



## ASSEMBLY AND MOUNTING MANUAL

Insect screen integrated  
into roller shutter system

**RSS+IS**



# ASSEMBLY AND MOUNTING MANUAL FOR INSECT SCREEN INTEGRATED INTO ROLLER SHUTTER SYSTEM (RSS+IS)

## TABLE OF CONTENTS

<b>1.</b>	<b>General description and components of RSS+IS</b> .....	<b>2</b>
1.1.	Main technical parameters .....	2
<b>2.</b>	<b>Components of RSS+IS</b> .....	<b>4</b>
<b>3.</b>	<b>Assembly of RSS+IS</b> .....	<b>8</b>
3.1.	Cutting the roll tube, curtain, end slat and brush inserts .....	8
3.2.	Installing the bearing and assist and push-up spring into the roll tube .....	8
3.3.	Spring pre-tension .....	9
3.4.	Assembly with end caps .....	10
3.5.	Assembly with the end slat .....	11
3.6.	Connecting the curtain (with end slat) to the roll tube .....	12
3.7.	Shutter box assembly .....	12
3.8.	Installing the roll tube with curtain into the shutter box .....	13
3.9.	Installation of stoppers .....	14
<b>4.</b>	<b>Mounting the roller shutter system</b> .....	<b>14</b>
<b>5.</b>	<b>Unlocking the assist and push-up spring</b> .....	<b>14</b>
<b>6.</b>	<b>Winding parameters of roller curtain</b> .....	<b>15</b>

## 1. GENERAL DESCRIPTION AND COMPONENTS OF RSS+IS

Roller systems with integrated insect screen (RSS+IS) are used in combination with roller curtains made of the following profiles: **AR/39(N)**, **AR/41(N)**, **AR(H)/40(N)**, **AR/45(N)**, **AER42**, **AER44/S**.

### 1.1 MAIN TECHNICAL PARAMETERS

- Max. width of the opening—2.0 m;
- Max. height of the opening—2.2 m;
- Min. width of the roller shutter (overall width)—0.6 m;
- Max. force to lower the screen (for max. height of roller shutter)—5 kg;
- Suspension of roller shutters—on retainer springs and security locks.

There are no restrictions as to roller shutter control mechanisms used.

It is recommended to use the following components in RSS+IS systems: end caps **SF45**, **SF20**, round **SF-R** and quarter-round **SF-QR** or end caps with non-centered pin **M-SF45**, **M-SF20**, round **M-SF-R** and quarter-round **M-SF-QR**, sizes 137, 150, 165, 180 and 205 mm, and corresponding shutter boxes.

The components and assembly process of the roller shutter part of the RSS+IS system does not differ from those of standard ALUTECH roller shutters and are described in the roller shutter assembly manual. Thereby, we shall describe only the assembly process of the insect screen in this manual.

