Alban Giacomo spa

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QUALITY SYSTEM
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TECHNICAL MANUAL

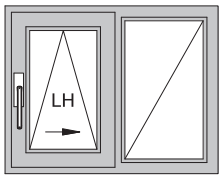
# GALILEO AUTOMATIC

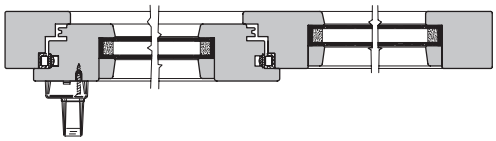
## Sliding Coplanar Tilt System

*for all types of profile with gap 4/12*
*and rebate 15/18/20*

# Opening layouts

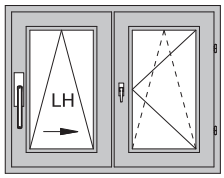
## Layout A

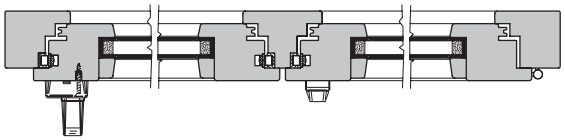


One sliding sash and one fixed sash.

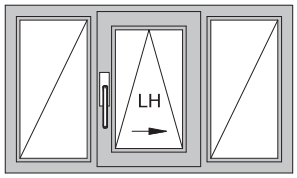
## Layout B

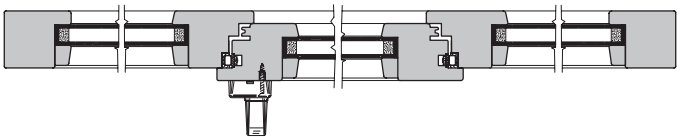


One sliding sash and one swing sash with fixed central jamb.

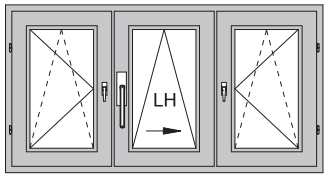
## Layout C

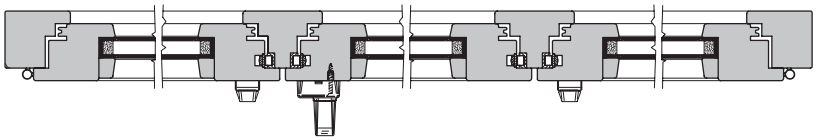


One central sliding sash and two fixed lateral sashes.

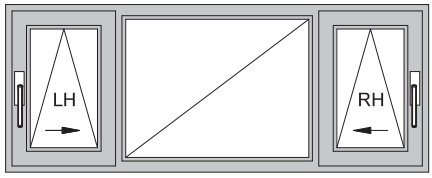
## Layout C1

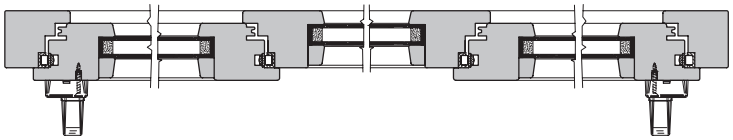


One central sliding sash and two lateral swing sashes with fixed central jamb.

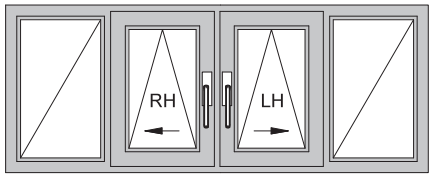
## Layout D

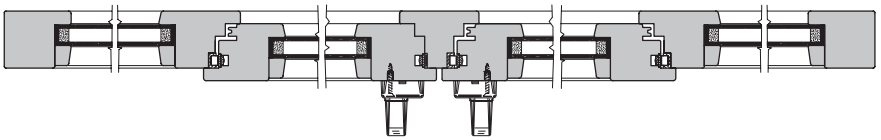


Two inward sliding lateral sashes and one fixed central sash having the same width as the two sliding sashes.

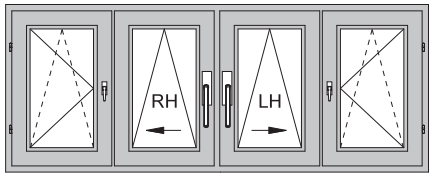
## Layout E

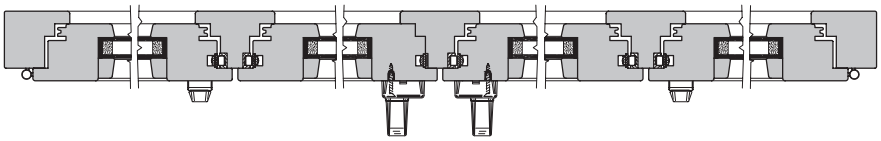


Two outward sliding coaxial centralmsashes and two fixed lateral sashes. Central point system between the two sliding sashes with mullion to be installed (MR central point system) and single control handle on both sliding sashes.

## Layout F



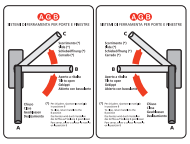



Two outward sliding coaxial central sashes and two swing lateral sashes. Central point system between the two sliding sashes with mullion to be installed (MR central point system) and single control handle on both sliding sashes.

# GALILEO

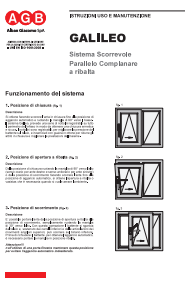


**IMPORTANT NOTICE !!!**



- **Apply the label with the handle control functions on the assembled sash**

- **Give the user the enclosed leaflet "Instructions for use and maintenance"**



# Operating sequence

1) Check the diagonal dimensions (fig. 1) to make sure that the door rails and stiles and the frame jambs are square.
2) Identify the “Opening layout” (see the page 2).
3) Measure the **SRH** (fig. 2) and **SRW** (fig. 3) of each sliding sash.
4) Make sure that the gap between the rebate of the sash on which the hardware is installed and the corresponding rebate on the frame housing the strikers conforms to the specifications for the type of door construction.

Diagonal **A** = Diagonal **B**

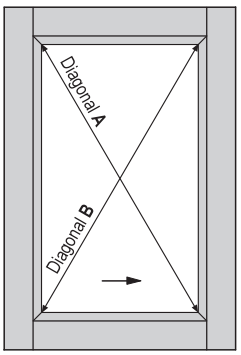



**fig. 1**

**Vertical section**

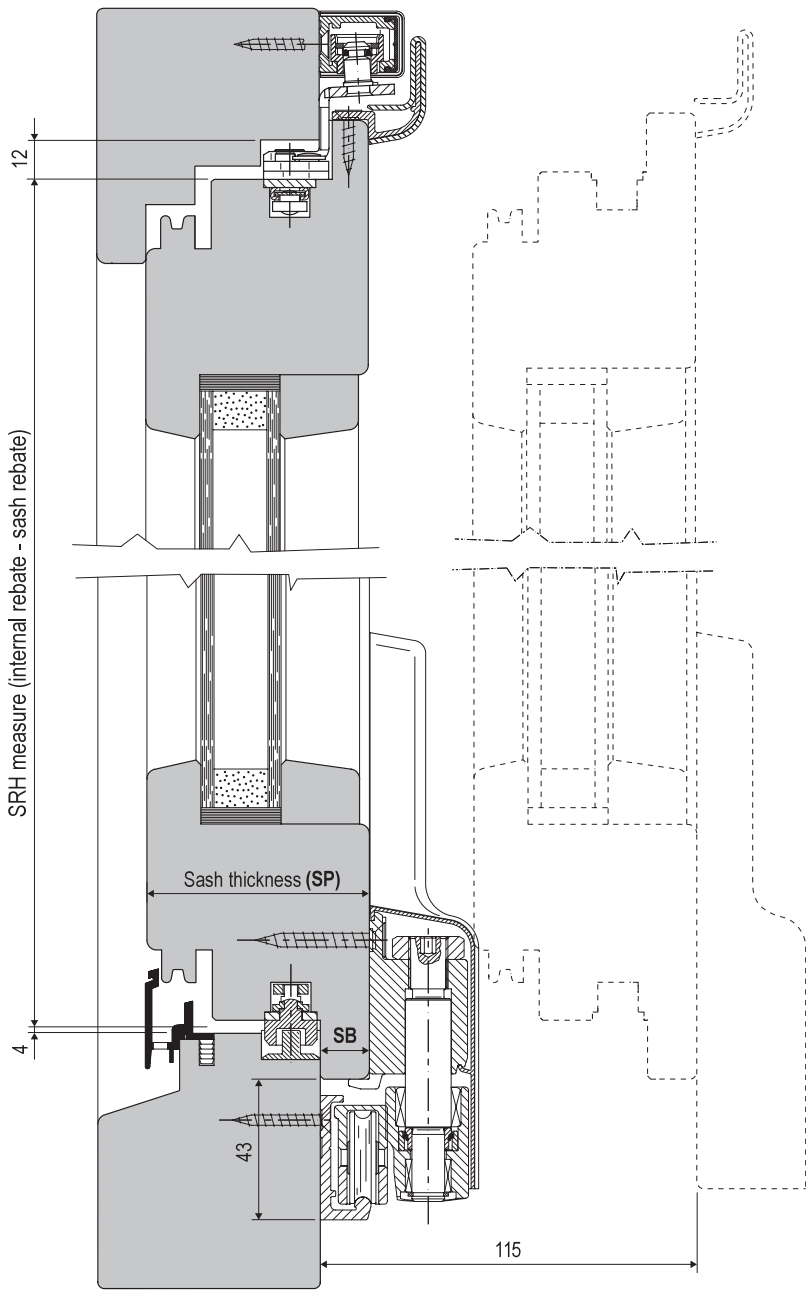
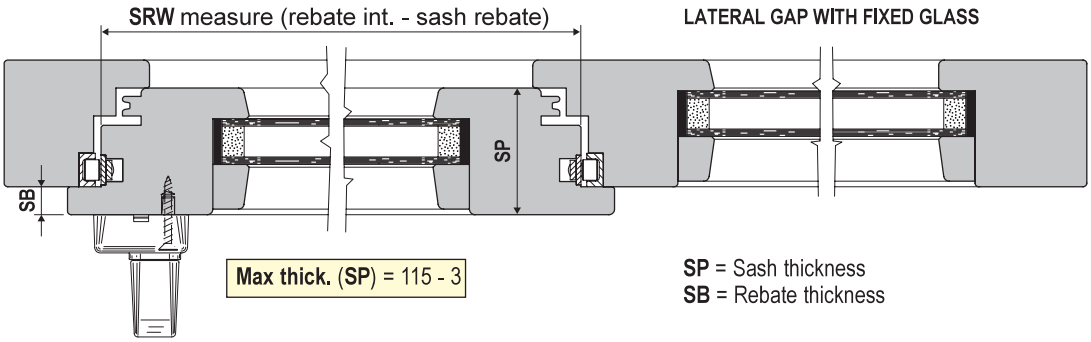



**fig. 2**

**SP** = Sash thickness
**SB** = Rebate thickness

## Horizontal sections



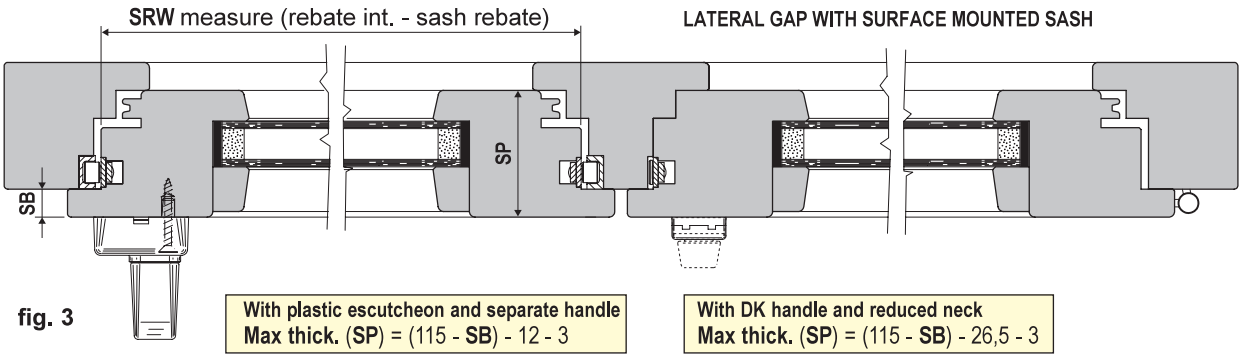
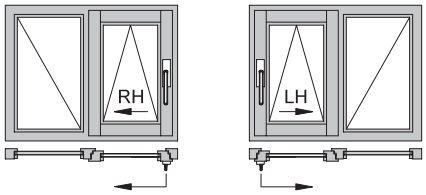




fig. 3

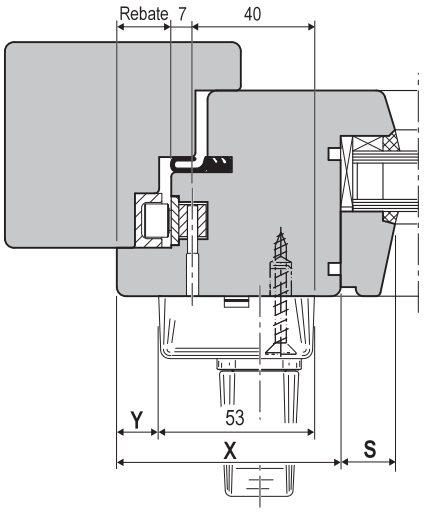
**5)** Determine whether the sash is left or right handed.




**6)** Choose the position (backset) of handle keeping in mind that, for assembly inside the hardware groove, the minium size of the stile should be calculated according to the following formula:

**Min X** = Rebate + 7 + 40

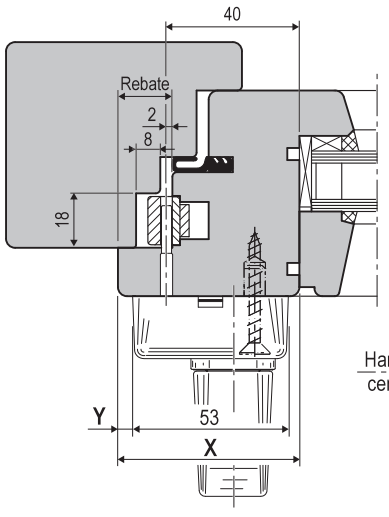
Y = 10 for rebate 15 mm
13 for rebate 18 mm
15 for rebate 20 mm




GROOVE INTERNAL HOOK

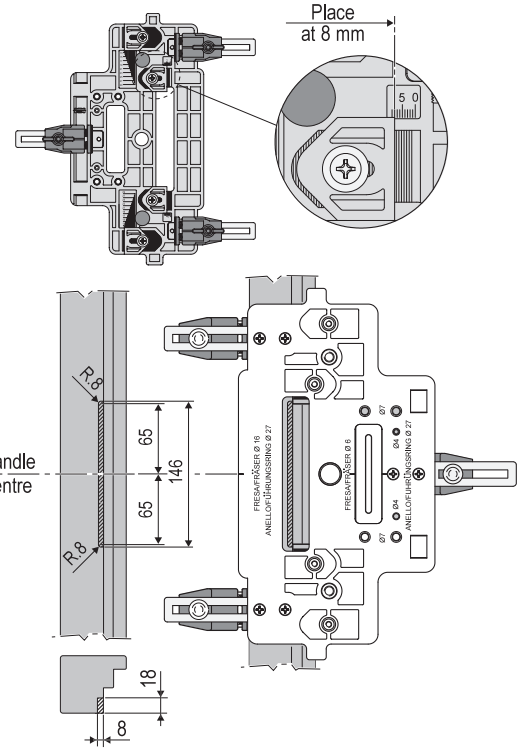
**Min X** = Rebate - 2 + 40

Y = 1 for rebate 15 mm
4 for rebate 18 mm
6 for rebate 20 mm




GROOVE EXTERNAL HOOK

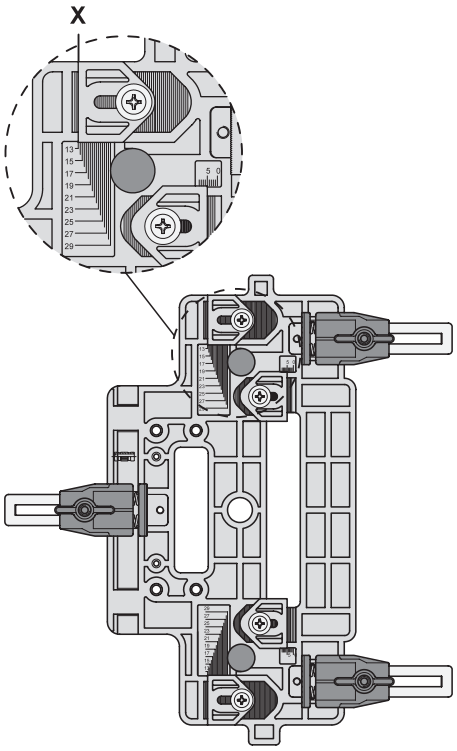
MILLING FOR PLATE HOUSING



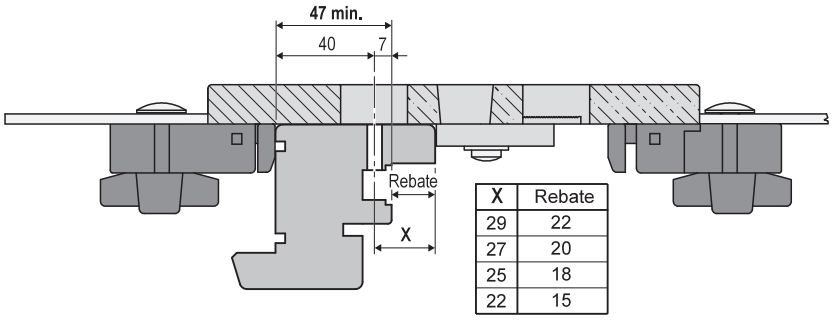

***Note. If reduced sections are used (X), the handle can be mounted overlapping the glass trim. In this case keep in mind that X includes also the glass trim (S).***

# Millings for handle assembly

**1)** Adjust the jig art. M02030.00.01 forn the rebate depth of sash:

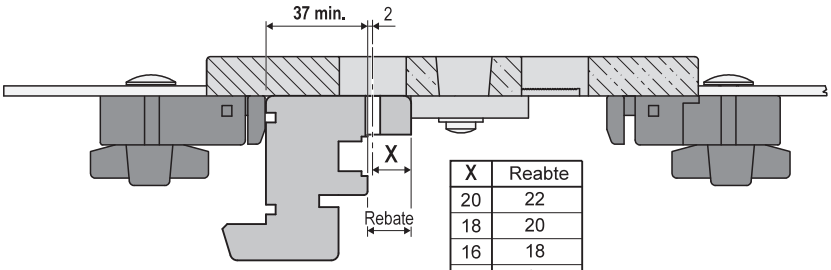



**Groove internal connection**




| X | Rebate |
|---|---|
| 29 | 22 |
| 27 | 20 |
| 25 | 18 |
| 22 | 15 |

**Groove external connection**




| X | Reabte |
|---|---|
| 20 | 22 |
| 18 | 20 |
| 16 | 18 |
| 13 | 15 |

**2)** Determine the GR size of the vertical connecting element.

**3)** Insert the jig art. M02030.00.01 (**a**) on the supporting rod art. A20030.00.00 (**b**), placing it over the hole corresponding to the espagnolette handle height (fig. 2).

