



FDC AUTOMATIC SWING DOOR

FDC DECORATIVE OPERATOR

OPERATION AND MAINTENANCE
MANUAL

DISTRIBUTED BY:

1. Introduction

1.1 General remarks

This manual for the FDC swing door drive unit:

- Supplies precise instructions for the assembly, the commissioning, the maintenance and troubleshooting.
- Is destined for the specialized personnel from the automatic door and electrotechnical trades, who have been accordingly authorized by the relevant authorities.
- Uses the following signs in order to point out certain dangers and important remarks:



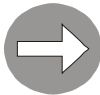
Warning

Involving danger to life and limb.



Caution

A situation where material could be damaged or the function impaired.







Note

Hints which facilitate the work.

- Will be supplied together with the drive unit.



1.2 Safety



	<p>The FDC drive unit for swing doors has been designed exclusively for operating automatic swing doors. The manufacturer resp. the distributor declines all responsibility for any applications outside of the defined application objectives resp. limits.</p> <p>Prior to the first commissioning of the installation, and at least once a year, the functional safety of the installation must be checked by a competent specialist (AADAM Certified).</p>	
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	<p>Regular maintenance is absolutely necessary in order to guarantee a long lifetime and a safe operation of the swing door drive unit. Maintenance must be carried out by adequately trained specialists. Should it be neglected or made by incompetent persons, the manufacturer resp. the distributor declines all responsibility for any resulting damages or consequences. We recommend that you engage in a maintenance contract with your distribution partner.</p>	
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Each maintenance, troubleshooting and checking which has been carried out must be documented in work order or maintenance chart

Any subsequent interventions or modifications of the FDC swing door drive unit may only be carried out by an authorized and specialized technician.

	<p>Should it not be possible to repair immediately any malfunctions which might jeopardize the safety of the users, the operator of the installation must be informed and the door be taken out of operation if necessary. Repair work shall be carried out as soon as possible.</p>	
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	<p>The cutting and pinching zones existing on the hinge side must be appropriately covered by installer or customers.</p>	
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	<p>A faultless functioning of the products can only be guaranteed on condition that they are used in conjunction with the original Gildor accessories (control elements, safety elements....), otherwise declines all responsibility for a safe and reliable functioning of the installation.</p>	
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1.3 Product description

The FDC swing door drive unit opens and closes the door wing via a rod assembly.

Normal function

Motorized opening → controlled closing by means of spring pressure while the short-circuited motor acts as a fixed damper.

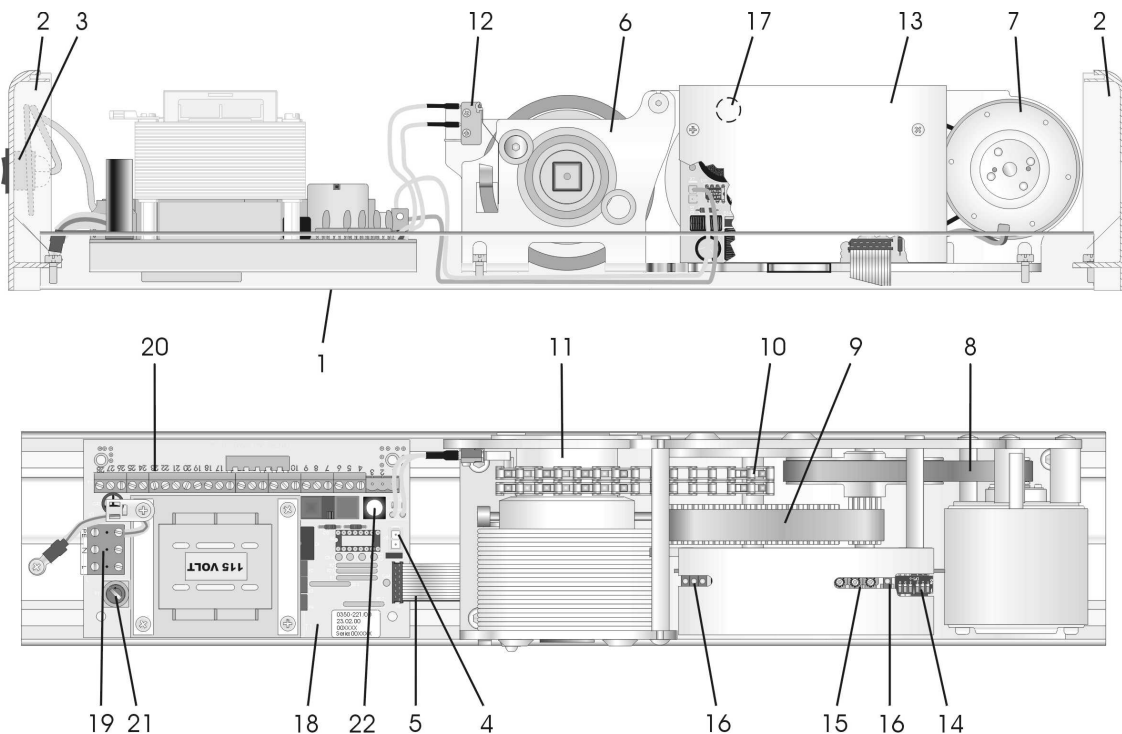
In the event of a power failure

The door is closed from any position by spring pressure in a controlled manner; in the case, too, the motor functions as a fixed damper according to the generator principle.

The FDC swing door drive unit consists of the following elements:

- | | |
|-----------------------------------------------------------------|----------------------------------------------|
| 1 Main structural profile | 12 Door position monitoring switch |
| 2 Side cover | 13 Control (with logic servo-unit LOSE) |
| 3 Programs switch 1-0-2 | 14 DIL switch |
| 4 Power cable | 15 Potentiometer |
| 5 Logic cable | 16 LED (status displays) |
| 6 Drive module | 17 Buzzer |
| 7 Direct current motor with interference suppressor electronics | 18 Mains power terminal unit |
| 8 Poly-V belt transmission | 19 110V terminal |
| 9 Toothed belt transmission | 20 Terminals for control and safety elements |
| 10 Chain transmission | 21 Fuse |
| 11 Output shaft | 22 RESET button |

Covering profile (not shown in the illustration)
Rod assemblies (not shown in the illustration)

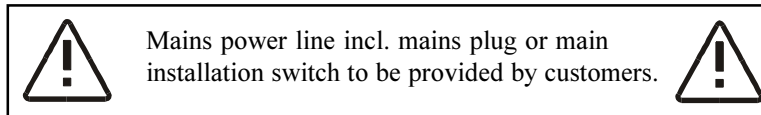


1.4 Technical data

Mains power supply:	115 V, 60 Hz, 10A
Power consumption motor:	< 100 W
Ambient temperature:	5° up to +158° F
The FDC drive unit may only be used in dry rooms	maximum relative humidity of air 65%
Protection rating:	IP 30, provided that the holes in the structural profile are covered during installation.
Performance and application range:	DIN 3 - 5 (DIN 6 limited)
Door opening angle:	adjustable between 70 - 95°
Opening speed:	adjustable between 30 - 100%
Closing speed:	when power-operated (110volt applied) adjustable between 30 -100%. In the event of a power failure: fixed
Hold-open time:	adjustable between 1 - 30 s
Driving power:	adjustable between 60 - 100%

1.5 Delivery condition

The FDC swing door drive unit is completely packed upon delivery (including the fixing material). The rods and the fittings are included in a separate package.



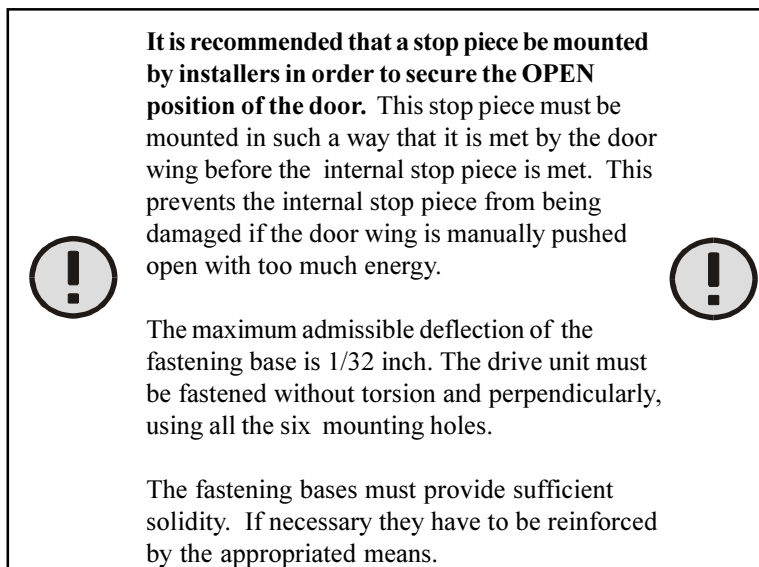
2. Installation

2.1 Checking prior to installation

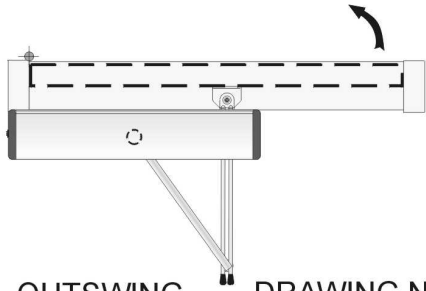
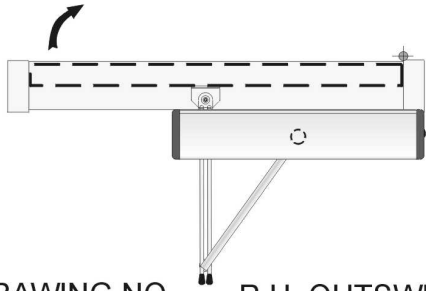
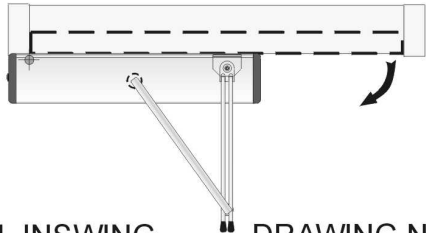
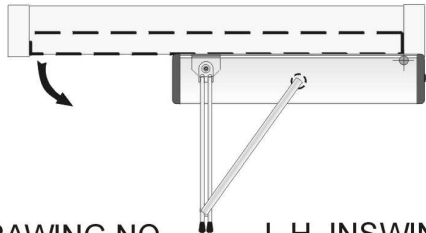
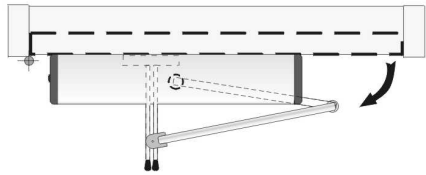
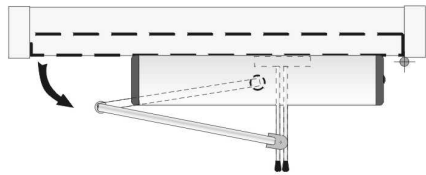
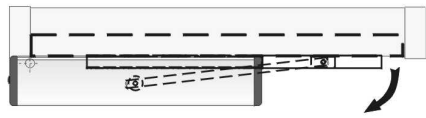
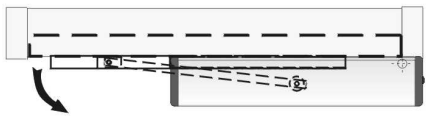
Unwrap the drive unit, the rods as well as the accessory and fixing material and keep it ready for installation.