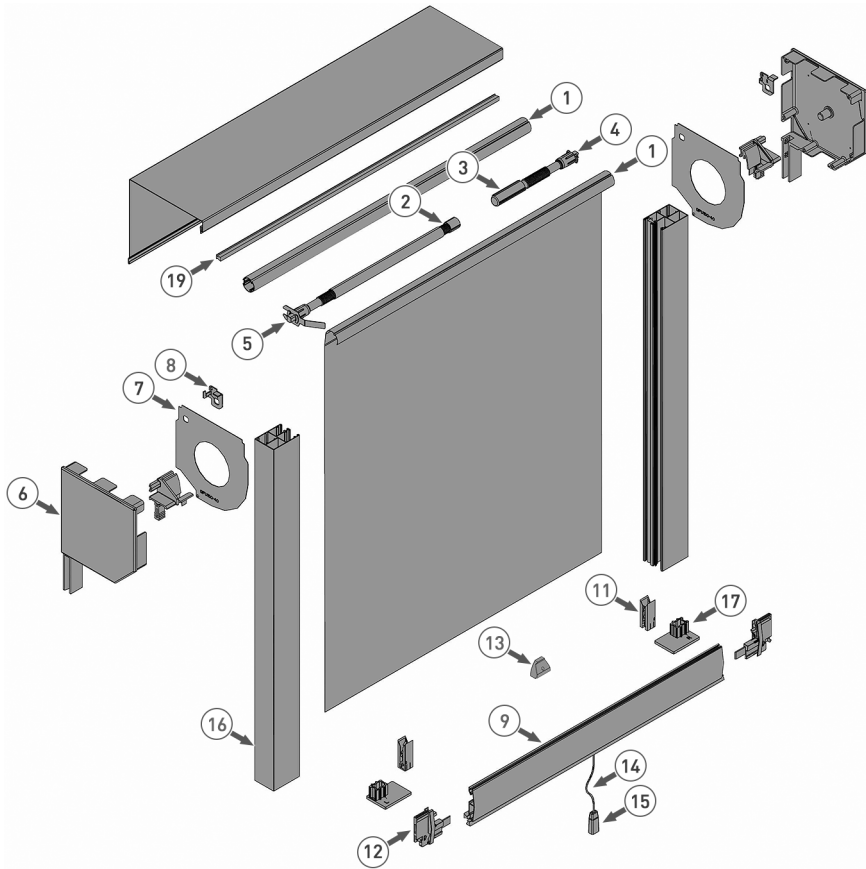
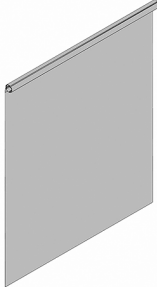
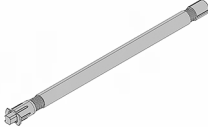
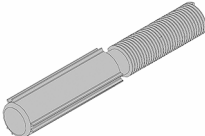
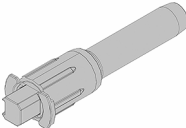



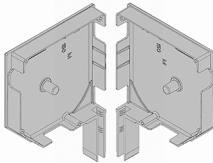

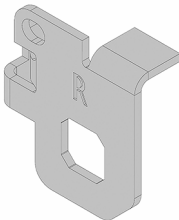


Fig. 1. Components of RSS+IS


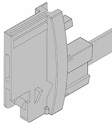



Nr.	Article	Name
1	<b>M-TNR-1.7</b> <b>M-TNR-2.5</b>	Tube with insect screen
2	<b>M-2SIM</b> <b>M-2SIM/L</b>	Assist and push-up spring
3	<b>M-BRS</b>	Braking mechanism
4	<b>M-OP</b>	Bearing
5	<b>M-FS</b>	Fixing device
6	<b>(M-)SF45/xxx</b> <b>(M-)SF20/xxx</b> <b>(M-)SF-QR/xxx</b> <b>(M-)SF-R/xxx</b>	End caps standard or with non-centered pin
7	<b>GPU/xxx</b>	Safety plate
8	<b>M-SBR</b>	Bracket

Nr.	Article	Name
9	<b>M-ES12x57</b>	End slat
10	<b>ISE18</b>	Brush insert
11		Stopper
12	<b>M-NLM</b>	Locking device
13	Insect screen locking mechanism	Cord holder
14		Cord
15		Cord handle
16	<b>M-GR53x39IE</b>	Guide rail
17	<b>M-GRP53</b>	End piece
18	<b>M-GD9</b>	Combined entry guide
19	<b>ISE06</b>	Brush insert

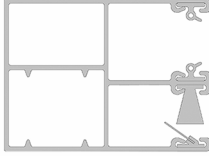
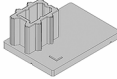
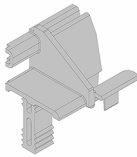

## 2. COMPONENTS OF RSS+IS

Nº	Image	Article	Name	Function	Usage
<b>Roll tube and accessories</b>					
1		<b>M-TNR-1.7</b> <b>M-TNR-2.5</b>	Tube with insect screen	Protects against insects and poplar fluff	Required
2		<b>M-2SIM</b> <b>M-2SIM/L</b>	Assist and push-up spring	For lifting and lowering the insect screen	Required
3		<b>M-BRS</b>	Braking mechanism	Provides smooth lifting and lowering the insect screen	Optional
4		<b>M-OP</b>	Bearing	For fixing the roll tube assembly with curtain to the end caps	Required
5		<b>M-FS</b>	Fixing device	Fixes the tension of the assist and push-up spring	Required when mounting the assist and push-up spring

