Sliding Door Operator
Entrematic PSL Retrofit Kit

Installation Manual
Original instructions
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1 Revision

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<td>8</td>
<td>Updated the length of backbone to fit the MUK package within 1.2m.</td>
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<td>16</td>
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<td>21</td>
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<td>23</td>
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<tr>
<td>83</td>
<td>Added number for all screws and nuts in the operator drawings.</td>
</tr>
<tr>
<td>95</td>
<td>Added battery as standard component.</td>
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<tr>
<td>114</td>
<td>Added new paragraph for belt lock installation.</td>
</tr>
<tr>
<td>113</td>
<td>Added new paragraph for limitations when using the belt lock.</td>
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</table>
2 Reference

For general statement, electrical connection, start up and parameter setting and other information, please refer to PSL150 Installation and Service Manual (1016248).
3 Tools required

- Allen key 6 mm with spherical tip
- Torx (T10 and T20)
- Phillips screw driver
- Multi/Wire cutter
- Spanner 10mm
- Tape measuring tool
4 Mechanical installation

4.1 Entrematic PSL Retrofit Kit for universal bracket solutions

**Note!** Following are the common steps for connecting components, please refer to cross-view for each adapted door type.

4.1.1 Check the components and kits

**Check the components (Universal)**

4 Screw: ISO 14583 (MRT-TT) M6x10
11 Screw: DIN 6921 (M6SF) M6x8
12 Backbone assembly
13 Slack reducer (Not needed if belt lock equipped)
14 Washer: ISO 7089 (BRB) 6.4x12x1.5
15 Tension wheel assembly
18 Tooth belt
20 Belt clamp
24 Connecting bracket
26 Transmission bracket
28 Mounting bracket
61 Battery
Check B1 kit

14  Washer: ISO 7089 (BRB) 6.4x12x1.5 FZB
25  Bracket 1
27  Mounting plate
29  Square nut: M6
30  Nut: M6
31  Nut: ISO 4035 (ML6M) M6 FZB
32  Screw: DIN 6921 (M6SF) M6x12
33  Screw: DIN 6921 (M6SF) M6x14
34  Screw: DIN 6921 (M6SF) M6x16
35  Screw: ISO 14583 (MRT-TT) M6x16
36  Screw: ISO 14583 (MRT-TT) M6x20
37  Screw: ISO 14583 (MRT-TT) M6x25
38  Screw: ISO 14583 (MRT-TT) M6x35
Check B2 kit

14  Washer: ISO 7089 (BRB) 6.4x12x1.5 FZB
25  Bracket 1
27  Mounting plate
32  Screw: DIN 6921 (M6SF) M6x12
33  Screw: DIN 6921 (M6SF) M6x14
34  Screw: DIN 6921 (M6SF) M6x16
35  Screw: ISO 14583 (MRT-TT) M6x16
40  Bracket 2
Check B3 kit

14  Washer: ISO 7089 (BRB) 6.4x12x1.5 FZB
27  Mounting plate
29  Square nut: M6
33  Screw: DIN 6921 (M6SF) M6x14
35  Screw: ISO 14583 (MRT-TT) M6x16
38  Screw: ISO 14583 (MRT-TT) M6x35
41  Bracket 3
42  Spacer block
43  Screw: DIN 6921 (M6SF) M6x10
Check B4 kit

14  Washer: ISO 7089 (BRB) 6.4x12x1.5 FZB
25  Bracket 1
32  Screw: DIN 6921 (M6SF) M6x12
33  Screw: DIN 6921 (M6SF) M6x14
35  Screw: ISO 14583 (MRT-TT) M6x16
36  Screw: ISO 14583 (MRT-TT) M6x20
43  Screw: DIN 6921 (M6SF) M6x10
44  Bracket 4
45  Bracket 5
46  Nut: M6
Check belt lock fixing bracket kit 1

4 Screw: ISO 14583 (MRT-TT) M6 x 10
11 Screw: DIN 6921 (M6SF) M6 x 8
14 Washer: ISO 7089 (BRB) 6.4 x 12 x 1.5 FZB
27 Mounting plate
29 Square nut: M6
30 Nut: M6
31 Nut: ISO 4035 (ML6M) M6 FZB
32 Screw: DIN 6921 (M6SF) M6 x 12
33 Screw: DIN 6921 (M6SF) M6 x 14
34 Screw: DIN 6921 (M6SF) M6 x 16
47 Fixing bracket
48 Mounting bracket
Check belt lock fixing bracket kit 2

4 Screw: ISO 14583 (MRT-TT) M6x10
11 Screw: DIN 6921 (M6SF) M6x8
14 Washer: ISO 7089 (BRB) 6.4x12x1.5 FZB
33 Screw: DIN 6921 (M6SF) M6x14
34 Screw: DIN 6921 (M6SF) M6x16
40 Bracket 2
43 Screw: DIN 6921 (M6SF) M6x10
44 Bracket 4
45 Bracket 5
46 Nut: M6
47 Fixing bracket
48 Mounting bracket
Check belt lock fixing bracket kit 3

35  Nut: M5
30  Belt guide
55  Fixing bracket (belt lock) TORMAX iMotion 2202
59  Screw: ISO 14583 (MRT) M5x10
60  Screw: ISO 7046 (MFTS) M3x5

Check belt lock fixing bracket kit 4

29  Square nut: M6
43  Screw: DIN 6921 (M6SF) M6x10
56  Fixing bracket (belt lock) GEZE Slimdrive
4.1.2 The IOU and the battery installation

**Note!** Select IOU when using bi-stable lock.

Fix the IOU (7) and the battery (8) to the backbone assembly (12) with the screws (9).