***Note. To trim the espagnolette, see the point 4 and related table on page 9.***

**4)** Rest the jig rod (art. A20030.00.00+M02030.00.01) on the stile of the sliding sash, making sure that the foot at the base of the jig rod matches the hardware installation rebate of the bottom rail (fig. 1).

**5)** Mill for the insertion of the handle blade, using a pantograph fitted with a 27 mm guide ring and 6÷8 mm mill (fig. 2).

***Note. The milling must always extend to the groove housing the hardware so as to permit the connection between the handle and the espagnolette.***

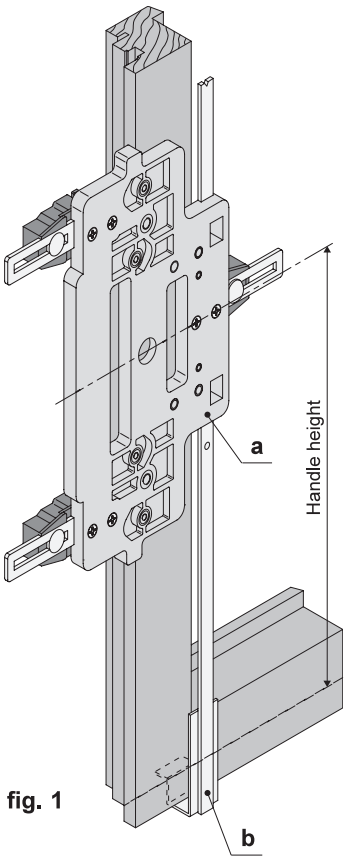



fig. 1

**Jig positioned for left handle**

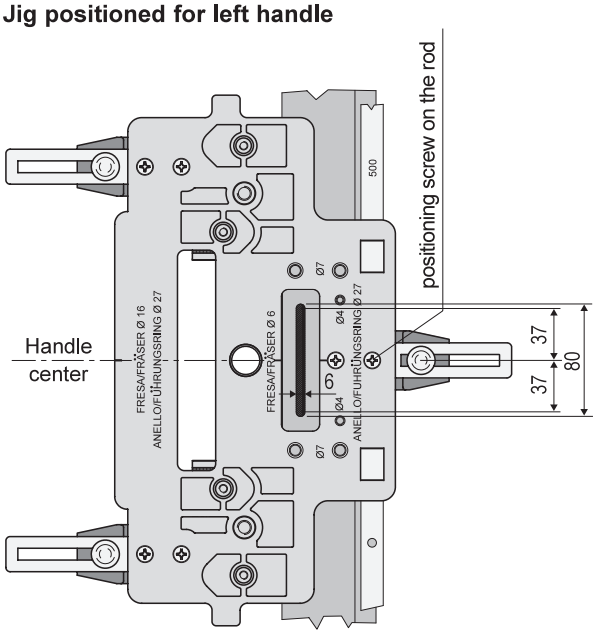



fig. 2

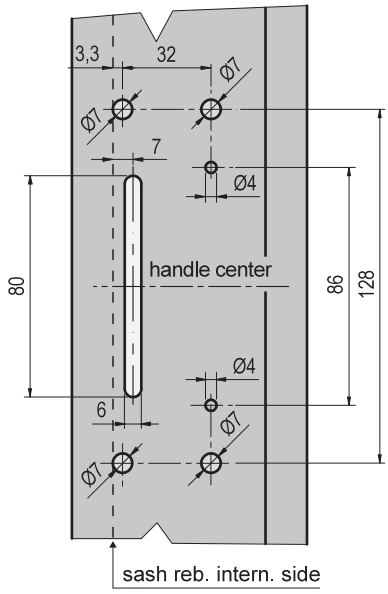
## For wood or aluminium-wood profiles

**6)** Drill two holes using a 4 mm bit to receive the self-tapping screws, and four holes using a 7 mm bit, 11/12 mm in depth to receive the two ENSAT bushings and the handle central pins.

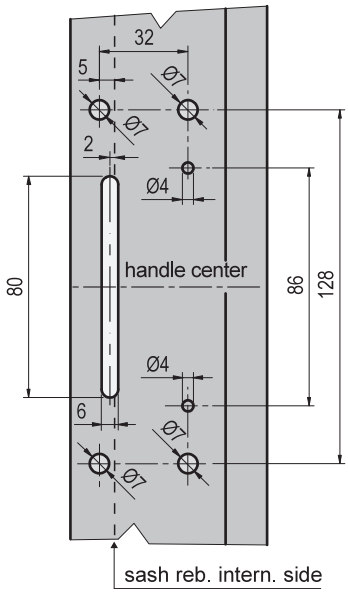
## For PVC profiles

**7)** Drill two holes using a 3 mm bit to receive the self-tapping screws, two holes using a 7 mm bit to receive the central pins and two 5 mm holes for the M5 (through) screws.

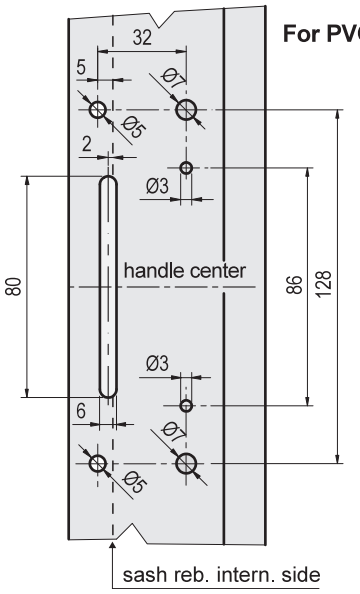
**6) Internal groove connection**



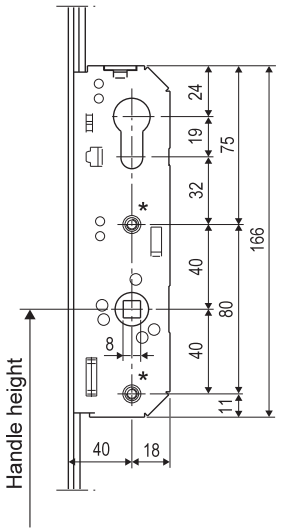

**6) External groove connection**



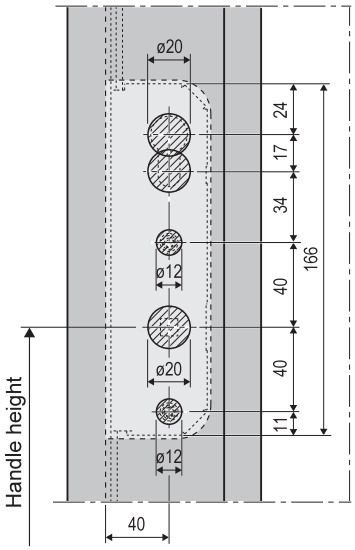

**7) External groove connection**

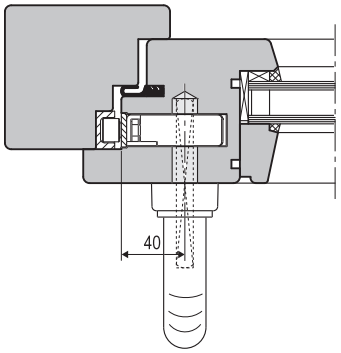


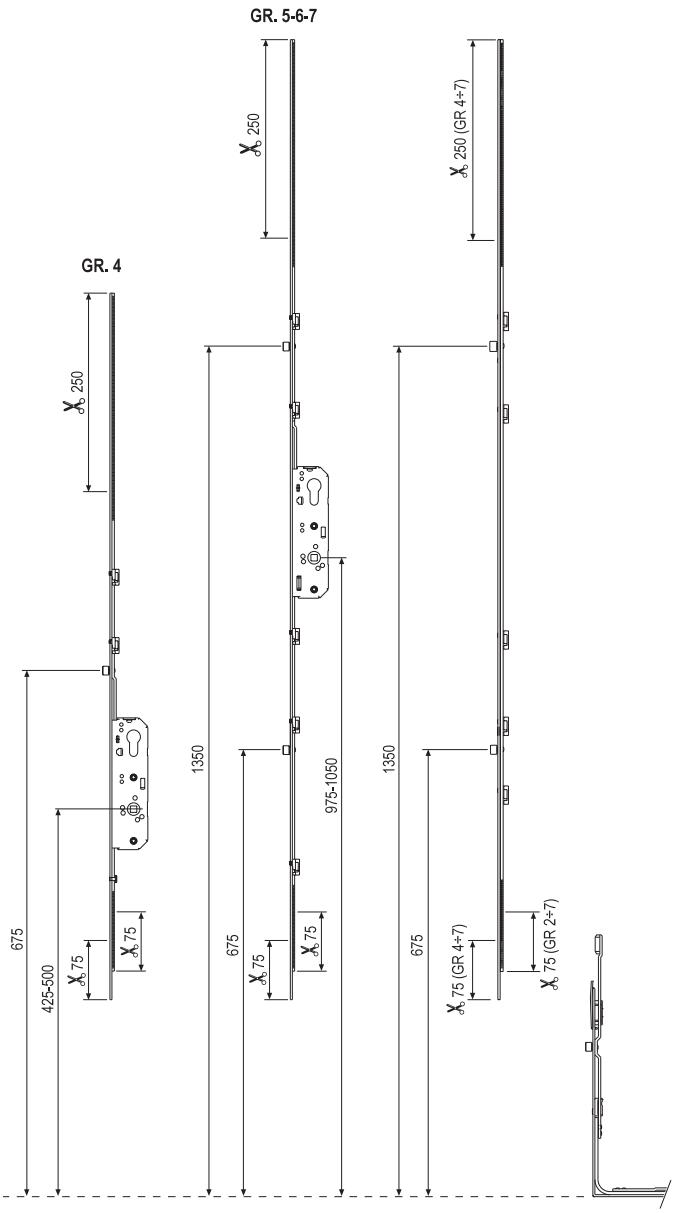
# Espagnolette with cylinder hole




* Threaded bushings for internal handle fastening M02020.03.XX (only for GR 4). For GR 5-6-7 use the intennal-external handle M02020.04/05. XX or M02020.04/05.XX.




**Espagnolette kit with cylinder hole+connecting rod M42027.40.XX**

| GR | SRH | Measure | Handle height | Trim | |
|---|---|---|---|---|---|
| | | | | Low. | Up. |
| 4 | 1661-1910 | 1390 | 500 | 75 | 250 |
| 5 | 1745-1995 | 1476 | 1050 | 75 | 250 |
| 6 | 1900-2150 | 1630 | 1050 | 75 | 250 |
| 7 | 2151-2400 | 1880 | 1050 | 75 | 250 |

# Millings for upper hinge assembly

**1)** Adjust the jig art. M02030.00.01 (fig. 1) to match the rebate of the sash, keeping in mind that the play of the hinges for the upper corner movements is 5 mm from the edge of the groove that houses the hardware (fig. 2).

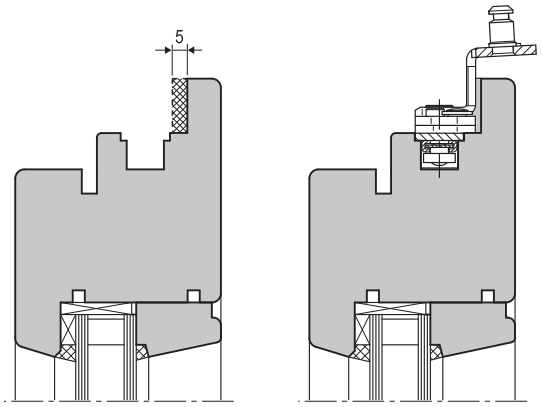



**fig. 2**

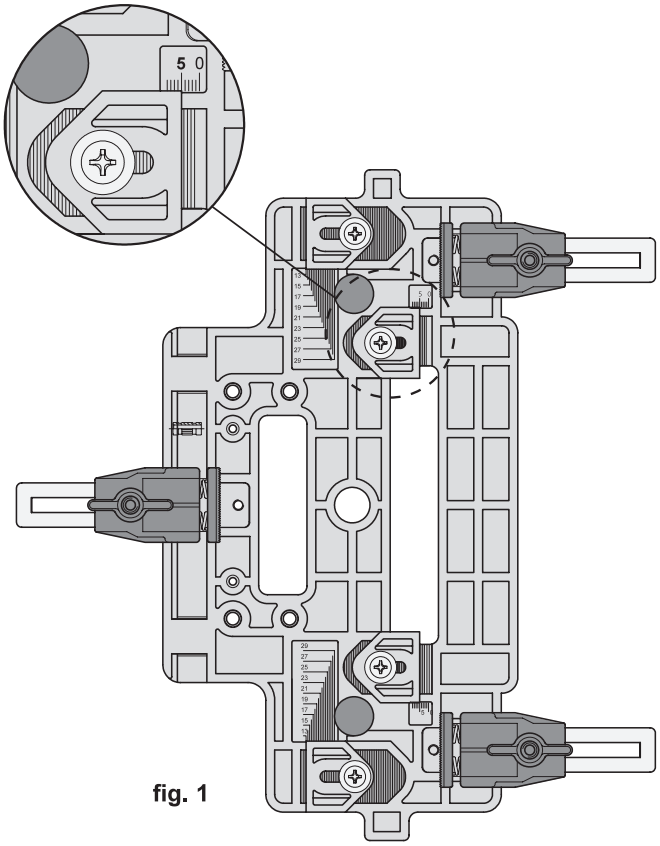



**fig. 1**

**2)** Position the jig, art. M02030.00.01 (a), on the upper rail of the sliding sash, aligning it with the rebate edge of the hardware groove (fig. 3). Adjust the support feet (b) so that the jig forms a 90° angle with the sash (fig. 4).

Mill the gain for the hinges using a pantograph fitted with a 27 mm guide ring and 16 mm mill.

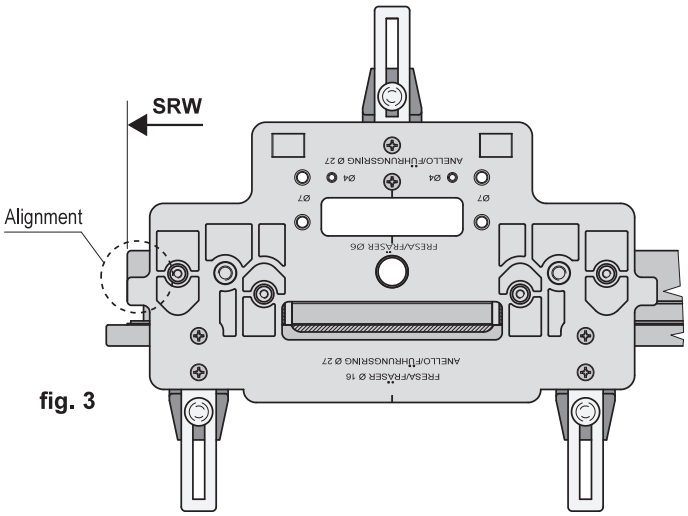
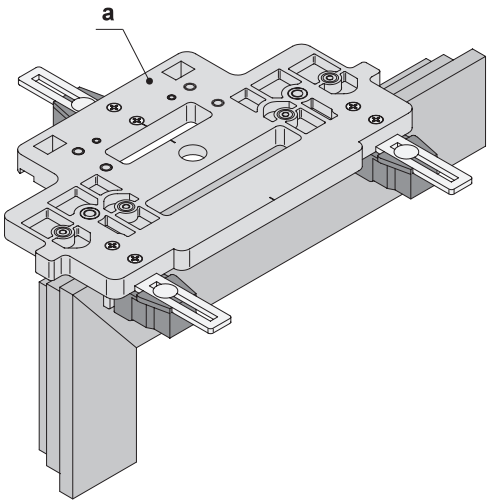



**fig. 3**



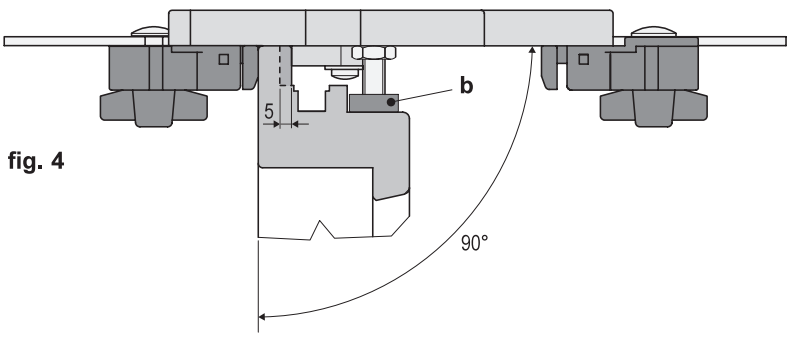




**fig. 4**

# Hardware diagram for layout E - rh sash

**A Central-control handle kit**
M02020.01.**XX** (rh) Aluminium
M02120.01.10 (rh) Enamelled polished

**XX** = 01 Silver
91 White RAL 9010
94 Brown

**F Horizontal connecton kit**
M42023.00.00 - SRW = 720-1035
M42023.00.0B - SRW = 830-1036
M42023.00.01 - SRW = 1036-1260
M42023.00.02 - SRW = 1261-1510
M42023.00.03 - SRW = 1511-1760

