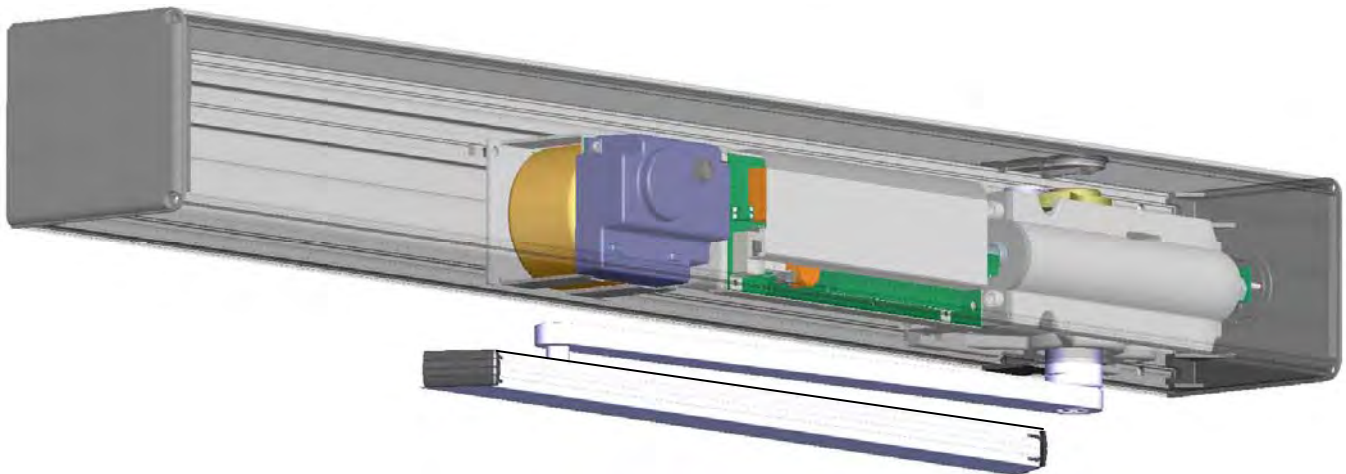
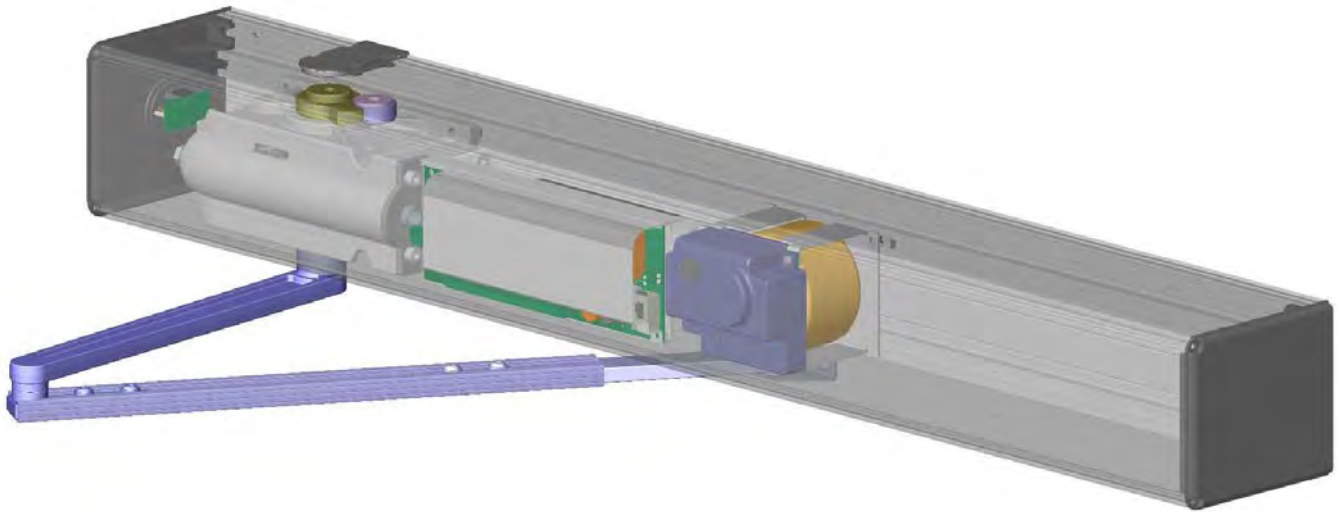




# 6100 Series Swing Door Operator Installation Instructions

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The manufacturer's specifications for this product require the installation to be approved by an AAADM certified inspector.





# 6100 Series Swing Door Operator Installation Instructions

The record-USA 6100 Operator has been carefully designed, built, and tested to provide years of service.

The life of the operator package is directly related to how carefully the installation is accomplished and how accurately the instructions are followed. Installation of this operator package should be done by properly trained and knowledgeable installers with a knowledge of local code requirements and the requirements of ANSI A156.19 Standards for Low Energy and Power Assisted Pedestrian Doors. The authorized service / installation dealer must perform all measurements for forces, speeds, and times to insure proper and safe operation.

record-USA is not responsible for improperly adjusted or maintained automatic doors or activation / safety systems and assumes no responsibility for damages caused by automatic door systems that have not been properly installed, tested, and adjusted.

## OWNER INFORMATION TO BE PROVIDED BY THE DISTRIBUTOR / INSTALLER

- \* After the installation instruct the owner on the safe operation of the door.
- \* Location and proper use of the power switches.
- \* Location of the main cutoff breaker.
- \* Necessary warnings not covered in general instructions.
- \* Owners Manual and Daily Safety Checklist.
- \* Phone number(s) for the local servicing dealer.
- \* What to do in the event that a dangerous situation should occur, and how to shut the doors down and call for service.

## READ INSTALLATION INSTRUCTIONS BEFORE INSTALLING.

The sequence of installation and adjustment is in order, however some sections will not apply. Review this instruction manual and determine those sections that do apply. Be sure all doors swing freely and clear all objects before attaching arms.

Special attention needs to be given to installations with parallel and slide arms when an adjacent wall is perpendicular to the door frame.

## INDEX

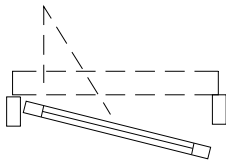
INTRODUCTION, OWNER INFORMATION & INDEX.....	2
PRODUCT IDENTIFICATION.....	3
INSTRUCTIONS TO THE INSTALLER.....	4
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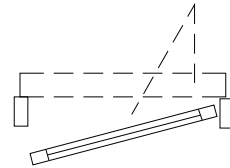
# 6100 Series Swing Door Operator Installation Instructions

## OPERATOR HANDING IDENTIFICATION

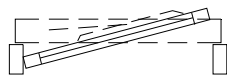
LHR STD. ARM



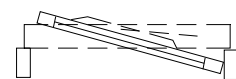
RHR STD. ARM



LH TRACK ARM

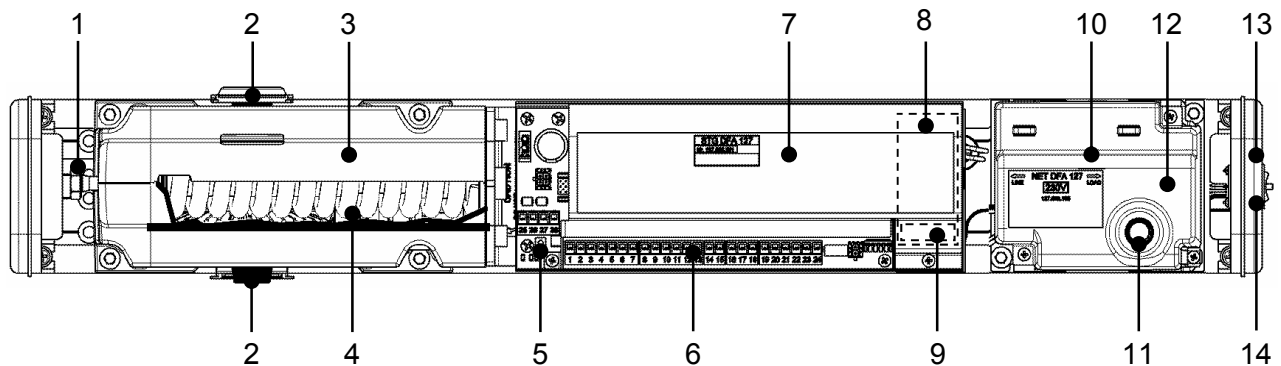


RH TRACK ARM



## Product Description

The record Series 6100 Swing Door Operator is a power-open, spring-close unit providing full functionality conforming to either ANSI A156.19 requirements. The self-monitoring microprocessor-based control maintains precise regulation throughout the door open / close cycle. Two operators can be connected together in a master/slave configuration providing synchronized operation. Safety is additionally increased by the use of a redundant force limitation.



- |                                      |  |
|--------------------------------------|--|
| 1 Adjusting screw for spring tension | 8 Motor Drive Circuit Board            |
| 2 Output Shafts for Arms & Stop      | 9 Slide switch S1 (rotating direction) |
| 3 Drive Unit                         | 10 Power Supply                        |
| 4 Closing Spring                     | 11 Fuse ( 2.0A, 5X20mm, Slo-Blo)       |
| 5 Multifunction Pushbutton / Control | 12 Power Supply Circuit Board          |
| 6 Terminal Blocks for I/O            | 13 On / Off / Open Rocker Switch       |
| 7 Microprocessor Control             | 14 Status LED and Reset Pushbutton     |



# 6100 Series Swing Door Operator Installation Instructions

## Drive Arms

Three types of drive arms are available:

The Standard Arm provides the most flexibility –  
Outswing (push) reveals to 12"  
Inswing (pull) reveals up to 6"



9-80-0105

The Slide Track Arm –  
Inswing (pull) reveals to 6"  
Outswing (push) reveals to 3"



9-80-0104

The Slide Track Arm with Offset Adapter –  
Suitable for center-pivoted doors with  
breakout capability;  
Allow double-egress installations in a  
common header.



9-80-0104 & 9-80-0107

An extension adapter is included with each arm assembly, connecting the drive arm to the operator output shaft. The Standard Arm is provided with a 35mm adapter which mounts the drive arm approximately 1-1/8" below the bottom of the header. The Slide Track Arm includes a 20 mm adapter, mounting the drive arm approximately 1/2" below the bottom of the header. Optional adapters are available that will increase the distance below the header to approximately 1-3/4" (50mm - P/N 9-80-0007), or approximately 3" (80mm - P/N 9-80-0011). For double-egress installations, the Double-Egress Adapter kit, 4-80-0804, includes an offset adapter for the track arm and a 50mm adapter for the standard arm, accommodating a double-rabbit frame.

Layouts for the different arm / installation configurations are attached. Check the arm assemblies prior to unit installation and verify dimensions and clearances.

## Instructions to the Installer

This unit is to be installed and commissioned by a trained technician with knowledge of ANSI A156.10 and A156.19 Standards for Power Operated Doors, applicable local codes, and record-USA installation recommendations.

After installation, verify the door can be opened without power applied, and the force required to open the door does not exceed 50 pounds-force (222 N).

## Information to provided to the owner

The Owners Manual with training and explanation of the daily safety check.  
Location of the operator control panel (On / Off / Hold Open).  
Specific information pertinent to the proper operation of the installation.

## Electrical preparation

Before preparing jambs, determine the method and requirements for the electrical wiring involved and whether mats or other type of activation is used.  
Power requirements — 115 VAC, 60 Hz, 15 Amp Service.



# 6100 Series Swing Door Operator Installation Instructions

## Mechanical Installation

The door panel must move freely throughout its entire opening and closing rotation. The door frame must provide a stable base, structurally sufficient to support automatic operation. Typically the operator baseplate will overlap the door jambs by 1-1/2".

Verify the installation conditions and select the arm configuration that most closely matches the installation. As a general rule, the operator output shaft will mount 4" away from the hinge jamb, measured parallel to the closed door. The door mounted foot on a Standard arm assembly will typically mount 18" from the hinge jamb. For Slide Track arm assemblies, the door mounted track will mount with one end located 4" from the hinge jamb. Consult the attached layout drawings for additional details.

Securely attach the unit baseplate to the door frame; Hex Head Tek Screws are included - #14 X 2" for unit mounting to door frame, and #10 X 1-1/2" for Arm mounting to door.

Typically, the drive arm is attached to the operator with the unit in the closed position. Additionally, the arm is positioned on the splined output shaft with a slight pre-load, pushing the door against the door closed stop. The spline provides incremental adjustment of 6°; typically, one spline index for pre-loading is sufficient.

The drive arm is attached to the lower operator output shaft using the extension adapter supplied with the arm assembly. Consult the appropriate arm configuration for proper arm positioning on the shaft (The most common application – an outswing / push configuration using the Standard arm assembly – has the drive arm mounted to the shaft perpendicular to the closed door.) When securing the arm on the shaft, insure the extension adapter has seated properly on the shaft spline. If not seated correctly, slippage of the arm on the shaft may occur. For Track arms, install the arm with the outer end of the arm against the closed door. Do not tighten the bolt; using the arm, pull the operator open and during the slow, controlled closing, insure the splines seat correctly and tighten the 6mm socket head bolt. Verify all fasteners are securely tightened.

## Operator Swing Direction

If the operator does not close slowly (with either arm), the handing selection switch should be changed. It is located behind a slot in the sheet metal cover for the operator control –

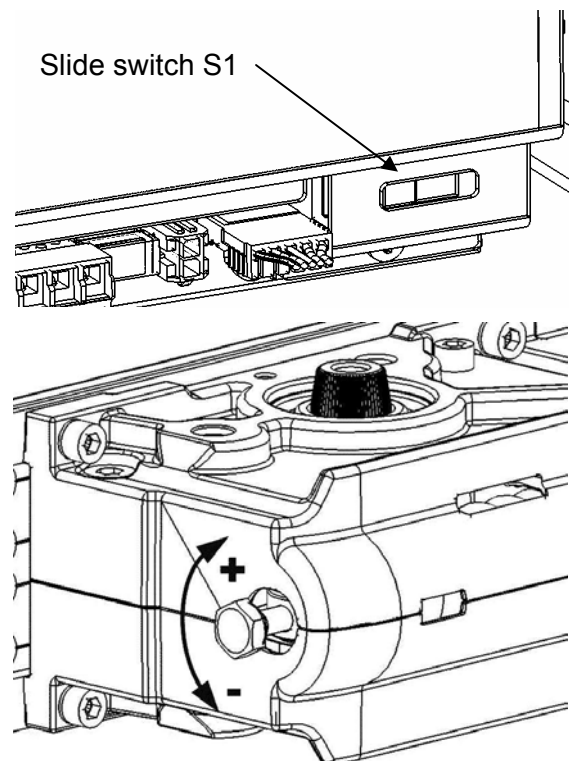
With no power applied, the operator should be capable of being easily pushed open and when released, will close the door at a controlled speed.

## Closing Spring Adjustment

The closing force provided by the spring is adjustable.