- **ISO 14583 (MRT) M4x6 (2x)**
- **ISO 14583 (MRT) M4x6 (2x)**
- **ISO 14583 (MRT) M4x6 (4x)**

7  IOU
8  Battery
9  Screw: ISO 14583 (MRT) M4x6
12 Backbone assembly
4.1.3 Fix the brackets to the backbone assembly

The brackets in the picture is only an example, please choose the suitable brackets for the specified operator.

a How to install the mounting plate. Please refer to the dimension on the surface of mounting plate (27) firstly. For measurement see drawing to respectively operator.
b Assemble the mounting plate (27) and mounting bracket (28) with the washers (14) and screws (4).

![Diagram](image)

- Screw: ISO 14583 (MRT-TT) M6x10
- Washer: ISO 7089 (BRB) 6.4x12x1.5 FZB
- Mounting plate
- Mounting bracket

4 Mechanical installation

c Fix two screws (11) to the backbone assembly (12), don't tighten the screws (11).

![Diagram](image)

- Screw: DIN 6921 (M6SF) M6x8
- Backbone assembly
d Fix the brackets to the backbone assembly (12), then tighten the screws (11) with a torque of 8 - 10 Nm.

Screw: DIN 6921 (M6SF) M6x8

Backbone assembly
4.1.4 Fix the brackets to the tension wheel

Fix the brackets to the tension wheel assembly (15) in the same way as 4.1.3.

Screw: DIN 6921 (M6SF) M6x8
11  Screw: DIN 6921 (M6SF) M6x8
15  Tension wheel assembly

4.1.5 Fix the brackets to the belt lock (option)

Fix the brackets to the belt lock (39) in the same way as 4.1.3.

Screw: DIN 6921 (M6SF) M6x8
11  Screw: DIN 6921 (M6SF) M6x8
39  Belt lock
Case 1/3/4: Need to order the extension plate kit (Article: 1019867), please refer to the installation on page 23.

Case 3: Need to order the extension cable for IOU (Article: 330000441)

**Note!** For the single opening right door, the belt lock is installed on the right side close to the backbone.
Bi-parting door (the belt lock is installed on the right side of the beam)

**Note!** Please refer to belt lock installation drawing (1018479).

2100 mm ≤ SBL ≤ 2164 mm (HD)
2270 mm ≤ SBL ≤ 2334 mm (DD)

**Opening right door**

**Note!** Belt lock is installed on the right side of the beam for following SBL. Please refer to belt lock installation drawing (1018479).

SBL < 2100 mm (HD)
SBL < 2300 mm (DD)

**Opening left door**

**Note!** Please refer to belt lock installation drawing (1018479).

No limitations.
4.1.6 Fix the extension plate kit

Note! The Extension plate is only needed when a belt lock shall be fitted in a door with small COW.

Check the components

62 Holding bracket
63 Screw: ISO 4014 (M6S) M4x10
64 Screw: ISO 14583 (MRT) M4x6
65 Extension plate
66 Wiring harness
Fix IOU, battery and belt lock to extension plate

Case 1

- 62 Holding bracket
- 64 Screw: ISO 14583 (MRT) M4x6
- 65 Extension plate
- 69 Belt lock
- 70 Battery

ISO 14583 (MRT) M4x6 (3x)
Case 3

62  Holding bracket
64  Screw: ISO 14583 (MRT) M4x6
65  Extension plate
69  Belt lock
70  Battery
71  IOU
Case 4

62  Holding bracket  
64  Screw: ISO 14583 (MRT) M4x6  
65  Extension plate  
69  Belt lock  
70  Battery  
71  IOU
Install the extension plate kit to the backbone

12 Backbone assembly
63 Screw: ISO 4014 (M6S) M4x10
64 Screw: ISO 14583 (MRT) M4x6
65 Extension plate
4.1.7 Fix the transmission bracket to the connecting bracket

a Fix the transmission bracket (26) to the connecting bracket (24) with the screws (4) and washers (14).

ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)
ISO 14583 (MRT-TT) M6x10 FZB 8.8 (4x)

4 Screw: ISO 14583 (MRT-TT) M6x10
14 Washer: ISO 7089 (BRB) 6.4x12x1.5 FZB
24 Connecting bracket
26 Transmission bracket

4.1.8 Attachment of slack reducer

Please refer to PSL150 Installation and Service Manual (1016248).
4.1.9 General rules of the installation
Position of the belt connecting to the transmission brackets.

**Bi-parting opening**
The transmission bracket (16) on the left door leaf shall be connected to the *upper* belt.
The transmission bracket (16) on the right door leaf shall be connected to the *lower* belt.

**Single left opening**
The transmission bracket (16) shall be connected to the *upper* belt.

**Single right opening**
The transmission bracket (16) shall be connected to the *lower* belt.
### 4.1.10 List of the adapted door types

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<th>Belt lock fixing bracket kit</th>
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<td>Tormax TMP</td>
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<td>Tormax TX/TM/TMX</td>
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<td>Tormax TEP/XP</td>
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<td>Ditec VALOR (escape route)</td>
<td>80</td>
<td>B1</td>
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<td>Ditec Bis O</td>
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<td>51</td>
<td>Ditec Bis V</td>
<td>82</td>
<td>B2</td>
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</table>
4.1.11 Adapted door types

**Note!** Original nuts and bolts can be reused.

ATS CLIXMASTER

---

24 Connecting bracket
25 Bracket 1
27 Mounting plate
28 Mounting bracket
ATS TSF 2100

ISO 14583 (MRT-TT)
M6x10 FZB 8.8 (6x)

ISO 7089 (BRB)
6.4x12x1.5 FZB (6x)

Original or nut M6 (6x)

DIN 6921 (M6SF)
M6x14 FZB 8.8 (6x)

Original or nut M6 (6x)

24 Connecting bracket
25 Bracket 1
27 Mounting plate
28 Mounting bracket
Baumgartner Al-Profil

Original or square nut M6 (6x)

ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)

DIN 6921 (M6SF) M6x16 FZB 8.8 (6x)

DIN 6921 (M6SF) M6x8 FZB 8.8 (6x)

ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)

ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)

Original or square nut M6 (4x)

ISO 14583 (MRT-TT) M6x16 FZB 8.8 (4x)

ISO 14583 (MRT-TT) M6x10 FZB 8.8 (4x)

24 Connecting bracket
25 Bracket 1
27 Mounting plate
28 Mounting bracket
Make M6 threads on the original steel beam manually.

