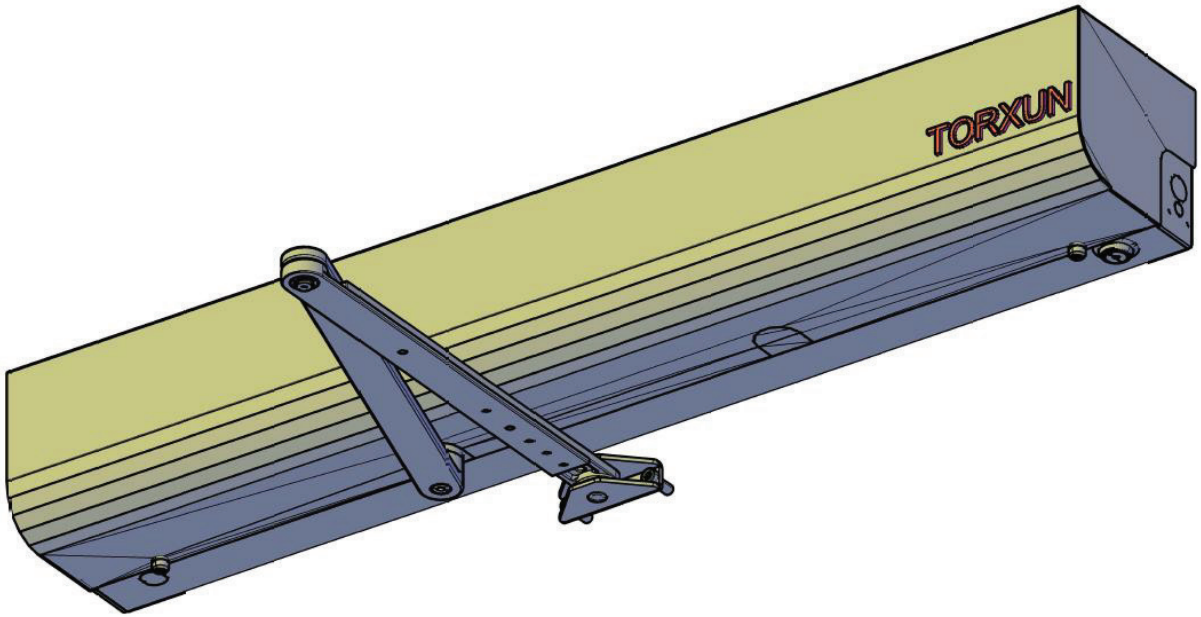
TORXUN
VEHICLE ACCESS TECHNOLOGIES

# AUTOPED(TM)/ MODEL-10 OPERATOR APPENDIX

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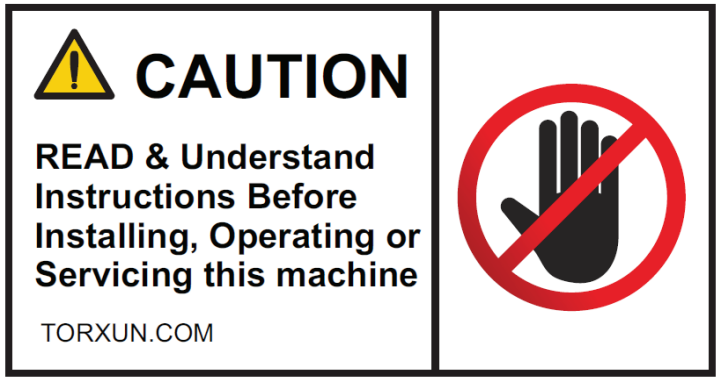

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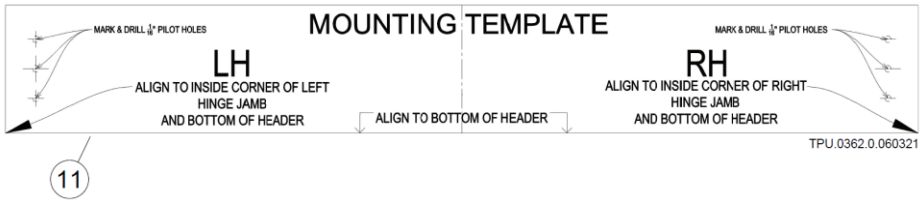
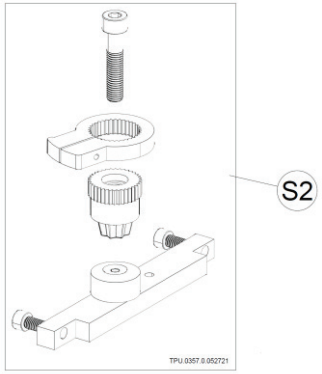
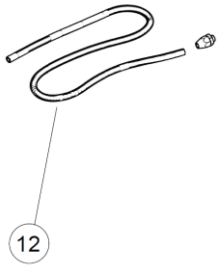
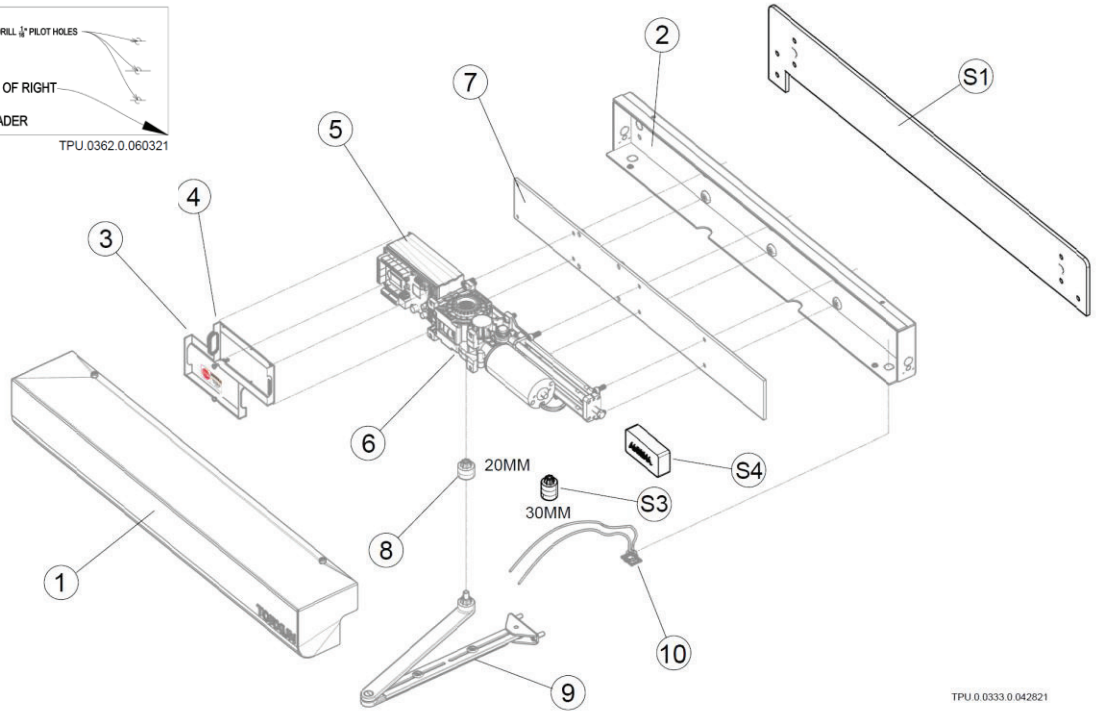
# AUTOPED OPERATOR PARTS AND COMPONENTS




| Item | Standard Parts Description | Qty |
|---|---|---|
| 1 | Enclosure Assembly - Front Cover | 1 |
| 2 | Enclosure Assembly - Rear Cover (Chassis) | 1 |
| 3 | Push Arm Assembly – factory assembled Lever Arm, Push Arm and Arm Shoe | 1 |
| 4 | Spindle Extension, 20mm | 1 |
| 5 | Rocker Switch | 1 |
| 6 | Control Unit Cover - Front and Rear | 1 set |
| 7 | Drive Assembly–factory assembled motor-gearbox-controller on mounting plate | 1 set |
| 8 | Drive Assembly Mounting Plate | 1 |
| 9 | Paper Mounting Template – for use on headers 4” or more in height or on door eaves | 1 |
| 10 | Rocker Switch Kit | 1 set |
| 11 | Paper Mounting Template | 1 |
| 12 | Conduit Adapter Kit | 1 set |

| Optional Parts Description | | |
|---|---|---|
| S1 | Stiffener Plate (Optional) | (1) |
| S2 | Positive Stop Kit (Optional) | (1) |
| S3 | Spindle Extension, 30mm (Optional) | (1 set) |
| S4 | Radio Frequency Activation Kit | (1) |

# SECTION I
# INSTALLING AUTOPED
# ON
# DOOR/GATE HEADERS LESS THAN FOUR INCHES (4”)

**For installation of AUTOPED Operator on headers less than four inches (4”) in height, TORXUN requires the use of the AUTOPED StiffenerPlate or its equivalent to add rigidity to the installation of the operator**

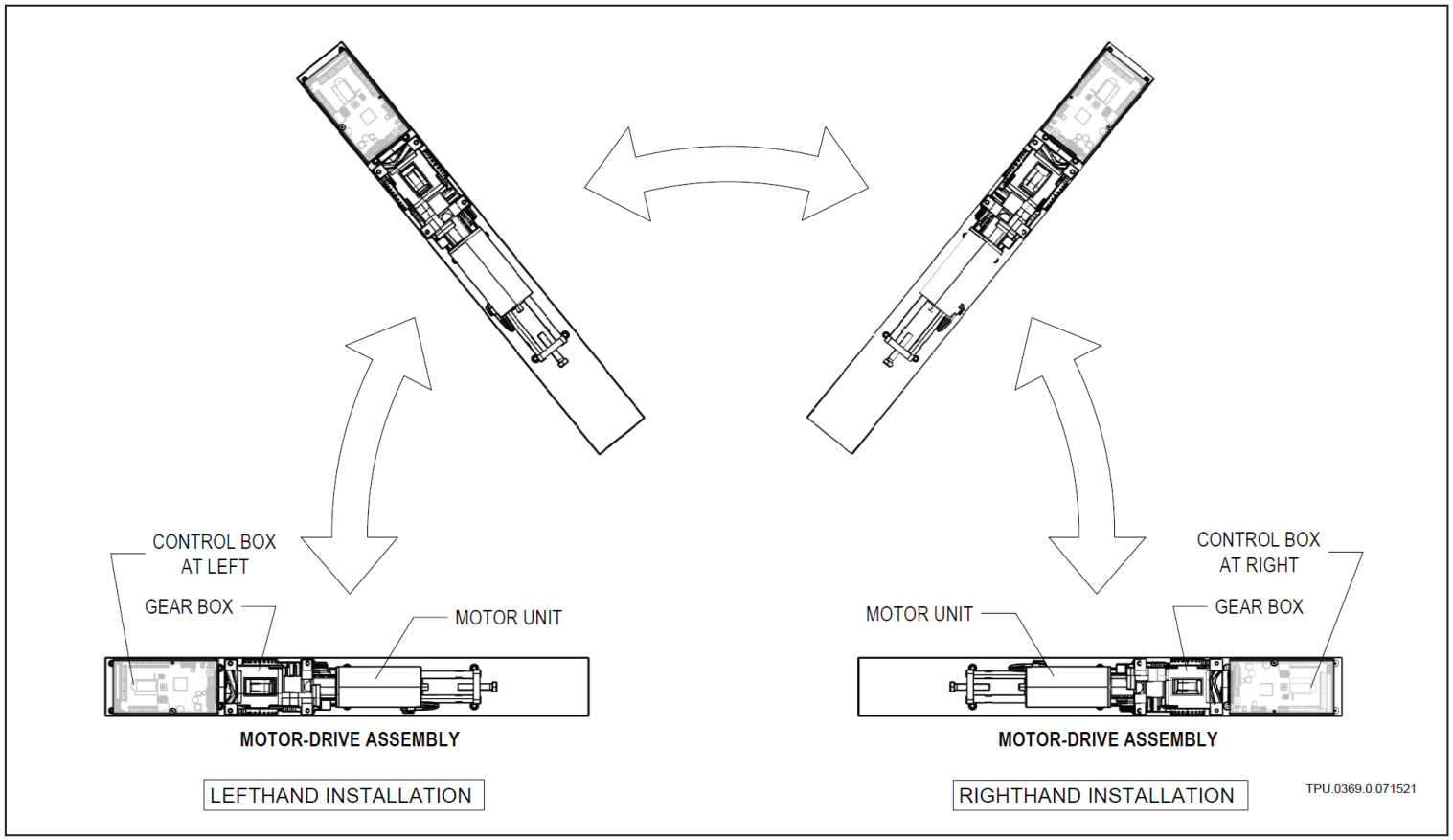
# IMPORTANT INSTALLATION NOTE

**THE AUTOPED CAN BE USED FOR BOTH LEFTHAND OR RIGHTHAND DOOR/GATE SYSTEM WITHOUT NEED FOR ADAPTER OR MODIFICATION**

**TO CHANGE HAND OF OPERATOR INSTALLATION:**

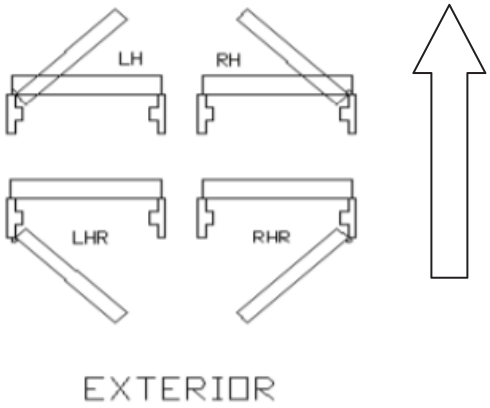
- **FLIP THE MOTOR-DRIVE ASSEMBLY CLOCKWISE OR COUNTER-CLOCKWISE BEFORE MOUNTING TO CHASSIS; Fig 1**
- **CHASSIS IS NEUTRAL, ORIENTATION IS THE SAME FOR LEFT OR RIGHT HAND INSTALLATION**
- **LEFTHAND OPERATOR INSTALLATION: CONTROL BOX UNIT IS AT LEFT OF GEAR BOX**
- **RIGHTHAND OPERATOR INSTALLATION: CONTROL BOX UNIT IS AT RIGHT OF GEAR BOX**