Do not adjust the force so low that the door will not consistently close under spring power.

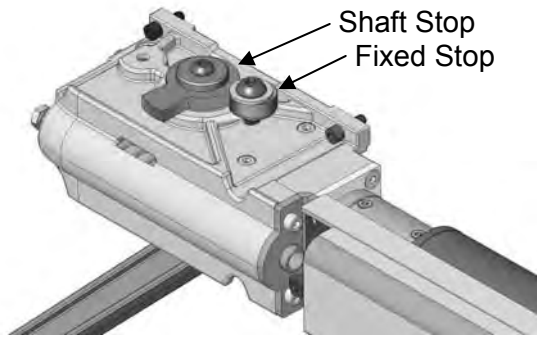
On a typical 3'-0" door with a standard arm assembly, the spring closing force can be adjusted from less than 5 pounds force to more than 20 pounds force, measured at the leading edge of the door.



# 6100 Series Swing Door Operator Installation Instructions

## Open Stop

The unit is provided with an adjustable full open stop. Rotate the door to the full open position; mount the Shaft Stop onto the upper output shaft and against the Fixed Stop. The spline of the output shaft allows indexing in 6° increments. For finer adjustment, the Fixed Stop is slightly eccentric; loosen and rotate until the desired stop location is achieved and re-tighten.



For installations where severe physical abuse may occur (such as extreme wind conditions), it is suggested a floor mounted stop be installed at full open. Additionally, the operator full open stop can be set at 100 degrees or more of opening, and program the operator to electronically stop at the 90 degree full open position. This can be accomplished by manually stopping the door at 90 degrees during a calibration run, or by reducing the opening angle under the parameter "Drive / Opening angle" (using an FPC902 Hand Terminal or a Display Control Panel).

## Power Supply Connection

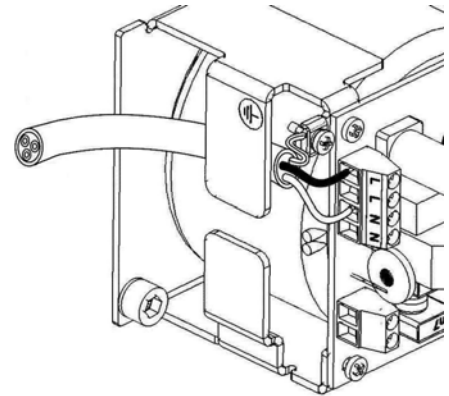
Connect 115VAC, 60 Hz, 10A, to Power Supply terminal strip

- 115 VAC "Hot" (Line) to "L" terminal;
- 115 VAC "Neutral" to "N" terminal

The second "L" and "N" terminals provide a convenient junction for dual operator systems.

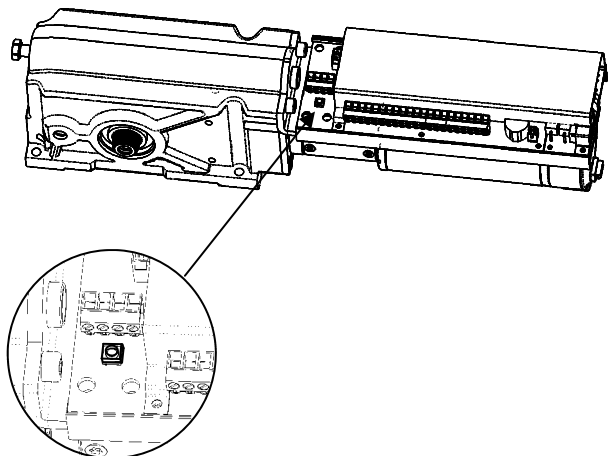
Proper grounding must be provided for the unit. A grounding tab and screw are located adjacent to the Power Supply terminal strip.

The power supply cover must be installed after connecting 115 VAC primary service.



The **multifunction pushbutton** can be used for the following functions:

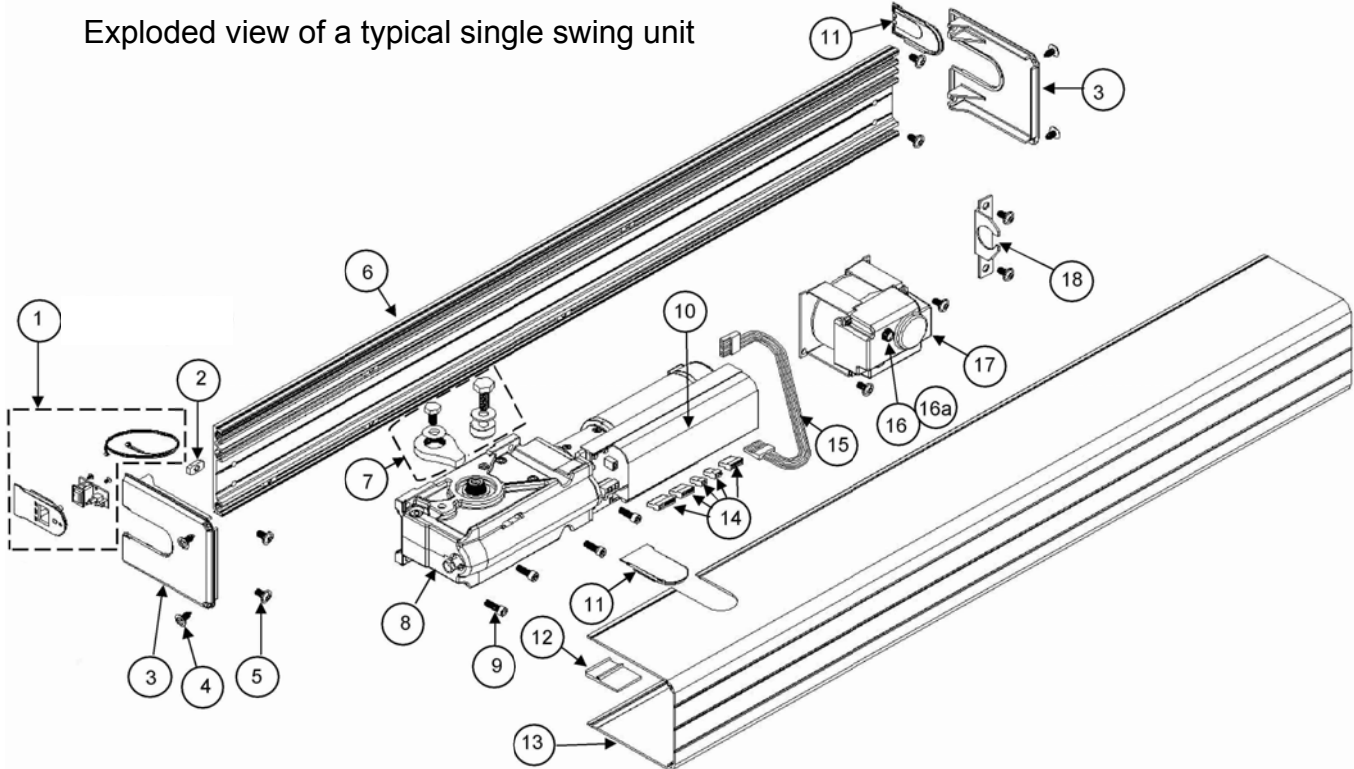
- 1 flash of the red LED will actuate a standard open cycle (if the rocker switch is on).
- 3 flashes of the red LED will initiate a calibration run.
- 4 flashes of the red LED will initiate the parameter adjust mode of a Display Control Panel.
- 8 flashes of the red LED will reset the unit's parameters to factory defaults.
- 15-17 flashes will cause the unit to reset without affecting any of the field set parameters.



**After completion of the mechanical installation and prior to adjusting the parameters, always initiate a calibration run by pressing and holding the pushbutton for 3 flashes of the red LED. This will insure proper door operation by calibrating the unit to the installation conditions.**

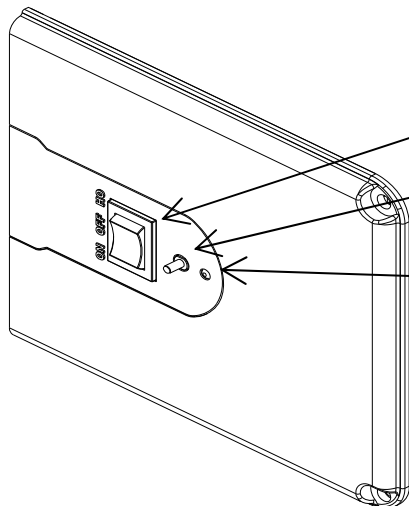
# 6100 Series Swing Door Operator Installation Instructions

Exploded view of a typical single swing unit



ITEM	PART NUMBER	DESCRIPTION	ITEM	PART NUMBER	DESCRIPTION
1	4-80-0802	KIT, ROCKER SWITCH, CABLE, INSERT, & SCREWS	11	6-80-9003	INSERT, PLAIN, COVER & END CAP
2	4-51-1036	PLATE, NUT (1/4-20)	12	6-80-9002	INSERT, SHAFT CUTOUT, COVER
3	6-80-9001	END CAP, COVER	13	5-80-4003	COVER, 6100/8100 CL-DB
4	81-3114-0412-DB	SCREW, 8x1/2" Ph. PH SMS BL OXIDE	14	4-80-0801	KIT, ELECTRICAL CONNECTORS, J1 - J6
5	81-0017-2658	SCREW, 1/4-20X3/8" ALLEN BH BL OXIDE	15	9-80-0010	HARNESS, ENCODER
6	5-80-4001-MF	PLATE, OPERATOR MOUNTING, 6100/8100	16	9-99-1902	FUSE CAP
7	9-80-0103	MOUNTING SET, HARD STOP ADAPTOR	16a	9-99-1940	FUSE, 2.5 A, 5mm X 20mm
8	9-61-0101	DRIVE MODULE, SERIES 6100 OPERATOR	17	9-80-0102	POWER SUPPLY, 6100/8100
9	81-0014-2666	SCREW 1/4-20X3/4" ALLEN BH, BLK OXIDE	18	4-80-1001	BRACKET, CONDUIT ANCHOR
10	9-80-0108	CONTROL, SERIES 6100/8100 OPERATOR	19	9-80-0009	HARNESS, POWER SUPPLY TO CONTROL (not shown)

The Series 6100 Standard Rocker Switch Control Panel includes:



3 Position Rocker Switch - ON / OFF / OPEN

Pushbutton - To reset the operator, press and hold for 8 seconds

LED (red) - Normally off; flashing indicates either the unit is performing a calibration run, or an error has been encountered.

To clear an error, press & hold the pushbutton for Approximately 8 seconds, or until the LED turns off.



## Service the Series 6100 & 8000 with the FPC-902 Hand Terminal



Sep11

After the operator has been mechanically installed, the arms attached to the door, and 120VAC connected to the power supply, connect the FPC902 Hand Terminal to the operator control. The following sequence of screens will occur. The final screen shown below is the base point from which various settings for the operator are accessed and modified.

```
AKKU      PASS
FLASH    PASS
EEPROM   PASS
RTC      PASS
CAN      PASS
```

```
FPC902
Version 2.12
Feb 22 2010
13:30:19
```

```
FPC902
Service STG >
Service STG Slave >
Service sensor >
Flash-Programmer >
Setup
```

Press "OK", or scroll down to STG Slave and press "OK"

```
Connect with STG ...
■■■■■■■■□□□□□□
```

```
Accept all parameter
from the STG?

Offline Yes
```

Press "OK"

```
Parameter download
from STG ...
■■■■■■■■□□□□□□
```

```
DFA127 V1.47
USA Low Energy
Manual
0 Errorless
Continue
```

Press "OK"



**STATUS SCREEN**

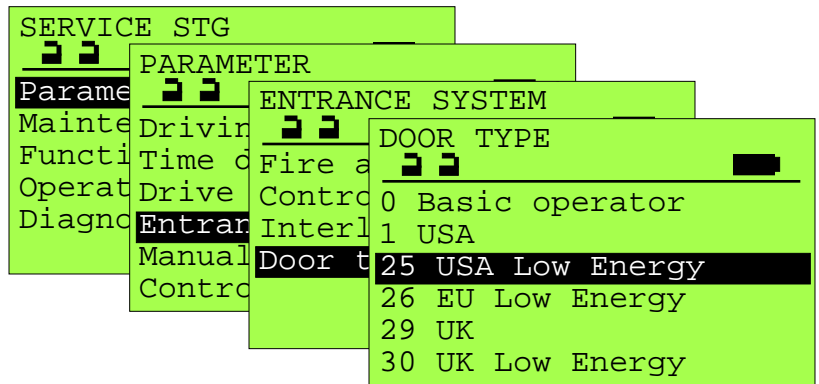
This screen will indicate the current status of the operator. The center 3 lines provide the door type, operation mode (Off / Open / Automatic / Manual), and the current error code. This screen is always accessible by pressing the "STATUS" button at the bottom of the FPC 902 Hand Terminal.

```
SERVICE STG
Parameter >
Maintenance >
Functions >
Operation mode >
Diagnostics >
```

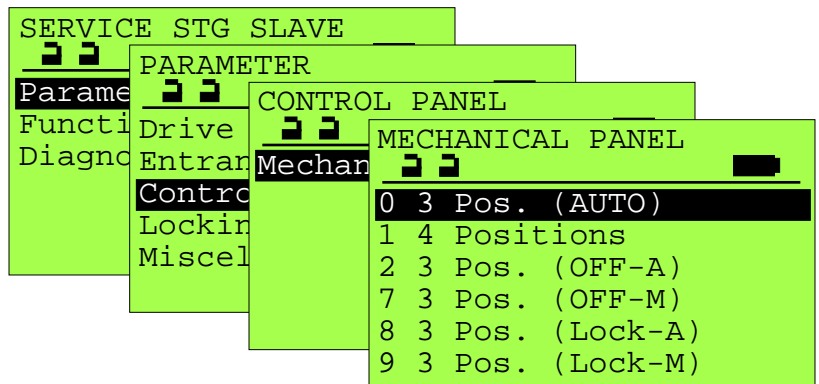
The following page indicates suggested parameter configurations for a typical installation. For a detailed description of all parameters, consult the instructions provided with the FPC902.

The following documents the suggested sequence of programming the operator:

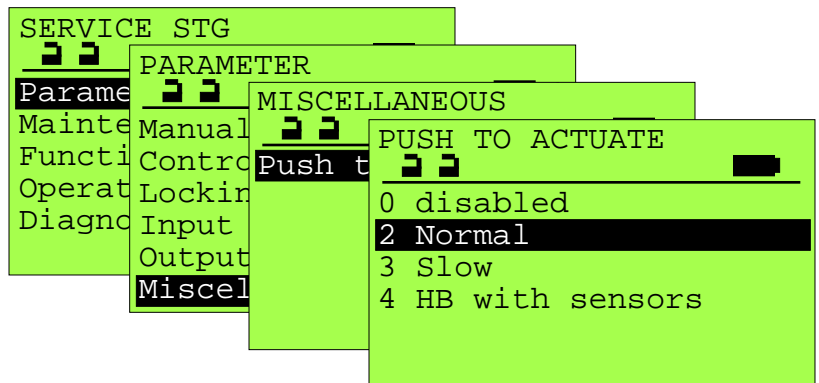
The Series 6100 is shipped configured for a combination operation designated as "USA Low Energy". If manual operation of the door is not desired (with 115VAC power present), this should be changed to "USA", as shown in the sequence at right.