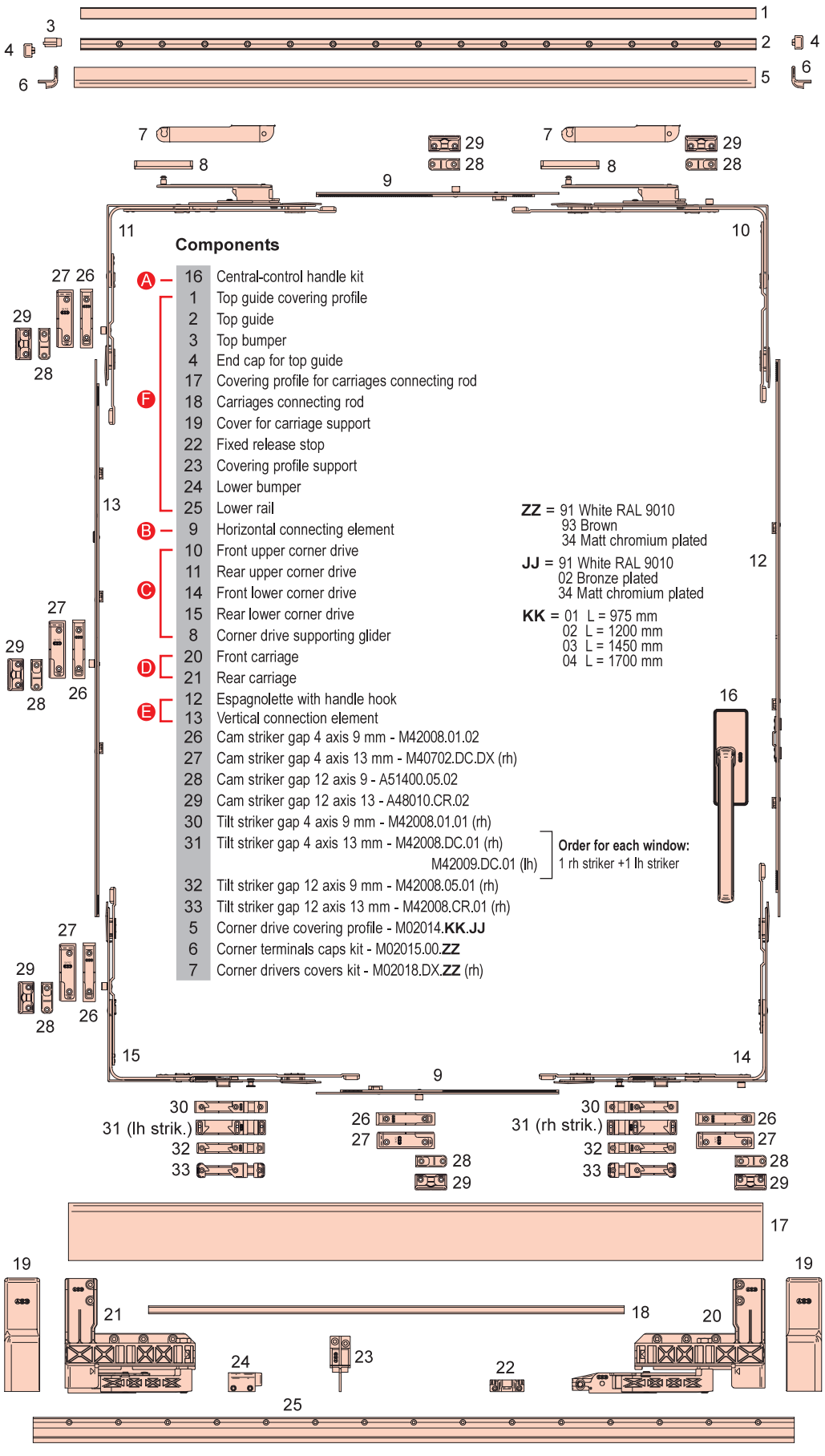
**C Corner drives kit**
M41100.08.DX (rh) - axis 9
M41100.10.DX (rh) - axis 13

**D Carriages kit 130 Kg**
M42401.DX.00 (rh)

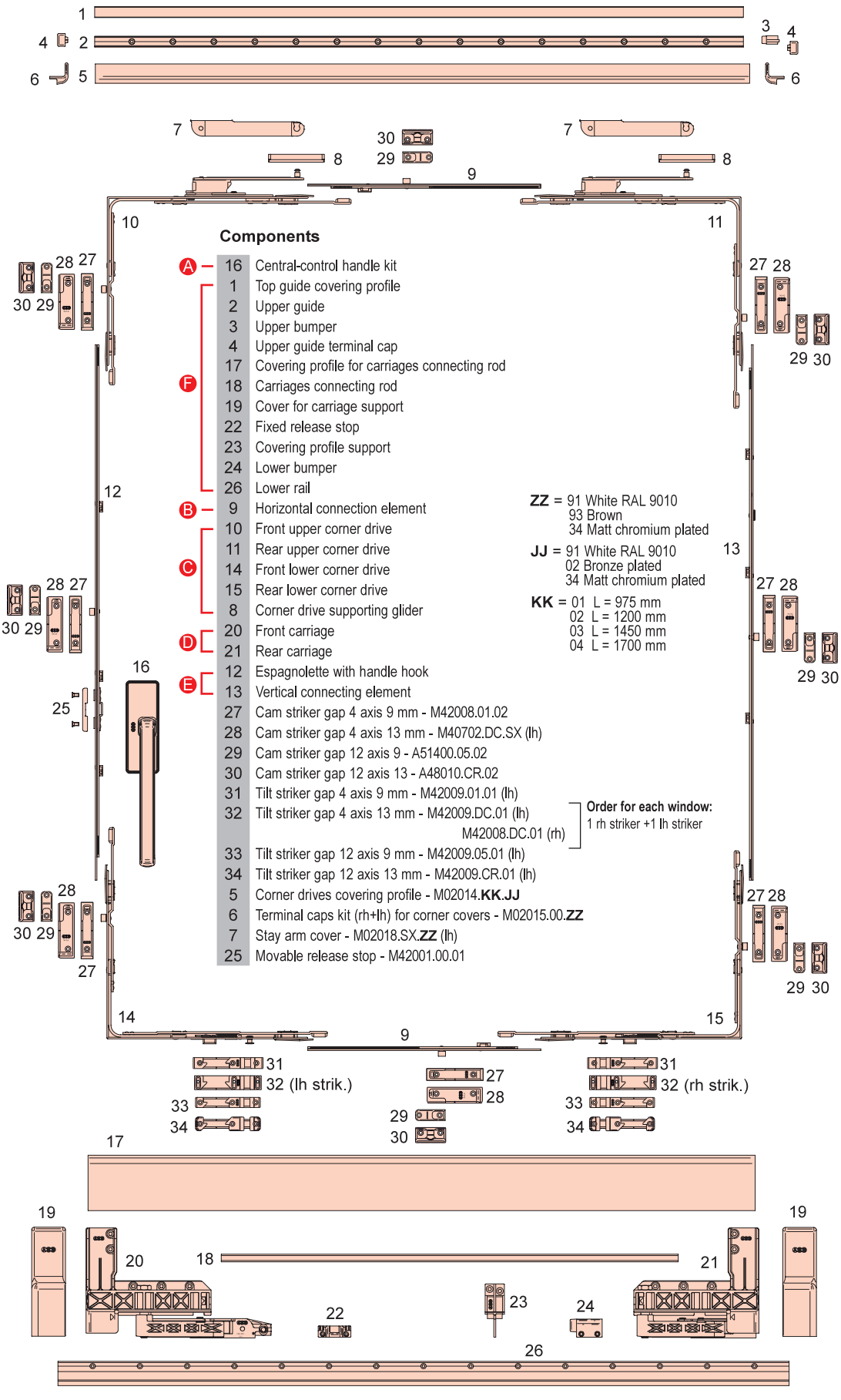
**E Vertical connection kit**
M42124.00.02 - SRH = 1161-1410
M42124.00.03 - SRH = 1411-1660
M42124.00.04 - SRH = 1661-1910
M42124.00.05 - SRH = 1745-1995
M42124.00.06 - SRH = 1900-2150
M42124.00.07 - SRH = 2151-2400

**F Width accessories kit**
M02022.01.**YY** - SRW = 720-1035
M02022.02.**YY** - SRW = 1036-1260
M02022.03.**YY** - SRW = 1261-1510
M02022.04.**YY** - SRW = 1511-1760

**YY** = 91 White RAL 9010
94 Brown
34 Matt chromium plated



# Hardware diagram for layout E - lh sash




## Components

| | | |
|---|---|---|
| A | 16 | Central-control handle kit |
| F | 1 | Top guide covering profile |
| | 2 | Upper guide |
| | 3 | Upper bumper |
| | 4 | Upper guide terminal cap |
| | 17 | Covering profile for carriages connecting rod |
| | 18 | Carriages connecting rod |
| | 19 | Cover for carriage support |
| | 22 | Fixed release stop |
| | 23 | Covering profile support |
| | 24 | Lower bumper |
| | 26 | Lower rail |
| B | 9 | Horizontal connection element |
| C | 10 | Front upper corner drive |
| | 11 | Rear upper corner drive |
| | 14 | Front lower corner drive |
| | 15 | Rear lower corner drive |
| | 8 | Corner drive supporting glider |
| D | 20 | Front carriage |
| | 21 | Rear carriage |
| E | 12 | Espagnolette with handle hook |
| | 13 | Vertical connecting element |
| | 27 | Cam striker gap 4 axis 9 mm - M42008.01.02 |
| | 28 | Cam striker gap 4 axis 13 mm - M40702.DC.SX (lh) |
| | 29 | Cam striker gap 12 axis 9 - A51400.05.02 |
| | 30 | Cam striker gap 12 axis 13 - A48010.CR.02 |
| | 31 | Tilt striker gap 4 axis 9 mm - M42009.01.01 (lh) |
| | 32 | Tilt striker gap 4 axis 13 mm - M42009.DC.01 (lh) M42008.DC.01 (rh) |
| | 33 | Tilt striker gap 12 axis 9 mm - M42009.05.01 (lh) |
| | 34 | Tilt striker gap 12 axis 13 mm - M42009.CR.01 (lh) |
| | 5 | Corner drives covering profile - M02014.**KK.JJ** |
| | 6 | Terminal caps kit (rh+lh) for corner covers - M02015.00.**ZZ** |
| | 7 | Stay arm cover - M02018.SX.**ZZ** (lh) |
| | 25 | Movable release stop - M42001.00.01 |

**Order for each window:** 1 rh striker +1 lh striker

**ZZ** = 91 White RAL 9010
93 Brown
34 Matt chromium plated

**JJ** = 91 White RAL 9010
02 Bronze plated
34 Matt chromium plated

**KK** = 01 L = 975 mm
02 L = 1200 mm
03 L = 1450 mm
04 L = 1700 mm

**A** Central-control handle kit
M02020.02.**XX** (lh) aluminium
M02120.02.10 (lh) Enamelled polished

**XX** = 01 Silver
91 White RAL 9010
94 Brown

**B** Horizontal connection element
M42023.00.00 - SRW = 720-1035
M42023.00.0B - SRW = 830-1036
M42023.00.01 - SRW = 1036-1260
M42023.00.02 - SRW = 1261-1510
M42023.00.03 - SRW = 1511-1760

**C** Corner drives kit
M41000.08.SX (lh) - axis 9
M41000.10.SX (lh) - axis 13

**D** Carriages kit 130 Kg
M42401.SX.00 (lh)

**E** Vertical connection element
M42024.00.01 - SRH = 835-1160
M42024.00.02 - SRH = 1161-1410
M42024.00.03 - SRH = 1411-1660
M42024.00.04 - SRH = 1661-1910
M42024.00.05 - SRH = 1745-1995
M42024.00.06 - SRH = 1900-2150
M42024.00.07 - SRH = 2151-2400

**F** Width accessories kit
M02022.01.**YY** - SRW = 720-1035
M02022.02.**YY** - SRW = 1036-1260
M02022.03.**YY** - SRW = 1261-1510
M02022.04.**YY** - SRW = 1511-1760

**YY** = 91 White RAL 9010
94 Brown
34 Matt chromium plated

# Assembly of corner movements and connection elements

**1)** Make sure that all the hardware is blocked in the final assembly position. If any elements are not blocked, proceed with the assembly keeping the hardware in the closed position.

**2)** Apply and secure the two upper corner movements (fig. 1) according to the right or left hand of the single sliding sash.

***Note. Use 3,5x35 mm partially threaded screws.***

**3)** Apply and secure the two lower corner movements (fig. 1) following the indications marked on the face of the hardware (fig. 2) A=front, P=back.

**4)** Adapt the linking elements to the dimensions of the sash (fig. 3), trimming the more knurled section. Before proceeding with this operation, in case it should be necessary to modify the height of the handle, unblock the hardware, align the lower section of the forend and of the moving rod, then cut as needed. Check the table on the right.

***Note. Determine the cutting measurement of the linking elements making sure that the cover tabs of the corner movements are not in the locked position.***

**Vertical connection elements**

| GR | SRH | Measure | Handle height | Trim | |
|---|---|---|---|---|---|
| | | | | Low. | Up. |
| 1 | 835-1060 | 640 | 400 | 100 | 225 |
| 1 | 885-1110 | 640 | 450 | 50 | 225 |
| 1 | 935-1160 | 640 | 500 | 0 | 225 |
| 2 | 1161-1410 | 890 | 500 | 75 | 250 |
| 3 | 1411-1660 | 1140 | 500 | 75 | 250 |
| 4 | 1661-1910 | 1390 | 500 | 75 | 250 |
| 5 | 1745-1995 | 1476 | 1050 | 75 | 250 |
| 6 | 1900-2150 | 1630 | 1050 | 75 | 250 |
| 7 | 2151-2400 | 1880 | 1050 | 75 | 250 |

**Horizontal connection elements**

| GR | SRW | Measure | Trim | |
|---|---|---|---|---|
| | | | Low. | Up. |
| 0 | 720-1035 | 415 | - | 225 |
| 0 bis | 830-1035 | 415 | - | 205 |
| 1 | 1036-1260 | 640 | 100 | 225 |
| 2 | 1261-1510 | 890 | 75 | 250 |
| 3 | 1511-1760 | 1140 | 75 | 250 |

fig. 1

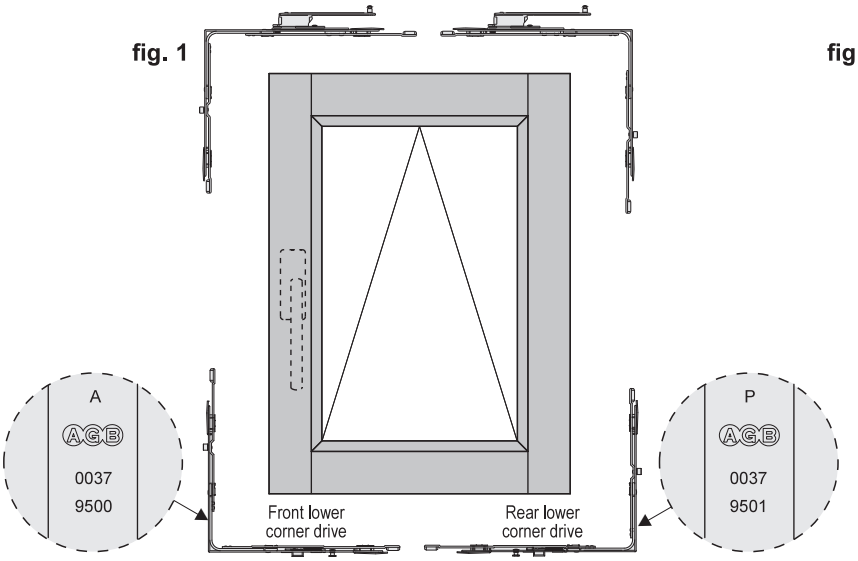
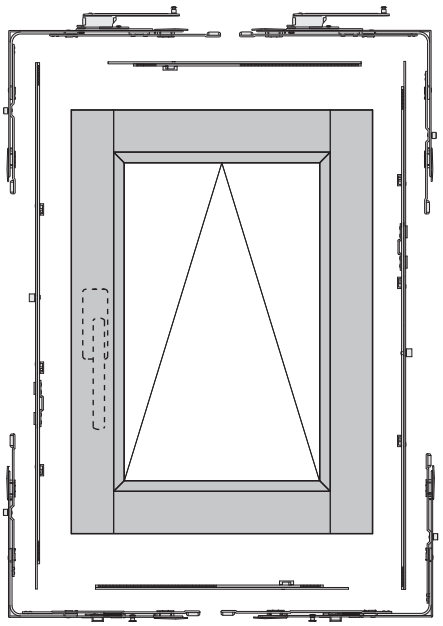


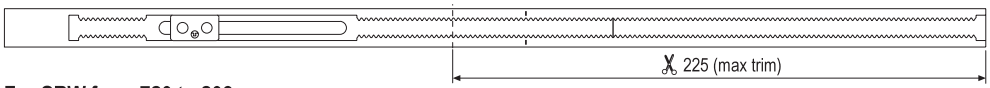

fig. 2

fig. 3



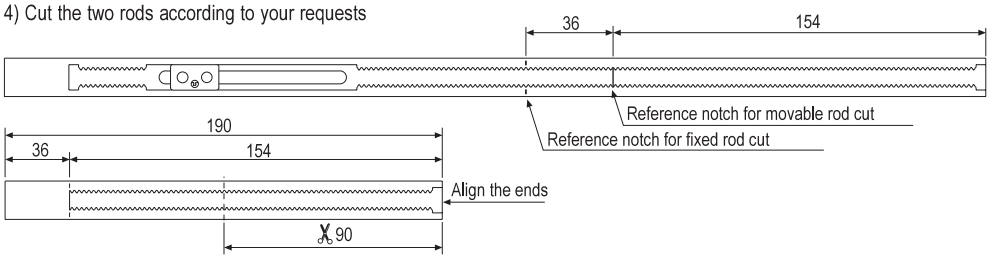
## *Instructions for rod trim GR0*

**For SRW from 810 to 1035 mm**




**For SRW from 720 to 809 mm**

Do the following procedure:
1) Cut the movable rod in correspondence of the notch
2) Cut the fixed sash in correspondence of the notch
3) Check that the extremity of fixed and movanle rod are aligned
4) Cut the two rods according to your requests



# Carriage installation

**1)** Adjust the carriage drilling jig art. M02030.00.02 (a) keeping in mind that, when X=34 (fig. 1), the carriage cover remains at 2 mm distance from the sash rebate edge (fig. 2).