Nº	Image	Article	Name	Function	Usage
<b>End caps and accessories</b>					
6		<b>M-SF45/xxx</b> <b>M-SF20/xxx</b> <b>M-SF-QR/xxx</b> <b>M-SF-R/xxx</b>	End caps with non-centered pin	To optimize winding parameters of the insect screen and the roller curtain	Optional (an alternative to standard <b>SF</b> end caps)
7		<b>GPU/xxx</b>	Safety plate	For mounting of roller curtain of <b>AER42</b> profile. Additional hole for fixing the tube with the screen to the end cap	Optional (an alternative to <b>M-SBR</b> bracket)
8		<b>M-SBR</b>	Bracket	For fixing the tube with the screen to the end cap	Optional (an alternative to <b>GPU</b> safety plate)
<b>End slat and accessories</b>					
9		<b>M-ES12x57</b>	End slat	To be installed into the insect screen. Together with <b>M-NLM</b> mechanism provides locking of insect screen in its down position	Required
10		<b>ISE18</b>	Brush insert	To be installed into <b>M-ES12x57</b> end slat. Additional protection against insects coming through the end slat	Required in one of the grooves of <b>M-ES12x57</b> end slat

Nº	Image	Article	Name	Function	Usage
11		<b>M-NLM Insect screen locking mechanism</b>	Stopper	Provides locking of insect screen (to be installed into <b>M-GR53×39IE</b> guide rail)	Required
12			Locking device	Provides locking of insect screen (to be installed on both sides of <b>M-ES12×57</b> end slat)	Required
13			Cord holder	For cord fastening (to be installed in the center of <b>M-ES12×57</b> end slat)	Required
14			Cord	For convenience of screen locking (to be output through <b>M-NLM</b> cord holder installed in <b>M-ES12×57</b> end slat)	Required
15			Cord handle	For the cord from the <b>M-NLM</b> set	Required



Nº	Image	Article	Name	Function	Usage
<b>Guide rails and accessories</b>					
16		<b>M-GR53x39IE</b>	Guide rail	Combined guide rail provides installation of both roller shutter curtain and insect screen	Required
17		<b>M-GRP53</b>	End piece	Prevents ingress of dirt and dust into the guide rail chamber	Optional
<b>Other accessories</b>					
18		<b>M-GD9</b>	Combined entry guide	For combined use of roller curtain and insect screen. Ensures smooth entering of the curtain and the screen into the shutter box	Required
19		<b>ISE06</b>	Brush insert	Protects against insects coming through the shutter box (to be installed inside of the <b>SB</b> shutter box back panel)	Optional

### 3. ASSEMBLY OF RSS+IS

#### 3.1 CUTTING THE ROLL TUBE, CURTAIN, END SLAT AND BRUSH INSERTS

Cut the **M-TNR** roll tube with curtain, **M-ES12×57** end slat, **ISE06** brush inserts, and **ISE18** to the required length, depending on the overall dimensions of the roller shutter.

Table 1

Calculation of length of the tube with curtain, end slat and brush inserts for roller shutter width (W)

Name	Size, W (mm)
<b>M-TNR</b> tube with curtain	62
<b>M-ES12×57</b> end slat	116
<b>ISE18</b> brush insert	104
<b>ISE06</b> brush insert	54

#### 3.2 INSTALLING THE BEARING AND ASSIST AND PUSH-UP SPRING INTO THE ROLL TUBE

If necessary, assemble the **M-BRS** brake with the **M-OP** bearing (fig. 2). Install the bearing into the **M-TNR** tube with curtain (fig. 3).



**Important!** The bearing is to be placed only on the right side of the tube (i.e. the tube is rotating clockwise when the curtain is unwinding).

