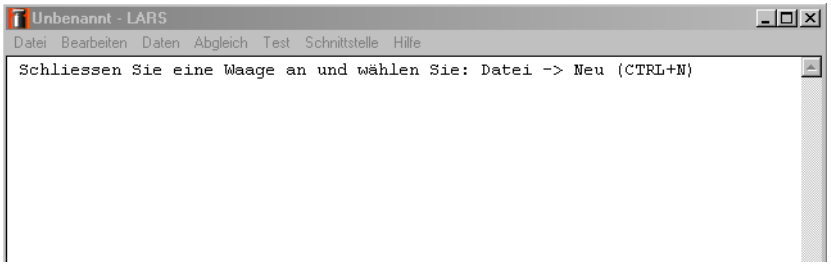
Part No. for LARS software, LARSLock and RS9– RS9-Cable see Chapter 11.

3 Start/end Service Mode and LARS

3.1 Start/end Service Mode on balance

The Service menu of the balance can also be started without LARS. For full information, see Chapter 8, Adjusting in the Service Menu.

3.2 Start/quit LARS



To start

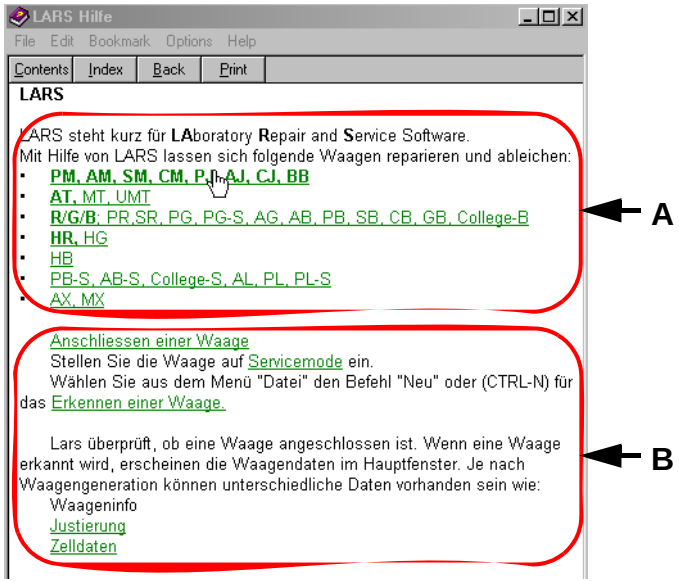
1. Double-click on 

   The LARS menu window appears. All further work with LARS is selected in the various popup menus (see Section 3.3).

To quit

1. In the File menu, select the Quit command. The stored data of the balance are backed up in the selected file and are available for a future service.

3.3 Working with LARS



If you still have insufficient knowledge of the LARS functions, it is advisable to press the Help key F1.

The Help window shown at left then appears:

- **B** shows the steps which are generally necessary for service with LARS.
- Double-clicking on the balance type **A** shows in an additional window the special service procedure for the selected balance.

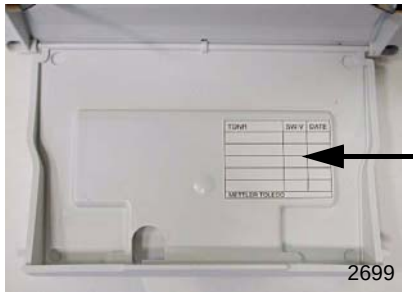
The Help key F1 can be pressed again for each operation. The Help function explains the current situation.

3.4 Load type data

If a new main board has been installed in the balance, a new type definition must be loaded.

A

A



B

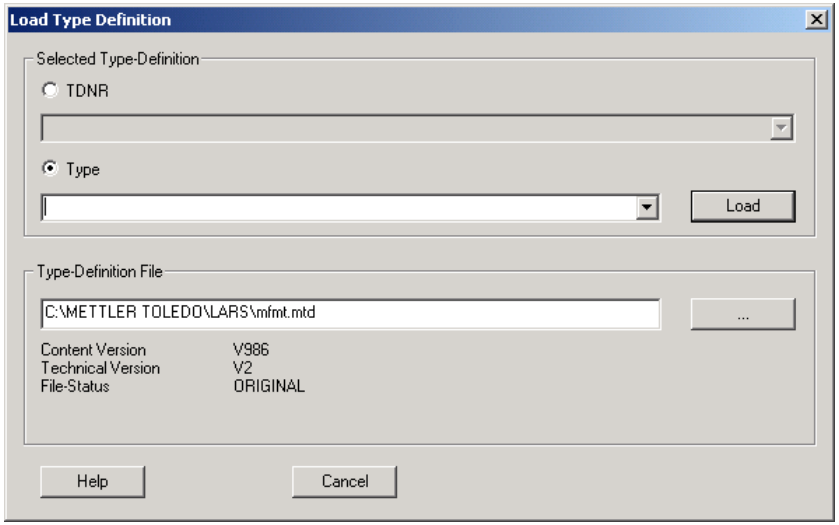
Note

The TDNR on the black laser label **A** should not be used before being tested.

Software or hardware changes may make it necessary to adjust the TDNR in line with the new functionalities too.

Where this is the case, it is useful to enter the new TDNR and the new software version in the relevant service label **B**. This prevents errors and facilitates searches for the correct TDNR if they can no longer be read from the balance.