Check the drive unit for possible transport damages.

Check the free running movement of the door wing. Should it fail to move smoothly and silently, or if it is out of balance (i.e. it opens or closes by itself), these problems must be eliminated first!



2.2 General view installation versions

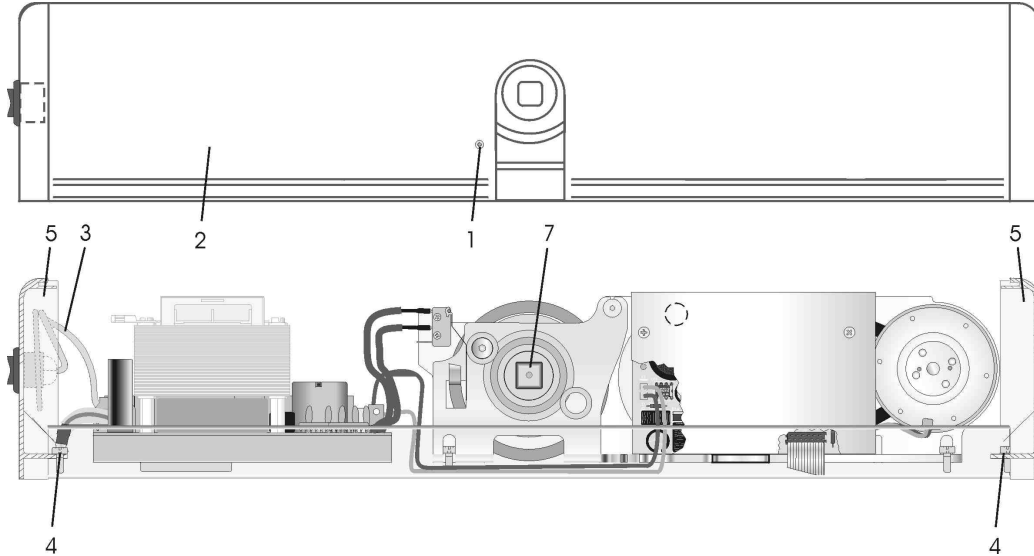
 <p>L.H. OUTSWING HEADER MOUNTED NORMAL RODS</p> <p>DRAWING NO. P11.3.21</p>	 <p>DRAWING NO. P11.3.21</p> <p>R.H. OUTSWING HEADER MOUNTED NORMAL RODS</p>
 <p>R.H. INSWING DOOR MOUNTED NORMAL RODS</p> <p>DRAWING NO. P11.3.22</p>	 <p>DRAWING NO. P11.3.22</p> <p>L.H. INSWING DOOR MOUNTED NORMAL RODS</p>
 <p>R.H. INSWING HEADER MOUNTED PARALLEL RODS</p> <p>DRAWING NO. P11.3.23</p>	 <p>DRAWING NO. P11.3.23</p> <p>L.H. INSWING HEADER MOUNTED PARALLEL RODS</p>
 <p>R.H. INSWING HEADER MOUNTED SLIDING RODS</p> <p>DRAWING NO. P11.3.24</p>	 <p>DRAWING NO. P11.3.24</p> <p>L.H. INSWING HEADER MOUNTED SLIDING RODS</p>

2.3 Installation of the drive unit (Decorative Unit)

- Remove the locking screw (1) and pull the covering profile (2) away from the drive unit in horizontal direction.
- Pull out the plug of the programs switch cable (3).

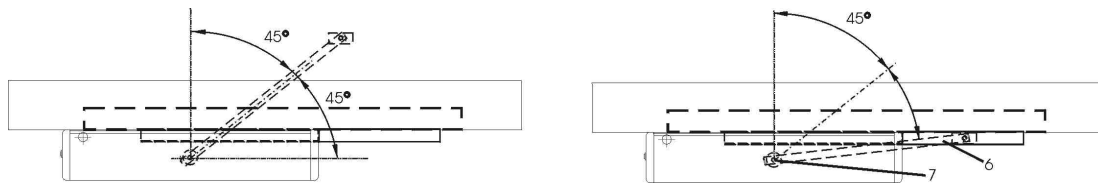
Depending on the assembly situation of the drive unit, it may be advisable to install the program switch on the opposite side in order to guarantee an optimal operating facility. Should this be required, the work must be carried out according to chapter 3.3.

- Loosen two binding screws (4) on each side cover (5) and remove the covers by pulling them outward.



Sliding rods

When installing the sliding rods, make sure that the rotating arm (6) is mounted to the operator before the drive unit is installed. The sliding rods must be screwed down to the output shaft (7), its position being inclined by 45° with regard to the closing edge of the door.




- Position the drive unit as correct for the assembly, according to application drawing P11.3.24, and screw it down according to the specifications. The rotation arm (6) is prestressed by this process and must be carefully pressed against the door wing.


Normal rods + parallel rods

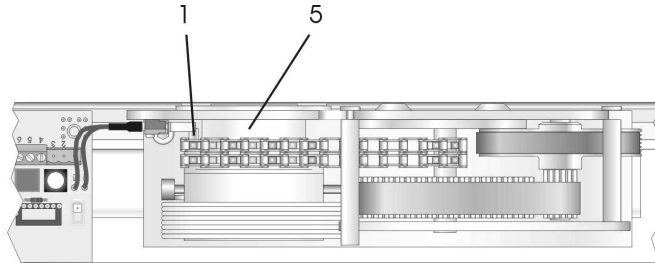
- Position the drive unit as correct for the assembly, according to application drawing P 11.3.21, 22 or 23 and screw it down according to the specifications.

2.4 Installation of the normal rods

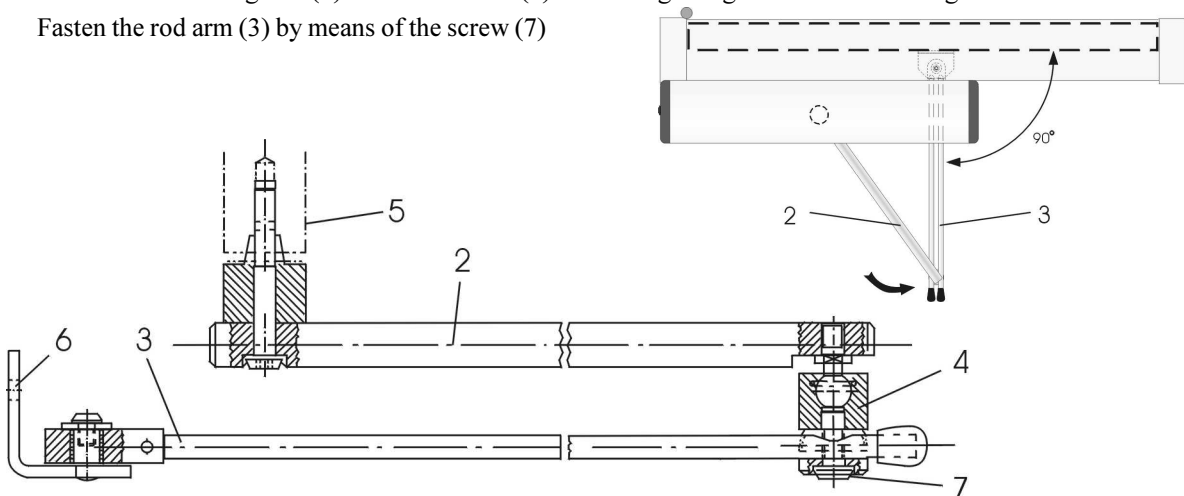



The internal stop screw (1) for the torsion spring must not be removed! **It is recommended that a permanent stop piece be mounted by installers in order to secure the OPEN position of the door.** This stop piece must be mounted in such a way that is met by the door wing before the internal stop screw butts against the internal stop piece.






- Close the door.
- Separate the rotating arm (2) from the rod arm (3) by dismantling the ball and socket joint (4).
- When the door is closed, position the rotating arm (2) at a right angle to the door wing and screw it against the output shaft (5).
- Fasten the rod arm (3) including the door connection angle (6) onto the door wing or the lintel, depending on the situation. Exact positioning according to application drawing P 11.3.21 resp. P 11.3.22.
- Slightly loosen the screw (7) of the rod arm (3) and snap in the ball and socket joint (4) which connects the rotating arm with the rod arm.
- Prestress the rotating arm (2) until the rod arm (3) forms a right angle with the door wing.
- Fasten the rod arm (3) by means of the screw (7)






Check the motional sequence of the door wing:


- Sense of rotation of the drive unit.
- the rods must not touch.
- check the spring-powered.





- Tighten all the screws.

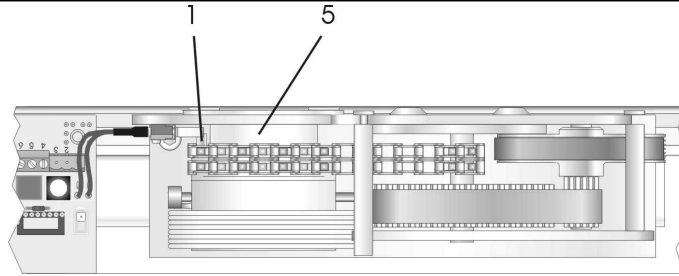


If the rod arm (3) protrudes out too much, it can be cut off as necessary.

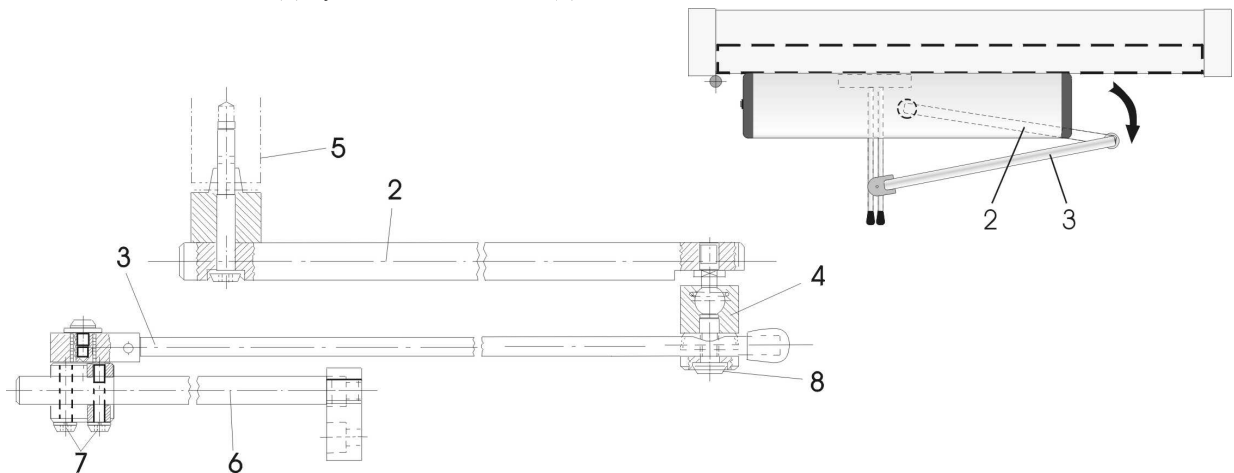



2.5 Installation of the parallel rods


 The internal stop screw (1) for the torsion spring must not be removed! **It is recommended that a permanent stop piece be mounted by installers in order to secure the OPEN position of the door.** This stop piece must be mounted in such a way that it is met by the door wing before the internal stop screw butts against the internal stop piece.
 