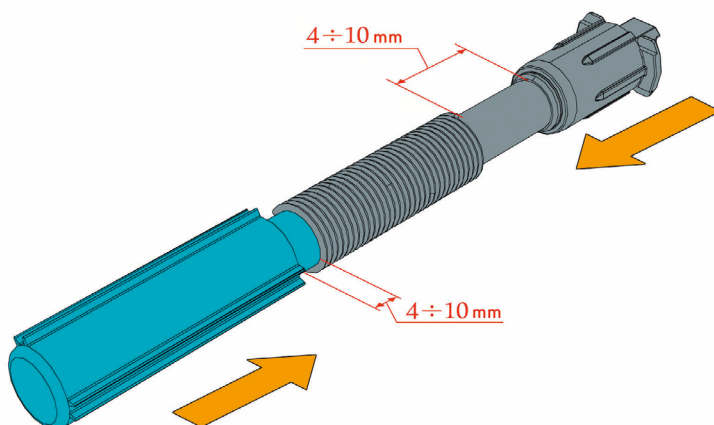


Fig. 2. **M-OP** bearing and **M-BRS** brake assembly

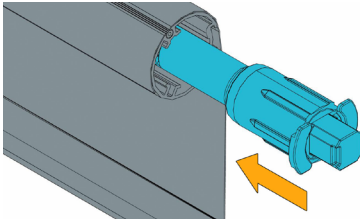


Fig. 3. Installing **M-OP** bearing into the **M-TNR** tube with curtain

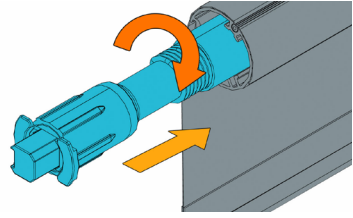


Fig. 4. Installing **M-2SIM (M-2SIM/L)** assist and push-up spring into the tube with curtain

Install **M-2SIM (M-2SIM/L)** assist and push-up spring into the tube with curtain. When installing the assist and push-up spring, you should rotate it only clockwise.



**Important!** Assist and push-up spring is to be installed only on the left side of the roll tube (i.e. the tube is rotating counter-clockwise when the curtain is unwinding).

### 3.3 SPRING PRE-TENSION

To cock the assist and push-up spring, it is necessary to put on a spanner or pin wrench with 10 mm span on the spring-assisted axle at the end of the mechanism (fig. 6) and, while holding the tube, make the necessary number of full revolutions clockwise, depending on the size of the roller shutter (fig. 5). Then fix the tension using the **M-FS** fixing device. Insert it into the assist and push-up springs grooves (fig. 7 and 8).

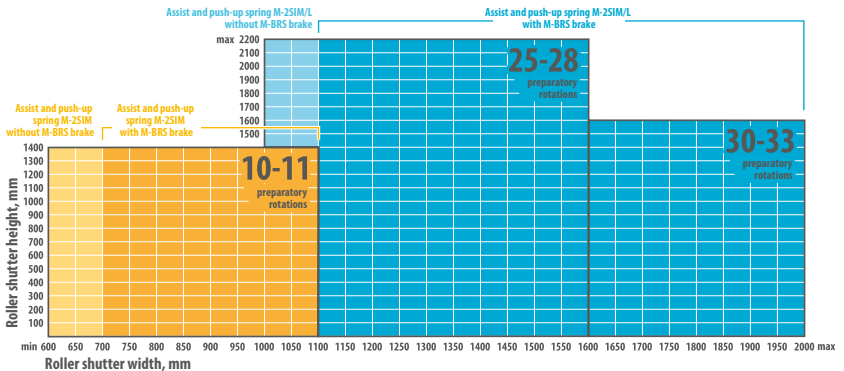


Fig. 5. Number of revolutions of the assist and push-up spring depending on the roller shutter size



**Important!** Assist and push-up springs are to be pre-tensioned clockwise only. Counter-clockwise cocking is not allowed and can cause failure of the spring.

Beware of spontaneous unwinding of the spring when dismantling the tube with the curtain. When dismantling, insert the **M-FS** fixing device into the spring bearing, remove the spring from the roll tube and evenly unwind the spring manually. In order to prevent injuries while cocking the spring, please do not let it out of the tube, and hold the wrench until the mechanism is securely locked.