ISO 14583 (MRT-TT)
M6x10 FZB 8.8 (4x)

Connecting bracket
Mounting bracket
Bracket 2
DORMA ES 50

Connecting bracket
Bracket 1
Mounting plate
Mounting bracket
DORMA ES 55/60

24 Connecting bracket
25 Bracket 1
27 Mounting plate
28 Mounting bracket
4 Mechanical installation

DORMA ES 70

24 Connecting bracket
28 Mounting bracket
24 Connecting bracket
27 Mounting plate
28 Mounting bracket
DORMA ES 200

24 Connecting bracket
27 Mounting plate
28 Mounting bracket
41 Bracket 3
ELDEBE GSX

- **DIN 6921 (M6SF)**
  - M6x8 FZB 8.8 (6x)
  - M6x12 FZB 8.8 (6x)

- **ISO 4035 (ML6M)**
  - M6 FZB (6x)

- **ISO 7089 (BRB)**
  - 6.4x12x1.5 FZB (36x)
  - M6x10 FZB 8.8 (6x)

- **ISO 14583 (MRT-TT)**
  - M6x25 FZB 8.8 (4x)

24 Connecting bracket
27 Mounting plate
28 Mounting bracket
4 Mechanical installation

EMD

DIN 6921 (M6SF) M6x14 FZB 8.8 (12x)
ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)
ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)

Nut (6x)

Square nut: M6 (4x)
14mm

24 Connecting bracket
27 Mounting plate
28 Mounting bracket
EMC

DIN 6921 (M6SF) M6x12 FZB 8.8 (4x)
Square nut: M6 (4x)

DIN 6921 (M6SF) M6x14 FZB 8.8 (12x)

ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)

ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)

 ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)

DIN 6921 (M6SF) M6x8 FZB 8.8 (6x)

Connecting bracket 24
Mounting plate 27
Mounting bracket 28

14mm
24 Connecting bracket
25 Bracket 1
27 Mounting plate
28 Mounting bracket
24 Connecting bracket
25 Bracket 1
27 Mounting plate
28 Mounting bracket
Faiveley 17

- DIN 6921 (M6SF) M6x14 FZB 8.8 (6x)
- ISO 4035 (ML6M) M6 FZB (6x)
- ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)
- ISO 4035 (ML6M) M6 FZB (4x)
- ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)
- DIN 6921 (M6SF) M6x12 FZB 8.8 (4x)
- ISO 4035 (ML6M) M6 FZB (4x)
- ISO 14583 (MRT-TT) M6x10 FZB 8.8 (4x)

24 Connecting bracket
25 Bracket 1
27 Mounting plate
28 Mounting bracket
**GEZE ECdrive**

- Square nut M6 (6x) [29]
- DIN 6921 (M6SF) M6x10 FZB 8.8 (6x) [43]
- DIN 6921 (M6SF) M6x8 FZB 8.8 (6x) [28]
- ISO 14583 (MRT-TT) M6x10 FZB 8.8 (4x) [4]
- ISO 14583 (MRT-TT) M6x16 FZB 8.8 (4x) [35]
- ISO 7089 (BRB) 6.4x12x1.5 FZB (16x) [14]
- 6
- 28
- 11

**Parts and Locations**

- 24 Connecting bracket
- 25 Bracket 1
- 28 Mounting bracket
GEZE TSA 350 N/350 W

- Original T-nuts or ISO 4035 (ML6M) M6 FZB (4x)
- DIN 6921 (M6SF) M6x14 FZB 8.8 (6x)
- Square nut M6 (6x)
- ISO 4035 (ML6M) M6 FZB (4x)
- 12 mm Square nut M6 (6x)
- DIN 6921 (M6SF) M6x8 FZB 8.8 (6x)
- ISO 7089 (BRB) 6.4x12x1.5 FZB (32x)
- ISO 14583 (MRT-TT) M6x20 FZB 8.8 (4x)
- DIN 6921 (M6SF) M6x12 FZB 8.8 (4x)

24 Connecting bracket
25 Bracket 1
28 Mounting bracket
4 Mechanical installation

GEZE TSA 360

Original T-nuts or ISO 4035 (ML6M) M6 FZB 8.8 (4x)

DIN 6921 (M6SF) M6x14 FZB 8.8 (6x) Square nut M6 (6x)

DIN 6921 (M6SF) M6x8 FZB 8.8 (6x)

Connecting bracket
24
Bracket 1
25
Mounting bracket
28

24
32
31
33
29
28
11

ISO 14583 (MRT-TT) M6x20 FZB 8.8 (4x)

ISO 7089 (BRB) 6.4x12x1.5 FZB (32x)

DIN 6921 (M6SF) M6x12 FZB 8.8 (4x)
4 Mechanical installation

24 Connecting bracket
25 Bracket 1
27 Mounting plate
28 Mounting bracket
4 Mechanical installation

Gilgen SLK/SLG

DIN 6921 (M6SF)
M6x12 FZB 8.8 (6x)

ISO 4035 (ML6M)
M6 FZB (6x)

DIN 6921 (M6SF)
M6x8 FZB 8.8 (6x)

ISO 7089 (BRB)
6.4x12x1.5 FZB (24x)

24 Connecting bracket
25 Bracket 1
28 Mounting bracket
4 Mechanical installation

Connecting bracket
Bracket 1
Mounting bracket
24 Connecting bracket
25 Bracket 1
27 Mounting plate
28 Mounting bracket
4 Mechanical installation

Manusa STK

- Original screws and nuts (6x)
- ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)
- ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)
- DIN 6921 (M6SF) M6x12 FZB 8.8 (6x)
- DIN 6921 (M6SF) M6x16 FZB 8.8 (4x)
- ISO 7089 (BRB) 6.4x12x1.5 FZB (16x)

- Connecting bracket
- Bracket 1
- Mounting plate
- Mounting bracket
Connecting bracket 24
Bracket 44
24 Connecting bracket
25 Bracket 1
27 Mounting plate
28 Mounting bracket
40 Bracket 2
Porte Automatiche GTS-L/-P

Make M6 threads on the original door carriers

Connect 24
Bracket 1
Mounting plate
Mounting bracket
Make M6 threads on the original steel beam manually.