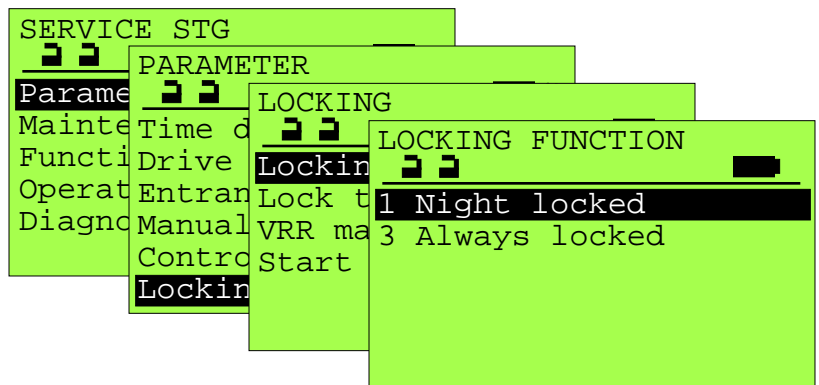
If a pair of operators are to be operated simultaneously, and only one rocker switch is to be used, it should be connected to the master control, and the slave control must be set as shown at right, allowing it to function without a rocker switch.



If automatic operation in response to pushing the door is desired (Push-To-Start), select "Miscellaneous", then "Push to Actuate" and enable by selecting "2 Normal". Note on paired units, this option must be set individually for both operators.



The unit is defaulted to include support for an automatic lock. If one is not provided, select the "Locking" parameter, then "Locking Functions", and change from "3 Always locked" to "1 Night locked" to eliminate the delay before opening.

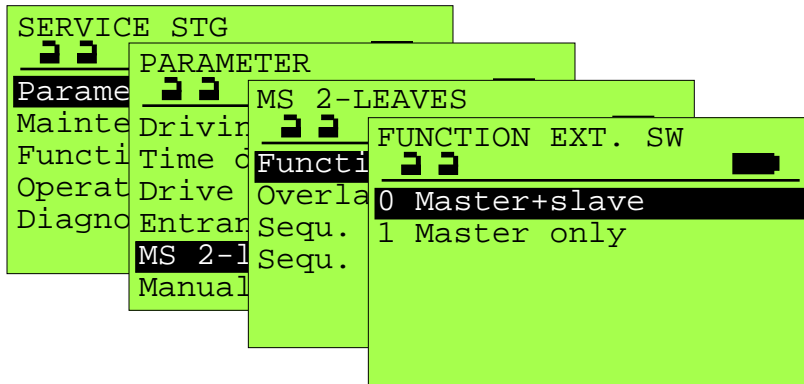


The unit(s) are now ready to be placed into operation. Turn the control panel "on", press and hold the Control Button on the door control for 3 blinks of the adjacent LED. This will initiate a calibration cycle of the operator. After a few seconds the operator should open slowly, with a short pulse during mid-opening. It should be allowed to complete this cycle without interruption.

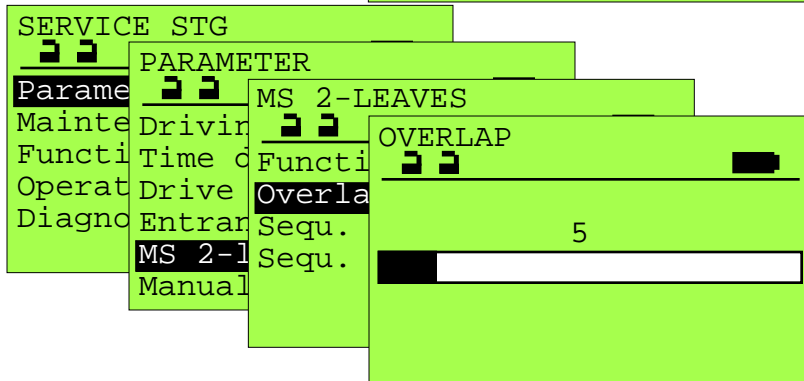
Note: Calibration must be performed individually on both operators of a pair.

The Series 6100 and 8000 Instructions included with the FPC-902 Terminal will have a complete listing of the screens, options, and adjustments available for this operator.

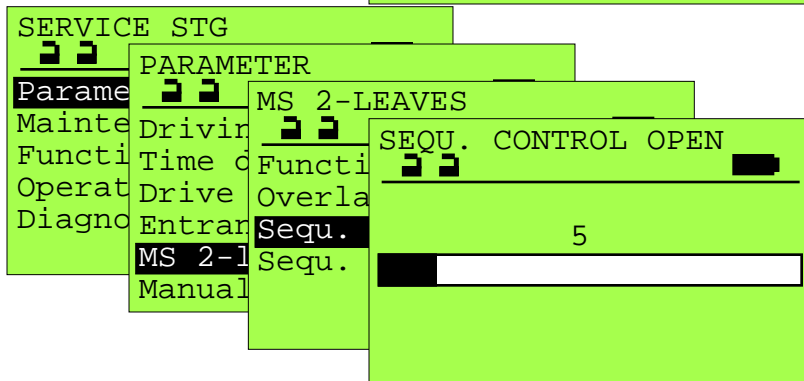
## Screens Available when synchronizing two operators Both Simultaneous Pairs and Double Egress



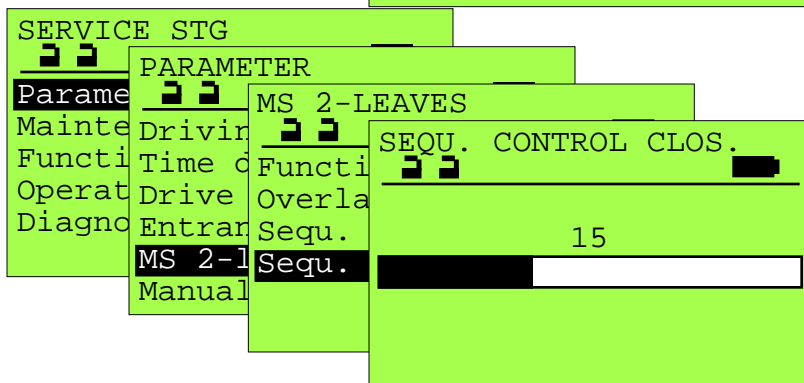
This is automatically set by the controls upon reading the Master / Slave jumper block (J13) on the controls.



This sets the lead time and lag time between operation of the master and slave operators, useful with an overlapping astragal. When set above 0, the Master begins opening before the slave and will stop 10° before fully closed, allowing the slave to close first. When set to 0, operation is simultaneous.



This adjusts a delay time between when the master operator begins opening and when the slave begins. Closing will not be affected. When set to 0, operation is simultaneous.



This adjusts a delay time between when the slave operator begins closing and when the master begins closing. Opening will not be affected. When set to 0, operation is simultaneous.

When ordered as a dual synchronized pair or a double egress, the operators are factory wired and parameters preset. If any changes are made, the following setup sequence is suggested - Insure Jumper J14 is set to M1 on the master unit and set to S1 on the slave unit. Apply power to both units, then press and hold the blue Control button on the master control for 8 flashes of the red LED (reset to factory defaults). Next press and hold the Control button for 8 flashes on the slave control. Return to the master unit and press & hold the Control button for 3 flashes of its red LED (initiate a calibration run). Finally, press & hold the button for 3 flashes on the slave control. The units should now be configured for synchronous operation, and with the above parameters set to 0 providing simultaneous operation. Note: If only one rocker switch is used, it is to be connected to the master control, and the slave control parameter CONTROL PANEL / MECHANICAL PANEL should be set to 0 3 Pos. (AUTO).



Full Power & Low Energy  
"Knowing Act" doors



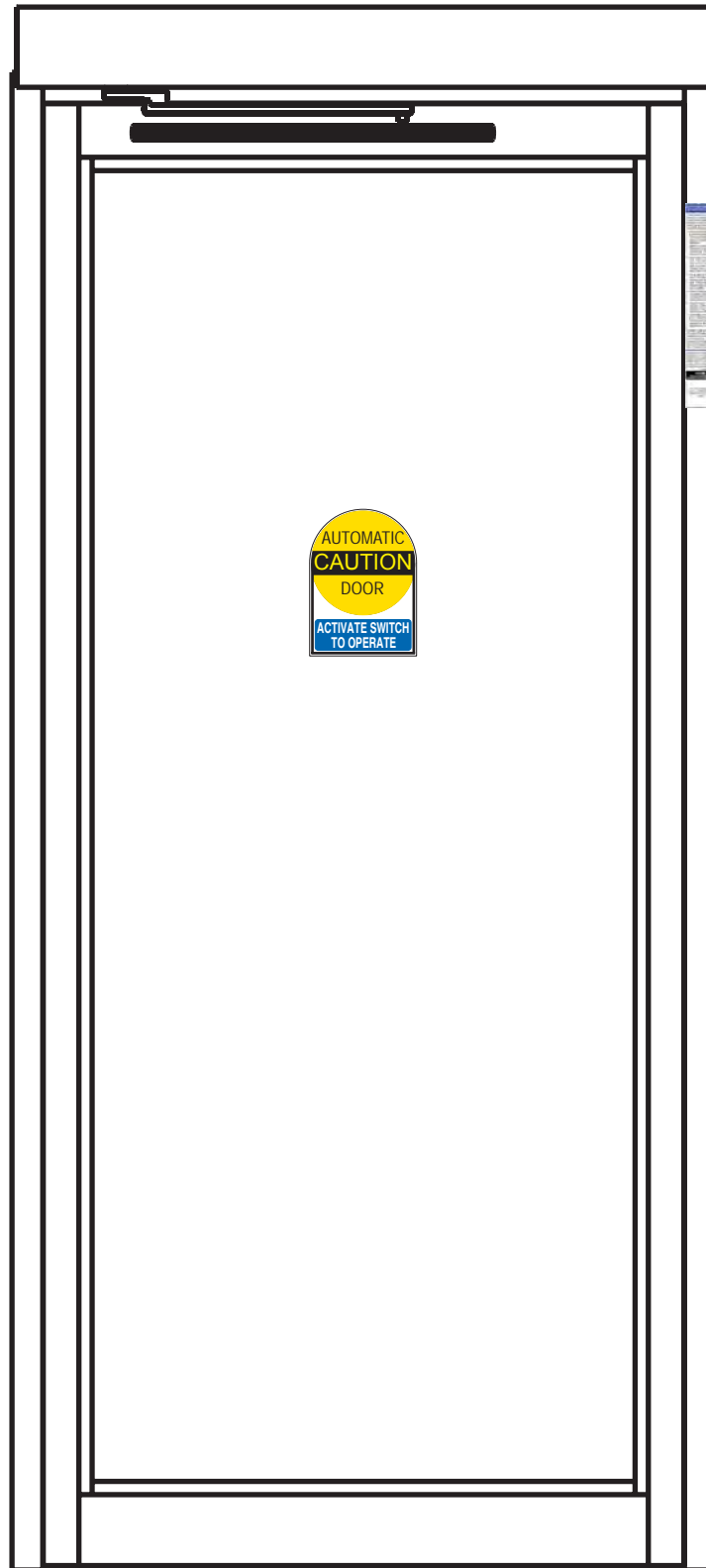
Full Power - Swing Side, 2-Way Traffic;  
Low Energy - Sensor Activation



Full Power  
Approach Side



Full Power  
Non-Approach Side

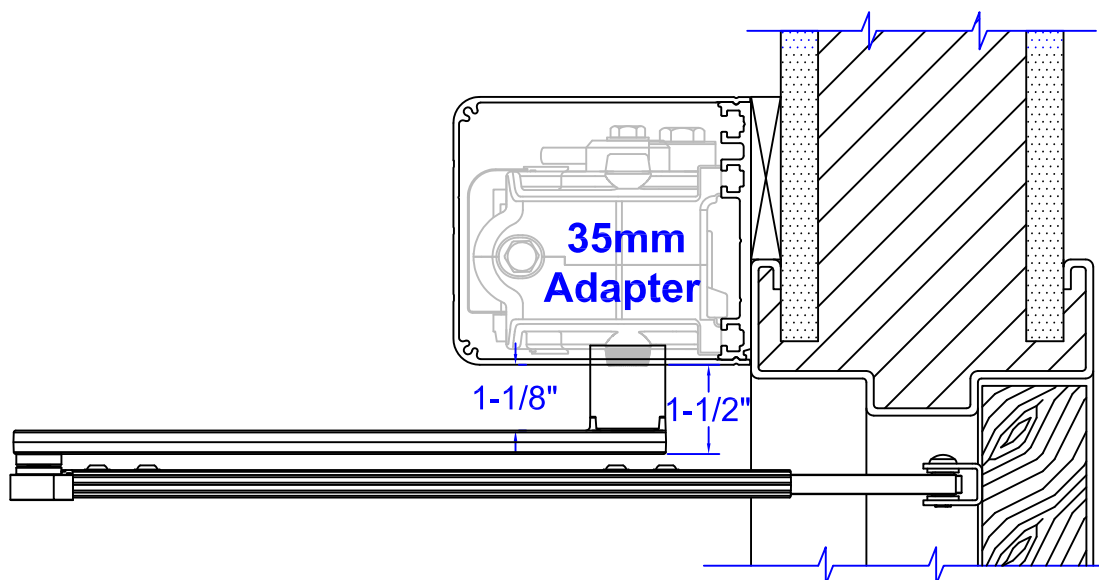


Daily Safety Check locate below control panel

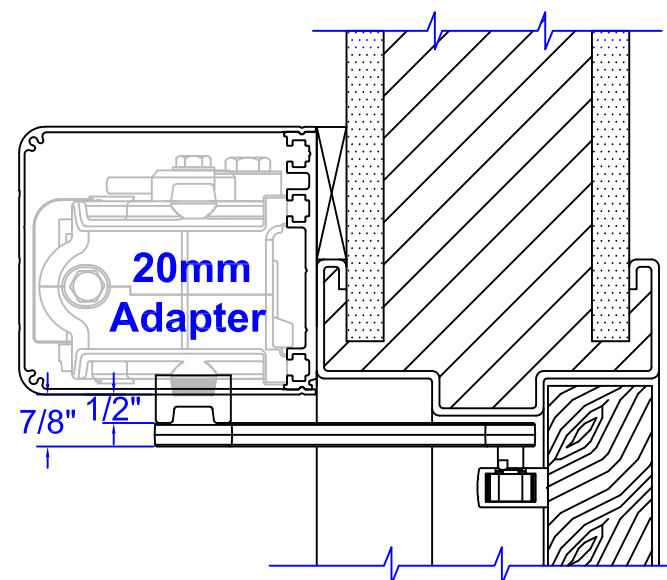
58"  
± 5"