**Fig I.1 CHANGING OPERATOR INSTALLATION: LEFTHAND TO RIGHTHAND OR VICE VERSA**



# I.1 DOOR HANDING

I.1a Definition Door Handing



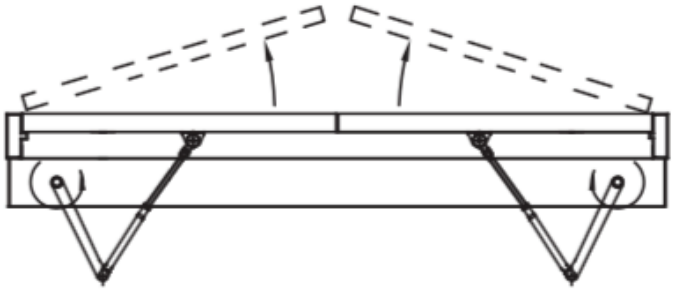

LH: Left Hand -> typically with a pull arm

RH: Right Hand -> typically with a pull arm

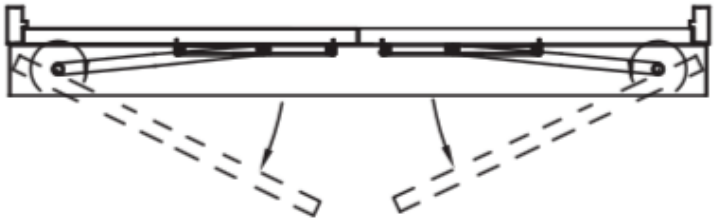
LHR: Left Hand Reverse -> typically with a push arm

RHR: Right Hand Reverse -> typically with a push arm

I.1b Push Application – Same Drive Unit for LHR and RHR

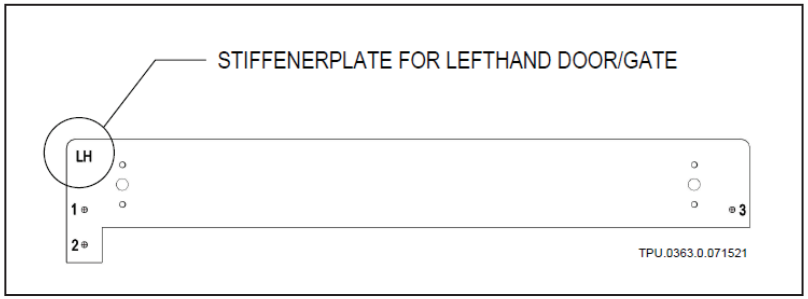


I.1c Pull Application – Same Drive Unit for LH and RH

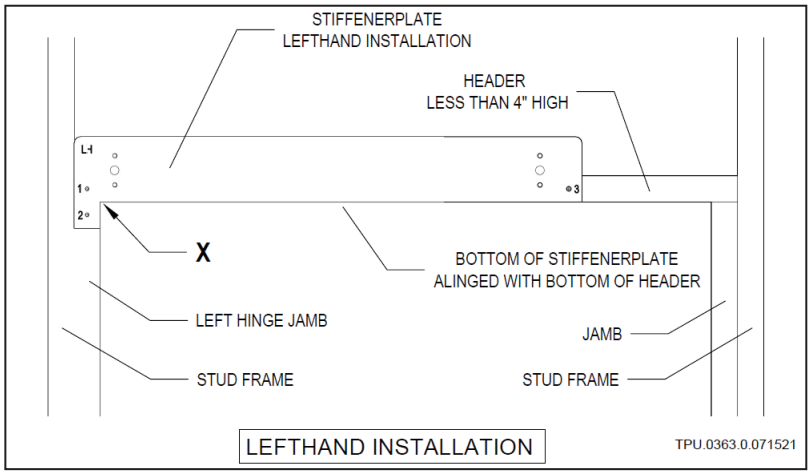


# I.2 INSTALLATION: LEFTHAND OPERATOR FOR HEADERS LESS THAN 4” IN HEIGHT

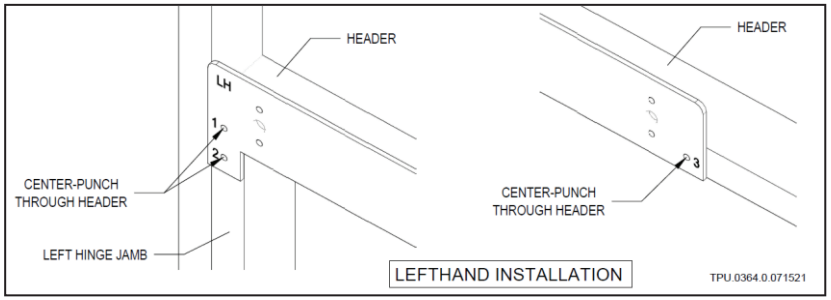
**STEP 1** Use StiffenerPlate for Lefthand (LH) installation




**STEP 2** Align **“X”** to corner of left hinge jamb and bottom of header



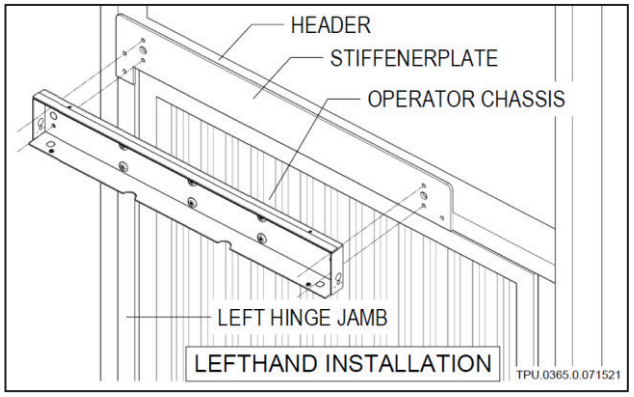

**STEP 3** Center-punch pilot holes 1,2,3



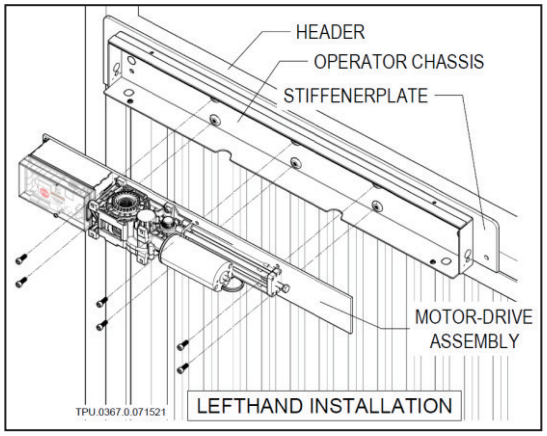

**STEP 4** Drill 1/16” pilot holes 1,2,3

**STEP 5** Fasten[1] StiffenerPlate through holes 1,2,3

**STEP 6** Mount[2] operator Chassis to StiffenerPlate




**STEP 7** Mount[3] Motor-Drive assembly to operator Chassis




**STEP 8** Refer back to AUTOPED Installation Manual, Section I.5 to continue installation of the Swing Arm assembly

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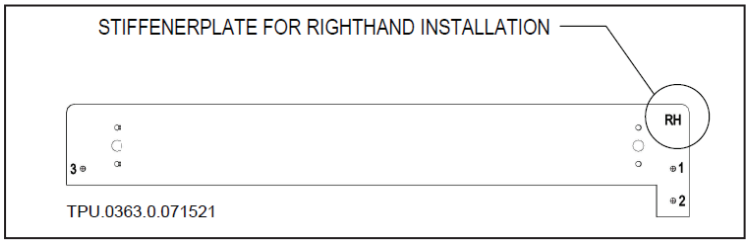
[1] Type, size and material of fasteners by installer

[2] Use screws NF 7/16 x 20 x 3/4 included in kit to mount

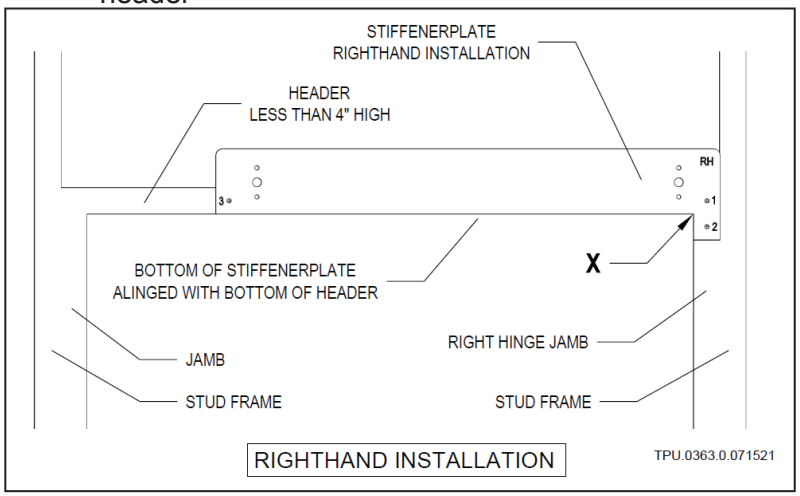
[3] Use screws M6 x 1.0 x 12 included in kit to mount

# I.3 INSTALLATION: RIGHTHAND OPERATOR FOR HEADERS LESS THAN 4” IN HEIGHT

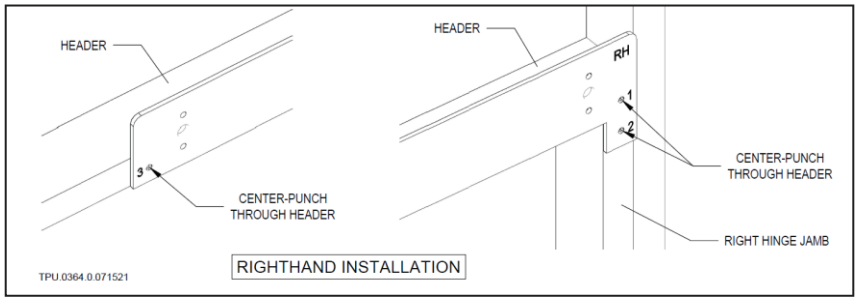
**STEP 1** Use StiffenerPlate for Righthand (RH) installation