Original screws or DIN 6921 (M6SF) M6x12 FZB 8.8 (6x)

DIN 6921 (M6SF) M6x8 FZB 8.8 (6x)

ISO 14583 (MRT-TT) M6x10 FZB 8.8 (4x)

Original screws

Connecting bracket 24
Mounting bracket 28
Bracket 2 40
Make M6 threads on the original steel beam manually.

Original screws or DIN 6921 (M6SF) M6x12 FZB 8.8 (6x)

ISO 14583 (MRT-TT) M6x10 FZB 8.8 (8x)

Make M6 threads on the original steel beam manually.

Original screws or DIN 6921 (M6SF) M6x12 FZB 8.8 (6x)

ISO 14583 (MRT-TT) M6x10 FZB 8.8 (8x)

24  Connecting bracket
25  Bracket 1
28  Mounting bracket
40  Bracket 2
Make M6 threads on the original steel beam manually.

Original screws or DIN 6921 (M6SF) M6x12 FZB 8.8 (6x)

ISO 14583 (MRT-TT) M6x10 FZB 8.8 (4x)

DIN 6921 (M6SF) M6x14 FZB 8.8 (4x)

24  Connecting bracket
25  Bracket 1
28  Mounting bracket
4 Mechanical installation

Record STA11

- DIN 6921 (M6SF) M6x14 FZB 8.8 (6x)
- ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)
- ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)
- ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)
- Square nut M6 (6x)

Components:
- 24 Connecting bracket
- 25 Bracket 1
- 27 Mounting plate
- 28 Mounting bracket
Record STA12/STA14 Steel

191

ISO 4035 (ML6M)
M6 FZB (4x)
ISO 14583 (MRT-TT)
M6x10 FZB 8.8 (4x)
DIN 6921 (M6SF)
M6x14 FZB 8.8 (4x)

24
33
31
28

DIN 6921 (M6SF)
M6x8 FZB 8.8 (6x)

Original screws or
DIN 6921 (M6SF)
M6x12 FZB 8.8 (6x)

32

DIN 6921 (M6SF)
M6x10 FZB 8.8 (4x)

ISO 4035 (ML6M)
M6 FZB (4x)

25

ISO 14583 (MRT-TT)
M6x10 FZB 8.8 (4x)

24 Connecting bracket
25 Bracket 1
28 Mounting bracket
Record STA12/STA14 AL

Original or Nut M6
DIN 6921 (M6SF)
M6x8 FZB 8.8 (6x)
DIN 6921 (M6SF)
M6x12 FZB 8.8 (6x) 

Nut M6
ISO 7089 (BRB)
6.4x12x1.5 FZB (12x)

DIN 6921 (M6SF)
M6x14 FZB 8.8 (4x)
ISO 14583 (MRT-TT)
M6x16 FZB 8.8 (4x)

24 Connecting bracket
25 Bracket 1
44 Bracket 4
Record STA13

24 Connecting bracket
25 Bracket 1
28 Mounting bracket
4 Mechanical installation

Record STA15

24 Connecting bracket
25 Bracket 1
28 Mounting bracket
Record STA16/17

Note! * Cut the original beam to several pieces.

**Bi-parting**

2/3 of the original beam for backbone assembly.
1/6 of the original beam for tension wheel.
1/6 of the original beam for belt lock.

**Left opening**

2/3 of the original beam for backbone assembly.
1/3 of the original beam for tension wheel and belt lock.

**Right opening**

2/3 of the original beam for backbone assembly and belt lock.
1/3 of the original beam for tension wheel.

---

24 Connecting bracket
28 Mounting bracket
4 Mechanical installation

Record STA19

24 Connecting bracket
44 Bracket 4
Record STA20

DIN 6921 (M6SF) M6x8 FZB 8.8 (6x)
DIN 6921 (M6SF) M6x10 FZB 8.8 (6x)
Nut M6 (6x)

DIN 6921 (M6SF) M6x10 FZB 8.8 (4x)
ISO 7089 (BRB) 6.4x12x1.5 FZB (8x)

24 Connecting bracket
44 Bracket 4
Record STA21

Nut M6 (6x)
DIN 6921 (M6SF) M6x8 FZB 8.8 (6x)
DIN 6921 (M6SF) M6x10 FZB 8.8 (6x)
DIN 6921 (M6SF) M6x12 FZB 8.8 (4x)

3

ISO 7089 (BRB) 6.4x12x1.5 FZB (8x)

50

24 Connecting bracket
44 Bracket 4
24  Connecting bracket
25  Bracket 1
27  Mounting plate
28  Mounting bracket
4 Mechanical installation

Tormax TX/TM/TMX

Original screws or DIN 6921 (M6SF) M6x12 FZB 8.8 (6x)

ISO 14583 (MRT-TT) M6x10 FZB 8.8 (8x)

24 Connecting bracket
25 Bracket 1
28 Mounting bracket
Waldoor EC

24  Connecting bracket
28  Mounting bracket
4 Mechanical installation

Waldoor UC

- ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)
- ISO 14583 (MRT-TT) M6x10 FZB 8.8 (8x)
- DIN 6921 (M6SF) M6x12 FZB 8.8 (6x)
- DIN 6921 (M6SF) M6x14 FZB 8.8 (6x)
- ISO 7089 (BRB) 6.4x12x1.5 FZB (18x)