## SAFETY DECAL REQUIREMENTS

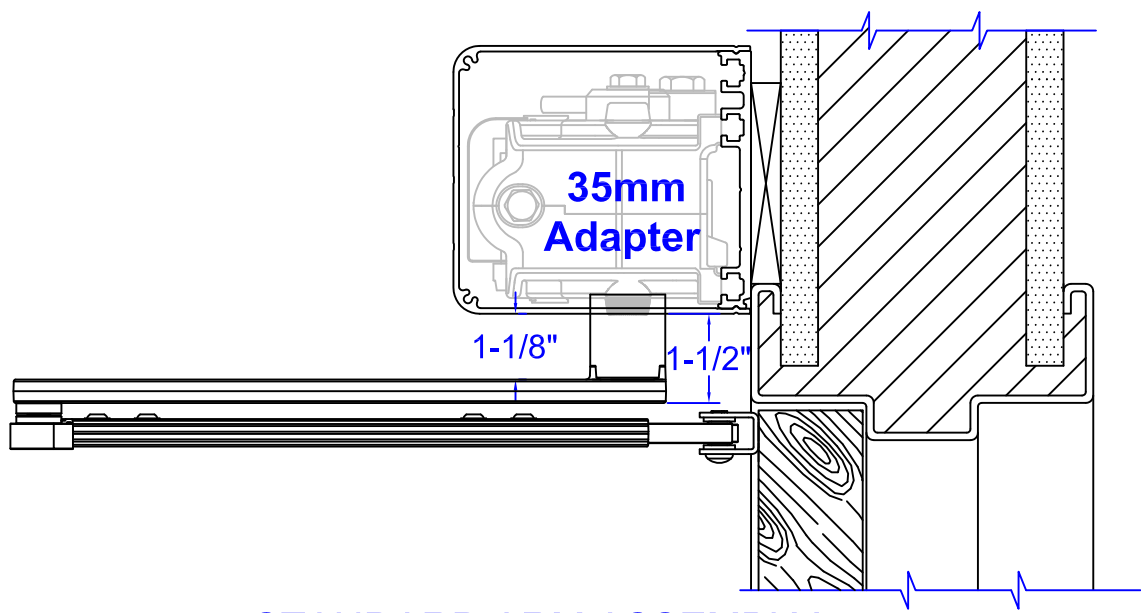
Oct06



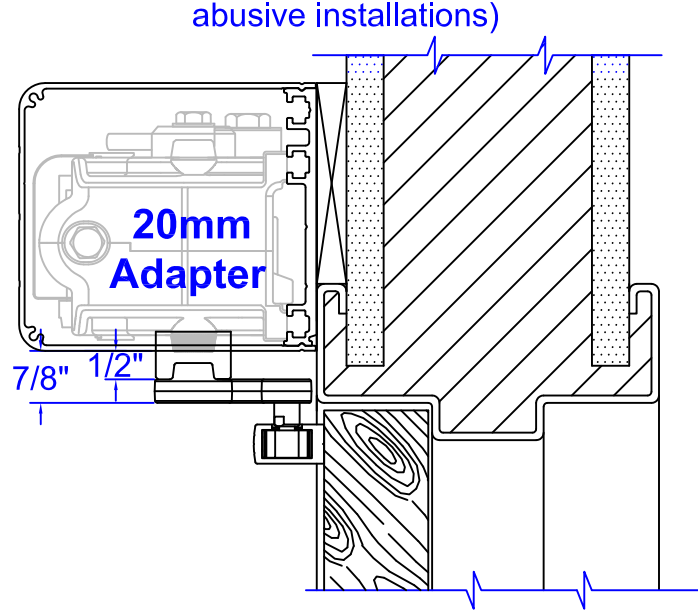
**STANDARD ARM ASSEMBLY  
 OUTSWING CONFIGURATION**



**SLIDE TRACK ARM ASSEMBLY  
 OUTSWING CONFIGURATION**  
 (Not recommended for heavy doors &/or  
 abusive installations)

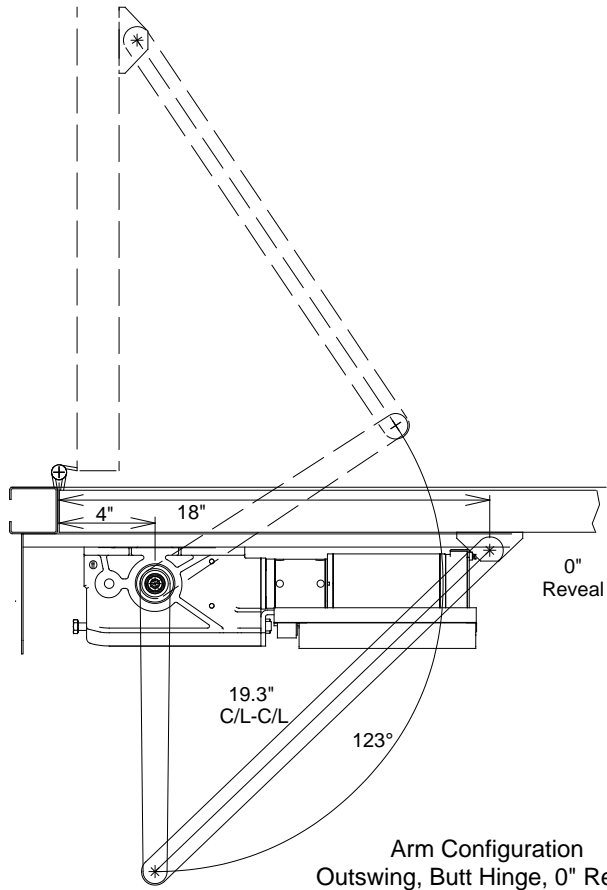


**STANDARD ARM ASSEMBLY  
 INSWING CONFIGURATION**

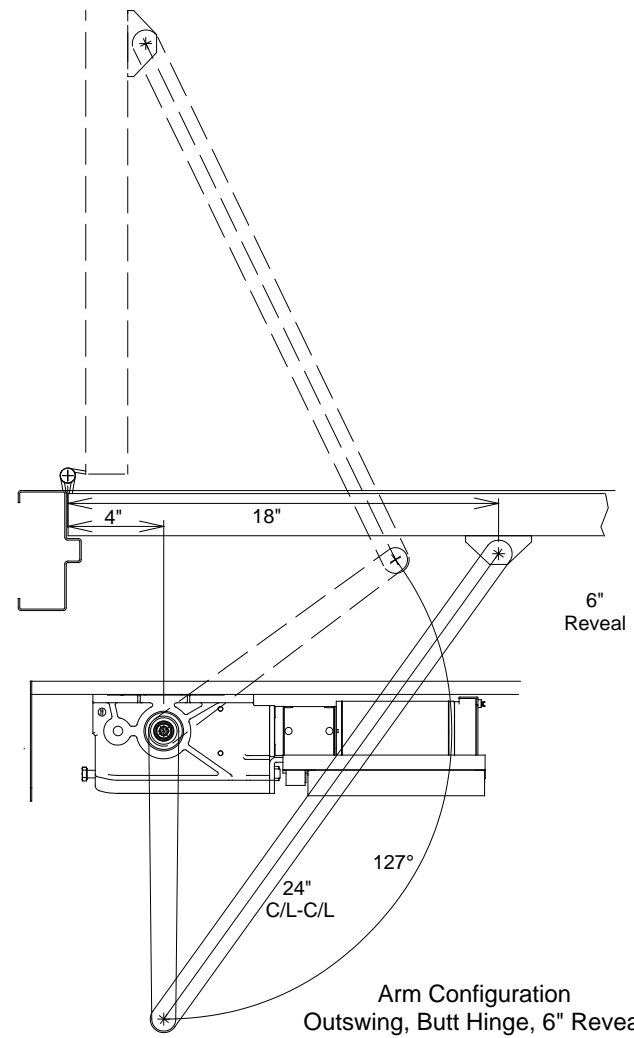


**SLIDE TRACK ARM ASSEMBLY  
 INSWING CONFIGURATION**

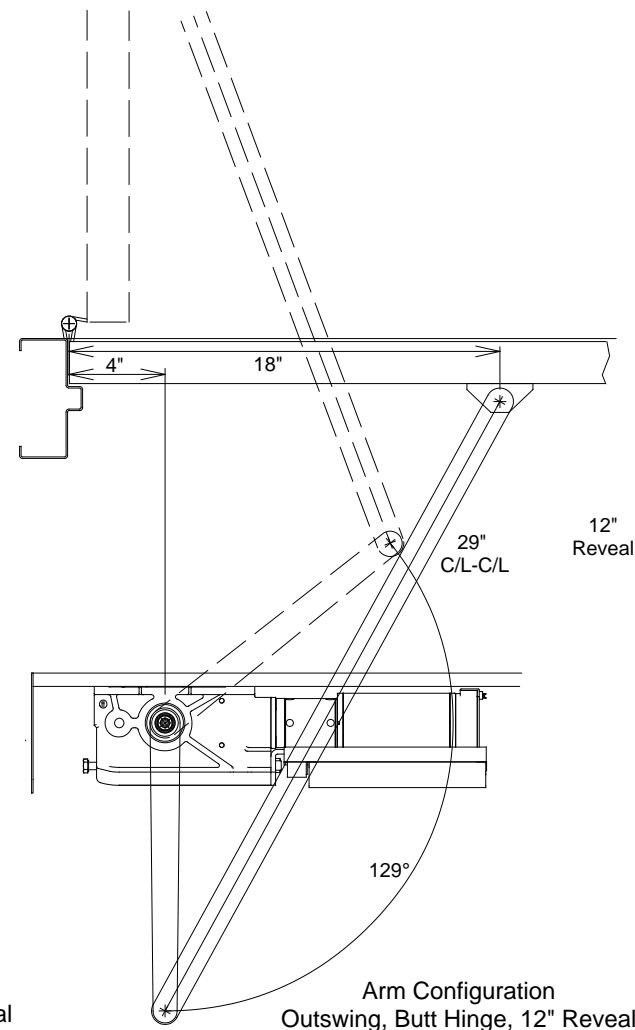
FOR DOUBLE-EGRESS INSTALLATIONS, CONSULT PAGE 20 OF THE INSTALLATION MANUAL



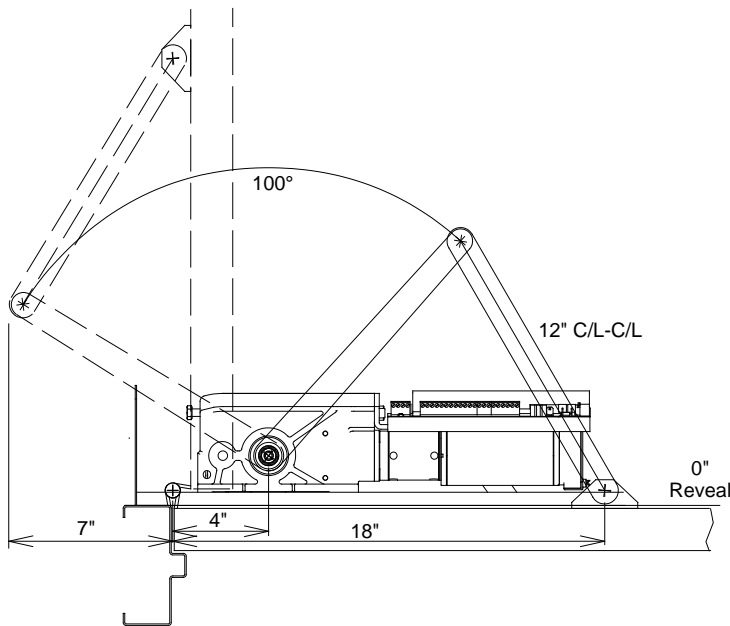
Arm Configuration  
Outswing, Butt Hinge, 0" Reveal  
25Sep05 DPH



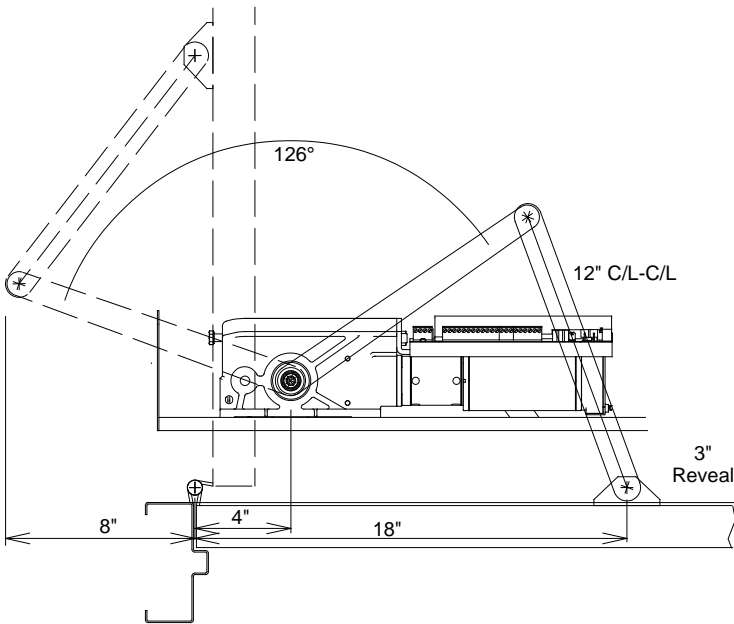
Arm Configuration  
Outswing, Butt Hinge, 6" Reveal  
25Sep05 DPH



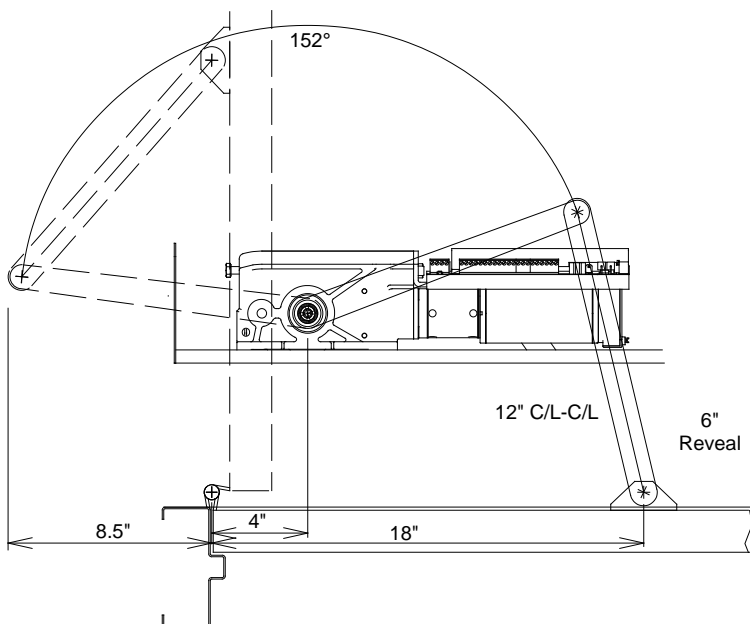
Arm Configuration  
Outswing, Butt Hinge, 12" Reveal  
25Sep05 DPH