**STEP 2** Align **“X”** to corner of right hinge jamb and bottom of header



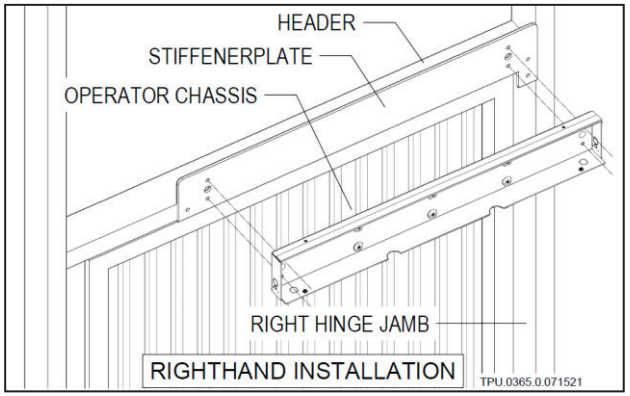

**STEP 3** Center-punch pilot holes 1,2,3



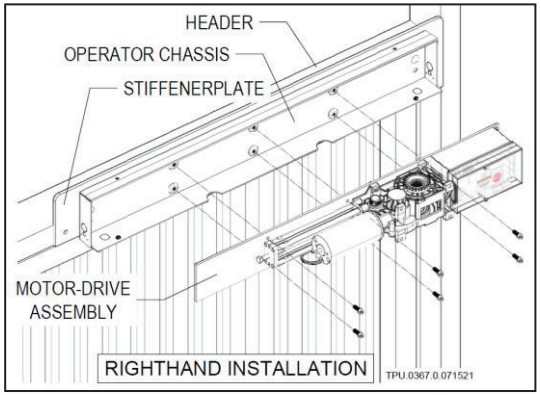

**STEP 4** Drill 1/16” pilot holes 1,2,3

**STEP 5** Fasten[4] StiffenerPlate through holes 1,2,3

**STEP 6** Mount[5] operator Chassis to StiffenerPlate




**STEP 7** Mount[6] Motor-Drive assembly to operator Chassis



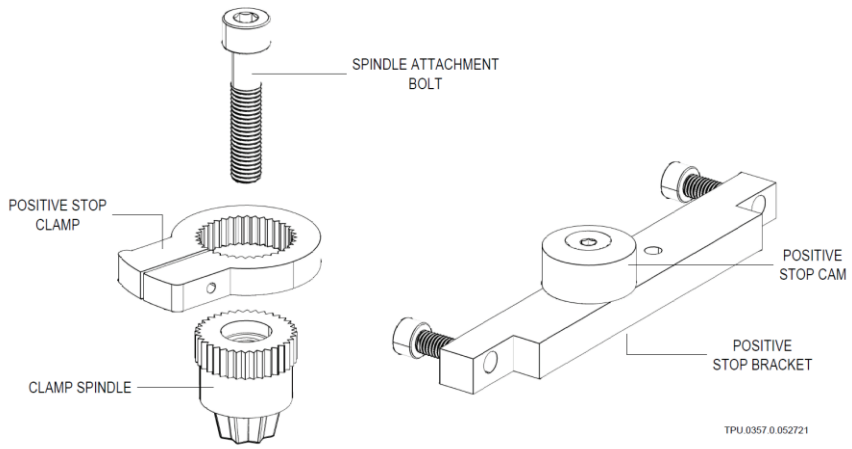

**STEP 8** Refer back to AUTOPED Installation Manual, Section I.5 to continue installation of the Swing Arm assembly

[4] Type, size and material of fasteners by installer
[5] Use screws NF 7/16 x 20 x 3/4 included in kit to mount
[6] Use screws M6 x 1.0 x 12 included in kit to mount

# SECTION II
# INSTALLING THE AUTOPED
# OPTIONAL POSITIVE STOP

**TORXUN recommends use of the optional Positive Stop Kit when a physical stop such as a wall, bollard, floor stop or similar items are not in place to limit the gate or door from opening past safe limits 105º**

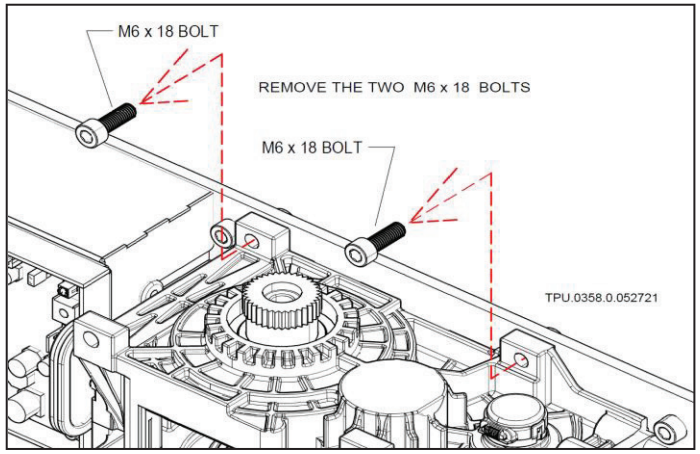
## II.1 OPTIONAL POSITIVE STOP KIT (P/N M10S.0040)



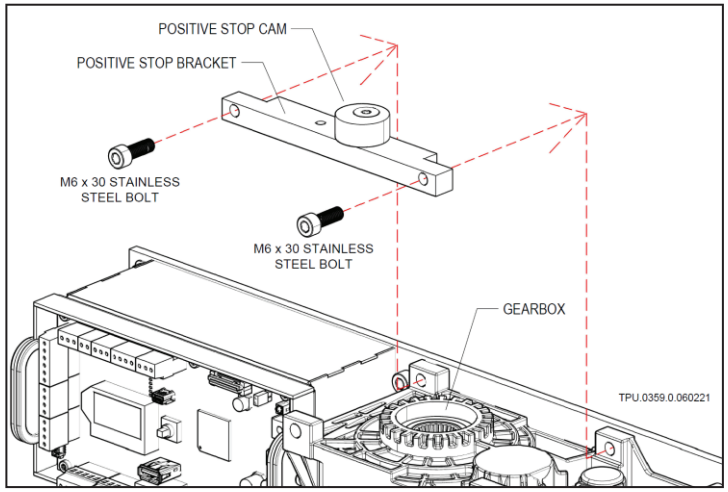

## II.2 INSTALLING THE POSITIVE STOP

**STEP 1** Swing door/gate to max opening; keep in open position.

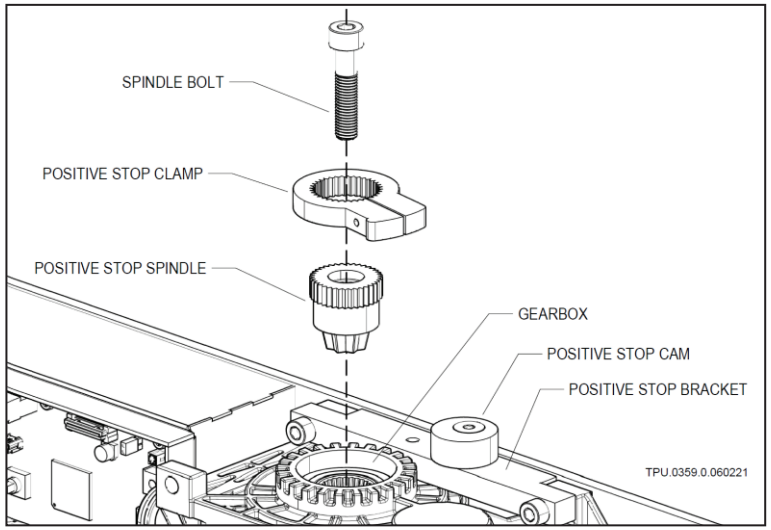
**STEP 2** Remove top two bolts on the Gear Box mounting plate



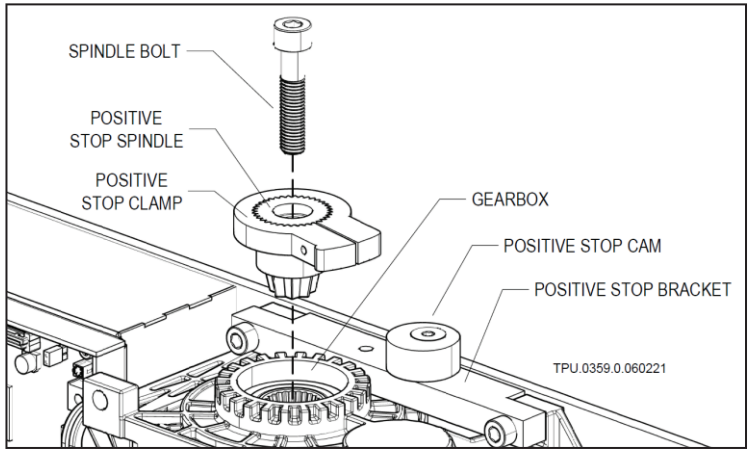

**STEP 3** Install the Positive Stop Cam Bracket and Cam; use the two stainless steel M6x3 bolts included in the kit



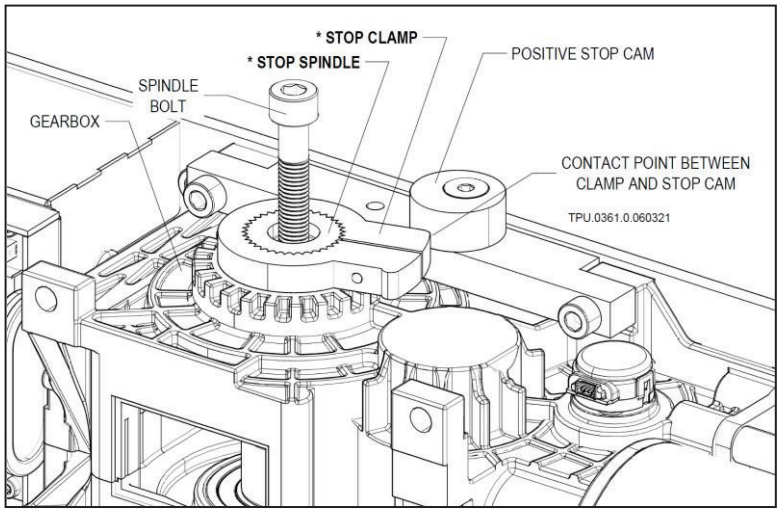
**STEP 4** Gather the Spindle bolt, Positive Stop Clamp & Spindle




**STEP 5** Assemble the Stop Clamp and Spindle together




**STEP 6** Insert Clamp and Spindle assembly to the Gearbox




**IMPORTANT NOTE ON STEP 6**

**Make sure that the Stop Clamp* and Stop Spindle* are flush with each other when assembled** (see diagram*)

**When placing the Stop Clamp* over the Stop Spindle*, the door must be in the open position no more than 105° from closed position. Place the Stop Clamp so that its rounded vertical face (contact point) is a hairline from making contact with the Positive Stop Cam.**

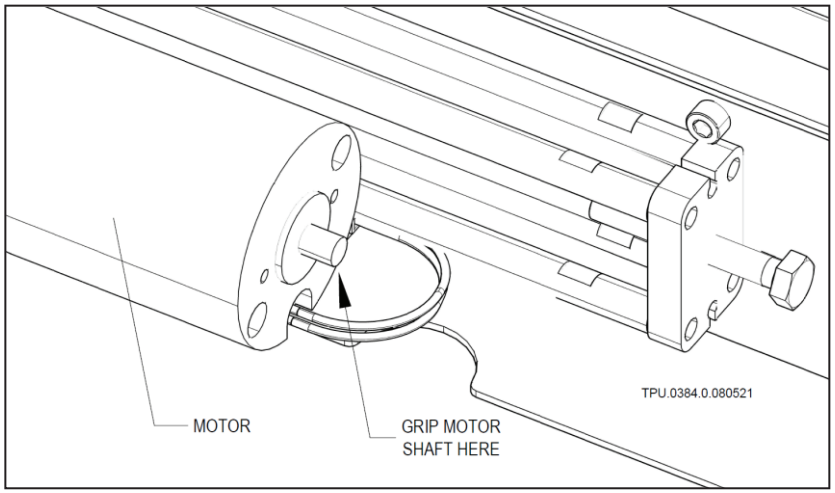
**STEP 7** Insert the Spindle Bolt to the Positive Stop Clamp and Spindle assembly; tighten to fasten the assembly to the Gearbox

**STEP 8** Go to section II.3 for Adjustment of Stop position

## II.3 ADJUSTING THE STOP POSITION

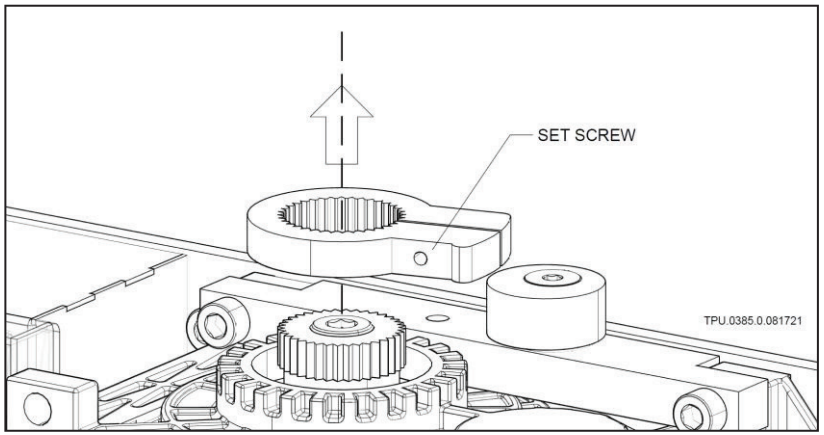
**Note:** Maximum swing open position is 105º

