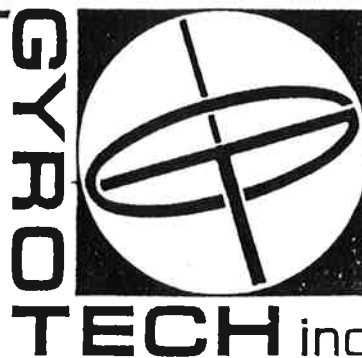


SYSTEM

700



“GEMINI”

INSTALLATION

AND

SERVICE MANUAL

FOR

**SWING DOOR
CONVERSION UNIT**

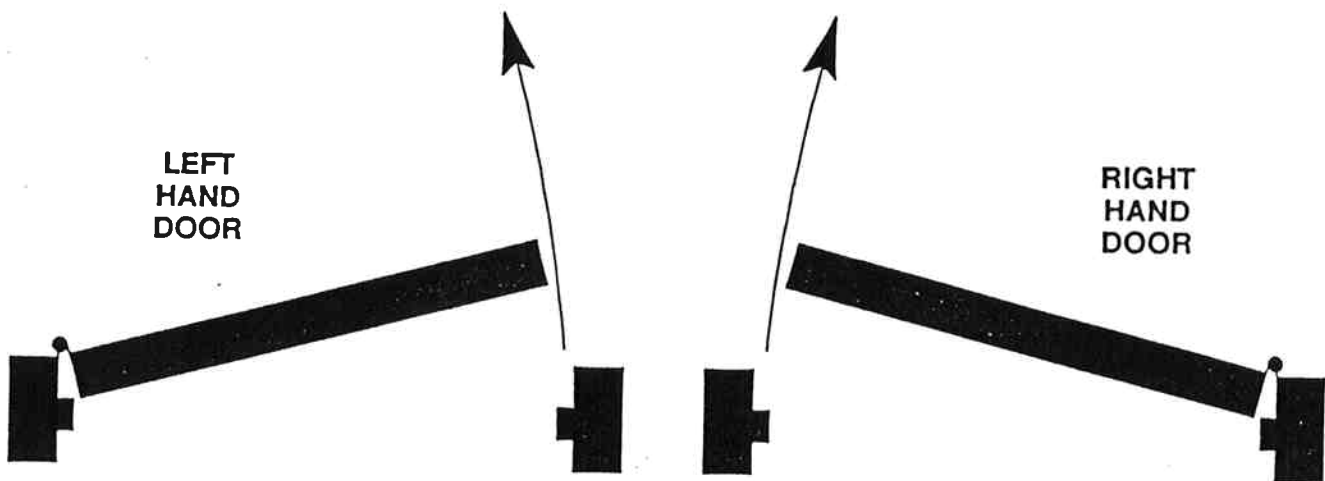
Automatic Door Operator

5/91

REQUIREMENTS

- * POWER INPUT TO THE DOOR CONTROL MUST BE 120 VOLTS (50-60 HZ)
- * MAXIMUM WIRE SIZE IS 14 AWG.
- * ALL WIRING MUST CONFORM TO STANDARD WIRING PRACTICE IN ACCORDANCE WITH NATIONAL AND LOCAL WIRING CODES.
- * NOTE: UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE GIVEN IN INCHES, (MILLIMETERS)
- * MINIMUM FRAME FACE 1 3/4" (44.45MM)
- * DOOR MUST SWING FREELY THROUGH THE ENTIRE OPENING AND CLOSING CYCLE BEFORE BEGINNING THE INSTALLATION.
- * MINIMUM CEILING CLEARANCE (FROM TOP OF DOOR) 7" (178MM).
- * FOR WIRING REFER TO WIRING INSTRUCTION ON PAGE 5.
- * HAND OF UNIT AND HAND OF DOOR MUST BE THE SAME. HAND OF UNIT IS NOT REVERSIBLE.
- * DOOR MUST BE HUNG ON BUTT HINGES OR 3/4" (19MM) OFFSET PIVOTS.
- * DOOR THICKNESS MUST BE 1 3/4" (44MM) MINIMUM 2 1/4" (57MM) MAXIMUM.
- * USE OF A SUPPLEMENTAL DOOR STOP IS ALWAYS REQUIRED.
- * WHEN APPLYING THE HANDICAP STICKERS, IF "PUSH-N-GO" IS NOT TO BE USED, CUT OFF THE "PUSH DOOR TO OPERATE" PORTION OF THE AUTOMATIC DOOR STICKER.

