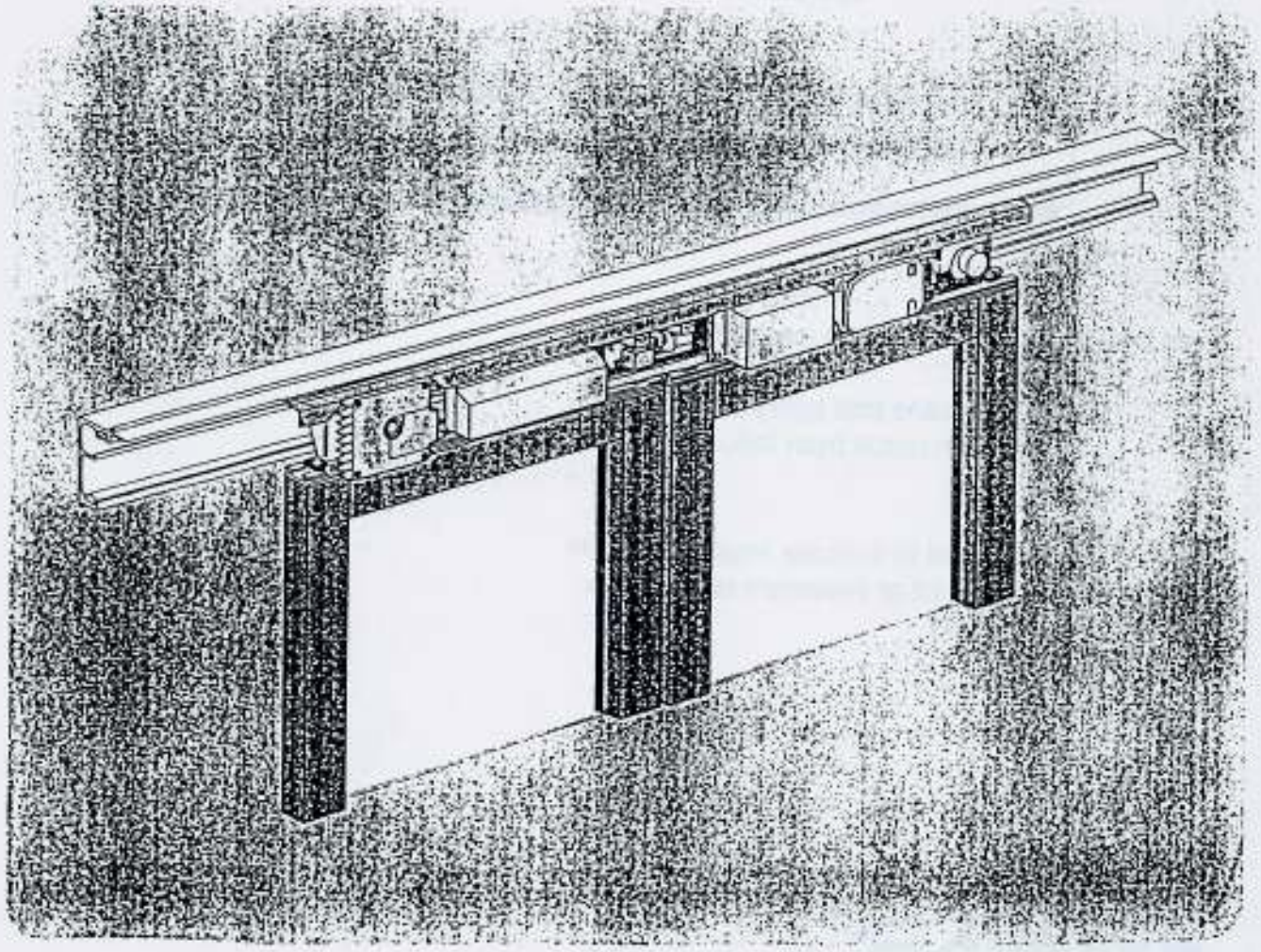
besam®

Mechanical Installation Manual
Part No. 04-23-007

Mechanical Installation Power-Glide™ AMD Sliding Door System



CAUTION

Improperly Adjusted Doors can cause injury and equipment damage.

Inspect door operation daily using safety checklist in owner's manual and at door.

- Have door adjusted as described in Owner's Manual.
- Safety devices should be in place and operational.

Have door inspected at least annually by an AAADM certified inspector and after any adjustment of repair.

In the following manual, the word:

Caution means that injury or property damage can result from failure to follow instructions.

Note is used to indicate important steps to be followed or important differences in equipment.

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Warnings

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been designed to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Re-orient the receiving antenna.

Relocate the receiver with respect to the equipment.

Move the receiver away from the equipment.

Plug the receiver into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

Refer to Installation/Troubleshooting Manual P/N 04-23-010 for electrical connection, adjustment and troubleshooting.

Models

Two main models are available:

-Operators with the supplementary designation -1..., for **single-sliding** doors, with one sliding leaf. Right or left opening has to be specified when ordering.

-Operators with the supplementary designation -2..., for **bi-parting** doors, consisting of a pair of door leaves which are sliding away from each other to form a single common door opening.

* Note: Chart shown for narrow stile doors.

Bi-Part Model No.	"A"	"L"	"B"
PGAMD-2-8	36" (914.4)	96" (2438.4)	24 3/8" (619.1)
PGAMD-2-10	48" (1219.2)	120" (3048)	30 3/8" (771.5)
PGAMD-2-12	60" (1524)	144" (3657.6)	36 3/8" (923.9)
PGAMD-2-14	72" (1828.8)	168" (4267.2)	42 3/8" (1076.3)
KEY:	(L/2) -12" (L/2)-(304.8)	(C-1/2") (C-12.7)	(L/4)+3/8" (L/4)+(9.5)

A = Door opening
L = Overall frame width
B = Door leaf width (active and sidelite leaf)
C = Masonry opening width
Key = Formula for determining door dimensions.

* Note: Chart shown for narrow stile doors.

Single-Slide Model No.	"A"	"L"	"B"
PGAMD-7	35 1/4" (895.4)	84" (2133.6)	41 1/2" (1054.1)
PGAMD-8	41 1/4" (1047.8)	96" (2438.4)	47 1/2" (1206.5)
PGAMD-8-6	44 1/4" (1124)	102" (2590.8)	50 1/2" (1282.7)
KEY:	(L/2) -6 3/4" (L/2)-(171.5)	(C-1/2") (C-12.7)	(L/2)-1/2" (L/4)-(12.7)

A = Door opening
L = Overall frame width
B = Door leaf width (active and sidelite leaf)
C = Masonry opening width
Key = Formula for determining door dimensions.

Power-Glide AMD-2, bi-parting doors

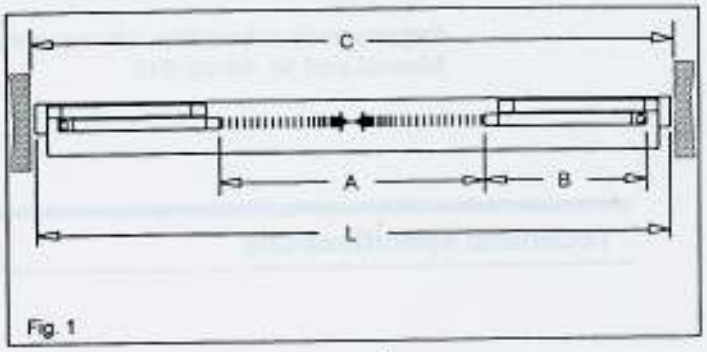


Fig. 1

Power-Glide AMD-1, single-sliding door, right-opening

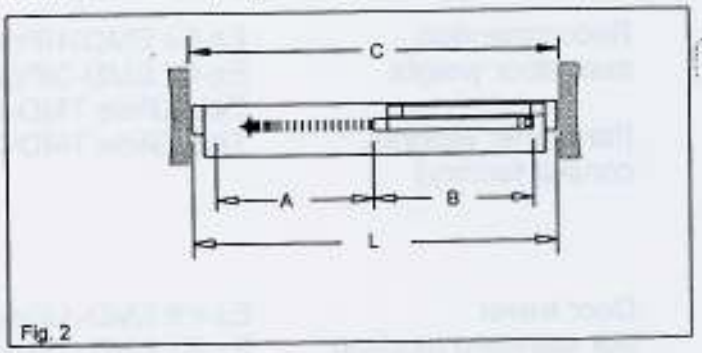


Fig. 2

Power-Glide AMD-1, single-sliding door, left-opening

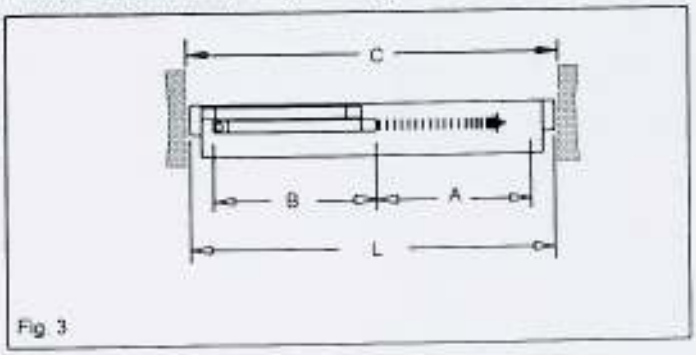


Fig. 3

Introduction

This manual contains the necessary details and instructions for the mechanical installation of the Besam Power-Gide AMD sliding door system.
The Power-Glide AMD (overhead concealed) operator/support beam is designed to be installed between two vertical jambs. The support beam supports the active sliding door(s), sidelite(s) and a transom above the operator, if required. Both sides of the operator support beam must be accessible due to the drive train and computer controls being located on opposite sides of the operator.

Note: All dimensions shown in this manual are shown in both english and metric (metric in parenthesis).

For electrical connection, adjustment and troubleshooting refer to Installation/Troubleshooting Manual part no. 04-23-010.

Technical specifications

Recommended max. door weight	Ez-Fit EMD-1/Power-Glide AMD-1	1x 300lbs. (135kg.)
	Ez-Fit EMD-2/Power-Glide AMD-2	2x 175lbs. (80kg.)
	Tele-Glide TMD-R/L	2x 150lbs. (64kg.)
(for higher weights, consult factory)	Tele-Glide TMD-2	4x75lbs.(32kg.)
Door travel (for standard models)	Ez-Fit EMD-1/Power-Glide AMD-1	35" - 70" (900-1800mm)
	Ez-Fit EMD-2/Power-Glide AMD-2	35" - 78" (900-2000mm)
	Tele-Glide TMD-R/L	35" - 141" (900-3600mm)
	Tele-Glide TMD-2	80" - 149" (1800-3800mm)

Identification of integral parts (Operator for bi-parting doors shown)

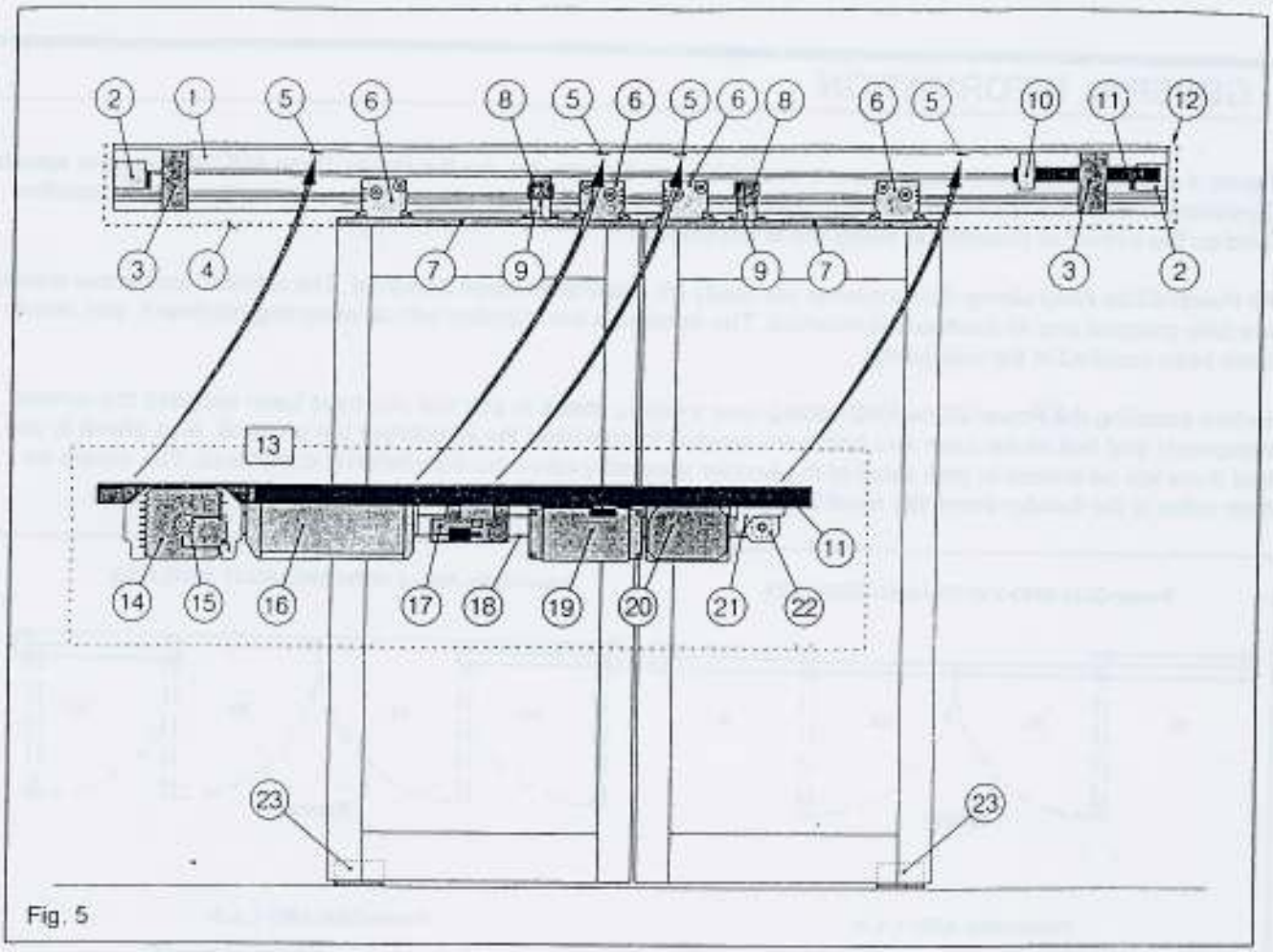


Fig. 5

1. Support beam
2. Door stop
3. Cover bracket
4. Cover
5. Bracket for drive module (4 pcs)
6. Carriage wheel fitting
7. Door adaptor
8. Tooth belt fitting
9. Carrier fitting
10. Cable channel bracket
11. Cable channel
12. Cable inlets
13. Drive module
14. Motor unit
15. Drive wheel
16. Control unit
17. Electromechanical locking device
18. Tooth belt
19. Emergency unit/Extension unit
20. Power supply unit
21. Tension wheel fitting
22. Tension wheel
23. Floor guide

Power-Glide AMD

GENERAL INFORMATION

Figure 4 shows the different plans that are available from Besam, Inc. for the Power-Glide AMD sliding door system. Operators can have a bi-parting or (left or right hand) single slide mode of operation and sidelites can be installed fixed on the interior or mounted to swing out to the exterior.

All Power-Glide AMD sliding door systems are ready for installation when delivered. The sidelites and active leaves are fully prepped and all hardware is installed. The operators are supplied with all mounting hardware, and rivnuts have been installed in the side jambs.

Before installing the Power-Glide AMD sliding door system, check to see that you have been supplied the correct equipment and that all the tools and hardware needed to complete the installation are on hand. Also check to see that there will be access to both sides of the header assembly when the installation is completed. The covers on both sides of the header assembly must be removeable to service the unit.

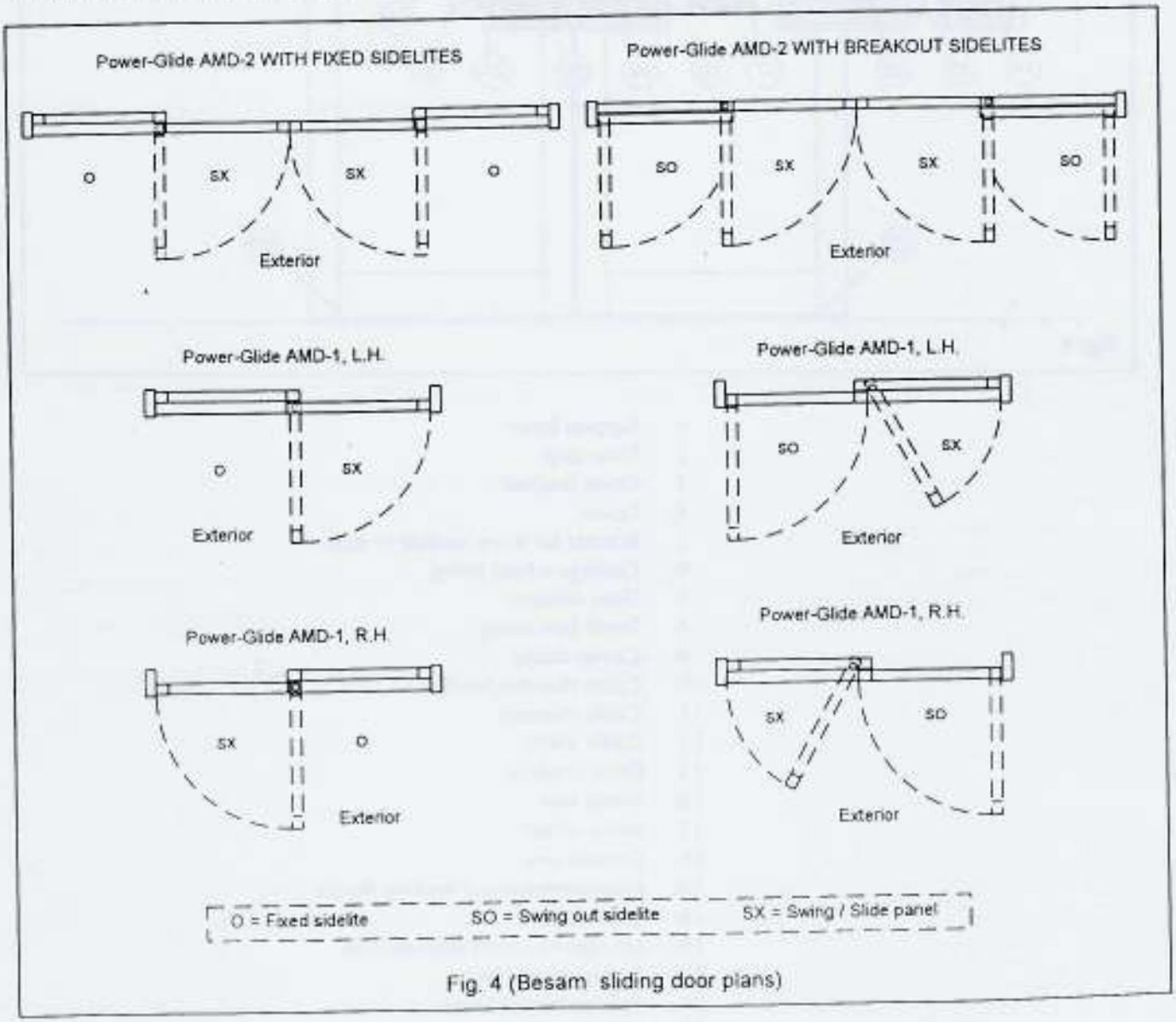


Fig. 4 (Besam sliding door plans)

Checking - Marking out - Fixing

Prior to intallation of the support beam, the covers and the drive module (if equipped) have to be removed. See page 17 and 25.

Check that the fixing material and the upper part of the door leaf have the necessary enforcements, and that the floor is level and smooth.

Bi-parting doors (AMD-2...)

Mark out the center of the daylight opening width. Mark out the center of the support beam. At installation the support beam is placed so that both center marks are aligned. This ensures that the support beam will be fixed symmetrically in the daylight opening width.

Single-sliding doors (AMD-1...)

The door opening direction must be specified on the order form.
All single-sliding door operators have the transmission rod fastened to the toothbelt joint at the upper part of the toothbelt.
Changing from left to right opening is done by changing the direction of rotation for the motor unit (this is done by changing PMD function 27 motor value from b to A) see pg. 19 of the Electrical Installation/Troubleshooting manual, P/N 04-23-010 for other PMD functions and values.

Space required

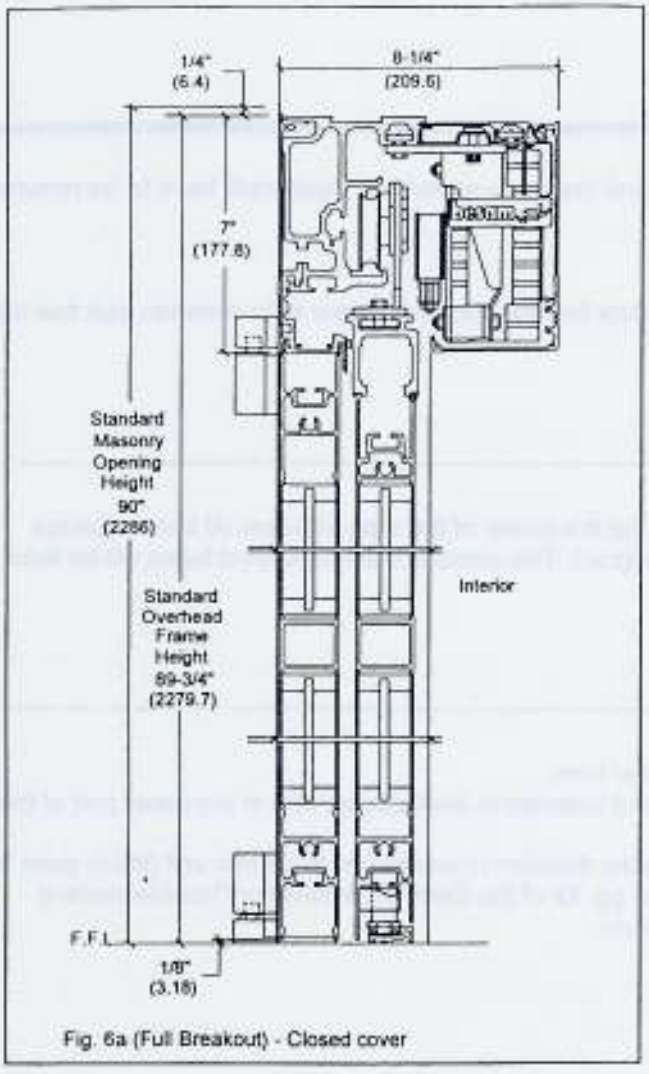


Fig. 6a (Full Breakout) - Closed cover

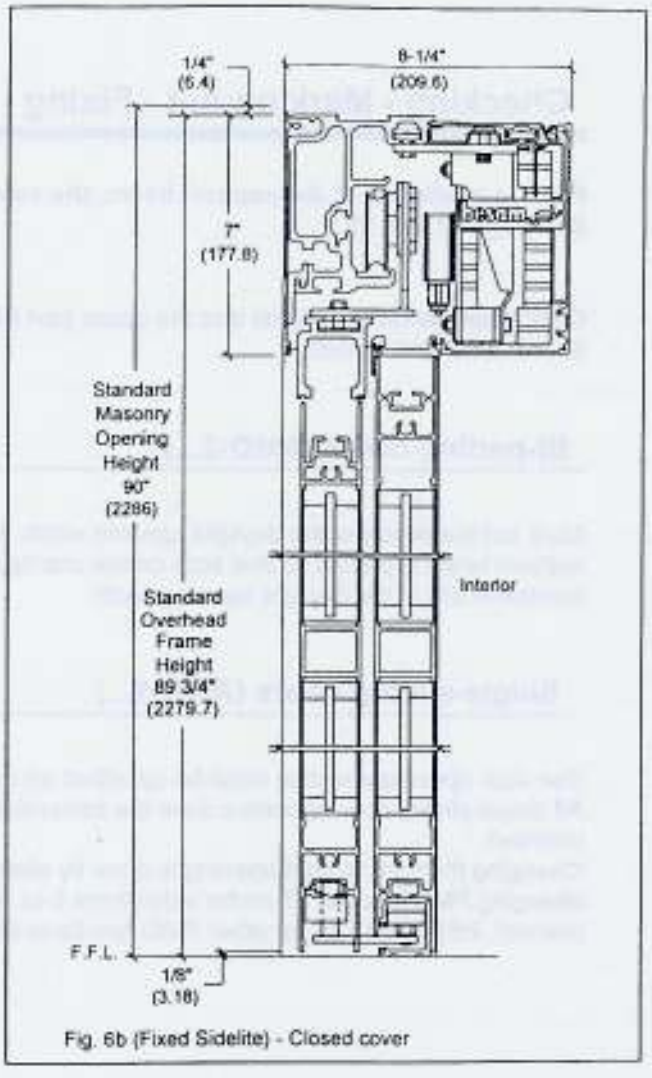


Fig. 6b (Fixed Sidelite) - Closed cover

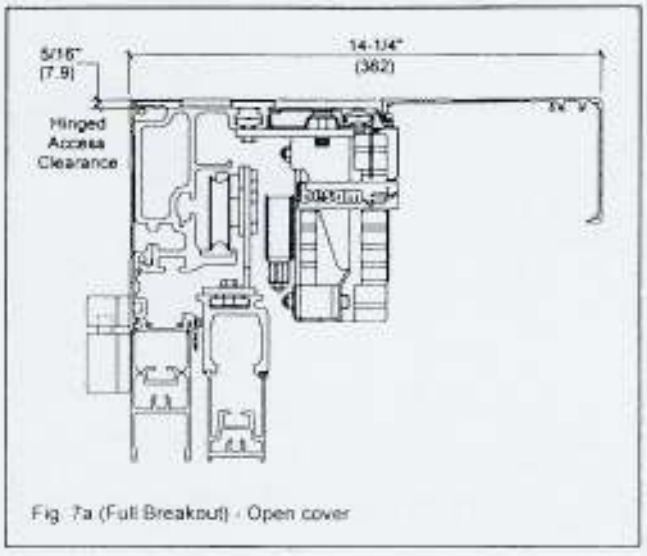


Fig. 7a (Full Breakout) - Open cover

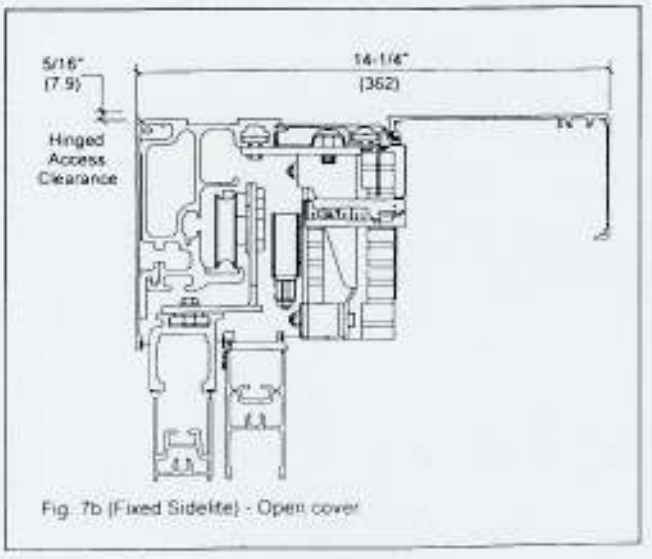


Fig. 7b (Fixed Sidelite) - Open cover

Installing the door carrier on the top of the door leaf (Factory Installed)

1. Make sure that the upper part of the door leaf is sufficiently reinforced.
2. Establish the distance between the door leaf and the sidelite, considering door design and door sweep.
3. Place the door carrier on the top of the door leaf. The distance between the door leaf and sidelite serves to ensure the correct depth installation. Take into account door sweeps, where used. The figures 10a, 10b, 11,12 and 13 show how to position the door carrier on the top of the door leaf.
4. The door carrier can be roughly adjusted for depth, ± 3/16" (5mm), in relation to the door leaf. This rough adjustment is to be carried out when the door carrier is fitted on the door leaf.