Service Data Plate see Chapter 11



Searching by TDNR

1. From the Data menu, select the Type Definition command.
2. Enter the appropriate TDNR in the «TDNR» field in the «Load type definition» dialog field.
3. Click on Load and follow the instructions.

Note

You can obtain specific information by clicking the Help button or pressing the F1 key.

4 Software Handling

WARNING

Before replacing the balance or Terminal software, the customer settings must always be saved.

4.1 e-loader

Customer settings must be printed out, and then input to the balance by hand after the update has been completed.

4.1.1 Print out the customers settings

1. Select user.
2. Open menu settings.
3. Touch Print key
   Menu settings are printed.
4. Select System menu.
5. Touch Print key
   Menu settings are printed.
6. Select next user.
7. Repeat steps 2 to 6 until the desired settings have been printed for all users.

4.1.2 Backup with e-Loader

Especially when a software update takes place because of a software fault, it is **not allowed** to use the e-loader functions

«Save data from XS balance in file ...»
and
«Restore data for XS balance from file ...».

Only if these functions are not used can fault-free operation of the balance after a software update be assured.

4.2 Data on PCB

4.2.1 Data on the Platform PCB

- Part of TDNR (Cell)
- Balance Software
- SNR

4.2.2 Data on the Cell PCB

- Part of TDNR (Cell)
- Cell data

4.2.3 Data on the Terminal PCB

- TDNR (Terminal)
- Terminal Software
- SNR

4.3 Change of hardware also affects software

Changed hardware	What changes must be made to the software?						
	Balance software **Terminal software**	**TDNR**	**Cell data**	**SNR**	**Adjustment**	**Customer settings**	**another adjustments**
Platform PCB	Load software (see Section 3.3)	Load (see Section 3.4)	-	Load	Check LIN, and CAL, and adjust if necessary	Load from safe (see Section 4). Input by hand.	- Last Service - Next Service - Batterie Exp. Date
Cell PCB	-	Load (see Section 3.4)	Load	-	Check LIN, and CAL, and adjust if necessary	-	
Terminal PCB	Load software	-	-	Load	-	Load from safe (see Section 4). Input by hand.	

4.4 Change of software also affects other software

Changed hardware	What changes must be made after the software is changed?						
	Balance software Terminal software	**TDNR**	**Cell data**	**SNR**	**Adjustment**	**Customer settings**	**another adjustments**
Platform PCB	New features, applications, or languages	-	-	-	Check LIN and CAL, and adjust if necessary	Load from safe (see Section 4). Input by hand.	- Last Service - Next Service - Batterie Exp. Date
Cell PCB	-	-	-	-	-	-	
Terminal PCB	Load software (see Section 3.3)	-	-	-	Check LIN and CAL, and adjust if necessary	Load from safe (see Section 4). Input by hand.	

8 Adjusting in the Service Menu

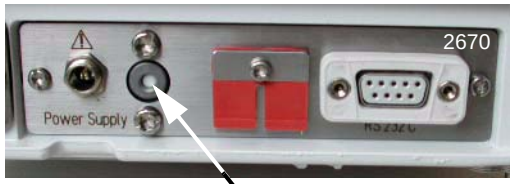
List of Contents

1 General

The service software is part of the balance software.

Updating the balance software will automatically update the service software as well.

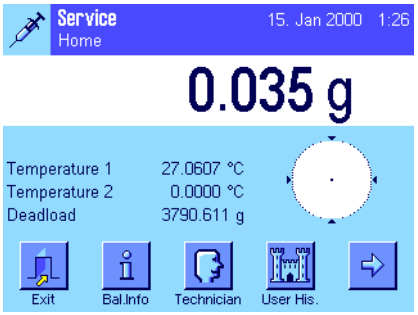
1.1 Starting the Service menu

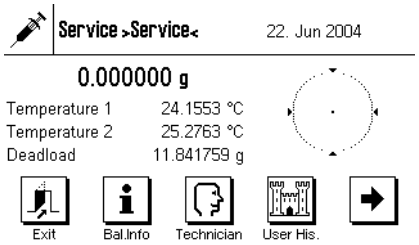


1. Switch on the balance and wait until the display shows «0.0000».
2. Remove the securing sticker.
3. Using a suitable object, press the service button **A**.
   - After 5 bleeps, the display goes dark.
   - After 2 more bleeps, the overview menu of the Service menu appears.

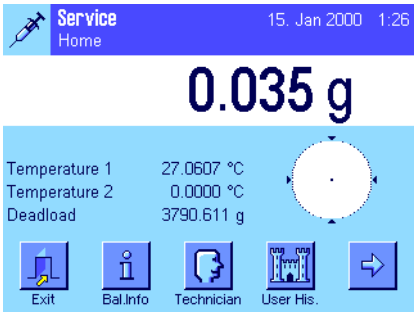
Note

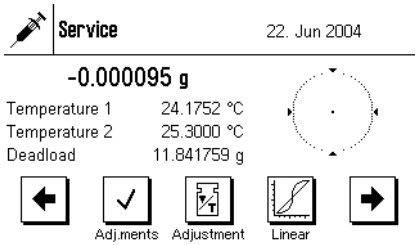
If no key is pressed for 30 minutes, the balance automatically returns to the Weighing menu.





