



# TORMAX Technologies, Inc.

## TORMAX TTX

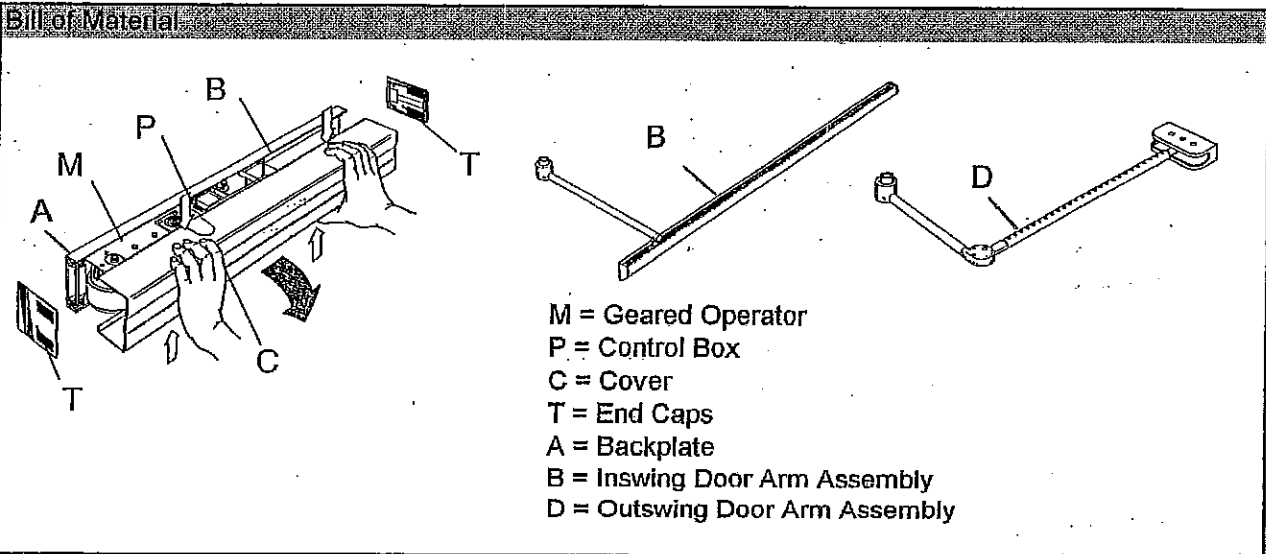
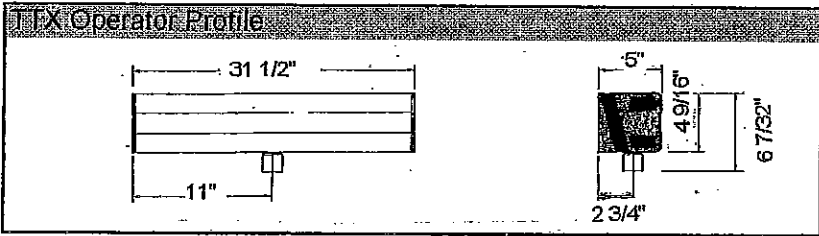
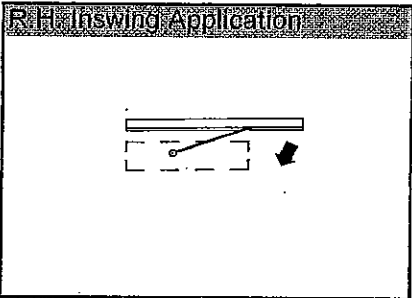
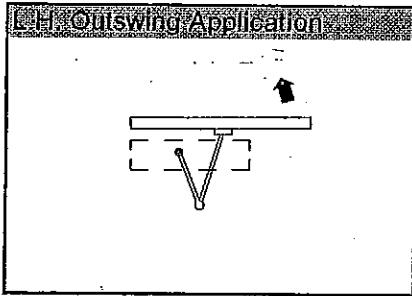
Low Energy Swing Door Operator

Installation and Tune-In Manual

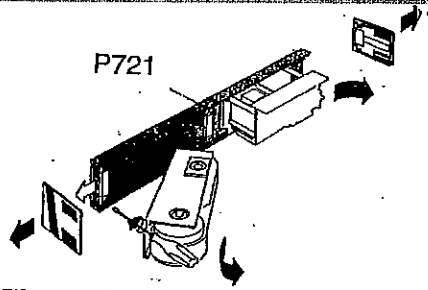
TORMAX Technologies, Inc.  
121 Interpark Boulevard, Suite 604  
San Antonio, TX 78216  
Phone: 1-888-685-3707  
Phone: 210-494-3551  
Fax: 210-494-5930  
[www.tormaxautomatic.com](http://www.tormaxautomatic.com)

# TORMAX TTX Low Energy Swing Door Operator

Specification	
Power Supply	120 VAC
Maximum Current	1 A
Motor	24 VDC
Accessories Output	24VDC 0.3 A Max.
Lock Output	12-24VDC 1.2A Max (power to lock 0.5-0.7S)
Unit Size	5" Wide x 4 9/16" High x 31 1/2" Length
Door Size	220 Lbs. Max.
Door Width	48" Max.
Adjustable Opening Speed 7 Seconds Maximum	
Adjustable Closing Speed 10 Seconds Maximum	
Adjustable Hold Open Time 0 - 25 Seconds	
Obstruction Time Out 5 Seconds	
Opening Torque 9 Lbs. Maximum	
Closing Torque 5 Lbs. Maximum	
Opening Stop by Microswitch	