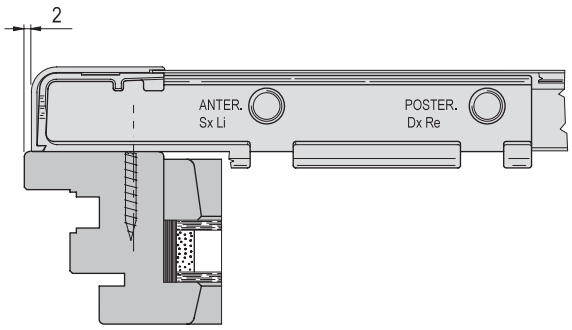



**fig. 2**

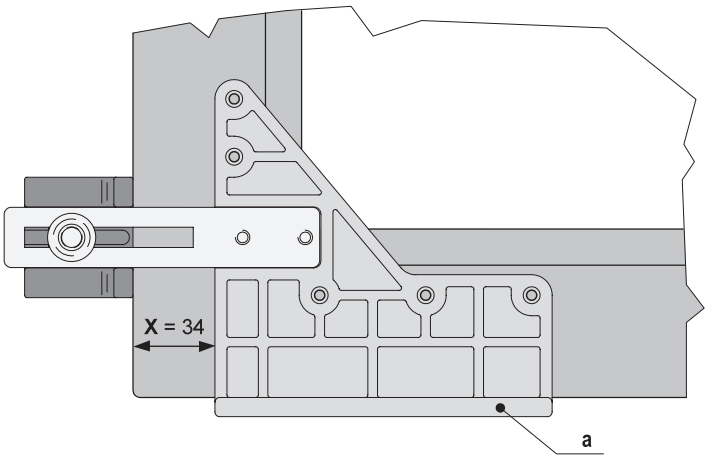
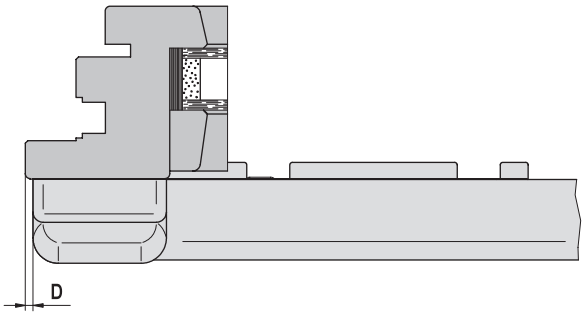



**fig. 1**




***Note. To increase the distance between the cover and the sash rebate edge (D), adjust the jig (X) in the following manner:***

***Ex:*** For **D**= 5 mm ⟶ **X**= 34+5-2

For **D**= 0 mm ⟶ **X**= 34+0-2

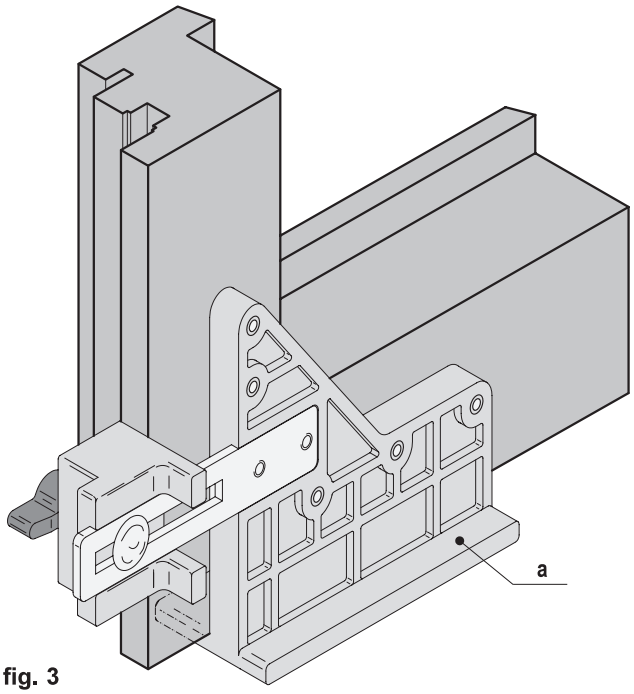



**fig. 3**

**2)** Position the jig art. M02030.00.02 (a) on the rebate of the lower rail or on a stile of the sliding sash (fig. 3). Drill 5 holes using a 4 mm drill bit, depth 40 mm.

**3)** Flip the jig art. M02030.00.02 (a) 180°, position it on the rebate of the lower rail and of the opposite stile. Drill five more holes using a 4 mm drill bit (fig. 4).

**4)** Position and fasten the carriages using 5x40 mm screws.

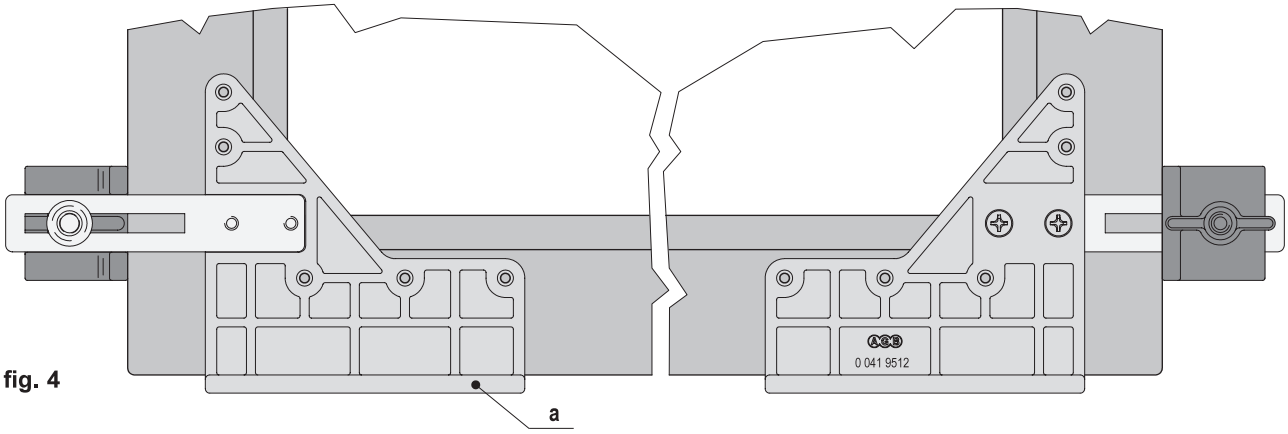



**fig. 4**

**5)** Lay the carriage link rod (b) in the seat (marked by an arrow) of one of the two carriages, and mark the cutting dimensions corresponding to the arrow on the opposite carriage (fig. 5).

**6)** Insert the link rod in the proper carriage seats. Fasten the socket head screw of the rear carriage using a 4 mm Allen wrench. Close the carriages and fasten the socket head screw of the front carriage.

**7)** To cut the cover trim to size refer to the arrows marked on the carriages (fig. 5).

**8)** Position the supports for the cover trim (c) and fasten them on the lower rail using 5x40 mm screws (you will need approximately one support for each meter of trim).

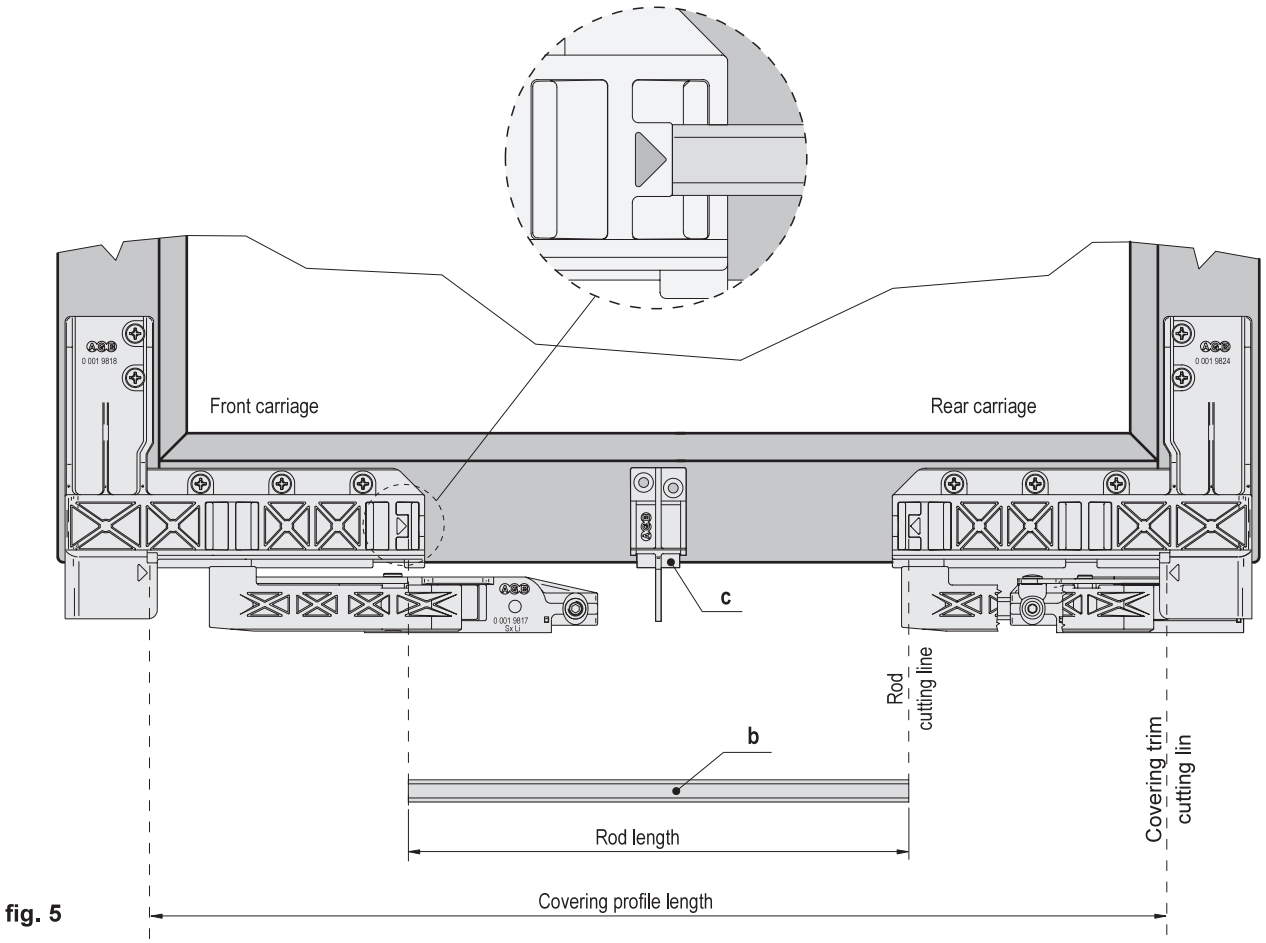



**fig. 5**

# Handle installation

## For wood, aluminium-wood or PVC profiles

**1)** Fasten the blade guide art. M02001.00.01 (a) to the espagnolette, using the two TSPIC M5x12 screws (b) only for external groove linking (fig. 1).

## For wood or aluminium-wood profiles

**2)** Insert the two ENSAT threaded bushings (c) in the holes (d) using the M5 screw and the nut provided in the kit (fig. 3). Screw the bushings flush with the surface of the sash. Remove the screw used for fastening and, if necessary, loosen the nut (fig. 3).

**3)** Place the handle (e) on the stile in the closed position, insert the centring pins in the proper holes (f) and make sure that the bayonet joint is properly inserted in the espagnolette or in the blade guide.

***Note. Trim the bayonet (i) to the proper size in case it impedes the proper fitting of the handle.***

**4)** Turn the handle to the tilt position and fasten the two M5x20 mm screws (g) in the threaded bushings

**5)** Fasten the two 5x40 mm screws (h).

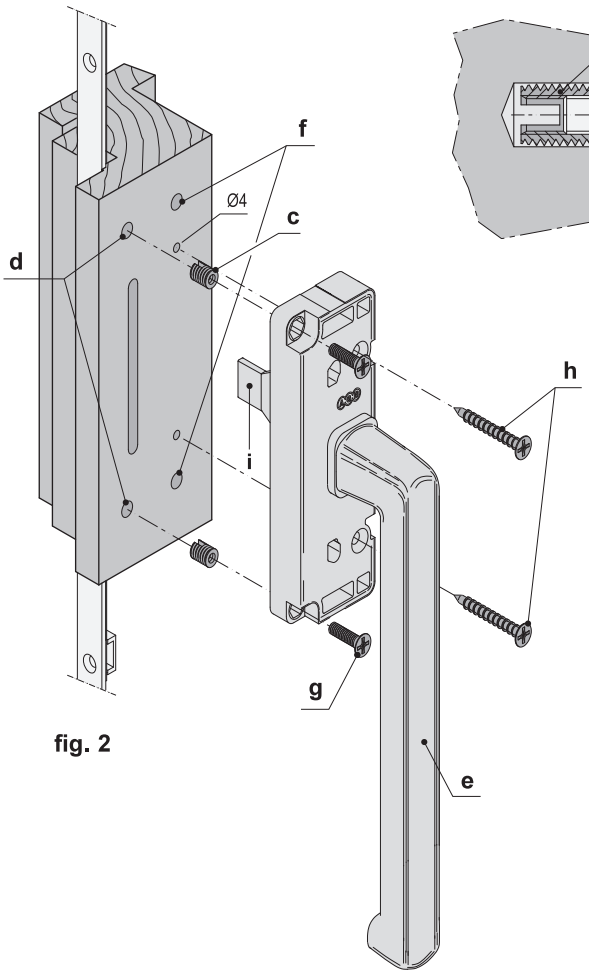



fig. 2

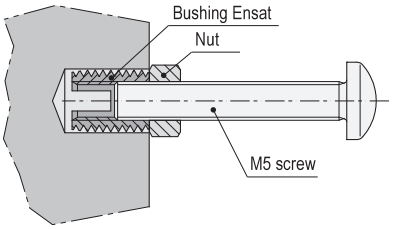



fig. 3

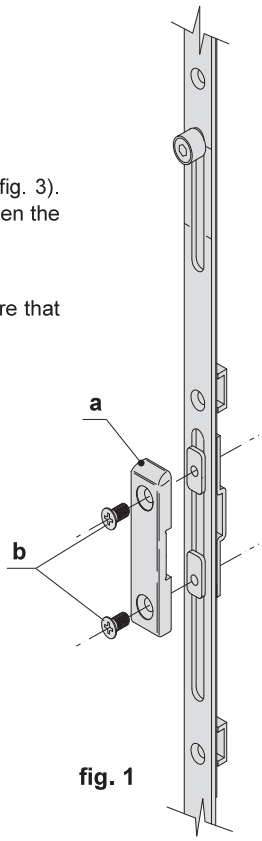



fig. 1

## For PVC profiles

**2)** Place the handle (c) on the stile and insert the central pins in the proper holes (d) (fig. 4).

**3)** Make sure that the bayonet joint is inserted properly in the blade guide; if necessary trim it.

**4)** Fasten the two M5x30 mm screws (e) using the DIN 934 M5 H4 suitable nuts icluded in the kit (f).

**5)** Fasten the two 5x40 mm self-tapping screws.

***Note. We recommend using the blade guide, art. M02001.00.01, when the stile thickness is less than 80 mm and, in case of PVC doors and window, if the milling of the steel core of the profile is difficult.***

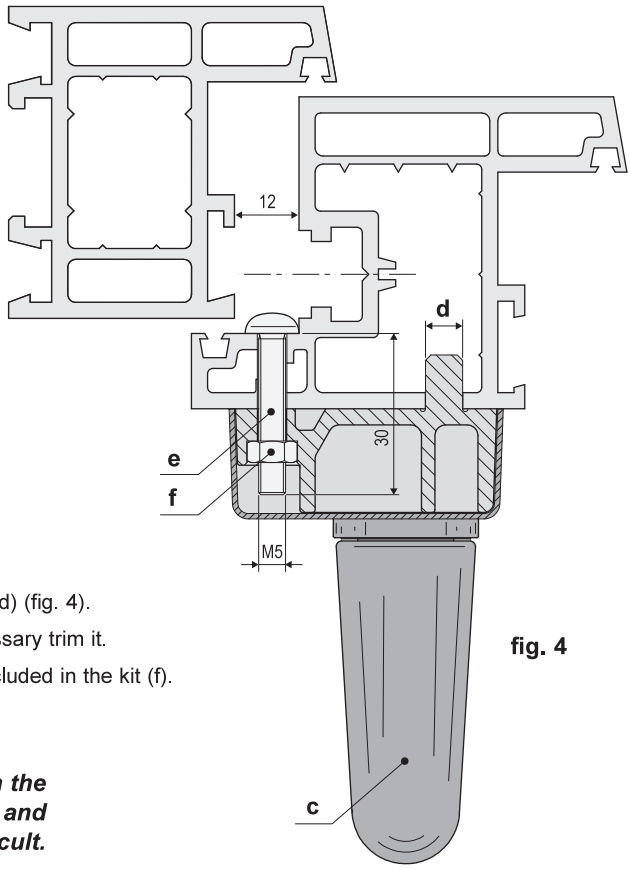



fig. 4

# Millings on wood frames, gap 4 mm, for striker installation

All the millings for the strikers must be executed using a pantograph fitted with a 27 mm guide ring and 16 mm mill.

***Note. For the gain housing the upper hinges, the 4 mm gap sashes must always be constructed to allow for an 11 or 12 mm clearance of the head jamb.***

## *Millings on the jambs*

**1)** Check the number of locking cams present on one of the vertical linking elements (fig. 1).

**2)** For sashes with 500 mm max. handle height, insert a jig art. A20030.01.27 (a) on rod art. A20030.01.28 (b), and position it according to the GR size of the vertical linking elements on the handle side (fig. 2). If you use a GR size without locking cams the millings can be done without the help of a jig rod.