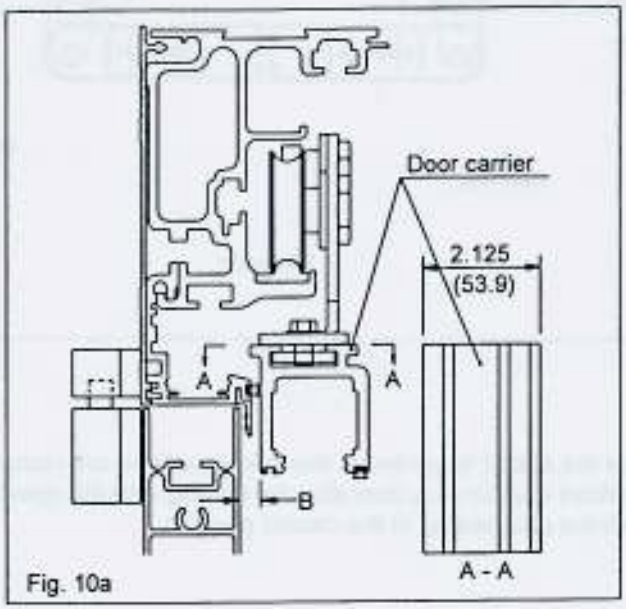


Fig. 10a

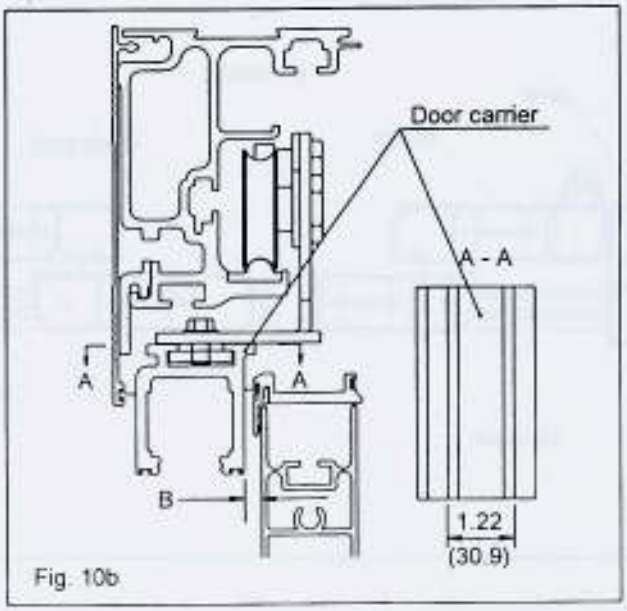


Fig. 10b

Installation examples for bi-parting doors

Recommended Fixed sidelite installation

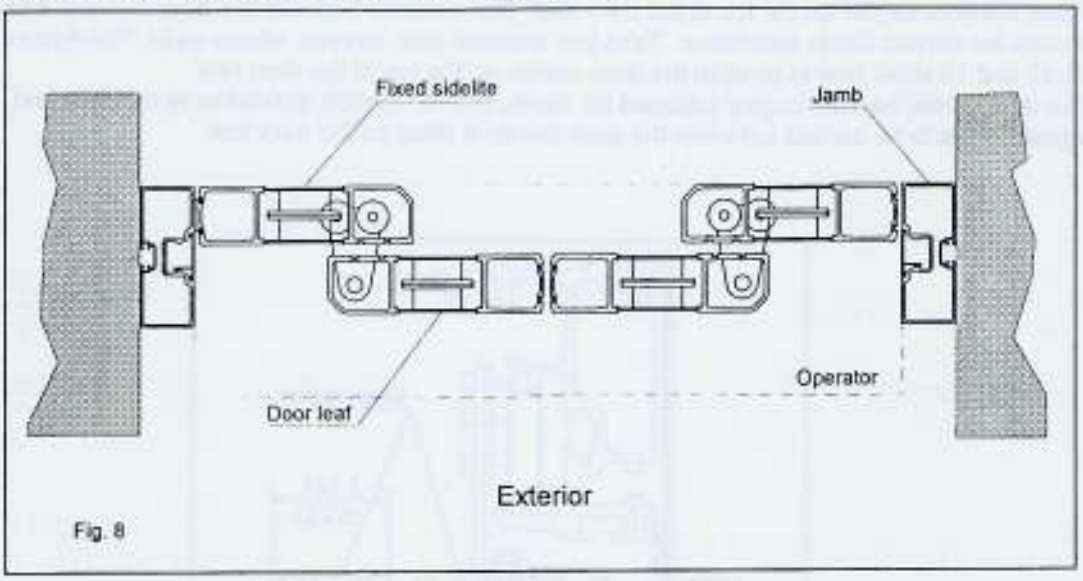


Fig. 8

To reduce the risk of finger traps, these installations are recommended. The jamb/wall is used as a door stop for closing and the operator is fitted in line with the door leaf(s) in the closed position.

Recommend Full Breakout installation

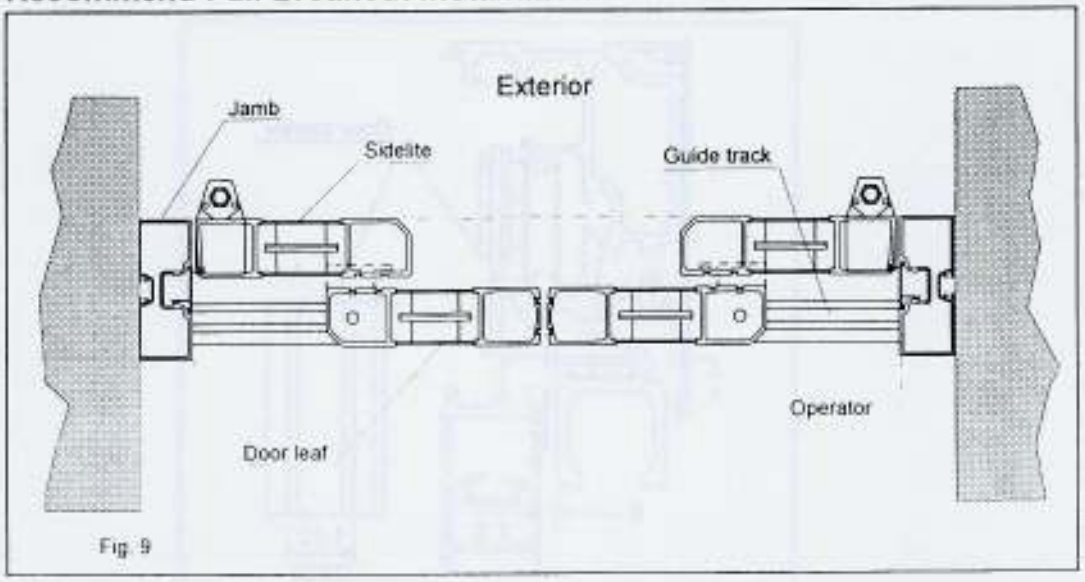


Fig. 9

Hanging the door leaves

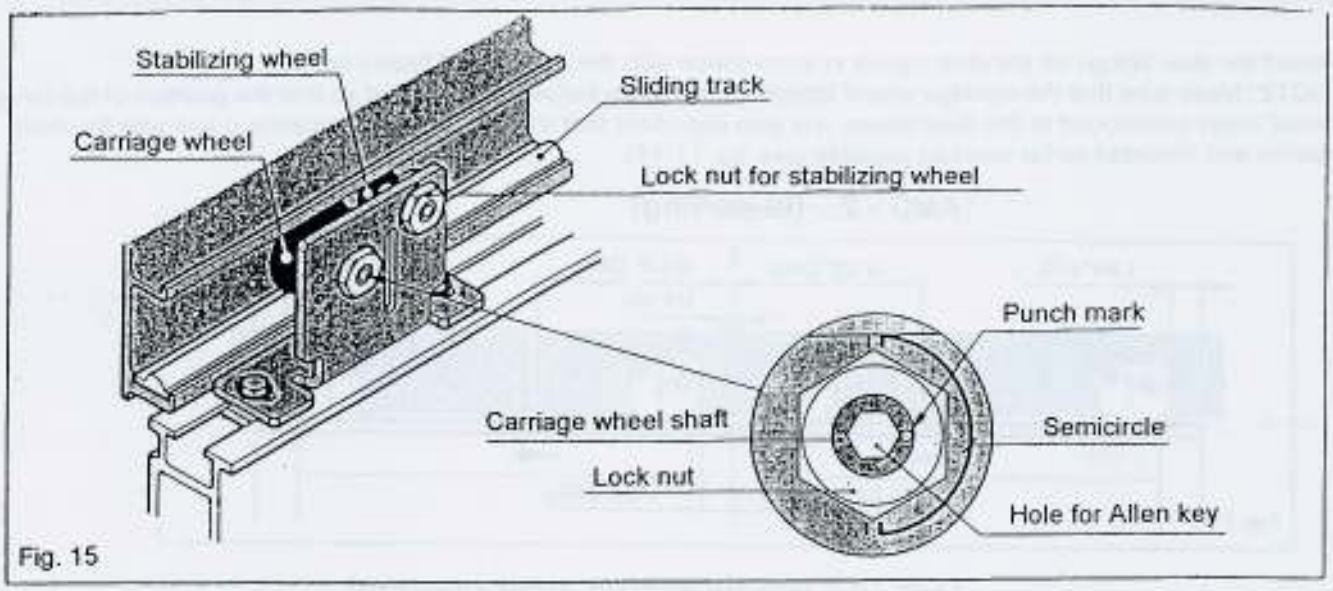


Fig. 15

1. Loosen the stabilizing wheel lock nut and turn the wheel to its lowest position (see also fig. 20, page 16).
2. Loosen the carriage wheel lock nut and turn the wheel so that the punch mark is to the **right** of the shaft center in the middle of the semicircle marked on the fitting. Tighten the lock nut.
3. Ensure that the sliding track is clean. Hang the door leaf into the sliding track.
4. The carriage wheel shaft is eccentric and by rotating the shaft halfway clockwise or counterclockwise, the door leaf can be adjusted a total of 3/4" (20mm), ±3/8" (10mm) up or down.
5. Insert an 5/16" (8mm) Allen key in the hexagonal hole. Loosen the lock nut and turn the key until the door leaf is about 5/16" (8mm) above the floor. Tighten the lock nut. Both carriage wheels should be adjusted the same way. Make sure that the punch mark on the carriage wheel shaft is to the **right** of the shaft center within the semicircle; a condition necessary for self-locking of the wheels.

A rough adjustment of the door height is necessary to facilitate the installation of the floor guide (see fig. 15).

Note! The following is valid for **single-sliding** operators with a door travel A = 35 1/2" (900mm) - 39 1/2" (1000mm).
If the height adjustment has to be carried out after the installation of the drive module, the emergency unit must be removed to make the hexagonal hole in the carriage wheel shaft accessible. If necessary, the toothbelt fitting has to be loosened and pushed aside.

Installation of Non-panic floor guides

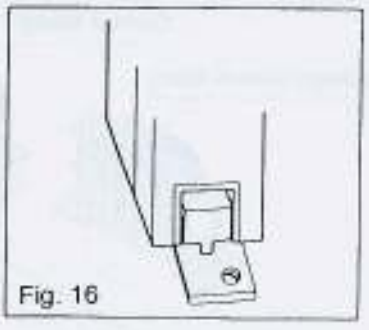


Fig. 16

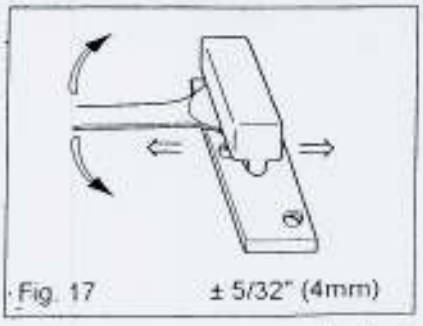


Fig. 17 ± 5/32" (4mm)

Push the door leaf sideways to clear the space for the floor guide. Fit the floor guide so that the back edge of the plastic block is in line with the back edge of the door leaf in the closed position (see fig. 16). The floor guide can be adjusted horizontally about ±5/32" (4mm) after being installed, using the eccentric nut underneath the plastic block (see fig. 17).

Installing the door fittings on the door carrier

Install the door fittings on the door carrier in accordance with the figures and tables below.
NOTE: Make sure that the carriage wheel fittings are correctly installed, i.e. turned so that the position of the three small holes correspond to the illustrations. It is also important that the fittings are completely in line with the door carrier and mounted as far apart as possible (see fig. 11-14).

AMD - 2... (bi-parting)

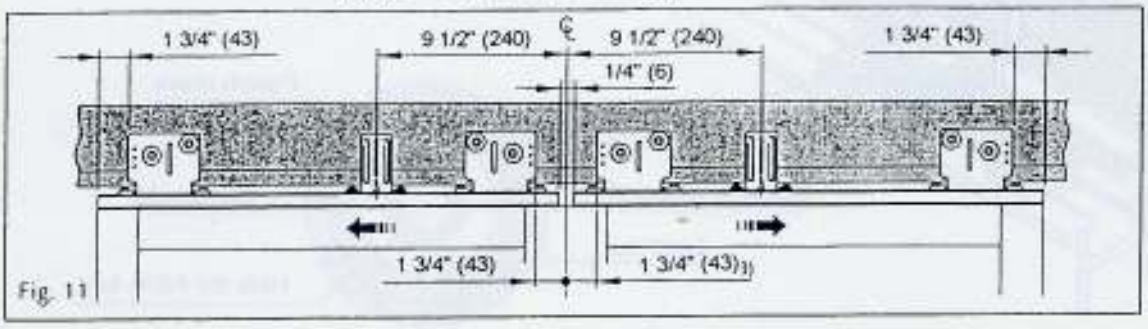


Fig. 11

AMD - 1... (single-sliding, right-opening)

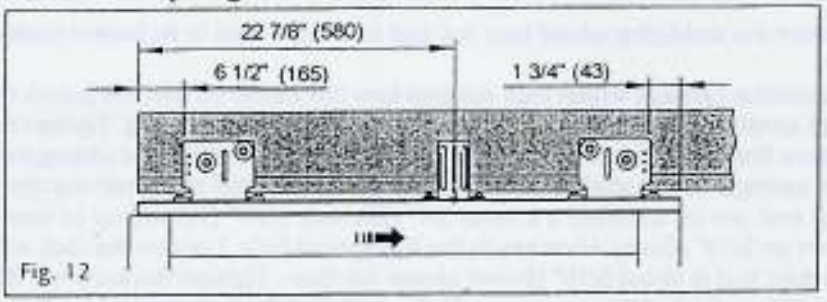


Fig. 12

AMD - 1... (single-sliding, left-opening)

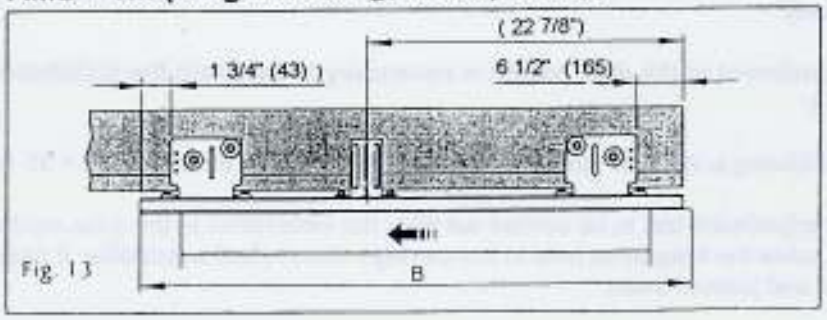


Fig. 13

Fastening the fittings

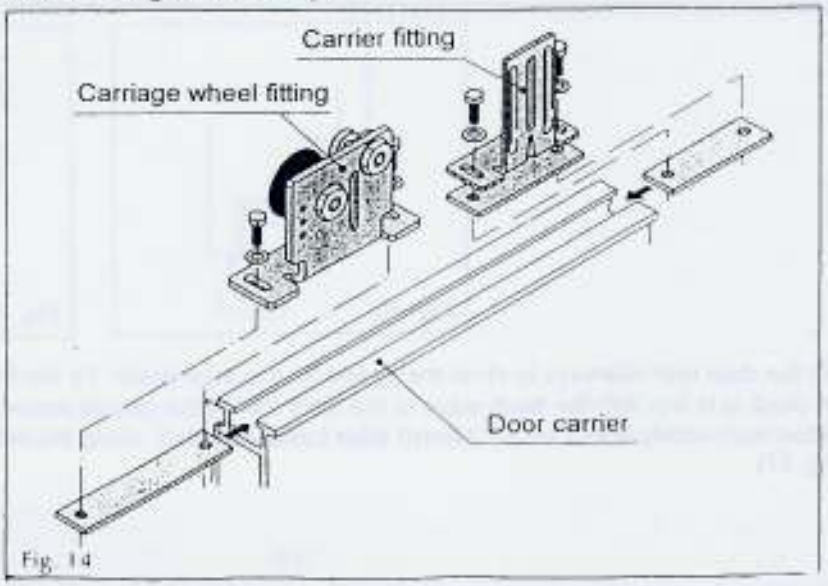


Fig. 14

Final adjustment of door leaves

A final adjustment of the door leaves is necessary after installing the floor guides.

Depth adjustment

1. The distance **A**, between the top of the door leaf and the fixed sidelite, is to be adjusted by loosening the two screws connecting the carriage wheel fitting to the door carrier. The holes in the carriage wheel fitting are slotted and the door leaf/adapter can be adjusted +/- 1/8" (3mm) left to right.
   Note! Make sure that the carriage wheel fitting is completely in line with the door carrier.
2. The distance **B** is determined by floor track location on (Full breakout unit) or guide on (Fixed sidelite unit). **Note! On non-panic only distance B is to be adjusted with the eccentric nut on the floor guide (fig. 17, pg. 13).**
3. If weatherstrip is used between the door leaf and the sidelite, it should touch them both equally for the total vertical height.

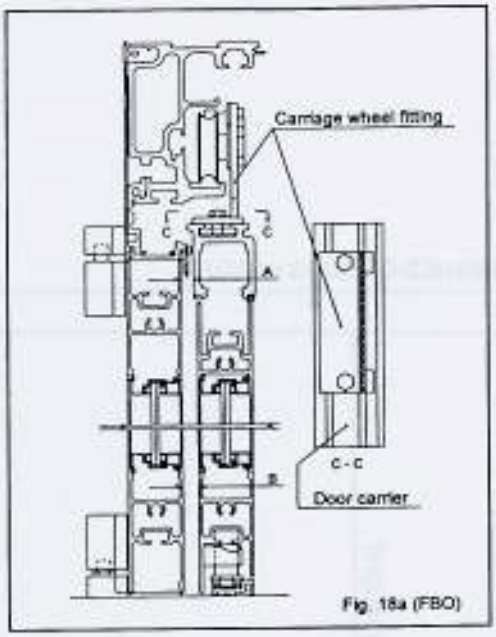


Fig. 18a (FBO)

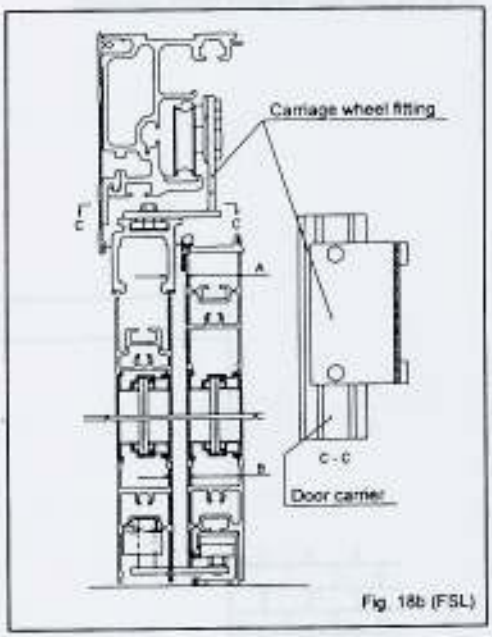


Fig. 18b (FSL)

Height adjustment

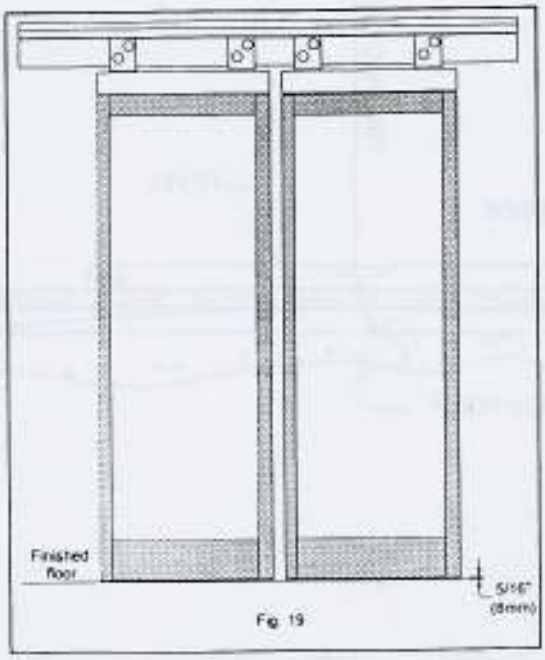


Fig. 19

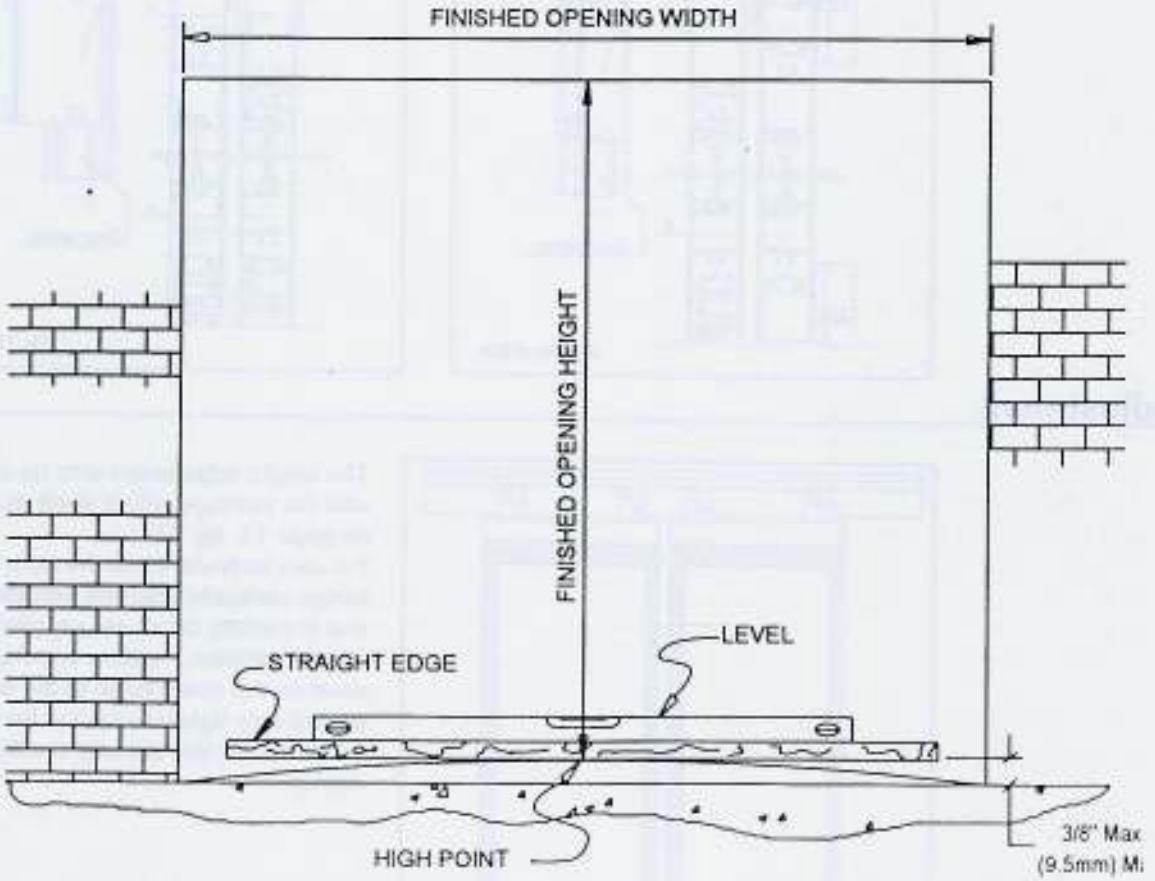
The height adjustment is to be carried out with the carriage wheel shaft as described on page 13, fig. 15.
It is very important that the door leaf hangs vertically after the adjustment and that bi-parting doors are parallel in the closed position. If a door weatherstrip is used on the lower edge of the door leaf, it should only lightly touch the floor. Check that the door leaf is parallel with the fixed sidelite.

Site preparation

The finished opening must be plumb and square and the finished floor must not vary by more than 3/8"(9.5mm) from the highest to the lowest point. if necessary, have the floor leveled before attempying to install the sliding door system.