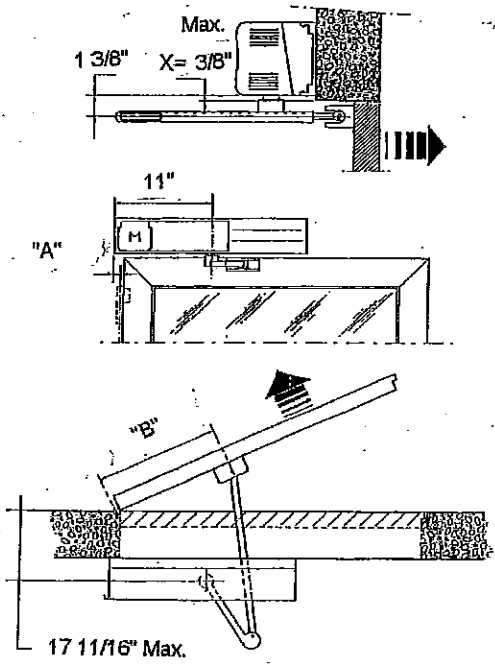
**Installation**



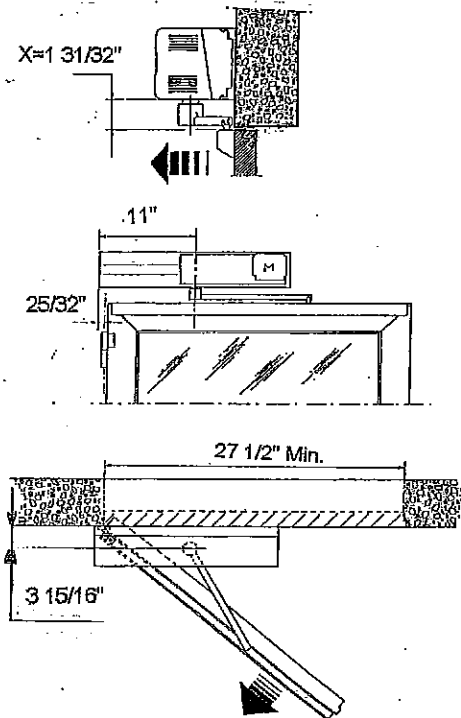
Disconnect the connectors from the PC board and remove the control box and operator from backplate extrusion. Do not remove the P721 clamp and rubber noise suppression material between the geared motor and the aluminum backplate extrusion.

Secure the backplate extrusion to the wall or door frame (refer to dimension "X")

**Outswing Application**

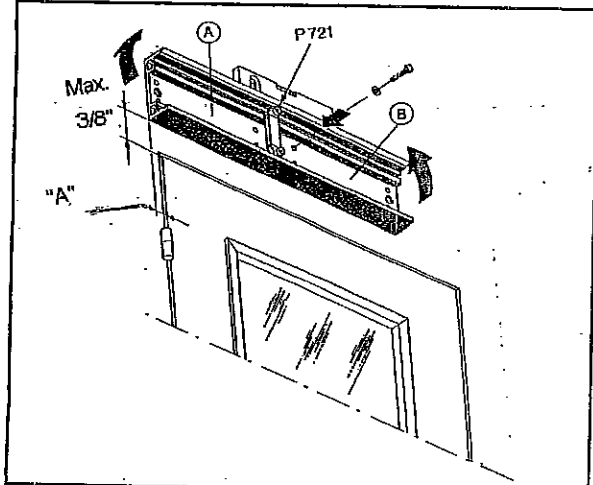


**Inswing Application**



**Inswing Applications:** Position the operator so that the motor is furthest from the hinges. Position control box on hinge side of operator.

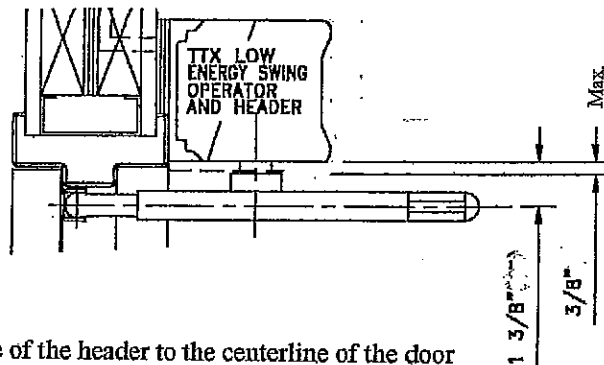
**Outswing Applications:** Position the operator so that the motor is closest to the hinges. Position control box strike side of operator.



Outswing Application		0-2 Degrees	3-45 Degrees	46-90 Degrees
Distance "A"	Distance "B"	Initial Door Release	Set Door In Motion	Door to Full Open Position
25/32"	13 3/8"	30 lbf.	12 lbf.	8 lbf.
25/32"	14 9/16"	26 lbf.	14 lbf.	10 lbf.
1 3/4"	14 9/16"	23 lbf.	10 lbf.	8 lbf.