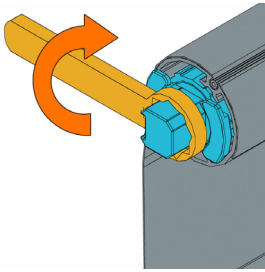


Fig. 6. Spring pre-tension

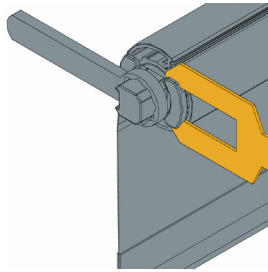


Fig. 7. Spring locking with an **M-FS** fixing device

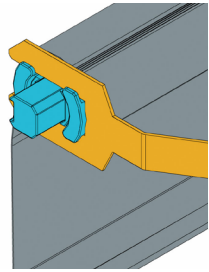


Fig. 8. Locked spring

### 3.4 ASSEMBLY WITH END CAPS

Install and fix the motor onto the end cap following the requirements of the roller shutter system assembly manual (fig. 9).

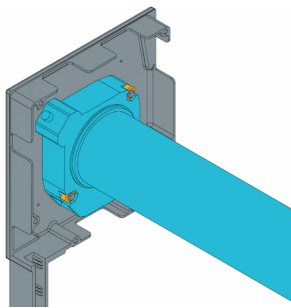


Fig. 9. Tubular motor assembly with end cap

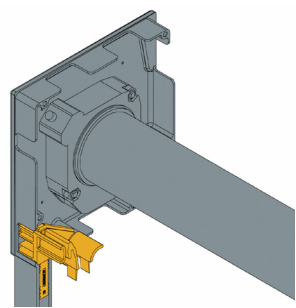


Fig. 10. **M-GD9** entry guide installation

Install **M-GD9** entry guides in the end caps (fig. 10). Install **GPU** safety plates according to table 2 or **M-SBR** brackets on the end caps and fix them using self-tapping screws 3.9×9.5 DIN7981 (fig. 11 or 12).

Table 2  
Compatibility of safety plates

End cap size	Articles of safety plates
137	GPU137/40, GPU137/64, GPU137AI, GPU-R137AL
150	GPU150/40, GPU150/64, GPU150AI, GPU-R150AL
165	GPU165/40, GPU165/64, GPU165AI, GPU-R165AL
180	GPU180/40, GPU180/64, GPU180AI, GPU-R180AL
205	GPU205/40, GPU205/64, GPU205AI, GPU-R205AL

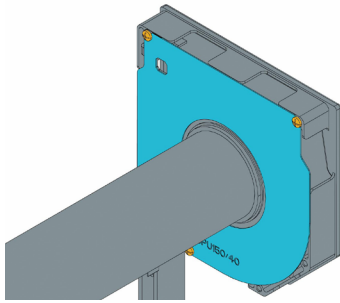


Fig. 11. Safety plate installation

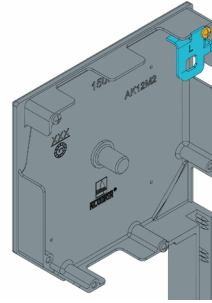


Fig. 12. M-BR-L bracket installation

**Note:** M-BR-L bracket (marked with letter **L**) to be used with the left end cap, and M-BR-R (marked with letter **R**)—with the right end cap.

### 3.5 ASSEMBLY WITH THE END SLAT

Put the cord into the cord holder hole and knot it. Assemble the cord with the cord handle in the same way. Install the cord holder assembly into the **M-ES12×57** end slat (fig. 13).

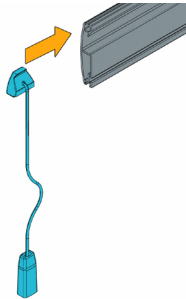


Fig. 13. Installing the cord assembly with holder and handle

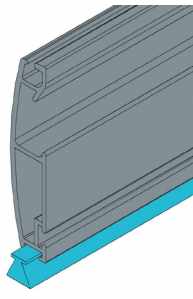


Fig. 14. Installing the **ISE18** brush insert into the **M-ES12×57** end slat

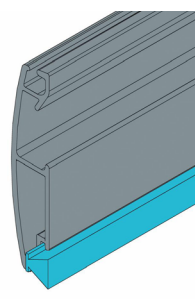


Fig. 15. Installing the **ISE18** brush insert into the **M-ES12×57** end slat

Install the **ISE18** brush insert into the **M-ES12×57** end slat (fig. 14 or 15).



**Note:** the insert is to be installed only if there is a reveal or a windowsill.

Assemble the locking device (fig. 15).