CAUTION: The finished floor height must be determined prior to setting the jambs, threshold and support beam. In some cases it can vary from 1/8" to 3/8" ((3.2 to 12.7mm) or more depending on the type of flooring being installed.

The finished opening width (F.O.W.) should be 1/2" ((9.53 mm) wider than the overall frame width (O.F.W.) and the finished opening height (F.O.H.) should be 1/4" ((6.3mm) higher than the overall frame height (O.F.H.) of the sliding door system.



Drive modules

AMD/EMD	Door Travel (A)	Drive Module
-2	35"-78"(900-2000mm)	DA
	78"-118"(2000-3000mm)	DB*
-1	35"-40"(900-1000mm)	DA
	40"-59"(1000-1500mm)	DB
	59"-80"(1500-2000mm)	DA+TED
	80"-118"(2000-3000mm)	DA+TED+SPEC

Two types of drive modules are available: DA and DB, and two additional accessory devices for single-sliding operators with wide daylight openings, TED and TED-SPEC.

*)If Door Travel A >100" (2600mm); special transmission rod required.

Installation of drive modules

1.) Remove the screw(s) fitted in the cover brackets located at both ends of the beam. Remove cover plate assembly in order to install module.

2.) Hang the drive module on the four brackets and fasten it with (4) long SHCS and (4) flat washers, supplied in hardware pack using a special Allen key (see fig. 22a and 22c). Dismantle the emergency unit if necessary.

3.) If the accessory device TED/TED-SPEC is used, the tension wheel fitting has to be removed from the drive module and mounted in the TED/TED-SPEC bracket. The whole unit with a new tooth belt is then to be fitted in the support beam (see fig. 22b and 23a).

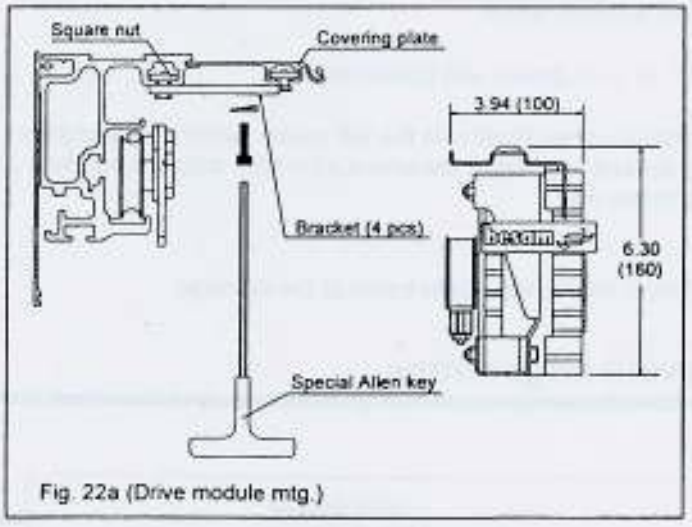


Fig. 22a (Drive module mtg.)

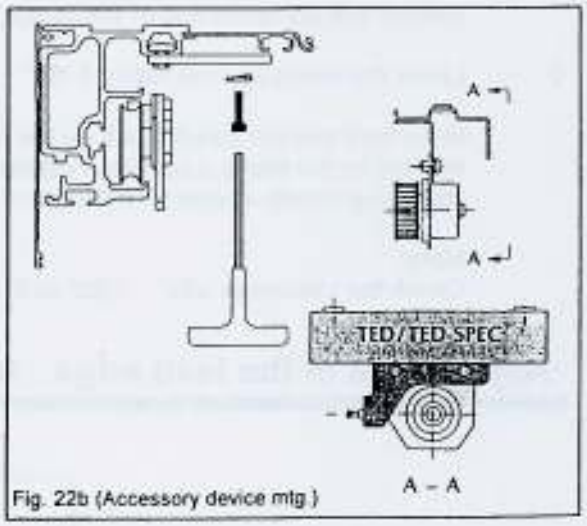
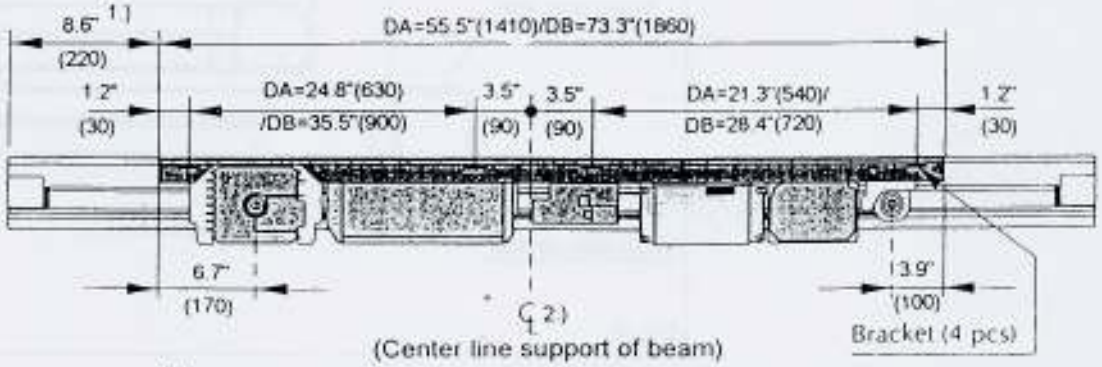


Fig. 22b (Accessory device mtg.)



1) To be used when positioning the brackets for **single-sliding** doors.
2) To be used when positioning the brackets for **bi-parting** operators.

Fig. 22c Mounting of drive unit in support beam.

Adjustment of the stabilizing wheel

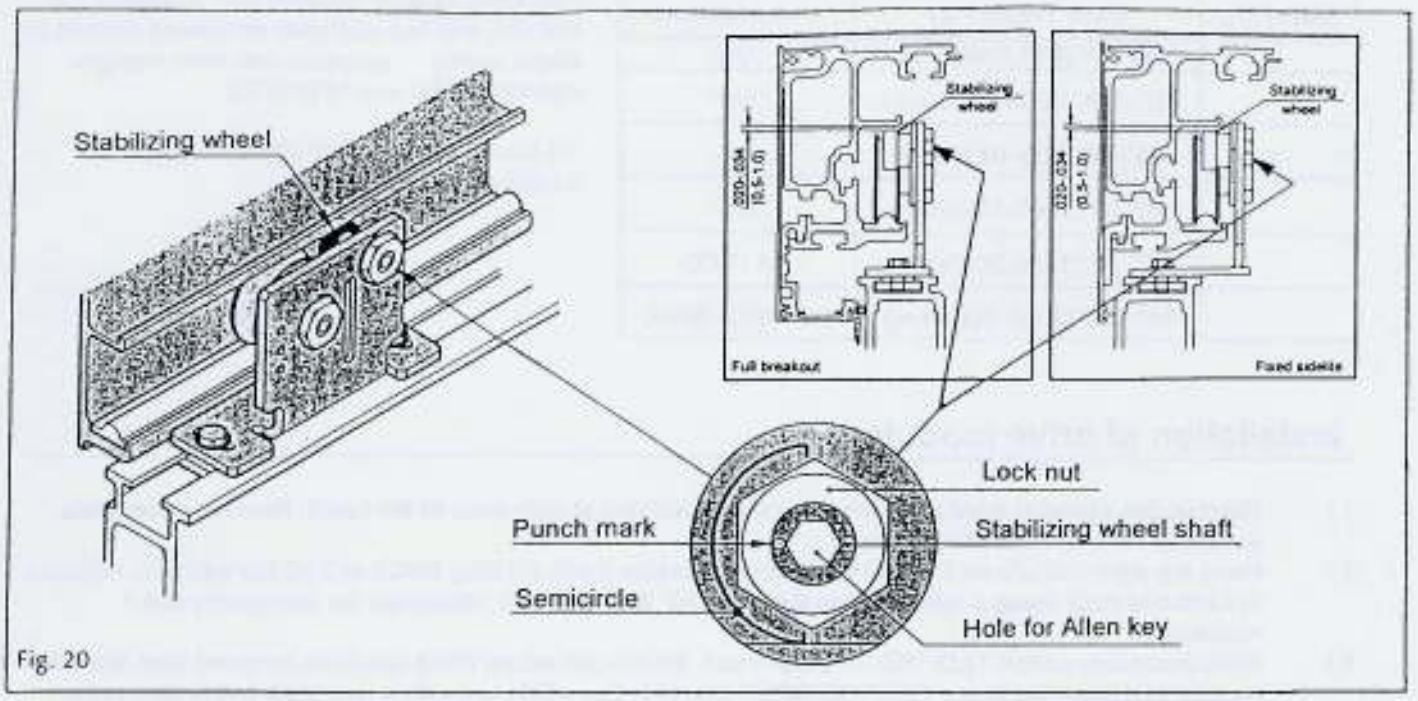


Fig. 20

1. Insert an 8mm Allen key in the hexagonal hole and turn the key **clockwise** until the stabilizing wheel is in contact with the underside of the flange of the support beam.

2. Lower the wheel approximately 1 /64" - 1/32" (0.5 - 1.0mm) and tighten lock nut.

   Make sure that the punch mark on the stabilizing wheel shaft is to the left center within the semicircle marked on the fitting; a condition necessary for self-locking of the wheel after final adjustment. Both stabilizing wheels should be adjusted in the same way.

   Note!
   Check the clearance 1/64" - 1/32" (0.5 - 1.0mm) for the complete travel of the carriage.

Adjustment of the lead edge - to avoid finger traps

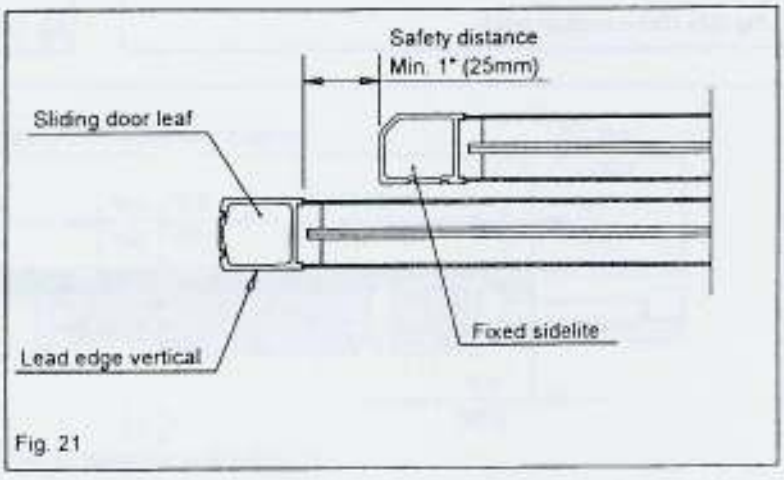


Fig. 21

Push the doors by hand to the desired maximum opening.In case of framed doors, the lead edge of the door leaf must not pass the vertical rail of the sidelite leaf and must stop at least 1" (25mm) before the vertical rail. This is to avoid finger traps. Loosen the door stops, move them in against the carriage wheel fittings and tighten firmly.

Sidelite ballcatch/panic switch adjustments

Check to see that the sidelite door portion of the ballcatch assembly engages properly with the sidelite header portion. The sidelite and header portions can be repositioned slightly if necessary. Adjust the tension (see fig. 24) on the ballcatch as required by local egress codes. This is accomplished by turning the adjustment screw located in the center of the sidelite door portion of the ballcatch.

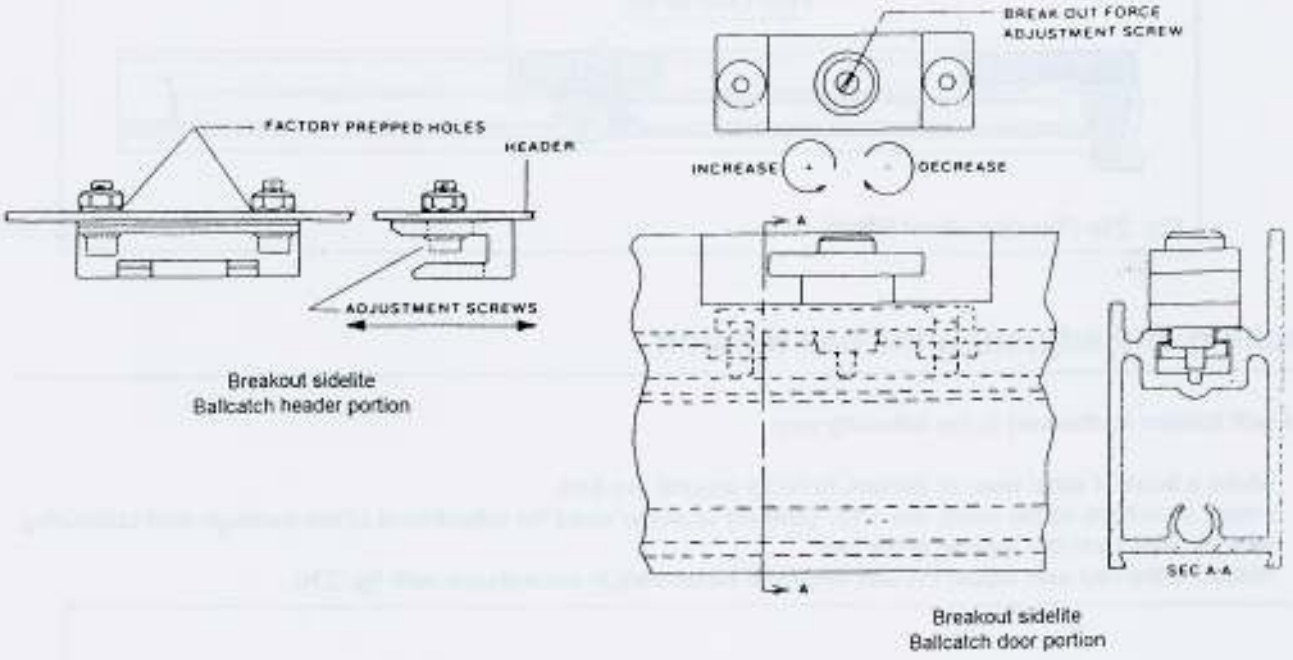


Fig. 24 (Ballcatch adjustments)

The Power-Glide AMD is equipped with a magnetic panic breakout switch assembly (bi-parting units have two) which shuts the operator off whenever the sidelite is open. A ceramic magnet is located in the upper leading edge vertical rail of the sidelite. The switch(s) (see fig. 25) are positioned (directly over the magnet) in the lower section of the support beam. The switch location is factory set but can be field adjusted (see fig.25) if necessary, by loosening the switch bracket mounting screw and sliding it to preferred position and retightening screw.

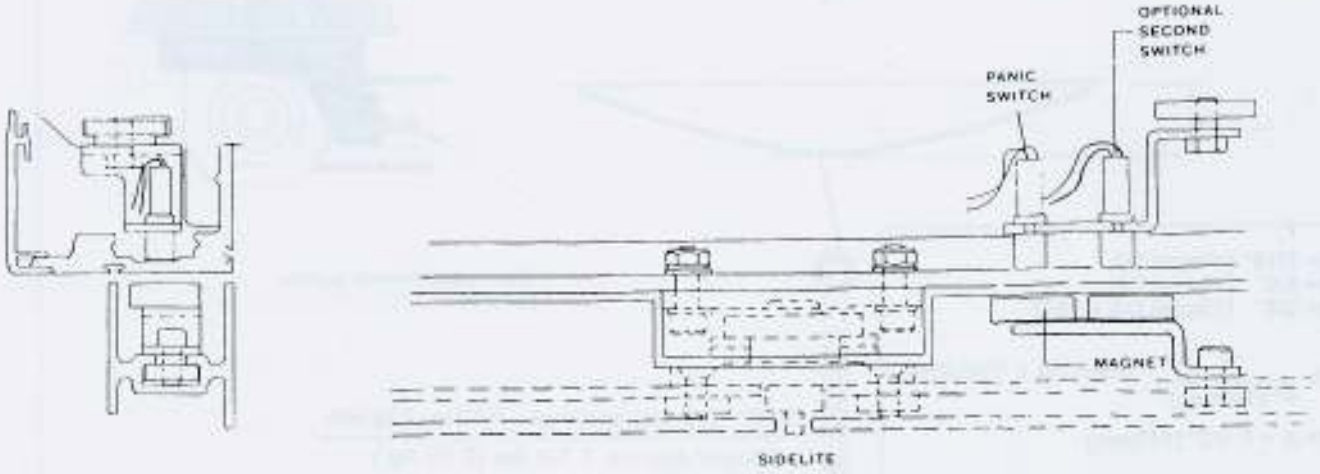


Fig. 25 (Panic switch adjustments)

Installation of drive module cont.

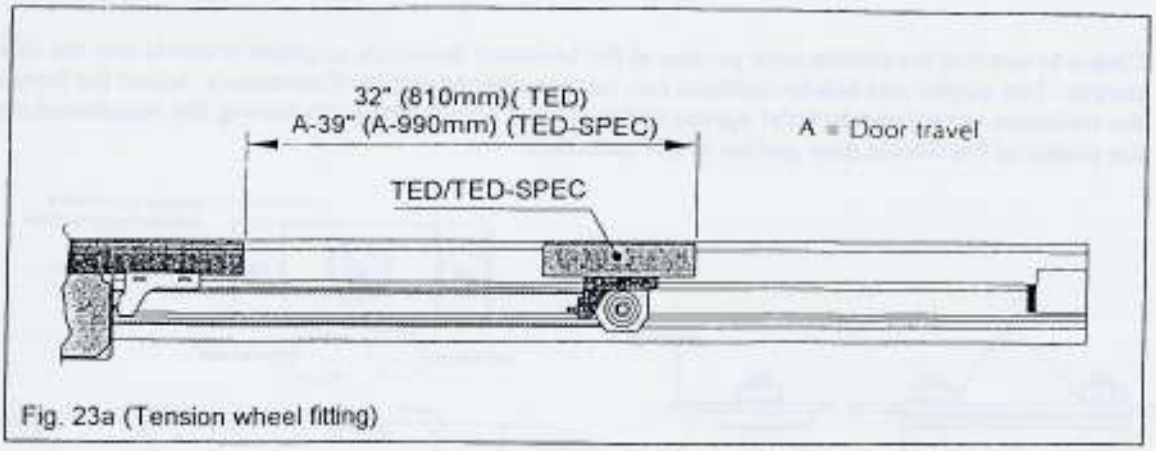


Fig. 23a (Tension wheel fitting)

Checking and adjusting the belt tension

Correct belt tension is checked in the following way:

- Make a hook of steel wire, or similiar, to hang around the belt.
- Hang, by means of the hook, the 1.10" (28mm) spanner used for adjustment of the carriage and stabilizing wheels, exactly in the middle of the belt.
- Measure the sag and adjust the belt tension if necessary, in accordance with fig. 23b.

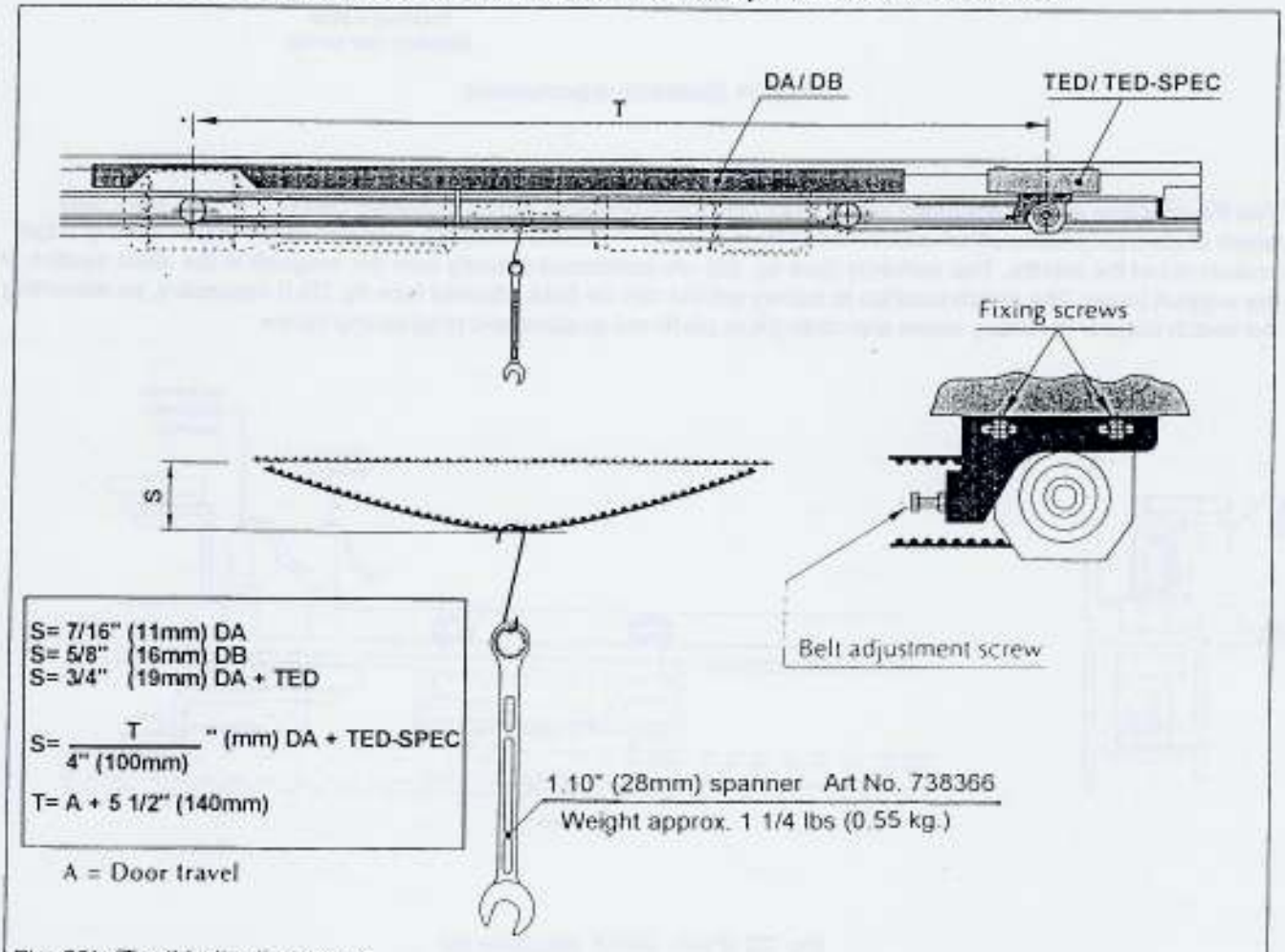


Fig. 23b (Toothbelt adjustment)

Adjust and secure the active leaf(s) bottom guide pin so there is no binding on the threshold/guide track screws. This should be checked for the full stroke of the door(s). Panic the active leaf(s) out and adjust the ballcatch tension (see Fig. 24) as required by local egress codes. Install the sidelite interlocks onto the active leaf(s). Slide the active leaf(s) to the open position and close the sidelite(s). Slowly slide the active leaf(s) into the closed position while checking to see that the interlock hardware engages the sidelite cutouts. Adjust (see Fig. 28) and shim (supplied) if necessary for proper alignment.

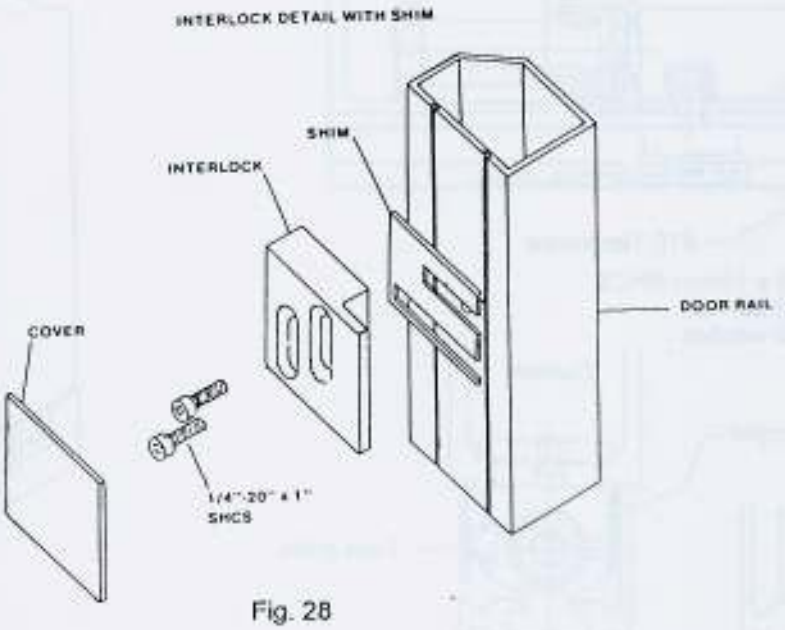
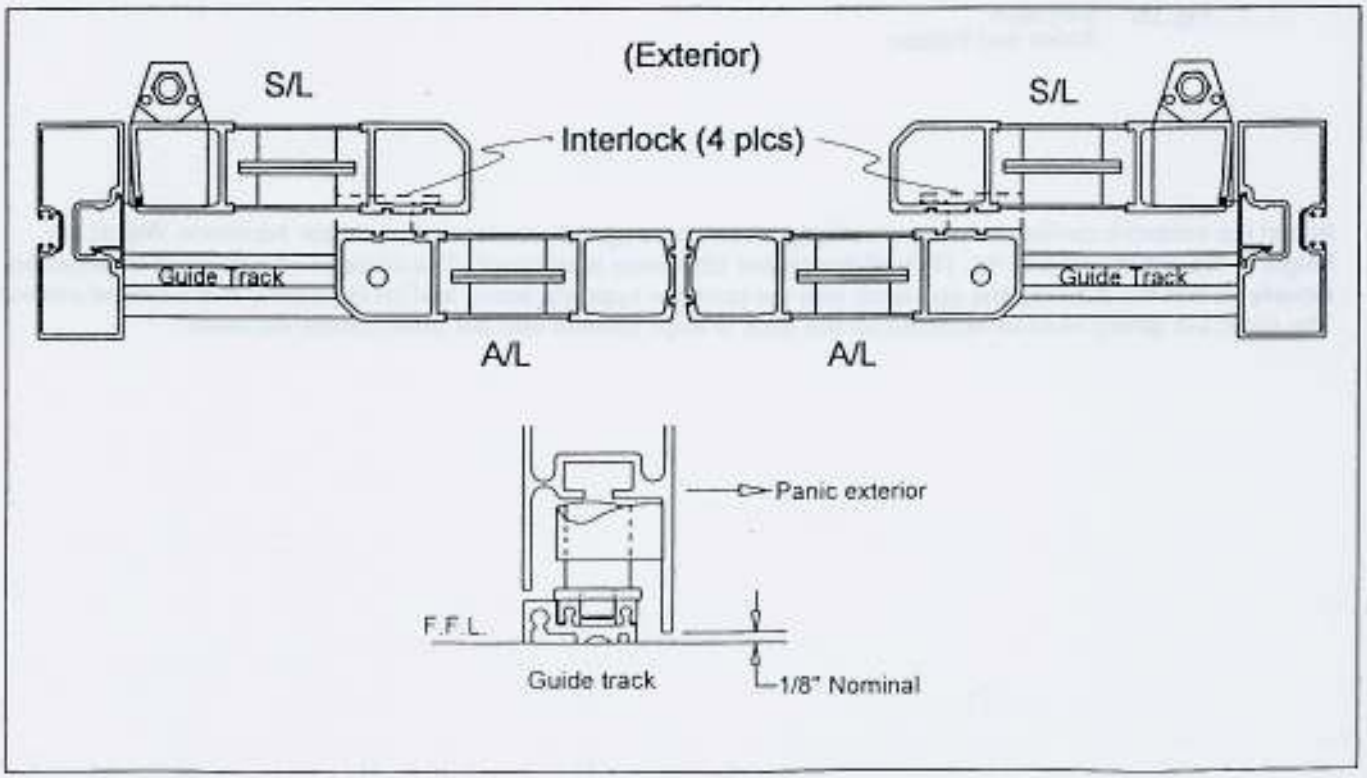


Fig. 28



At the end opposite the PSA upper door carrier install the ballcatch assembly so that it aligns with the active leaf ballcatch cutout. Secure the screws in the upper carrier ballcatch portion and latch the active leaf(s) closed. **Note:** It may be necessary (because of inadequate vertical door clearance) to adjust (see pg. 13) the carriage wheels prior to hanging the door(s). Position the active leaf(s) for leveling. Release the bottom guide pin(s) (see fig. 27) into the threshold/guide track.