**Outswing Door Arm**

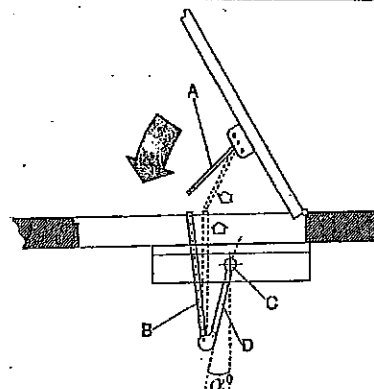
Remove the door shoe from the door arm assy and fasten to the door



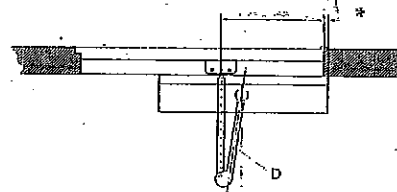
Note: Verify that you have sufficient clearance from underside of the header to the centerline of the door shoe prior to mounting the header

Note: The operator shaft rotation shall not exceed 170 degrees. It is recommended that a mechanical doorstop be utilized as a positive stop with the door in the fully open position. Using the arm extension stop beyond 90 degrees may cause damage to the door arm.

Separate the threaded bar "A" from the perforated tube "B". Secure the threaded bar "A" to the door shoe. Attach the door arm to the operator spindle at 90 degrees. Manually preload the operator in the direction of swing 18 degrees (or equivalent to one operator shaft tooth) and hold in place.

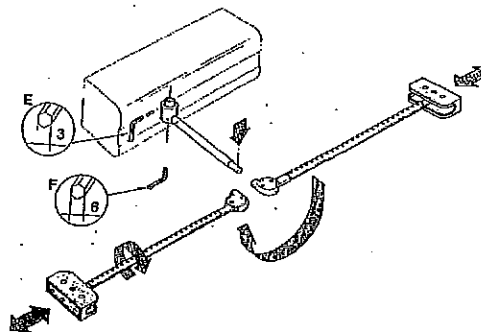


Close the door completely and secure the bar "A" and the perforated tube "B" to one another and secure with set screws



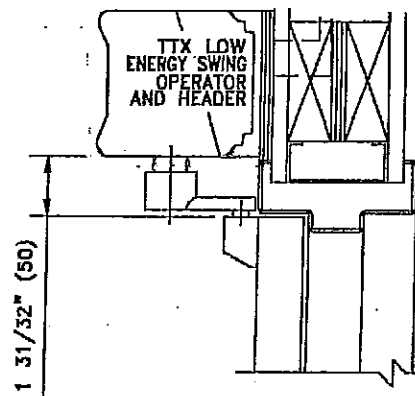
\* Refer to Chart on Page 2

If the bar "A" and the tube "B" are too long, cut the excess from tube "B". Secure door arm to operator shaft with screw "F". Lock screw "F" into place with screw "E". Note, these are metric screws:  
Next set the opening stop refer to next page (FA)



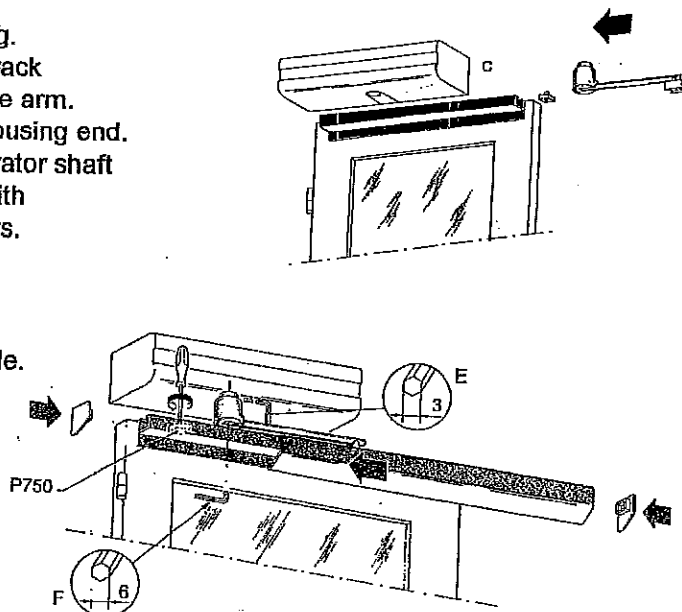
### Inswing Door Arm

Remove outer track cover and fasten the slide track housing to the door

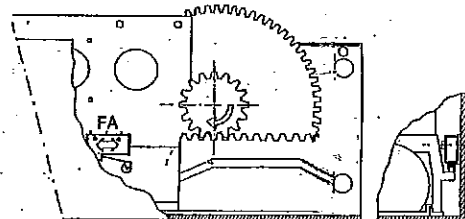


Warning: The operator shaft rotation shall not exceed 170 degrees. When open, the door leaf should rest against the arm extension stop or a mechanical floor door stop.