DETERMINE HAND OF DOOR



GENERAL

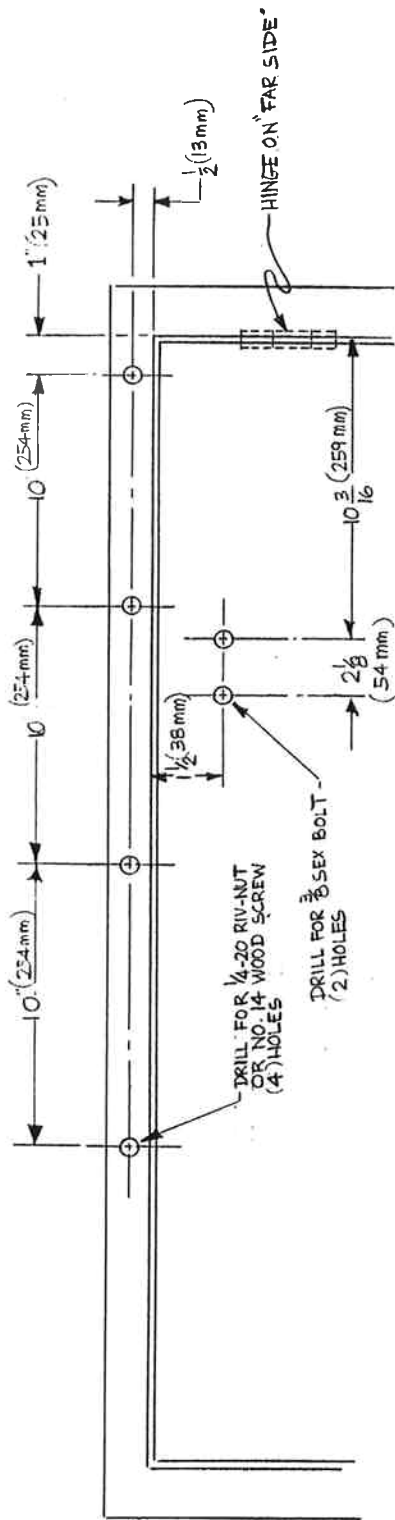
- * BEFORE BEGINNING THE INSTALLATION, VERIFY THAT THE DOOR FRAME IS PROPERLY REINFORCED AND IS WELL ANCHORED IN THE WALL. UNREINFORCED HOLLOW METAL FRAMES SHOULD BE PREPARED AND FITTED WITH 1/4"-20 BLIND RIV-NUTS FURNISHED BY THE INSTALLER.
- * ELECTRICAL CONDUIT AND SWITCH OR SENSOR WIRES SHOULD BE PULLED TO THE FRAME BEFORE PROCEEDING.

FASTENERS FOR FRAME

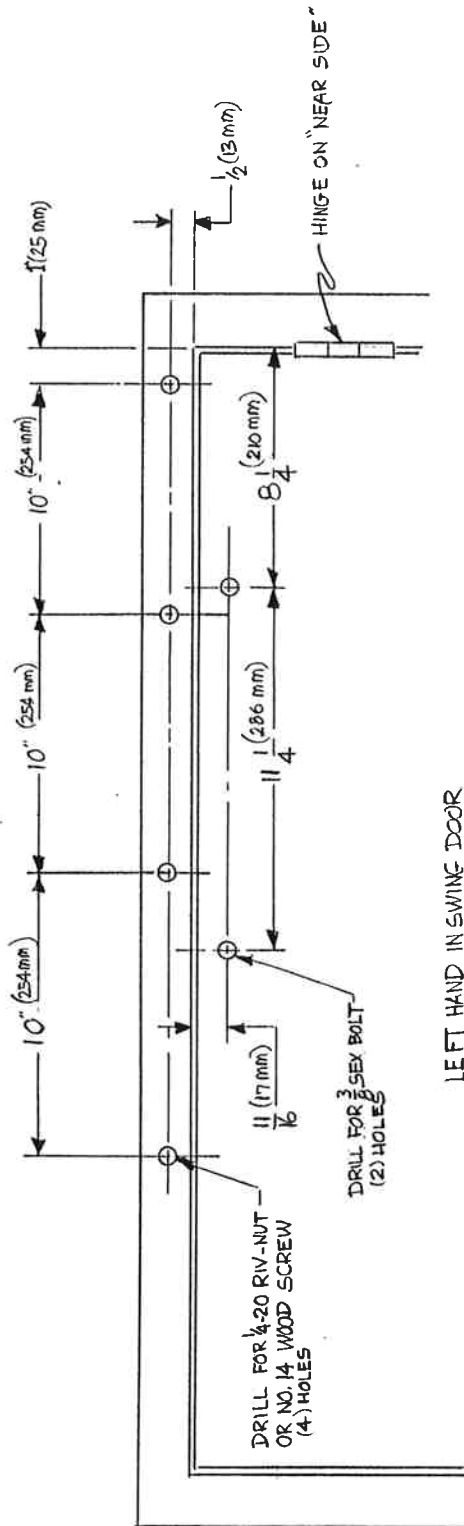
- * 1/4"-20 MACHINE SCREWS FOR HOLLOW METAL AND ALUMINUM OR NO. 14 - 2 3/4" (70MM) WOOD SCREWS.