- Close the door.
- Separate the rotating arm (2) from the rod arm (3) by dismounting out the ball and socket joint (4).
- When the door is closed, position the rotating arm (2) parallel to the door wing and screw it against the output shaft (5), according to application drawing P 11.3.23.
- Screw the wing bar (6) against the door wing, according to application drawing P 11.3.23.
- Slightly unscrew the screws (7) of the wing bar (6) and adjust measure D according to application drawing P 11.3.23. Then tighten the screws (7).
- Slightly loosen the screw (8) of the rod arm (3) and snap in the ball and socket joint (4) which connects the rotating arm with the rod arm.
- Prestress the rotating arm (2) until the measure 3 1/4" has been reached (also see application drawing P 11.3.23.).
- Fasten the rod arm (3) by means of the screw (8).





 Check the motional sequence of the door wing:


- Sense of rotation of the drive unit.
- The rods must not touch.
- Check the spring-powered.





Tighten all the screws.




 Note:

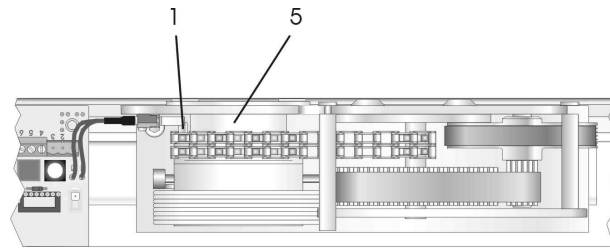
- If the rod arm (3) protrudes out too much, it can be cut off as necessary.



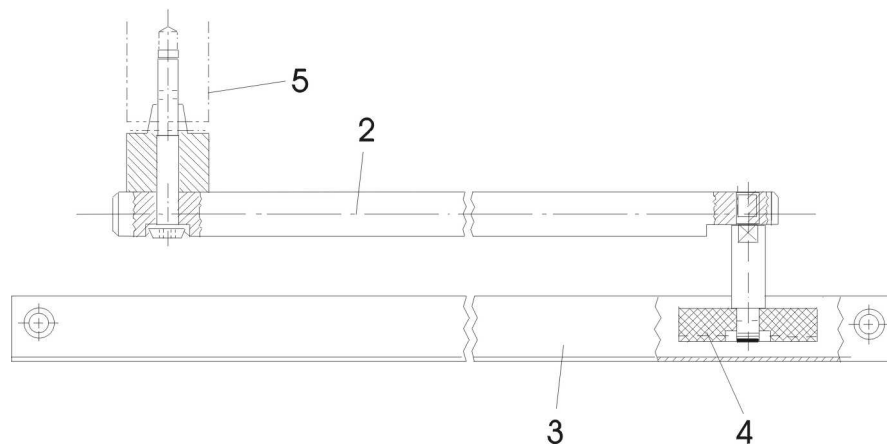
2.6 Installation of the sliding rods



 Prior the installation of the drive unit, the rotating arm (2) must be screwed onto the output shaft (5), according to chapter 2.3 and to application drawing P 11.3.24! 

 The internal stop screw (1) for the torsion spring must not be removed! **It is recommended that a stop piece be mounted by customers in order to secure the OPEN position of the door.** This stop piece must be mounted in such a way that it is met by the door wing before the internal stop screw butts against the internal stop piece. 



- The door is closed.
- Push the guideway rail (3) over the glider (4) and fasten it to the door wing according to application drawing P 11.3.24.





 Check the motional sequence of the door wing:
Sense of rotation of the drive unit.
The rods must not touch.
Check the spring-powered closing. 

- Tighten all the screws.

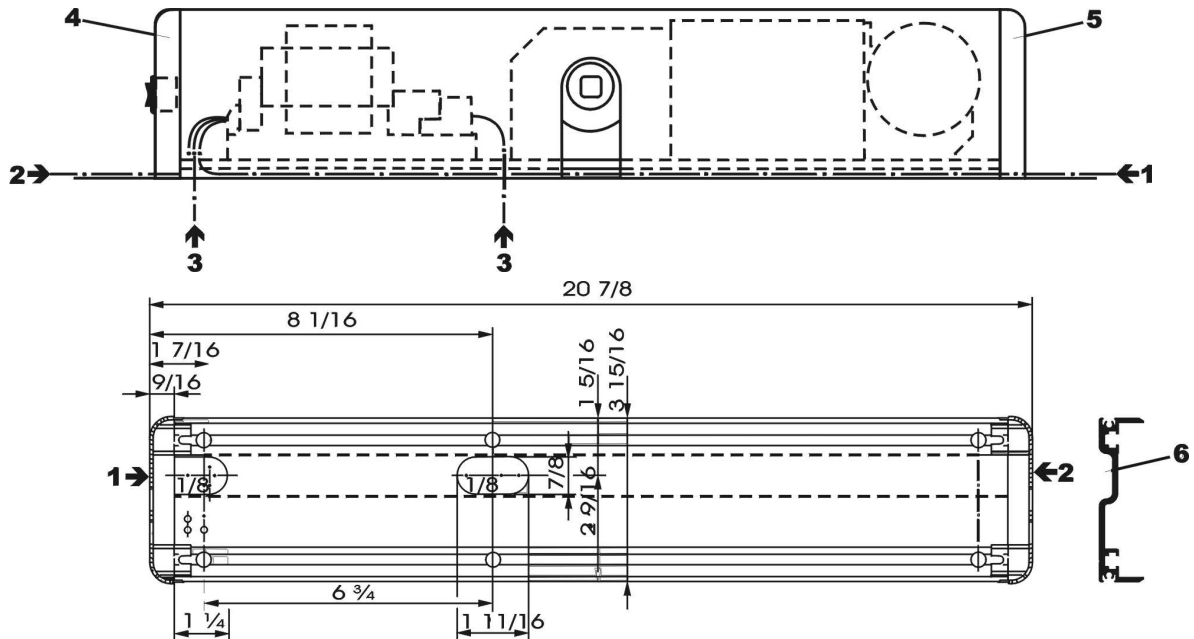
3. Electrical connections

3.1 Cable layout for header mounting (partly applicable for wing assembly)


 Due to the rotating elements, the 110 volt cables cannot be routed through the drive unit!
 A suitable fixing of the power cables outside of the drive unit must be provided.
 

Cabling versions

Drive unit installation according to respective application drawing



110 volt cable run A

- Cut out the side cover (4) for the cable entry.
- Insert the cable (2) directly.

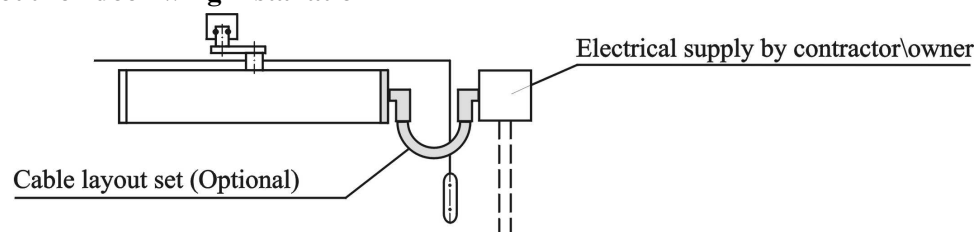
110 volt cable run B



- Cut out the side cover (5) for the cable entry.
- The cable (1) must be routed below the structural profile.
- Free passage (6) = 8 x 25 mm.

110 volt cable run C

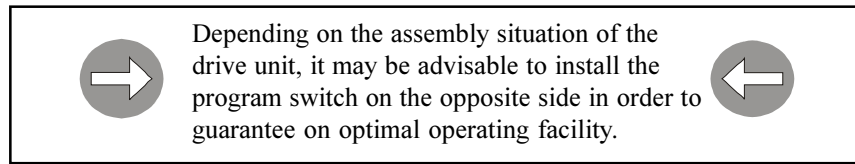
- Insert the cable (3) directly (concealed mounting).

3.2 Cable layout for door wing installation

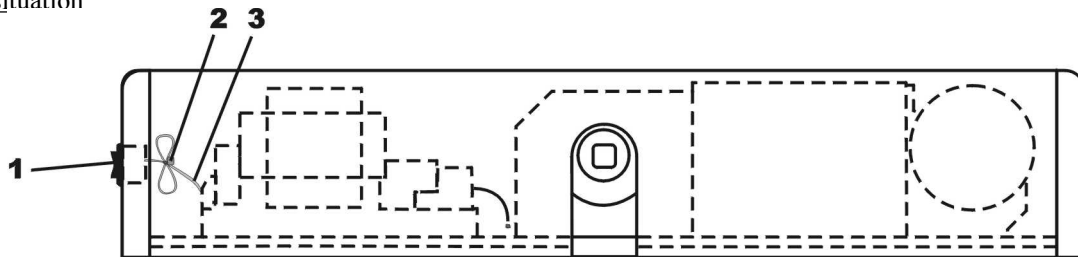



Note: For the cable layout for wing assembly, the cable layout set 150-310 including separate instructions is available.
 

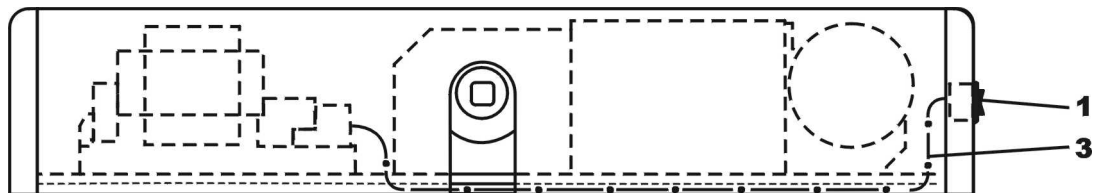
3.3 Arrangement of the internal program switch (Off/On/Hold open)



Initial situation



After modification



- Cut the cable clamp (2) open.
- Unplug the connector of the program switch cable (3).
- Mount the program switch (1) including the side cover on the opposite side of the drive unit.
- Route the program switch cable (3) below the structural profile of the drive unit and between the drive module and the NEKLE into the drive unit.
- Plug in the connector of the program switch cable (3).

.4 Control and safety elements

- Mount all the required control and safety elements at their respective place.
- Lead the cables of the elements up to the drive unit.
- Connect the cables according to the diagram.

3.5 Options

- Control panel BEDIS
 - as a temporary BEDIS
 - BEDIS with fixed installation
 - Instruction for adjustments. Manual: BEDIS OEM-A 115 V

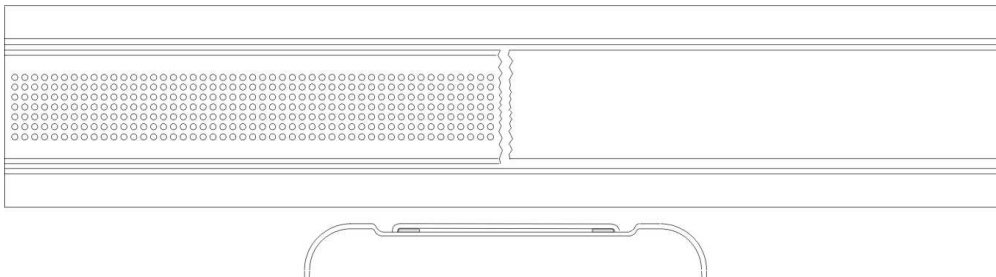


If an electric lock is provided, its connection rating is 24 VDC and max. 0,5 A (or 24 VAC/1.5 A). It should be designed for a duty cycle of 100%. The solenoid lock locks in all the program switch positions, including MANUAL. Following an opening command the solenoid lock unlocks for an impulse duration of 1 second.