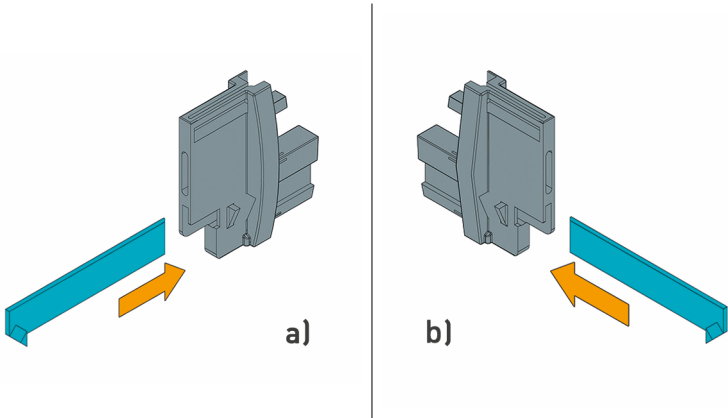


Fig. 16. Locking devices assembly:  
a) left; b) right

### 3.6 CONNECTING THE CURTAIN (WITH END SLAT) TO THE ROLL TUBE

If necessary, trim the edges of the tent fabric and the welt of the **M-TNR** tube with curtain from both sides respecting the dimensions 7.5 and 2.5 mm (fig. 17).

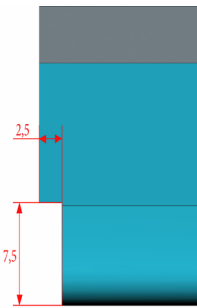


Fig. 17. Trimming the tent fabric and the welt

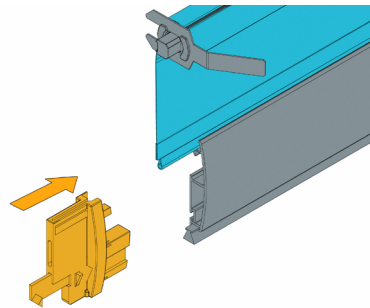


Fig. 18. Installing the **M-TNR** tube with curtain and locking devices into the end slat

Install the **M-TNR** tube with curtain and locking devices into the **M-ES12x57** end slat (fig. 18).

### 3.7 SHUTTER BOX ASSEMBLY

Install and fix the octagonal tube with end caps. Install and fix the back panel of the shutter box. Do not install the front panel. Drill all the necessary holes for electric motor in the end cap according to the roller shutter system assembly manual (fig. 19).

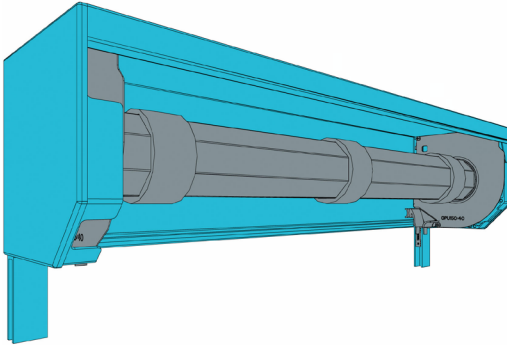


Fig. 19. Shutter box assembly with octagonal tube

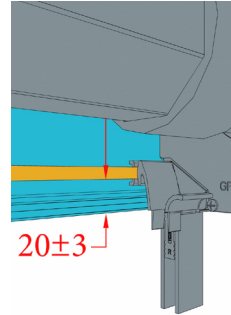


Fig. 20. Pasting **ISE06** brush insert

If necessary, paste the **ISE06** brush insert on the back panel of the shutter box at a distance of  $20\pm 3$  mm from the lower edge of the shutter box (fig. 20).

### 3.8 INSTALLING THE ROLL TUBE WITH CURTAIN INTO THE SHUTTER BOX

To install the tube into the shutter box, the following actions are needed:

- unwind the insect screen so that the lower edge of the end slat projects from the shutter box by 45–55 mm;
- insert the left part of the tube with projecting assist and push-up spring into the hole in the **M-BR-L** bracket or into the **GPU** safety plate (fig. 21);
- install the right part of the tube pressing on the projecting spring-assisted part of the **M-OP** bearing (fig. 22) till it enters the tube, and drag it into the hole in the **M-BR-R** bracket or into the **GPU** safety plate till latching (fig. 23);
- insert the insect screen into the grooves of the **M-GD9** entry guides.