24 Connecting bracket
25 Bracket 1
27 Mounting plate
28 Mounting bracket
40 Bracket 2
4 Mechanical installation

Waldoor UWS 800

Connecting bracket 24
Bracket 1 25
Mounting plate 27
Mounting bracket 28

ISO 4035 (ML6M) M6 FZB 8.8 (6x)
ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)
ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)
DIN 6921 (M6SF) M6x12 FZB 8.8 (6x)
ISO 4035 (ML6M) M6 FZB(6x)
DIN 6921 (M6SF)
ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)
ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)
DIN 6921 (M6SF) M6x8 FZB 8.8 (6x)
ISO 4035 (ML6M) M6 FZB(6x)
DIN 6921 (M6SF)
ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)
ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)
DIN 6921 (M6SF) M6x8 FZB 8.8 (6x)
Ditec VALOR (escape route)

- DIN 6921 (M6SF) M6x12 FZB 8.8 (6x)
- ISO 4035 (ML6M) M6 FZB (6x)
- ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)
- DIN 6921 (M6SF) M6x8 FZB 8.8 (6x)
- ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)
- ISO 14583 (MRT-TT) M6x25 FZB 8.8 (4x)

24 Connecting bracket
27 Mounting plate
28 Mounting bracket
Ditec Bis O

24 Connecting bracket
27 Mounting plate
28 Mounting bracket
40 Bracket 2
4 Mechanical installation

Ditec Bis V

- ISO 7089 (BRB) 6.4x12x1.5 FZB (6x)
- ISO 14583 (MRT-TT) M6x10 FZB 8.8 (6x)
- DIN 6921 (M6SF) M6x8 FZB 8.8 (6x)
- ISO 4035 (ML6M) M6 FZB (6x)
- ISO 7089 (BRB) M6x12 FZB 8.8 (6x)

24 Connecting bracket
27 Mounting plate
28 Mounting bracket
40 Bracket 2

Issued 2019-12-24
4.2 Entrematic PSL Retrofit Kit for TORMAX iMotion 2202

4.2.1 Check the components

Check the components in the package as following.

13 Drive unit kit
14 Main control assembly
15 Tension wheel assembly
18 Tooth belt
20 Belt clamp
25 Nut: DIN 985 M6 (M6M)
26 Screw: ISO 14581 (MFT) M6x12
27 Transmission bracket
28 Universal transmission bracket
35 Nut: M5
36 Screw: ISO 14583 (MRT) M5x10
37 Slack reducer (Not needed, if belt lock equipped)
61 Battery
4.2.2 Preparing

a. Dismount the original drive system, following components should be retained: door carriers (1), beam (2), cover set (3), door stops (4), cable holders (5), nuts (11) and screws (12).

Note! If there are not enough nuts (11) and screws (12), use the nuts (35) and the screws (36) to replace.

1. Door carrier
2. Beam
3. Cover set
4. Door stop
5. Cable holder
11. Nut: M5
12. Screw: M5x10
35. Nut: M5
59. Screw: ISO 14583 (MRT) M5x10
4.2.3 The IOU and the battery installation

**Note!** IOU must be selected when bi-stable.

a) Remove the brackets for the IOU and battery.

Fix the IOU and the battery (8) to the main control assembly (14) with the screws (9) and (10).

- 7 IOU
- 8 Battery
- 9 Screw: ISO 14583 (MRT) M4x6
- 10 Screw: ISO 14583 (MRT-TT) M4x55
- 14 Main control assembly
4.2.4 Fix the nuts and screws on the drive unit kit and the main control assembly

a Fix the nuts (11) to the drive unit kit (13) and main control assembly (14) with screws (12), but do not tighten the screws (12).

- Nut: M5
- Screw: M5x10
- Drive unit kit (HD or DD)
- Main control assembly
4.2.5 Fix the drive unit kit and the main control assembly

a Lift the drive unit kit (13) and main control assembly (14) to the beam (2), Then tighten the screws (12) with a torque of 6 Nm.
4.2.6 Fix the tension wheel assembly

a  Fix the nuts (11) to the tension wheel assembly (15) with screws (12), but do not tighten the screws (12).
Lift the tension wheel assembly (15) to the beam (2), do not tighten the screws (12) fully, so it shall be able to slide along the beam (2).

b  The position of the tension wheel assembly (15) should be as close as possible to the drive unit, but make sure that the tension wheel assembly (15) will not interfere with the door carrier when the door is fully opened.
4.2.7 Fix the transmission brackets

a Unscrew the existing screws (24), fix the transmission brackets (27) and the universal transmission brackets (28) to the door carriers (1) with the screws (24) and (26).

**Note!** The door leaves should be held firmly when unscrew the existing screws (24) on the door carriers (1).

---

**Door carrier**

- **Existing screw:** M6x14 (4x)
- **Nut:** DIN 985 M6 (M6M) (25)
- **Screw:** ISO 14581 (MFT) M6x12 (4x) (26)

**Transmission bracket**

- **Universal transmission bracket** (28)
4.2.8 Placement of the transmission brackets

**Bi-parting opening**
The transmission bracket (16) on the left door leaf shall be connected to the inner belt.
The transmission bracket (16) on the right door leaf shall be connected to the outer belt.

**Single left opening**
The transmission bracket (16) shall be connected to the inner belt.

**Single right opening**
The transmission bracket (16) shall be connected to the outer belt.
4.2.9 Attachment of the tooth belt

a Cut the tooth belt (18) to the right length if needed. Route the tooth belt (18) around the drive unit pulley (19) and around the tension wheel assembly (15).

b For bi-parting doors the belt ends are joined with the belt clamp (20) in the outer part of the tooth belt (18).

c Click the belt clamp (20) into position.