FASTENERS FOR DOOR

- * 1/4"-20 MACHINE SCREWS AND 3/8 DIAMETER X 1 3/4 (45MM) SEX-NUT.



RIGHT HAND OUT SWING DOOR



LEFT HAND IN SWING DOOR

REVISIONS	DATE	DATE: 3-21-91	PART NAME: FRAME DRILLING DETAILS
		SCALE: $\frac{1}{2}$	MATERIAL:
		DRAWN BY: JES	SPECIFICATIONS: LOW ENERGY OPERATOR
		APPROVED BY:	

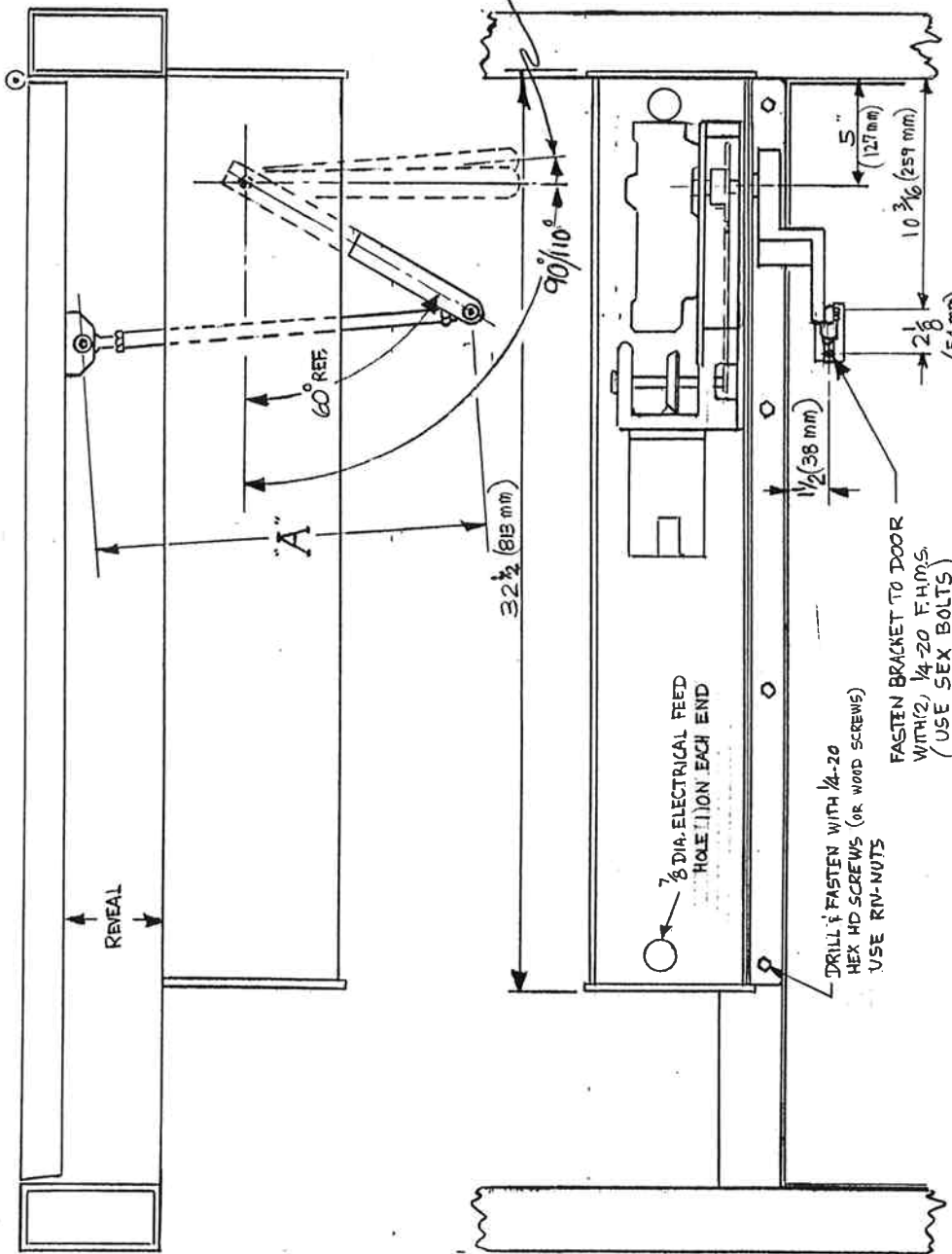
TOLERANCES (UNLESS NOTED)
FRACTIONAL $\pm 1/64$
XX $\pm .010$
XXX $\pm .008$
ANGLES $\pm 1/2^\circ$