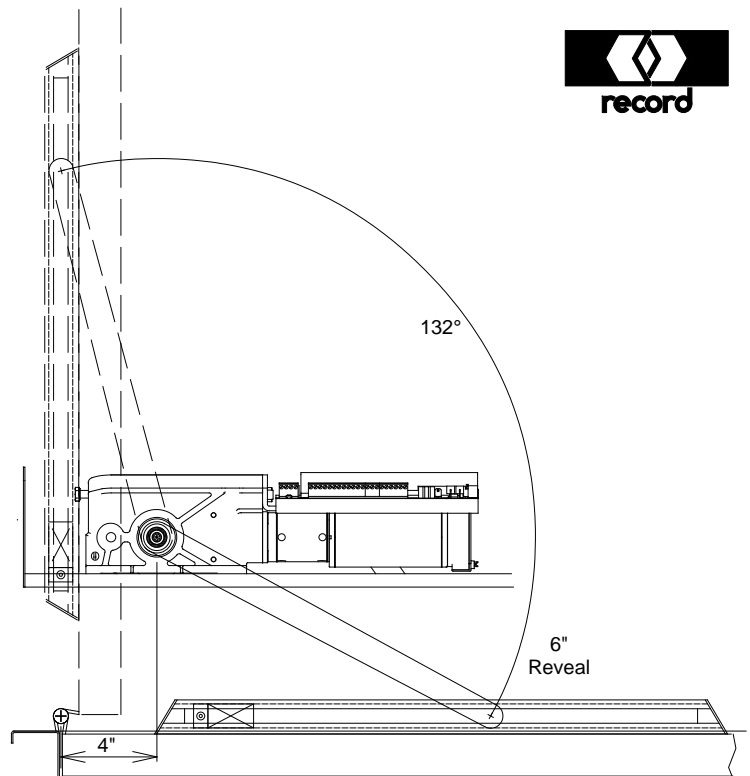
Arm Configuration  
 Inswing, Butt Hinge, 0" Reveal  
 25Sep05 DPH



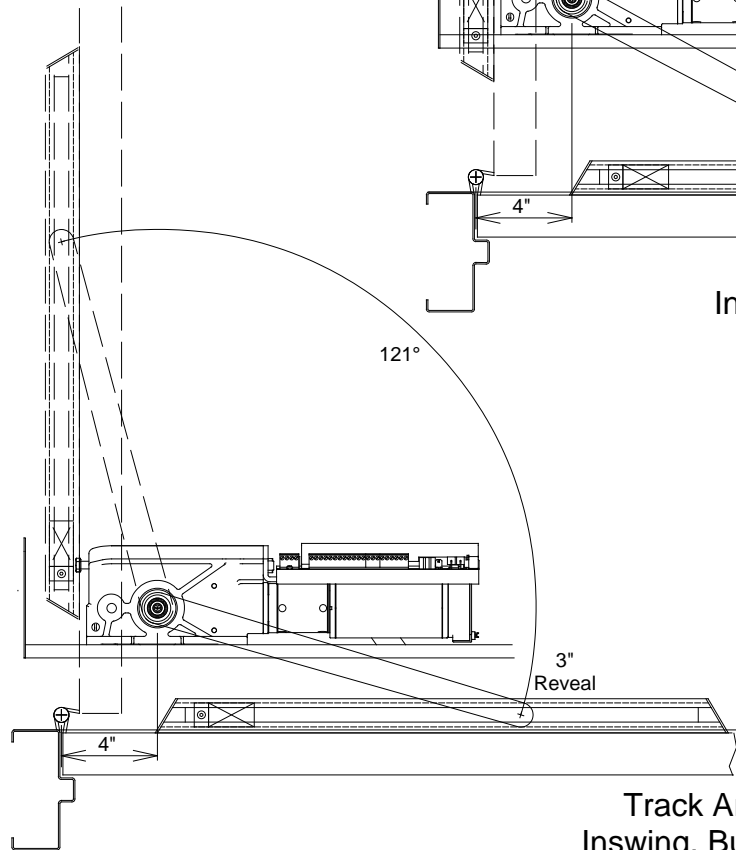
Arm Configuration  
 Inswing, Butt Hinge, 3" Reveal  
 25Sep05 DPH



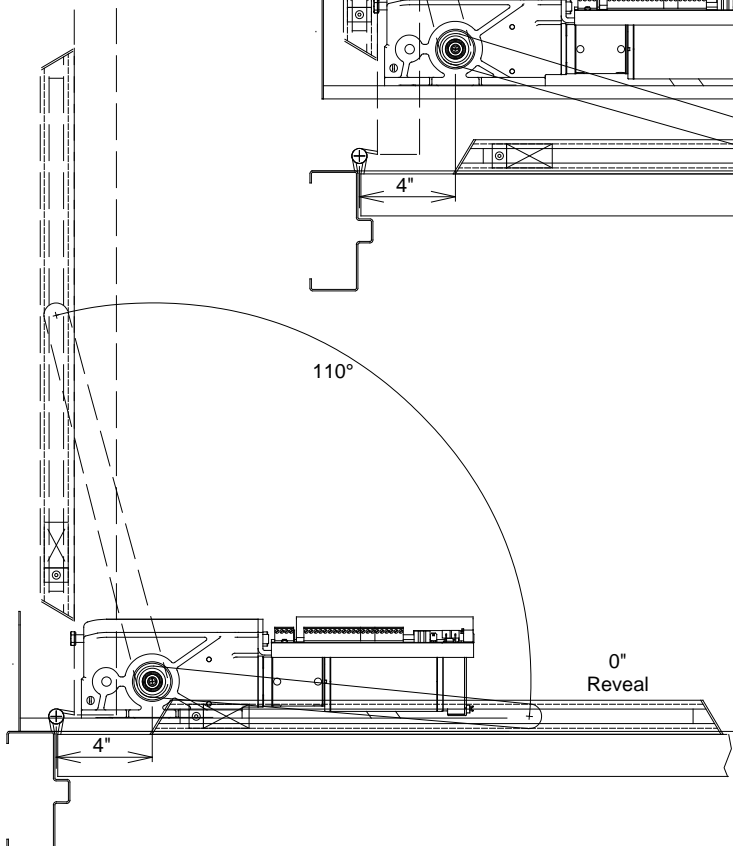
Arm Configuration  
 Inswing, Butt Hinge, 6" Reveal  
 25Sep05 DPH