1.2 Overview menu



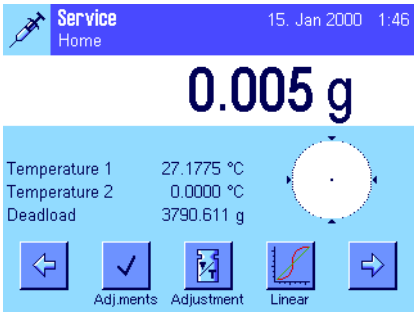


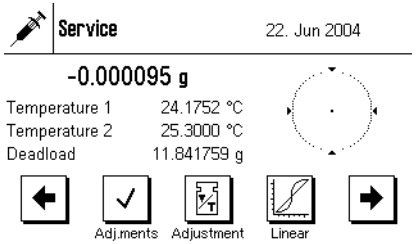
Note

In some countries, and on special customer request, the Service menu is disabled. In the overview menu, only the «Exit» key is available. Settings in the Service menu can only be made with LARS (see Chapter 7).

Menu page 1/3

«Exit»	To quit the Service menu
«Bal.Info»	Current service-relevant values of the balance
«Technician»	Name of the technician
«UserHis»	Last 50 user adjustments



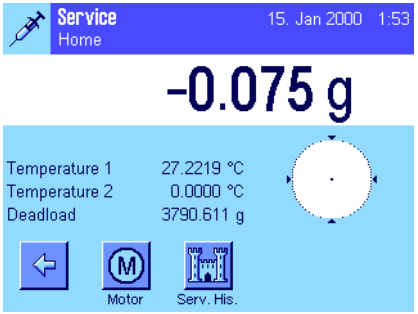


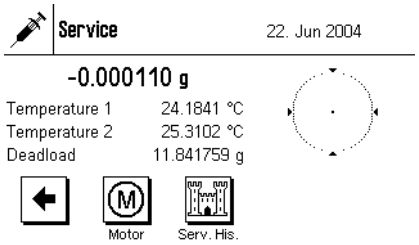
Menu page 2/3

«Adj.ments» Performed Adjustments (Lin, StdCal etc.)

«Adjustment» (see Section 1.4)

«Linear» (see Section 1.5)





Menu page 3/3 (PS)

«Motor» Motor test (see Section 1.6)

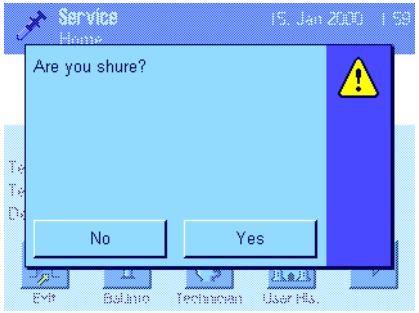
«Serv.His.» Who did which adjustment. Last 20 service adjustments.

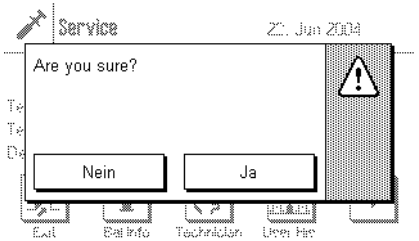
1.2.1 Select service settings

Touching the various symbols on the screen calls up the individual menu points.

The clear and simple menu guidance allows systematic working in the Service menu.

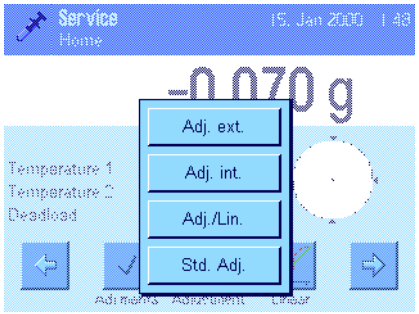
1.3 Quit the Service menu

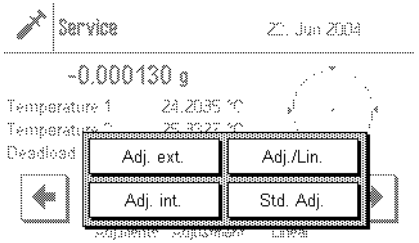




1. Touch the «Exit» symbol
2. Confirm with «Yes» (No terminates the operation)
   - The balance returns from the Service menu to the Weighing menu.

1.4 Adjustment menu



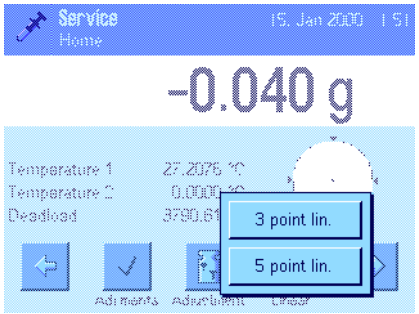


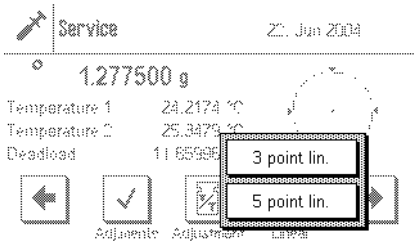
The Adjustment menu has four submenus.