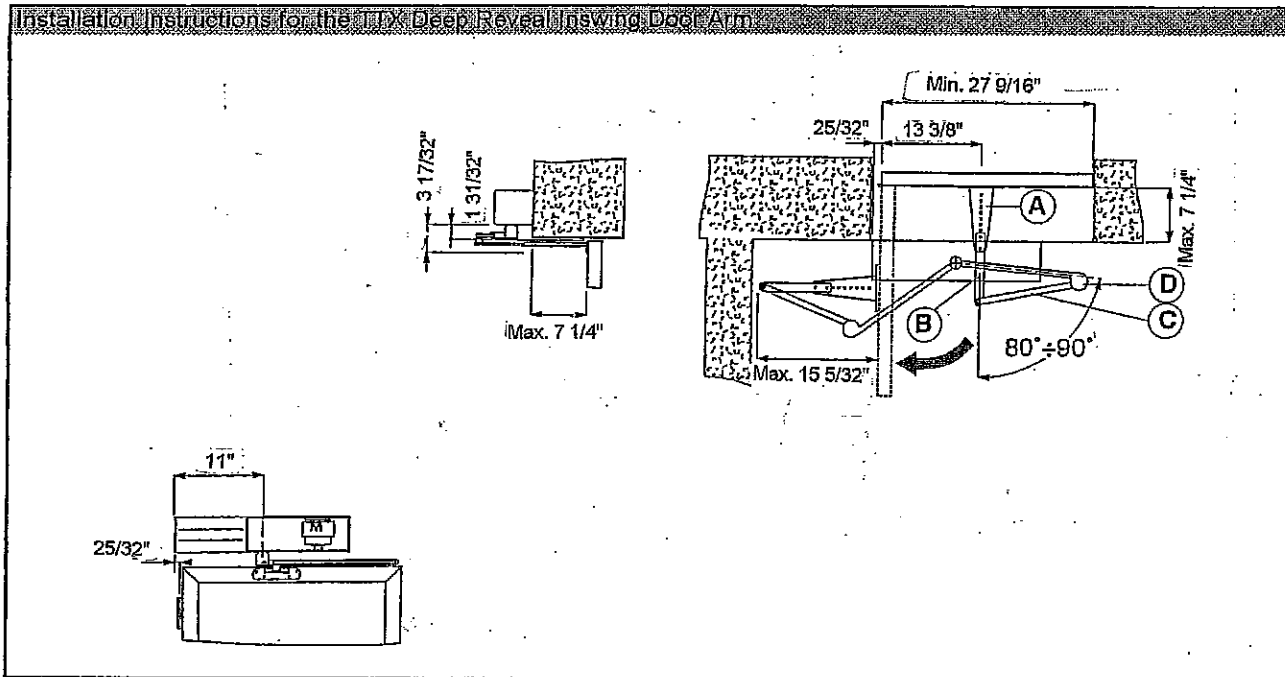
Preload operator by attaching arm to shaft, rotate 18 degrees in the direction of opening. Carefully insert a screwdriver between the rack end and operator mounting stud and remove arm. Insert door arm slide into slide door track housing end. Close door and secure door arm to the operator shaft with screw "F". Lock screw "F" into place with set screw "E". Note, these are metric screws. Remove the screwdriver between rack and operator mounting stud. Open door to 90 degrees and secure P750 track stop 3/16" from the door arm slide. Slide cover over track housing and snap plastic end caps into position.



FA = Opening Stop. Manually open door to desired position, loosen the stop switch screws and position stop switch so that the switch lever engages against the rack in the full open position. Retighten screws.



Installation Instructions for the TTX Deep Reveal Inswing Door Arm



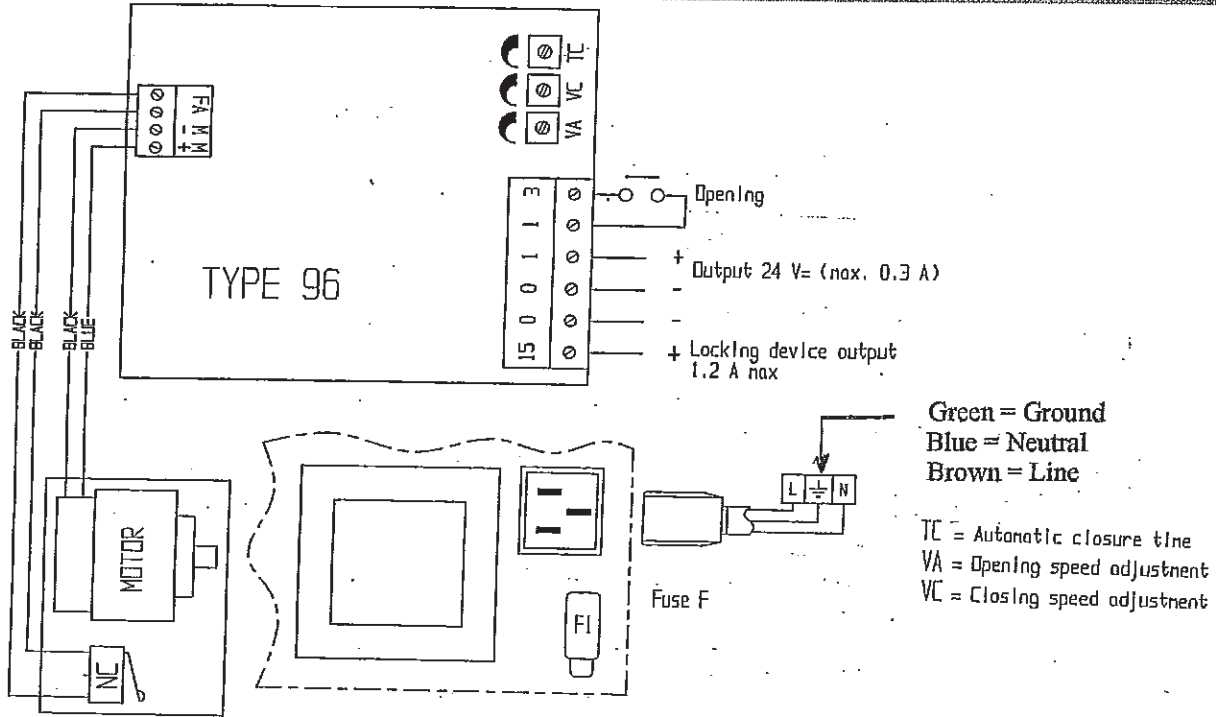
**Installation**

Adjust the length of arm components "A" + "B" so as to form an angle of between 80 - 90 degrees with respect to arm component "D".