**Track Arm Configuration**  
**Inswing, Butt Hinge, 6" Reveal**  
25Sep05 DPH

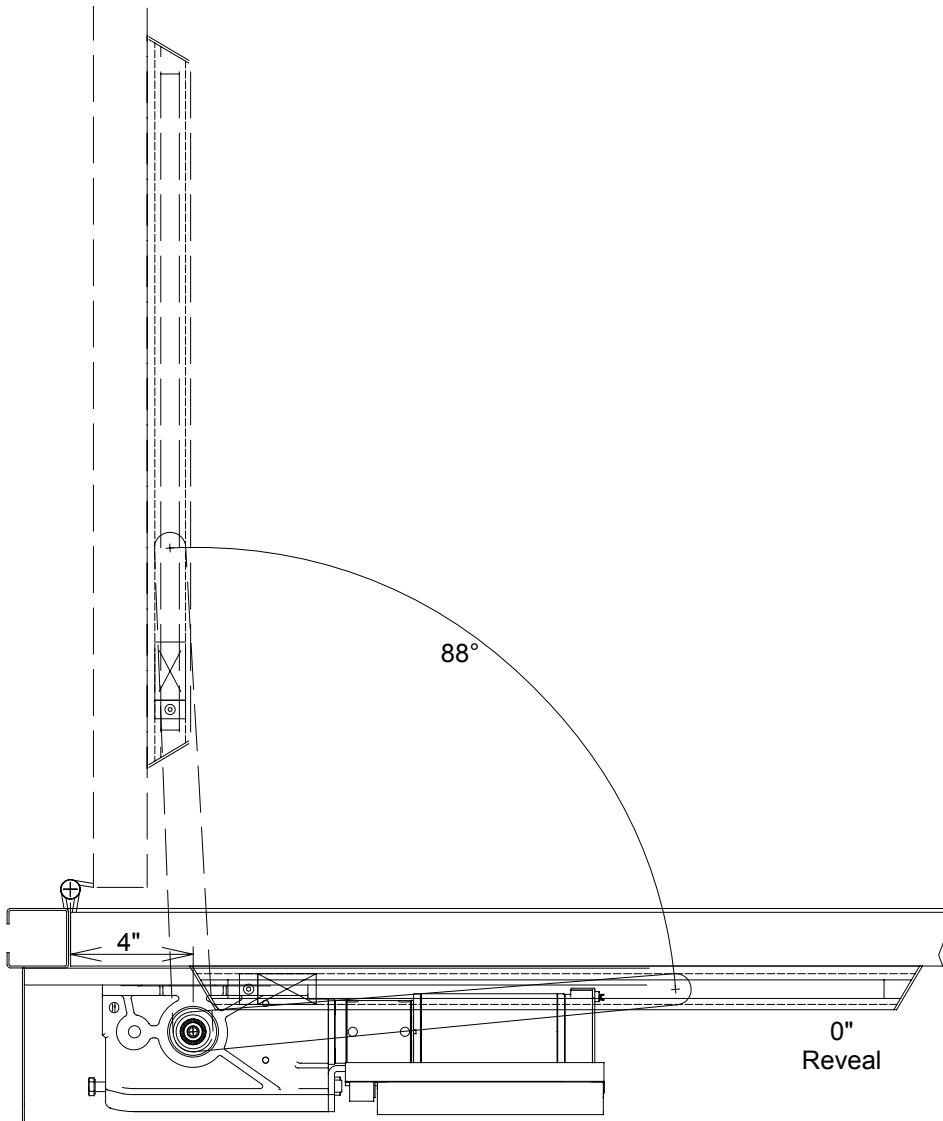


**Track Arm Configuration**  
**Inswing, Butt Hinge, 3" Reveal**  
25Sep05 DPH

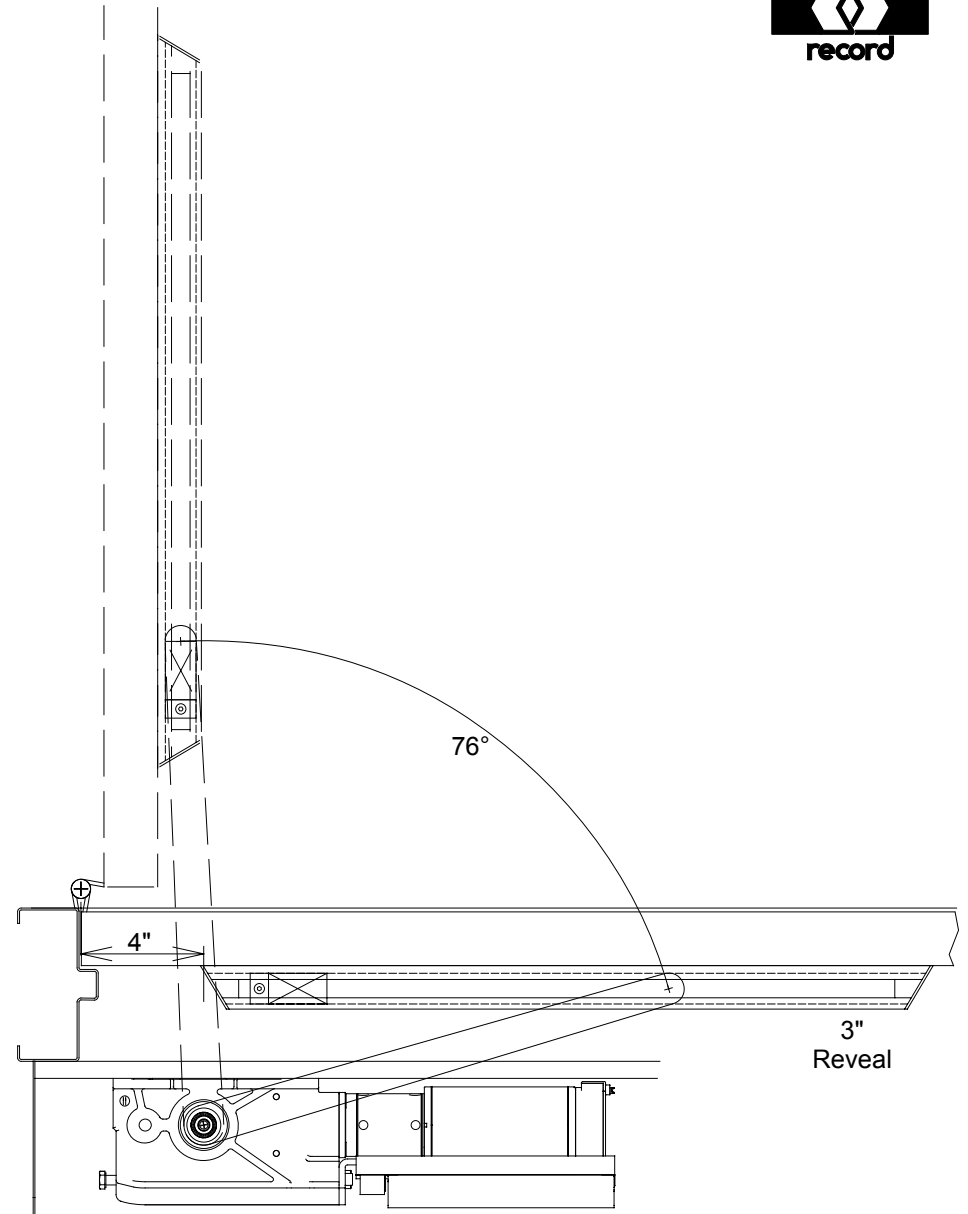


**Track Arm Configuration**  
**Inswing, Butt Hinge, 0" Reveal**  
25Sep05 DPH



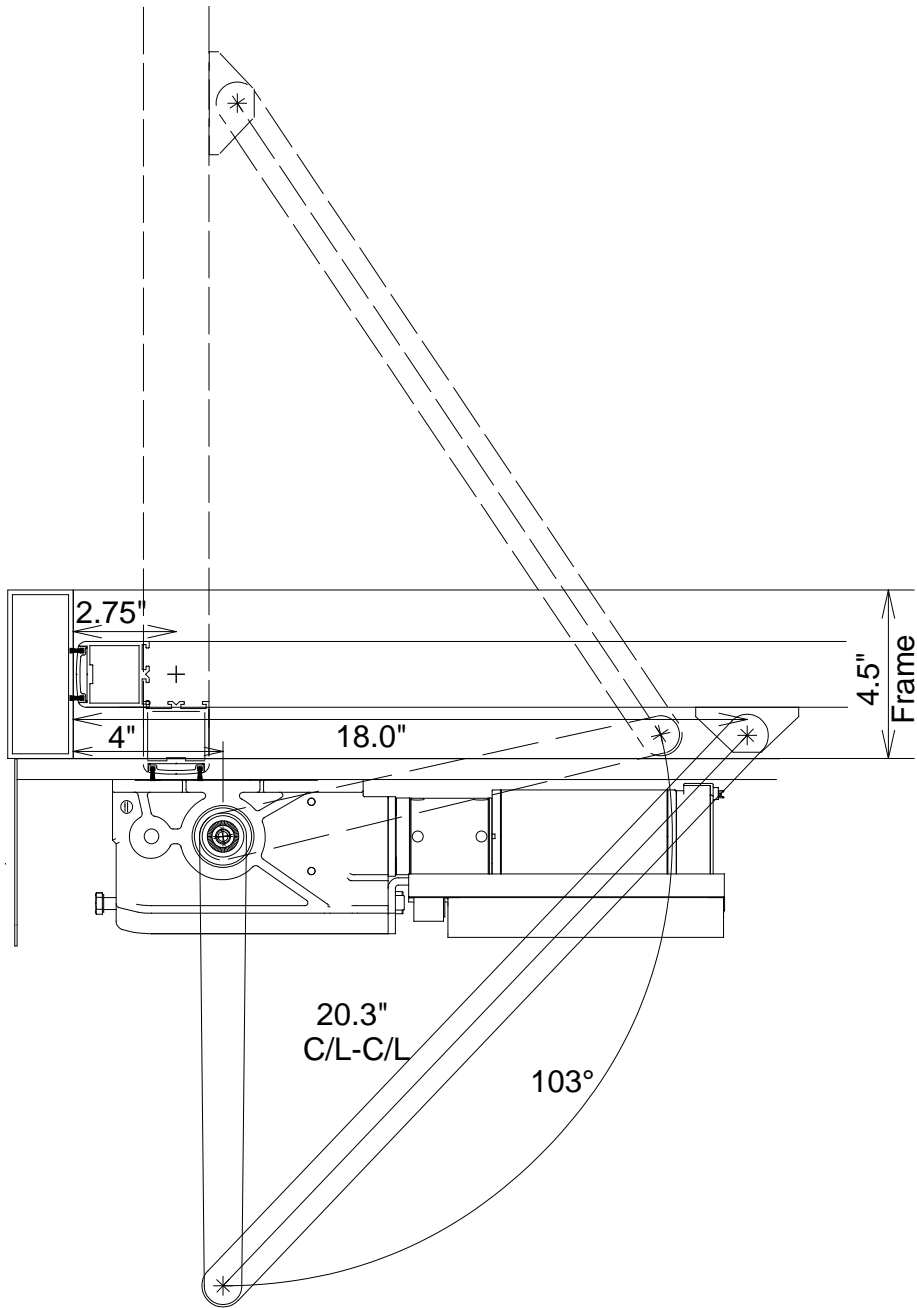


Track Arm Configuration  
Outswing, Butt Hinge, 0" Reveal  
25Sep05 DPH

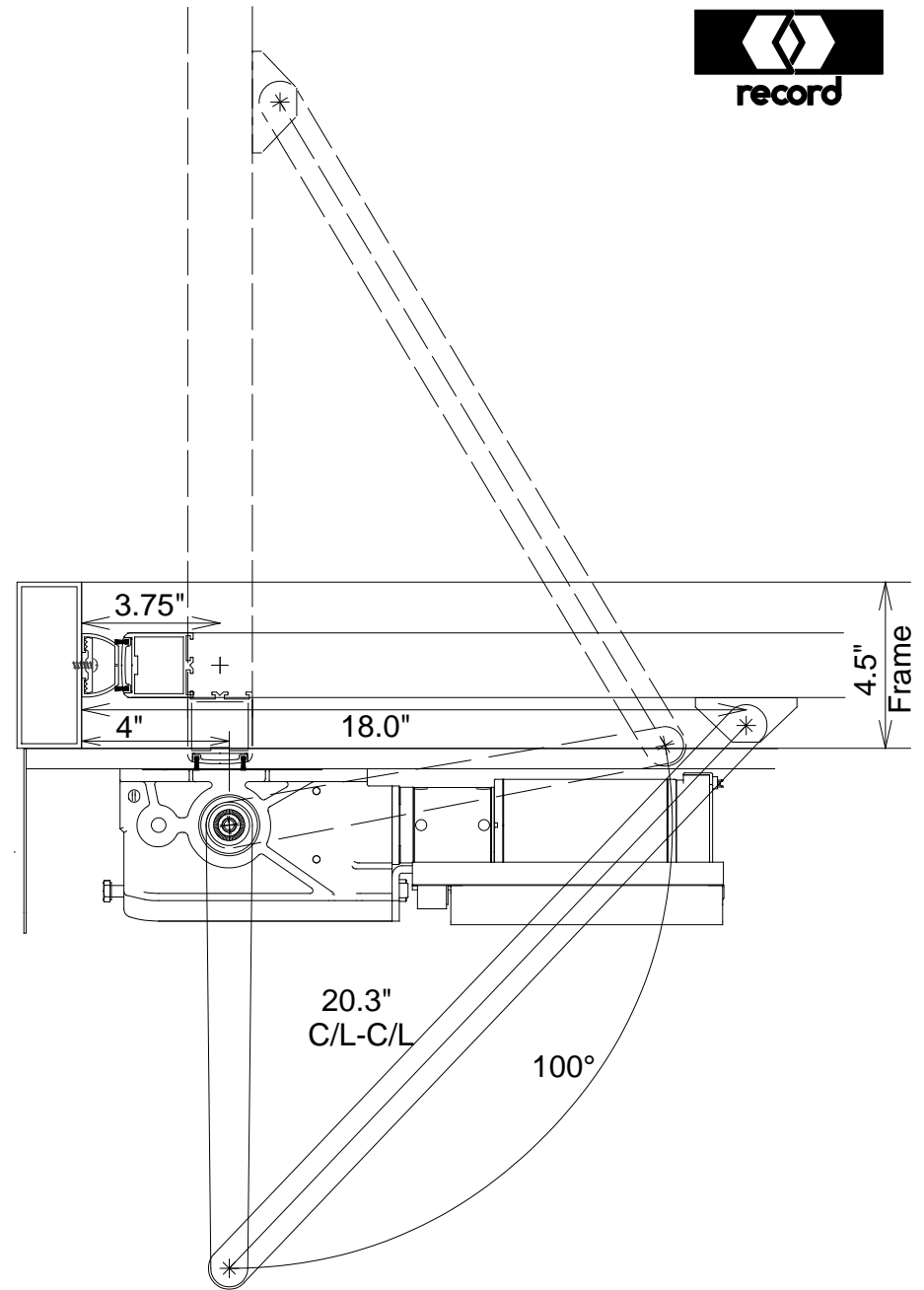


Track Arm Configuration  
Outswing, Butt Hinge, 3" Reveal  
25Sep05 DPH

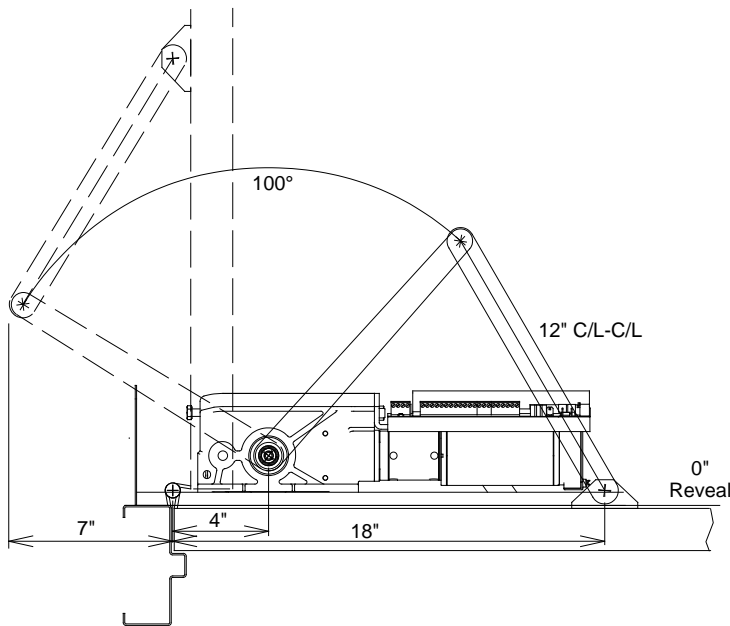
Not recommended for heavy doors and/or abusive installations



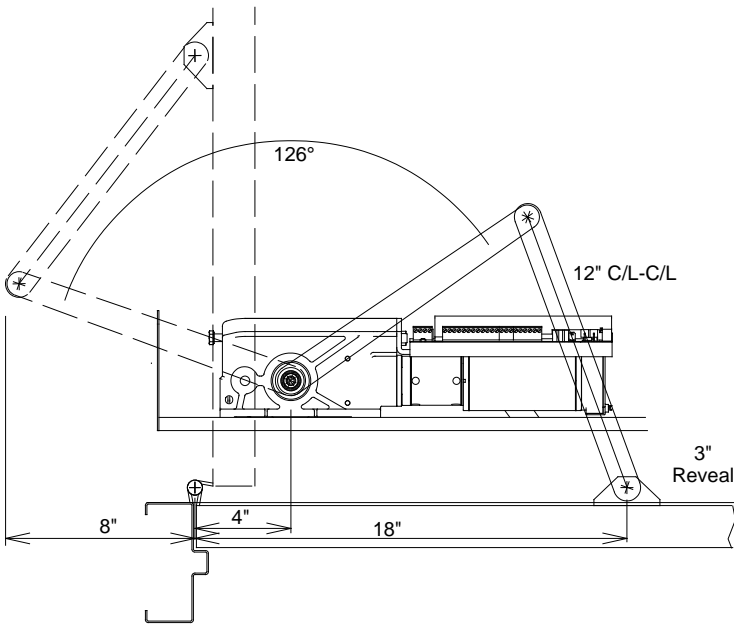
Arm Configuration  
Outswing, 2.75"CenterPivot, 4.5"Frame  
25Sep05 DPH



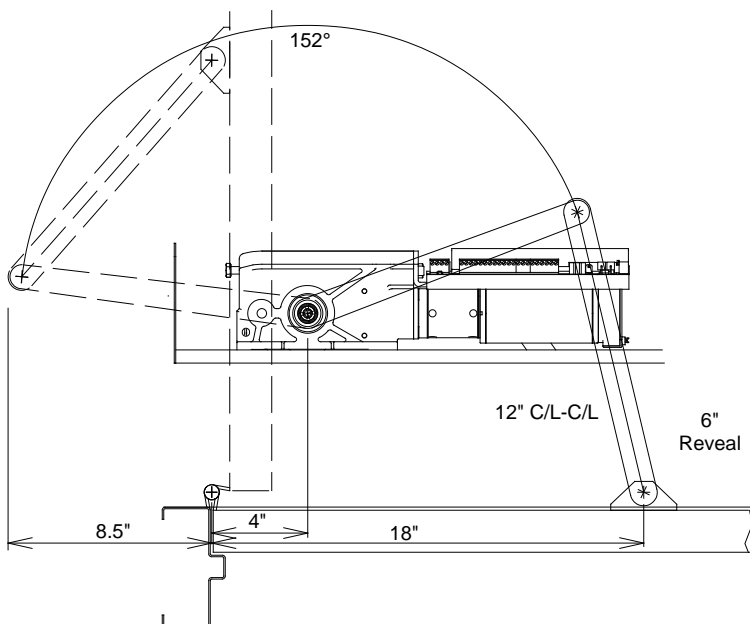
Arm Configuration  
Outswing, 3.75"CenterPivot, 4.5"Frame  
25Sep05 DPH



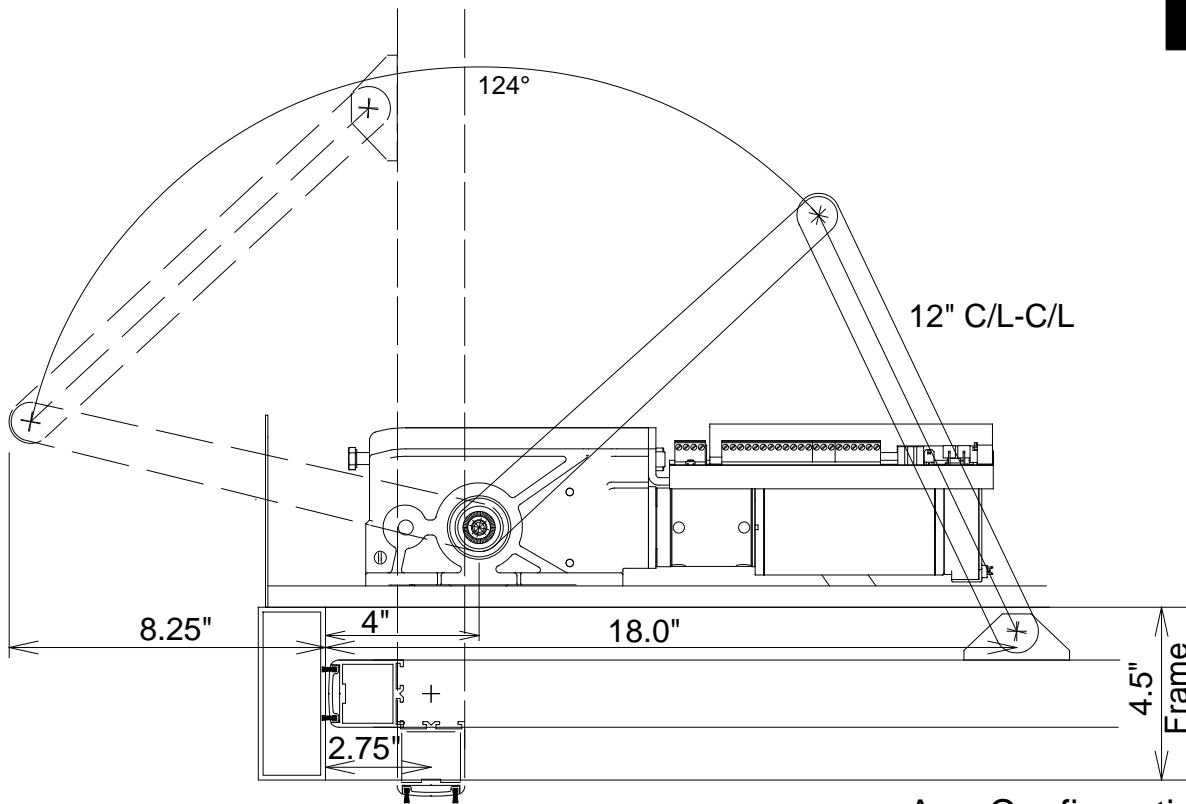
Arm Configuration  
 Inswing, Butt Hinge, 0" Reveal  
 25Sep05 DPH