**STEP 1** Clamp the end of the Motor Shaft with a Vice Grip to keep shaft from rotating




**STEP 2** Loosen the set screw of the Positive Stop Clamp

**STEP 3** Pull the Positive Stop Clamp off from the Spindle




**STEP 4** Rotate the Positive Stop Clamp clockwise or counterclockwise as needed (1~2 teeth at a time)

**STEP 5** Reset the Positive Stop Clamp back on to the Spindle

**STEP 6** Tighten the set screw

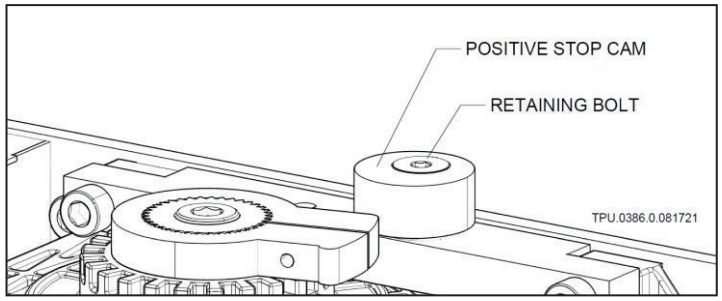
**STEP 7** Remove grip from motor shaft, turn operator on to test the open position of Door/Gate panel

**STEP 8** If needed, repeat the preceding steps to test again

Fine adjustments of the stop position may be necessary and is done by adjusting the Stop Cam position

**STEP 9** Loosen the Positive Stop Cam Retaining Bolt

**STEP 10** Rotate the Positive Stop Cam clockwise or counterclockwise as needed




**STEP 11** Tighten the Positive Stop Cam Retaining Bolt

**STEP 12** Run the Operator to test the open position of Door/Gate panel

**STEP 13** If needed, repeat the preceding steps and test again

# SECTION III
# ADJUSTING
# CLOSING-SPRING PRELOAD

**In the process of installing the AUTOPED, the spring tension may need to be adjusted to regulate the closing pressure of the door or gate panel. Make these adjustments when the door or gate panel does not fully close or slams when closing.**

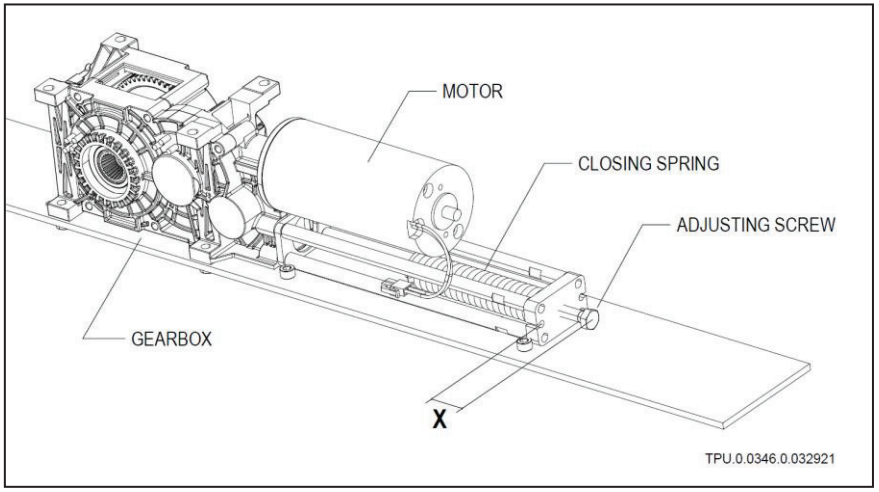
## III. ADJUSTING CLOSING SPRING PRELOAD

The AUTOPED operator is equipped with a closing spring that aids in the closure of the gate/door and to maintain closing speeds while the gate/door is in manual mode. When power to the operator is cut or turned off, the closing spring will allow the Door/Gate to close in a controlled manner, fully latching the door lock system.

The tension of the spring is responsible for regulating the amount of pressure the door requires to be pushed open before the “Push and Go” assist takes over.

Preload adjustment is done by turning the Adjusting Screw. By default, distance **X** between top of head of Adjusting Screw and spring bracket is:

**X** = 1-1/32 inch (26 mm)




To adjust the Closing Spring Preload:

**STEP 1** Swing Door/Gate panel open to about 60º

**STEP 2** Allow panel to close on its own

**STEP 3** Check to see if Door/Gate latches on full lock

**STEP 4** Adjust distance **X** according to Table II.3 (below)

**STEP 5** Repeat the above steps if needed

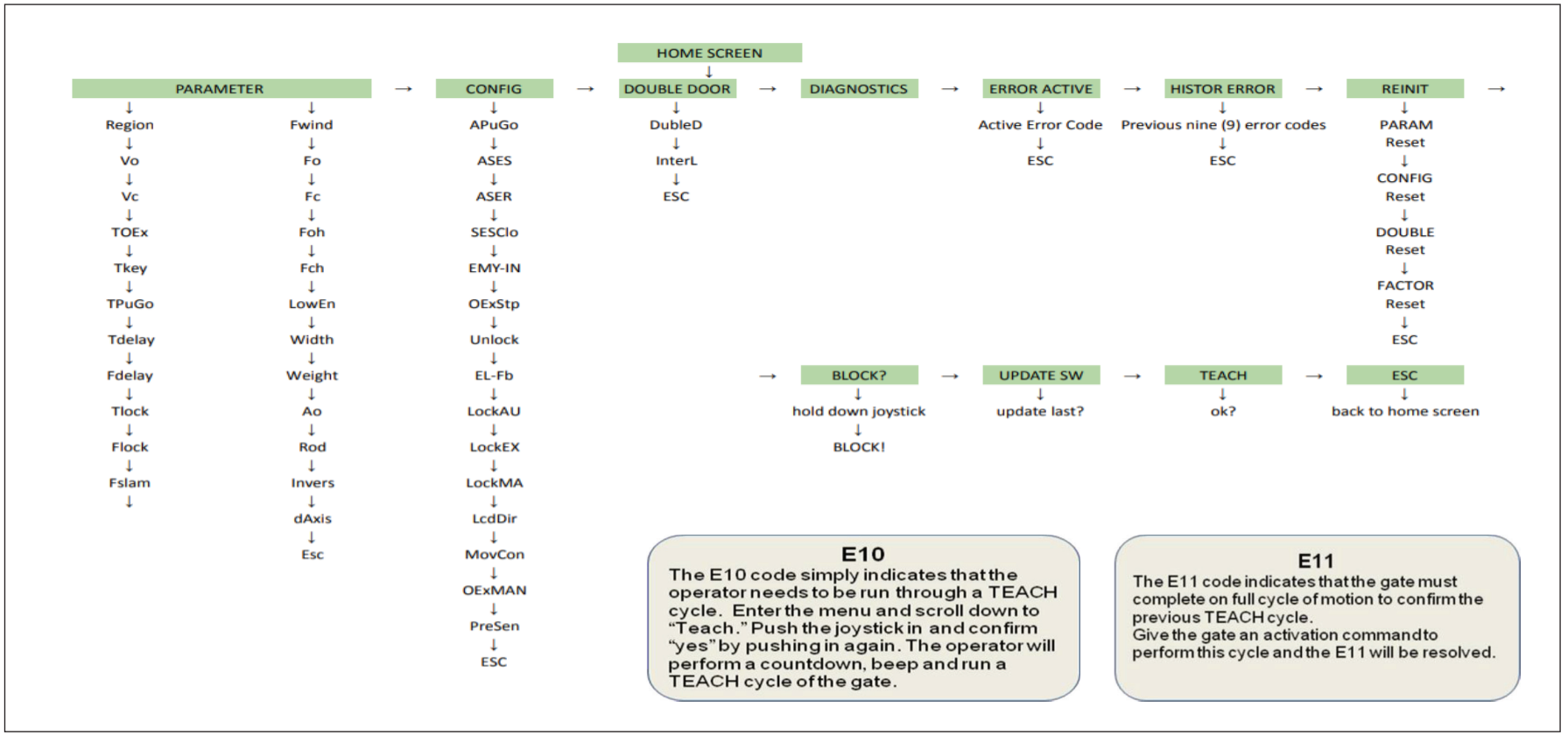
Table II.3 Preload **X** Values

| **Door/Gate panel width** | **37”** | **43”** | **49”** | **55”** | **63”** |
|---|---|---|---|---|---|
| Standard push arm | | | | | |
| Measure “**X**” | 1-9/16” | 1-7/16” | 1-1/4” | 1-1/16” | 7/8” |
| Optional slide arm | | | | | |
| Measure “**X**” | 1-7/16” | 1-5/16” | 1-1/16” | 3/4” | 11/16” |

# SECTION IV

# MENUS AND PROGRAMMING

## IV.1 PROGRAMMING FLOW: GUIDE CHART




## IV.2 MENU GLOSSARY

| Display | Description |
|---|---|
| OEO | Exterior activation sensor (exterior activation signal) |
| OEI | Interior activation sensor (interior activation signal) |
| KEY | Activation device (external switch activation signal, key switch, card reader, etc.) |
| SES | swing side Door/Gate mounted sensor (swing side safety signal) |
| PRE | Header mounted sensor on swing side |
| SER | Push side door mounted sensor (approach side safety signal) |
| SEF | Door mounted sensor for obstacle detection (recycle sensitivity) |
| EMY-IN | Emergency open input (emergency input signal) |
| PUGO | Push and go |

## IV.3 CONTROL UNIT LED LIGHTS

| LED description and color indications | | |
|---|---|---|
| **LED** | **Description** | **Indicator** |
| SOK | System ok | Green flashing |
| OE active | Opening devise | Blue=active |
| SE active | Safety devise | Yellow=active |
| Error | Error | Red |
| E-lock relay | E-lock relay | White |

## IV.4 LCD SCREEN GLOSSARY

| Display | Description |
|---|---|
| <REF?> | Waits for reference switch |
| < ?? > | Unknown |
| >< | Closed |
| >##< | Closed and locked |
| <<>> | Opening |
| <> | Open |
| >><< | Closing |
| == | Stopping |

## IV.5 CHART FOR MENUS AND WHAT THEY DO

| Menu Title | Description |
|---|---|
| Parameter | Sets the parameters for swing Door/Gate movements |
| CONFIG | Configuration: sets the parameters of the AUTOPED control features and functions |
| DOUBLE DOOR | Sets the closing sequence and interlock function |
| DIAGNOSTICS | Diagnostic tools that display the status of various inputs |
| ERROR ACTIVE | ❖ Displays pending active errors<br>❖ Activate error list is updated with the latest addictions appearing at the end<br>❖ A0 indicates the latest active error |
| HISTORY ERROR | ❖ Displays all active errors that were detected and then corrected or not corrected.<br>❖ H0 indicates the latest active error |
| REINT | Reinitialization resets settings back to factory default |
| BLOCK? | Locks/unlocks joystick |
| UPDATE SW | Start the upgrade process from the USB stick |
| TEACH | ❖ Programs the initial setup, finds errors (if any)<br>❖ Programs a new setup procedure when deemed necessary |