- «Adj.ext.» adjustment with external weights
- «Adj.intern» adjustment with internal weight
- «Adj. /Lin» linearization
- «Std. Adj.» standard calibration

The individual adjustments are performed according to the guidance displayed in the menu.

1.5 Linear menu



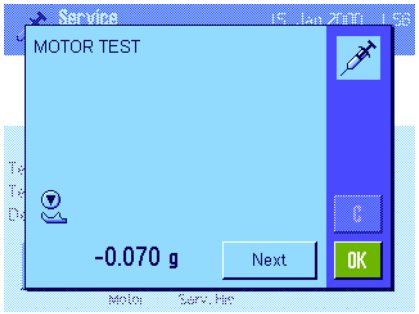


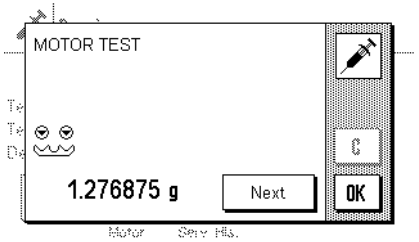
The Linear menu contains two submenus.

- «3point lin.» 3-point linearization
- «5point lin.» 5-point linearization

The individual adjustments are performed according to the guidance displayed in the menu.

1.6 Motor menu





The Motor menu is used to test the functioning of the calibration motor.

1. Touch the Next button
The motor lowers the calibration weight
- Display: Weight of internal calibration weight

2. Touch the Next button again
The motor raises the calibration weight
- Display: 0.000 g

9 Adjustment Data

List of Contents

1 Adjustment data

1.1 XP Balances

1.1.1 XP Balance Type «S»

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
XP204S 1 I	210 g 0.1 mg 1 mg		100 g 0.3 mg		100 g 10 0.2 mg		0/50/100/150 g 50 g 0.2 mg	d	200 g E2 * 1 mg	
XP404S 1 I	410 g 0.1 mg 1 mg		200 g 0.3 mg		200 g 10 0.1 mg		0/100/200/300 g 100 g 0.2 mg	d	400 g E2 * 2 mg	
XP404SDR DR I	410 g / 80 g 1 mg / 0.1 mg 1 mg		200 g 1 mg		200 g 10 0.6 mg		0/100/200/300 g 100 g 0.6 mg	d	400 g E2 * 2 mg	
XP203S 1 II	210 g 1 mg 0.01 g		100 g 3 mg		100 g 6 0.9 mg		N.A 50/100/150/200 g 2 mg	E2	200 g E2 5 mg	
XP603S 1 II	610 g 1 mg 0.01 g		200 g 3 mg		200 g 6 0.9 mg		0/200/400 g 200 g 2 mg	d	600 g F1* 4.5 mg	
XP603SDR DR II	610 / 120 g 0.01 g / 1 mg 0.01 g		200 g 0.01 g		200 g 6 6 mg		N.A. 200/400/600 g 0.01 g	F1	600 g F1* 9 mg	

* Conventional weight value

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
XP1203S 1 I	1210 g 1 mg 0.01 g		500 g 3 mg		500 g 10 0.8 mg		0/200/400/600/ 800/1000 g 200 g 2 mg	d	1.2 kg F1* 6 mg	
XP2003SDR DR I	2100 g / 500 g 0.01 g/ 1 mg 0.01 g		1000 g 0.01 g		500 g 10 6 mg		0/500/1000/1500 g 500 g 6 mg	d	2 kg F1 0.01 g	
XP5003SDR DR I	5100 g / 1000 g 0.01 g / 1 mg 0.01 g		2 kg 0.01 g		2 kg 10 6 mg		0/1/2/3/4 kg 1 kg 6 mg	d	5 kg F1* 0.02 g	
XP1202S 1 II	1210 g 0.01 g 0.1 g		500 g 0.02 g		500 g 6 8 mg		N.A. 400/800/1200 g 0.02 g	F1	1.2 kg F1 0.06 g	
XP4002S 1 II	4100 g 0.01 g 0.1 g		2 kg 0.03 g		2 kg 6 8 mg		0/1/2/3 kg 1 kg 0.02 g	d	4 kg F1 0.06 g	
XP6002S 1 II	6100 g 0.01 g 0.1 g		2 kg 0.03 g		2 kg 6 8 mg		0/2/4 kg 2 kg 0.02 g	d	6 kg F1* 0.06 g	
XP6002SDR DR II	6100 g / 1200 g 0.1 g / 0.01 g 0.1 g		2 kg 0.1 g		2 kg 6 0.06 mg		N.A. 2/4/6 kg 0.1 g	F1	6 kg F1 0.15 g	
XP8002S 1 II	8100 g 0.01 g 0.1 g		5 kg 0.04 g		5 kg 6 8 mg		0/2/4/6 kg 2 kg 0.02 g	d	8 kg F1* 0.06 g	
XP10002S 1 II	10100 g 0.01 g 0.1 g		5 kg 0.04 g		5 kg 10 8 mg		0/2/4/6/8 kg 2 kg 0.02 mg	d	10 kg F1* 0.05 g	