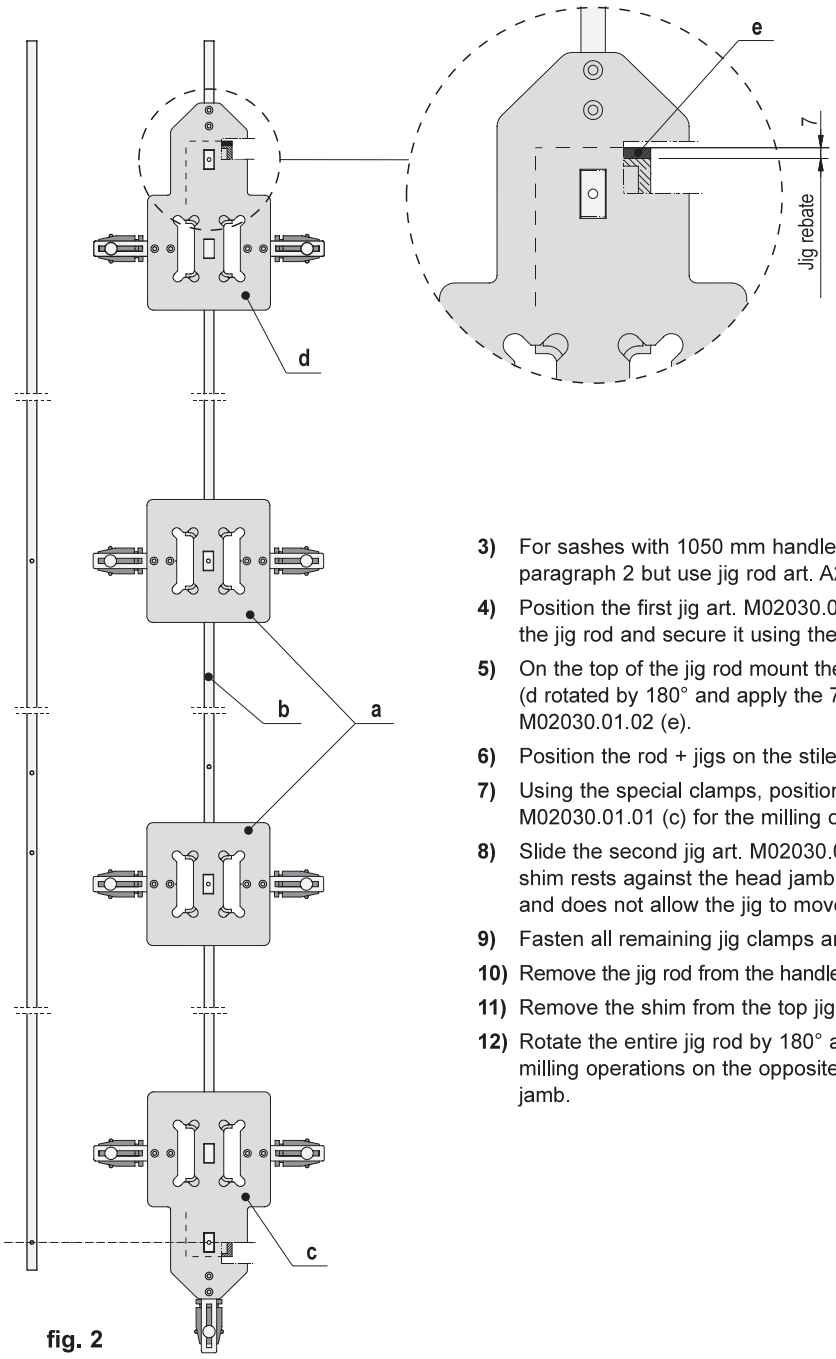



fig. 2

**3)** For sashes with 1050 mm handle height follow the instructions in paragraph 2 but use jig rod art. A20030.01.29.

**4)** Position the first jig art. M02030.01.01 (c) over the bottom hole of the jig rod and secure it using the special threaded spring nut.

**5)** On the top of the jig rod mount the second jig art. M02030.01.01 (d rotated by 180° and apply the 7 mm compensating shim art. M02030.01.02 (e).

**6)** Position the rod + jigs on the stile, on the handle side (fig. 3).

**7)** Using the special clamps, position and fasten the first jig art. M02030.01.01 (c) for the milling of the striker on the lower section.

**8)** Slide the second jig art. M02030.01.01 (d) along the rod until the shim rests against the head jamb. Make sure the clamp is locked and does not allow the jig to move from its proper position.

**9)** Fasten all remaining jig clamps and mill the striker slots.

**10)** Remove the jig rod from the handle-side jamb.

**11)** Remove the shim from the top jig and mount it on the bottom one.

**12)** Rotate the entire jig rod by 180° and repeat the positioning and milling operations on the opposite jamb, always referring to the head jamb.

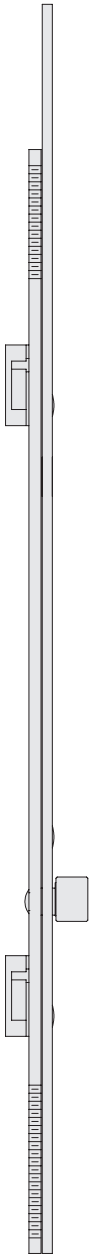


fig. 1

**13)** For the opening types with rebate reversal (SB point) or with centre mullion to be installed (MR system central point for diagrams B1, C2, E and F), mount the shims art. A20030.01.24 (e) and shim art. M02030.01.02 (f) on the upper (d) and lower (c) jigs, as shown in fig. 4. For the lateral rebate, install on the jigs only the shims (e).

**14)** Make sure that the shim (f) of jig (c) rests on the sash bottom rail. Slide the jig (d) along the rod until it rests against the top rail and secure it.

**fig. 3**

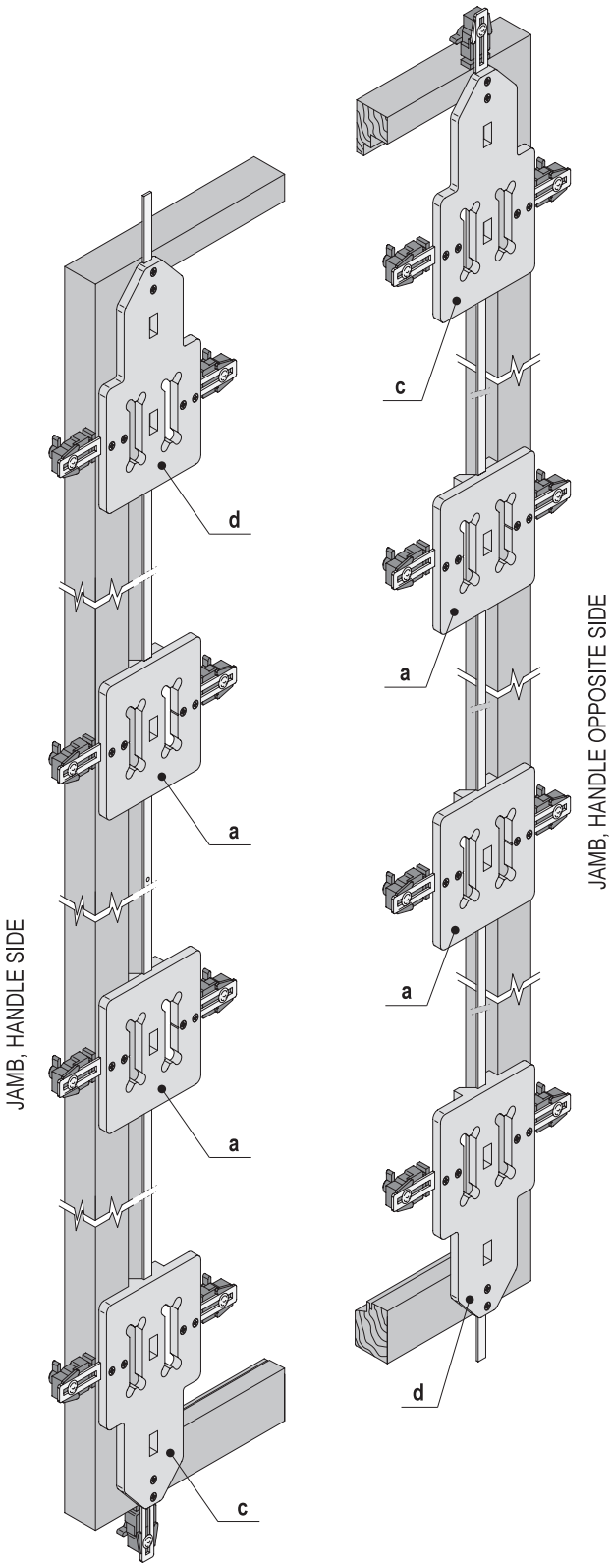
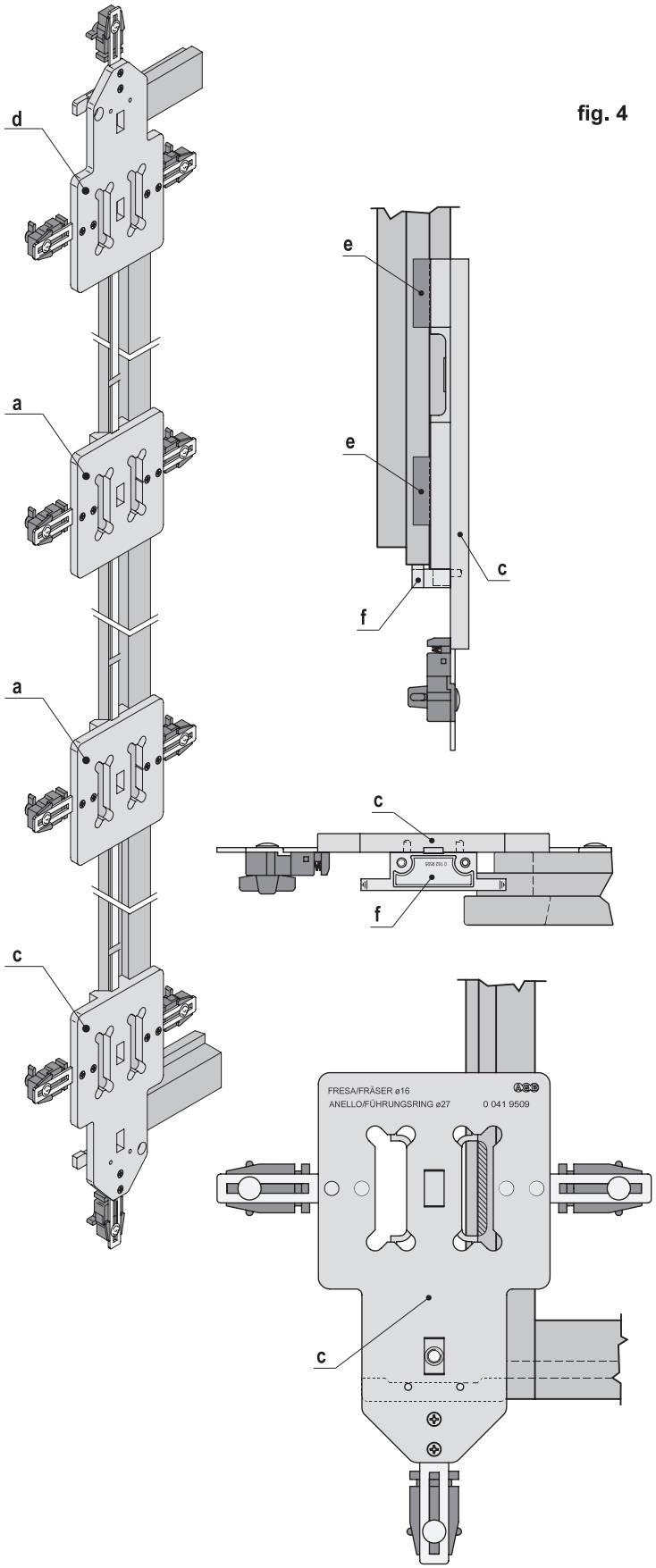



**fig. 4**



## Millings on the lower transom

**1)** Mount the first jig, art. M02030.01.03 (e), on the jig rod, art. A20030.01.28 (b), positioning it over the base hole, and fasten it using the special threaded spring nut.

**2)** Mount a jig art. A20030.01.27 (d), positioning it according to the GR size of the horizontal linking elements.

**3)** Mount the second jig, art. M02030.01.03 (a), on the end of the rod, and rotate it by 180° as compared with the previous one. Apply the compensating shim art. M02030.01.02 (c).

**4)** Rest the rod+jigs on the lower transom.

**5)** Using the clamps, fasten jig art. M02030.01.03 (e), for the milling of the tilt striker, to the jamb opposite to the handle side (fig. 2).

**6)** Slide the second M02030.01.03 jig (a) on the rod until it rests against the jamb, than make sure the clamp is tight and does not allow the jig to move from its proper position.

**7)** Fasten all remaining jig clamps and mill the gains for the strikers.

**8)** If you use a GR size without locking cams (SRW less than 1260 mm) the millings for the tilt strikers can be made without using the jig rod.

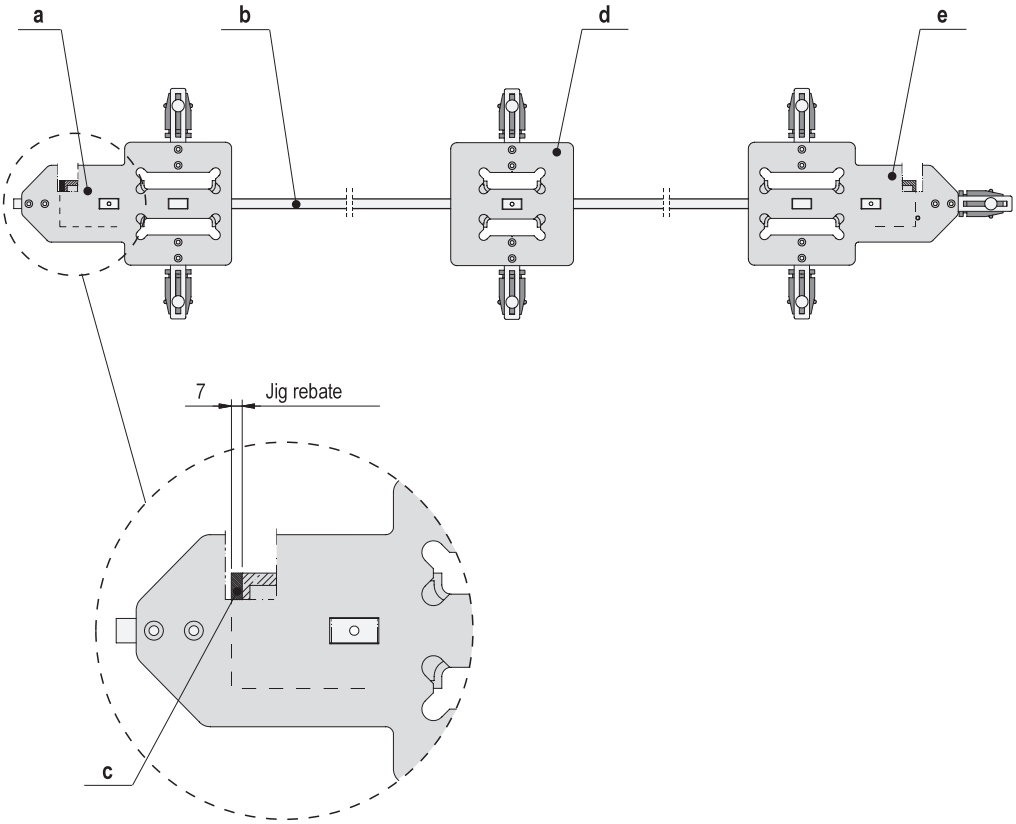



fig. 1

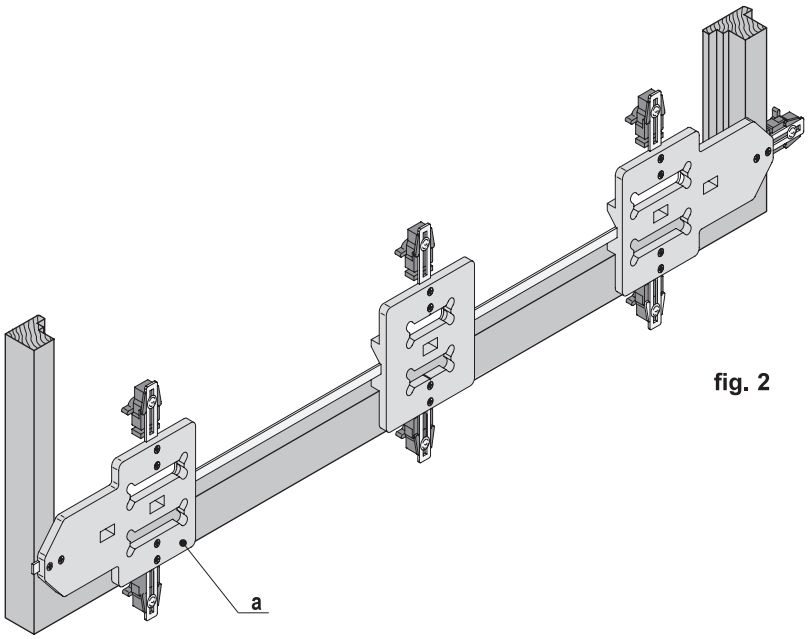



fig. 2

# Strikers positioning on layout A - gaps 4 and 12 mm

**1)** The locking cam strikers, art. M02008.01.02, must be installed according to the closing direction of the hardware: clockwise direction for left-handed sashes and counter-clockwise for right-handed sashes. Use 4x30 mm screws to fasten the strikers.