The maximum reveal is 7 1/4" (distance from the face of the door to the back of the operator housing).

The TTX Deep Reveal Inswing Door Arm is configured for a RH inswing door.  
For LH inswing door separate arm component "C" from "D" (after having first removed the pin) and reassemble the two arm components rotated 180 degrees.

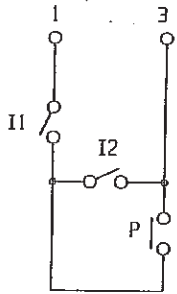
Formax BTX Wiring Diagram



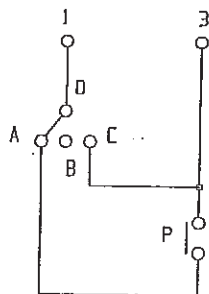
Important: Type 96/120 Electric Board supplies 120VAC with 1.6A Fuse

On/Off and On/Off/Hold Open Connections

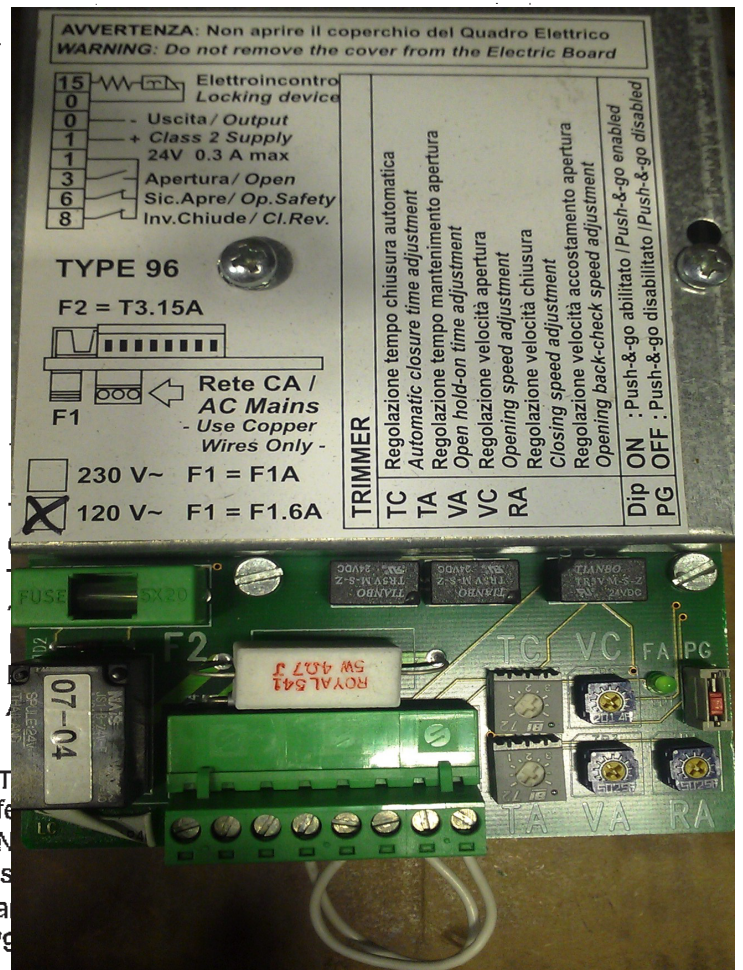
D = 3 position switch  
 I1 - I2 = switch  
 P = normally open contact



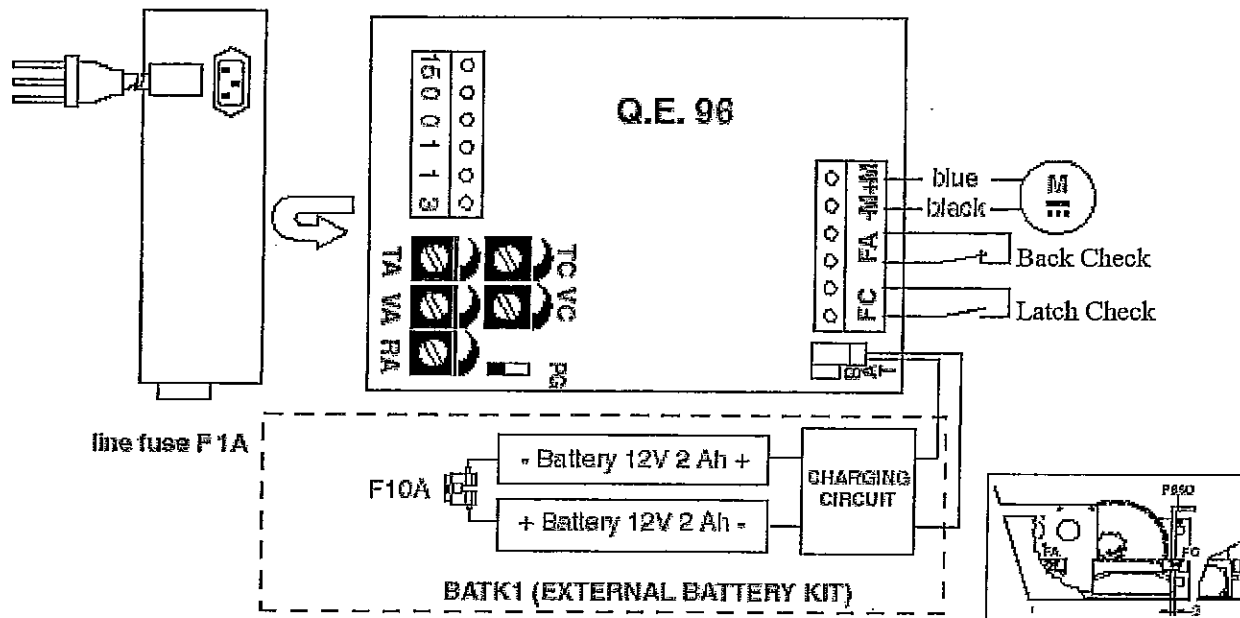
I1 = closed door / automatic  
 I2 = automatic / open door