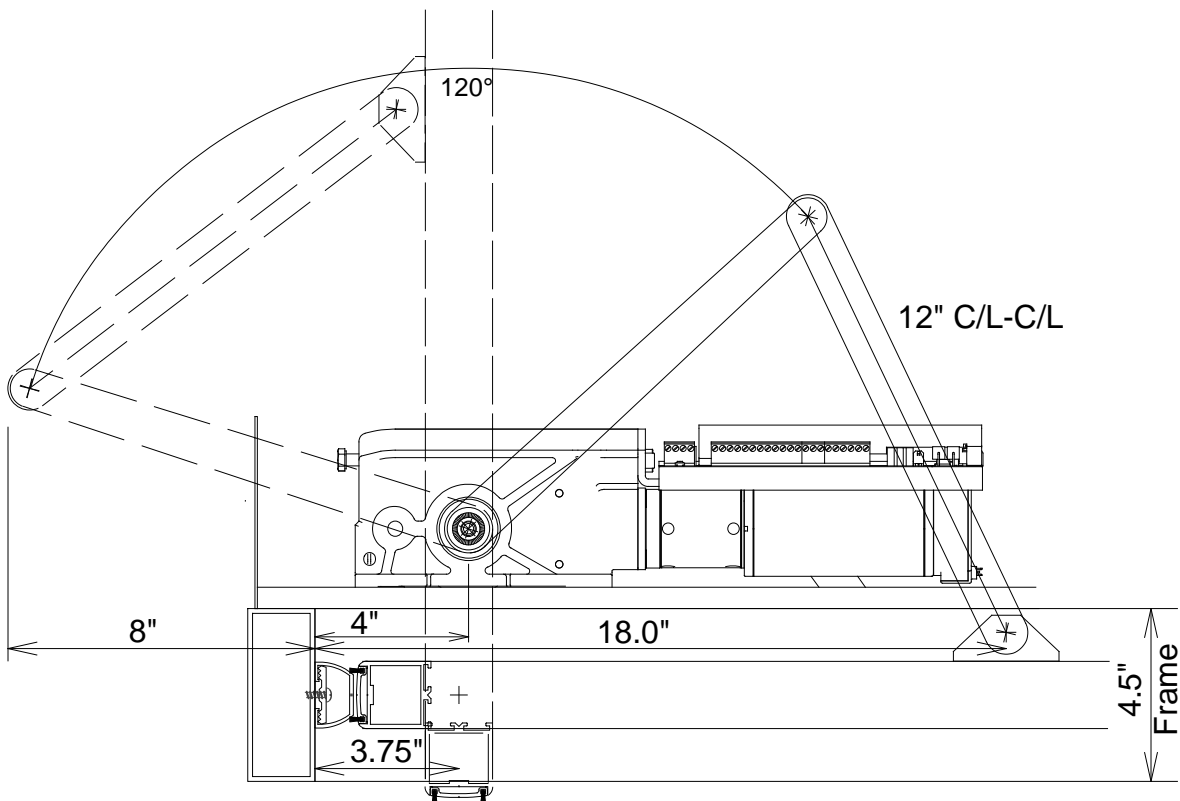
Arm Configuration  
 Inswing, Butt Hinge, 3" Reveal  
 25Sep05 DPH



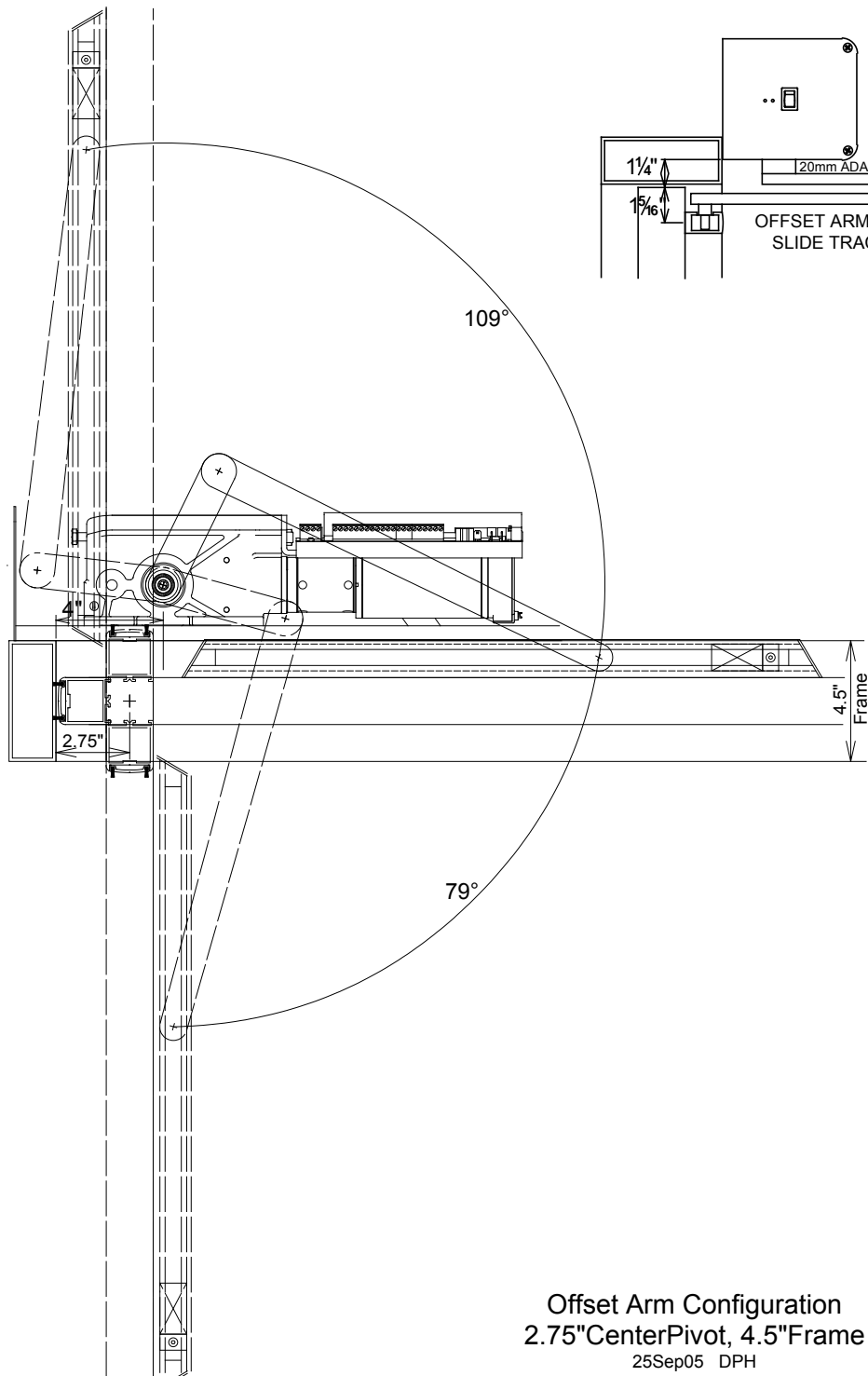
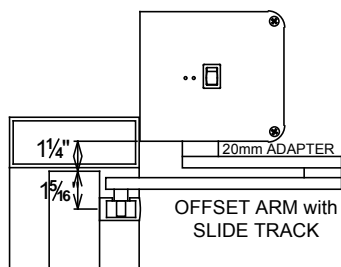
Arm Configuration  
 Inswing, Butt Hinge, 6" Reveal  
 25Sep05 DPH



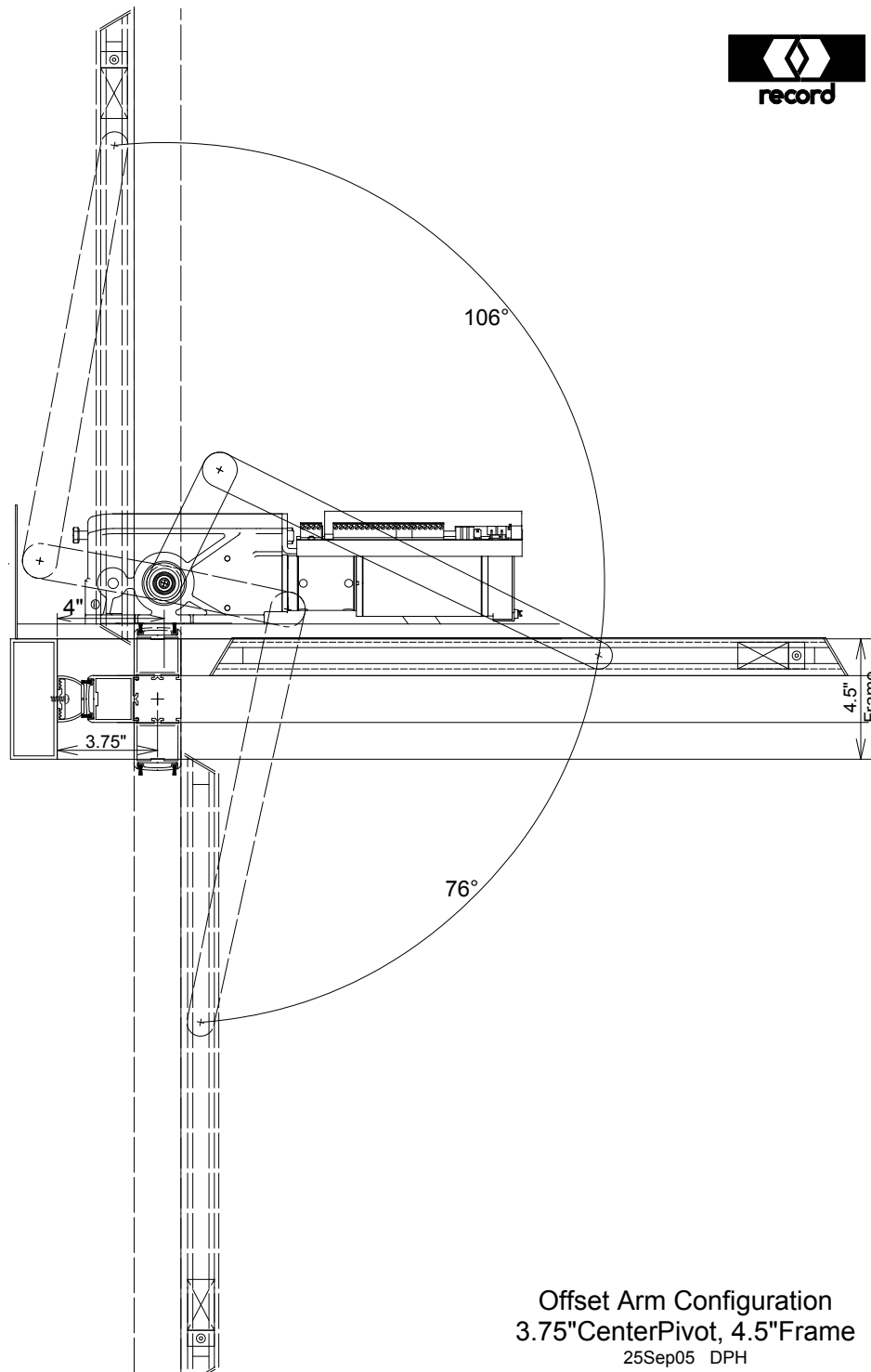
Arm Configuration  
 Inswing, 2.75" Center Pivot, 4.5" Frame  
 25Sep05 DPH



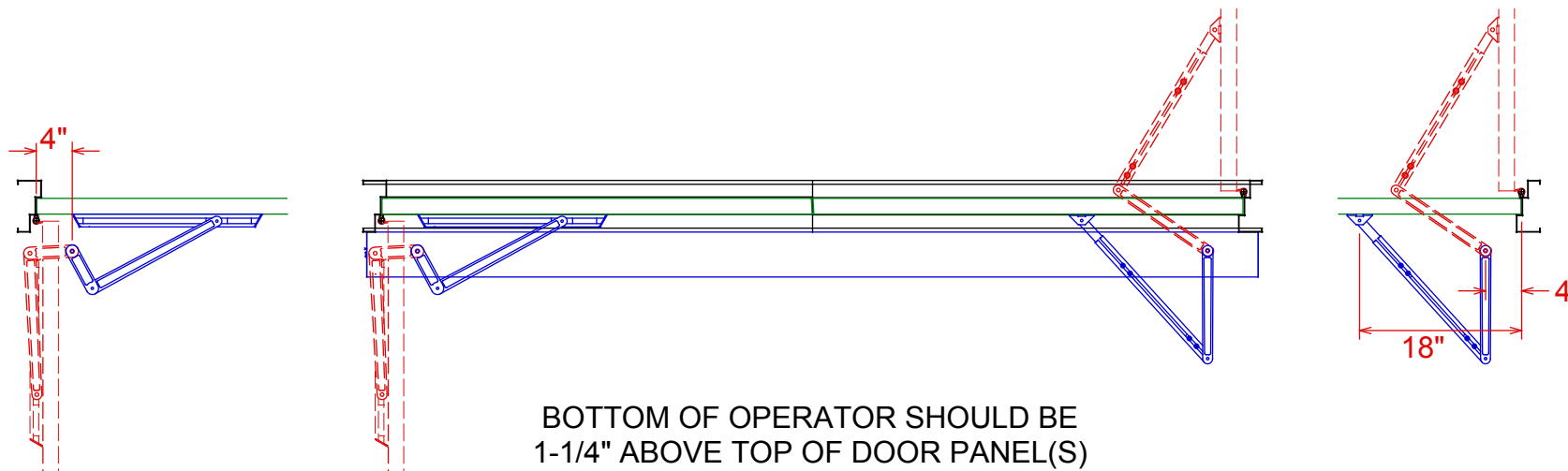
Arm Configuration  
 Inswing, 3.75" Center Pivot, 4.5" Frame  
 25Sep05 DPH