**2)** The locking cam strikers on the head jamb are always surface mounted (gap 12 mm).

Their position on the frame, according to the GR size of the connection element, is determined according to the following rule:

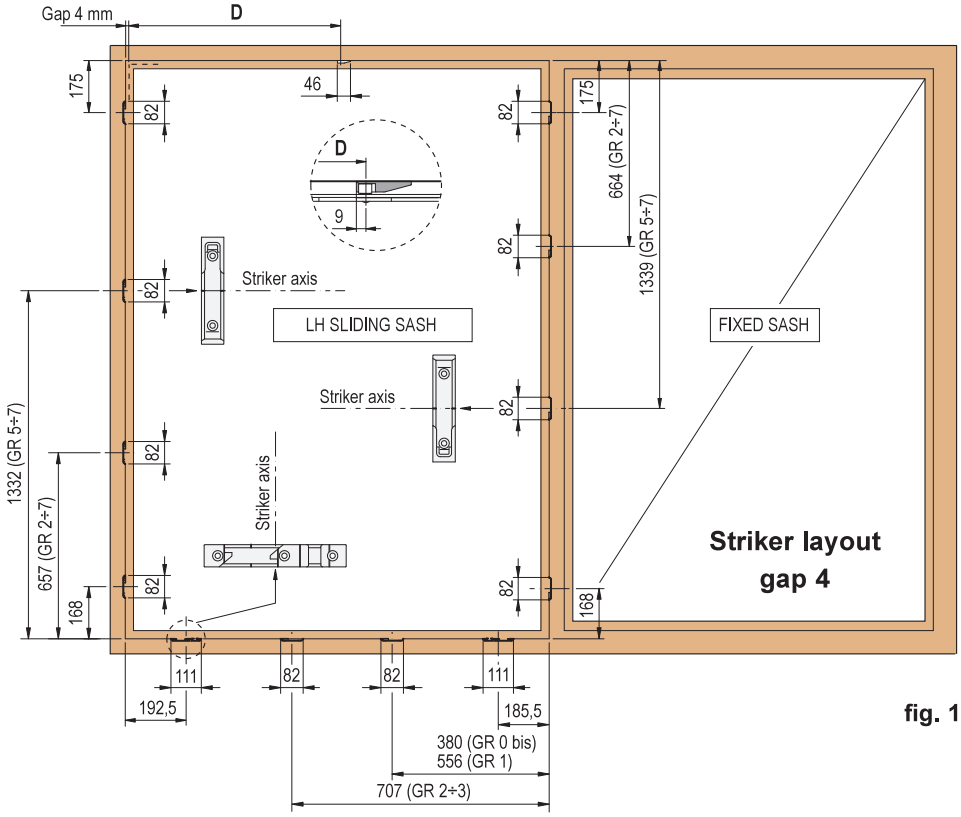



fig. 1

**D + 4 - 9**

**D** = closing position of the locking cam in relation to the hardware (574 mm for GR1, 725 mm for GR 2 and GR 3);

**4** = gap;

**9** = distance from locking cam axis to end of striker.

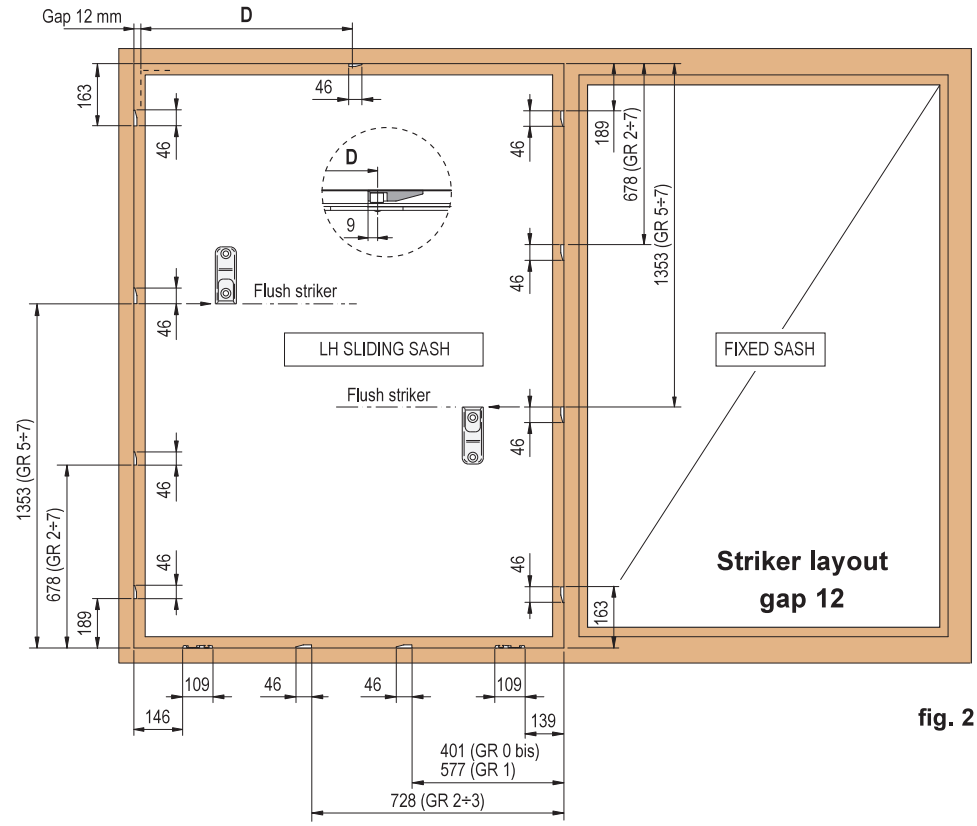
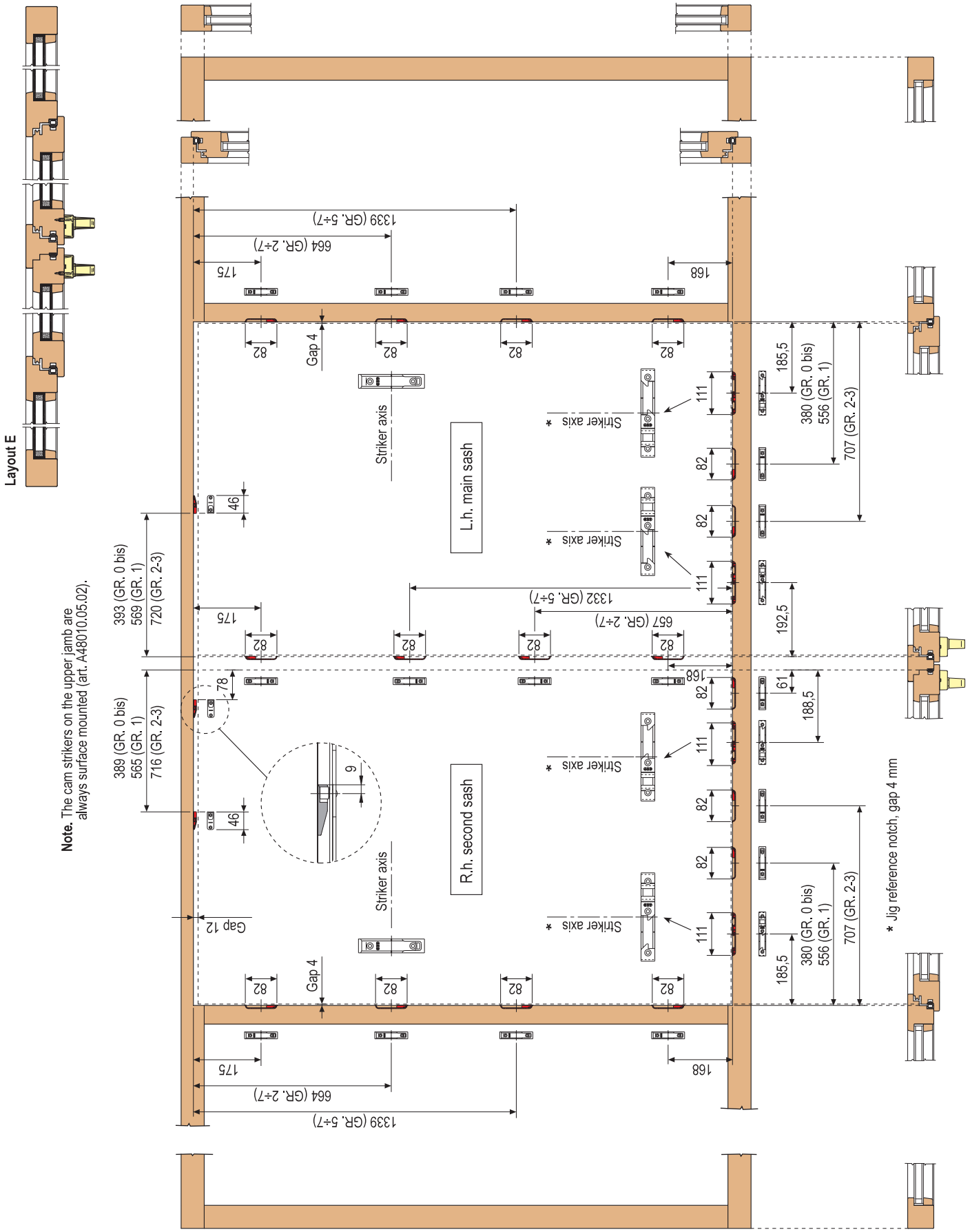



fig. 2

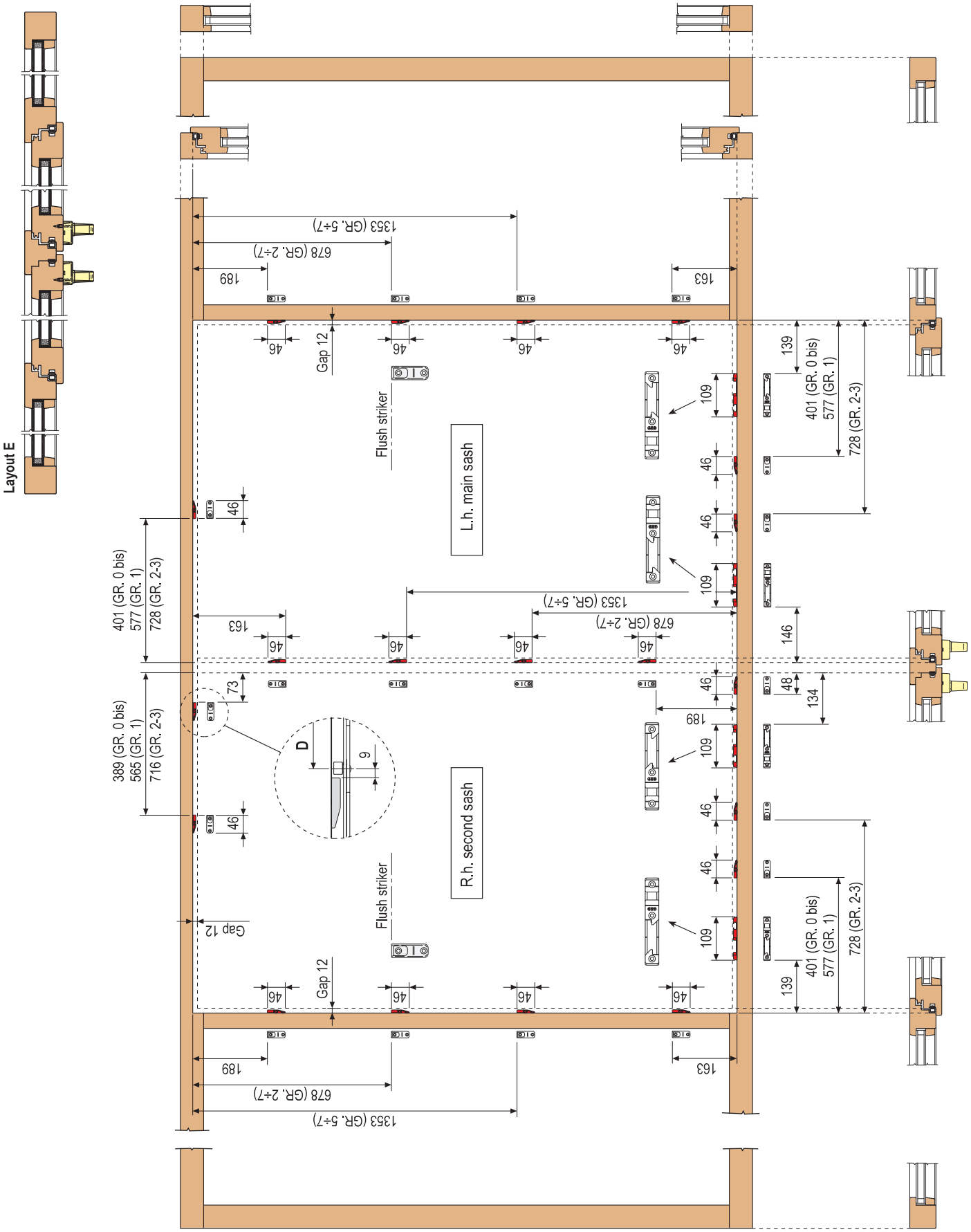
**Strikers positioning**

**D + 12 - 9**

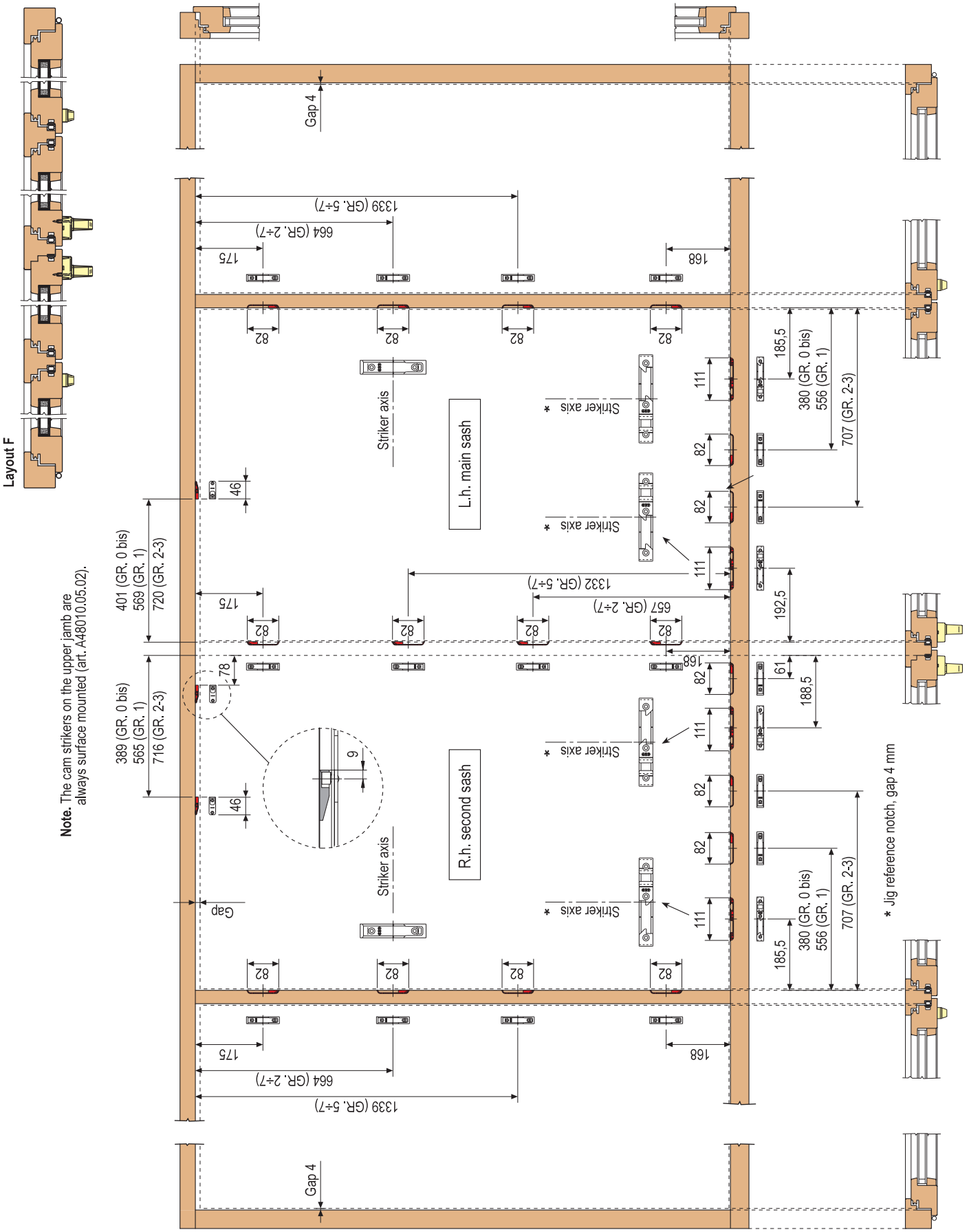
# Strikers positioning on layout E - gap 4 mm



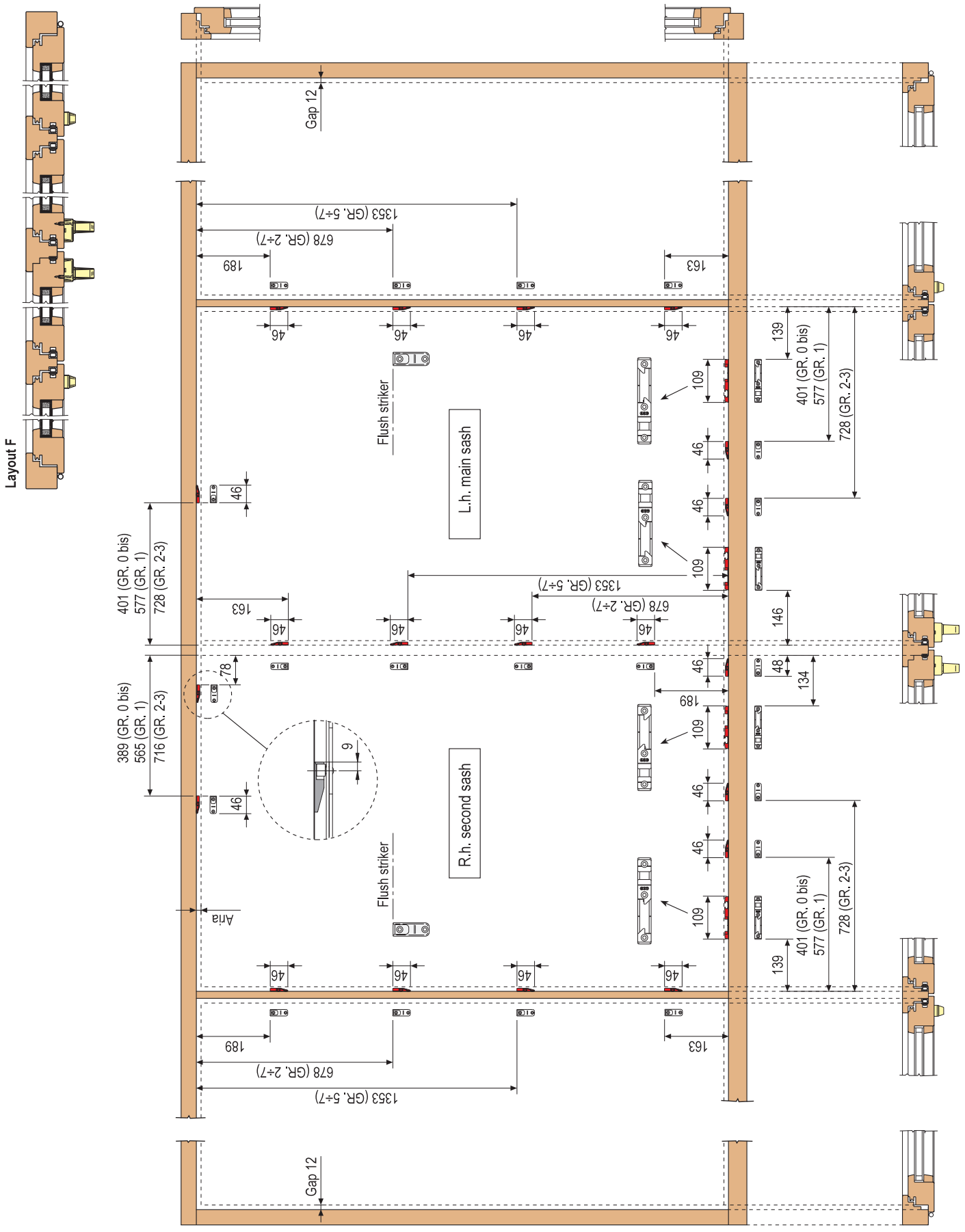
# Strikers positioning on layout E - gap 12 mm



# Strikers positioning on layout F - gap 4 mm



# Strikers positioning on layout F - gap 12 mm



# Installation of bottom rail

Before proceeding with the installation of the rail and top guide you must decide whether you wish to refer to the internal or the external rebate of the frame. Jig art. M02030.00.04 (a) is suitable for both types of installation and must be adjusted accordingly.