## IV.6 CHART FOR OPTIONS IN THE PARAMETER MENU: SETTINGS FOR DOOR/GATE MOVEMENT

| Device | Unit type | Default | Value | Description |
|---|---|---|---|---|
| Region | Both | Eu | Eu or us | EU- Europe; US- united states<br>Software version determined by UL standards. Must be changed to US |
| Vo | Low energy | 9 | 0-9 | |
| Vc | Low energy | 9 | 0-9 | |
| TOEx | Low energy | 5s | 3-60s | ANSI 156.19 for low energy: TOEx must be no less than 5 seconds |
| TKey | Low energy | 5s | 3-180s | ❖ TKey sets the hold open time resulting from an activation signal from a device (referred to as KEY) on terminals 2+3<br>❖ With TOEx and TKey, you can set a different hold open time for different activation devices by using different terminals |
| TPuGo | Low energy | 3s | 3-180s | Determines how long the Door/Gate stays open |
| TDelay | Low energy | .2s | 0.0-4.0s | Tdelay sets the amount of time the door hesitates to allow the lock to release before opening. |
| FDelay | Low energy | Off | Off-7.0A | Fdelay is a temporary “hold closed” force applied to the door to keep it closed while the electric lock is being released. This parameter sets the amount of force that is applied. FDelay is only active if TDelay setting is greater than 0. |
| TLock | Low energy | 0.5s | 0.0-4.0s | Sets amount of time Door/Gate panel will press against lock to engage it. |
| Flock | Low energy | 2.0A | Off-7.0A | Sets amount of force that is applied to the Door/Gate panel to engage the lock at the closed position. It is only active if TLock setting is greater than 0. |
| FSlam | Low energy | Off | Off-10 | Accelerating function (Force Slam). For example: when a Door/Gate panel needs to be forced shut due to a latch or heavy seals. |

| Device | Unit type | Default | Value | Description |
|---|---|---|---|---|
| FWind | Low energy | Off | Off<br>Open<br>Close<br>Both | ❖ Obstacle detection optimized for exterior doors/gate panels (wind loads)<br>❖ Assuming that a gust of wind is not a hard obstacle which will stop the door, the motor current will rise “slowly”. In this case the AUTOPED control unit will provide additional power to continue the door movement.<br>❖ When FWind is turned ON, TORXUN strongly recommends the use of Door/Gate panel mounted sensors to stope or reopen the door if an obstacle is detected during the door cycle |
| Fo | Low energy | 9 | 0-9 | ❖ Opening force (force open) when an obstacle is detected during open/close cycle or both<br>❖ In standard mode obstacle detection can not be switched on/off. It can be adjusted with parameters for “Fo”=force opening and “Fc”=force close. To make obstacle detection least sensitive, set both parameters on max. To make obstacle detection most sensitive, set both parameters on minimum. (caution, this can allow the drive to react to small changes in wind) |
| Fc | Low energy | 9 | 0-9 | |
| Foh | Low energy | 4 | 0-9 | Hold open force (force hold open) |
| Fch | Low energy | 0.0A | 0.0A-3.5A | ❖ Interlocking force (force close hold) automatically programs Flock and FDelay if these settings are set at 0.<br>❖ If there is no electric lock and the interlocking force Fch is not adjusted, error 14/02 will be displayed as a warning after the teach 1 procedure and the Door/Gate will endlessly reopen. |
| LowEn | Low energy | on | On | Door/Gate panel is low energy in both directions. Door/Gate panel is activated by a knowing act |
| Width | Low energy | 48in | 30-63in | Width of the Door/Gate panel from edge to edge. |
| Weight | Full and low | 100~250lbs | 100-550lbs | Weight of the Door/Gate panel. |
| Ao | Low energy | 95° | 20°-190° | Opening angle of the door (angle open)<br>Teach must be activated after this setting has been changed. |

| Device | Unit type | Default | Value | Description | Device |
|---|---|---|---|---|---|
| Rod | Full and low | STD-PH | STD-PH | Outswing arm and Arm-Shoe | Push function |
| | | | | | Motor cable connector: X=orange |
| | | | SLI-PL | Inswing arm with track and roller | Pull function |
| | | | | | Motor cable connector: Y=Green |
| | | | SLI-PH | Outswing with inswing track and roller | Push function |
| | | | | | Motor cable connector: X=orange |
| Rod | Low energy | STD-PH | ❖ If panic breakout latch is installed and the motor is plugged in backwards or the wrong arms are chosen during programming, there is a possibility the Door/Gate panel can burst open unexpectedly towards the installer once TEACH mode is initiated.<br>❖ Teach must be activated after this setting has been changed. | | |
| Inverse | Low energy | Off | Off-On | In the event of a power failure/error, the Door/Gate panel is opened by spring power from any position (unless it has been locked). The position of the motor connector is reversed regarding the standard drive unit. | |
| | | | | Teach must be activated after this setting has been changed. | |
| dAxis | Low energy | 7in | 2-25in | Distance between center line of the door hinges and the mounting surface of the operating assembly. dAxis is an approximate value. Depending on the installation situation, dAxis may have to be estimated. | |
| | | | | Teach must be activated after this setting has been changed. | |

## IV.7 CONFIGURATION MENU OPTIONS AND DEFINITIONS

| Device | Unit type | Default | Description |
|---|---|---|---|
| APuGO | Off | Off, 2°-10° | Triggering angle for Push and Go (angle Push and Go) |
| ASES | 95° | 45°-95° | Lock out angle:<br>Angle at which the swing side Door/Gate panel mounted sensor is ignored just before open/<br>If Ao is changed, ASES is automatically set to Ao. |
| ASER | 0° | 0°-60° | Lock out angle: angle at which push side of the Door/Gate panel sensor is ignored just before closing. |
| SESClo | Inactive | Active | Sensor mounted on swing side of Door/Gate is activated or inactivated during closing cycle |
| | | Inactive | |

| Device | Unit type | Default | Description | |
|---|---|---|---|---|
| EMY-IN | CL-SPR | | Configuration of the emergency terminal (break contact switch) | |
| | | CL-SPR | Spring close (standard application) | |
| | | STOP | Stops Door/Gate panel closing/opening | |
| | | OPEN | Opens the Door/Gate panel | |
| | | CL-MOT | Motor close (inverse application) | |
| OExSTp | Off | Off | N/A | ❖ Used to setone of the activation “values” to “sequential” mode.<br>❖ Sequential mode is used to hold the door open until a second activation is received.<br>❖ One activation opens the Door/Gate panel, and a second activation is required to close the Door/Gate panel. |
| | | OEI | Opening devise inside | |
| | | OEO | Opening devise outside | |
| | | KEY | Key opening devise | |
| | | RADIO | N/A | |
| UNLOCK | PERMAN | IMPULS | When the Door/Gate panel is first opened: momentarily unlocks the electric lock | |
| | | PERMAN | When the Door/Gate panel is first opened: Permanently unlocks the electric lock. | |
| EL-FB | Off | Off | Electric lock status feedback | |
| | | N.O. | Open if unlocked (-); closed if locked (+) | |
| | | N.C. | Open if locked (+); closed if unlocked (-) | |
| Lock AU | UNLOCK | UNLOCK/LOCK | ❖ Sets the condition of the lock when in automatic mode.<br>❖ Only visible when Unlock is set to PERMAN. | |
| LockEX | LOCK | UNLOCK/LOCK | ❖ Sets the condition of the lock when in EXIT mode.<br>❖ Only visible when Unlock is set to PERMAN | |
| LockMA | UNLOCK | UNLOCK/LOCK | ❖ Sets the condition of the lock when in MANUAL mode.<br>❖ Only visible when Unlock is set to PERMAN | |
| LcdDir | 0 | 0-1 | Orientation of the display (LCD direction) | |
| MovCon | OFF | OFF/ON | Endurance test Open/Close (moving continuous) | |
| Pre Sen | N.C. | Off/N.C./N.O. | Swing side presence sensor output logic | |
| OExMAN | ON | OFF/ON | ❖ On enables activation to reopen the door during the closing cycle of a manual opening.<br>❖ OExMAN only if APuGo is turned OFF | |

## IV.8 DOUBLE DOOR MENU CHART

| Device | Default | Value | Description |
|---|---|---|---|
| DoubleD | Off | Off<br>MastrA<br>SlaveA<br>MastrB<br>SlaveB | Closing sequence role and interlocking side |
| AoSeq | 20° | 0-110° | Current delay angle for opening sequence control (only visible if DoubleD is active) |
| AcSeq | 20° | 0-110° | Current delay angle for closing sequence control (only visible if DubleD is active) |
| InterL | Off | Off<br>SideA<br>SideB | Interlocking door system where one door will only receive open commands once the other is closed |
| ILAuto | Active | Inacti<br>Active | Interlock mode Operating mode AUTOMATIC (only visible in InterL is active) |
| ILExit | Active | Inacti<br>Active | Interlock mode operating mode EXIT (only visible if InterL is active) |
| ILNigt | active | Inacti<br>Active | Interlock mode Operating mode Night (only visible in InterL is active) |

## IV.9 DIAGNOSTIC TABLE

| Devise | Description | Value |
|---|---|---|
| K-I-O-R-S-P-E | (K) Key<br>(I) OEI (Interior Activation Sensor)<br>(O) OEO (Exterior Activation Sensor)<br>(R) SER (Push Side Door Mounted Sensor)<br>(S) SES (Swing side door mounted sensor)<br>(P) Swing side header mounted presence sensor<br>(E) EMY-IN (Emergency Open Input) | (+) Active<br><br><br>(-) Inactive<br><br>(Read only and cannot be changed) |
| -0.0A ; 0° | Displays motor current and the swing door opening angle (Example: 2.1A ; 65°) | |
| X.YA/Z° | Displays the actual current used by the motor and the current angle of the door/ gate panel. | |
| Simulate Key | Key command that opens the door panel by pressing OK | |

| Devise | Description | Value |
|---|---|---|
| E-Lock | L- Display status of the lock<br><br>FB- Display input El-FB. Press OK to activate the electric locking device | (L+) locked<br>(L-) Unlocked<br>(FB+) Locked<br>(FB-) Unlocked |
| PG Version | Packaged software | |
| SW Version | Version of software | |
| UL Version | Software changed due to UL specifications | |
| HW Version | Version of logic PCB | |
| Cycles | Total number of openings the gate has performed. | |
| RO R1 FP RP | Display what the door/gate panel is doing<br>(R0) Relay print with address 0<br>(R1) N/A<br>(FP) N/A<br>(RP) N/A | (-) Identified and ready for operation<br>(+) Neither identified or registered<br>( a ) Defective or error<br>(x) Removed |

## IV.10 CHART FOR THE REINIT MENU (RESET BACK TO FACTORY DEFAULT)

| Device | Description |
|---|---|
| FACTORY RESET | All settings that were programmed into the control will be reset to factory defaults |
| PARAM RESET | Resets/sets all motion parameters back to the default values (inclusive opening angle, rod assemblies, invers and dAxis) |
| CONFIG RESET | Resets all configuration settings back to the default values |
| DOUBLE RESET | Resets simultaneous pair settings and airlock settings back to the default values |

## IV.11 BLOCK/UNBLOCK MENU: LOCK KEYS

| Menu | Description | | |
|---|---|---|---|
| Block? | To lock the joystick | Press ok for 2 seconds | The display shows temporarily BLOC! |
| UBLOC? | To unlock the joystick | Press ok for 2 seconds | The display shows temporarily UBLOC |
| BlockD | When the joystick is blocked, the “home display” shows BLOCKD, if the joystick is operated! | | |

## IV.12 TEACH MENU

| Device | Description |
|---|---|
| TEACH OK? | Programs the setup procedure within the AUTOPED controller. |

# SECTION V
# TROUBLE SHOOTING AND ERROR CHARTS

## V.1 ERROR CODE DEFINITION

| | |
|---|---|
| A | Drive unit deactivates itself during a certain period: manual operating mode or stopping position |
| F | Fatal error |
| H | Manual operating mode with restarting attempt |
| W | Warning |
| A0 | A(active error); (0) most recent error |

| Error No | | Description | Cause | Elimination | Checking time | Reaction |
|---|---|---|---|---|---|---|
| E1 | 01 | Encoder | Channel A lost | • check:<br>o Encoder Connection<br>o Motor Cable<br>o If jumper is inserted on x106<br>• Direction of motor rotation does not match swing side of door<br>• Door is blocked | During Run | H |
| | 02 | | Channel B lost | | | |
| | 03 | | Channel A+B lost | | | |
| | 04 | | Short Circuit A+B | | Prior to Start-up | H |
| | 05 | | Malfunctions | | | |
| | 06 | | Motor Cable incorrectly plugged in | | | |
| | 07 | | No signal channel A | | During Encoder Test | H |
| | 08 | | No signal channel B | | | |
| | 09 | | No signal channel A+B | | | |
| | 10 | | Short Circuit A+B | | Prior to Start up | H |
| | 11 | | Malfunctions | | During Test | H |
| | 12 | | Malfunctions | | | |
| | 13 | | Encoder not connected | | Always | H |
| E2 | 02 | Motor Current | Current too high | • Check:<br>o Motor cable<br>o If jumper is inserted on x106 | Prior to start up | H |
| | | | Current too low | | | |
| | | | Jumper missing | | | |
| E3 | 01 | Latch check (cushioning) | Test failed once | Switch the drive unit to Manual operating mode. Carefully check if the door closes in a cushioned manner.<br>• If not: replace hardware<br>• If yes: check/correct the friction of the Door/Gate and the pre-stressing of the closing spring | Prior to closing cycle (after startup) | W |
| | | | Test failed twice | | | |
| | 02 | | Damping defective | | | F (Drive unit is functioning Buzzer Active) |
| | | | Opening beyond range of operator | | | |