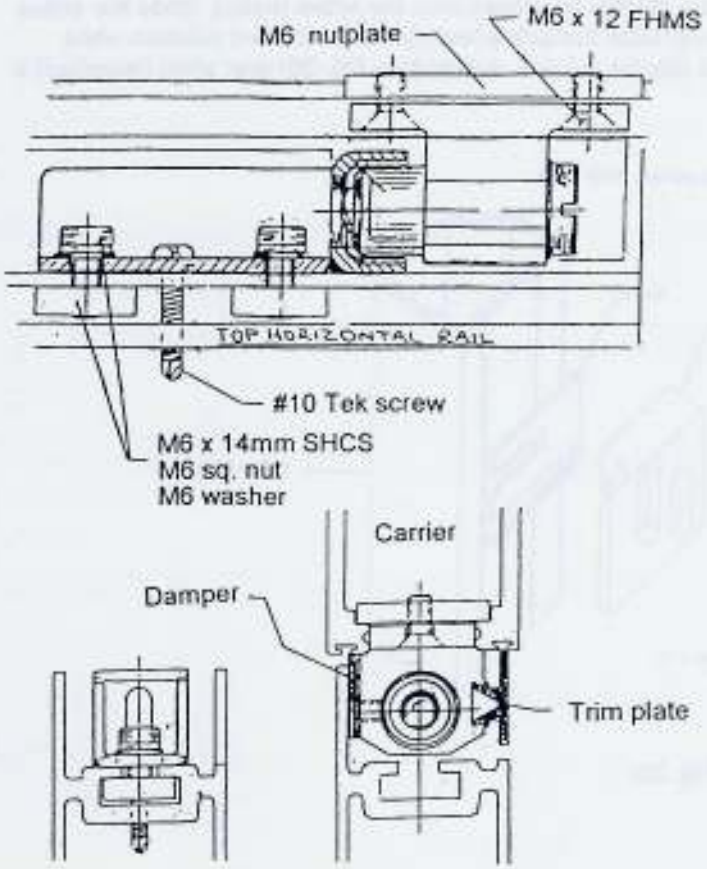


Fig. 26 Ballcatch
Active leaf Portion

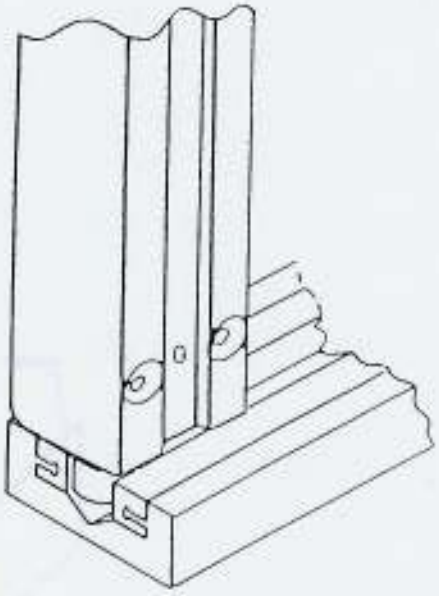


Fig. 27

Adjust the eccentric carriage wheels, stabilizing wheel, (see pg. 16) carrier and panic bar hardware. Adjust the height of the active leaf (see fig. 15) until the proper clearance is obtained. The carriage wheels must be adjusted equally so that the door will line up plumb with the jamb (or opposite active leaf on bi-parters) in the closed position. The panic bar (pivot) must be adjusted for the door to align parellel with the panic carrier extrusion.

Installation of covering plate

1. The covering plate is mounted in the support beam by means of the two cover brackets (see fig. 30a).

2. Two square nuts are fitted with screws in the groove of the covering plate. The screws have been removed (see item 1, page 17). The square nuts are used to fasten the covering plate in the pre-drilled holes in the center of the drive module.

3. Check that two square nuts are positioned just opposite the pre-drilled holes at the upper side of the drive module.

4. Fasten the covering plate (with the earlier removed screws) in the two square nuts by using a special Allen key (see fig. 30b & 30c).

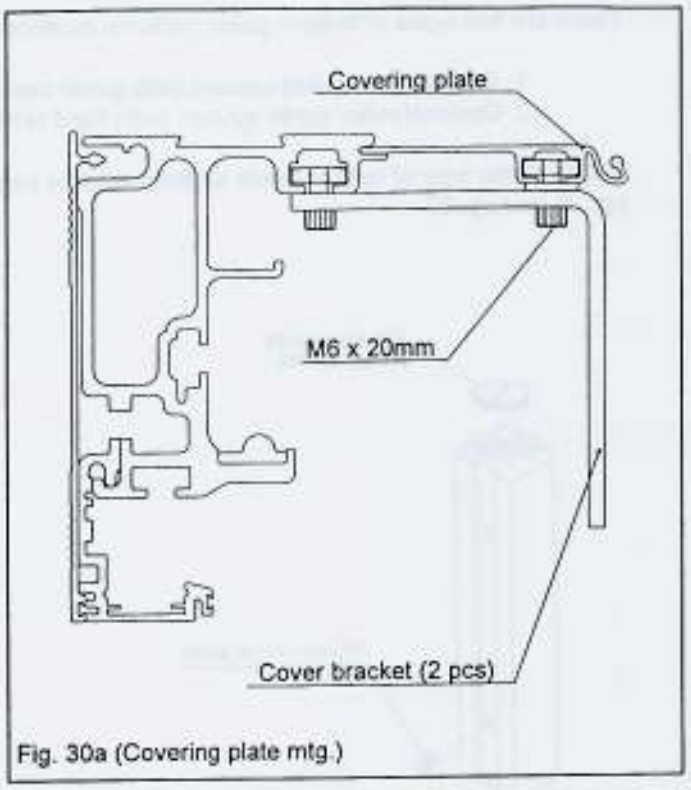


Fig. 30a (Covering plate mtg.)

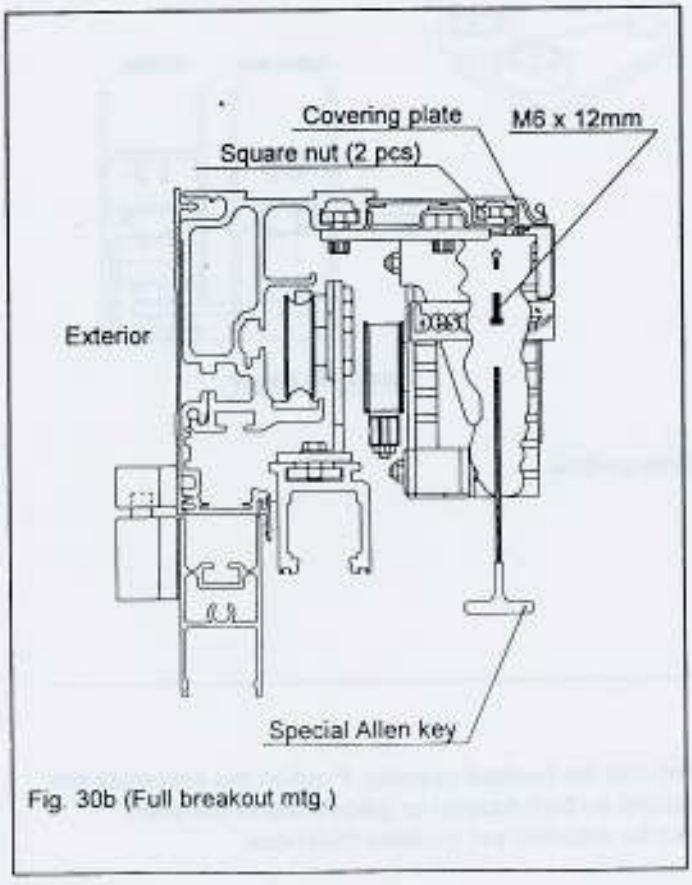


Fig. 30b (Full breakout mtg.)

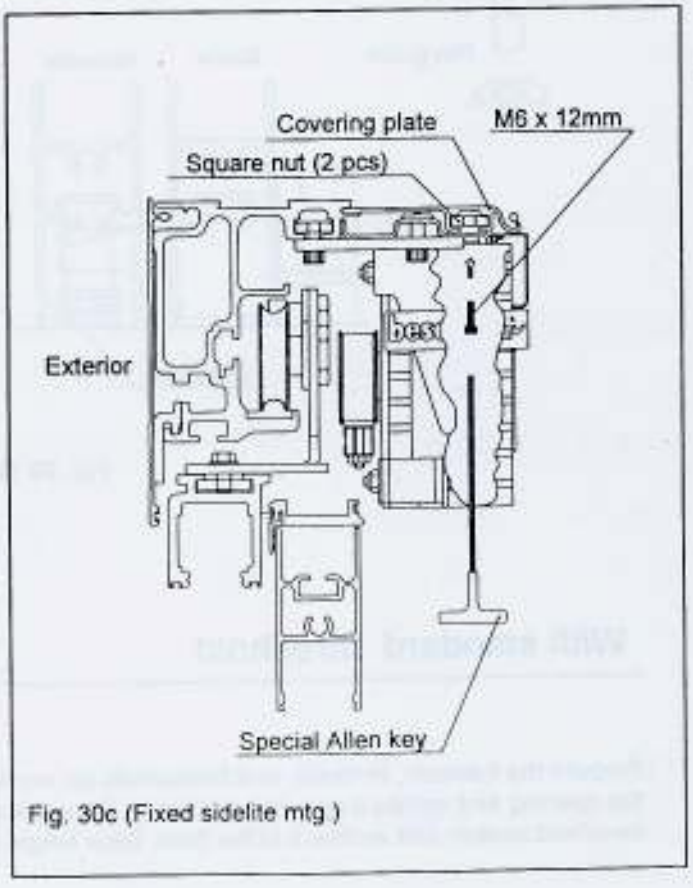


Fig. 30c (Fixed sidelite mtg.)

Bottom guide systems

There are two types of bottom guide systems available (see fig. 29).

1. Standard pin guide system (with guide track).
2. Optional roller guide system (with fixed sidelite adapter).

Establish the type of bottom guide system which is being installed and follow the appropriate instructions stated on pg. 26 and pg. 27.

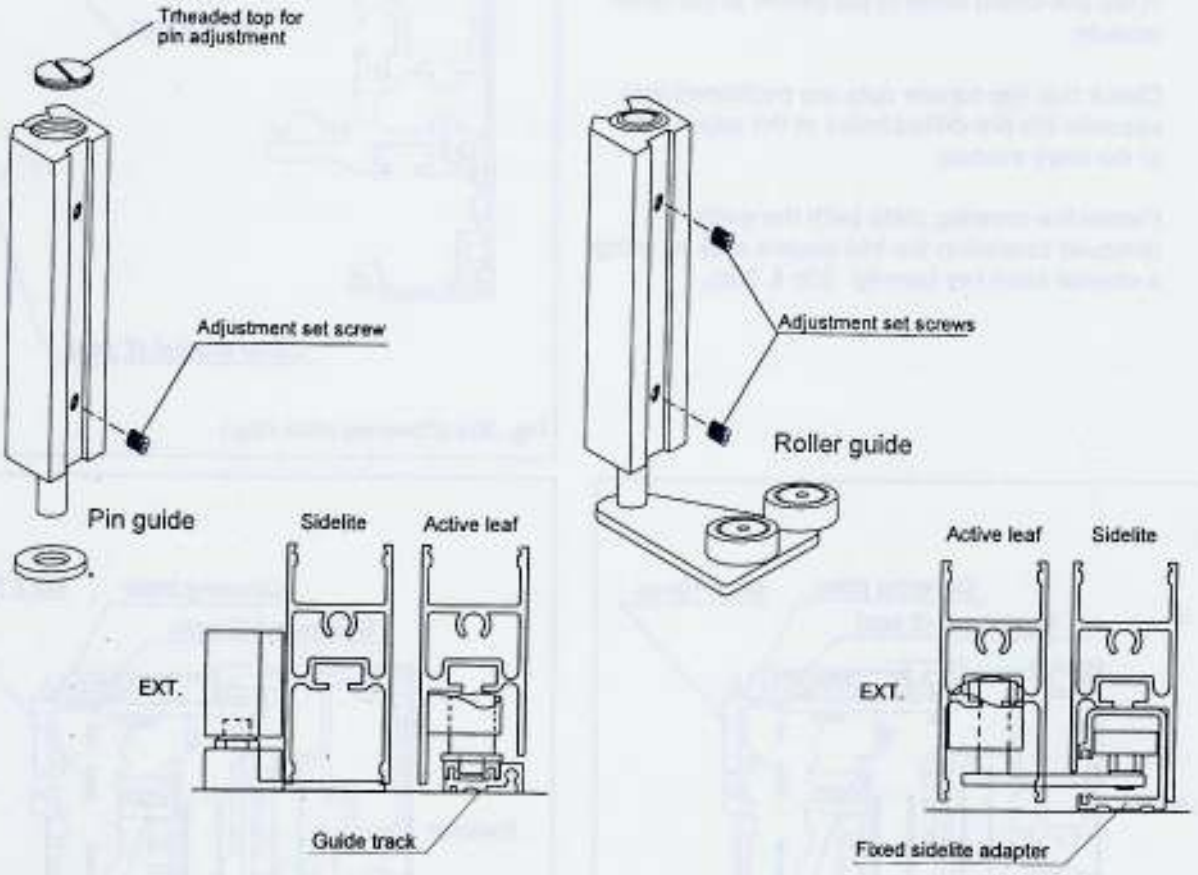


Fig. 29 (Bottom guides)

With standard threshold

Prepare the transom, verticals, and horizontals for anchoring into the finished opening. Position the assembly into the opening and secure it square and plumb. Secure the sidelite bottom adapter or guide track to the short threshold section and anchor it to the floor. Door height must be adjusted per treshold thickness.

Attachment of toothbelt fittings and transmission rod (factory installed)

For standard operator sizes, one end of the transmission rod is screwed and the other end taped to the toothbelt.

1. Cut the tape open and pull the toothbelt so that the transmission rod is accessible.
2. Attach the two rectangular washers to the toothbelt fitting, using two Allen screws.
3. Slide the unit into the transmission rod with one washer inside and the other one outside the rod.
4. Adjust the unit so that the screws are accessible through the slotted holes in the rod. Do not tighten the screws firmly, because of later adjustment.
5. Bi-parting operators: Push the doors together and slide them until their meeting point is aligned with the center of the daylight opening.
   Single-sliding operators: Slide the door to the closed position.
6. Pull the toothbelt until the toothbelt fitting is just opposite the carrier fitting. Adjust the transmission rod if necessary and tighten the Allen screws through the slotted hole(s).
7. Fix the toothbelt fitting to the carrier fitting by using two screws and one rectangular nut. Adjust so that the upper and lower parts of the toothbelt are parallel and tighten the screws.
8. Check that the transmission rod, viewed from above, is completely in line with the toothbelt. If necessary adjust the carrier fitting.

For bi-parting operators the toothbelt fitting for each door leaf should be attached in this way.

Bi-parting operators

Right-opening door leaf

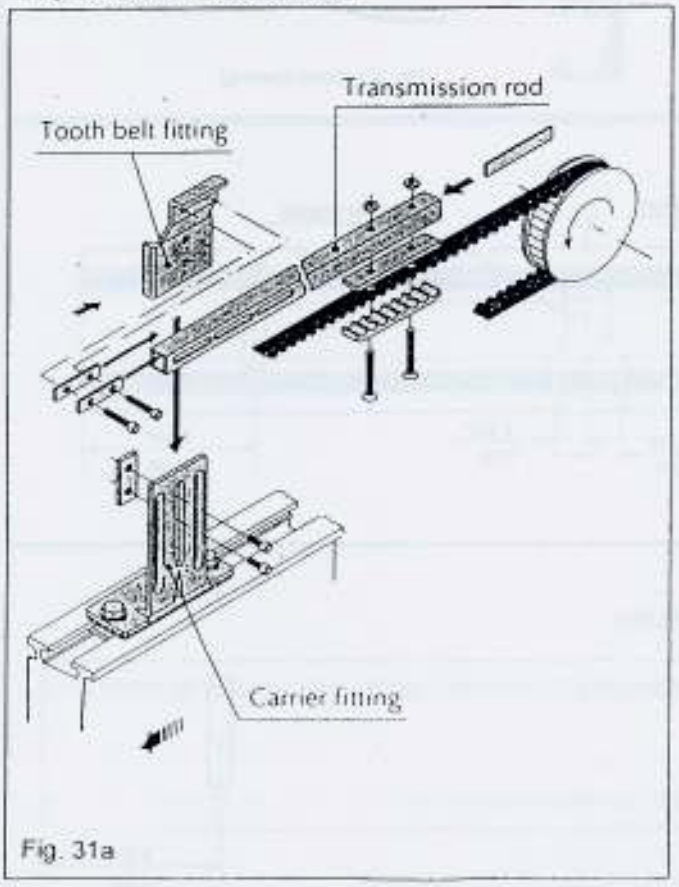


Fig. 31a

Left-opening door leaf

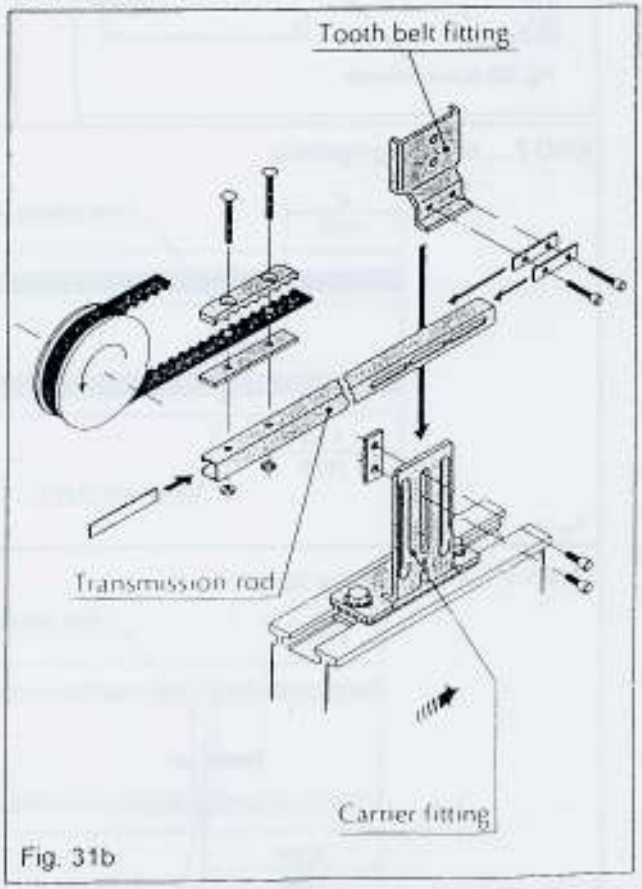


Fig. 31b

Installing / Removing the cover

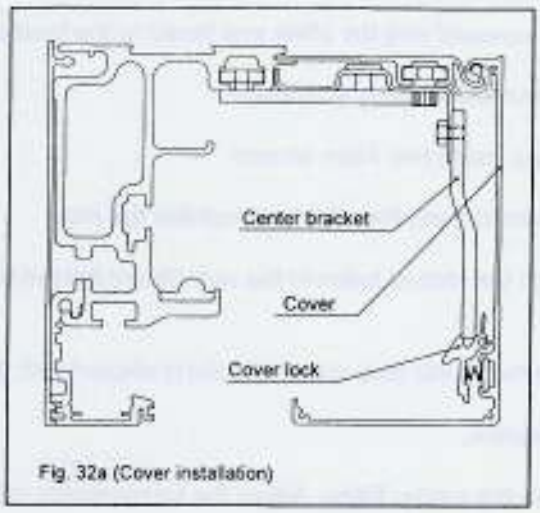


Fig. 32a (Cover installation)

Installing

1. Fix the center bracket in the pre-drilled holes in the drive module in the center of the door opening (see fig. 32a and 33a.). **Note!** Only valid for bi-parting door operators.
2. The cover is fixed by means of pre-mounted spring-loaded cover locks. The cover locks are slid over a special flange in the lower part of the cover and positioned as indicated in fig. 33a and 33b.
3. Fit the upper part of the cover into the covering plate and push it in against the center and cover brackets.
4. The cover locks will engage around the lower part of the center and cover brackets.

Removing

1. Set the program selector (if equipped) to the "open" position and close the doors manually.
2. Reach into the bottom of the cover and push on the cover lock (see fig. 32b). At the same time pull the lower part of the cover outwards until the cover is released from the cover lock. Repeat this procedure for all cover locks.
3. Pull the lower part of the cover outwards about 10°. The cover can now be lifted off at the hinge joint or swung further outwards/upwards. A suitable support can then be placed to keep the cover open (see fig. 32c).

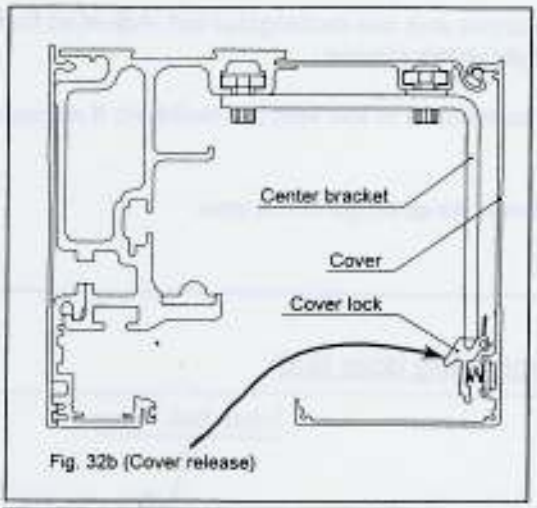


Fig. 32b (Cover release)

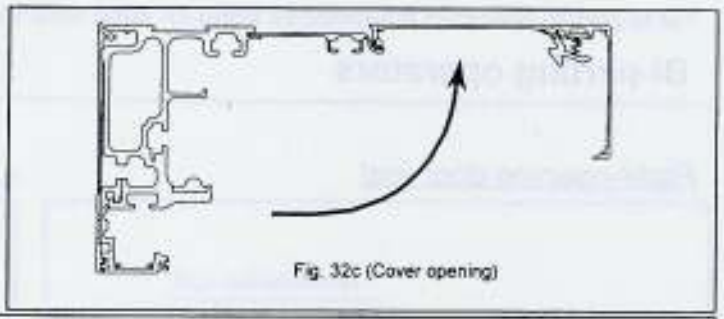


Fig. 32c (Cover opening)

AMD-2..., bi-parting operator

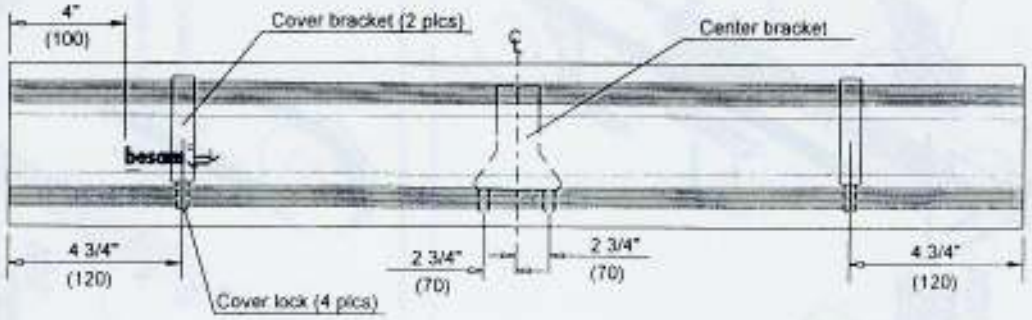


Fig. 33a

AMD-1..., single-sliding operator

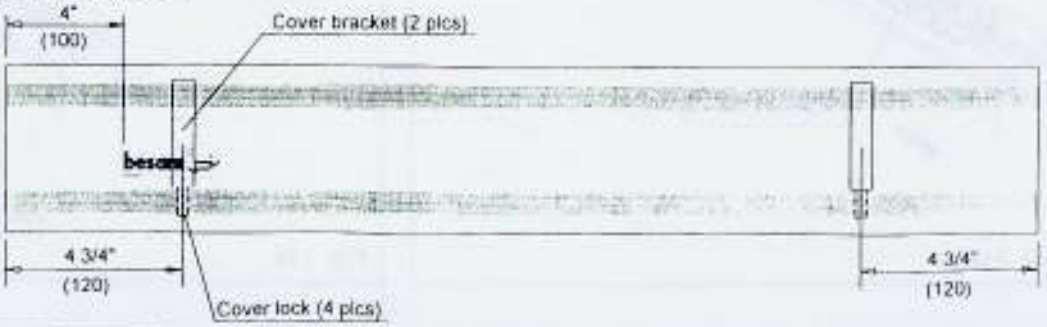


Fig. 33b

Hanging the active leaf pin guides

Remove all packing material from the door assembly. The door is shipped with most parts installed for ease of installation. The door fittings must be placed according to the location dimensions provided. (see figs 11 thru 15) Remove the rubber band holding the delrin washer onto the pin guide prior to installing the door. Position the door so the carriage wheels are riding on the radius of the plastic track extrusion located in the slider beam. Loosen the lower set screw in the pin guide, the pin will now be under a light spring pressure. Push the pin guide up and into the door enough so the pin can be inserted into the floor track. Slight adjustments may be required to the PSA pivot bar assembly at this time in order to adjust for the weight of the door. Position the active leaf(s) for leveling. Adjust the eccentric carriage wheels, stabilizing wheels and carrier hardware. Adjust the height of the active leaf until proper clearance is obtained. The carriage wheels must be adjusted equally so that the doors line up with the jamb (or opposite leaf on bi-parters) in the closed position. Open the active leaf(s) and adjust the height of the bottom pin guides and secure the set screw (see fig.34). Slowly slide the active leaf(s) open while checking for any binding in the guide assembly. Re-adjust until there is no binding for the full stroke of the active leaf(s). Panic the active leaf(s) out and adjust the ballcatch tension (see fig.24) as required by local egress codes. Adjust the door stops in the header for the active leaf(s) to provide proper finger protection (see pg 10), adjust manual locks and proceed with all wiring and operator adjustments.