D/A = automatic  
 D/B = closed door  
 D/C = open door



## TTX Tune-In and Adjustment Addendum



**TC – Push Plate Time Delay:** Adjusts the hold open time duration (from 0 to 25 s) when the door is activated by a push plate or other type of sensor. The time delay begins when the back check switch (FA) has been tripped.

**TA – Push & Go Time Delay:** Adjusts the hold open time duration (from 0 to 25 s) when the door is activated by push and go. The time delay begins when the back check switch (FA) has been tripped.

**VA – Opening Speed:** Adjusts the opening speed.

**VC – Closing Speed:** Adjusts the closing speed.

**RA – Opening Back Check Run Time:** Adjusts the opening back check run time when the back check switch (FA) has been tripped. NOTE: An increase or decrease of RA has a direct impact on VA.

1. Set position of back check (FA) and latch check (FC) micro switches. (Brass screws on top or bottom of operator depending on outswing or inswing application; see figure above.)
2. Set “Push and Go” feature ON or OFF. The switch is located next to potentiometer RA.
3. Set RA pot at 3/4 rotation and set all other potentiometers at 1/2 rotation before activating door.
4. Activate door.
5. Adjust VA and VC to the desired opening and closing speeds respectively.
6. Readjust RA to the desired door opening angle. Note: Increasing or decreasing RA will have a direct impact on opening velocity. VA may have to be readjusted for desired results.
7. Set TC to the desired push and go time delay.
8. Set TA to the desired push plate time delay. (Push Plate Time Delay = TC + TA)



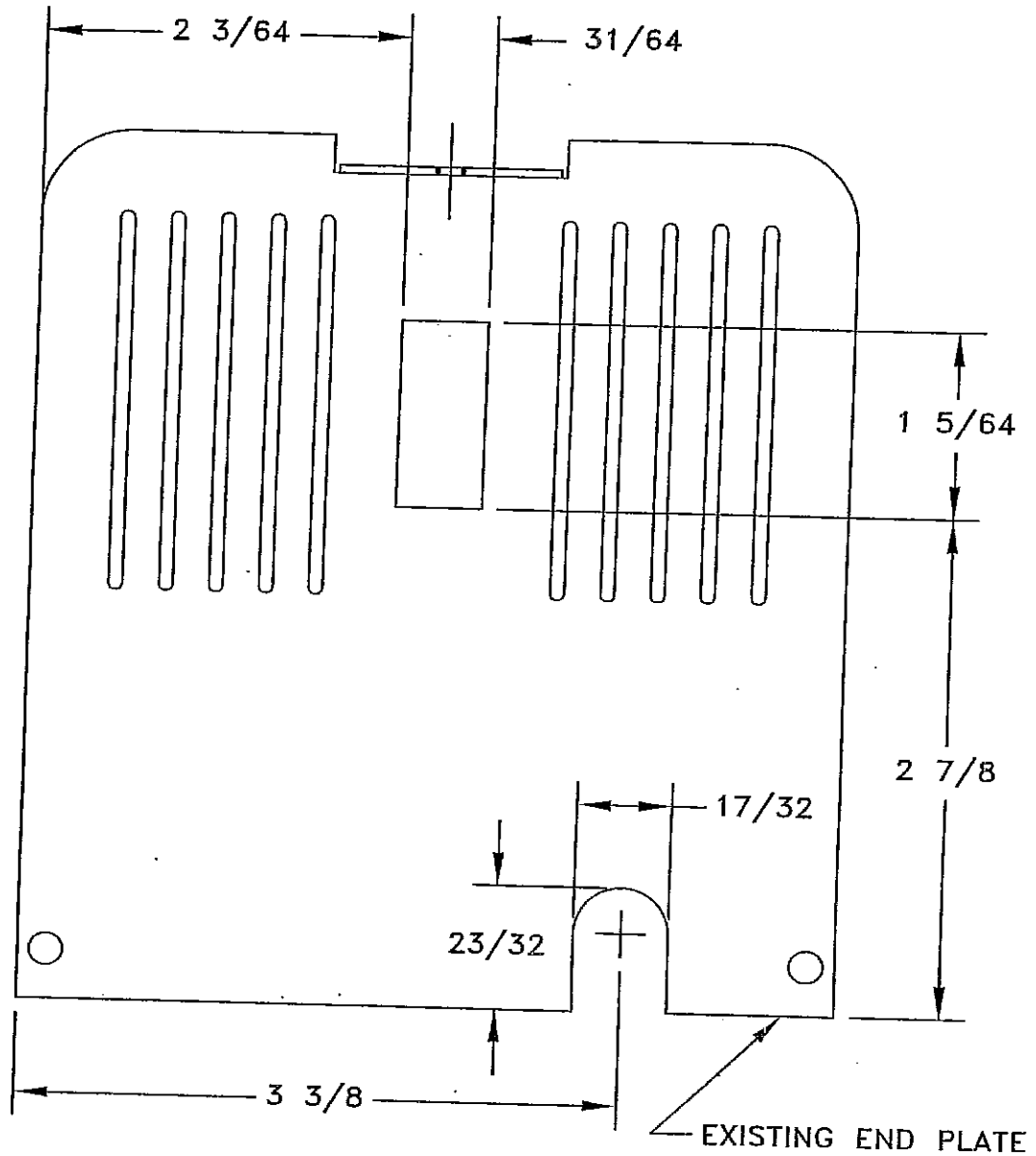


TTX SERIES

END PLATE MACHINING

JOB NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

DOOR LOCATION: \_\_\_\_\_ DOOR NO: \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_