| Error No | | Description | Cause | Elimination | Checking time | Reaction |
|---|---|---|---|---|---|---|
| E4 | 01 | Reference switch | Range of operator detected in the Open Position | • Check:<br>o The connection<br>o Switching the point of the reference switch<br>• Reference switch must be activated in closed position (switch contact to open) | Open position | F |
| | 02 | | Not detected in the Closed Position | | Prior to the first setup run | A |
| | 03 | | Not detected in the closed Position | | | |
| | 04 | | Not detected in the open position in “INVERS” mode | • Before start (teach) door must be in open position<br>• Reference switch must be activated in open position (switch contact open) | | |
| E5 | 00 | Powe limitation | Control overload<br>Maximum power is restricted | • Check/correct:<br>o Friction of the Door/Gate<br>o Pre-load of closing spring<br>• Ensure maximum door weight is not exceeded | Permanent | A |
| E10 | 01 | Full teach required | Parameter Ao, Rod, Invers or dAxis was changed | Carry out a learn cycle | Upon changing the drive unit configuration | H |
| | 02 | | Minimum opening angle has not been achieved | Check the locking/ electric lock | During teach | H |
| E11 | 01 | Half teach required (opening) | Parameter Vo changed | Carry out a complete and unhindered opening cycle | Upon changing the speed parameters | W |
| | 02 | Half teach required (closing) | Parameter Vc or ForceSlam changed | Carry out a complete and unhindered closing cycle | | |

| Error No | | Description | Cause | Elimination | Checking Time | Reaction |
|---|---|---|---|---|---|---|
| E14 | 01 | Locking/Electric lock | The Door/Gate got caught in the locking/electric lock | Check the function of the locking/electric lock | When opening from a closed position | H |
| | 02 | | The inverted operation has no locking, or the interlocking force Fch has not been programmed | Program/increase the interlocking force Fch | At the end of the teach procedure | W |
| E15 | 01 | Obstacle during opening | Too many successive obstacles have occurred | • Examine the installation<br>• Remove the obstacle<br>• Move the Door/Gate to the target position | Permanent | H, A<br>Restart after 60 seconds |
| | 02 | Obstacle during closing | | | | |
| E16 | 01 | Temperature | Temperature on output level has reached 178°F | Allow the unit to cool down | Permanent | A<br>Drive unit functions with reduced power |
| | 02 | | Temperature on output level has reached 196°F | | | A<br>Drive unit has stopped |
| E20 | 01 | SER test | SER test signal unsuccessful | SER short circuit to the earth. Check the cabling of the sensor or the jumper | Prior to closing | A |
| | 02 | | SER too slow | SER reacts too slowly. Check the cabling for the sensor. Check for polarity reversal/test signal. | E20-01 and E20-02 together, no line in between, like E21 | |
| E21 | 01 | SES test | SES test signal unsuccessful | SES short circuit to the earth. Check the cabling of the sensor or the jumper. | Prior to opening | A |
| | 02 | | SES too slow | SES reacts too slowly. Check the cabling of the sensor. Check for polarity reversal/test signal. | | |

| Error No | | Description | Cause | Elimination | Checking time | Reaction |
|---|---|---|---|---|---|---|
| E22 | 01 | NOT test | NOT input on 24v | Check the jumper NOT. Check the cabling of the NOT | Permanent | H |
| | 02 | | Malfunction | Restart the control unit SW update necessary | After power up | |
| E30 | 01 | 30v error | 30v too low | Main's failure, overload motor. Check 115vac line. Replace hardware | Permanent | A |
| | 02 | | 30v too high | | | |
| | 03 | | Error upon switching on | | After power up | |
| E31 | 01 | 24v general | Error upon switching on | Overload, short circuit of the 24v inputs (without electric lock, safety sensors) | After power up | A (restart after 10 seconds) |
| | 02 | | Over-resp, under-voltage | | permanent | |
| E32 | 01 | 24v safety | Over-resp, under voltage | Overload, short circuit safety sensors | | |
| E33 | 01 | 24v E-lock | Error: over-resp under voltage | Overload, short circuit electric lock | | |
| | 02 | | Premonition: over-resp under voltage | | | w |
| E34 | 01 | 24v CAN | Over resp under voltage | Overload, short circuit external power supply CAN | | |
| E60 | 00 | Relay PCB 0 | Optional PCB has been removed, its address changed or became defective | Check if the option is provided. If defective: replace or remove from configuration. | Permanent | W |
| | 10 | Relay PCB 1 | | | | W |
| | 20 | Radio PCB | | | | W |
| | 30 | Fire Protection | | | | A |
| E50 | 01-99 | System error | Unexpected hardware or software event | Switch the drive unit Off/On. Carry out a Factory Reset, Carry out a software update, inform the manufacturer | permanent | W or H or F |
| E51 | | | | | | |
| E52 | | | | | | |
| E70 | XX | CAN bus setting | CAN address XX existing twice | Correctly define the role of the closing sequence or the interlock function | Permanent | W |
| E71 | 01 | CAN connection | No CAN connection | Plug in, check, or replace the CAN cable<br>Check if all the CAN participants are switched on | Permanent | W |

| Error No | | Description | Cause | Elimination | Checking time | Reaction |
|---|---|---|---|---|---|---|
| E80 | 01 | Continuous routine | Malfunction | ----- | Permanent | W |
| | 02 | | | Power down then power up | | F |
| E81 | 01 | MCU routine | | ----- | Before: opening Door/Gate<br>Closing Door/Gate | W |
| | 02 | | | Power down then power up | | F |
| E82 | 01 | Dynamic routine | Damping test failed | ----- | After power down then every 24hrs when Door/Gate is closing | W |
| | 02 | | | Power down then power up | | F |
| E83 | 01 | Static routine | Motor current test failed | ----- | Test occurs at the door closed position | W |
| | 02 | | | 1. Power down then power up again<br>2. If problem is not resolved, turn the “ForceSlam potentiometer adjuster” fully counterclockwise.<br>3. If the problem still is not resolved, replace the faulty control and or motor operator. | | F |

# SECTION VI
# TERMINAL CONNECTIONS
# AND
# WIRING SCHEMATICS

## VI.1 TERMINAL CONNECTION CHART

| Terminal | Description | Connector | Description |
|---|---|---|---|
| X101 | Opening command outside (OEO) | 8 | 24VDC |
| | | 9 | OEO |
| | | 10 | GND |
| X101 | Opening command inside (OEI) | 11 | 24VDC |
| | | 12 | OEI |
| | | 13 | GND |
| X102 | Key Operated Switch | 1 | 24VDC |
| | | 2 | KEY |
| | | 3 | GND |
| X103 | Plug in connection to the Power Supply Unit | N/A | N/A |
| X104 | Programmable Emergency Close or Open or Stop | 4 | EmA |
| | | 5 | EmB |
| X105 | Safety Devise Stop | 14 | SE 24V |
| | | 15 | SE Stop |
| | | 16 | SE Test |
| | | 17 | GND |
| X106 | Jumper | N/A | N/A |
| X107 | Safety Devise Reverse | 18 | SE 24V |
| | | 19 | SE Rev |
| | | 20 | SE Test |
| | | 21 | GND |
| X108 | Electric Lock | 27 | EL 24V |
| | | 28 | GND |
| | | 29 | EL-COM |
| | | 30 | EL-NO |
| | | 31 | EL-NC |
| | | 32 | EL-Fb |
| X110 | External Program Selector | SA | Auto |
| | | SL | Locked |
| | | SO | Open |
| | | SM | Manual |
| | | SW | One Way |
| | | SG | GND |

| Terminal | Description | Connector | Description |
|---|---|---|---|
| X111 | Present Sensor (Sensor is only checked before the door moves) | PU | Programmable I/O Voltage |
| | | PI | Programmable Input |
| | | PO | Programmable Output |
| | | PG | GND |
| X113 | Connection to the Encoder | N/A | N/A |
| X114 | Power/Program Selector Switch | N/A | N/A |
| X115 | Serial Port | N/A | N/A |
| X116 | Connection to the Relay PCB Board | N/A | N/A |
| X117 | Can Bus (for dual door installation) | CG | GND |
| | | CL | CAN Low |
| | | CH | CAN High |
| X118 | USB/Service | N/A | N/A |