1) Adjust the jigs art. M02030.00.04 (a), according to the X measure, with reference to the internal rebate (fig. 1); place to lower block on the frame and secure it.
2) The number of jigs (at least two) needed for proper assembly depends on the length of the rail (we recommend using one jig for every 500 mm of length).
3) Cut the snap-in rail (**b**) (fig. 2).
4) Position the rail art. M02004 (b) on the frame sill with the help of the jigs (fig. 3) and fasten everything using clamps.
5) For proper operation of the system, counterbore each screw hole by 3 mm (fig. 4) using jig art. M02030.00.05 (c). Fasten the rail using 3,5x30 mm screws.

***Note.*** ***In case of particularly large or heavy sashes made of soft wood or PVC, rest the rail, if possible, on the floor or insert a shim (d) (fig. 5).***

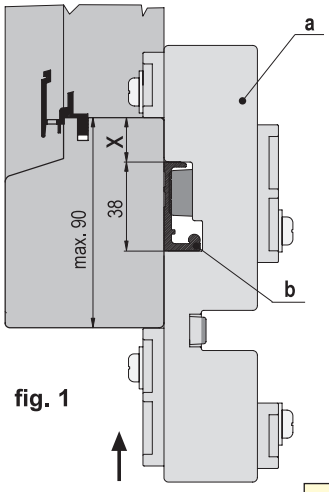
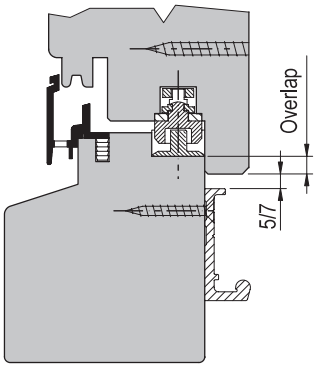



fig. 1




When you use carriages basic kit in version 3 or upper, please use the following formula:

**X = overlap + 7** *for sashes up to 80 kg*

**X = overlap + 5** *for sashes from 80 to 130 kg*

overlap = rebate-gap

***Ex.***
*gap = 4 mm rebate = 15 mm*
*overlap = 15-4 = 11 mm*
*X = 11+5 = 16 mm*

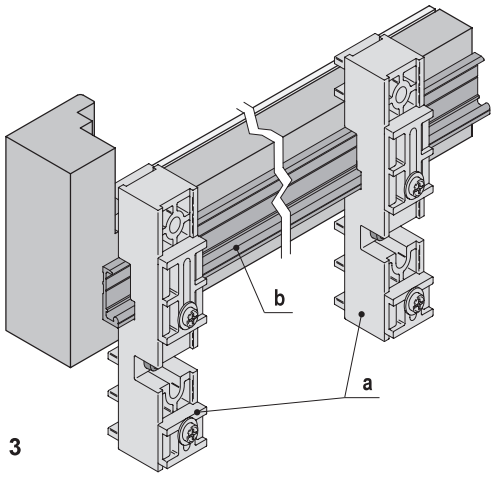



fig. 3

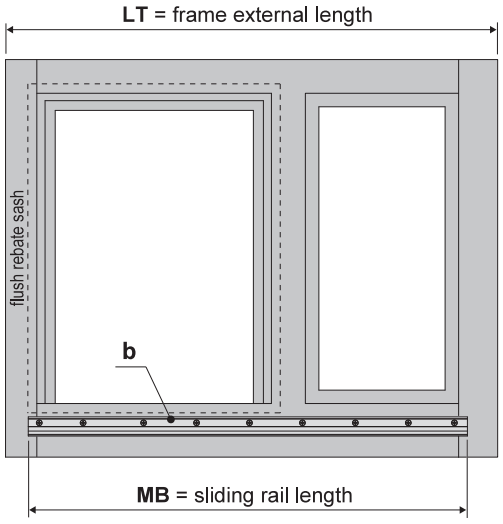



fig. 2

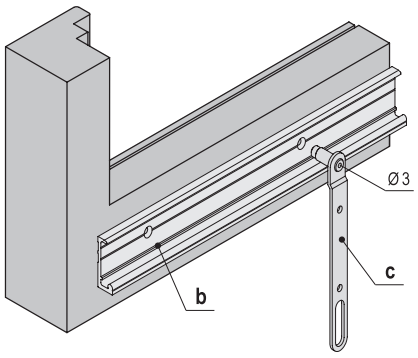
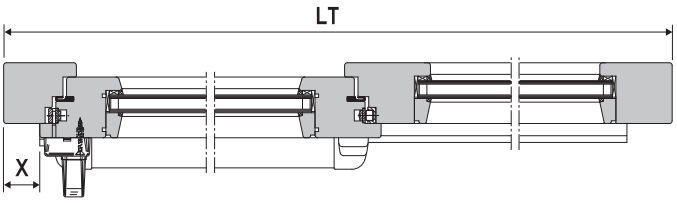



fig. 4

**MB = LT - 2X**



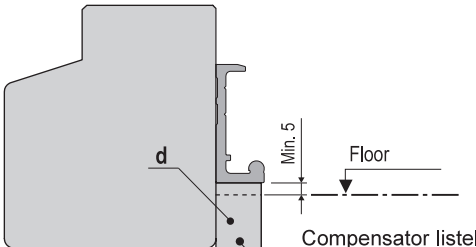




fig. 5

Compensator listel to be applied for all the rail length.

# Top guide installation

**1)** Adjust the jigs,art. M02030.00.04 (a), according to the Y measure, with reference to the internal rebate (fig. 1); place to lower block on the frame and secure it.

**2)** Cut the top guide (**b**) (fig. 2).

**3)** Position the guide on the head jamb of the frame with the help of the jigs (fig. 3) and fasten everything using the clamps.

**4)** For proper operation of the system counterbore each screw hole by 3 mm (fig. 4) using jig art. M02030.00.05 (c). Fasten the rail using 4x30 mm screws.

**5)** Insert the two support runners, art. M02010.00.03, in the guide (d).

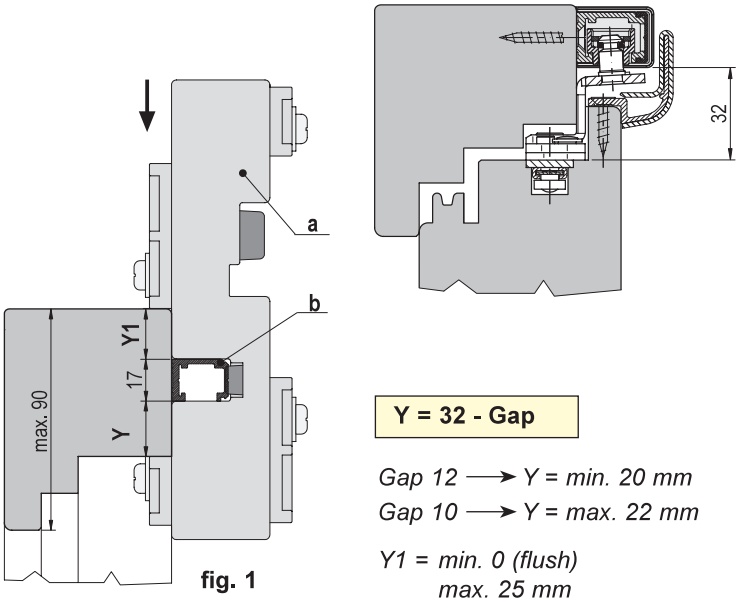



fig. 1

**Y = 32 - Gap**

*Gap 12 ⟶ Y = min. 20 mm*
*Gap 10 ⟶ Y = max. 22 mm*

*Y1 = min. 0 (flush)*
*max. 25 mm*

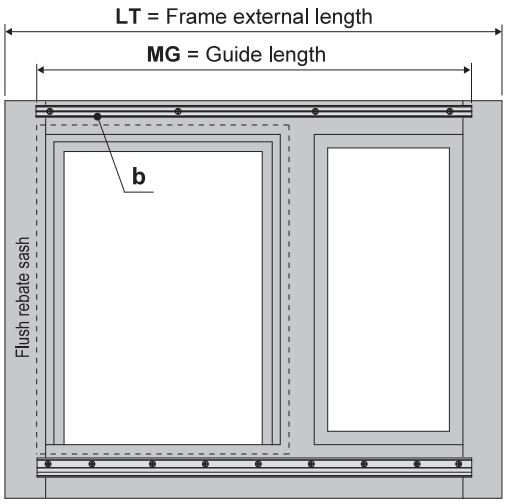
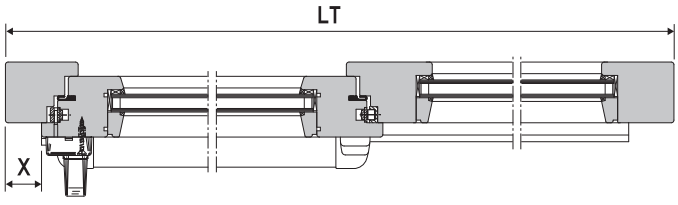



fig. 2

**MG = LT - 2X**



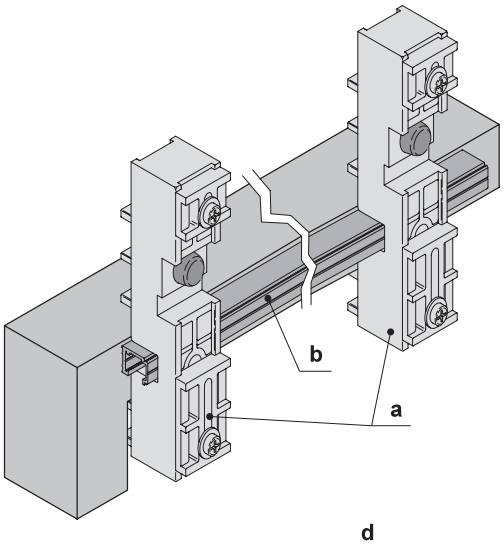




fig. 3

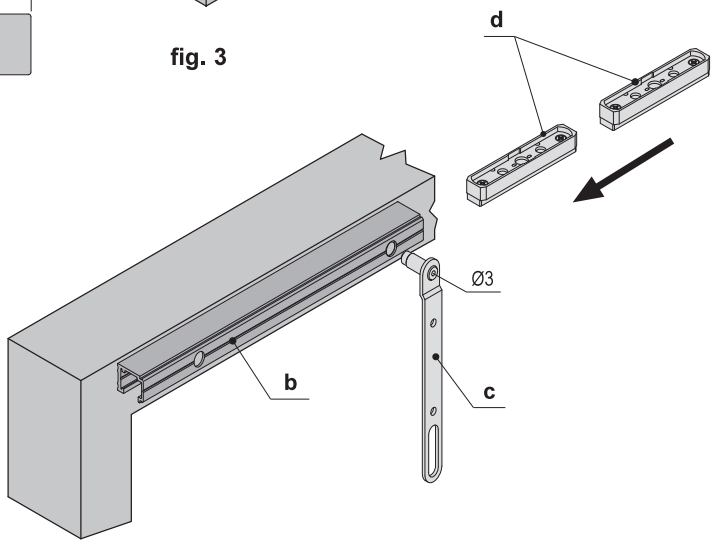
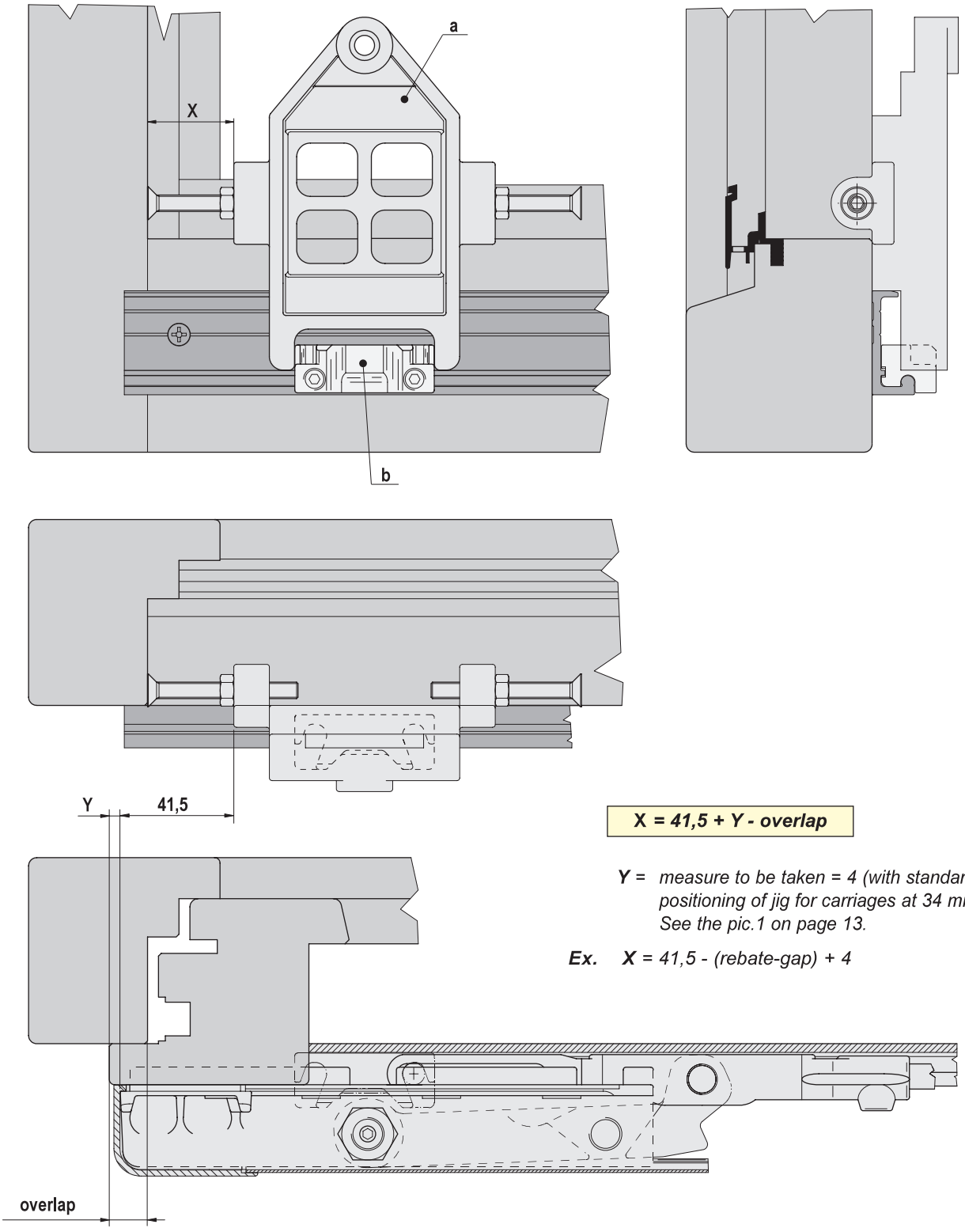



fig. 4

# Installation of fixed release block

*(standard version included in basic kit)*

**1)** Adjust the X measurement of the jig, art. M02030.00.03 (a), for the positioning of the release block, art. M02011.01 (b), as follows:




**X = *41,5 + Y - overlap***

***Y*** = *measure to be taken = 4 (with standard positioning of jig for carriages at 34 mm). See the pic.1 on page 13.*

***Ex.*** ***X*** = *41,5 - (rebate-gap) + 4*

**2)** Slide the release block (b) on the bottom rail (c), handle side, by the sliding track and security tooth (fig. 1).

**3)** Place the jig (a) over the release block and slide it along the frame sill until the side adjustment screw rests against the jamb on the handle side (fig. 2).

**4)** With a 4 mm Allen wrench fasten the release block by means of the pre-assembled socket head screws (d).

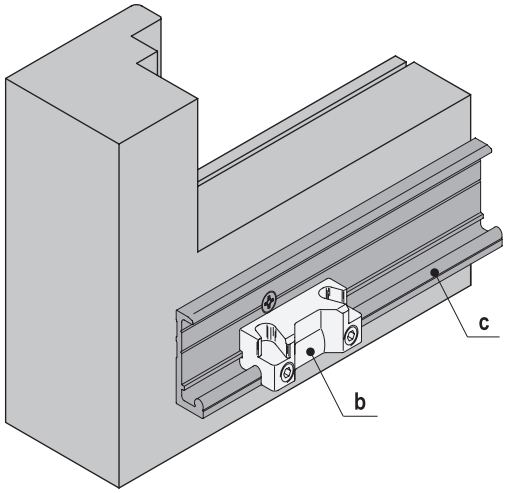



**fig. 1**

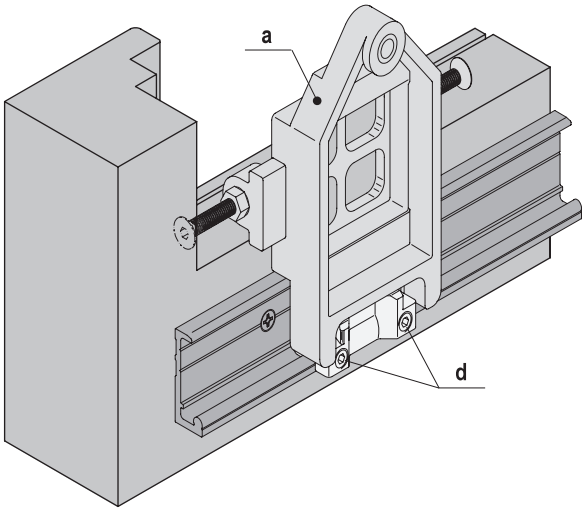



**fig. 2**

# Sash assembly on the frame

**1)** Position the handle horizontally (tilt opening).

**2)** Place the sliding sash (a) on the bottom rail (b) making sure that the carriage wheels are aligned to run on the rail (fig. 1).

**3)** Position the sliding sash vertically.

**4)** Align the support runners (c) (previously inserted in the top guide) with the corner movement hinge pins. Slide the pin in the centre hole of the runner and push the hinge arm until you hear it snap on. Repeat the operation for the other hinge arm.