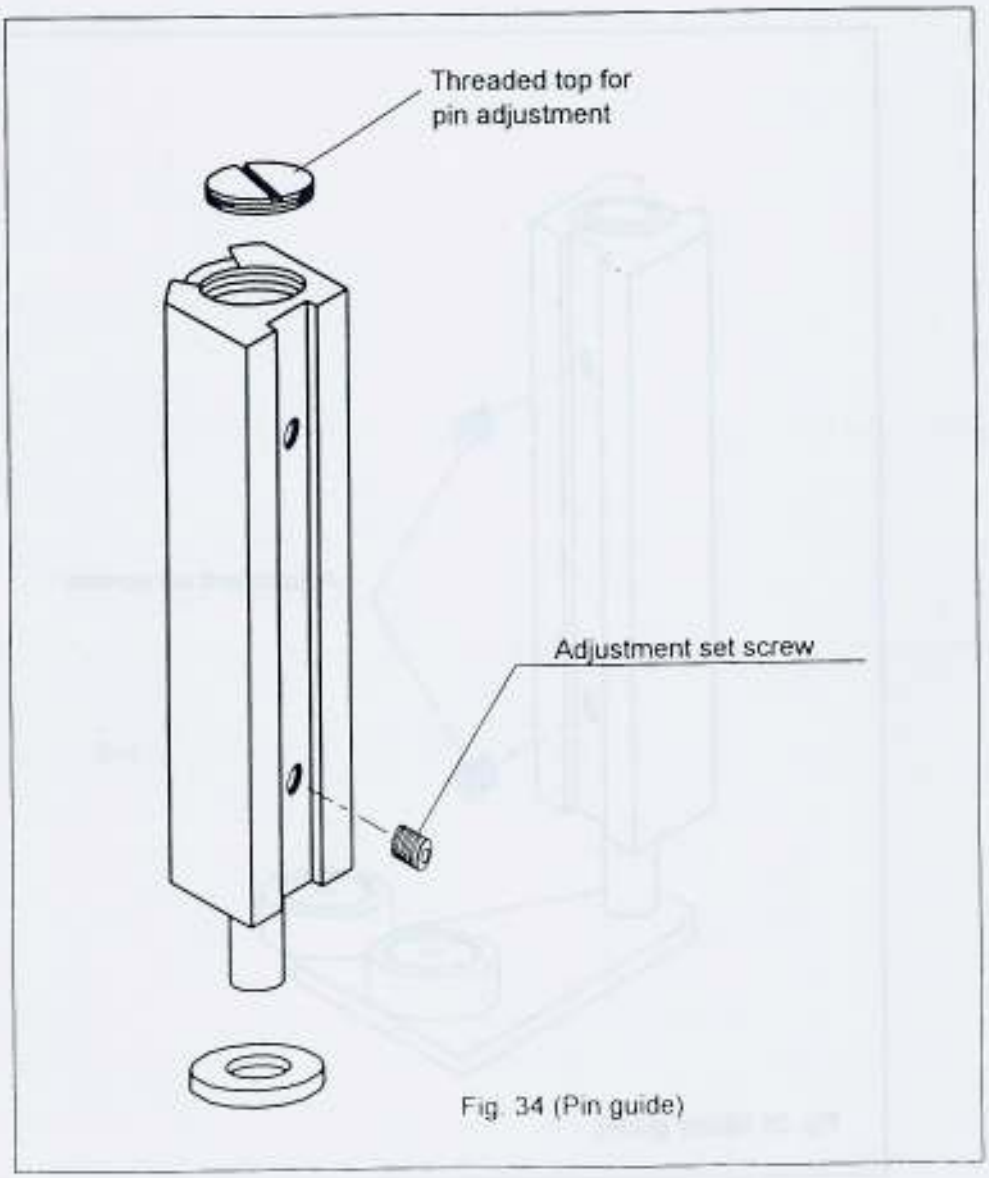


Fig. 34 (Pin guide)

Hanging the active leaf roller guides

Remove all packing material from the door assembly. The door is shipped with most parts installed for ease of installation. The door fittings must be placed according to the location dimensions provided. (see figs 11 thru 15) Position the door so the carriage wheels are riding on the radius of the plastic track extrusion located in the slider beam. Loosen both set screws in the roller guide. Bring the active leaf(s) to their full open positon. Insert and the roller guide into the sidelite floor track and adjust as required. (note: it may be necessary to temporaraly move the doors stops so the roller guide can be inserted into the roller guide track) Slight adjustments may be required to the PSA pivot bar assembly at this time in order to adjust for the weight of the door. Position the active leaf(s) for leveling. Adjust the eccentric carriage wheels, stabilizing wheels and carrier hardware. Adjust the height of the active leaf until proper clearance is obtained. The carriage wheels must be adjusted equally so that the doors line up with the jamb (or opposite leaf on bi-parters) in the closed position. Open the active leaf(s) and adjust the height of the bottom roller guides and secure the set screws (see fig.35). Slowly slide the active leaf(s) open while checking for any binding in the guide assembly. Re-adjust until there is no binding for the full stroke of the active leaf(s). Panic the active leaf(s) out and adjust the ballcatch tension (see fig.24) as required by local egress codes. Adjust the door stops in the header for the active leaf(s) to provide proper finger protection (see pg. 10), adjust manual locks and proceed with all wiring and operator adjustments.

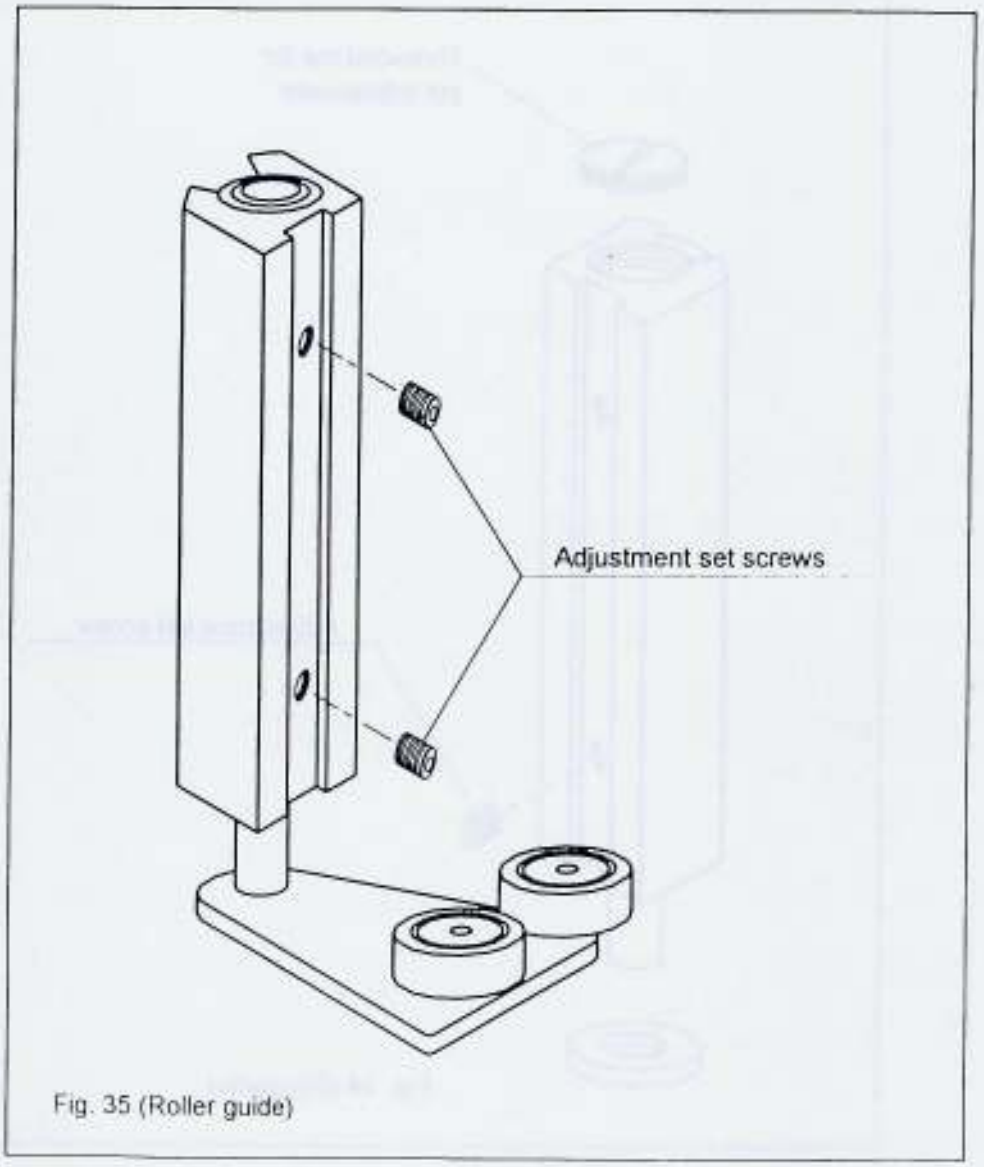


Fig. 35 (Roller guide)

besam®

1/4" FLUSH GLAZE TRANSOM SYSTEM

The following are recommended installation steps for a Power-Glide AMD Sliding Door Frame System with flush glaze 1/4" glass.

The Transom Glazing System can also be equipped (order separately) with snap in gutter members and different glass beads to accept either 5/8" or 1" Thermopane. Please reference drawings A28325 and A28335 enclosed.

The Frame System provides the following features:

- Jambs are hollow extrusions which can be field cut in order to fit frame into tight finish opening widths.
- Transom header assembly (compensating channel) provides the flexibility of increasing or decreasing overall frame height by as much as 1".
- Less glazing components.
- Less labor intensive.

NOTE:

It's important that certain installation steps are carefully followed with regards to installing the pull in glazing vinyl. The pull in type vinyl (see fig. 1) must always be installed prior to assembling the frame. The pull in vinyl (1) in the vertical jambs must be temporarily positioned below the operator header (to prevent damage) until all anchoring procedures have been completed.

1.  - Pull In Vinyl - installed prior to frame assembly.
2.  - Roll In Vinyl - installed after setting glass.
3.  - Push In Vinyl - gutter and bead installed on top of operator header.

Fig. 1

Finished opening check

(Please reference drawing A28332)

- Check that all components are available.
- Establish the overall frame width (OFW) and overall frame height (OFH) and record.
- Check to see each side of finished opening is not out of plumb by more than 1/4".
- Unpackage header channel (3) which is the same length as the OFW and check fit at various points in the opening height. If the header channel fits properly, the sliding door package will fit also. NOTE: If the finished opening is determined to be small, one or both jambs (hollow) may be carefully field cut (maximum 3/4" each jamb) as desired. Be certain to cut header channel (3) also.
- Establish the high point of the finished floor (FFL) and the finished opening height (FOH). Lay the (unexposed side down) header channel (3) across the finished opening (see fig. 2) shim level and measure the distance from the underside of the channel (3) to the underside of the finished opening header. This measurement is the finished opening height (FOH) and can be no larger than 3/4" or smaller than 5/16" of the established OFH.

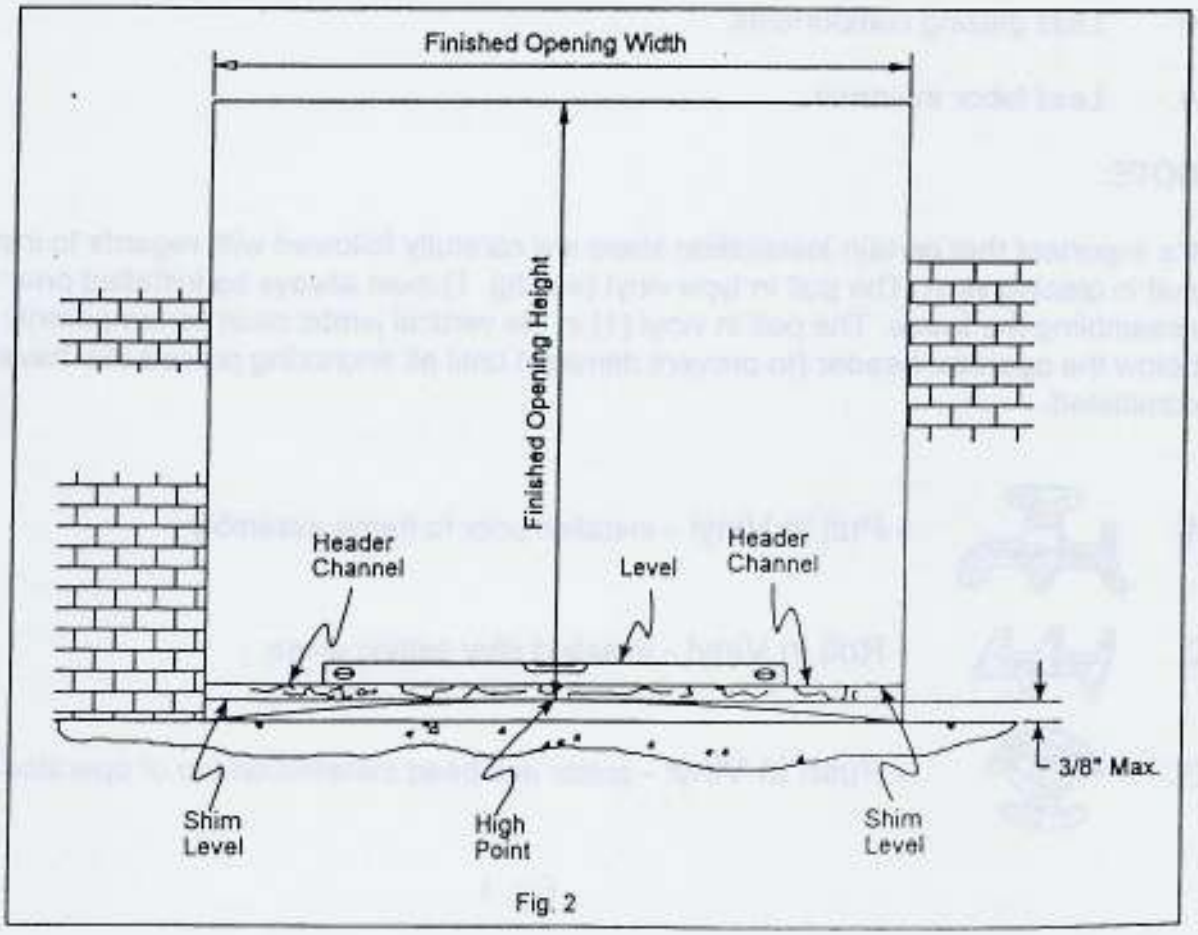


Fig. 2

The header channel (3) is adjustable (see fig. 3) and can compensate for differences between the FOH and the OFH.

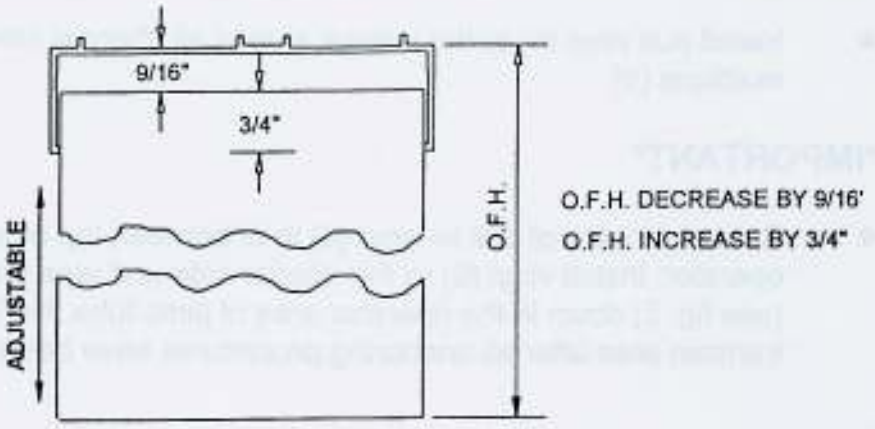


Fig. 3

Frame preparations

- Position the right and left jambs in their proper position in the finished opening. Mark the desired anchoring points. It's important that the jambs are shimmed to the established finished floor height before marking.

- Drill necessary anchoring clearance holes. Be certain to countersink all anchoring holes located in the transom area. This will help to prevent glass breakage when setting the transom glass. Due to clearances, the countersink tool must be slid down from the top of the jamb tubes.

- Reposition both prepped jambs to their permanent position in the finished opening, shim jambs to the finished floor height, plumb, level and drill (using jamb anchoring notes as template) for appropriate anchoring locations. Remove jambs, complete drilling procedure and install anchoring shields if required.

- Carefully remove header channel inserts (4). Drill anchoring clearance (see fig. 4) holes 1-1/2 " from the center line of the header channel.

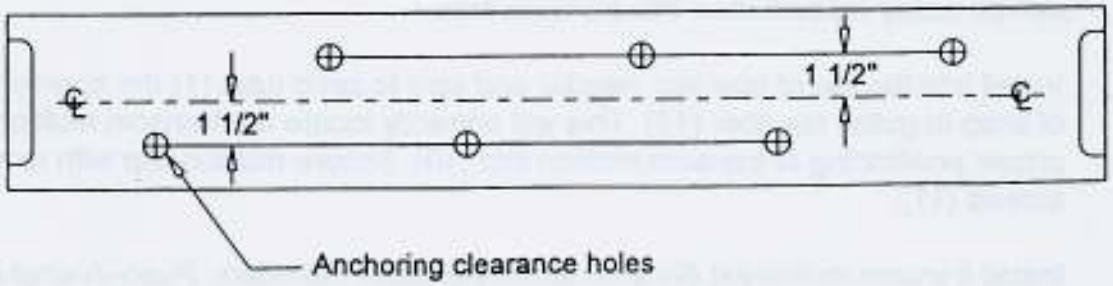


FIG. 4

IMPORTANT

- Install pull vinyl (6) to the interior side of all channel inserts (4) and all transom muillions (9).

IMPORTANT

- Cut two lengths of pull in vinyl (6) to fit between top of jamb tubes (1) to the top of the operator. Install vinyl (6) to the interior side and tape temporarily (to prevent damage) (see fig. 5) down in the operator area of jamb tube. NOTE: Vinyl will be pulled up into transom area after all anchoring procedures have been completed.

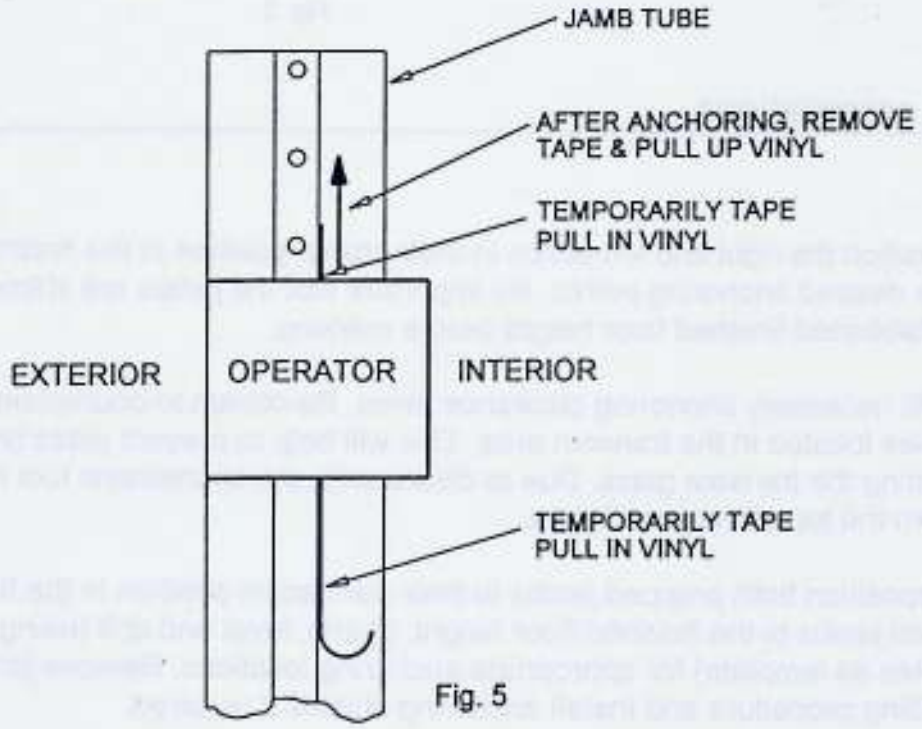


Fig. 5

- Secure both jambs (1) to the operator header. Check to see that vinyl (6) is free and can be easily repositioned into transom area.

- Install into the top of operator header and tight to jamb tube (1) the appropriate length of snap in gutter member (13). This will correctly locate the transom mullion (9) and proper positioning of transom mullion clip (10). Secure mullion clip with mounting screws (11).

- Install transom mullion(s) (9) and remaining gutter members. Push-in vinyl (15) can be installed into all gutter members (13) and snap glazing beads (14) at this time.

Setting the frame

- Install header channel (3) by carefully sliding it over and completely down on all transom verticals.

- Position frame in its correct position (pre-drilled anchoring holes in finished opening must align) in the finished opening. Shim jambs in the operator area until frame is centered and secured in the finished opening. Check level of operator.

- Plumb and secure one jamb. Measure OFW at the operator height, shim and secure opposite jamb at established OFW measurement.

- Measure clearance, at several points, between the finished opening header (see fig. 6) and the top of the header channel (3). Measurement must be 1" or smaller and finished opening header must be level to within 1/4". Perform the following header channel adjustments according to conditions.

  Clearance 1" or less - Push header channel (3) tight to opening header and secure.

  Clearance 1-1/8" or greater - Install necessary shim material between header channel (3) and opening header and secure.

  Out of level - If more than 1/4", shim header channel (3), level and secure

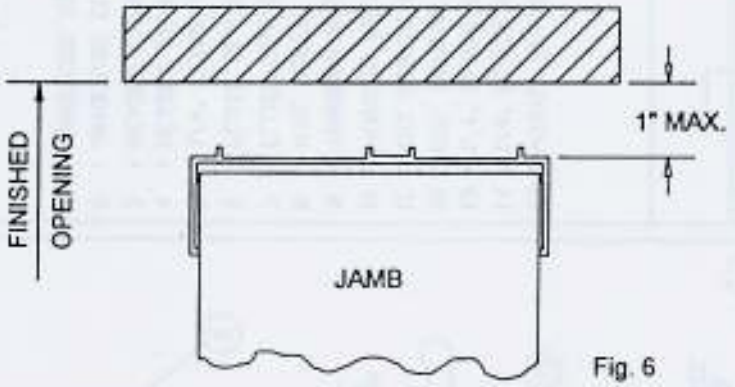


Fig. 6

- Install header channel inserts (4) and secure verticals to channel with self-tapping screws (8). NOTE: Be certain inserts have pull-in vinyl (6) installed and is positioned to interior.

- Measure transom glass requirements: (Flush Glaze System Only).

  Width = daylight opening plus 3/4".
  Height = daylight plus 9/16".

- Install transom glass. Block and install roll-in vinyl (7).

- Install jamb tube closures (2), hang doors, wire and tune-in. Clean entrance and caulk.

REV.	DESCRIPTION.	BY.	DATE.	CHK'D.
A	DELETE ITEM #5b, ITEM #5 WAS 5a, ITEM #4 PT# 50-01-110 WAS 50-01-090	C.J.McC.	7-9-92	

QTY.	PART #	
	50-20-100	15 , VINYL HEADER GLASS STOP.
2	53-01-070	14 , 1/4" GLASS SNAP F.G.
2	53-01-060	13 , 1/4" GLASS GUTTER F.G.
2	50-09-144	12 , MTG. SCREW, FHPD SELF TAP.
2	53-09-002	11 , MTG. SCREW, MULLION CLIP.
1	53-01-050	10 , TRANSOM MULLION CLIP.
1	53-01-010	9 , TRANSOM MULLION EXTR.
6	53-09-003	8 , MTG. SCREW, PHPD SELF TAP.
	53-20-002	7 , FLUSH GLAZE VINYL, ROLL IN.
	53-20-001	6 , FLUSH GLAZE VINYL, PULL IN.
3	53-01-020	5 , 1/4" FLUSH GLAZE INSERT.
2	53-01-110	4 , HEADER CHANNEL SNAP INSERT.
1	53-01-080	3 , HEADER CHANNEL BODY.
2	50-01-610	2 , JAMBTUBE CLOSURE.
2	53-04-110	1 , JAMBTUBE ASSY.

CUSTOMER :
ACK# :
DFW :
DFH :
COLOR : CLEAR
ASSY :

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HIGHTSTOWN, N.J. 08520-5212
609-443-5800.(FAX-3440)

TITLE TRANSOM SYSTEM
1/4" FLUSH GLAZE.