## VI.2 WIRING SCHEMATIC DIAGRAMS

Fig VI.1 Non-Powered Activation Devices

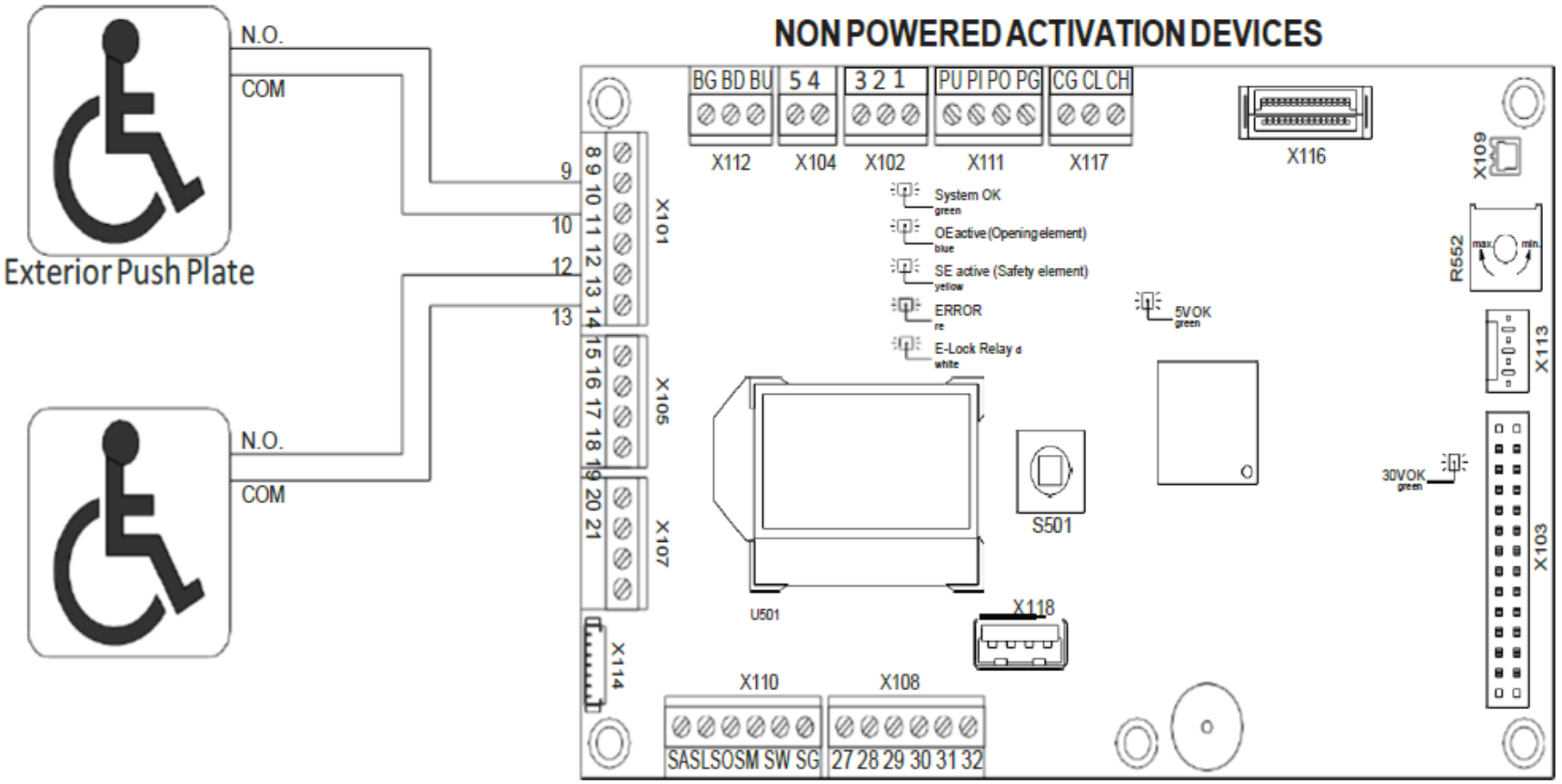
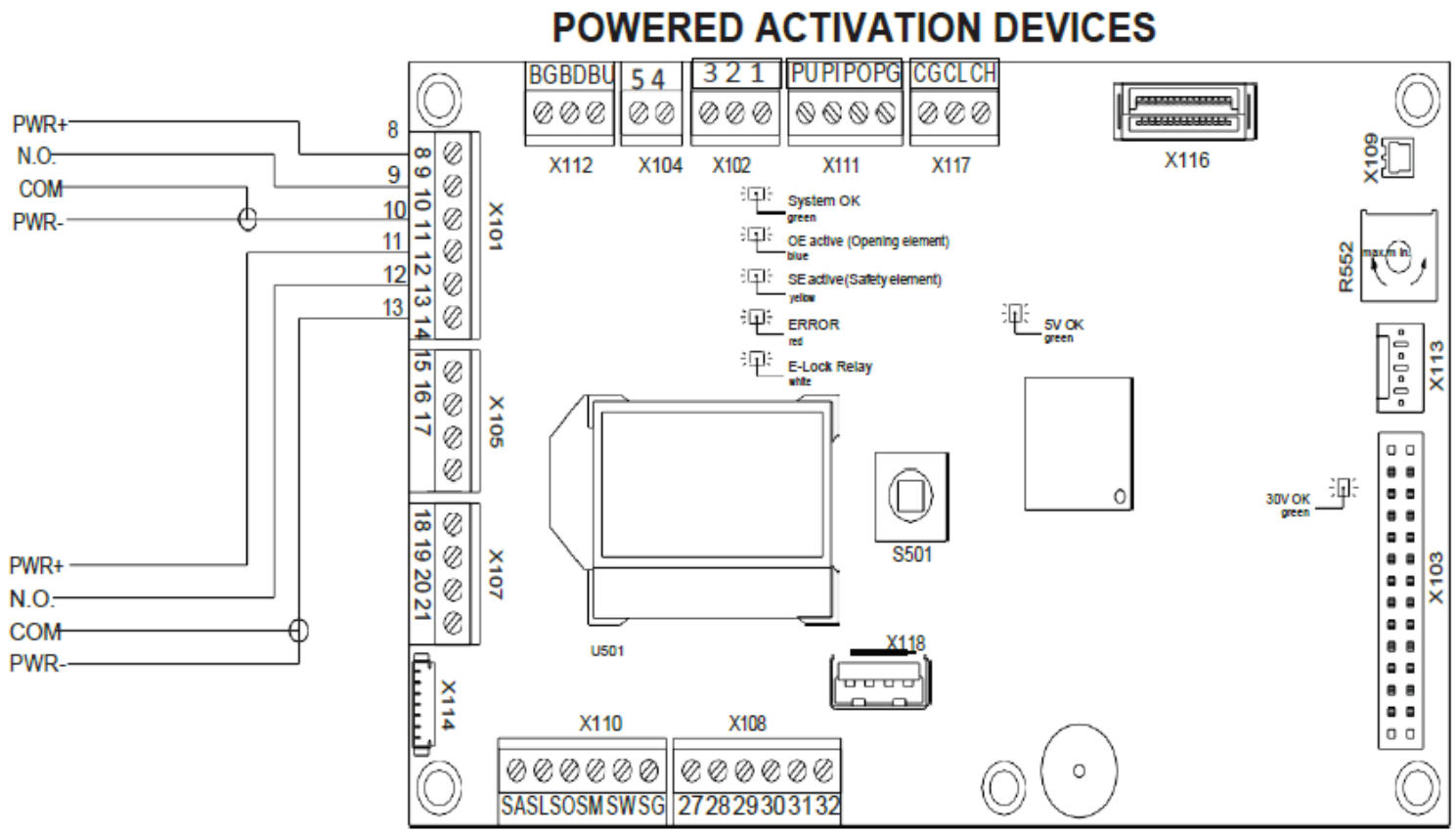
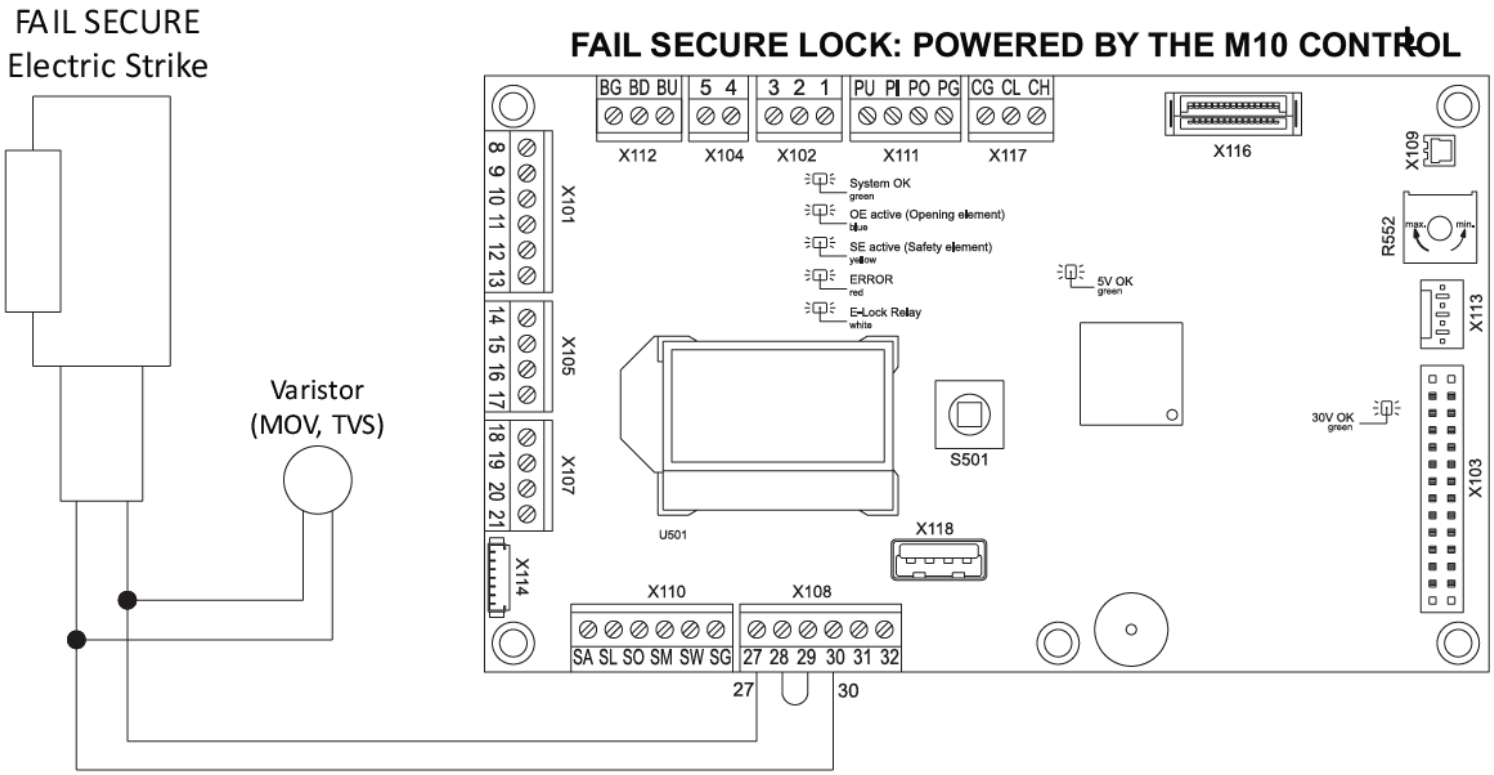


Fig VI.2 Powered Activation Devices



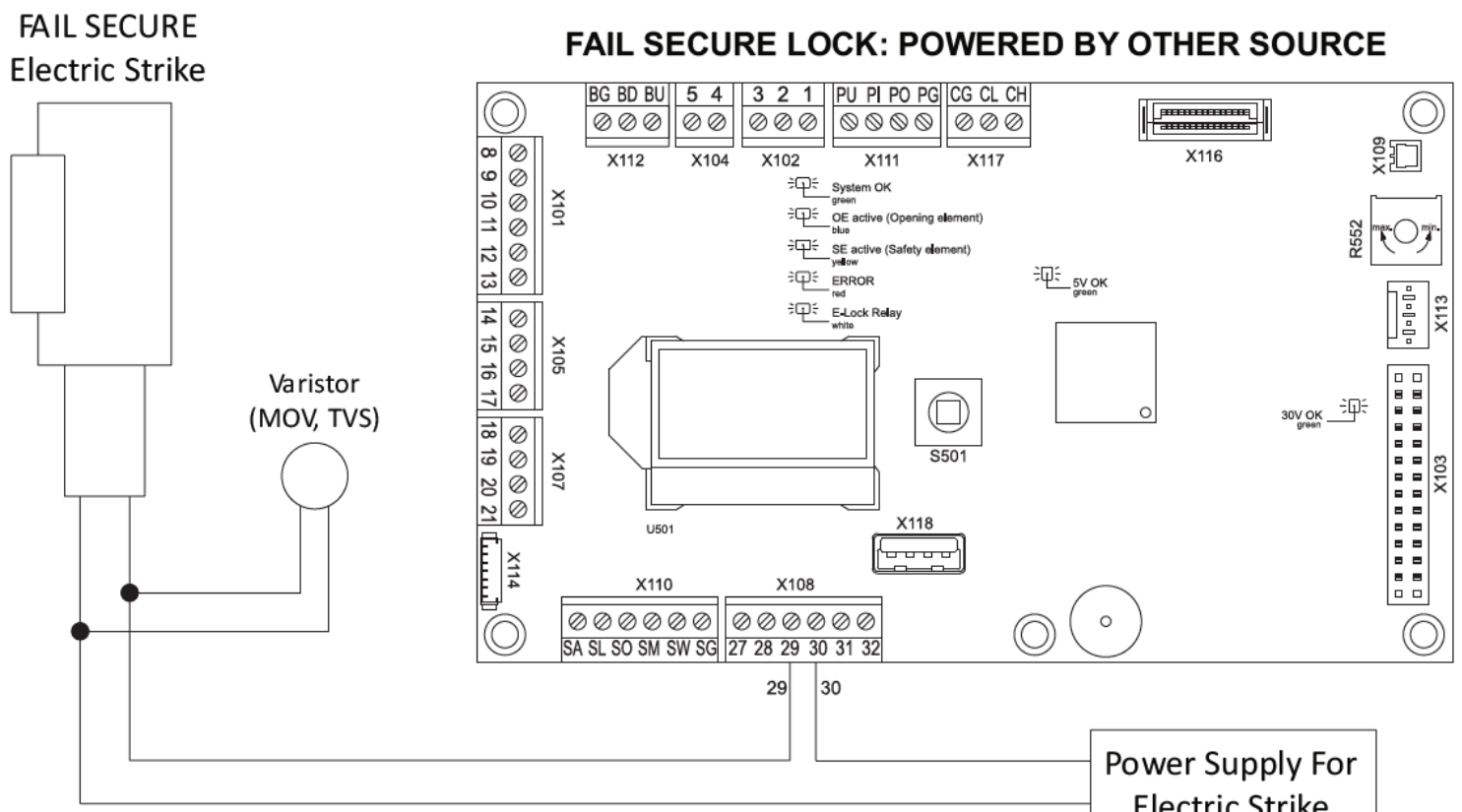

**NOTE**: Do not exceed 2A 24V draw from the Board. TORXUN recommends one board powered accessory only. Others should be powered by independent power supplies.

Fig VI.3 Locking Devices Powered by the AUTOPED Operator




**NOTE**: Do not exceed 2A 24V draw from the Board. TORXUN recommends one board powered accessory only. Others should be powered by independent power supplies

Fig VI.4 Locking Devices Powered by Another Source (not powered by AUTOPED Operator)




- FAIL SAFE and MAG Locks are wired to Terminal 31 (EL-NC) instead of 30 (EL-NO).
- If the FAIL SECURE Lock has a built-in FeedBack Switch, connect the Feed-Back Switch to Terminals 28 (GND) and 32 (EL-Fb).
- Power for Lock: 24 VDC (800mA max.)