**Note!** Do not adjust parameter P12!
4.2.10 Checking and adjusting the belt tension

a Loosen the fixing screw (32) without removing it.

b Screw the adjustment screw (33) to its outmost position.

c Tension the tooth belt (18) by pulling the tension wheel assembly (15) by hand. Tighten the screws (12) with a **torque of 6 Nm**.

d Tighten the adjustment screw (33) until there is a gap of approx. 1-2 mm between the lock nut (34) and the bracket according to illustration below, but not further. Be sure not to overtighten, otherwise the adjustment screw (33) might damage the tension wheel (31).

e Retighten the fixing screw (32) with a **torque of 10 Nm**.

**Note!** Do not make any adjustment on the lock nut (34).
4.2.11  Bi-parting operators

a  Put doors in fully closed position. Make sure that the doors trailing edge is align with the side light.

b  Click the belt clamp (20) into position in the inner transmission bracket (16).

c  Check door panels for proper centering in the fully closed and opened positions.

4.2.12  Attachment of slack reducer

Please refer to PSL150 Installation and Service Manual (1016248).
4.2.13 Install the belt lock (option)

a Fix the nuts (11) to the belt lock (21) with screws (12), but do not tighten the screws (12). Lift the tooth belt lock (21) to the beam (2), then tighten the screws (12) with a torque of 6 Nm.

b Fix the belt to belt lock (21).

c Fix the belt guide (30) to the belt lock (21) with the screws (60).
4.3 Entrematic PSL Retrofit Kit for GEZE Slimdrive

4.3.1 Check the components

Check the components in the package as following.

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Screw: ISO 14583 (MRT) M4x6</td>
<td></td>
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<tr>
<td>11</td>
<td>Screw: ISO 4014 (M6S) M6x8</td>
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</tr>
<tr>
<td>12</td>
<td>Screw: DIN 6921 (M6SF) M6x10</td>
<td></td>
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<tr>
<td>13</td>
<td>Drive unit kit</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>PSU</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Tension wheel assembly</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Tooth belt</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Belt clamp</td>
<td></td>
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<tr>
<td>24</td>
<td>Mounting plate</td>
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<tr>
<td>25</td>
<td>Screw: ISO 7046 (MFX) M6x10</td>
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<tr>
<td>26</td>
<td>MCU</td>
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<td>27</td>
<td>Transmission bracket</td>
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<tr>
<td>28</td>
<td>Universal transmission bracket</td>
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<td>Cable bracket</td>
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<td>31</td>
<td>Screw: ISO 14585 ST 4.2x9.5</td>
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<td>32</td>
<td>Screw: ISO 14581 (MFT) M6x12</td>
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<td>37</td>
<td>Nut: M6</td>
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<td>38</td>
<td>Screw: ISO 14583 (MRT) M5x10</td>
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<tr>
<td>39</td>
<td>Slack reducer (Not needed if belt lock equipped)</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Battery</td>
<td></td>
</tr>
</tbody>
</table>
4.3.2 Preparing

- Dismount the original drive system, following components should be retained: door carriers (1), beam (2), cover set (3), square nuts (4), door stops (5) and extension beams (6).

**Note!** If there are not enough square nuts (4), use the nuts (37) to replace.

1. Door carrier
2. Beam
3. Cover set
4. Square nut: M6
5. Door stop
6. Extension beam
37. Nut: M6
4.3.3 Exchange the extension beams

a Exchange the extension beams (6).

6 Extension beam
4.3.4 Fix the PSU (power supply unit) and drive unit kit

a Fix the PSU (14) and the drive unit kit (13) onto the extension beam (6) with screws (12). Then tighten the screws (12) with a torque of 10 Nm.
4.3.5 Fix the mounting plate and MCU (control unit)

a. Fix the mounting plate (24) to the extension beam (6) with screws (25), then fix the MCU (26) onto the mounting plate (24) with the original screws (9) and washers.

2. Beam
4. Square nut: M6 24. Mounting plate
9. Screw: ISO 14583 (MRT) M4x6 42. Drive motor mounting plate
4.3.6 IOU and the battery installation

**Note!** The IOU must be selected when bi-stable.

a. Remove the brackets for the IOU and battery.

b. Fix the IOU (7) and the battery (8) to the mounting plate (24) with screws (9) and (10).

7 IOU (KS902MP)  
8 Battery (KS902BAT2)  
9 Screw: ISO 14583 (MRT) M4x6  
10 Screw: ISO 14583 (MRT-TT) M4x55  
24 Mounting plate
4.3.7 Fix the tension wheel assembly

a Fix the tension wheel assembly (15) to the extension beam (6) with the screws (32), do not tighten the screws (32) fully, so it shall be able to slide along the extension beam (6).

b The position of the tension wheel assembly (15) should be as close as possible to the drive unit, but make sure that the tension wheel assembly (15) will not interfere with the door carrier when the door is fully opened.

---

**Parts List**

4 Square nut: M6
6 Extension beam
15 Tension wheel assembly
32 Screw: ISO 14581 (MFT) M6x12
4.3.8 Fix the transmission brackets

a Unscrew the existing screws (29), fix the transmission brackets (27) and the universal transmission brackets (28) to the door carriers (1) with the existing screws (29) and the screws (11).

**Note!** If there are not enough existing screws (29), use the screws (38) to replace.
4.3.9 Placement of the transmission brackets

**Bi-parting opening**

The transmission bracket (16) on the left door leaf shall be connected to the upper belt. The transmission bracket (16) on the right door leaf shall be connected to the lower belt.

**Single left opening**

The transmission bracket (16) shall be connected to the upper belt.

**Single right opening**

The transmission bracket (16) shall be connected to the lower belt.
4.3.10 Attachment of the tooth belt

a Cut the tooth belt (18) to the right length if needed. Route the tooth belt (18) around the drive unit pulley (19) and around the tension wheel assembly (15).

b For bi-parting doors the belt ends are joined with the belt clamp (20) in the lower part of the tooth belt (18).

c Click the belt clamp (20) into position.