DATE.	DRAWN BY.	DRAWING/INVENTORY No.
8-20-90	CJMcC.	A 28332

besam ®

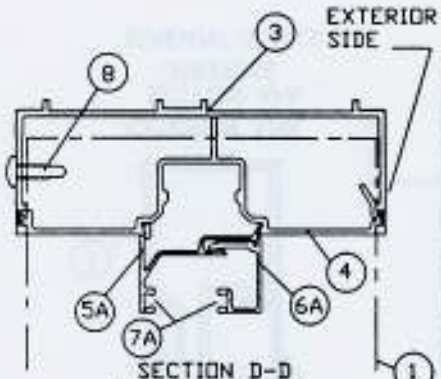
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
HIGHTSTOWN, N.J. 08520-5212
609-443-5800.(FAX-3440)

TITLE TRANSOM SYSTEM
5/8" THERMOPANE GLAZE

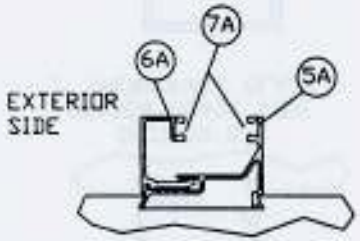
DATE. 8-20-90

DRAWN BY. CJMcC.

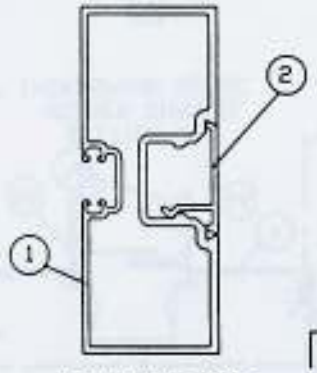
DRAWING/INVENTORY No. A 28325



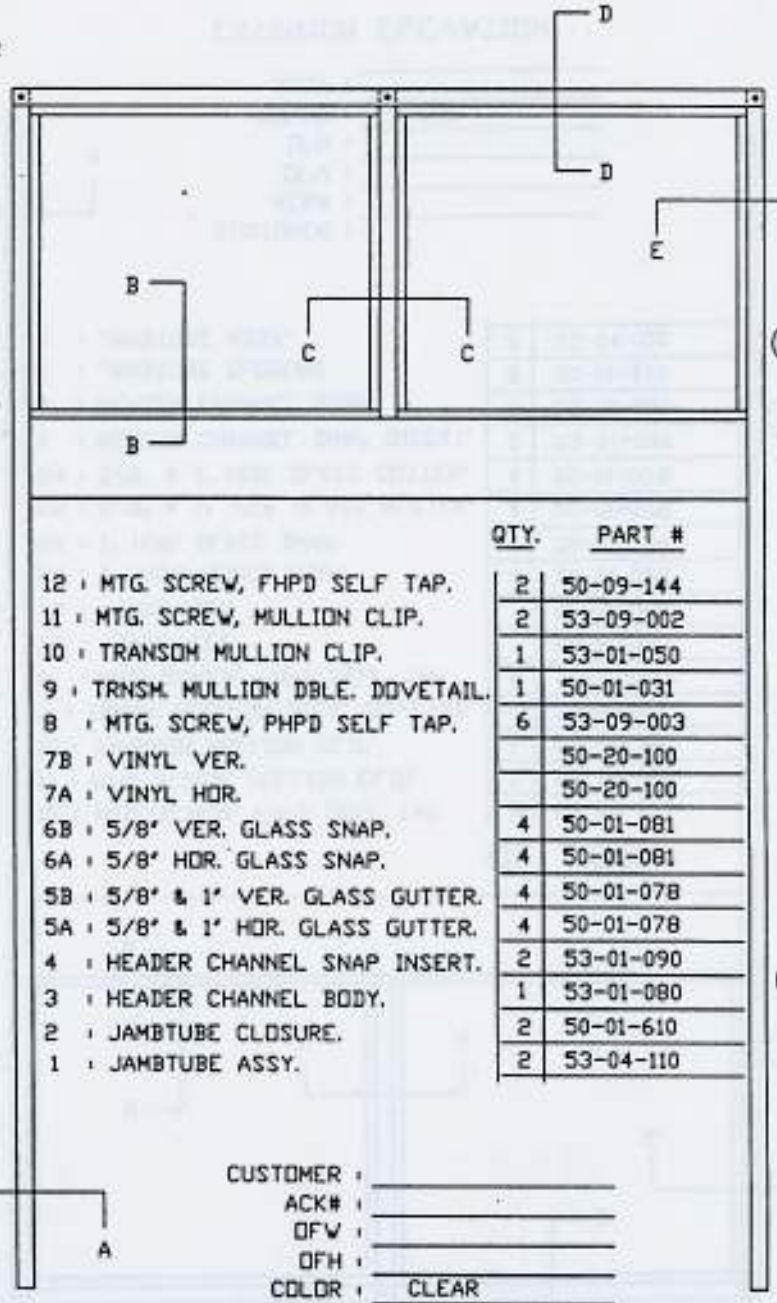
SECTION D-D
HEADER CHANNEL
5/8" THERMOPANE GLAZE



SECTION B-B
HEADER GLASS STOP
5/8" THERMOPANE GLAZE



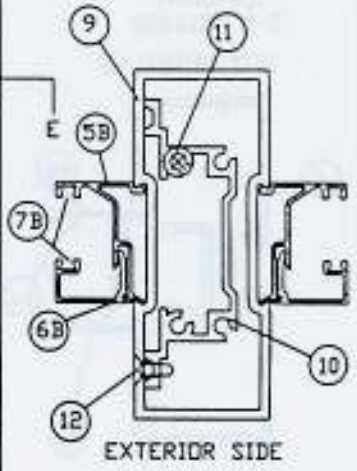
SECTION A-A
JAMBTUBE
BENEATH HEADER



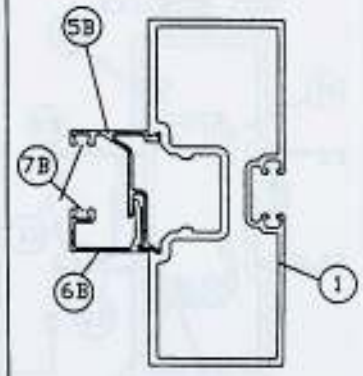
		QTY.	PART #
12	MTG. SCREW, FHPD SELF TAP.	2	50-09-144
11	MTG. SCREW, MULLION CLIP.	2	53-09-002
10	TRANSOM MULLION CLIP.	1	53-01-050
9	TRNSM. MULLION DBLE. DOVETAIL.	1	50-01-031
8	MTG. SCREW, PHPD SELF TAP.	6	53-09-003
7B	VINYL VER.		50-20-100
7A	VINYL HOR.		50-20-100
6B	5/8" VER. GLASS SNAP.	4	50-01-081
6A	5/8" HOR. GLASS SNAP.	4	50-01-081
5B	5/8" & 1" VER. GLASS GUTTER.	4	50-01-078
5A	5/8" & 1" HOR. GLASS GUTTER.	4	50-01-078
4	HEADER CHANNEL SNAP INSERT.	2	53-01-090
3	HEADER CHANNEL BODY.	1	53-01-080
2	JAMBTUBE CLOSURE.	2	50-01-610
1	JAMBTUBE ASSY.	2	53-04-110

CUSTOMER : _____
ACK# : _____
OFW : _____
OFH : _____
COLOR : CLEAR
ASSY : _____

EXTERIOR ELEVATION.



SECTION C-C
TRANSOM MULLION
5/8" THERMOPANE GLAZE



SECTION E-E
JAMBTUBE
ABOVE HEADER
5/8" THERMOPANE GLAZE

REV.	DESCRIPTION.	BY.	DATE.	CHK'D.

REV.	DESCRIPTION.	BY.	DATE.	CHK'D.

QTY.	PART #	
2	50-09-144	12 - MTG. SCREW, FHPD SELF TAP.
2	53-09-002	11 - MTG. SCREW, MULLION CLIP.
1	53-01-050	10 - TRANSOM MULLION CLIP.
1	50-01-031	9 - TRNSM. MULLION DBLE. DOVETAIL.
6	53-09-003	8 - MTG. SCREW, PHPD SELF TAP.
	50-20-100	7B - VINYL VER.
	50-20-100	7A - VINYL HOR.
4	50-01-084	6B - 1" VER. GLASS SNAP.
4	50-01-084	6A - 1" HOR. GLASS SNAP.
4	50-01-078	5B - 5/8" & 1" VER. GLASS GUTTER.
4	50-01-078	5A - 5/8" & 1" HOR. GLASS GUTTER.
2	53-01-090	4 - HEADER CHANNEL SNAP INSERT.
1	53-01-080	3 - HEADER CHANNEL BODY.
2	50-01-610	2 - JAMBTUBE CLOSURE.
2	53-04-110	1 - JAMBTUBE ASSY.

CUSTOMER :
ACK# :
DFW :
DFH :
COLOR : CLEAR
ASSY :

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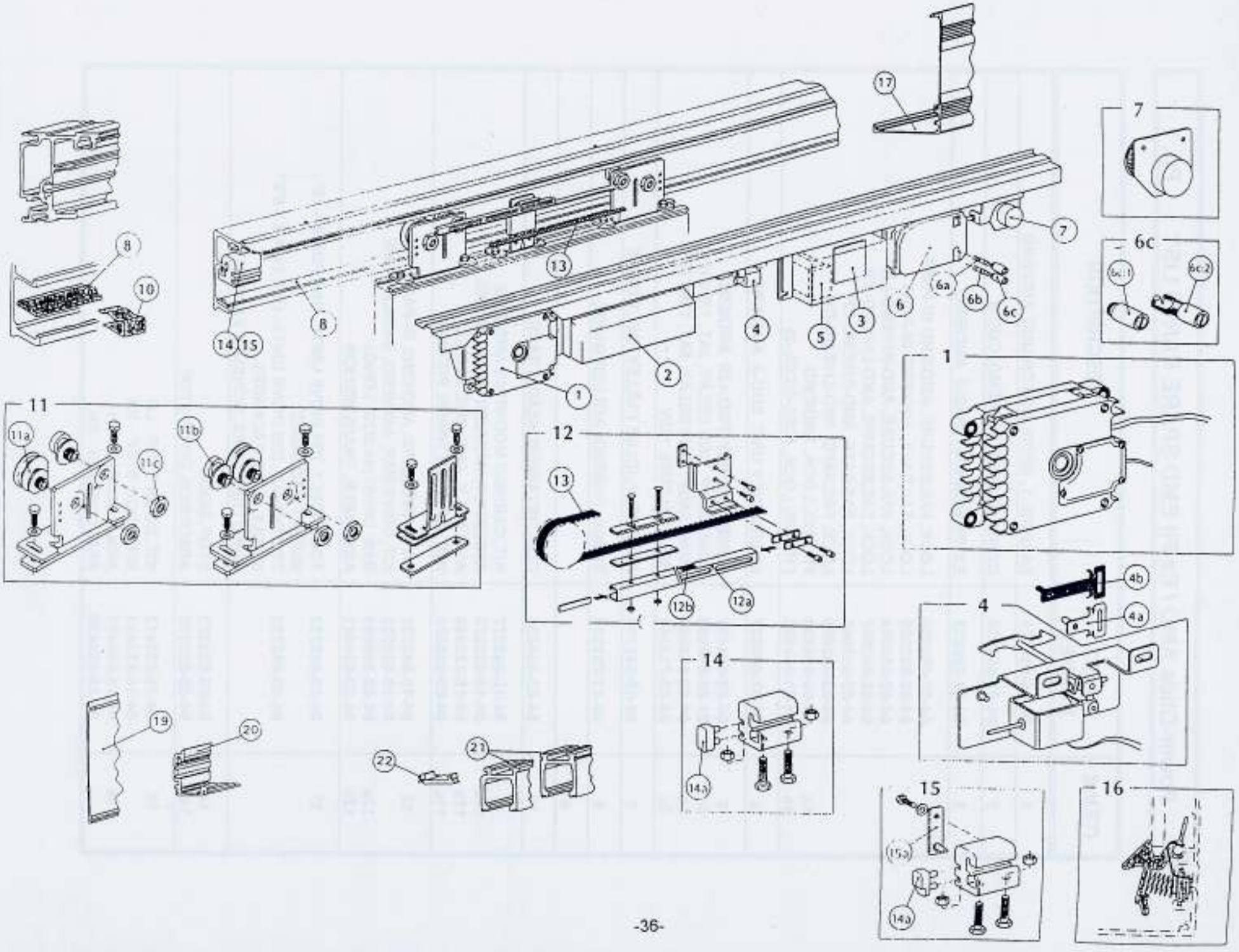
AUTOMATIC DOOR SYSTEMS
81 TWIN RIVERS DRIVE
HIGHTSTOWN, N.J. 08520-5212
609-443-5800.(FAX-3440)

TITLE TRANSOM SYSTEM
1" THERMOPANE GLAZE

DATE.	DRAWN BY.	DRAWING/INVENTORY No.
8-20-90	CJMcC.	A 28335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6c.1
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4b
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4a
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14a
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15a
14a
16

Power-Glide AMD / Ez-Fit EMD SPARE PARTS LIST Pg. 1

ITEM #	PART NUMBER	DESCRIPTION
1	04-15-548726	ASSEMBLY, DRIVE MOTOR UNIT AMD/EMD
2	04-02-654935	CONTROL UNIT, AMD/EMD, CUD-3
3	04-02-600028	EXTENSION UNIT, EXD-3 AMD/EMD
4	04-02-692064	LOCK, FAILSECURE, AMD/EMD BI-PART
	04-02-692065	LOCK, FAILSAFE, AMD/EMD BI-PART
	04-02-692066	LOCK, FAILSECURE, AMD-RH/EMD-LH
	04-02-692067	LOCK, FAILSECURE, AMD-LH/EMD-RH
	04-02-692068	LOCK, FAILSAFE, AMD-RH/EMD-LH
	04-02-692069	LOCK, FAILSAFE, AMD-LH/EMD-RH
4a	04-03-654423	FITTING, LOCK, AMD/EMD
4b	04-03-654595	FITTING, LOCK, (CGL-1/CGL-2)
5	04-02-600027	EMERGENCY UNIT, EUD-3 AMD/EMD
6	04-02-654481	POWER SUPPLY, PSD-120 AMD/EMD
6a	24-02-654658	FUSE, 2AMP, TIME DELAY, 2AT, 120V (F2)
6b	04-02-654659	FUSE, 5AMP, TIME DELAY, 5AT, 120V (F1)
6c	04-02-713344	HOLDER, FUSE 120V
7	04-15-548163	ASSEMBLY, IDLER PULLEY, BELT DRIVE
8	04-21-701239	TRACK, CARRIER ROLLER GUIDE
9		
10	04-03-544958	CLIP, RETAINING HEAD, TRACK
11	04-15-548377	KIT, CARRIER MOUNTING AMD/EMD
11a	04-15-832376	ASSEMBLY, CARRIER GUIDE WHEEL
11b	04-15-832440	ASSEMBLY, ANTI-RISE WHEEL
11c	04-09-830374	NUT, CARRIER WHEEL FITTING
12	04-15-548731	KIT, DRIVE BARS, AMD/EMD, BI-PART
	04-15-548732	KIT, DRIVE BAR, AMD/EMD, SINGLE SLIDE
12a	04-03-548694	BAR, DRIVE (44 3/32" LONG)
12b	04-20-654461	ABSORBER, TRANSMISSION
13	04-20-548722	TOOTHBELT, (DA DRIVE UNIT) - USE FOR 8 '- 15' BI-PART PACKAGES.
	04-20-548723	TOOTHBELT, (DB DRIVE UNIT) - USE FOR 8 '- 8'6" SINGLE SLIDE PACKAGES. FOR OTHER SIZES, CONSULT FACTORY
14	04-05-832372	STOP, DOOR
14a	04-20-830176	ABSORBER, DOOR STOP
15	04-15-832413	KIT, DOOR STOP - LH
	04-15-832414	KIT, DOOR STOP - RH
15a	04-15-645431	ARM, LOCKING - LH
	04-15-654430	ARM, LOCKING - RH

Power-Glide AMD / Ez-Fit EMD SPARE PARTS LIST Pg. 2

ITEM #	PART NUMBER	DESCRIPTION
16	04-15-549043	KIT, CLAMPING, AMD/EMD
17	04-01-701255 04-01-701265	EXTRUSION, REMOVABLE COVER (CLEAR-PER FT) EXTRUSION, REMOVABLE COVER (BRONZE-PER FT)
18		
19	04-01-700806 04-01-700906	EXTRUSION, COVER, FIXED AMD (CLEAR-PER FT) EXTRUSION, COVER, FIXED AMD (BRONZE-PER FT)
20	04-01-700805 04-01-700815	EXTRUSION, LOWER EDGE, AMD FBO (CLEAR-PER FT) EXTRUSION, LOWER EDGE, AMD FBO (BRONZE-PER FT)
21	19-01-007 19-01-008 18-01-008 18-01-009	PANIC CARRIER, AMD - CLEAR PANIC CARRIER, AMD - BRONZE PANIC CARRIER, EMD - CLEAR PANIC CARRIER, EMD - BRONZE
22	04-01-700900 04-01-700816	EXTRUSION, LOWER EDGE, AMD FSL (CLEAR-PER FT) EXTRUSION, LOWER EDGE, AMD FSL (BRONZE-PER FT)
23	50-15-560CL 50-15-560DB 50-15-561CL 50-15-561DB	KIT, OFFSET PIVOT, R.H. CLR. KIT, OFFSET PIVOT, R.H. DK.BZ. KIT, OFFSET PIVOT, L.H. CLR. KIT, OFFSET PIVOT, L.H. DK.BZ.

Accessories

Cover - made in clear anodized aluminum (standard). Bronze anodized or paint finishes optional.
Program selectors - PS-4, PS-5, PS-2 and PSP.
Electromechanical locking device ELD/ELDP - locks the doors in the closed position. Activated by program selector.
Manual cylinder lock LCD - for manual blocking of the electromechanical locking device for locking with power.
Manual lock opening device MODD - for manual unlocking of the electromechanical locking device ELD.
Micro switch kit LSKD - for indication of door lock position.
Pharmacy opening ELDP-PH - not used.
Electronic emergency unit EUD-3 - used if a door is required to be closed or opened by means of a battery unit in the event of power failure.
Emergency closing with repeated closing - if the door is opened by hand after an electronic emergency closing, it will close again after approx. 4 seconds (LSKD to be used).
Partial opening - Provides partial door opening width. Program selector PSP or PS-2 and PS-4/PS-5 must be installed.
Break-out panic unit PSB - enables the door/sidelites to be broken outwards in case of an emergency.
Full glass system CGL-1/CGL-2 - a door system designed specifically for full glass doors.
Push to open/Push to close function - The first push on the push-button opens the door, the second push closes the door. The push-button is to be connected to the extension unit EXD-3.
Interlocking - used between two operators when the first operator must close before the other one can open. Connection to be made on the extension unit EXD-3.
Synchronizing - used e.g. when two single-sliding operators are installed for operation against each other, where all functions shall be carried out simultaneously for both operators. Connections to be made on the extension unit EXD-3.

Maintenance/Service

The mechanical aspect of Automatic door installations must be subject to regular maintenance, the frequency of which is governed by the environmental conditions and density of traffic.

1. Remove dust and dirt from the operator. Dirt on the sliding track should be removed with methylated spirits. If necessary replace the sliding track.
2. None of the parts need lubrication. The toothbelt and plastic guide track must be kept dry and clean. Check the belt tension.
3. Check that all nuts and bolts are tightened well.
4. If necessary, adjust the door leaf speeds, the hold open time and the door leaf position.

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Besam Inc., 81 Twin Rivers Drive, Hightstown, NJ 08520-5212 Tel: 609-443-5800, Fax: 609-443-3440

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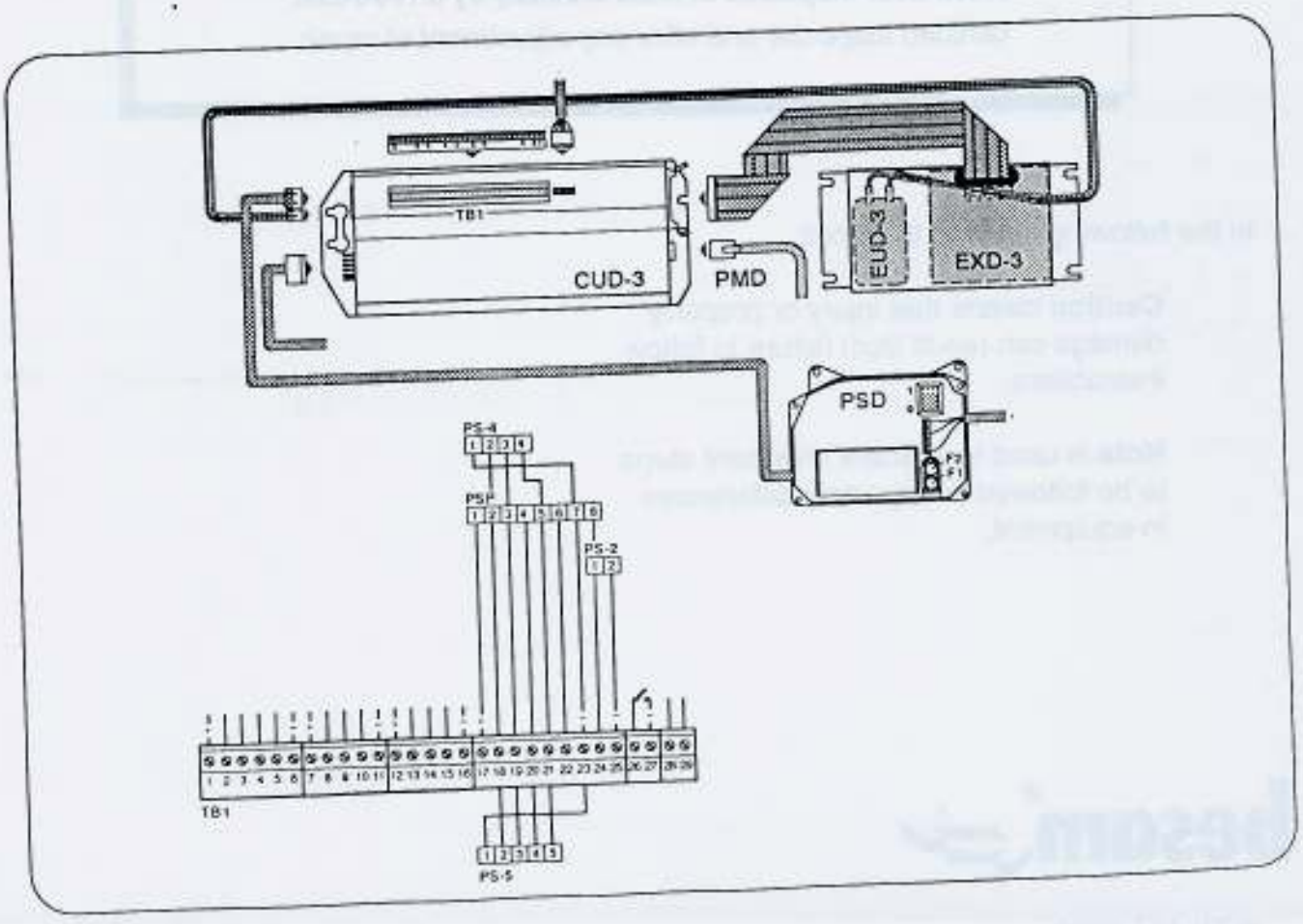
Installation/Troubleshooting Manual

Part No. 04-23-010

Electrical Connection, Adjustment and Troubleshooting

Sliding Door Operators Power-Glide™ AMD, Ez-Fit™ EMD, Tele-Glide™ TMD



CAUTION

Improperly Adjusted Doors can cause injury and equipment damage.

Inspect door operation daily using safety checklist in owner's manual and at door.

- Have door adjusted as described in Owner's Manual.
- Safety devices should be in place and operational.

Have door inspected at least annually by an AAADM certified inspector and after any adjustment of repair.

In the following manual, the word:

Caution means that injury or property damage can result from failure to follow instructions.

Note is used to indicate important steps to be followed or important differences in equipment.

besam®

(609) 443-5800

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Connection of activation units	8
Electrical accessories	10-15
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Electro-mechanical locking devices	13
Emergency units	14-15
Connection of emergency push-button	15
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Push-button set	17-18
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Warnings

IMPORTANT NOTICE!

To avoid bodily injury, material damage and malfunction of the product, the instructions contained in this manual and the American National Standard for power operated pedestrian doors, ANSI A156.10 must be strictly observed during installation, adjustment, repair, service, etc. Only Besam trained technicians should be allowed to carry out these operations.

All pedestrian door applications should be safety checked daily (see owner's manual) and annually by a certified American Association of Automatic Door Manufacturers (AAADM) inspector (see owners manual.)

Besam-Owners' manuals are included with all products shipped.

Radio and television reception

This equipment generates and uses radio frequency energy and if not installed and used properly, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been designed to comply with the emission limits in accordance with (US market FCC Part 15) EN 50081-1 which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Re-orient the receiving antenna.
Relocate the receiver with respect to the equipment.
Move the receiver away from the equipment.
Plug the receiver into a different outlet so that equipment and receiver are on different branch circuits.
If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

Note!

Instructions, design, specifications and illustrations which are contained in this manual are not binding. Rights reserved for changes without previous notice.

Technical specifications

Power supply	120 VAC ±10%, 60 Hz fuse 10A
Power consumption	max. 250 W
Auxiliary voltage	18 VDC, 1A
Motor fuse F1	5 AT
Control fuse F2	2 AT
Recommended max. door weight (for higher weights, consult factory)	EMD/AMD 1x 300lbs. (135kg.) EMD/AMD 2x 175lbs. (80kg.) TMD-R/L 2x 150lbs. (64kg.) TMD-2 4x 75lbs. (32kg.)
Door travel for standard models	EMD/AMD-1 35"--70" (900-1800mm) EMD/AMD-2 35"--78" (900-2000mm) TMD-R/L 35"--141" (900-3600mm) TMD-2 80"--149" (1800-3800mm)
Opening and closing speed	Variable up to approx. 27in/sec (0.7m/sec) (1-leaf)
Low speed	Variable up to approx. 7in/sec (0.15m/sec)
Hold open time	1-60sec
Ambient temperature	-5°F to 122°F (-20°C to +50°C)

The computerized control unit is equipped with:

Contacts for connection of:

- **Programming module PMD;** to be used for programming of the operating values into the computer.
- **Motor unit.**
- **Emergency unit;** to be used when there are requirements for the operator to open or close the doors in case of a power failure.
- **Power supply unit.**
- **Revolution counter.**
- **Extension unit EXD–3** (see separate connection drawing).

Terminal block for connection of:

- **Auxiliary units** (TB1), as activation units, electromechanical locking device etc.