Other function: see BEDIS instructions, settings 3rd level, softswitch 20.

- Decor sheet metal
 - with perforation pattern (standard)
 - varnished according to specifications

Before the decor metal sheet is glued in place, the respective surface on the covering profile must be cleaned and degreased.



3.6 EMERGENCY DISCONNECTION



If requested by the regulations, the emergency disconnecter button must be mounted at an easily accessible place next to the door. The mains supply line must be cabled via this button.



3.7 Mains power (110 volt input)



Before working on the drive unit, make sure that the mains cable is voltage-free!
the mains supply line including mains plug has to be provided by customers.



- Check if all the cables are correctly connected according to the diagrams.
- Connect the mains cable to the mains terminal.

4. Commissioning

4.1 Initial requirements

All the work described so far has been carried out.

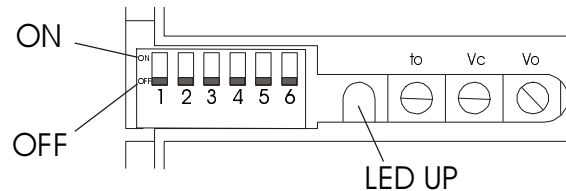
The required operating mode can be selected by means of DIL-switches and potentiometers, according to diagram.

Program switch position	1	=	AUTOMATIC
	2	=	MANUAL
	3	=	HOLD OPEN

Settings made at the factory:

DIL switch position all on OFF

Potentiometers	to	=	9 o'clock
	Vc	=	12 o'clock
	Vo	=	12 o'clock



If the standard opening widths and the normal rods are used, the DIL switch positions can be left unchanged. Otherwise they have to be adjusted as described in chapter 5.2.



4.2 Setting-up procedure

The setting-up procedure is carried out when the drive unit is taken into operation for the first time or after a RESET.



For the parallel and the sliding rods, it is imperative that DIL switch 2 be placed to ON.



The setting-up procedure is identified by a buzzer sounding at intervals of 1 second (see chapter 6.2) and carried out as follows:

- The door is moved to the CLOSED position by spring-power.
- The door opens at the slow setting-up speed up to the customer supplied stop piece in the OPEN position.
- Then a closing motion at setup speed is carried out until half the opening width is reached. During this process the mass of the door wing is measured and the switching points of any existing safety element STOP (SIH) are determined.



If a SIH (e.g. swing path side header mounted presence sensor) has been connected in the opening sense and if the door opens towards a wall, the SIH is automatically suppressed.



4.3 Starting the setting-up procedure

- Move the door wing to the CLOSED position.
- Switch on the mains power.
- LED 5 V lights up on the logic servo unit (LOSE).
- The installation is set up.
- Check all the program positions by means of the respective control elements.
- Check any possibly installed safety elements with regard to their function.
- Connect and remount the covering profile.

4.4 Interferences

The setting-up procedure can be affected by the following interferences:

- The electric lock is not correctly connected.
- The DIL switches are not correctly set.

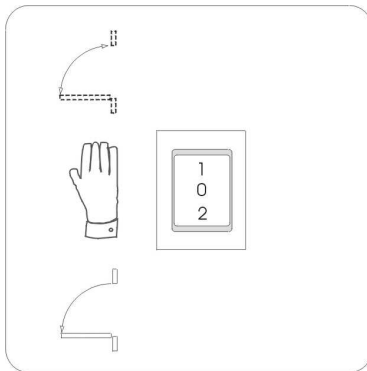
If the drive unit does not function at all, check the following points:

- Mains power switched on?
- Internal fuse defective?
- The programs switch is positioned on NIGHT.
- Required wire links inserted?
- Have all the control and safety elements been connected according to the diagram?
- Electric lock correctly connected (normally open/normally closed circuit)?
- Check the DIL switch positions.
- Check the SI-LED (SIH, SIR, NOT).
- Check the OK-LED (OKI, OKA, KEY).

5. Electrical settings

5.1 Program switch

The program switch is connected according to the diagram.

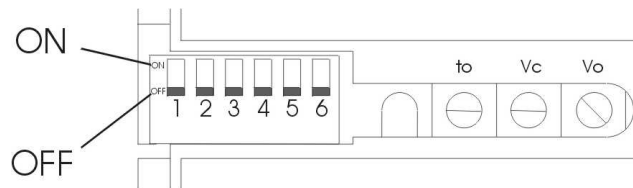


1	=	AUTOMATIC	Automatic operation. All the control elements are active.
0	=	MANUAL	The installation is not locked. Corresponds to the operating mode without mains power.
2	=	OPEN	The installation opens and remains in the open position.

5.2 DIL switches

No.	Position	Function	Rem.
1	OFF ON	No increase of the closing power Increase of the closing power on pos. AUTOMATIC	D
2	OFF ON	Setting-up with standard opening width and normal-rods Setting-up with customer-elected opening width or parallel resp. sliding rods	D
3	OFF ON	Program switch position 0 = MANUAL Program switch position 0 = NIGHT	D
4	OFF ON	Push-and-Go function active Push-and-Go function inactive	D
5	OFF ON	Low Energy class Low Energy class	D
6	OFF ON	Low Energy class Low Energy class	D

D = default (basic setting)



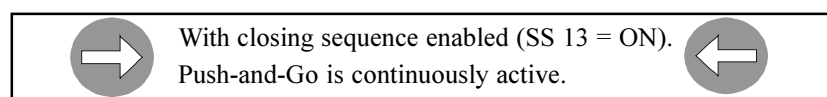
PUSHANDGO

Push-and-Go active = OFF

Push and go is also operative in the locked positions of the program switch. The response angle can be changed by means of DIL 1 and DIL 3.

Push-and-Go inactive = ON

The drive unit is not activated if the door is manually pushed open (manual mode). However an automatic opening can be initiated by means of the control elements (depending on the program switch position).



LOW-ENERGY

The low energy prescription ANSI/BHMA A156.19-1990 determines the maximum admissible wing speeds. The kinetic energy resulting from the wing weight and the wing speed is relevant for the safety considerations. The opening and closing time can be adjusted as follows:

Opening resp. closing motion:

The first 90% of the opening resp. closing angle must be selected according to the following chart, in function of the wing weight and of the wing width.

On the last 10% of the opening resp. closing angle the wings are automatically moved during at least 1.0 seconds for the opening motion and 1.5 seconds for the closing motion.

Door classification:

Wing weight (kg)

Wing width (inches)	0....100	100....125	125....150	150....175	175....200
0.....30	3,0 s	3,0 s	3,0 s	3,0s	3,5 s
30.....36	3,0 s	3,5 s	3,5 s	4,5 s	4,5 s
36.....42	3,5 s	4,5 s	4,5 s	4,5 s	4,5 s
42....48	4,5 s	4,5 s	4,5 s	5,5 s	5,5 s

Setting procedure:

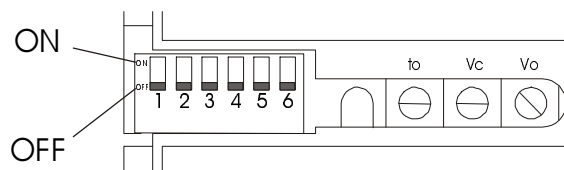
- Determine the door class according to the above chart.
- Switch on the drive unit.
- Connect the service BEDIS.
- Set softswitch 25 to ON (activation Low Energy mode).
- Adjust the door class by means of DIL switches 5 and 6 and according to the following chart.
- Carry out the setting-up procedure (RESET, then program switch position OPEN).

Door class	DIL switches	
	DIL 5	DIL 6
5,5 s	OFF	OFF
4,5 s	ON	OFF
3,5 s	OFF	ON
3,0 s	ON	ON

5.3 Potentiometers

The potentiometer is set to the maximum value if you turn it clockwise until it meets the stop.

- to = Hold-open time 1....30 s
(Standard setting = 3 s)
- Vc = Closing speed 30....100%
(Standard setting = 50%)
- Vo = Opening speed 30....100%
(Standard setting = 50%)



5.4 Interlock operation

Standard interlock

The description refers to the standard interlock, i.e. two completely separate FDC swing door drive units are used. The two drive units are to be connected as follows via the terminals:

	Drive unit 1	Drive unit 2
Interlock signal	24	24
0 V (GND)	25	25

The interlock can also be combined with a SLM sliding door or with a FFM folding door.

Principles:

- Both drive units must be switched on and off via the same 110volt breaker power connection.
- Interlock function in program switch position NIGHT and EXIT (locked).
- In order to guarantee the interlock function, both program switches must be in the same position.
- However, the communication via the interlock connection functions in any position of the program switch. This means that doors which are not in a locked programs switch position, are capable of blocking other doors which are in a locked program switch position. Conversely, the pending signal is not taken into account.
- Set the SS no. 3 to ON for both doors (interlock) and, by means of softswitch no. 4, attribute the MASTER function to one door.
- Opening commands are memorized.
- Memorization of the opening impulses can be suppressed by softswitch no. 16.
- The EMERGENCY OPEN or EMERGENCY CLOSE function has priority.
- If a door remains hooked or hung up in the locking mechanism, the other door is released after a short delay time has expired.
- Double openings are prevented by a special timing, even if two opening commands exist at the same time.

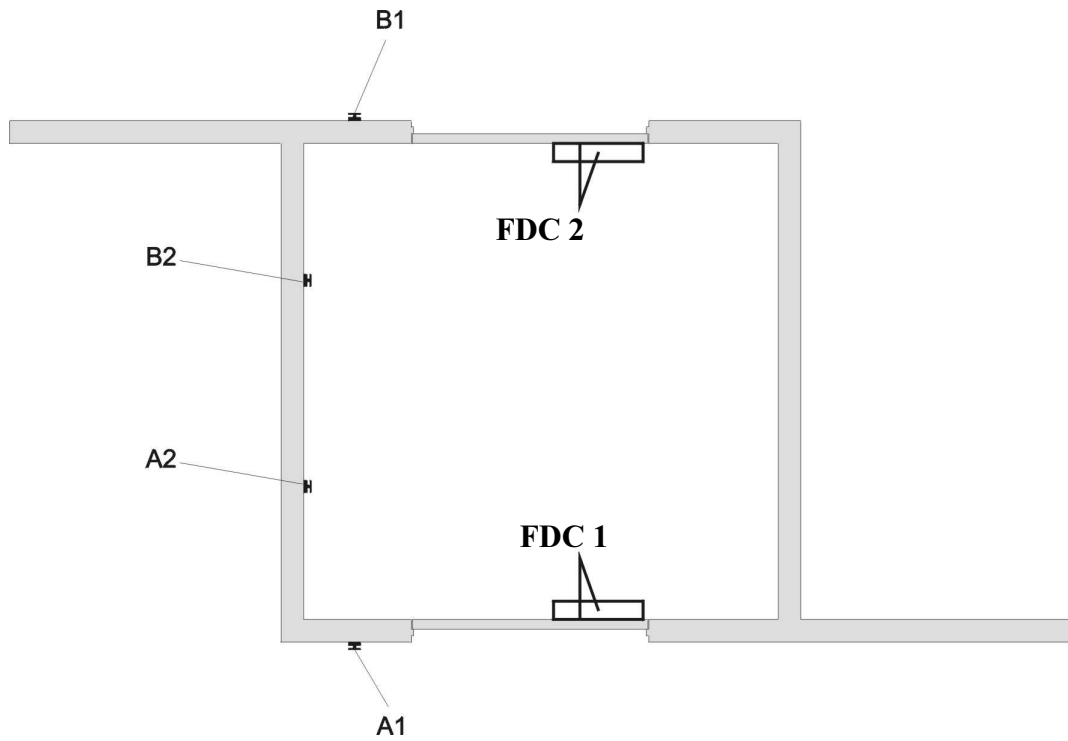
Procedure:

Both doors are closed. The MASTER supplies a signal which must be answered by the SLAVE, otherwise the signal is repeated by the MASTER. If in the reverse case the MASTER fails to respond, the SLAVE will repeat the request. If one of the doors is not CLOSED, it transmits a 0 V signal to its interlock output. After a RESET or a mains failure the synchronization is always made by the MASTER. This ensures that the setting-up procedure is carried out in accordance with the requirements of the interlock.