Note! Do not adjust parameter P12!
4.3.11 Checking and adjusting the belt tension

a. Loosen the fixing screw (34) without removing it.

b. Screw the adjustment screw (35) to its outmost position.

c. Tension the tooth belt (18) by pulling the tension wheel assembly (15) by hand. Tighten the screws (32) with a **torque of 10 Nm**.

d. Tighten the adjustment screw (35) until there is a gap of approx. 1-2 mm between the lock nut (36) and the bracket according to illustration below, but not further. Be sure not to overtighten, otherwise the adjustment screw (35) might damage the tension wheel (33).

e. Retighten the fixing screw (34) with a **torque of 10 Nm**.

*Note!* Do not make any adjustment on the lock nut (36).
4.3.12 Bi-parting operators

a. Put doors in fully closed position. Make sure that the doors trailing edge is align with the side light.
b. Click the belt clamp (20) into the transmission bracket (16) on upper.
c. Check door panels for proper centering in the fully closed and opened positions.

15 Tension wheel assembly
16 Transmission bracket
18 Tooth belt
19 Drive unit pulley
20 Belt clamp

4.3.13 Attachment of slack reducer

Please refer to PSL150 Installation and Service Manual (1016248).
4.3.14 Install the belt lock (option)

a) Fix the belt lock (21) to the extension beam (6) with screws (12). Then tighten the screws (12) with a **torque of 10 Nm**.

**Note!** *Cut the extension beam to smaller pieces.*

**Bi-parting**
2/3 of the extension beam for backbone assembly.  
1/6 of the extension beam for tension wheel.  
1/6 of the extension beam for belt lock.

**Left opening**
2/3 of the extension beam for backbone assembly.  
1/3 of the extension beam for tension wheel and belt lock.

**Right opening**
2/3 of the extension beam for backbone assembly and belt lock.  
1/3 of the extension beam for tension wheel.

---

4 Square nut: M6  
6 Extension beam  
21 Belt lock  
43 Screw: DIN 6921 (M6SF) M6x10
4.3.15  Fix the cable bracket
  
  a  Fix the cable bracket (30) to the beam (2) with screws (31).

2  Beam
30  Cable bracket
31  Screw: ISO 14585 ST 4.2x9.5
4.4 Entrematic PSL Retrofit Kit for Entrematic EMSL

4.4.1 Check the components

Check the components in the package as following.

12 Backbone assembly
15 Tension wheel assembly
18 Tooth belt
20 Belt clamp
24 Screw: DIN 6921 (M6SF) M6x14
25 Screw: ISO 10642 (MF6S) M6x8
26 Screw: ISO 14853 (MRT) M6x12
27 Connector bracket
28 Belt holder bracket
29 Reinforcement plate
4.4.2 Preparing

a Dismount the original drive system, following components should be retained: door carriers (1), beam (2), cover set (3), door stops (4), cable holders (5), connection box (6), track (35) and lock (36).
4.4.3 Fix the backbone assembly

a  Fix the backbone assembly (12) to the beam (2) with the screws (9). Then tighten the screws (9) with a **torque of 3 Nm**.

ISO 7045 (MRT-TT)  
M4x16 (3x)

2  Beam  
9  Screw: ISO 7045 (MRT-TT) M4x16  
12  Backbone assembly

4.4.4 Fix the IOU and the battery (option)

**Note!** The IOU must be selected when bi-stable lock.

a  Fix the IOU (7) and the battery (8) to the beam (2) with the screws (9).
2  Beam
7  IOU
8  Battery
9  Screw: ISO 7045 (MRT-TT) M4x16
SBL shall be 150 mm longer for a single right opening. Mount the PSL Retrofit Kit as far to the left side as possible. (In this case, it is not needed to mount the belt lock in the center, just close to the backbone).

For single left opening there is no limitations.

Case 3: Need to order the extension cable for IOU (330000441);

Case 4: Need to order the extension cable for battery (1020481).

Note! For narrow door, please refer to belt lock installation drawing (1018479).
4.4.5 Install the belt lock (option)

a Fix the belt lock fixing bracket (37) to belt lock (21) with screws (11).
Lift the belt lock (21) to the beam (2), then tighten the screws (9).

b Fix the belt to belt lock (21).

c Fix the belt guide (30) to belt lock (21) with the screws (60).
4.4.6 Fix the tension wheel assembly

a Fix the tension wheel assembly (15) to the beam (2) with the screws (9), do not tighten the screws (9) fully, so that it shall be able to slide along the beam (2).

b The position of the tension wheel assembly (15) should be as close as possible to the drive unit, but make sure that the tension wheel assembly (15) will not interfere with the door carrier when the door is fully opened.
4.4.7 Fix the connector brackets

a Dismount the existing screws (10) and the existing washers (11), and fix the reinforcement plates (29) to the door carriers (1) with screws (24).

b Assemble the connector brackets (27) and the belt holder brackets (28) with the screws (26). Fix them to to the door carriers (1) with screws (10) and (25).

1 Door carrier
10 Existing screw: DIN 6921 (M6SF) M6x12
11 Existing spacers: ISO 7093 M6.4
16 Transmission bracket
24 Screw: DIN 6921 (M6SF) M6x14
25 Screw: ISO 10642 (MF6S) M6x8
26 Screw: ISO 14853 (MRT) M6x12
27 Transmission bracket
28 Belt holder bracket
29 Reinforcement plate
4.4.8 Placement of the transmission brackets

**Bi-parting opening**

The transmission bracket (16) on the left door leaf shall be connected to the inner belt.
The transmission bracket (16) on the right door leaf shall be connected to the outer belt.

![Diagram of bi-parting opening]

**Single left opening**

The transmission bracket (16) shall be connected to the inner belt.