***Note. To release the runners, insert a screwdriver in the holes at the sides of the pin, or push and simultaneously lower the hinge arm.***

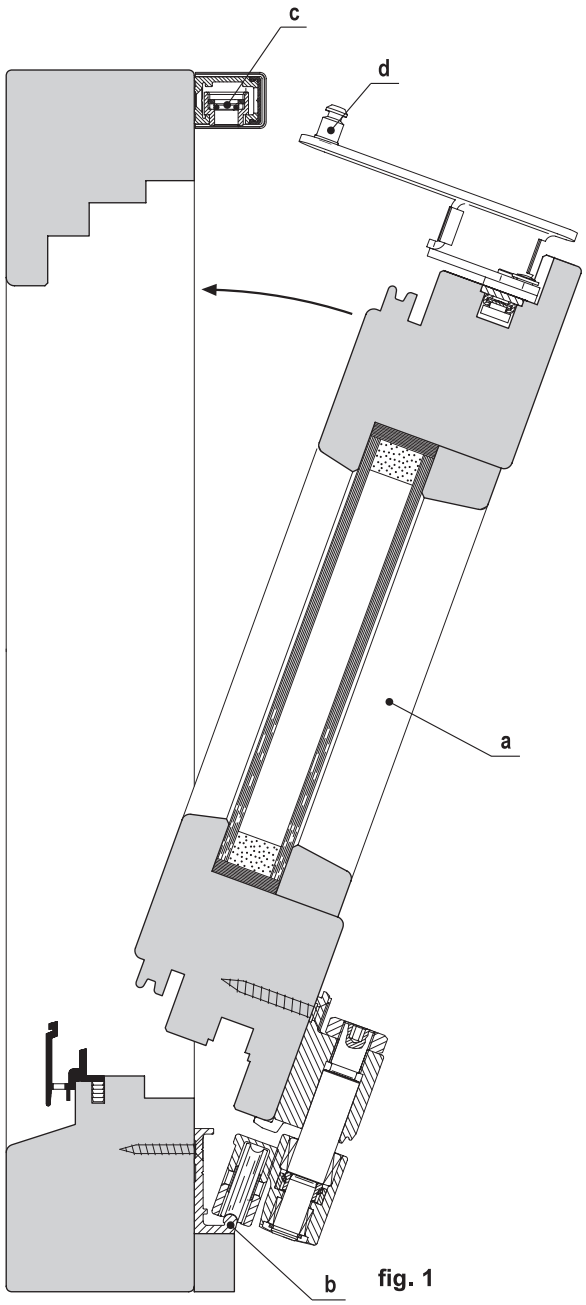



fig. 1

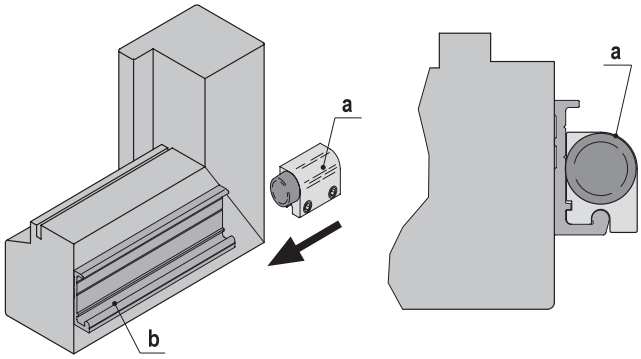
# Bumper installation

## *Rear bottom bumper:*

**1)** Mount the bumper, art. M02011.03 (a), on the bottom rail art. M02004 (b), by the sliding track and security tooth.

**2)** Align the bumper with the edge of the bottom rail.

**3)** Using a 4 mm Allen wrench fasten the bumper by means of the socket head screws.




## *Upper bumper:*

To prevent the derailment of the sliding sash, a bumper must be installed on the top guide.

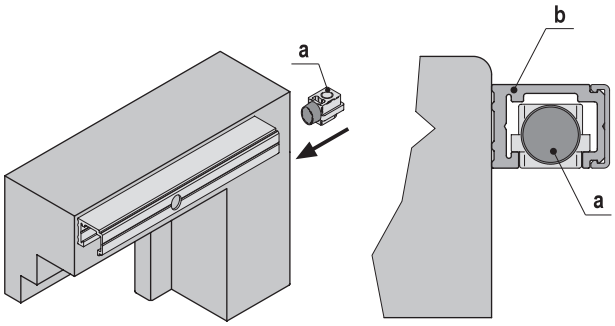
**1)** Position the sliding sash against the rear bottom bumper.

**2)** Mount the top bumper (a) on the top guide (b) and push it until it rests against the upper hinge runner.

**3)** Move the sliding sash to the closed position.

**4)** Move the top bumper about 2 mm towards the opening side to compensate for the tolerances of the hinges.

**5)** Using a 4 mm Allen wrench fasten the bumper by means of the pre-assembled socket head screw.




**WARNING !!!**

**If you disassemble the system you should provide for adequate sash support (2 people) after the release of the upper hinges to avoid damage to people or property.**

# System adjustment

The GALILEO Coplanar Sliding System has been designed keeping in mind all the problems (and related solutions) that are commonly encountered at installation sites.
If the frame is properly constructed and assembled and the sliding sash has a constant 4, 11 or 12 mm gap between the perimeters of the two rebates, no further adjustments are normally needed.
If these conditions are not satisfied or in case of structural settling or increased play, proceed as follows:

## *Vertical adjustment of carriages* *(fig. 1)*

The sash sliding carriages must be adjusted so that the bottom edge of the sash and the upper edge of the rail are parallel and at a constant distance of 5 mm.

Proceed as follows:

**1)** Loosen the lock nuts (a) using a 19 mm Allen wrench.

**2)** Using a 4 mm Allen wrench, regulate the adjustment dowels (b). The adjustment stroke is + 6, -3 mm from the original position.

**3)** Tighten the lock nuts (**a**).

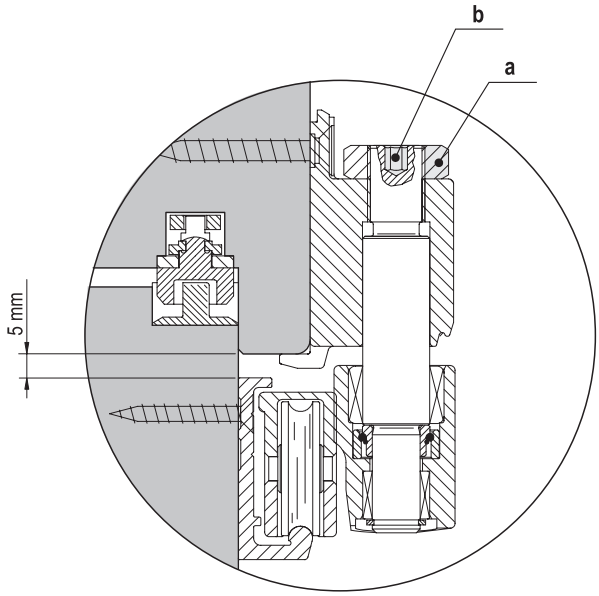



**fig. 1**

## *Sash position horizontal adjustment*

To move the sash right or left, just move the release block. Keep in mind that:

**1)** The movable release block, if properly installed, does not require any further adjustments.

**2)** The fixed release block may shift due to the loosening of the socket head screws with time. If this is the case, position the block as indicated on page 26.

## *Sash pressure adjustment* *(fig. 2)*

If the sash does not exert proper and evenly distributed pressure around the entire seal, adjust each locking cam (c) using a 4 mm Allen wrench. The locking cam adjustment range is ± 1 mm (fig. 2).

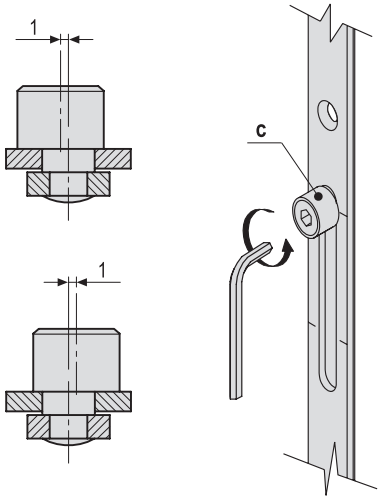



**fig. 2**

# Cover installation

To simplify the adjustment and prevent damage to the covers during transportation, we suggest that you install them on site as the final operation.

## *Carriage cover* (fig. 1-2)

**1)** Hook on the previously cut carriage cover trim as indicated by the arrow, point (1) (see page 14).

**2)** Press the cover trim (**a**) down and push it forward, point (2), until you hear it snap on.

***Note. To remove the cover, press downwards and pull.***

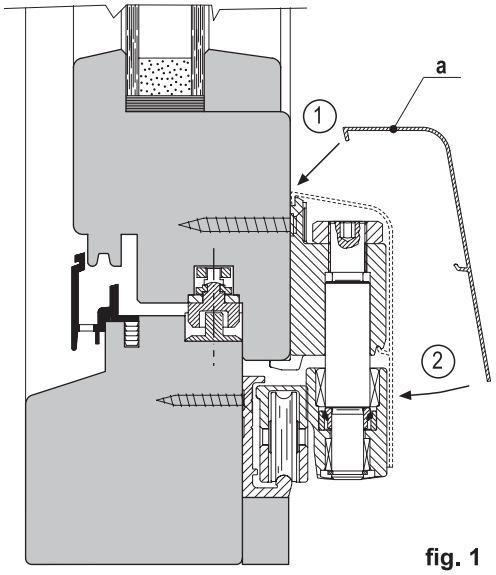



**fig. 1**

## *Carriage support cover* (fig. 2)

**1)** Apply the plastic side covers (**b**), art. M02013, inserting them in the special slits from the top.

**2)** Push the covers downward until they are aligned with the cover trim.

## *Top guide cover* (fig. 2)

**1)** Insert the plastic cover trim (**c**) art. M02007 in the top guide until it covers its entire length.

**2)** With scissors, trim off the excess.

**3)** Apply the end caps (**d**), art. M02011.04.

## *Upper hinge covers* (fig. 2-3)

The following covers can be selected to suit your requirements:

**1)** Snap-on, single plastic covers.

**2)** Aluminium trim (**f**) to be cut to fit the width of the sash, less 6 mm.

Position the trim on the upper part of the sash rebate and fasten it using 4x20 mm screws.

Install the right and left side caps (**g**).

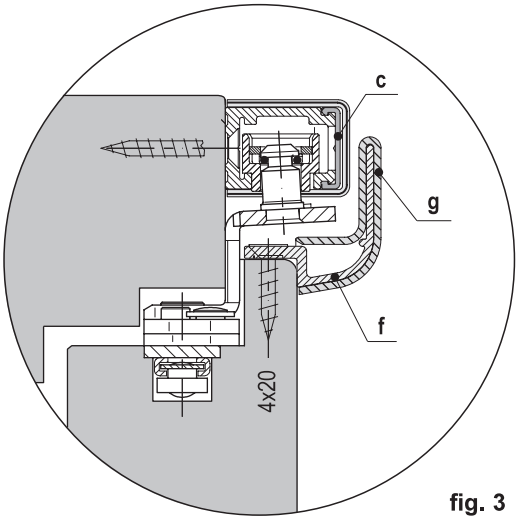
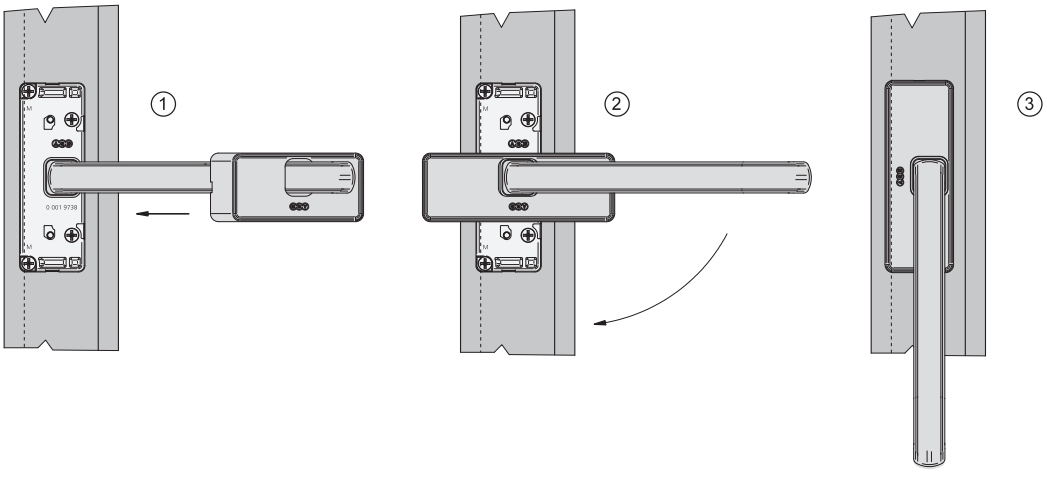



**fig. 3**

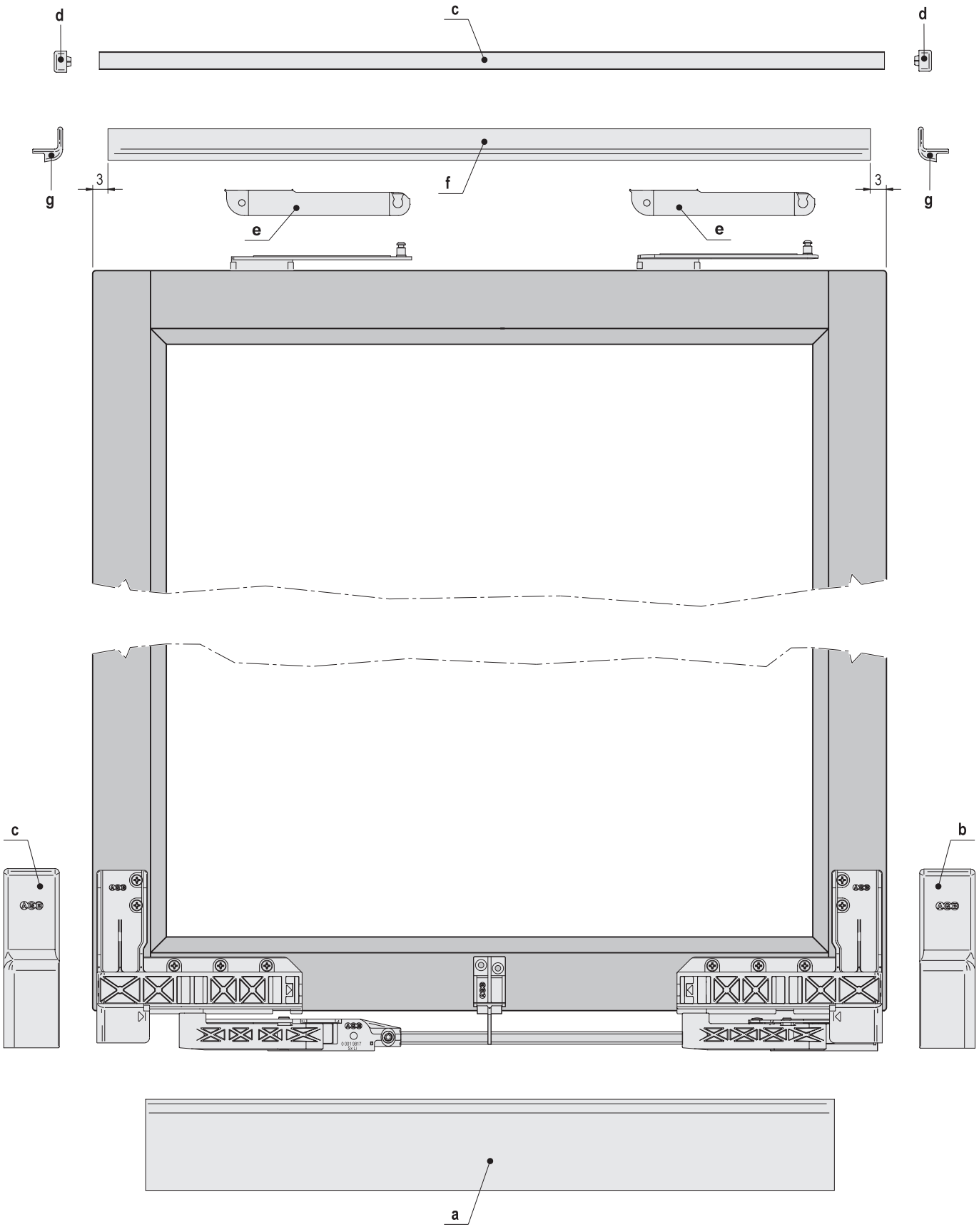
## *Handle cover* (fig. 4)

Apply the cover to the device, pushing it to the frame, up to the complete hooking, following the indicated sequence.



# Graphic representation of cover installation

fig. 2



# Routine maintenance

For excellent system performances, we recommend that you carry out the following operations periodically:

### *Every two weeks*

**1)** Brush the bottom rail to remove any accumulated debris that may obstruct wheel movements.

**2)** Vacuum the dust accumulating inside the tracks.

### *During assembly, and then annually*

You need to lubricate with oil or grease:

- Locking cams and locking cam strikers
- Upper corner hinges (above all the part of "S" rings)
- Top guide where the support runners rest
- Release block and tilt strikers
- Bottom carriage articulations and pins

### *Every two or three years*

Make sure that:

**1)** The dowels of the release block and of the top and bottom bumpers are tight to prevent the derailment of the sliding sash.

**2)** The hardware, especially the “load bearing” accessories, do not show any evident signs of wear that could compromise system performance.

# Troubleshooting

| PROBLEM | CAUSE | SOLUTION |
|---|---|---|
| The sliding sash hits and does not hook | Handle in release position | Turn handle to horizontal position |
| | Release block improperly positioned | Adjust position of release block |
| | Connecting rod loose or badly adjusted | Adjust and fasten the connecting rod:<br>- Remove the carriage cover<br>- Open the sash<br>- Tighten the rear carriage dowel and loosen the front carriage one<br>- Close the sash<br>- Tighten the front carriage dowel |
| | Carriages too high/low | Adjust carriage height |
| The sliding sash hooks onto the front carriage only | Connecting rod badly adjusted | Adjust carriage height |
| “Stiff” handle, sash scrapes when closing | Misaligned carriages<br>Carriages too high/low | Adjust carriage height |
| “Stiff” handle when closing | Advanced movement of an articulated joint | Disassemble the connecting rods, align the joints, reassemble the rods properly |
| The sash closes badly or with insufficient pressure | Badly-adjusted locking cams | Adjust the locking cams |
| Sash does not slide smoothly | Damaged or dirty bottom rail | Clean and/or replace the bottom rail |

## NOTES

## NOTES

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