  Note! To facilitate the connection, the control unit CUD-3 can be loosened and temporarily moved to a lower position.

Install the necessary cables to mains and activation units. Some of the plug-in contacts are connected at the factory. The activation units are not to be connected until the adjustment of speeds etc. has been carried out (see programming module PMD).

Connection of units and accessories

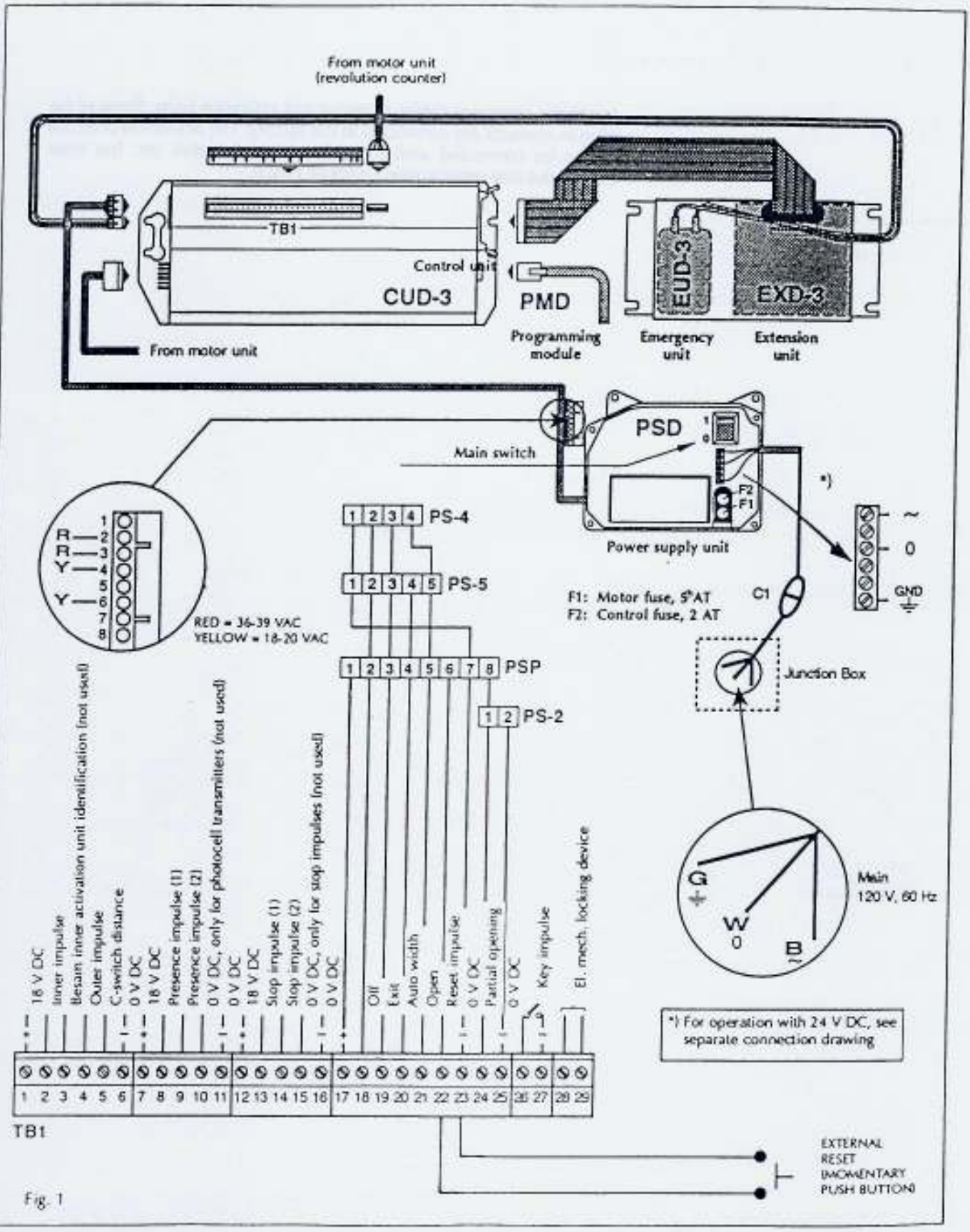


Fig. 1

The activation units and functions in fig. 2 apply to the operators AMD, EMD and TMD.

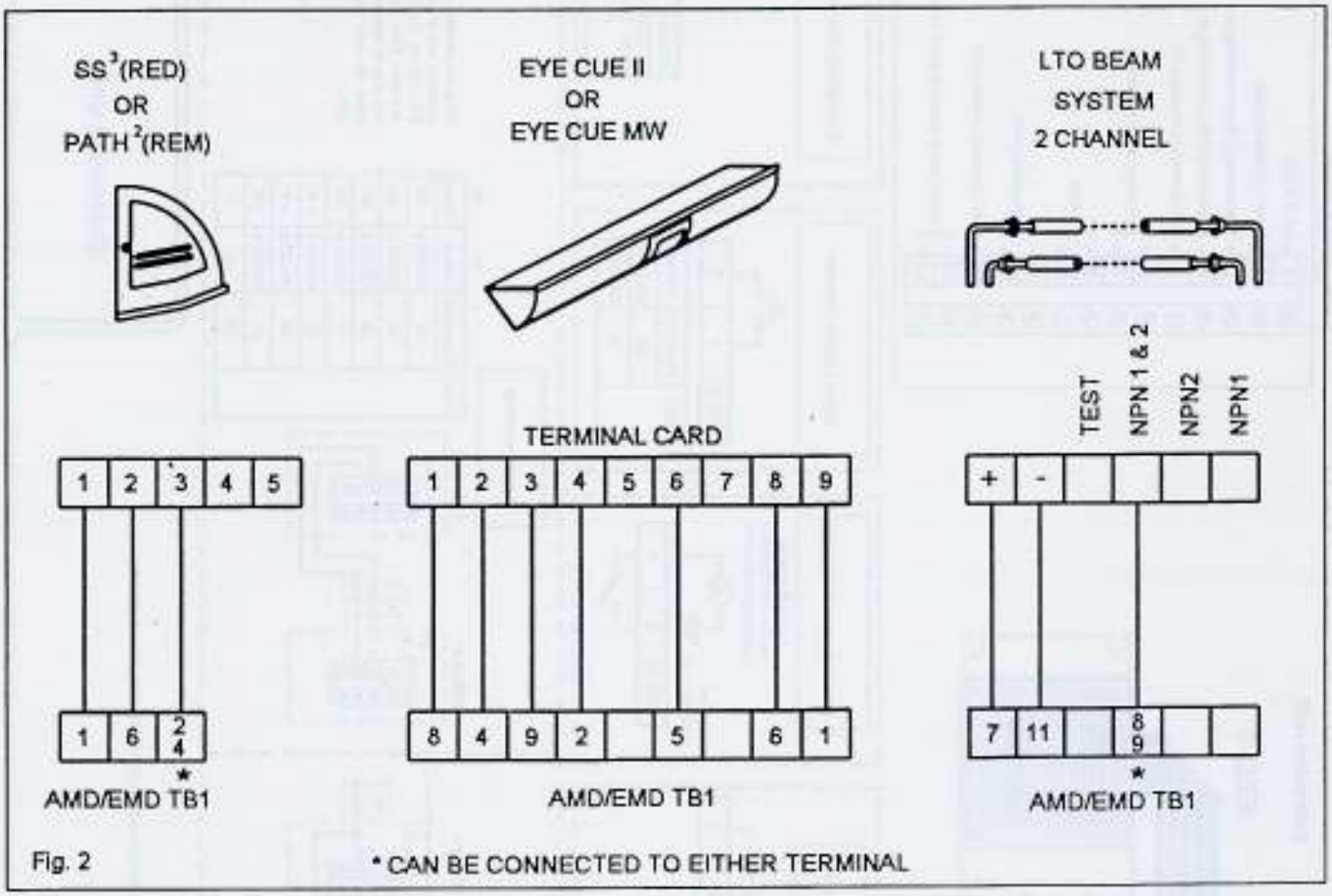
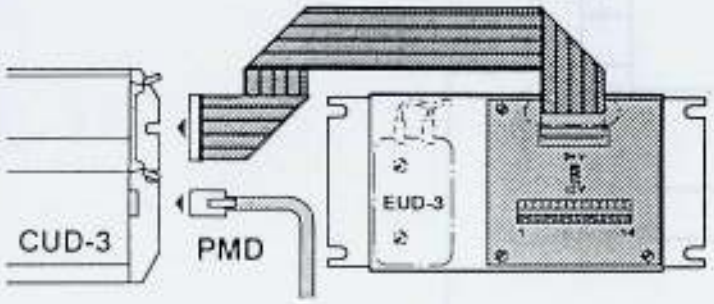


Fig. 2

Extension unit

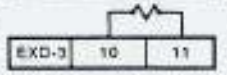
EXD-3



Extension unit EXD-3

1	(–) 0 V DC
2	Open / Close impulse
3	Interlocking / Synchronizing out
4	Interlocking / Synchronizing in
5	Side presence impulse (1)
6	External error indication
7	External error indication
8	Brake
9	Brake
10	Pharmacy lock
11	Pharmacy lock
12	Side presence impulse (2)
13	Emergency opening push button
14	Emergency opening push button

ELDP-PH Pharmacy lock

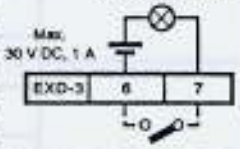


PMD	Function	Value
	20	10 cm
	21	00-60 s

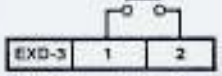
Brake

External error indication

Lamp or buzzer
Lampe oder Summer
Lampe eller summer

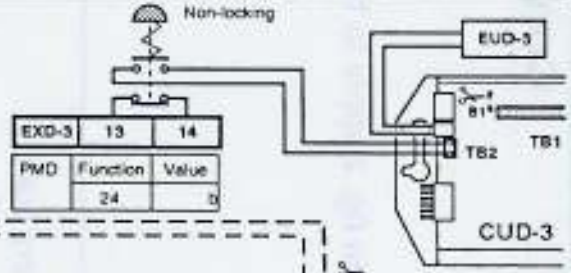


Open / Close impulse



PMD	Function	Value
	07	01-60 s
	16	01-60 s

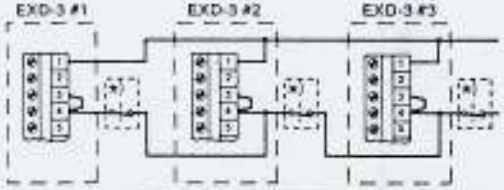
Emergency opening push button for opening with or without mains power



PMD	Function	Value
	24	b

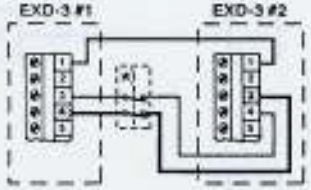
To prevent automatic emergency opening at power failure, B1 must be cut open.

Interlocking



PMD	Function	Value
	25	A

Synchronizing



PMD	Function	Value #1	Value #2
	07	00-60 s	00
	08	00-60 s	00
	16	00-60 s	00
	17	00-60 s	00
	18	00-60 s	= #1
	19	00-60 s	= #1
	21	00-60 s	00
	25	b	b

Program selector to be connected to one operator, and the terminals TB1:18-24 (not TB1:17) on CUD-3 linked to the other operator. Stop impulses must be connected to both operators. Each operator must have its own stop contacts/stop photocells.

Art. No. 600 028

*) Optional switch for disconnection of "Interlocking/Synchronizing"

Extension unit **EXD-3**

besam

B 654 976

Electrical accessories

- Program selectors (pages 11-12)
- Electro-mechanical locking devices (page 13)
- Emergency units (pages 14-15)
- Activation units (see connection drawing and separate installation instructions)
- Manual cylinder lock, LCD (see separate installation drawing)
- Limit switch kit, LSKD (see separate installation drawing)
- Extension unit, EXD-3 (see page 9 and separate connection drawing)

Program selectors (see also programming module PMD)

Program selectors, 4-Way switch, 2-Way switch and 5-Way Switch

Fig. 3a

The illustrations show program selectors with knob (PSW...), intended for surface mounting, but the selectors are also available with key (PSK...) and for flush mounting.

PS-4

This standard program selector is used to obtain the following necessary functions of the operator:

– – "Off" The inner and outer activation units are disconnected. The door is locked if an electromechanical locking device has been installed. However, the door can be opened with a key impulse.

– ↑ – "Exit" Passage through doorway from inside only. The door is locked if an electromechanical locking device has been installed. The door can only be opened with the inner activation unit and with a key impulse.

–↓↑– "Auto" The door can be opened with the inner and outer activation units.

– – "Open" The door is permanently open.

Fig. 3b

PS-2

This program selector has two positions, "1" and "0". It is necessary to install this selector if permanent partial opening is required.

With PS-2 in position "1" the partial opening width (11.81"- 78" (03-20 **dm**), function 15) and hold open time (1-60 sec., function 16) set by the programming module PMD are always obtained.

PS-5

This program selector has the same functions as PS-4, plus an additional position, marked:

Fig. 3c

↔↓↑↔ "Auto width"

In this setting the operator is programmed to select full or partial opening, depending on the volume of traffic.

- If the door is closed, from full opening, for more than the time set by the programming module PMD (1-60 sec., function 19) the next opening will be partial.
- If the door remains partly open, or is prevented from closing, more than the time set by the PMD (1-60 sec., function 18) it will automatically select full opening.
- The width of the partial opening (11.81"-78" (03-20' **dm**), function 15) and the "Auto width" hold open time (1-60 sec., function 17) are set by the PMD.
- Permanent partial opening cannot be selected with this selector.

Note! The program selectors PS-2 and PS-5 can be used together. If PS-2 is set to position "1" and PS-5 to any position but "Auto width", permanent partial opening is obtained. If PS-5 is set to "Auto width" and PS-2 to "0" or "1", the "Auto width" function is obtained.

Program selector, PSP

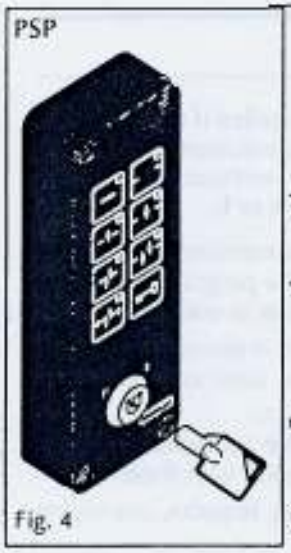


Fig. 4

PSP

"Auto partial"

"Exit partial"

"Key impulse"

"Reset impulse"

The illustration shows a push-button program selector for surface mounting, but the selector is also available for flush mounting.

This selector has the same functions as PS-5, plus four additional functions. It is also provided with LED's indicating the selected function and the settings are lockable.

The door can be opened partially with the inner and outer activation units.

Passage through a partially opened doorway from inside only. The door is locked if an electromechanical locking device has been installed. The door can only be opened with the inner activation unit and with a key impulse.

Key impulse button which opens the door partially in the positions "Off", "Exit" and "Exit partial".

Reset impulse button which resets the control unit CUD-3, and the program selector PSP.

Electromechanical locking devices

An electromechanical locking device can be installed if the door is to be locked in the closed position (see separate installation drawings.)
The locking device can be locked with or without power. See programming module PMD function 22 value **A** or **b**.

- The electromechanical locking device is controlled by the program selector and the door is locked with the program selector in **"Exit"** or **"Off"**. In the other settings the door is unlocked.
- In the setting **"Exit"** the outer activation unit is disconnected. The inner activation unit, however, can still be used and opens the lock and door when impulsed.
- In the setting **"Off"** both the inner and outer activation units are disconnected, and the door cannot be opened with these.
- The door can always be opened with a **key impulse,** overriding the program selector in "Exit" or "Off".

The locking device can, if locked without power, be manually released, by means of a separate accessory, MODD (does not apply to all operators). See separate installation drawing.
As a complement to the electromechanical locking device, a manual cylinder lock, LCD, can be installed (does not apply to all operators). See separate installation drawing.

Bi-parting doors

EMD/AMD	ELD-2	locked without power
	ELDP-2	locked with power
TMD	TLD-2	locked without power
	TLDP-2	locked with power

Single-sliding doors

EMD/AMD	ELD-L	locked without power – (right opening - from exterior)
	ELD-R	locked without power – (left opening - from exterior)
	ELDP-L	locked with power – (right opening - from exterior)
	ELDP-R	locked with power – (left opening - from exterior)
TMD	TLD-1	locked without power
	TLDP-1	locked with power

Emergency units

Automatic emergency opening or closing

Electronic emergency unit, EUD-3

The operator can be fitted with an electronic emergency unit EUD–3, which in case of a power failure automatically opens or closes the door, by means of a rechargeable battery unit. The door remains in this position until the power is restored. The operator will then resume the function set by the program selector. Emergency opening or emergency closing is selected with the programming module PMD function 11, value **A** or **b**. If EUD–3 is installed, function 12, value **A** must be selected.
If required not to have opening/closing during power failure with the program selector in "Off", select function 14, value **b** with the programming module PMD.

Monitoring of the emergency unit EUD–3

The function of the emergency units is monitored by the control unit if the programming module PMD is set to function 13, value **b**. This monitoring means that the door opens or closes (EUD–3) and remains in this position if a proper emergency opening or closing no longer can be achieved. The monitoring is not carried out with the program selector in positions "Off" and "Open".

Manual emergency opening or closing with emergency unit EUD–3

When required that the emergency opening or closing should not be carried out automatically in case of a power failure, a non-locking emergency push-button for manual control of the door can be connected. When the push-button is pressed the door will open or close by means of the emergency unit. The door remains in this position until the power is restored. In order to obtain this function, the jumper marked B1 on the CUD-3 is to be cut open. The push-button is to be connected in accordance with fig. 5a on page 15.

Automatic emergency opening or closing, with emergency unit EUD-3, when the program selector is not in the setting "Off" and *manual* when the program selector is in the setting "Off"

When required that the emergency opening or closing, in case of a power failure, should be carried out automatically when the program selector is not in the setting "Off" – and with an emergency push-button, when the program selector is in the setting "Off" – a non-locking emergency push-button for manual control of the door can be connected. When the push-button is being pressed the door will open or close by means of the emergency unit. The door remains in this position until the power is restored. The push-button is to be connected in accordance with fig. 5b and the programming module PMD is to be set to function 14 value **b**.

Connection of emergency push-button – for operation without main power

(For emergency opening **with** or **without** main power see separate connection drawing for extension unit EXD-3.)

Manual emergency opening or closing

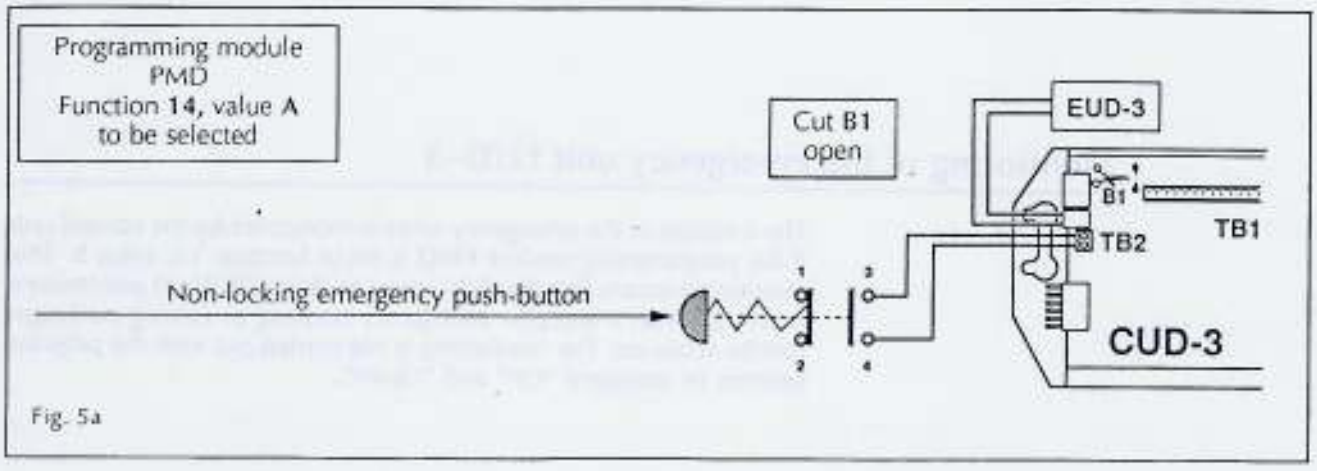


Fig. 5a

Automatic emergency opening or closing when the program selector is not in "Off" position and *manual* when the program selector is in "Off" position

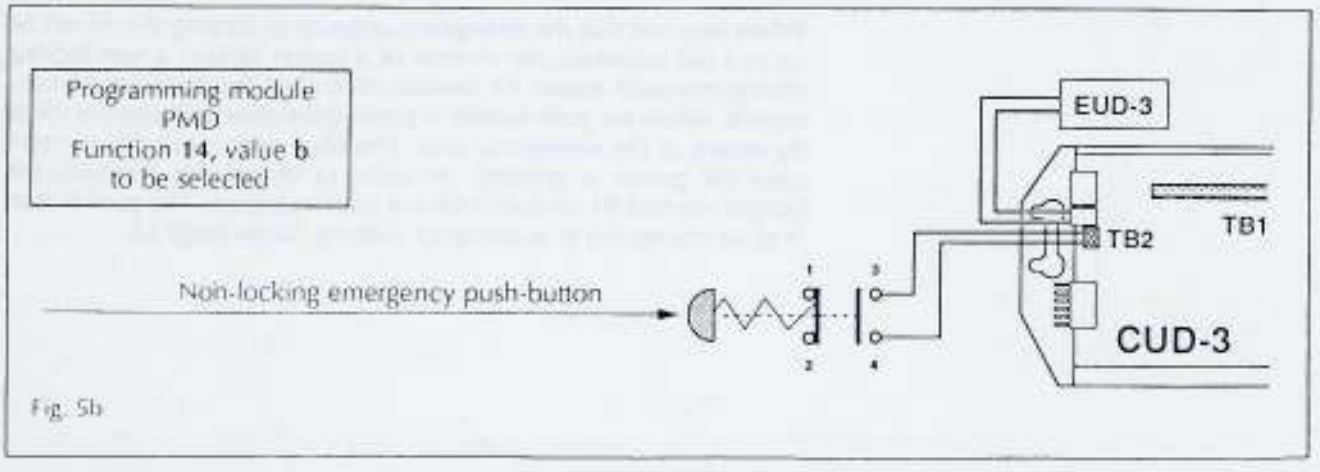


Fig. 5b

Programming module PMD

The PMD is used for programming the operating values into the control unit CUD-3.
The programming is made by a set of buttons. The PMD has a limited service life. A count down is made at every connection and after an automatic "reset" the remaining "value" is shown on the display. When the figures "0000" are shown the PMD is unusable and must be replaced.

Push-button set

PMD

Fig. 6a

Function buttons

These buttons are used for setting or checking*) the functions (01-99) for speed, hold open time, monitoring etc. A push on the upper button will increase the setting by one digit. A push on the lower button will decrease the setting by one digit. If the button is held depressed for more than 2 s the function number will be incremented/decremented every 0.1 sec. When the final function (99) has been reached the digits will roll over to the function 01 and start all over again.

*) *Note! When selecting any of these functions the latest value, programmed into the operator will be displayed, except for function 99, where value 01 will always be displayed.*

Value buttons

These buttons are used to set the desired value for the selected function. A push on the plus-button will increase, and on the minus-button decrease, the value with one digit. If the button is held depressed for more than 2 sec. the value will be incremented/decremented every 0.1 sec. When the end value has been reached the digits will roll over and start over again.

Program button

This button is used to program the control unit with the function and value selected on the PMD. To indicate that data has been transferred into the control unit, the display will blink and then return to the displayed digits for further programming.

Impulse button

This button is used to give an opening impulse to the operator. If the button is held depressed the impulse is given every 0.2 sec. If setting 1 "Off" is selected, a key impulse is given. See PMD program selector (push-button set) page 18.

Reset button

This button is used to reset the control unit CUD-3 and the programming module PMD. If the button is held depressed for approx. 2 sec., the door will make a search cycle (open/close) to find the width of the opening. This will also cause the loss of one usage of the PMD.

Function display

When a FUNCTION button is depressed, the latest function used will be presented on the function display. If no function has been selected previously, the function "01" will be shown. If the FUNCTION and VALUE buttons are not activated for 5 sec. the display will be blank.

Value display

The VALUE display shows the value for the selected function. If the FUNCTION and VALUE buttons are not activated for 5 sec. the VALUE display will show the present status or error code for the operator.

Functions and Values

Function	Description	Value (metric)	Value (standard)	Value* (metric)	Value* (standard)
01	High speed opening	20-70 cm/s	7.87-27.56 in/s	30	11.81 in/s
02	Low speed opening	05-15 cm/s	1.97-5.90 in/s	06	2.36 in/s
03	Low speed distance opening	00-30 cm	00-11.81 in	10	3.94 in
04	High speed closing	15-70 cm/s	5.90-27.56 in/s	20	7.87 in/s
05	Low speed closing	05-15 cm/s	1.97-5.90 in/s	06	2.36 in/s
06	Low speed distance closing	00-30 cm	00-11.81 in	05	1.96 in
07	Hold open time	01-60 s	01-60 s	06 s	06 s
08	Hold open time with key impulse	01-60 s	01-60 s	06 s	06 s
09	Not Used	----------	----------	A	A
10	Not Used	----------	----------	A	A
11	Emergency opening / Emergency closing (EUD-3) ①	A/b (open/close)	A/b (open/close)	A	A
12	Electronic / Mechanical emergency unit ①	A/b (elect/mech)	A/b (elect/mech)	A	A
13	Monitoring of the emergency unit ①	A/b (No/yes)	A/b (No/yes)	A	A
14	Emergency function with the program selector PS-/PSP, in "Off" ①	A/b (Yes/no)	A/b (Yes/no)	A	A
15	Partial opening width ②	03-20 dm	11.81-78.74 in	05	19.68 in
16	Hold open time for partial opening ②	01-60 s	00-60 s	02	02 s
17	"Auto width" hold open time ②	01-60 s	01-60 s	02	02
18	Impulse time from "Auto width" to full opening ②	01-60 s	01-60 s	15	15
19	Resume time for "Auto width" after closing, from full opening ②	01-60 s	01-60 s	05	05
20	Not Used	----------	----------	00	00
21	Not Used	----------	----------	00	00
22	Electromechanical lock, locked without/with power ③	A/b (without/with)	A/b (without/with)	A	A
23	Hold force on closed door ④	00-10 N	00-2.20 lbs	00	00 lbs
24	Emergency opening impulse connected	A/b (No/yes)	A/b (No/yes)	A	A
25	Interlocking / Synchronizing, between two doors ⑤	A/b (inter/sync.)	A/b (inter/sync.)	A	A
26	C-switch distance (Eye-Cue Presence)	00-80 cm	00-31.50 in	05	1.96 in
27	Motor direction ⑥	A/b	A/b	b	b
28	Number of operator cycles performed x 10,000	00-99	00-99	00	00
29	Number of operator cycles performed x 100	00-99	00-99	00	00
30	Active run program ⑦	01-06	01-07	02	02
98	Run program ⑧ Factory pre-programmed values Copying and transferring of values between operators ⑨	01-06 01 96-99	01-06 01 96-99	02	02
99	"DO NOT USE	----------	----------	----------	----------

Note: PMD values displayed are metric.