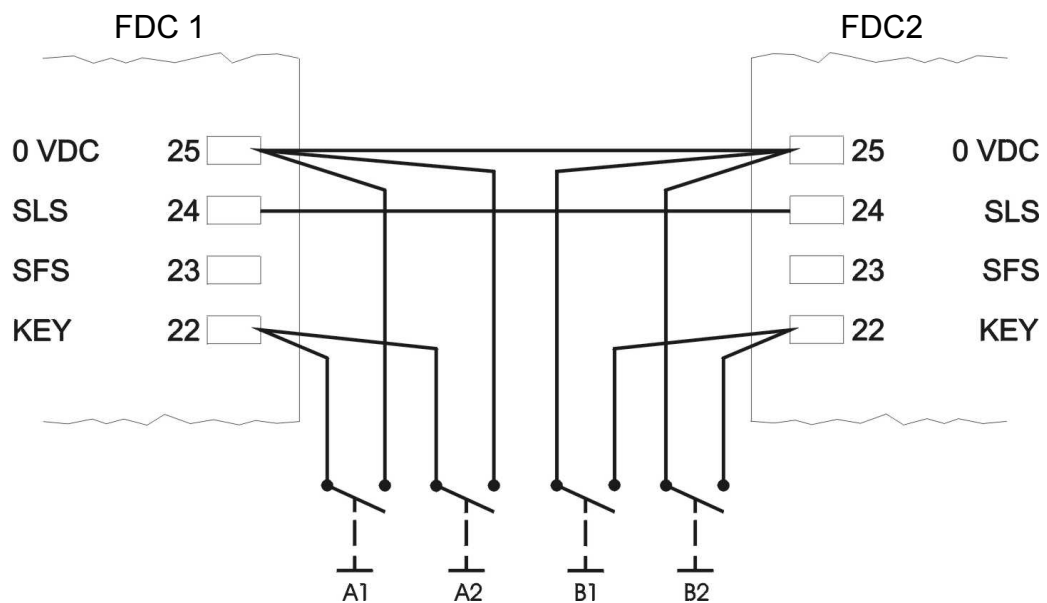
Safety interlock

- Four opening elements (e.g. push-buttons) are required.
- After an opening element (A1 or B1) has been actuated, the respective door is opened and closed again after the hold-open time has expired.
In order to open the second door, another opening element (A2 or B2) must be operated within the interlock.

Principle



Diagram



5.5 Automatic closing sequence control (For Pairs of doors)

Two completely separate FDC swing door drive units are used. The two drive units are to be connected as follows via the terminals:

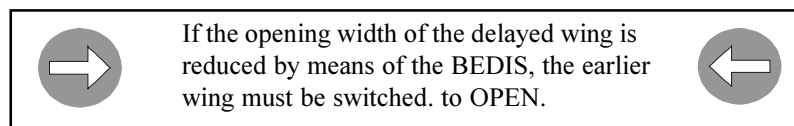
	Drive unit 1	Drive unit 2
Interlock signal	23	23
0 V (GND)	25	25

Principles:

- Both drive units must be switched on and off simultaneously via the same 110volt breaker power connection.
- For both drive units, the automatic closing sequence control must be activated by means of softswitch no. 13.
- The first wing to be set in motion is the MASTER drive unit for which softswitch no. 14 must be activated.
- The opening widths of the drive units need not be the same, provided that the difference does not exceed 20°.
- For both drive units the opening and closing speeds must be set to the same value, even in the event of varying openings widths.
- The control elements (OKI, OKA, KEY) as well as the program switch or the BEDIS with fixed installation are only connected to the MASTER (i.e. the earlier wing). The same applies for the connection of the electric strike.
- The EMERGENCY input on the MASTER (earlier wing) affects both drive units. The EMERGENCY CLOSE command on the SLAVE (delayed wing) affects only the SLAVE. The EMERGENCY OPEN command is non-functional.

Further functions of the closing sequence control earlier wing/delayed wing:

- If only the earlier wing shall be opened, an opening of the delayed wing can be prevented by means of NOT (terminal 11). This blocking is only active provided that the delayed wing is closed. SIH and SIR are also deactivated.
- In the event of bi-parting installations, a RESET causes an extended learning run to be initiated. After the setting-up run, the delayed wing is kept in the open position. The earlier wing closes while looking for the stopping point of the mechanical closing sequence regulator. This stopping point is memorized by the control which also uses it for the electric closing sequence. If no closing sequence regulator is installed, the stopping point for the electric closing sequence is located approximately at 1/4 of the opening width. Please note that during the learning RESET the delayed wing must not be blocked by means of a NOT, otherwise error No. 19 will be displayed. If the EMERGENCY input on the delayed wing is used, we recommend to place softswitch 18 to ON after the learning RESET.
- The SIH and SIR mounted on the wing are connected to the drive unit allocated to the respective wing.



Procedure:

Both wings are closed. As soon as the MASTER receives an opening command, it is set in motion. Shortly afterwards an opening command is transmitted by the MASTER to the SLAVE. After the hold-open time has expired, the SLAVE wing closes first, followed by the MASTER. After a RESET or a main power failure, the synchronizing is always made by the MASTER. This process also includes the setting-up procedure for the automatic closing sequence control.

6. Status display of signal transmitters



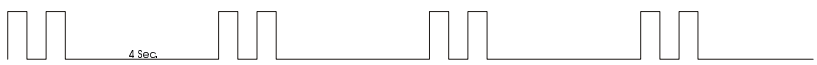

6.1 Indicator LED's

The three green LED's on the logic-servo unit (LOSE) are lit in order to signalize the following situations:

LED	Description
5 V	Drive unit is ready for operation.
OK	Control element OPEN inside (OKI). Control element OPEN outside (OKA) or Key-operated switch (KEY) is active.
SI	Safety element STOP (SIH). Safety element REVERSE (SIR) or NOT is active.

6.2 Signalling with buzzer


By means of the buzzer on the logic servo unit (LOSE), the following sound sequences are generated:

	Sound sequence of the buzzer
Switch on the mains power	 <p>The diagram shows a single rectangular pulse labeled 'Sound' followed by a long horizontal line labeled 'Pause/interval'.</p>
Setting-up motion after a RESET	 <p>The diagram shows a series of regular, repeating rectangular pulses. A '1 Sec.' interval is marked between two pulses.</p>
Functional error	 <p>The diagram shows three pairs of rectangular pulses. Each pair is followed by a long horizontal line labeled '4 Sec.'.</p>
Fatal error	 <p>The diagram shows three single rectangular pulses. Each pulse is followed by a long horizontal line labeled '8 Sec.'.</p>


In the event of an error, the buzzer is switched off after 30 seconds. It is only switched back on the 30 seconds when the position is changed.

6.3 Error display

The potential-free relay output ERROR (terminals 20 and 21) is activated when an error occurs.



The BEDIS can be used for fault finding.
An ERROR is displayed on the BEDIS
(see instructions for adjusting with
BEDIS 9547-999/02).



7. Maintenance/troubleshooting

7.1 Maintenance

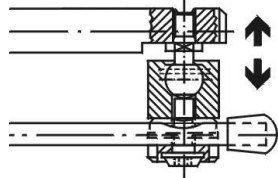
The drive unit has been designed with regard to reducing maintenance for all the existing components to a minimum. Nevertheless, it is recommended to service the drive unit at regular intervals. **A checkup is required once a year** which has to be entered into the work order or maintenance chart



Disconnect the drive unit from the power supply before carrying out any work on live elements!
Do not use running water or aggressive chemical products for cleaning the drive unit.



- Remove the locking screw and pull the covering profile away from the drive unit in horizontal direction.
- Check all the cable connections
- Separate the rod arm from the rotating arm.



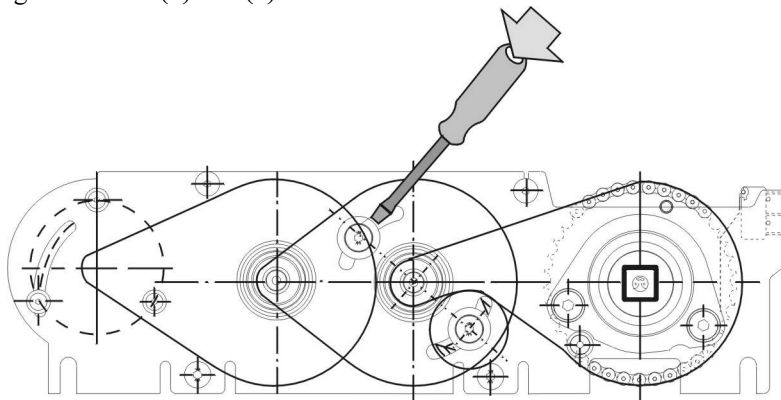
- Check the free running movement of the door wing.
- Check the bearings of the drive unit for increased noise level.
- Check the chain and grease them if required.



Chain lubricant:
chain spray “Motoline 622” art, no, 3621-002

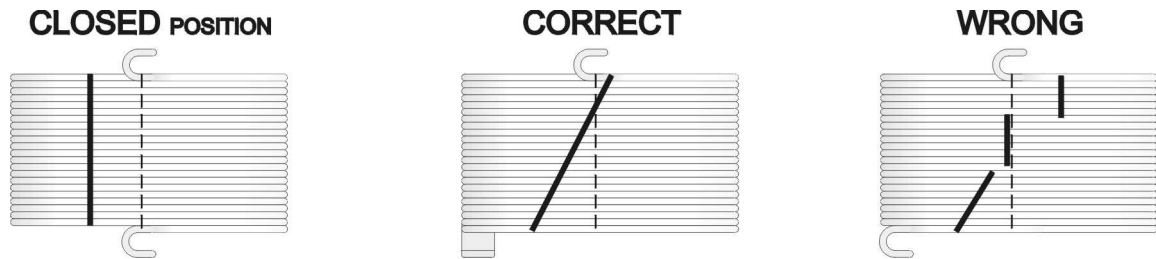


- If required, readjust the chain tension:
 - Slightly unscrew screws (1) and (2).
 - Using a screwdriver, apply a lateral force of 100 N on screw (1) and stretch the chain.
 - Retighten screws (1) and (2).



- Check the condition of the toothed and Poly-V belts and their running position on the pulleys and pinions.
- Adjust the rods according to chapter 2 and check the setting in the CLOSED position.
- Check if all the windings of the closing spring turn evenly. To do this, place the door in the CLOSED position and use a felt tip pen to draw a vertical line on the spring coil. Then watch this line during the OPENING and CLOSING motion of the door, which indicated if the windings turn evenly.