DRAWING NO.
2

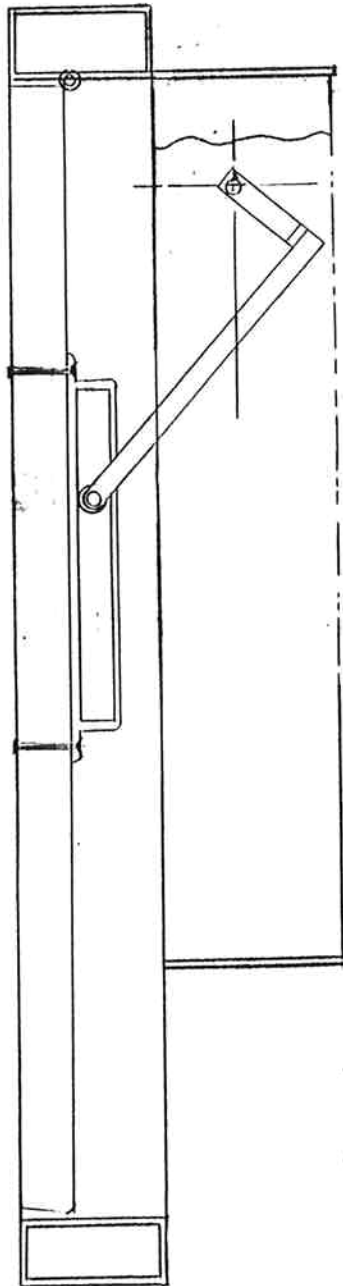
PART NO.

GYRO TECH inc.

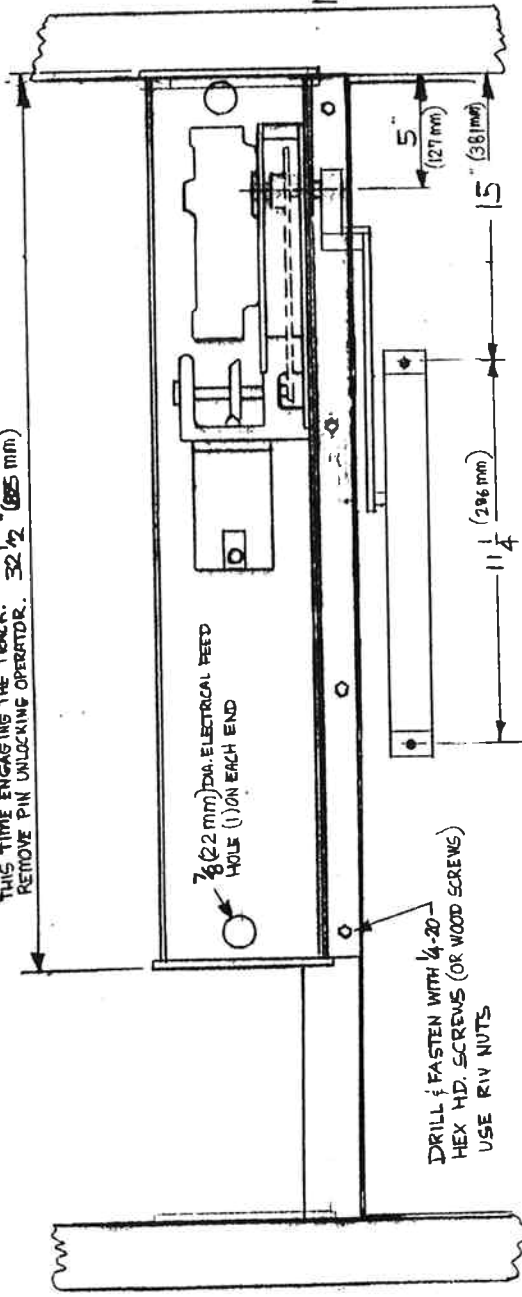
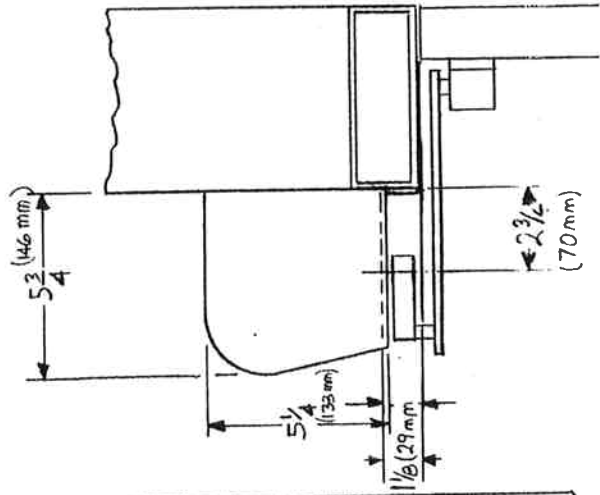
GYRO TECH inc