**Important!** The tube is to be installed into the shutter box carefully, in order to prevent the **M-FS** fixing device pulling out.

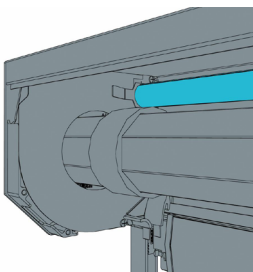


Fig. 21. Installing the left part of the tube with insect screen

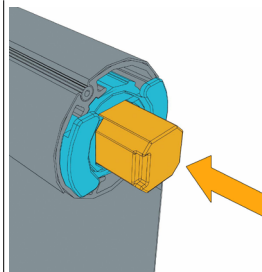


Fig. 22. Spring-assisted part of the bearing

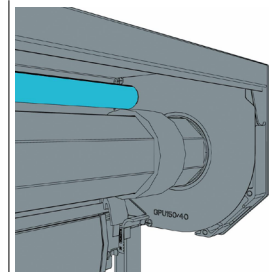


Fig. 23. Installing the right part of the tube with insect screen

### 3.9 INSTALLATION OF STOPPERS

Assemble the stopper (fig. 24).

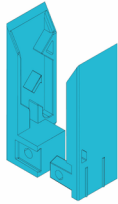


Fig. 24. Stopper assembly

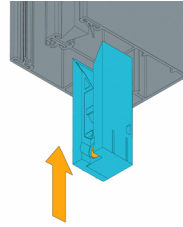


Fig. 25. Installing the stopper into the **M-GR53x39IE** guide rail

Install the stoppers into the **M-GR53x39IE** guide rails so that the lower edge of the stopper is located on the same level as the guide rail lower edge. Fix the stoppers using spacing screws from the set (fig. 25).

## 4. MOUNTING THE ROLLER SHUTTER SYSTEM

The roller shutter is to be mounted according to the roller shutter system mounting manual.

## 5. UNLOCKING THE ASSIST AND PUSH-UP SPRING

Pull out the **M-FS** fixing device (fig. 26).

Carry out five open-close cycles of the insect screen. The insect screen with the end slat should move without friction and extraneous sounds. The fixing device operation should be safe and stable.