1 inch = 2.54 (cm) centimeters
1 inch = .254 (dm) decimeters
1 pound force = 4.45 (N) newtons

*) Values, factory pre-programmed into the CUD-3 on all operators delivered (see Start-up)
1.) See emergency units
2.) See program selectors
3.) After changing, always press the reset button R (see electromechanical locking devices
4.) With this function a hold force can be selected that holds the door with a certain force in closed position
5.) This function is used if there are requirements for interlocking between two operators i.e. the first operator must close before the other one can open, or for synchronizing two single-sliding operators installed for operations against each other, where all functions shall be carried out simultaneously for both operators (see separate connection drawing for EXD-3)
6.) After changing the direction of rotation always press the reset button R.
7.) Information about active run program. (The value cannot be changed with function 30 selected)
8.) Pre-programmed basic values for 6 different run programs can be selected (see page 24)
9.) See PMD/Copying of programmed values

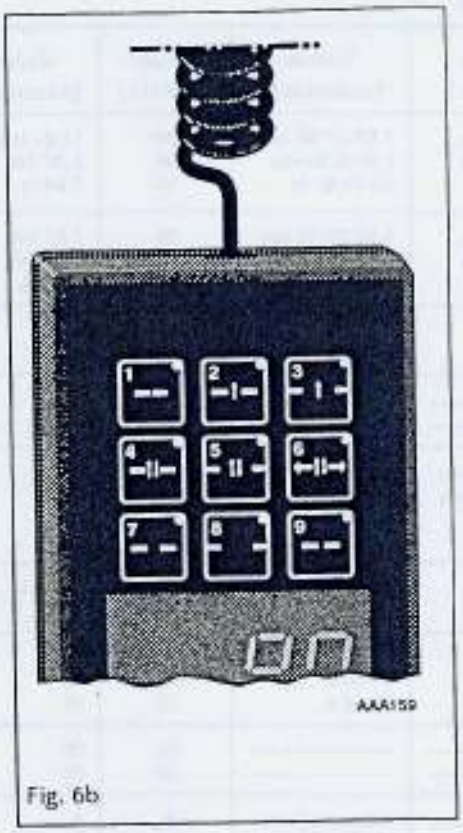


Fig. 6b

Program selector (push-button set)

These buttons, marked 1-9, are used to obtain the necessary functions of the operator. With the PMD connected to the CUD-3, these settings are overriding the settings of the program selector, PS-/PSP (if equipped). The functions of the program selector, PS-/PSP, are resumed approximately 30 s after the removal of the PMD.

Settings

1.	"Off"	The door is closed.
2.	"Exit partial"	Exit only, the door opens partially.
3.	"Exit"	Exit only, the door opens fully.
4.	"Auto partial"	The door opens partially with inner and outer activation units.
5.	"Auto"	The door opens fully with inner and outer activation units.
6.	"Auto width"	The door selects full or partial opening depending on the volume of traffic.
7.	"Open partial"	The door is permanently partially open.
8.	"Open"	The door is permanently fully open.
9.	"Pharmacy" **	

** (not used)

Functions and Values (continued)

Function	Description	Typical Door Settings			
		* Light door	* Medium door	*Heavy door	Factory settings
01	High speed opening	30	45	65	30
02	Low speed opening	06	09	12	06
03	Low speed distance opening	10	15	20	10
04	High speed closing	20	25	30	20
05	Low speed closing	06	09	12	06
06	Low speed distance closing	05	10	15	05
07	Hold open time	02	03	04	06
08	Hold open time with key impulse	06	06	06	06
09	Not Used	N/A	N/A	N/A	N/A
10	Not Used	N/A	N/A	N/A	N/A
11	Emergency opening / Emergency closing (EUD-3)	A	A	A	A
12	Electronic / Mechanical emergency unit	A	A	A	A
13	Monitoring of the emergency unit	A	A	A	A
14	Emergency function with the program selector,PS-/PSP, in "Off"	A	A	A	A
15	Partial opening width	05	08	12	05
16	Hold open time for partial opening	02	02	02	02
17	"Auto width" hold open time	02	02	02	02
18	Impulse time from "Auto width" to full opening	15	15	15	15
19	Resume time for "Auto width" after closing, from full opening	05	05	05	05
20	Run program incremental (opening)	00	10	15	00
21	Carriage lock time delay	00	00	00	00
22	Electromechanical lock, locked without/with power	A	A	A	A
23	Hold force on closed door	02	05	08	00
24	Emergency opening impulse connected	A	A	A	A
25	Interlocking / Synchronizing, between two doors	A	A	A	A
26	C-switch distance (Eye-Cue Presence) (distance from closed)	35	50	65	05
27	Motor direction	b	b	b	b
28	Number of operator cycles performed x 10,000	00	00	00	00
29	Number of operator cycles performed x 100	00	00	00	00
30	Active run program	02	03	03	02
98	Run program (closing) Factory pre-programmed values Copying and transferring of values between operators	02	03	03	02
99	"DO NOT USE"	N/A	N/A	N/A	N/A

Note: PMD values displayed are metric.

1 inch = 2.54 (cm) centimeters
1 inch = .254 (dm) decimeters
1 pound force = 4.45 (N) newtons

Note: The above typical door settings are for <u>REFERENCE ONLY</u>. All door settings must be adjusted individually per site installation conditions.

Door Weight			Glass Weight	
Door	Bi-part	Single-slide	Size	Formula
*Light door	70 lbs per leaf	100 lbs	1/4" Glass	3.5 lbs. per sq. ft.
*Medium door	130 lbs per leaf	200 lbs	1/2" Glass	7.0 lbs. per sq. ft
*Heavy door	180 lbs per leaf	300 lbs	5/8" / 1" Thermo-glass	7.0 lbs. per sq. ft.

Monitoring of activation units

Function No. 09 Presence sensor.

In most cases it is required that the door operator should be equipped with **PRESENCE** and **STOP** functions.

PRESENCE function means that presence sensors are installed in the door opening. If a sensor is activated when the door is fully open or during the closing cycle, the door will stay open or reverse to the open position as long as the sensor is activated.

STOP function is used e.g. when the door is equipped with a break-out panic unit. The **STOP** function is normally obtained by means of a magnetic switch. If the switch is deactivated (closed contact) the door will immediately stop.

The **PRESENCE** and **STOP** activation units are connected to the terminals 8, 9 and 13, 14 on the terminal block TB1.
The impulse signal given is closed (make) contact.

Function No. 10 Unused

Value A = Factory set
b = Unused

Pre-programmed run programs (Function 98) See also "Start-Up".

To facilitate the adjustment, pre-programmed basic values for six different run programs (operating performance) can be selected with the function **98** and any of the values **01 → 06.**
When selecting the values in the order from "01 to 06" the performance of the operator is gradually increased and can be adapted to the valid operating conditions (see "Start-Up", Adjustment and checking).

Programming the run programs into the CUD-3

1. Plug the PMD into the CUD-3 on the operator.
2. Select function **98** and any of the values **01 → 06**, but always use the lowest run program, 01-02 for pedetrian door applications.
3. Press the program button **P** within 5 seconds. The selected run program will now be transferred from the PMD to the CUD-3.

Copying of programmed values (Function 98) See also "Start-Up".

This function is used to facilitate the adjustment by copying the values from one smoothly running operator to another one with similar operating conditions. The values can be copied in two levels.

- Copying of user values only (functions 01–27)
- Copying of all values

Copying and transferring of the user values only (functions 01-27)

CUD-3 → PMD

1. Plug the PMD into the CUD-3 on the operator having the values to be copied.
2. Select function **98** and value **99.**
3. Press the program button **P** within 5 seconds. Only the user values will now be transferred from the CUD-3 to the PMD.

PMD → CUD-3

1. Plug the PMD into the CUD-3 on the operator receiving the copied values.
2. Select function **98** and value **98.**
3. Press the program button **P** within 5 seconds. The user values will now be transferred from the PMD to the CUD-3 on the new operator.

Copying and transferring of all values

CUD-3 → PMD

1. Plug the PMD into the CUD-3 on the operator having the values to be copied.
2. Select function **98** and value **97.**
3. Press the program button **P** within 5 seconds. All values will now be transferred from the CUD-3 to the PMD.

PMD → CUD-3

1. Plug the PMD into the CUD-3 on the operator receiving the copied values.
2. Select function **98** and value **96.**
3. Press the program button **P** within 5 seconds. All values will now be transferred from the PMD to the CUD-3 on the new operator.

Start-Up

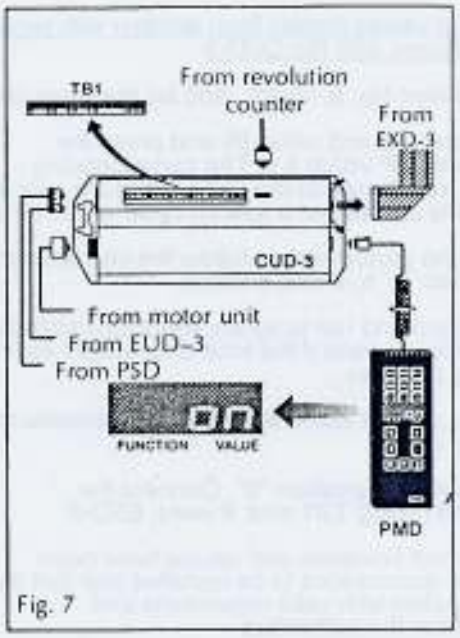


Fig. 7

After installing the operator, the start-up and adjustment must be carried out in the following order (see also electrical connections).

1. Unplug the terminal block TB1 and the extension unit EXD-3, if installed.
2. Switch on the power (main switch on PSD to position "1").
3. Plug the PMD contact into the control unit CUD-3. The display will first show the remaining "value" of the service life and after a while "00". Thereafter the value display will show the actual status or error code e.g. *"on"*.
   Note! The PMD is not ready for use until a status or error code is displayed.
4. The program selector, PS-/PSP, if equipped, is now out of operation and the door functions can be selected with the PMD program selector (push-button set). If buttons, 1-9, are selected the factory pre-programmed values (speeds, hold open times etc.) on the CUD-3 will be used when pressing the impulse button I. The functions of the program selector, PS-/PSP, are resumed approximately 30 sec. after the removal of the PMD.

Adjustment and checking

The operator is pre-programmed with six different run programs 98/01-06. When selecting the values in the order from "01 to 06" the performance (acceleration/braking) of the operator is gradually increased. The value 98/01 (minimum performance) is factory pre-programmed.

The adjustment can be carried out in two ways.

1. Programming of any of the six pre-programmed run programs (98/01-06) into the CUD-3
   a. Press the button No. 5, "Auto", and **let the door close*.**
   b. Press the impulse button I. The operator carries out a cycle open/close with the factory set value 98/01.
   c. To change the performance select function 98 and an appropriate value. Press the program button **P** within 5 sec. The corresponding values are transferred to the CUD-3. The operator automatically carries out a search cycle within 10 s.
   d. Press the impulse button I and study the door movement. If the selected value, is too low for, the door configuration and weight, the doors may stop during low speed and status code 27 will be displayed on the PMD. If the value is too high, the change-over from high to low speed may become too hard.
   e. Study the door movement and adjust the functions to the values required for a smooth and reliable door operation.
   f. Measure the stopped closing force to determine it is within applicable safety standards. (i.e. ANSI 156.10)

* If the door does not open and close, but first closes and then opens and remains in open position, adjust function 27 (motor direction) and press the reset button R.

NOTE: Always use the lowest run program 01-02 for pedestrian door applications.

Total door weight	Run Program value	Max. high speed close
up to 150 lbs (68 kg)	01	15-30 cm/s (6-12 in/s)
	02	15-30 cm/s (6-12 in/s
151- 200 lbs (70-90kg)	01	15-25 cm/s (6-10 in/s)
	02	15-20 cm/s (6-8 in/s)
201-300 lbs (92-135kg) single-slide applications	02	consult factory
	03	
301-450 lbs (138-200kg) custom and industrial applications consult factory	04	consult factory
	05	
	06	

NOTE: Pedestrian Door SafetyStandard

Maximum closing force: 30 lbs.
Maximum high speed closing: (door weights up to 160 lbs) 12" per/sec.

2. Programming of values copied from another with similar operating conditions, into the CUD-3.

   a. Press the button No. 5, "Auto", and **let the door close.**

   b. Select function 98 and value 96 and press the program button P within 5 s. The corresponding values are transferred to the CUD-3 and the operator automatically carries out a search cycle within 10 s.

   c. To change the performance, follow the instructions under item No. 1; **c, d** and **e** above.

   Note! - The speed and run program limitations stated in the table are valid if the total door weight exceeds 180 kg (400lbs).

   The door must stand still when adjustments are carried out.

3. Set the main switch to position "0". Connect the accessories and replug TB1 and, if used, EXD-3.

4. Check that correct functions and values have been selected for the accessories to be installed and that the installation complies with valid regulations and requirements from the authorities.

Note! If the operator is equipped with emergency unit CUD-3, it is necessary that test 99-03 be performed with approved result, i.e. error code "53" must not display (see pg. 25). Furthermore, a function control must be carried out in the following way:
1.) Set the program selector to "Auto".
2.) Switch off the main power.
Now the door(s) must move to the fully open position. These tests must be performed after installation and after every application on the PMD.

Status codes

When the PMD is connected, the value display continuously shows a status code for the present active impulse.

Status	Status code
Operation OK	on
Search cycle (open/close)	10
Inner impulse	11
Outer impulse	12
Door opened by open/close impulse on EXD-3	13
Key impulse	14
Pharmacy impulse	15
Interlocking impulse	16
Presence impulse -1	17
Presence impulse -2	18
Not used	19
Not used	20
Stop impulse -1	21
Stop impulse -2	22
Open/close impulse on EXD-3 required	23
Standby supply/EUD-3 active	24
Emergency opening impulse	25
Overtemperature	26
Door blocked	27

Error codes (see also "Troubleshooting")

If the operator does not function properly depending on any of the reasons below, an error code will be flashing on the value display. If more than one reason for the malfunction is found, the highest code will be displayed. After remedy the second highest code will be displayed etc.

Reason	Error code
Door opened without impulse	50 flashing
Presence/Stop detection unit defective	51 flashing
Inner activation unit defective	52 flashing
Emergency unit EUD-3 defective	53 flashing
Mechanical emergency unit PFR-3 defective	54 flashing
Motor direction error	55 flashing
Control unit defective	56 flashing
Revolution counter defective/Overspeed detection	57 flashing
Emergency opening impulse button defective	58 flashing
Programming module PMD defective	69 flashing
Communication error PMD ↔ CUD-3	70 flashing

System test codes (function 99)

In addition to the error codes shown on the value display during operation, further direct selection tests can be carried out on different parts of the system as follows.

NOTE: These tests are not to be performed without first contacting the factory.

Select function **99** and any of the values **01-07** on the PMD. Press the program button **P**, and the test corresponding to the selected value will be performed. If the test is unsuccessful an error code will be flashing on the value display.

Value	Test of	Error code
01	Presence/Stop detection units	51 flashing
02	Inner activation unit	52 flashing
03	Electronic emergency unit EUD-3	53 flashing
04	Mechanical emergency unit PFR-3	54 flashing
05	External program selector	see table below
06	Motor, visual test "	—
07	Revolution counter	57 flashing

"Close the door(s) before commencing the test! The motor runs approx. 1 s in the opening direction and then closes the door(s) again.

Test of external program selector (function 99, value 05)

Program selector setting		Code *)
"Off"	--	01
"Exit partial"	-ł-	02
"Exit"	-ł-	03
"Auto partial"	-┤-	04
"Auto"	-┤-	05
"Auto width"	-┤├-	06
"Open"	- -	07
"Error" (wrong connection)		08

*) The code figures will be shown for 5 seconds.

External error indication

External error indication is obtained if a lamp or a buzzer is connected to the extension unit EXD-3 (see separate connection drawing).

Troubleshooting

Always start any troubleshooting by checking the mechanical and electrical parts of the operator in the following order (see also connection drawing).

Note!
Before performing any replacements, the main power switch on the power supply unit is to be set to position "0" and then the 120 volt connector C1 (see Fig. 1) should be disconnected along with all other necessary plugs.

The control unit, emergency unit and power supply unit are fixed with brackets in the drive unit. At the replacement the complete unit is to be loosened from the brackets and replaced.

1. Mechanical checking and remedies

Set the main switch on the power supply unit to position "0". Pull the door leaf manually and check that the door can be easily moved over the complete sliding track/floor guide. If the door leaf stops or is hard to move, the reason may be sand, stones, rubbish etc. in the floor guide. The door leaf may also be jamming on the floor or on the bottom weather stripping. Clean the floor guide, adjust the door leaf height/ depth or take other necessary measures until the door leaf is running smoothly when manually operated.

2. Connect the PMD to the CUD-3

Set the main switch on the power supply unit to position "1".

Symptom	Remedies
No lights on the PMD-display.	Check the main switch and fuses (F1, F2). If the fuse F1 (5AT) has blown, see the limitations stated in the table on page 25.

3. Check if any error code is flashing on the PMD display

If the operator does not function properly depending on any of the reasons below, an error code will be flashing on the PMD display. If more than one reason for the malfunction is found, the highest code will be displayed. After remedy the second highest code will be displayed, etc. Always set the main switch to position "0" before replacement.

Reason	Error code	Remedies
Door opened without impulse	50 flashing	Check why the door moved
Presence/Stop detection unit defective	51 flashing	Replace the presence detection unit
Inner activation unit defective	52 flashing	Replace the activation unit
Electronic emergency unit EUD-3 defective	53 flashing	Check EUD-3 fuse/replace EUD-3
Mechanical emergency unit PFR-3 defective	54 flashing	Check the emergency unit PFR-3
Motor direction error	55 flashing	Replace the control unit or motor
Control unit defective	56 flashing	Replace the control unit
Revolution counter defective/Overspeed detection	57 flashing	Replace the motor
Emergency opening impulse button defective	58 flashing	Check the emergency impulse button
Programming module PMD defective	69 flashing	Replace the PMD
Communication error PMD ↔ CUD-3	70 flashing	Check the connections

Note!
After remedy, a direct selection system test (function 99) can be carried out on some of the units stated in the table. Within this system test a separate test of the external program selector can also be selected (see item 5, page 30).

4. Check the status code on the PMD display

The PMD display continuously shows the following status codes during the operation. These status codes are not error codes but show the present active impulse. If any of the status codes are constantly displayed the corresponding unit has to be checked, and if necessary remedied or replaced. Always press the **reset** button **R** after remedy/replacement.

Status code	Status	Remedies
on	Operation OK	
10	Search cycle running (open/close)	Let the door finish its cycle
11	Inner impulse is active	Check the impulse input
12	Outer impulse is active	Check the impulse input
13	Door opened by Open/Close impulse on EXD–3	Check the open/close input on the EXD–3
14	Key impulse is active	Check the impulse input
15	Pharmacy impulse is active	Check the impulse input
16	Interlocking impulse on EXD–3 is active	Check the connections
17	Presence impulse -1 is active	1. Check that correct impulse type is selected on the PMD, function 09. 2. Check the photocell/EyeCue output.
18	Presence impulse -2 is active	"
19	Not used	—
20	Not used	—
21	Stop impulse -1 is active	"
22	Stop impulse -2 is active	"
23	Open/close impulse on EXD–3 required	Give impulse on the open/close push-button
24	Standby supply/EUD–3 active	Check the EUD–3
25	Emergency opening impulse is active	Check the emergency impulse button
26	Overtemperature	—
27	Door blocked	Check for obstacles

After remedy or replacement the operator has to be checked as follows:

1. Study the door movement and adjust the functions to the values required for a smooth and safe door operation.
2. Check that correct functions and values have been selected for the accessories to be installed and that the installation complies with valid codes and standards.

5. PMD/System test codes (function 99)

NOTE: These tests should not be performed without first consulting the factory.

Select function **99** and any of the values **01-07** on the PMD. Press the program button **P**, and the test corresponding to the selected value will be performed. If the test is unsuccessful an error code will be flashing on the PMD-display.

Value	Test of	Error code
01	Presence/Stop detection units	51 flashing
02	Inner activation unit	52 flashing
03	Electronic emergency unit EUD-3	53 flashing
04	Mechanical emergency unit PFR-3	54 flashing
05	External program selector	see table below
06	Motor, visual test [1]	—
07	Revolution counter	57 flashing

[1] Close the door(s) before commencing the test! The motor runs approx. 1 sec. in the opening direction and then closes the door(s) again.

Test of external program selector (function 99, value 05)

Programme selector setting		Code [*]
"Off"	--	01
"Exit partial"	-⊦-	02
"Exit"	-⊦-	03
"Auto partial"	⌐⊦-	04
"Auto"	⌐⊦-	05
"Auto width"	⌐⊦-	06
"Open"	- -	07
"Error" (wrong connection)		08

*) The code figures will be shown for 5 seconds.

1
2
3
4
5
6
6a
6b
6c
7
8
9
10
11
11a
11b
11c
12
12a
12b
13
14
14a
14b
15
15a
16
17
19
20
21
22
4
4a
4b
6c
7

Power-Glide AMD / Ez-Fit EMD SPARE PARTS LIST Pg. 1

ITEM #	PART NUMBER	DESCRIPTION
1	04-15-548726	ASSEMBLY, DRIVE MOTOR UNIT AMD/EMD
2	04-02-654935	CONTROL UNIT, AMD/EMD, CUD-3
3	04-02-600028	EXTENSION UNIT, EXD-3 AMD/EMD
4	04-02-692064	LOCK, FAILSECURE, AMD/EMD BI-PART
	04-02-692065	LOCK, FAILSAFE, AMD/EMD BI-PART
	04-02-692066	LOCK, FAILSECURE, AMD-RH/EMD-LH
	04-02-692067	LOCK, FAILSECURE, AMD-LH/EMD-RH
	04-02-692068	LOCK, FAILSAFE, AMD-RH/EMD-LH
	04-02-692069	LOCK, FAILSAFE, AMD-LH/EMD-RH
4a	04-03-654423	FITTING, LOCK, AMD/EMD
4b	04-03-654595	FITTING, LOCK, (CGL-1/CGL-2)
5	04-02-600027	EMERGENCY UNIT, EUD-3 AMD/EMD
6	04-02-654481	POWER SUPPLY, PSD-120 AMD/EMD
6a	24-02-654658	FUSE, 2AMP, TIME DELAY, 2AT, 120V (F2)
6b	04-02-654659	FUSE, 5AMP, TIME DELAY, 5AT, 120V (F1)
6c	04-02-713344	HOLDER, FUSE 120V
7	04-15-548163	ASSEMBLY, IDLER PULLEY, BELT DRIVE
8	04-21-701239	TRACK, CARRIER ROLLER GUIDE
9		
10	04-03-544958	CLIP, RETAINING HEAD, TRACK
11	04-15-548377	KIT, CARRIER MOUNTING AMD/EMD
11a	04-15-832376	ASSEMBLY, CARRIER GUIDE WHEEL
11b	04-15-832440	ASSEMBLY, ANTI-RISE WHEEL
11c	04-09-830374	NUT, CARRIER WHEEL FITTING
12	04-15-548731	KIT, DRIVE BARS, AMD/EMD, BI-PART
	04-15-548732	KIT, DRIVE BAR, AMD/EMD, SINGLE SLIDE
12a	04-03-548694	BAR, DRIVE (44 3/32" LONG)
12b	04-20-654461	ABSORBER, TRANSMISSION
13	04-20-548722	TOOTHBELT, (DA DRIVE UNIT) - USE FOR 8 '- 15' BI-PART PACKAGES.
	04-20-548723	TOOTHBELT, (DB DRIVE UNIT) - USE FOR 8 '- 8'6" SINGLE SLIDE PACKAGES. FOR OTHER SIZES, CONSULT FACTORY
14	04-05-832372	STOP, DOOR
14a	04-20-830176	ABSORBER, DOOR STOP
15	04-15-832413	KIT, DOOR STOP - LH
	04-15-832414	KIT, DOOR STOP - RH
15a	04-15-645431	ARM, LOCKING - LH
	04-15-654430	ARM, LOCKING - RH

ITEM #	PART NUMBER	DESCRIPTION
16	04-15-549043	KIT, CLAMPING, AMD/EMD
17	04-01-701255 04-01-701265	EXTRUSION, REMOVABLE COVER (CLEAR-PER FT) EXTRUSION, REMOVABLE COVER (BRONZE-PER FT)
18		
19	04-01-700806 04-01-700906	EXTRUSION, COVER, FIXED AMD (CLEAR-PER FT) EXTRUSION, COVER, FIXED AMD (BRONZE-PER FT)
20	04-01-700805 04-01-700815	EXTRUSION, LOWER EDGE, AMD FBO (CLEAR-PER FT) EXTRUSION, LOWER EDGE, AMD FBO (BRONZE-PER FT)
21	19-01-007 19-01-008 18-01-008 18-01-009	PANIC CARRIER, AMD - CLEAR PANIC CARRIER, AMD - BRONZE PANIC CARRIER, EMD - CLEAR PANIC CARRIER, EMD - BRONZE
22	04-01-700900 04-01-700816	EXTRUSION, LOWER EDGE, AMD FSL (CLEAR-PER FT) EXTRUSION, LOWER EDGE, AMD FSL (BRONZE-PER FT)
23	50-15-560CL 50-15-560DB 50-15-561CL 50-15-561DB	KIT, OFFSET PIVOT, R.H. CLR. KIT, OFFSET PIVOT, R.H. DK.BZ. KIT, OFFSET PIVOT, L.H. CLR. KIT, OFFSET PIVOT, L.H. DK.BZ.