REVISIONS		DATE	DATE: 1-10-90	PART NAME: INSTALLATION DETAILS / OUT SWING RM.
SCALE: 1/4"		SCALE: 1/4"	MATERIAL:	
DRAWN BY: JES		DRAWN BY: JES	SPECIFICATIONS: LOW ENERGY OPERATOR	
APPROVED BY:		APPROVED BY:		
TOLERANCES (UNLESS NOTED)		TOLERANCES (UNLESS NOTED)		
FRACTIONAL ± 1/64		FRACTIONAL ± 1/64		
XX ± .010		XX ± .010		
XXX ± .005		XXX ± .005		
ANGLES ± 1°		ANGLES ± 1°		
DRAWING NO. 3		GYRO TECH inc.		
PART NO.		GYRO TECH inc.		



PLACE ARM AT ANGLE SHOWN AND
ROTATE 10/20° LOCK OPERATOR
BY PLACING A PIN BETWEEN THE CHAIN AND
SPROCKET REMOVE AND REPLACE ARM
THIS TIME ENGAGING THE TRACK.
REMOVE PIN UNLOCKING OPERATOR. 32 1/2" (825 mm)



DRILL & FASTEN WITH 1/4-20-
HEX HD. SCREWS (OR WOOD SCREWS)
USE RIV NUTS

FASTEN TRACK TO DOOR WITH
1/2, 1/4-20 F.H.M.S
USE SEX-BOLTS

PART NAME: INSTALLATION DETAILS/INSWING LH
MATERIAL: W / O" TO 3" REVEAL
SPECIFICATIONS: LOW ENERGY OPERATOR

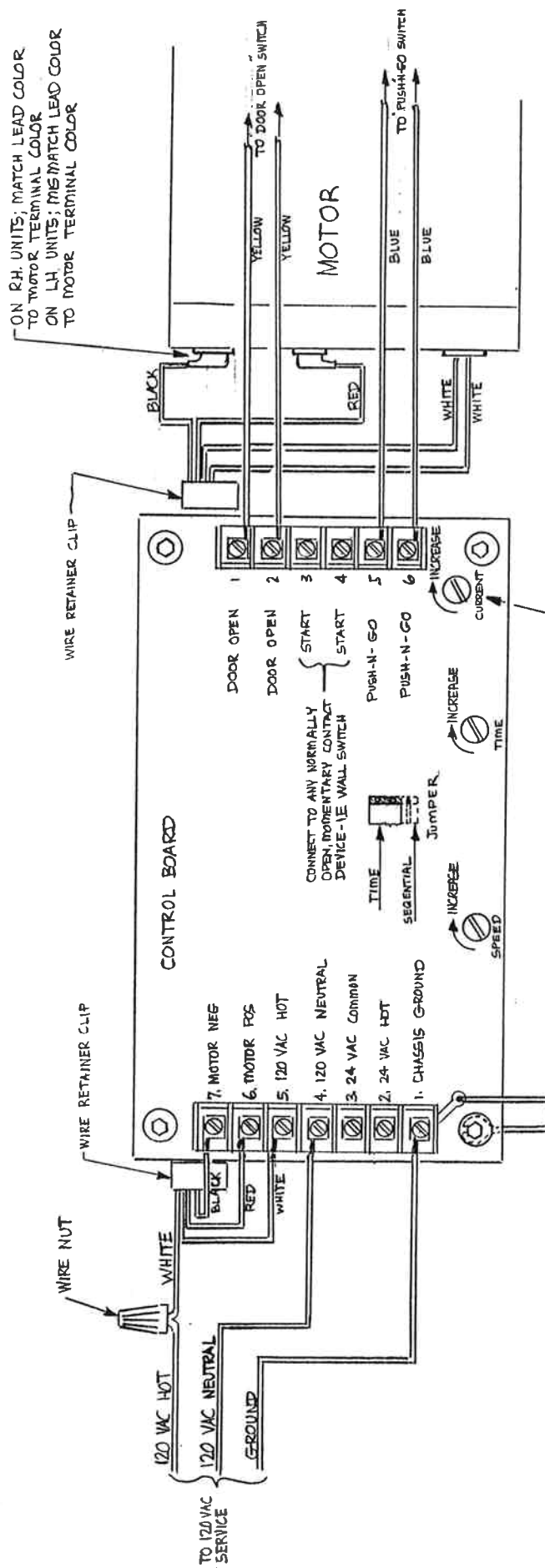
DATE: 10-19-92
SCALE: 1/2" = 1'-0"
DRAWN BY: G-A
APPROVED BY:

TOLERANCES
(UNLESS NOTED)
FRACTIONAL ± 1/64
XX ± .010
XXX ± .005
ANGLES ± 1/4°



GYRO TECH inc.

DRAWING NO.
4A
PART NO.



TURNING THIS POT CLOCKWISE INCREASES SENSITIVITY OF THE AUTOMATIC RECYCLE

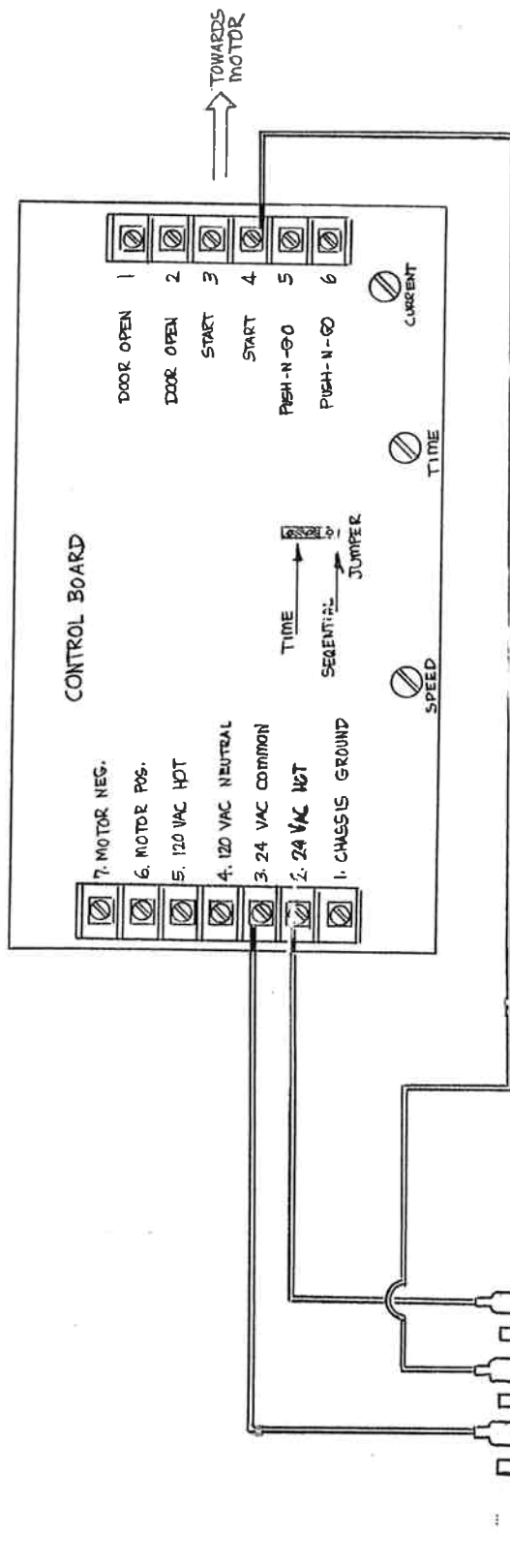
Pot Adjustment:

1. Move Jumper to the "seq1" position.
2. Adjust "Speed Pot" full CCW.
3. Adjust "Current Pot" full CCW.
4. Adjust "Time Pot" full CCW.
5. Attach all Input and Output wiring per diagram above.
6. Apply 120V AC power.
7. Close either "Start" or "Push 'N Go" switch to activate door.
8. Close either "Start" or "Push 'N Go" switch to disable door.
9. Adjust "Speed Pot" for optimum speed. Repeat steps 6 and 7.
10. Block door with heavy object.
11. Activate door. Motor should remain on.
12. Adjust "Current Pot" SLOWLY until motor turns off.
13. Remove object. Activate door. Door should open and travel to end. Motor should remain on at end of travel.
14. Disable door. Block door again. Activate door. Door should travel until object is hit and then unit will shut down.
15. Remove object. Move Jumper to the "Time" position.
16. Activate door. Door should remain open for 5 to 7 seconds and then turn off.
17. Adjust "Time Pot" for optimum time. Repeat step 16.
18. Place Jumper in position required.
19. End of adjustment.