NOTES:

1. DETAILS NOT TO SCALE
2. FILE SLOT CORNERS SQUARE FOR ROCKER SWITCH
3. MACHINE SLOT FOR POWER CORD (REV. B)
4. MOUNT THIS END PLATE ON CONTROL BOX END OF BACK PLATE

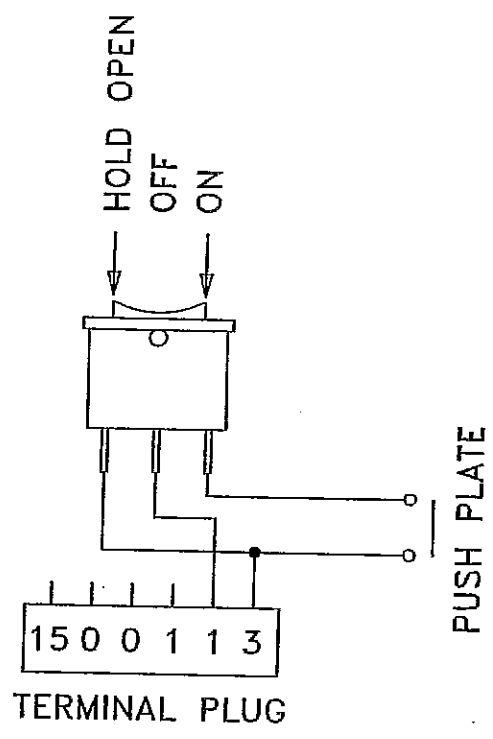
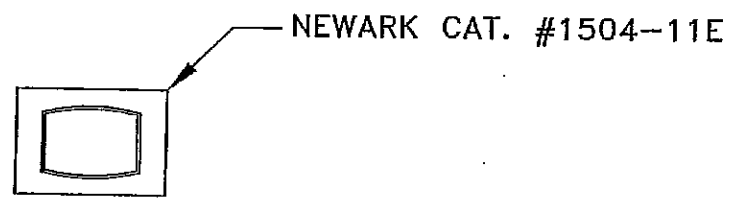