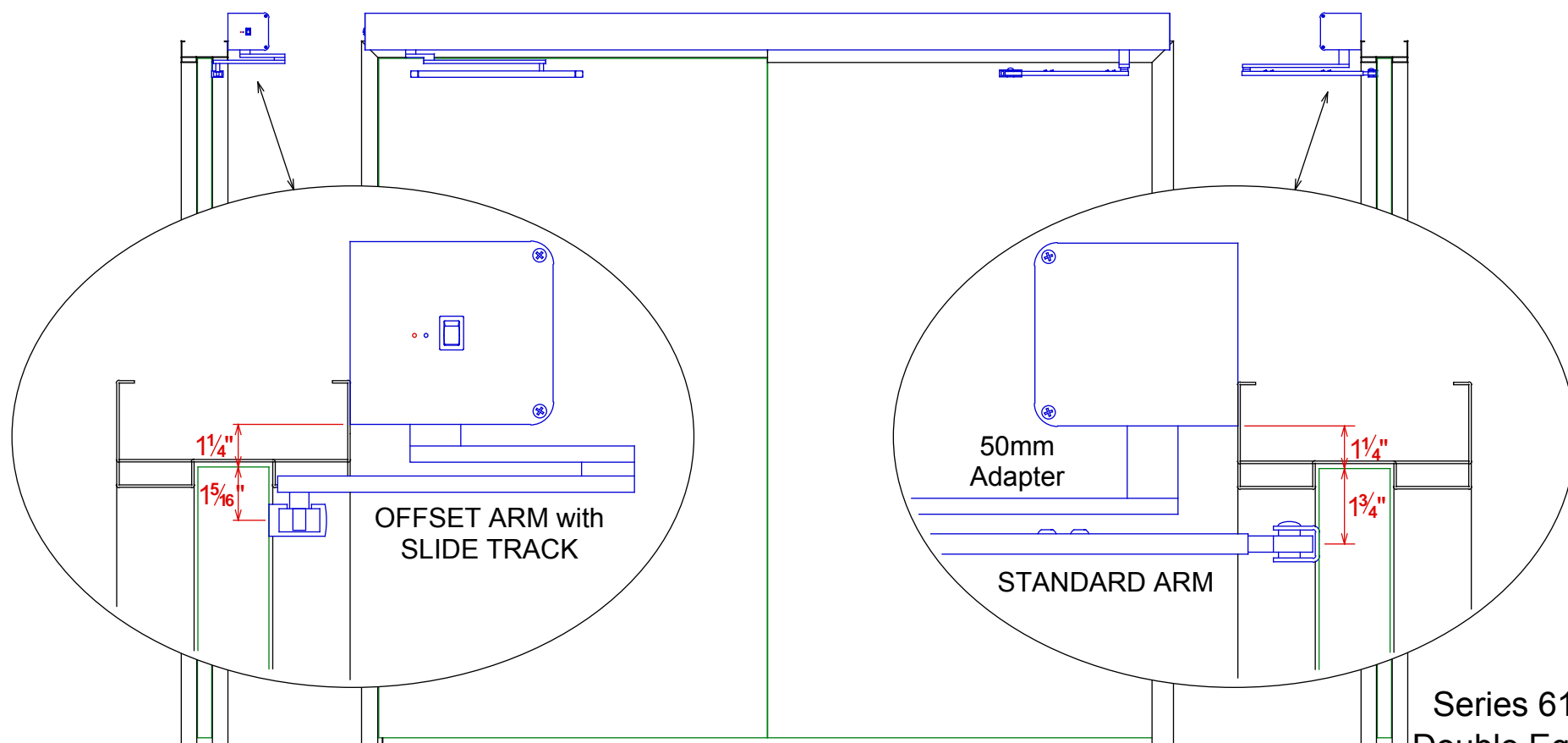
Offset Arm Configuration  
2.75" CenterPivot, 4.5" Frame  
25Sep05 DPH



Offset Arm Configuration  
3.75" CenterPivot, 4.5" Frame  
25Sep05 DPH



BOTTOM OF OPERATOR SHOULD BE  
1-1/4" ABOVE TOP OF DOOR PANEL(S)



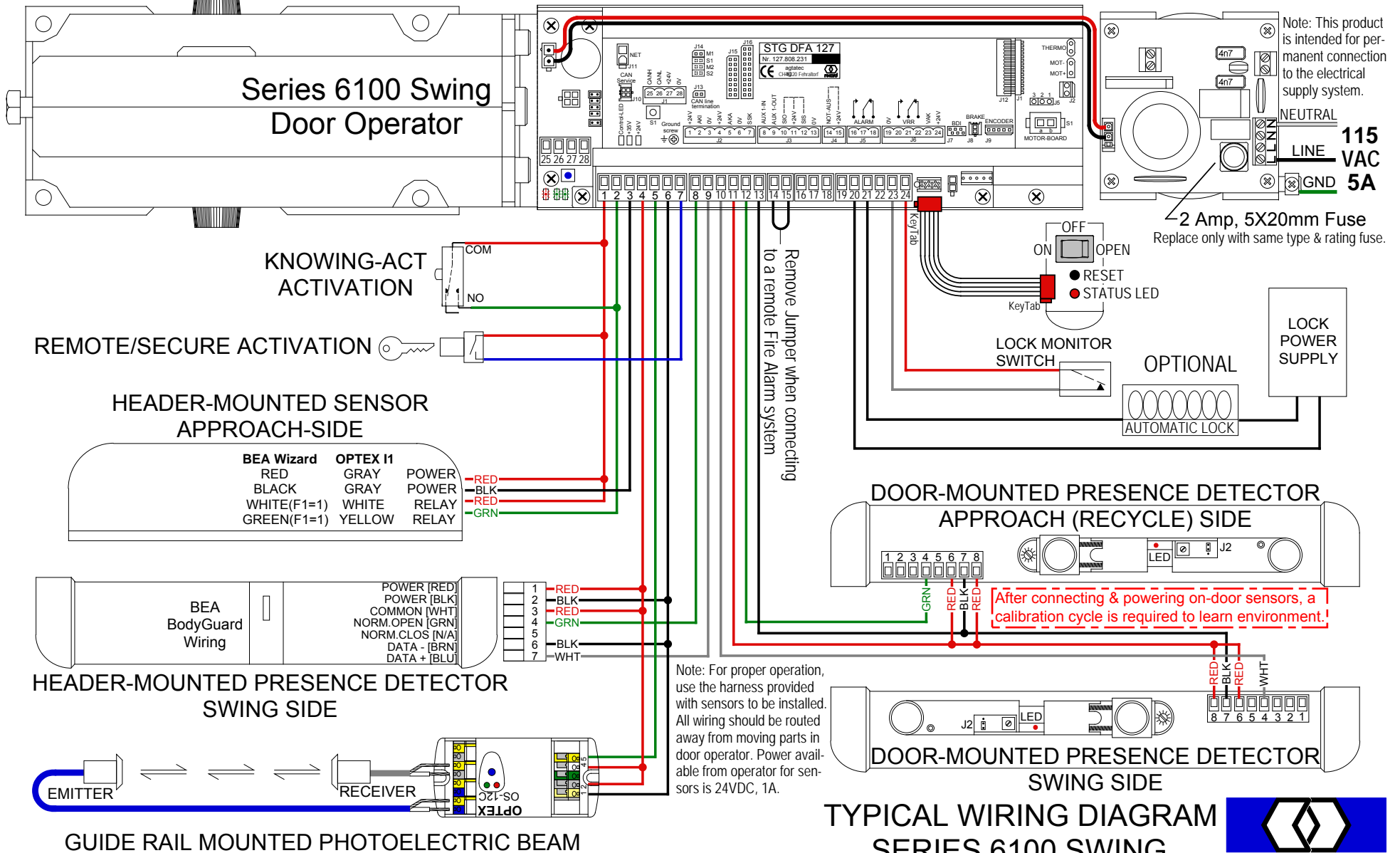
The Double-Egress Adapter kit (4-80-0804) includes the Offset Arm (9-80-0107) for the Slide Track, and the 50mm Adapter (9-80-0007) for the Standard Arm Ass'y.

Series 6100  
Double Egress  
Installation

## CONTROL TERMINAL BLOCK CONNECTIONS

- |   |   |  |
|---|---|--|
| 1 - Approach Sensor - Power/Signal - +24V     | 9 - BodyGuard Data Line - Data +                  | 17 - Door Alarm Relay - COM                |
| 2 - Approach Sensor - Signal                  | 10 - Door Mounted Swing Side Safety - Signal      | 18 - Door Alarm Relay - N.C.               |
| 3 - Approach Sensor - Power - 0V              | 11 - Door Mounted Sensors - Power/Signal - +24V   | 19 - Automatic Lock Power - 0V (0.5A Max.) |
| 4 - Guide Rail Beam - Power/Signal - +24V     | 12 - Door Mounted Approach Side Recycle - Signal  | 20 - Automatic Lock Control Relay - N.O.   |
| 5 - Guide Rail Beam - Signal                  | 13 - Door Mounted Sensors - Power - 0V            | 21 - Automatic Lock Control Relay - COM    |
| 6 - Guide Rail Beam - Power - 0V              | 14 - Fire Alarm Signal (Jumper to 15 if not used) | 22 - Automatic Lock Control Relay - N.C.   |
| 7 - Remote Switch - Signal                    | 15 - Fire Alarm - +24V                            | 23 - Automatic Lock Monitor Signal         |
| 8 - Header Mounted Swing Side Safety - Signal | 16 - Door Alarm Relay - N.O.                      | 24 - Automatic Lock Power/Signal - +24V    |

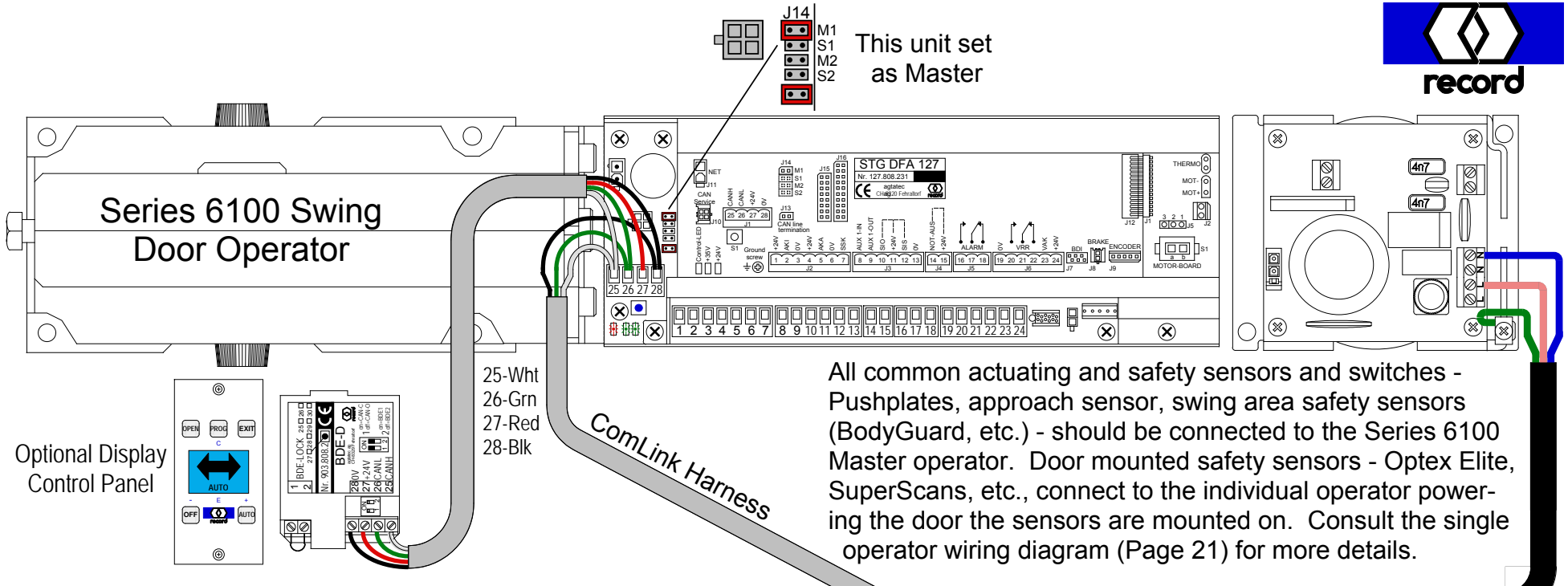
There are three levels of resetting an operator. To reset without changing any operating parameters, press & hold the black reset button (next to the ON/OFF rocker switch) for 6 seconds, until relay "clicks" occur. To reset and restore typical operating parameters (speed, master/slave, etc.), press & hold the blue button (on the door control) for 8 flashes of the red LED. To fully reset the unit, eliminating all parameter modifications (including Series 6100/8000 setting), press & hold the blue button on the control for 9 flashes of the red LED, then immediately remove the jumper between terminals 14 & 15. After a full reset, the parameter "Entrance System / Door Type" must be changed from "0 Basic Operator" to "25 USA Low Energy". Additional parameters, including factory settings, will also have to be re-entered. Consult factory for additional details.



## TYPICAL WIRING DIAGRAM SERIES 6100 SWING

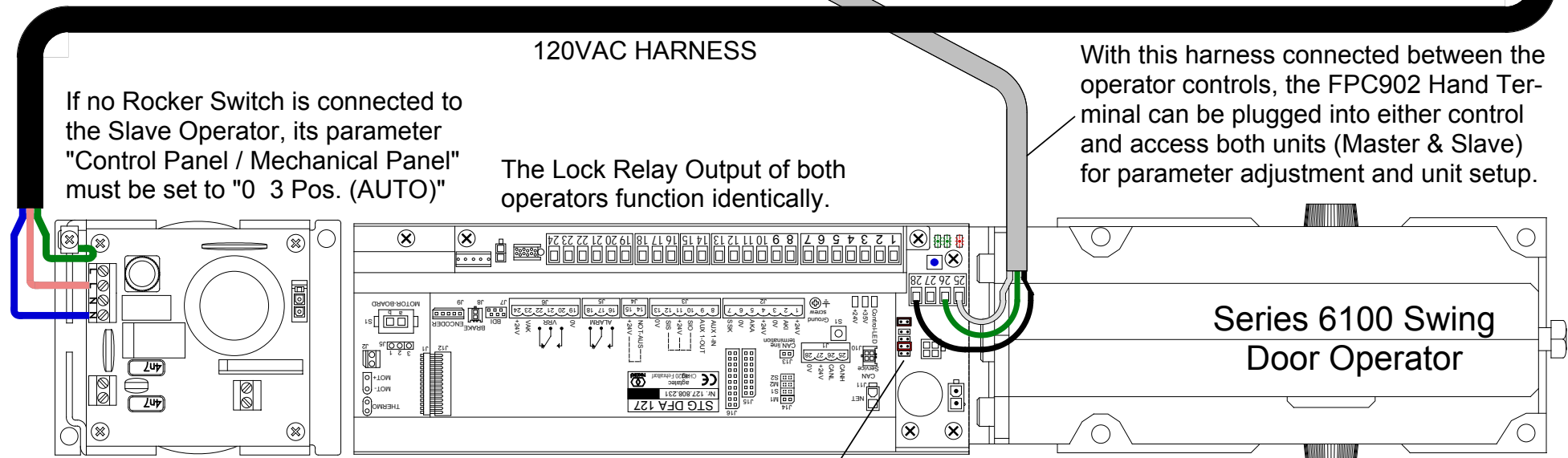
10SEP07 DPH





This unit set as Master

All common actuating and safety sensors and switches - Pushplates, approach sensor, swing area safety sensors (BodyGuard, etc.) - should be connected to the Series 6100 Master operator. Door mounted safety sensors - Optex Elite, SuperScans, etc., connect to the individual operator powering the door the sensors are mounted on. Consult the single operator wiring diagram (Page 21) for more details.



This unit set as Slave

With this harness connected between the operator controls, the FPC902 Hand Terminal can be plugged into either control and access both units (Master & Slave) for parameter adjustment and unit setup.

If no Rocker Switch is connected to the Slave Operator, its parameter "Control Panel / Mechanical Panel" must be set to "0 3 Pos. (AUTO)"

The Lock Relay Output of both operators function identically.

# INTERCONNECT WIRING SERIES 6100 SWING PAIR