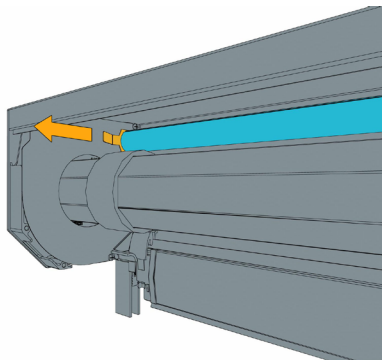


Fig. 26. Unlocking the spring



## 6. WINDING PARAMETERS OF ROLLER CURTAIN

Profile	End cap type	Tube size, mm	Suspension system	Shutter box type					
				SB/137	SB/150	SB/165	SB/165	SB/180	SB/205
				M-TNR1.7	M-TNR1.7	M-TNR1.7	M-TNR2.5	M-TNR2.5	M-TNR2.5
				Max. number of slats, pcs.					
AR/377(N)	Standard end cap	40	Security lock <b>RGM2</b>	8	15	24	23	33	78
			Retainer spring + ring <b>RD40</b>	18	33	51	43	63	104
		60	Security lock <b>RGM2</b>	–	9	27	26	37	74
			Retainer spring + ring <b>RD60</b>	–	26	45	41	57	98
	End cap with non-centered pin	40	Security lock <b>RGM2</b>	15	23	33	33	46	–
			Retainer spring + ring <b>RD40</b>	33	43	64	63	78	–
		60	Security lock <b>RGM2</b>	–	26	41	37	49	–
			Retainer spring + ring <b>RD60</b>	–	40	61	56	74	–
AR/39(N)	Standard end cap	40	Security lock <b>RGM2</b>	8	15	31	30	49	85
			Retainer spring + ring <b>RD40</b>	17	32	50	41	61	–
		60	Security lock <b>RGM2</b>	–	9	18	17	36	71
			Retainer spring + ring <b>RD60</b>	–	26	40	39	57	93
	End cap with non-centered pin	40	Security lock <b>RGM2</b>	14	30	43	40	60	–
			Retainer spring + ring <b>RD40</b>	31	43	60	60	72	–
		60	Security lock <b>RGM2</b>	–	17	27	26	47	–
			Retainer spring + ring <b>RD60</b>	–	38	54	53	60	–
AR(H)/40(N)	Standard end cap	40	Security lock <b>RGM2</b>	7	8	23	22	32	55
			Retainer spring + ring <b>RD40</b>	12	19	28	28	37	–
		60	Security lock <b>RGM2</b>	–	9	17	17	27	50
			Retainer spring + ring <b>RD60</b>	–	15	24	23	34	68
	End cap with non-centered pin	40	Security lock <b>RGM2</b>	8	23	27	32	43	–
			Retainer spring + ring <b>RD40</b>	14	27	39	37	48	–
		60	Security lock <b>RGM2</b>	–	9	26	26	36	–
			Retainer spring + ring <b>RD60</b>	–	23	37	32	45	–
AR/41(N)	Standard end cap	40	Security lock <b>RGM2</b>	7	14	22	22	31	63
			Retainer spring + ring <b>RD40</b>	11	19	24	34	40	–
		60	Security lock <b>RGM2</b>	–	8	17	17	35	69
			Retainer spring + ring <b>RD60</b>	–	15	31	30	40	74

Profile	End cap type	Tube size, mm	Suspension system	Shutter box type					
				SB/137	SB/150	SB/165	SB/165	SB/180	SB/205
				M-TNR1.7	M-TNR1.7	M-TNR1.7	M-TNR2.5	M-TNR2.5	M-TNR2.5
				Max. number of slats, pcs.					
AR/41(N)	End cap with non-centered pin	40	Security lock <b>RG2</b>	8	22	33	30	44	-
			Retainer spring + ring <b>RD40</b>	19	27	44	42	55	-
		60	Security lock <b>RG2</b>	-	16	29	25	39	-
			Retainer spring + ring <b>RD60</b>	-	25	42	40	59	-
AR/45(N)	Standard end cap	40	Security lock <b>RG2</b>	6	13	20	20	37	59
			Retainer spring + ring <b>RD40</b>	11	18	26	26	40	65
		60	Security lock <b>RG2</b>	-	8	15	15	32	53
			Retainer spring + ring <b>RD60</b>	-	14	26	24	36	65
	End cap with non-centered pin	40	Security lock <b>RG2</b>	12	20	31	31	41	-
			Retainer spring + ring <b>RD40</b>	18	26	37	34	48	-
		60	Security lock <b>RG2</b>	-	15	23	23	36	-
			Retainer spring + ring <b>RD60</b>	-	24	34	33	46	-
AER44/S	Standard end cap	40	Security lock <b>RG2</b>	6	13	21	21	34	61
			Retainer spring + ring <b>RD40</b>	11	18	27	26	36	67
		60	Security lock <b>RG2</b>	-	8	19	15	33	56
			Retainer spring + ring <b>RD60</b>	-	14	26	22	34	68
	End cap with non-centered pin	40	Security lock <b>RG2</b>	13	20	30	29	42	-
			Retainer spring + ring <b>RD40</b>	18	26	36	35	45	-
		60	Security lock <b>RG2</b>	-	15	27	24	37	-
			Retainer spring + ring <b>RD60</b>	-	22	34	31	45	-
AER42	Standard end cap	40	Security lock <b>RG2</b>	-	5	12	12	26	65
			Retainer spring + ring <b>RD40</b>	8	15	22	22	46	79
		60	Security lock <b>RG2</b>	-	-	7	7	23	62
			Retainer spring + ring <b>RD60</b>	-	6	20	20	36	76
	End cap with non-centered pin	40	Security lock <b>RG2</b>	5	12	26	26	36	77
			Retainer spring + ring <b>RD40</b>	15	22	40	40	57	90
		60	Security lock <b>RG2</b>	-	7	23	23	41	74
			Retainer spring + ring <b>RD60</b>	6	18	36	36	54	89





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