CAUTION! PLEASE USE CARE TO AVOID BENDING THE PINS WHEN REMOVING AND REPLACING THE "TIME-SEQUENTIAL" JUMPER.

NOTES: IF SEQUENTIAL OPERATION IS DESIRED PLACE JUMPER IN "SEQUENTIAL" POSITION AND DISCONNECT PUSH-N-GO LEADS IF "PUSH-N-GO" IS NOT DESIRED, DISCONNECT THE BLUE PUSH-N-GO LEADS

REVISIONS	DATE	PART NAME: ELECTRICAL CONNECTIONS TO CONTROL
	DATE: 5-22-91	MATERIAL:
	SCALE: 1/8"	SPECIFICATIONS: LOW ENERGY OPERATOR
	DRAWN BY: JES	APPROVED BY:
		TOLERANCES (UNLESS NOTED)
		FRACTIONAL ± 1/64
		XX ± .010
		XXX ± .005
		ANGLES ± 1/4"
DRAWING NO. 5		PART NO.



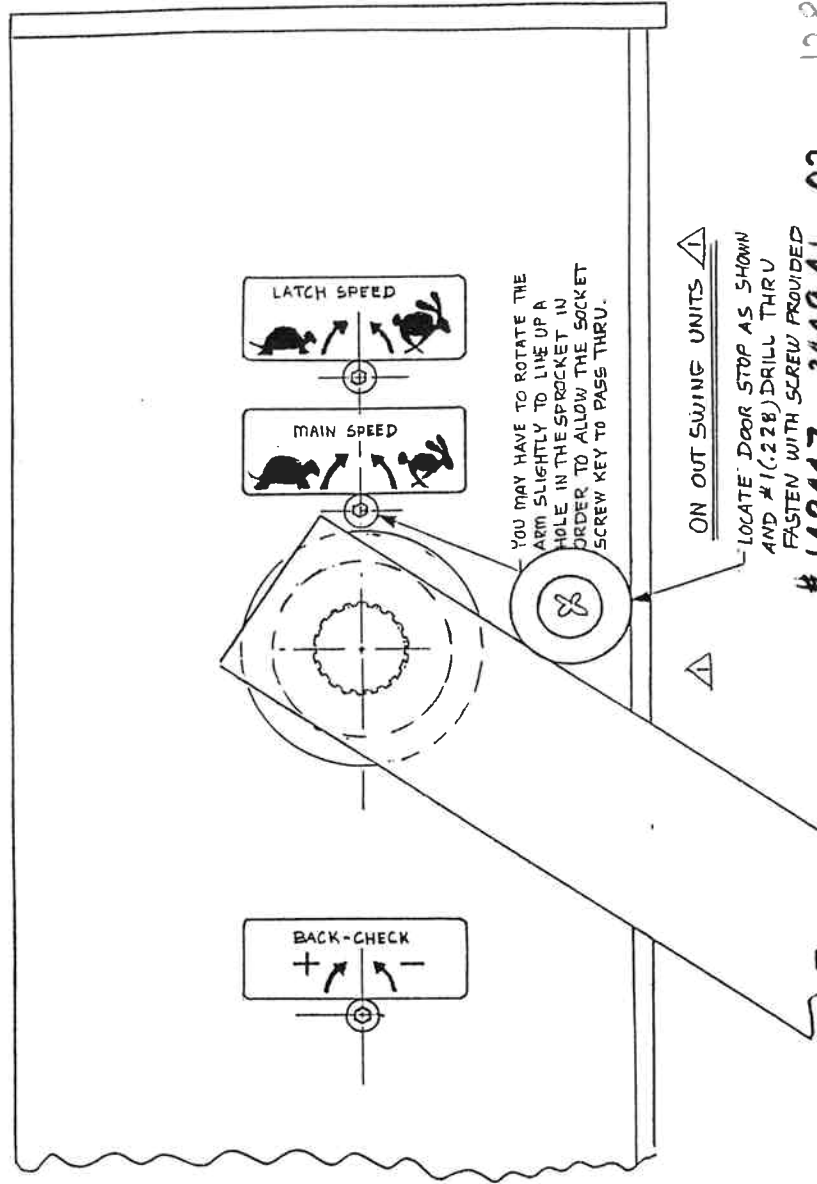
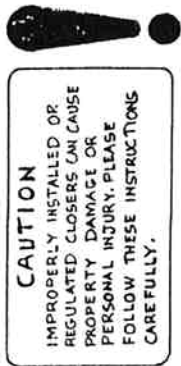
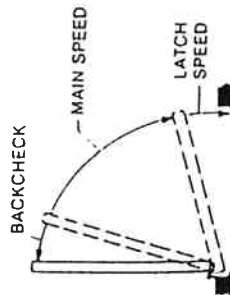
REVISIONS	DATE	DATE: 5-23-91	PART NAME: RADIO CONTROL ELECTRICAL CONNECTIONS
		SCALE: $\frac{1}{2}$	MATERIAL:
		DRAWN BY: JES	SPECIFICATIONS: LOW ENERGY OPERATOR
		APPROVED BY:	
		TOLERANCES (UNLESS NOTED)	
		FRACTIONAL $\pm 1/64$	
		.XX $\pm .010$	
		.XXX $\pm .005$	
		ANGLES $\pm 1/2^\circ$	
			DRAWING NO. 6
			PART NO.