* Conventional weight value

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
XP10002SDR DR II	10100 g / 2000 g 0.1 g / 0.01 g 0.1 g		5 kg 0.1 g		5 kg 10 0.06 g		0/2/4/6/8 kg 2 kg 0.05 g	d	10 kg F1 0.1 g	
XP4001S 1 II	4100 g 0.1 g 0.1 g		2 kg 0.2 g		2 kg 6 0.08 g		N.A. 1/2/3/4 kg 0.06 g	F1	4 kg F1 0.24 g	
XP6001S 1 II	6100 g 0.1 g 0.1 g		2 kg 0.2 g		2 kg 6 0.08 g		N.A. 2/4/6 kg 0.06 g	F1	6 kg F1 0.24 g	
XP8001S 1 II	8100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		0/2/4/6 kg 2 kg 0.1 g	d	8 kg F1 0.6 g	
XP10001S 1 II	10100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		0/2/4/6/8 kg 2 kg 0.1 g	d	10 kg F1 0.5 g	

* Conventional weight value

1.1.2 XP Balance type «M»

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
XP6002MDR DR II	6100 g / 1200 g 0.1 g / 0.01 g 0.1 g		2 kg 0.1 g		2 kg 6 0.06 g		N.A. 2/4/6 kg 0.06 g	F1	6 kg F1 0.15 g	
XP12002MDR DR II	12100 g / 2400 g 0.1 g / 0.01g 0.1 g		5 kg 0.1 g		5 kg 6 0.06 g		0/2/4/6/8/10 kg 2 kg 0.06 g	d	12 kg F1* 0.096 g	
XP8001M 1 II	8100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		N.A. 2/4/6/8 kg 0.1 g	F1	8 kg F1 0.6 g	
XP8001MDR DR II	8100 g / 1600 g 1 g / 0.1g 1 g		5 kg 1 g		5 kg 6 0.6 g		N.A. 2/4/6/8 kg 0.6 g	F1	8 kg F1 0.6 g	
XP12001M 1 II	12100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		N.A. 4/8/12 kg 0.1 g	F1	12 kg F1 0.6 g	
XP16001M 1 II	16100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		N.A. 4/8/12/16 kg 0.2 g	F1	16 kg F1 0.8 g	
XP20001M 1 II	20100 g 0.1 g 1 g		10 kg 0.2 g		10 kg 6 0.08 g		N.A. 5/10/15/20 kg 0.2 g	F1	20 kg F1 0.8 g	
XP12000M 1 -	12100 g 1 g -		5 kg 1 g		5 kg 6 0.6 g		N.A. 4/8/12 kg 0.6 g	F1	12 kg F1 0.6 g	
XP20000M 1 II	20100 g 1 g 1 g		10 kg 1 g		10 kg 6 0.6 g		N.A. 5/10/15/20 kg 0.6 g	F1	20 kg F1 0.8 g	

* Conventional weight value

1.1.3 XP Balance type «L»

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
XP8001L 1 II	8100 g 0.1 g 1 g		5 kg 0.3 g		5 kg 6 0.08 mg		N.A. 2/4/6/8 kg 0.2 g	F1	8 kg F1 0.64 g	
XP16001L 1 II	16100 g 0.1 g 1 g		5 kg 0.3 g		5 kg 6 0.08 g		N.A. 4/8/12/16 kg 0.2 g	F1	16 kg F1 0.8 g	
XP32001L 1 II	32100 g 0.1 g 1 g		10 kg 0.3 g		10 kg 6 0.08 g		N.A. 10/20/30 kg 0.3 g	F1	32 kg F1 0.96 g	
XP32001LDR DR II	32100 g / 6400 g 1 g / 0.1g 1 g		10 kg 1 g		10 kg 6 0.6 g		0/5/10/15/20/25 kg 5 kg 0.3 g	d	32 kg F1 0.96 g	
XP64001L 1 II	64100 g 0.1 g 1 g		20 kg 0.5 g		20 kg 6 0.1 g		N.A. 20/40/60 kg 0.5 g	F1	64 kg F1 1.28 g	
XP16000L 1 II	16100 g 1 g 1 g		5 kg 0.3 g		5 kg 6 0.6 g		N.A. 4/8/12/16 kg 0.6 g	F1	16 kg F1 1.28 g	
XP32000L 1 II	32100 g 1 g 1 g		10 kg 1 g		10 kg 6 0.6 g		N.A. 10/20/30 kg 0.6 g	F1	32 kg F1 1.92 g	
XP64000L 1 II	64100 g 1 g 1 g		20 kg 1 g		20 kg 6 0.6 g		N.A. 20/40/60 kg 0.6 g	F1	64 kg F1 1.92 g	