![Diagram of single left opening]

**Single right opening**

The transmission bracket (16) shall be connected to the outer belt.

![Diagram of single right opening]
4.4.9 Attachment of the tooth belt

a. Cut the tooth belt (18) to the right length if needed. Route the tooth belt (18) around the drive unit pulley (19) and around the tension wheel assembly (15).

b. For bi-parting doors the belt ends are joined with the belt clamp (20) in the outer part of the tooth belt (18).

c. Click the belt clamp (20) into position.

**Note!** Do not adjust parameter P12!
4.4.10 Checking and adjusting the belt tension

a Loosen the fixing screw (32) without removing it.

b Screw the adjustment screw (33) to its outmost position.

c Tension the tooth belt by pulling the tension wheel assembly (15) by hand. Tighten the tension wheel assembly to the beam with a **torque of 3 Nm**.

d Tighten the adjustment screw (33) until there is a gap of approx. 1-2 mm between the lock nut (34) and the bracket according to illustration below, but not further. Be sure not to overtighten, otherwise the adjustment screw (33) might damage the tension wheel (31).

e Retighten the fixing screw (32) with a **torque of 10 Nm**.

**Note!** Do not make any adjustment on the lock nut (29).

---

15 Tension wheel assembly  
31 Tension wheel  
32 Fixing screw  
33 Adjustment screw  
34 Lock nut
4.4.11 Bi-parting operators

a Put doors in fully closed position. Make sure that the doors trailing edge is aligned with the side light.

b Click the belt clamp (20) into position in the inner transmission bracket (16).

c Check door panels for proper centering in the fully closed and opened positions.

4.4.12 Attachment of slack reducer

Please refer to PSL150 Installation and Service Manual (1016248).
4.5 Entrematic PSL Retrofit Kit for Entrematic EMSL-T

4.5.1 Check the components

Check the components in the package as following.

12 Backbone assembly
15 Tension wheel assembly
18 Tooth belt
20 Belt clamp
24 Screw: DIN 6921 (M6SF) M6x14
25 Screw: ISO 10642 (MF6S) M6x8
26 Screw: ISO 14853 (MRT) M6x12
27 Connector bracket
28 Belt holder bracket
29 Reinforcement plate
4.5.2 Preparing

a Dismount the original drive system, following components should be retained: door carriers (1), beam (2), cover set (3), door stops (4), cable holders (5), connection box (6), track (35), lock (36) and support beam (37).
4.5.3  Fix the backbone assembly

a  Fix the backbone assembly (12) to the beam (2) with the screws (9). Then tighten the screws (9) with a **torque of 3 Nm**.
4.5.4 Fix the IOU and the battery (option)

**Note!** The IOU must be selected when bi-stable.

a Fix the IOU (7) and the battery (8) to the beam (2) with the screws (9).

![Diagram showing mechanical installation with labels for beam, IOU, battery, and screws.]

- Beam
- IOU
- Battery
- Screw: ISO 7045 (MRT-TT) M4x16 (3x)
4.5.5 Fix the tension wheel assembly

a. Fix the tension wheel assembly (15) to the beam (2) with the screws (9), do not tighten the screws (9) fully, so that it shall be able to slide along the beam (2).

b. The position of the tension wheel assembly (15) should be as close as possible to the drive unit, but make sure that the tension wheel assembly (15) will not interfere with the door carrier when the door is fully opened.

---

2 Beam
9 Screw: ISO 7045 (MRT-TT) M4x16
15 Tension wheel assembly
4.5.6  Fix the connector brackets (for fast door leaves)

a  Dismount the existing screws (10) and the existing washers (11), and fix the reinforcement plates (29) to the door carriers (1) with screws (24).

b  Assemble the connector brackets (27) and the belt holder brackets (28) with the screws (26). Fix them to the door carriers (1) with screws (10), washers (11) and screws (25).
4.5.7 Placement of the transmission brackets (for fast door leaves)

**Bi-parting opening**

The transmission bracket (16) on the left door leaf shall be connected to the inner belt. The transmission bracket (16) on the right door leaf shall be connected to the outer belt.

**Single left opening**

The transmission bracket (16) shall be connected to the inner belt.

**Single right opening**

The transmission bracket (16) shall be connected to the outer belt.
4.5.8 Attachment of the tooth belt (for fast door leaves)

a Cut the tooth belt (18) to the right length if needed. Route the tooth belt (18) around the drive unit pulley (19) and around the tension wheel assembly (15).

b For bi-parting doors the belt ends are joined with the belt clamp (20) in the outer part of the tooth belt (18).

c Click the belt clamp (20) into position.

Note! Do not adjust parameter P12!
4.5.9 Checking and adjusting the belt tension (for fast door leaves)

a. Loosen the fixing screw (32) without removing it.

b. Screw the adjustment screw (33) to its outmost position.

c. Tension the tooth belt by pulling the tension wheel assembly (15) by hand. Tighten the tension wheel assembly to the beam with a **torque of 3 Nm**.

d. Tighten the adjustment screw (33) until there is a gap of approx. 1-2 mm between the lock nut (34) and the bracket according to illustration below, but not further. Be sure not to overtighten, otherwise the adjustment screw (33) might damage the tension wheel (31).

e. Retighten the fixing screw (32) with a **torque of 10 Nm**.

**Note!** Do not make any adjustment on the lock nut (34).
4.5.10 Bi-parting operators (for fast door leaves)

a  Put doors in fully closed position. Make sure that the doors trailing edge is align with the side light.

b  Click the belt clamp (20) into position in the inner transmission bracket (16).

c  Check door panels for proper centering in the fully closed and opened positions.

![Diagram showing the bi-parting operators]

15  Tension wheel assembly
16  Transmission bracket
18  Tooth belt
19  Drive unit pulley
20  Belt clamp

4.5.11 Attachment of slack reducer

Please refer to PSL150 Installation and Service Manual (1016248).