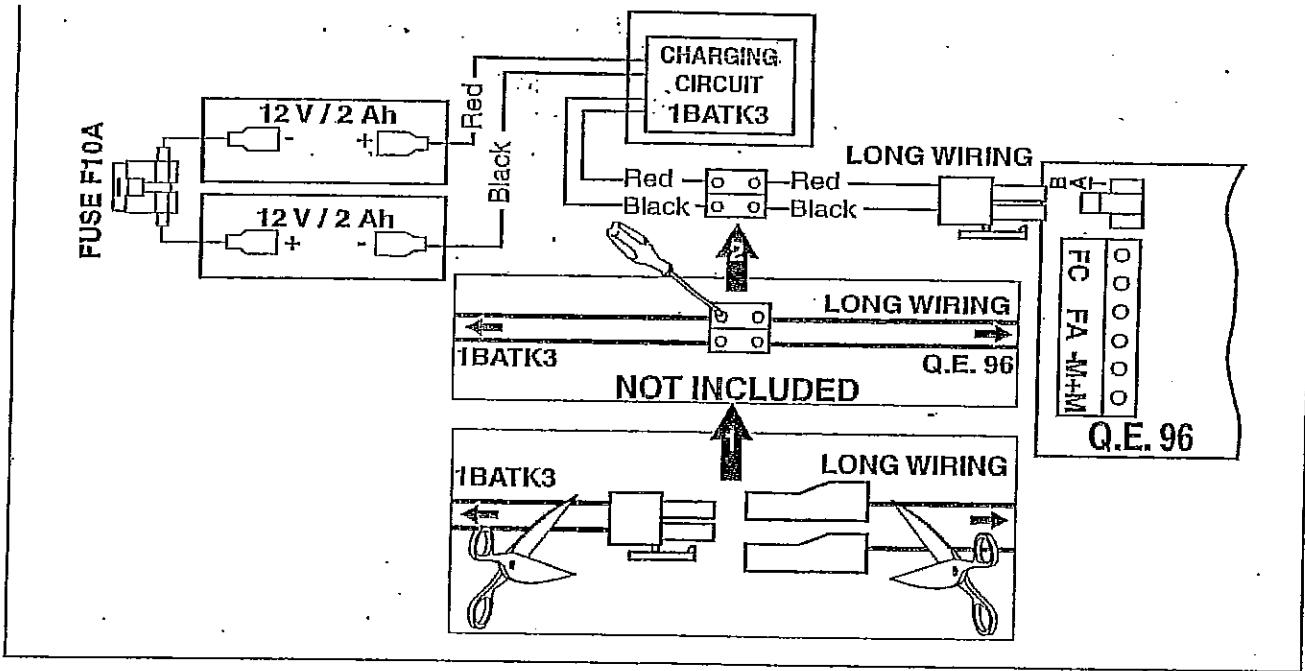
TTX SERIES

END PLATE W/ ROCKER SWITCH WIRING

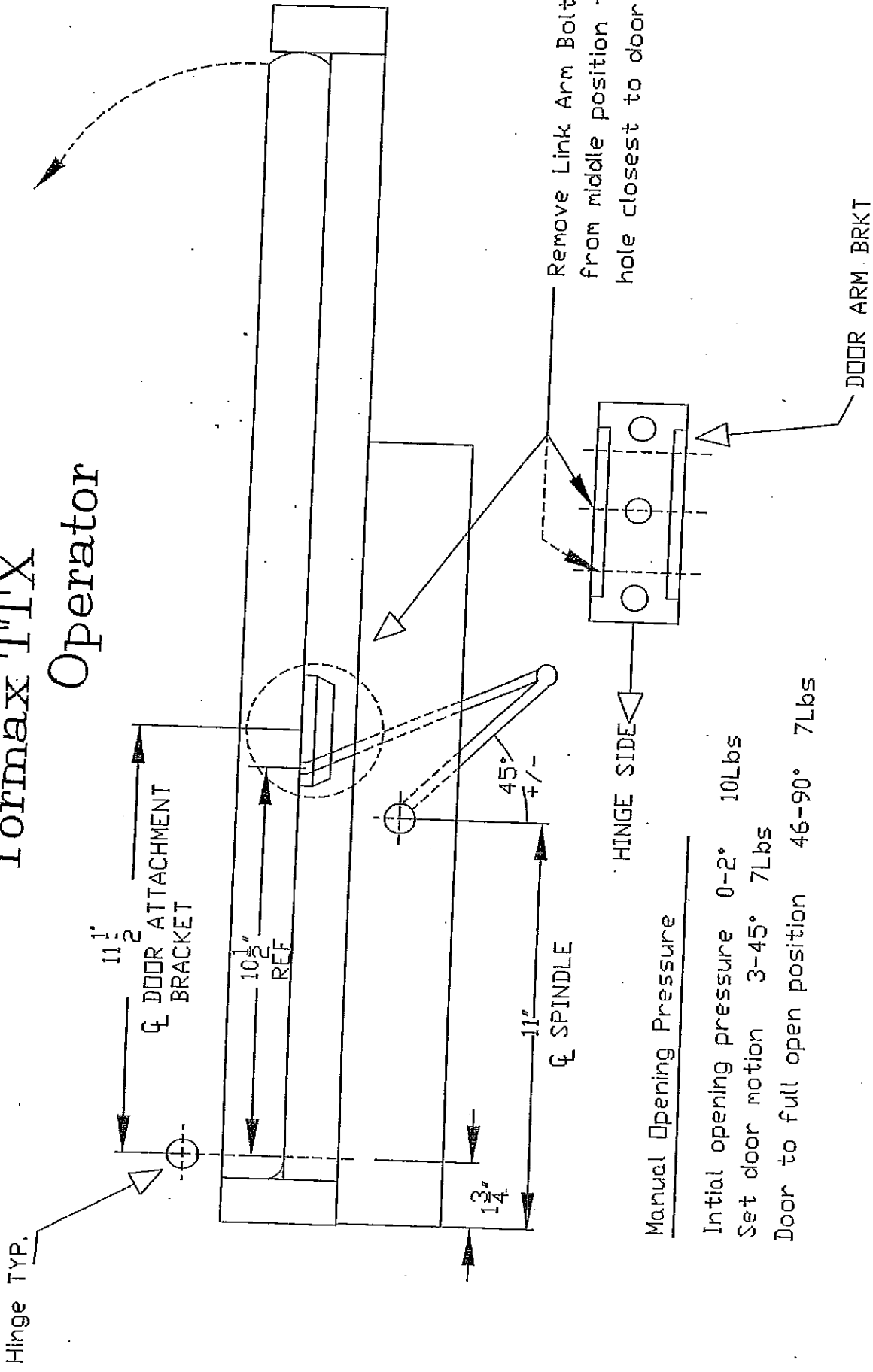
JOB NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

DOOR LOCATION: \_\_\_\_\_ DOOR NO: \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_





# Tormax TTX Operator



### Manual Opening Pressure

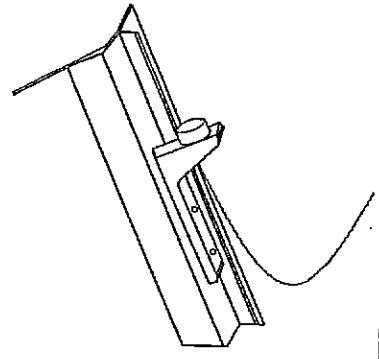
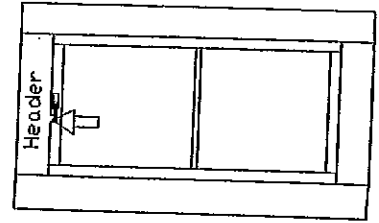
- Initial opening pressure 0-2° 10Lbs
- Set door motion 3-45° 7Lbs
- Door to full open position 46-90° 7Lbs



**Installation of Door Arm Stop**

**Instructions**

1. Install TTX Door Arm Stop to the horizontal sill. Position between hing & operator spindle with rubber stop facing door arm.
2. Adjust door arm stop to desired door opening position
3. Fasten door arm stop with appropriate fasteners using bracket holes as a guide



**110743-TTX Door Stop-CL Finish**