OPEN position



- Should the windings not turn evenly: **Grease the closing spring between the winding in the OPEN and CLOSED position, using spring grease GBU Y 131.**
- Check the tight fitting of all the screws.
- Final functional checking of the complete installation including the control and safety elements.

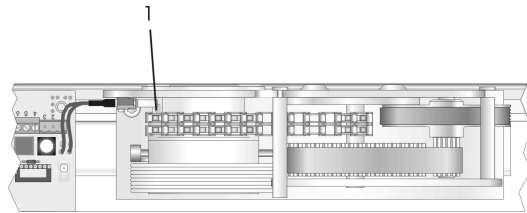
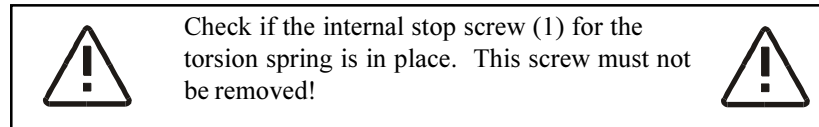
7.2 Troubleshooting

Malfunction	Visual checking	Cause/reason	Corrective/Measures
Drive unit does not function	Program switch Customer-supplied main switch Customer-supplied fuse Fuse in drive-unit internal cable connections	on position 0 (manual) switched OFF defective defective cut	flip to position 1 switch ON replace replace repair
Drive unit does not open	LED OK is not lit when actuated The door cannot be opened by hand LED SI is lit	Opening element defective Electric lock does not release Safety element STOP or EMERGENCY CLOSE has been triggered	
Drive unit does not close	LED OK is lit LED SI is lit	Opening element active Safety element reverse or SIH active	
Buzzer sounds	Poly-V belt	Grease on the Poly-V belt	remove grease
Wing moves jerkily	Chain	Insufficient chain tension	Adjust tension acc. to chapter 7.1

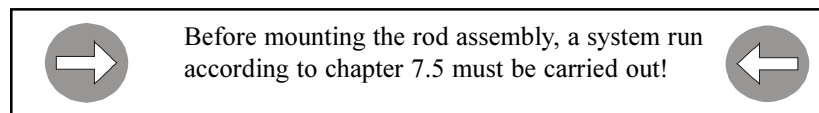

 The BEDIS can be used for fault finding.
 Should it not be possible to find and eliminated the cause of the malfunction, the complete drive module or the mains/terminal unit must be replace.
 

7.3 Replacing the drive module

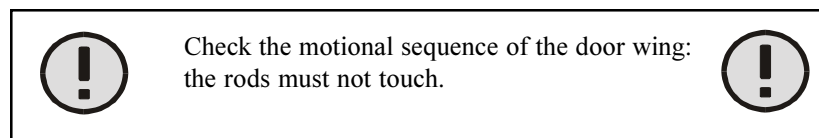
- Flip the program switch to position 0 (MANUAL) and disconnect the mains supply.
- Dismantle the covering profile.



- Separate the rod arm from the rotating arm.
- Dismantle the rod arm from the drive shaft.
- Unplug the power cable, the logic cable and the cable of the door position monitoring switch.
- Unscrew and remove the four fixing screws.
- Replace the drive module.
- Remount and tighten the fixing screws.
- Restore the cable connections



- Remount the rod assembly.



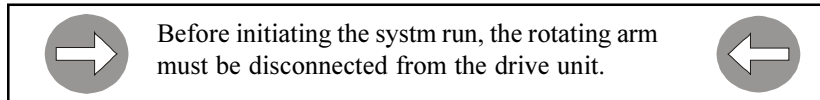
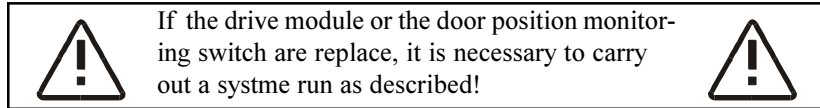
- Set the installation up according to chapter 4.
- Mount the covering profile.

7.4 Replacing the mains supply terminal unit

- Flip the program switch to position 0 (MANUAL) and disconnect the mains supply.
- Dismantle the covering profile.
- Unplug all the existing cable connections of the mains supply terminal unit.
- Unscrew and remove the four fixing screws.
- Replace the mains supply terminal unit.
- Remount and tighten the fixing screws.
- Restore the cable connections.
- Set the installation up according to chapter 4.
- Mount the covering profile.

7.5 System run

Prior to the delivery of the drive unit a system run is carried out at the factory. During this test run the maximum possible traveling distance is measured. This traveling distance is limited by the internal stop screw. Furthermore, the spring tension and the position of the door position monitoring switch are measured.



- Position all the DIL switches on OFF.
- Turn all the potentiometers (Vo, Vc, to, Fm) counter-clockwise up to the stop.
- Press the RESET key on the mains supply terminal unit (NEKLE) during 4 seconds.
- By spring pressure the drive unit is brought to the CLOSED position.
- The system run is initiated by shortly pressing the RESET key.
- At the end of the system run, disconnect the mains supply.
- Set the DIL switches and potentiometers back to factory setting.
- Mount the rods and take the installation into operation (both procedures according to the respective chapter).

8. List of spare parts

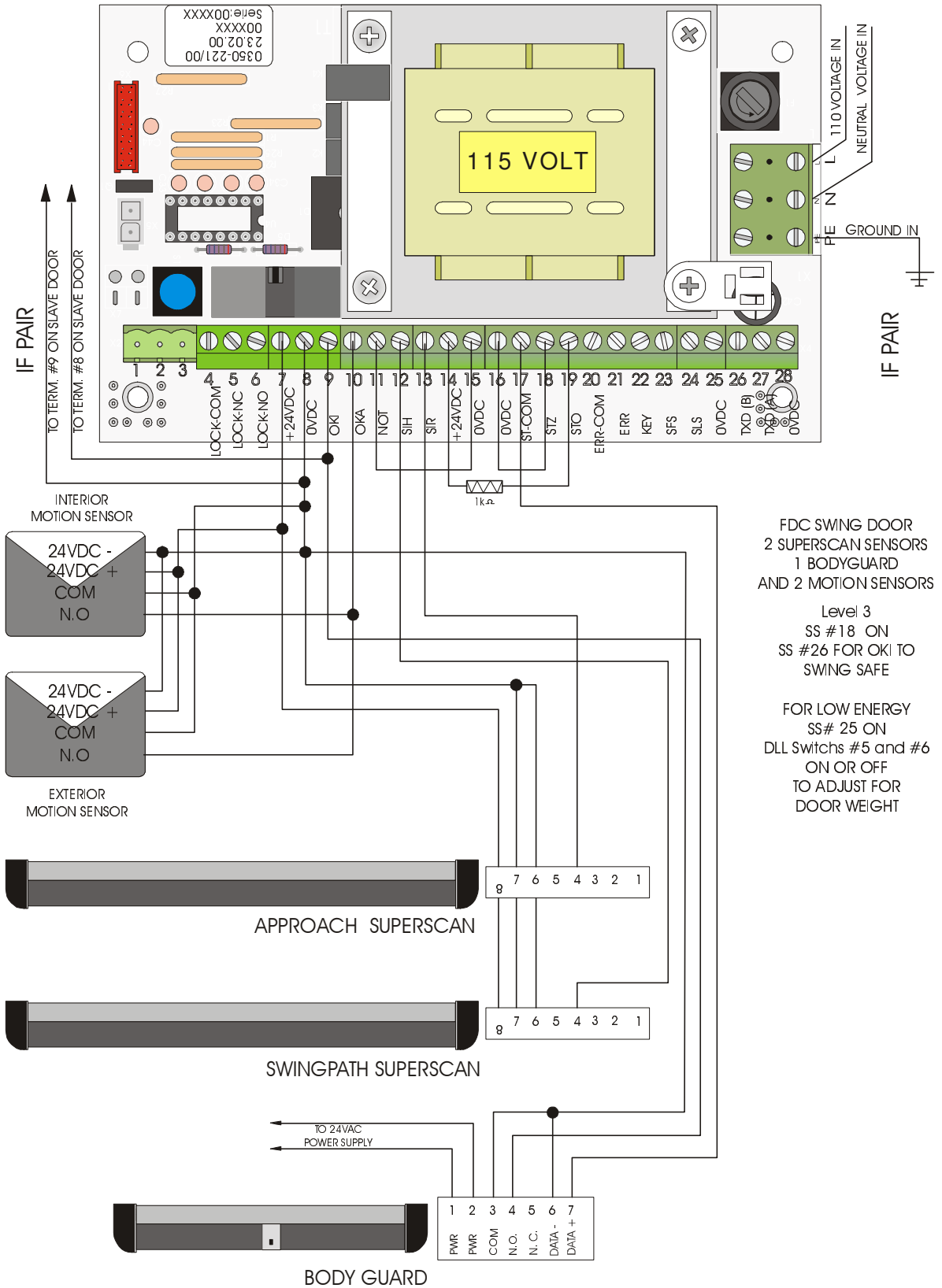
Drive unit complete		160-301
1	Structural profile	111-320-020
1	Covering profile	120-301
2	Side covers	130-301
1	Mains supply terminal unit	160-311
1	Drive module (with EPROM OEM-A)	160-310
1	EPROM (OEM-A 115 V)	XXX-300
1	Logic cable	140-313
1	Power cable	140-314
1	Program switch	140-311
1	Door position monitoring switch	140-301
1	Normal rod assembly Std. 01	350-301
1	Normal rod assembly Ext. 02	350-302
1	Standard axle extension	350-314
1	+20mm (.787) axle extension	350-315
1	+50mm (1.96) axle extension	350-316
1	Parallel rod assembly	350-308
1	Sliding rod assembly	350-304
1	Standard axle extension	350-317
1	+20mm (.787) axle extension	350-318
1	+50mm (1.96) axle extension	350-319

Std. 01	Depth of Reveal	0" - 4 3/4"
Ext. 02	Depth of Reveal	4 3/4" -9 7/8"

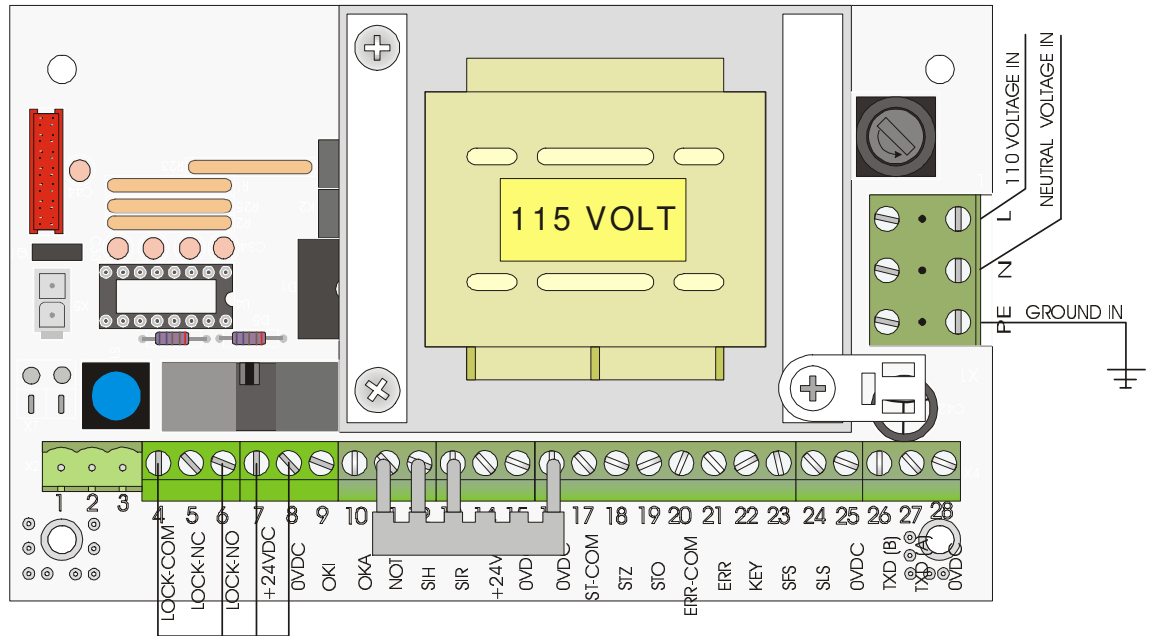
9. Disposal

A disposal of the FDC swing door drive unit according to the rules of environmental protection can be achieved by separating and recycling the different materials. No particular measures have to be taken in order to protect the environment.