* Conventional weight value

1.2 XS Balances

1.2.1 XS Balance Type «S»

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
XS203S 1 II	210 g 1 mg 0.01 g		100 g 3 mg		100 g 6 0.9 mg		N.A. 50/100/150/200 g 2 mg	E2	200 g E2 5 mg	
XS403S 1 II	410 g 1 mg 0.01 g		200 g 3 mg		100 g 6 0.9 mg		N.A. 100/200/300/400 g 2 mg	E2	400 g E2 6 mg	
XS603S 1 II	610 g 1 mg 0.01 g		200 g 3 mg		200 g 6 0.9 mg		0/200/400 g 200 g 2 mg	d	600 g F1* 4.5 mg	
XS603SDR DR II	610 g / 120 g 0.01 g / 1 mg 0.01 g		200 g 0.01 g		200 g 6 6 mg		N.A. 200/400/600 g 6 mg	F1	600 g F1* 9 mg	
XS1003S 1 I	1010 g 1 mg 0.01 g		500 g 3 mg		500 g 6 0.8 mg		0/200/400/600/800 g 200 g 2 mg	d	1 kg F1* 5 mg	
XS802S 1 II	810 g 0.01 g 0.1 g		500 g 0.02 g		500 g 6 8 mg		N.A. 200/400/600/800 g 0.02 g	F1	800 g F1* 0.06 g	
XS2002S 1 II	2100 g 0.01 g 0.1 g		1 kg 0.03 g		1 kg 6 8 mg		0/500/1000/1500 g 500 g 0.02 g	d	2 kg F1 0.05 g	
XS4002S 1 II	4100 g 0.01 g 0.1 g		2 kg 0.03 g		2 kg 6 8 mg		0/1/2/3 kg 1 kg 0.02 g	d	4 kg F1 0.06 g	

* Conventional weight value

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
XS4002SDR DR II	4100 g / 800 g 0.1 g / 0.01 g 0.1 g		2 kg 0.1 g		2 kg 6 0.06 g		N.A. 1/2/3/4 kg 0.06 g	F1	4 kg F1 0.06 g	
XS6002S 1 II	6100 g 0.01 g 0.1 g		2 kg 0.03 g		2 kg 6 8 mg		0/2/4 kg 2 kg 0.02 g	d	6 kg F1* 0.06 g	
XS6002SDR DR II	6100 g / 1200 g 0.1 g / 0.01 g 0.1 g		2 kg 0.1 g		2 kg 6 0.06 g		0/2/4 kg 2 kg 0.06 g	d	6 kg F1 0.15 g	
XS4001S 1 II	4100 g 0.1 g 0.1 g		2 kg 0.2 g		2 kg 6 0.08 g		N.A. 1/2/3/4 kg 0.06 g	F1	4 kg F1 0.24 g	
XS6001S 1 II	6100 g 0.1 g 0.1 g		2 kg 0.2 g		2 kg 6 0.08 g		N.A. 2/4/6 kg 0.06 g	F1	6 kg F1 0.24 g	
XS8001S 1 II	8100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		0/2/4/6 kg 2 kg 0.1 g	d	8 kg F1 0.6 g	

* Conventional weight value

1.2.2 XS Balance Type «M»

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
XS6001M 1 II	6100 g 0.1 g 0.1 g		2 kg 0.2 g		2 kg 6 0.08 g		N.A. 2/4/6 kg 0.06 g	F1	6 kg F1 0.24 g	
XS6001MDR DR II	6100g / 1200 g 1 g / 0.1 g 1 g		2 kg 1 g		2 kg 6 0.6 g		N.A. 2/4/6 kg 0.6 g	F1	6 kg F1 0.3 g	
XS10001M 1 II	10100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		N.A. 2/4/6/8/10 kg 0.1 g	F1	10 kg F1 0.5 g	
XS16001M 1 II	16100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		N.A. 4/8/12/16 kg 0.2 g	F1	16 kg 0.8 g	
XS10000M 1 -	10100 g 1 g -		5 kg 1 g		5 kg 6 0.6 g		N.A. 2/4/6/8/10 kg 0.6 g	F1	10 kg F1 0.5 g	
XS16000M 1 II	16100 g 1 g 1 g		5 kg 1 g		5 kg 6 0.6 g		N.A. 4/8/12/16 kg 0.6 g	F1	16 kg F1 0.8 g	

* Conventional weight value

1.2.3 XS Balance Type «L»

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
XS8001L 1 II	8100 g 0.1 g 1 g		5 kg 0.3 g		5 kg 6 0.08 g		N.A. 2/4/6/8 kg 0.2 g	F1	8 kg F1 0.64 g	
XS16001L 1 II	16100 g 0.1 g 1 g		5 kg 0.3 g		5 kg 6 0.08 g		N.A. 4/8/12/16 kg 0.2 g	F1	16 kg F1 0.8 g	
XS32001L 1 II	32100 g 0.1 g 1 g		10 kg 0.3 g		10 kg 6 0.08 g		N.A. 10/20/30 kg 0.3 g	F1	32 kg F1 0.96 g	
XS32001LDR DR II	32100 g / 6400 g 1 g / 0.1 g 1 g		10 kg 1 g		10 kg 6 0.6 g		0/5/10/15/20/25 kg 5 kg 0.3 g	d	32 kg F1 0.96 g	
XS16000L 1 II	16100 g 1 g 1 g		5 kg 1 g		5 kg 6 0.6 g		N.A. 4/8/12/16 kg 0.6 g	F1	16 kg F1 1.28 g	
XS32000L 1 II	32100 g 1 g 1 g		10 kg 1 g		10 kg 6 0.6 g		N.A. 10/20/30 kg 0.6 g	F1	32 kg F1 1.92 g	