Fig VI.5 Secured Activation Devices

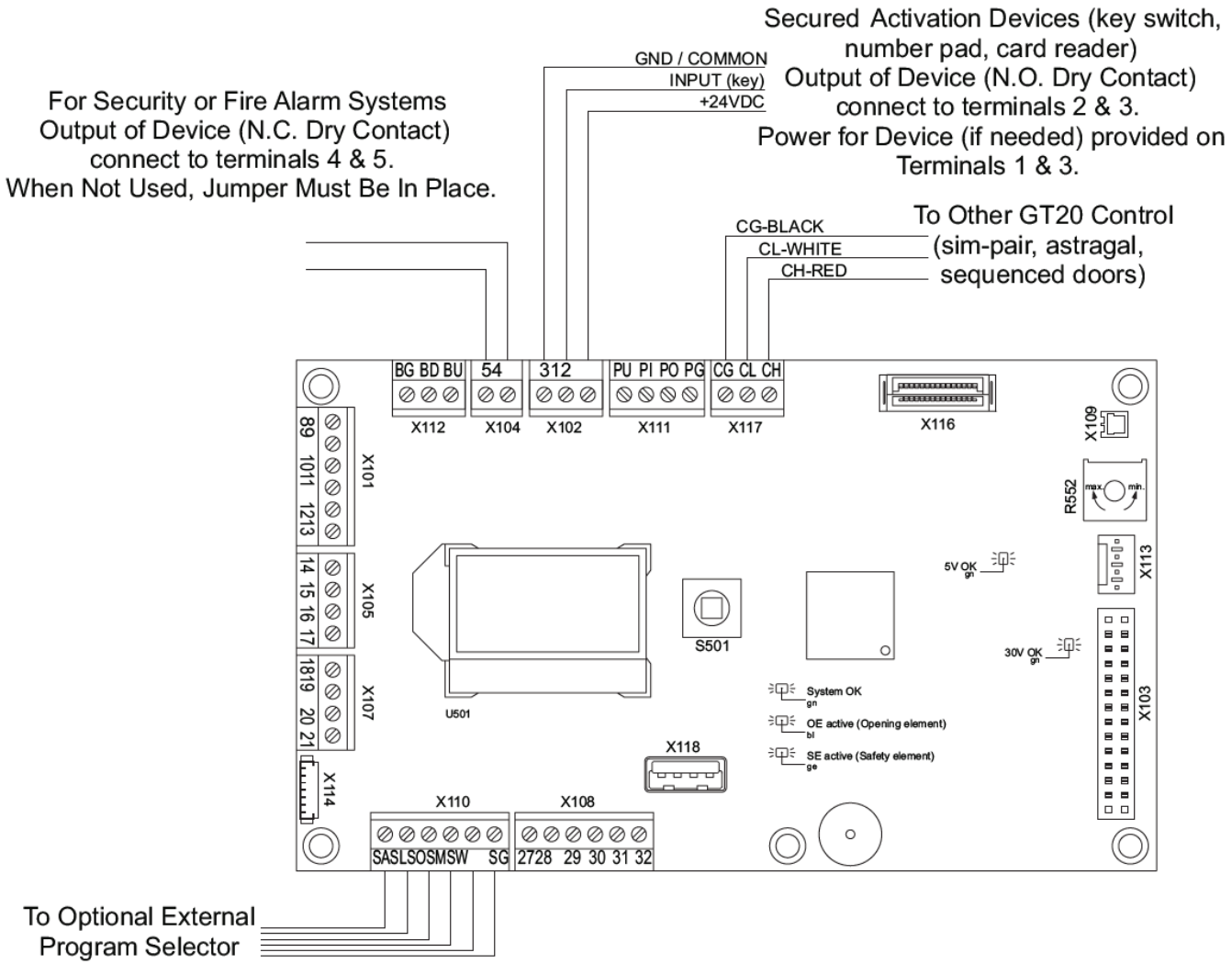
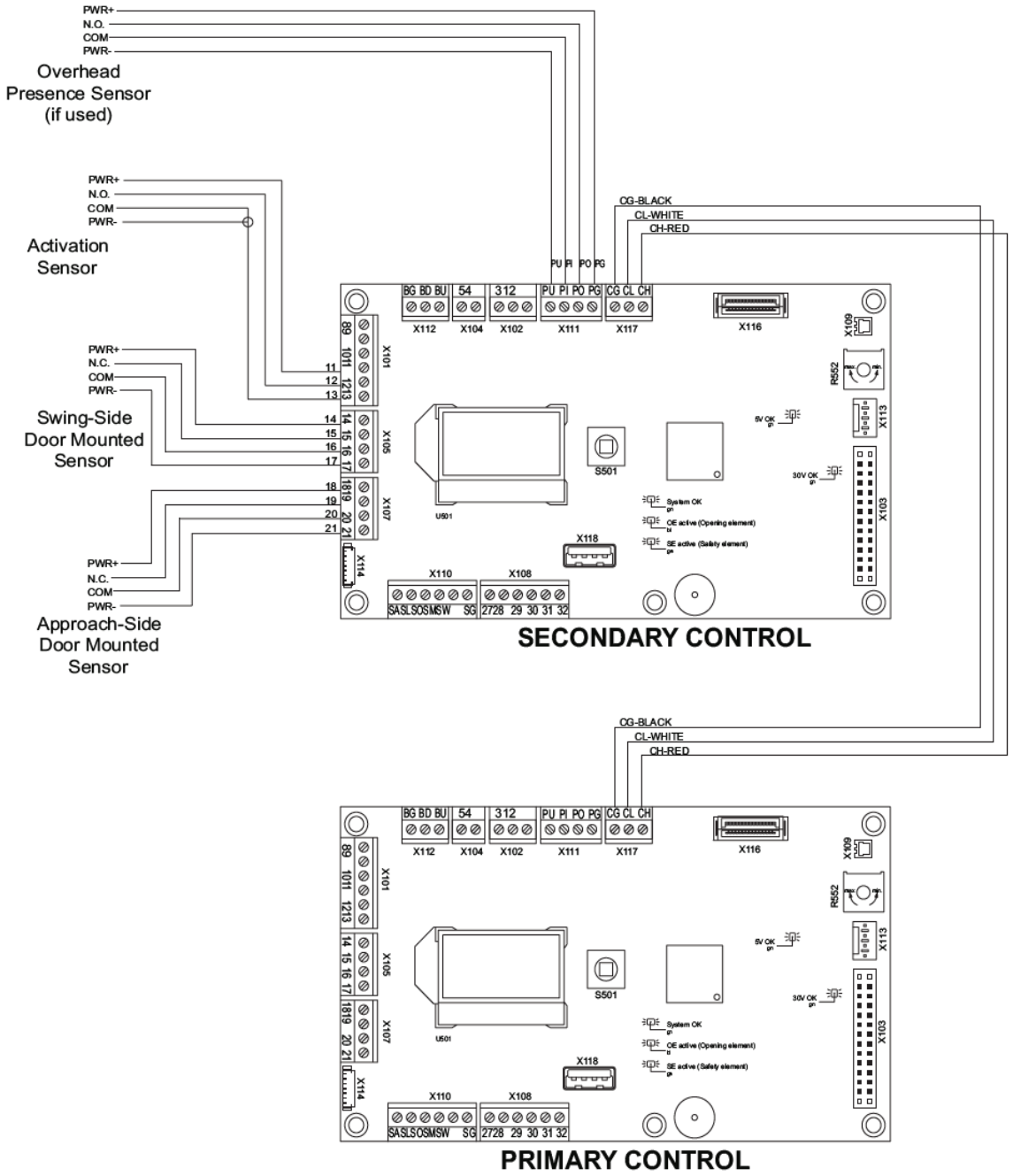


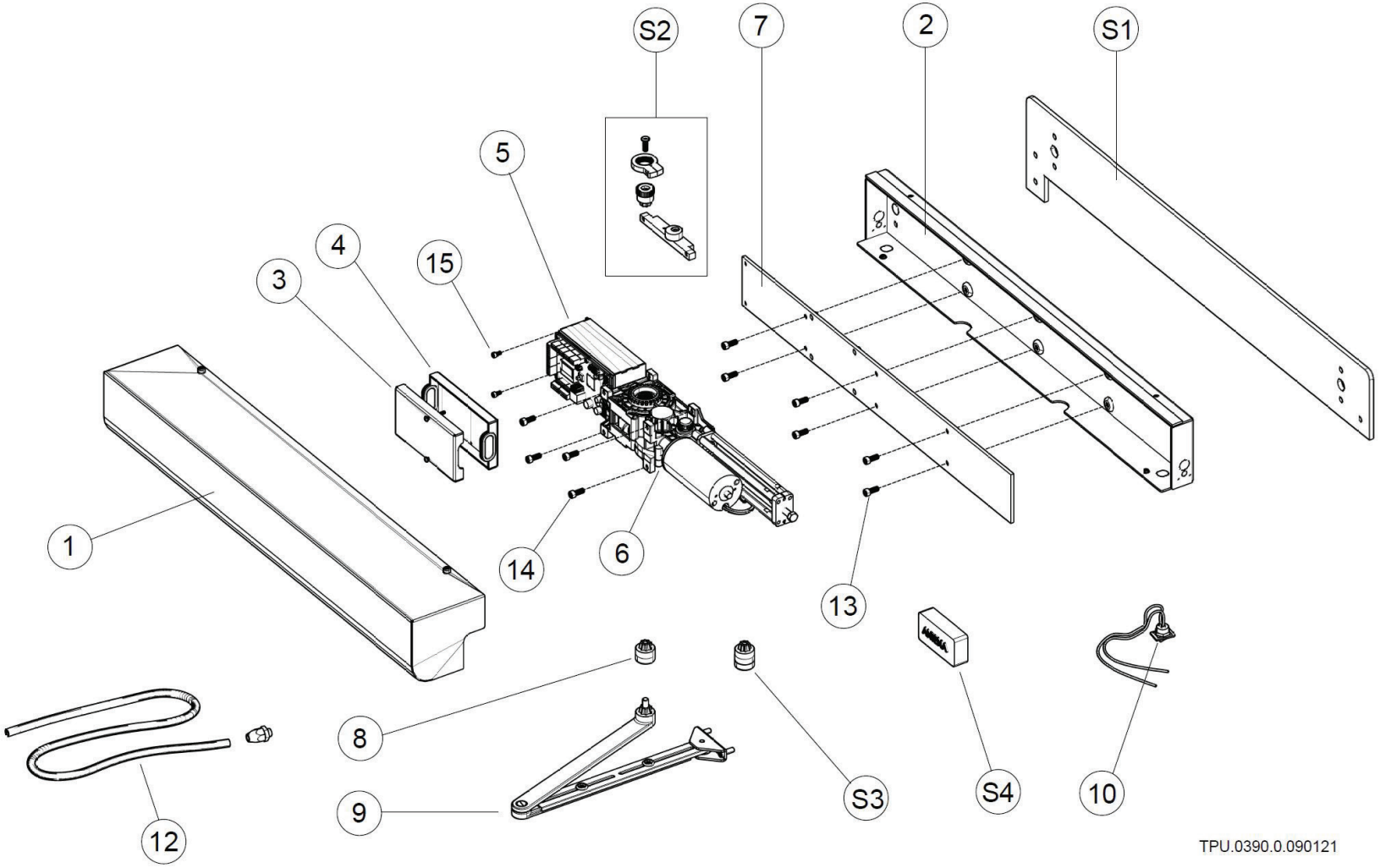
Fig VI.6 Wiring for Double Door/Gate System



# SECTION VII

# SERVICE PARTS

## VII.1 SERVICE PARTS/COMPONENTS VISUAL GUIDE




TPU.0390.0.090121


TPU.0362.0.060321

## VII.2 STANDARD PARTS LIST

| ITEM NO. | TORXUN PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | M10S.0001 REV A | ENCLOSURE - FRONT COVER | 1 |
| 2 | M10S.0001 REV A | ENCLOSURE - CHASSIS | 1 |
| 3 | M10S.0020 | CONTROL UNIT FRONTCOVER | 1 |
| 4 | M10S.0019 | CONTROL UNIT REARCOVER | 1 |
| 5 | M10S.0022 | CONTROL UNIT | 1 |
| 6 | M10S.0021 | MOTOR-GEARBOX ASSEMBLY | 1 |
| 7 | M10S.0010 | MOUNTING PLATE | 1 |
| 8 | M10S.0017 | SPINDLE EXTENSION 20MM | 1 |
| 9 | M10S.0028 | SWING ARM ASSY | 1 |
| 10 | M10S.0025 | ROCKER SWITCH KIT | 1 |
| 11 | M10S.0034 | PAPER MOUNTING TEMPLATE | 1 |
| 12 | M10S-0048 | CONDUIT ADAPTER KIT | 1 |
| 13 | M10S.0027 | M6 -1 x12 (fastens mounting plate to chassis) | 6 |
| 14 | M10S.0026 | M6 -1 x 18 (fastens gearbox to mounting plate) | 4 |
| 15 | M10S.00XX | M4 x 10 (fastens control unit box to mounting plate) | 2 |

## VII.3 OPTIONAL PARTS LIST

| ITEM NO. | TORXUN PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| S1 | M10S.0011 | STIFFENERPLATE | (1) |
| S2 | M10S.0040 | POSITIVE STOP KIT | (1) |
| S3 | M10S.0018 | EXTENSION SPINDLE 30MM | (1) |
| S4 | | RADIO FREQUENCY ACTIVATION KIT (pending) | (1) |