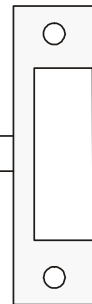
Full Sensing



Electric Strike



Install Jumper from 4 to 8 to complete common circuit for electric strike wire negative end of lock stike to either normally open or normally closed depending on stike type

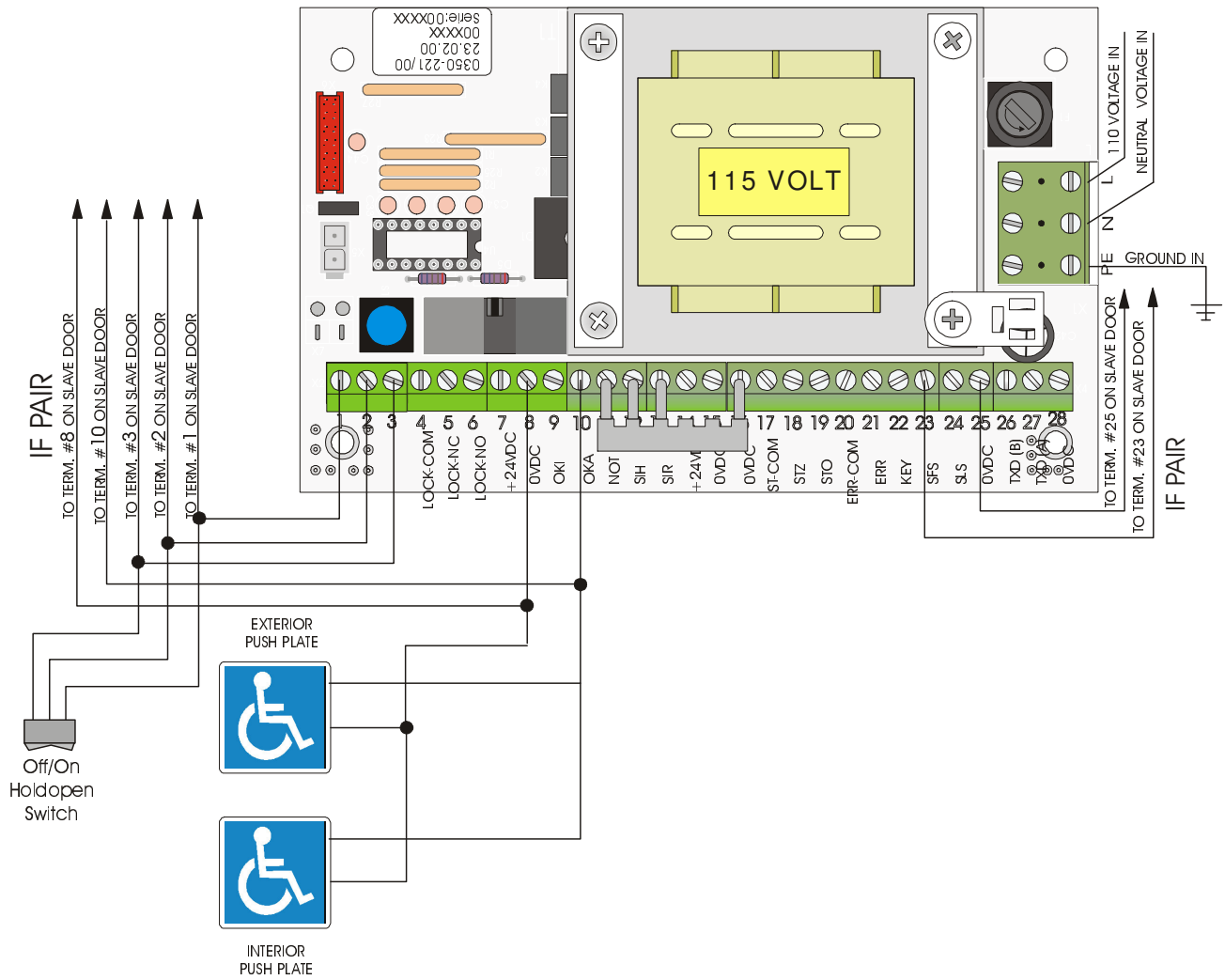


ELECTRIC STRIKE

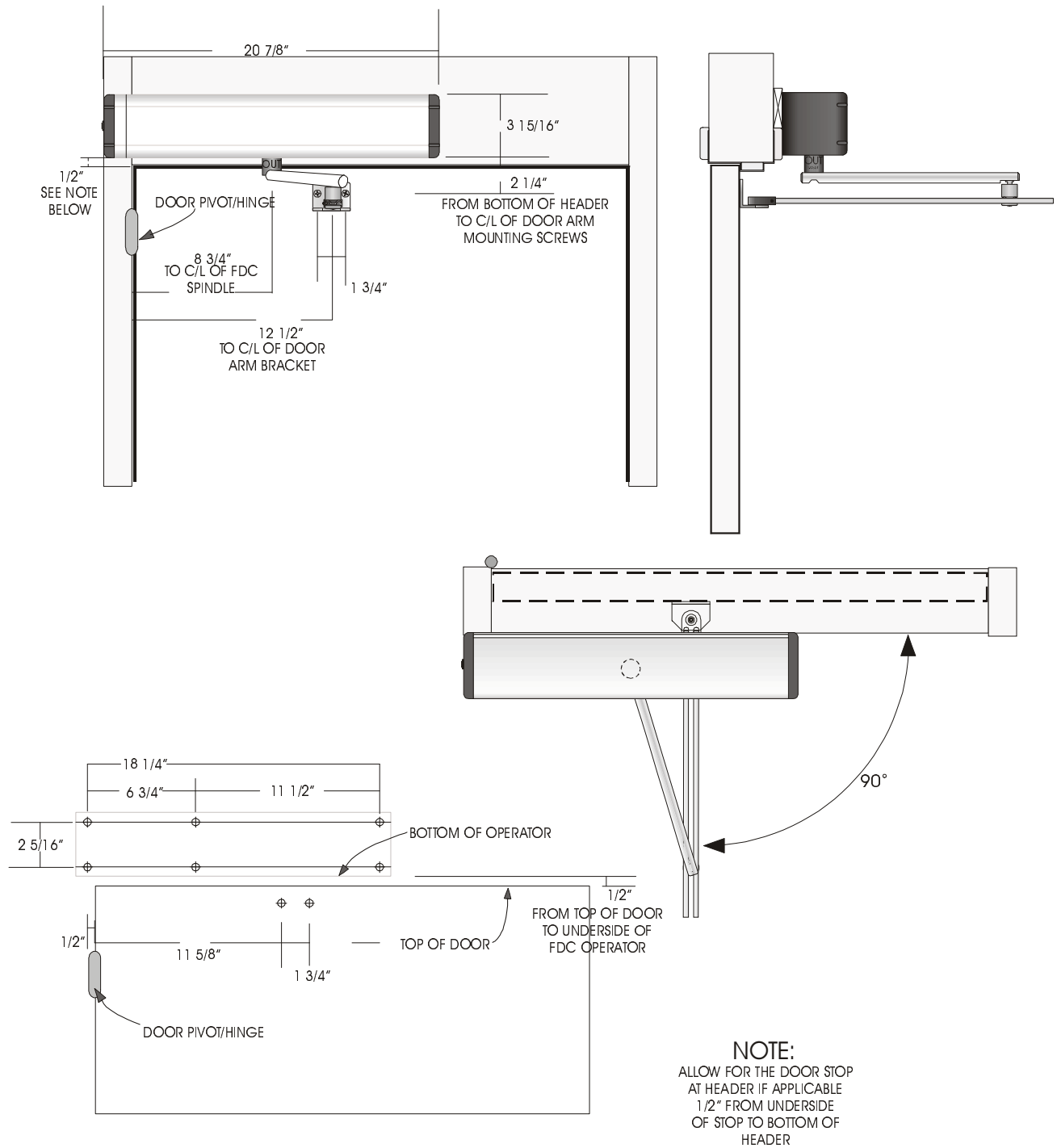
Solenoid strike not to exceed 24VDC at .5A or 24VAC at 1.5A it is suggested that the coil be rated for 100% duty cycle.

Push Plate Control

FDC WIRING FOR PUSH PLATE CONTROL FDC CONTROL BOX

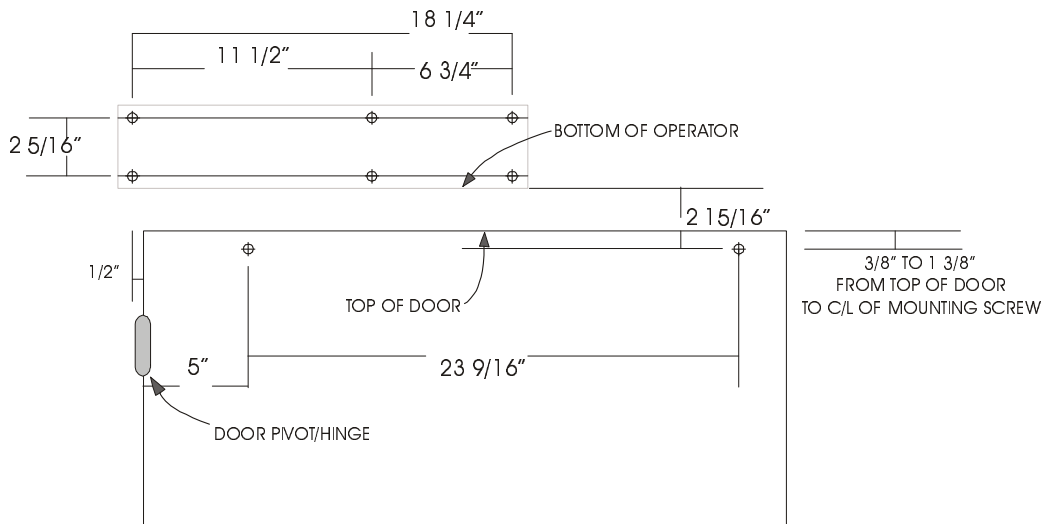
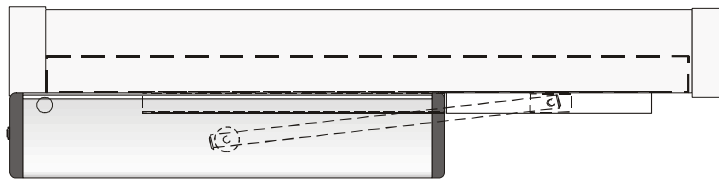
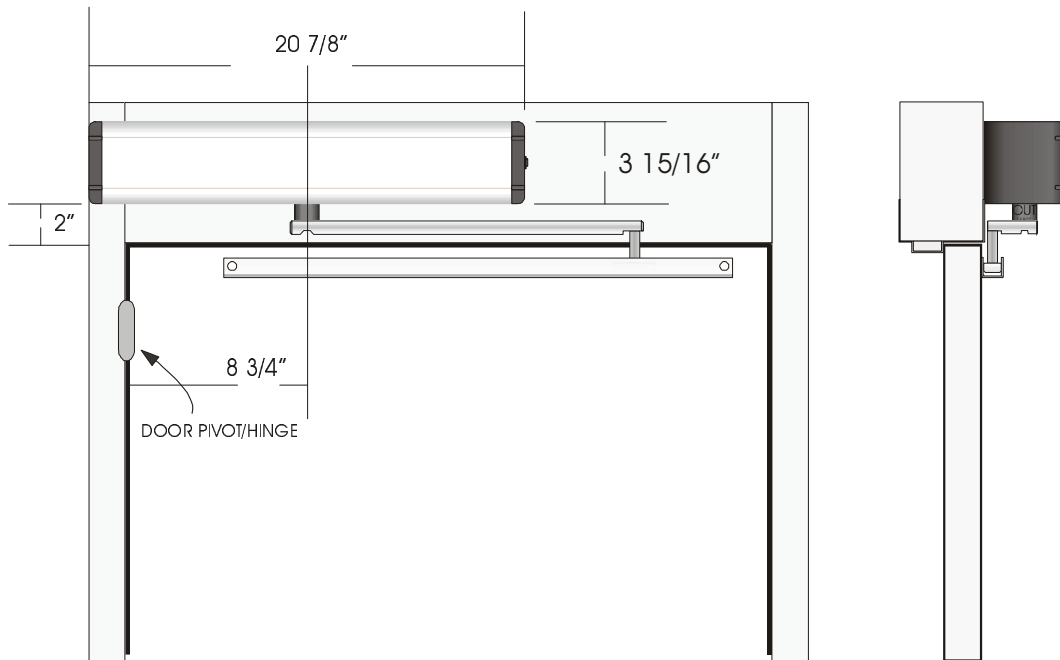