* Conventional weight value

1.3 Platform

1.3.1 X Platform Type «S»

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
X204S 1 I	210 g 0.1 mg 1 mg		100 g 0.3 mg		100 g 10 0.2 mg		0/50/100/150 g 50 g 0.2 mg	d	200 g E2 * 1 mg	
X404S 1 I	410 g 0.1 mg 1 mg		200 g 0.3 mg		200 g 10 0.1 mg		0/100/200/300 g 100 g 0.2 mg	d	400 g E2 * 2 mg	
X404SDR DR I	410 g / 80 g 1 mg / 0.1 mg 1 mg		200 g 1 mg		200 g 10 0.6 mg		0/100/200/300 g 100 g 0.6 mg	d	400 g E2 * 2 mg	
X203S 1 II	210 g 1 mg 0.01 g		100 g 3 mg		100 g 6 0.9 mg		N.A 50/100/150/200 g 2 mg	E2	200 g E2 5 mg	
X603S 1 II	610 g 1 mg 0.01 g		200 g 3 mg		200 g 6 0.9 mg		0/200/400 g 200 g 2 mg	d	600 g F1* 4.5 mg	
X603SDR DR II	610 / 120 g 0.01 g / 1 mg 0.01 g		200 g 0.01 g		200 g 6 6 mg		N.A. 200/400/600 g 0.01 g	F1	600 g F1* 9 mg	
X1203S 1 I	1210 g 1 mg 0.01 g		500 g 3 mg		500 g 10 0.8 mg		0/200/400/600/ 800/1000 g 200 g 2 mg	d	1.2 kg F1* 6 mg	

* Conventional weight value

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
X2003SDR DR I	2100 g / 500 g 0.01 g/ 1 mg 0.01 g		1000 g 0.01 g		500 g 10 6 mg		0/500/1000/1500 g 500 g 6 mg	d	2 kg F1 0.01 g	
X5003SDR DR I	5100 g / 1000 g 0.01 g / 1 mg 0.01 g		2 kg 0.01 g		2 kg 10 6 mg		0/1/2/3/4 kg 1 kg 6 mg	d	5 kg F1* 0.02 g	
X1202S 1 II	1210 g 0.01 g 0.1 g		500 g 0.02 g		500 g 6 8 mg		N.A. 400/800/1200 g 0.02 g	F1	1.2 kg F1 0.06 g	
X2002S 1 II	2100 g 0.01 g 0.1 g		1 kg 0.03 g		1 kg 6 8 mg		0/500/1000/1500 g 500 g 0.02 g	d	2 kg F1 0.05 g	
X4002S 1 II	4100 g 0.01 g 0.1 g		2 kg 0.03 g		2 kg 6 8 mg		0/1/2/3 kg 1 kg 0.02 g	d	4 kg F1 0.06 g	
X6002S 1 II	6100 g 0.01 g 0.1 g		2 kg 0.03 g		2 kg 6 8 mg		0/2/4 kg 2 kg 0.02 g	d	6 kg F1* 0.06 g	
X6002SDR DR II	6100 g / 1200 g 0.1 g / 0.01 g 0.1 g		2 kg 0.1 g		2 kg 6 0.06 mg		N.A. 2/4/6 kg 0.1 g	F1	6 kg F1 0.15 g	
X8002S 1 II	8100 g 0.01 g 0.1 g		5 kg 0.04 g		5 kg 6 8 mg		0/2/4/6 kg 2 kg 0.02 g	d	8 kg F1* 0.06 g	
X10002S 1 II	10100 g 0.01 g 0.1 g		5 kg 0.04 g		5 kg 10 8 mg		0/2/4/6/8 kg 2 kg 0.02 mg	d	10 kg F1* 0.05g	

* Conventional weight value

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
X10002SDR DR II	10100 g / 2000 g 0.1 g / 0.01 g 0.1 g		5 kg 0.1 g		5 kg 10 0.06 g		0/2/4/6/8 kg 2 kg 0.05 g	d	10 kg F1* 0.1 g	
X4001S 1 II	4100 g 0.1 g 0.1 g		2 kg 0.2 g		2 kg 6 0.08 g		N.A. 1/2/3/4 kg 0.06 g	F1	4 kg F1 0.24 g	
X6001S 1 II	6100 g 0.1 g 0.1 g		2 kg 0.2 g		2 kg 6 0.08 g		N.A. 2/4/6 kg 0.06 g	F1	6 kg F1 0.24 g	
X8001S 1 II	8100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		0/2/4/6 kg 2 kg 0.1 g	d	8 kg F1 0.6 g	
X10001S 1 II	10100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		0/2/4/6/8 kg 2 kg 0.1 g	d	10 kg F1 0.5 g	

* Conventional weight value

1.3.2 X Platform Type «M»

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
X12002MDR DR II	12100 g / 2400 g 0.1 g / 0.01g 0.1 g		5 kg 0.1 g		5 kg 6 0.06 g		0/2/4/6/8/10 kg 2 kg 0.06 g	d	12 kg F1 0.096 g	
X8001M 1 II	8100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		0/2/4/6 kg 2 kg 0.1 g	d	8 kg F1 0.6 g	
X12001M 1 II	12100 g 0.1 g 1 g		5 kg 0.2 g		5 kg 6 0.08 g		N.A. 4/8/12 kg 0.1 g	F1	12 kg F1 0.6 g	
X12000M 1 -	12100 g 1 g -		5 kg 1 g		5 kg 6 0.6 g		N.A. 4/8/12 kg 0.6 g	F1	12 kg F1 0.6 g	
X20001M 1 II	20100 g 0.1 g 1 g		10 kg 0.2 g		10 kg 6 0.08 g		N.A. 5/10/15/20 kg 0.2 g	F1	20 kg F1 0.8 g	
X20000M 1 II	20100 g 1 g 1 g		10 kg 1 g		10 kg 6 0.6 g		N.A. 5/10/15/20 kg 0.6 g	F1	20 kg F1 0.8 g	