Standard Out Swing Application



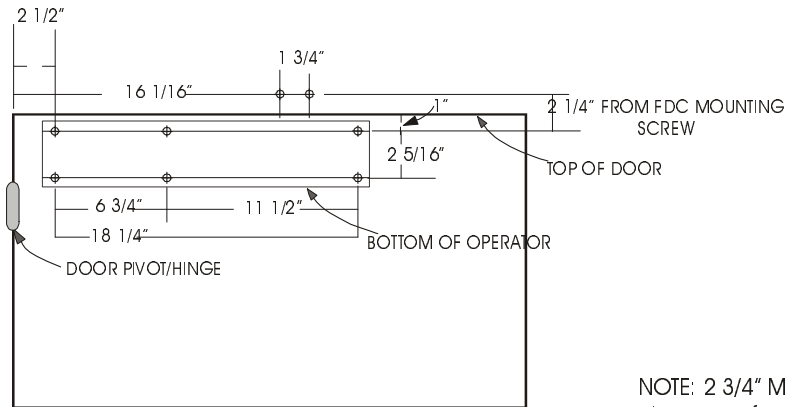
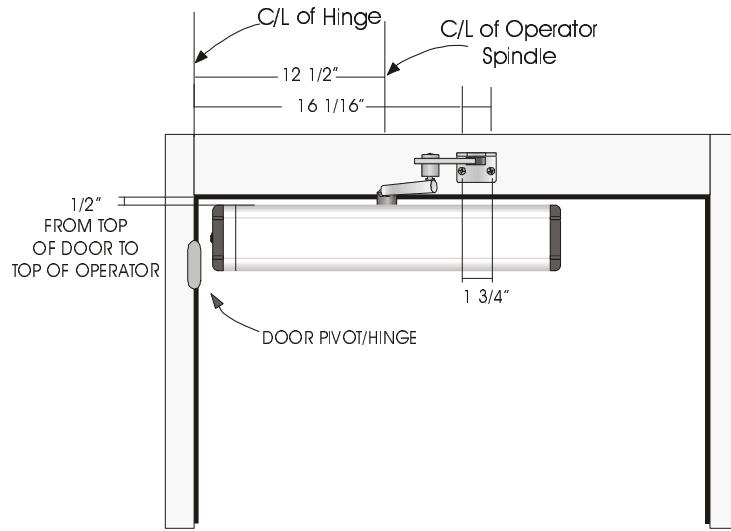
OUTSWING APPLICATION FDC WITH DECORATIVE HOUSING...L.H. SHOWN R.H. OPPOSITE	STANDARD REVEAL SHOWN IF REVEAL IS GREATER THAN $4\ 3/4"$ THAN EXTENDED DOOR ARM MUST BE USED	GILDOR OPERATOR PART# 160-301 GILDOR NORMAL RODS PART# 350-301	DRAWING NUMBER FDC-DECO.01-PUSH
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Standard Inswing Application

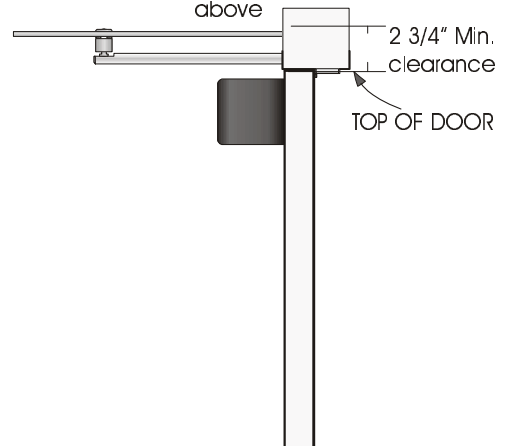
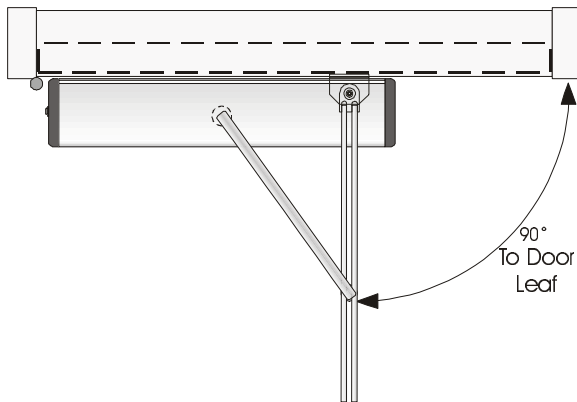


<p>INSWING APPLICATION FDC WITH DECORATIVE HOUSING. R.H. SHOWN L.H. OPPOSITE</p>	<p>0" REVEAL SHOWN IF REVEAL IS GREATER THAN 0" THAN SLIDE TRACK MUST BE SHIMMED FLUSH</p>	<p>GILDOR OPERATOR PART# 160-301 GILDOR C-CHANNEL PULL ARM PART# 350-304</p>	<p>DRAWING NUMBER FDC-DECO.01-PULL</p>
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Door Mount Pull Application

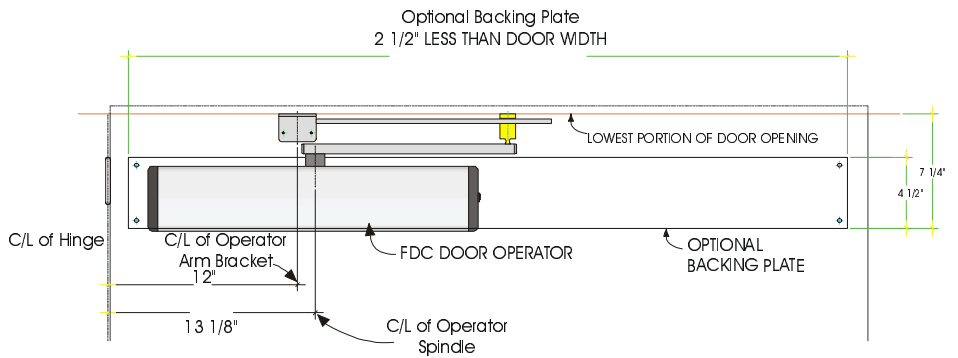
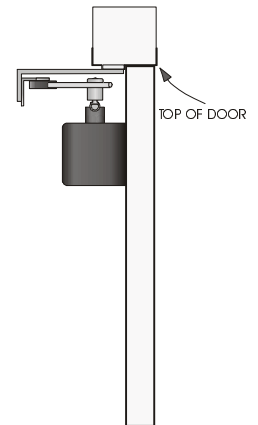
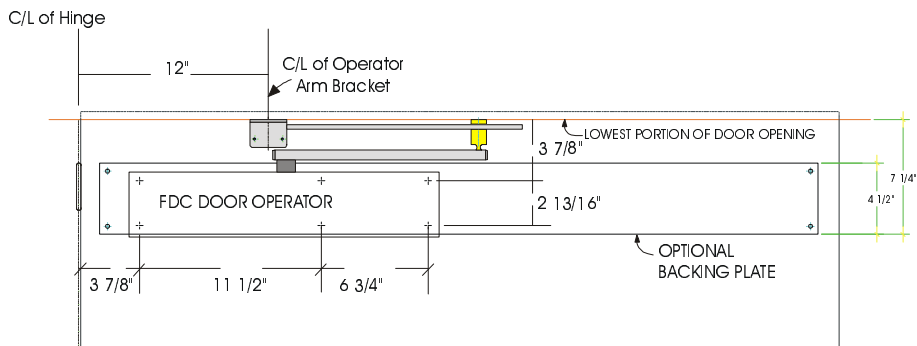
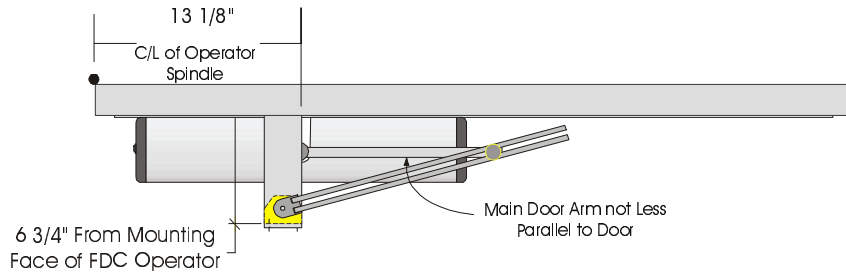


NOTE: 2 3/4" Minimum clearance from top of door to obstruction above



<p>OUTSWING APPLICATION FDC WITH DECORATIVE HOUSING..L.H. SHOWN R.H. OPPOSITE</p>	<p>STANDARD REVEAL SHOWN</p>	<p>GILDOR OPERATOR PART# 150-301 GILDOR NORMAL RODS PART# 350-301</p>	<p>DRAWING NUMBER P 11.3.40 FDC-DECO.02-PULL</p>
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Door Mount Push Application



<p>OUTSWING APPLICATION FDC WITH DECORATIVE HOUSING...L.H. SHOWN R.H. OPPOSITE</p>	<p>STANDARD REVEAL SHOWN</p>	<p>GILDOR OPERATOR PART# 150-301 GILDOR NORMAL RODS PART# 350-301 GILDOR UNDER HEADER BRACKET PART# 150-322</p>	<p>DRAWING NUMBER P 11.3.42 FDC-DECO.02-PUSH</p>
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