1.3.3 X Platform Type «L»

Balance Data			Excentricity		Repeatability		Linearity		Sensitivity	
Type Range Class	Capacity Readability d e		Refer. Weight Tolerance ±	Method	Refer. Weight Measurements Std. deviation max.	Method	Preload Refer. Weight Tolerance ±	Method	Refer. Weight Class Tolerance ±	Method
X16001L 1 II	16100 g 0.1 g 1 g		5 kg 0.3 g		5 kg 6 0.08 g		N.A. 4/8/12/16 kg 0.2 g	F1	16 kg F1 0.8 g	
X32001L 1 II	32100 g 0.1 g 1 g		10 kg 0.3 g		10 kg 6 0.08 g		N.A. 10/20/30 kg 0.3 g	F1	32 kg F1 0.96 g	
X64001L 1 II	64100 g 0.1 g 1 g		20 kg 0.5 g		20 kg 6 0.1 g		N.A. 20/40/60 kg 0.5 g	F1	64 kg F1 1.28 g	
X32000L 1 II	32100 g 1 g 1 g		10 kg 1 g		10 kg 6 0.6 g		N.A. 10/20/30 kg 0.6 g	F1	32 kg F1 1.92 g	

10 Accessories

List of Contents

1 Note

Accessories for balances are listed in the «Technical data and Accessories» chapter of the Operating Instructions. All information required for ordering accessories will be found there.

The Operating Instructions are on the LAB service-expert CD or at http://extranet.mt.com LabTec Market Support.

1.1 Frequently used accessories

1.1.1 Protectiv Cover Terminal

Designation	Part No.
Protective Cover Terminal PPT	11132570
Protective Cover Terminal SPT	11106870

1.1.2 Protectiv Cover Platform

Designation	Part No.
Protective Cover for Platform; balance types «S»	11133034
Protective Cover for Platform; balance types «M»	11132574

1.1.3 Protectiv Cover Platform/Terminal

Designation	Part No.
Protective Cover for Platform/Terminal; balance types «S»	11132571
Protective Cover for Platform/Terminal; balance types «M»	11132572

1.1.4 Power supply

Designation	Note	Part No.
Power supply	S and M platforms	11132070
Line cable S and M platforms	DK	87452
	GB	89405
	USA	88668
	AUS	88751
	SA	89728
	EU (Schuko)	87925
	CH	87920
	I	87457

1.1.5 Further accessories

All accessories are listed in the Operating Instructions in the chapter Technical Data and Accessories.

11 Service Aids

1 Service Aids

USB-Dongle ‘LARSLock‘

Part No.

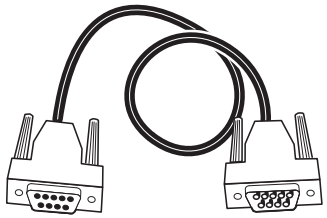
11107505

ServiceExpert CD

Part No.

11780410

RS9 – RS9 connection cable for balance – PC, 1m m/f



Part No.

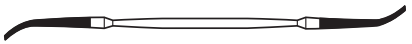
11101051

ESD-Servicekit

Part No.

11600009

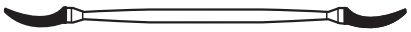
File



Part No.

299017

File for B-«MonoBloc»



Part No.

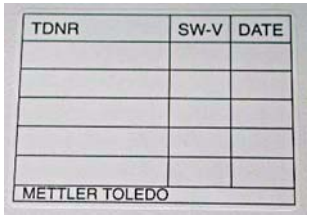
11600083

6-pin detector cable

Part No.

11134000

Service Data Plate



Part No.

11106832

Mounting Gauges «MonoBloc», Part No. 217411

	consisting of:	Part No.
	2 Pins Ø 2,97 mm (S-Balances)	217211
	2 Pins Ø 3,47 mm (B/G/R-Balances)	217270
	1 Spacer strip 0,5 mm	217225
	1 Spacer strip 6,5 mm	217378

12 Forms

1 Forms

1.1 Certificate - Examples

1.1.1 Certificate Blank

Cal_Cert_Blanc

1.1.2 Blancprint

Blancprint can by order wirh Part No. 11780454 (100 Plancprint)

Certificate of Balance Calibration

Balance:

Eccentricity

Yes ☐ No ☐

	First/Center	
Rear/Left	Rear/Right	
Front/Left	Front/Right	
	Last Center	

Tolerance: _____ Deviation: _____

Linearity

Yes ☐ No ☐

Absolute Differential	Weight Tare	Display Tare	Display Reference	Difference Reference
1				
2				
3				
4				
5				
6				
7				

Tolerance: _____ Deviation: _____

Sensitivity

Yes ☐ No ☐

Weight	Display

Tolerance: _____ Deviation: _____

Repetability

Yes ☐ No ☐

	empty	load	Difference
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Tolerance: _____ Deviation: _____

issued by

Mettler-Toledo Services, Balance Road, MT-8606 Weightcity

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