GYRO TECH inc.

IMPORTANT

REGULATION Do not allow door to slam into frame. A "normal" closing time from 90° open position is 5 to 7 seconds, evenly divided between main swing speed and latch swing speed. Use socket screw key furnished to adjust speed. To slow **MAIN SWING SPEED** of door turn **MAIN SPEED** screw clockwise. To slow **LATCH SPEED** of door turn **LATCH SPEED** screw clockwise. To increase **BACK-CHECK** turn **BACK-CHECK** screw clockwise. Use lightest **BACK-CHECK** that will retard door opening sufficiently. Do not use an **ABRUPT BACK-CHECK**, nor expect door closer to act as a door stop.



148447 244941-02 128746

REVISIONS	DATE	DATE	1-16-90	PART NAME: DOOR SPEED REGULATION PROCEDURE
1	EN 2426	2-6-92	SCALE:	MATERIAL:
			DRAWN BY: JES	SPECIFICATIONS: LOW ENERGY OPERATOR
			APPROVED BY:	
TOLERANCES (UNLESS NOTED)				
FRACTIONAL ± 1/64				
XX ± .010				
XXX ± .005				
ANGLES ± 1/2°				
GYRO TECH inc.				DRAWING NO. 7
GYRO TECH inc.				PART NO.

EXCERPT FROM ANSI/BHMA A156.19

4. REQUIREMENTS FOR LOW ENERGY POWER OPERATED DOORS - (SWINGING) OR LOW ENERGY POWER OPEN DOORS - (SWINGING)

4.1 Opening Speed

4.1.1 Doors shall be field adjusted so that opening speed to back check or 80 degrees shall be 3 seconds or longer as required in Table I.

4.1.2 Opening speed to fully open shall be 4 seconds or longer.

4.2 Closing Speed

4.2.1 Doors shall be field adjusted to close from 90 degrees to 10 degrees in 3 seconds or longer as required in Table I.

4.2.2 Doors shall be field adjusted to close from 10 degrees to fully closed in not less than 1.5 seconds.

4.3 Unless a sensing device is used to hold the door open, the door shall be field adjusted to remain fully open for not less than 5 seconds.

4.4 The force required to prevent a door from opening or closing shall not exceed a 15 lbf (67 N) applied 1 in (25 mm) from the latch edge of the door at any point in the opening or closing cycle.

4.5 The kinetic energy of a door in motion shall not exceed 1.25 lbf-ft (1.69 Nm). Table I provides speed settings for various weights of doors for obtaining results complying with this paragraph.

4.6 In the event of failure, doors shall open with a manual pressure not to exceed a 25 lbf (111 N) at point 1 in (25 mm) from the latch edge of the door.

4.7 Doors shall be equipped with a sign(s) visible from either side, instructing the user as to the operation and function of the door.

TABLE I

"D" Door Leaf Width Inches (mm)	Minimum Opening Time to Back Check or 80 degrees (in Seconds) or Minimum Closing Time from 90 degrees to Latch Check or 10 degrees (in seconds)				
	"W" Door Weight in Pounds (kg)				
	100(45.4)	125(56.7)	150(68.0)	175(79.4)	200(90.7)
30 (762)	3.0	3.0	3.0	3.0	3.5
36 (914)	3.0	3.5	3.5	4.0	4.0
42 (1067)	3.5	4.0	4.0	4.5	4.5
48 (1219)	4.0	4.5	4.5	5.0	5.5

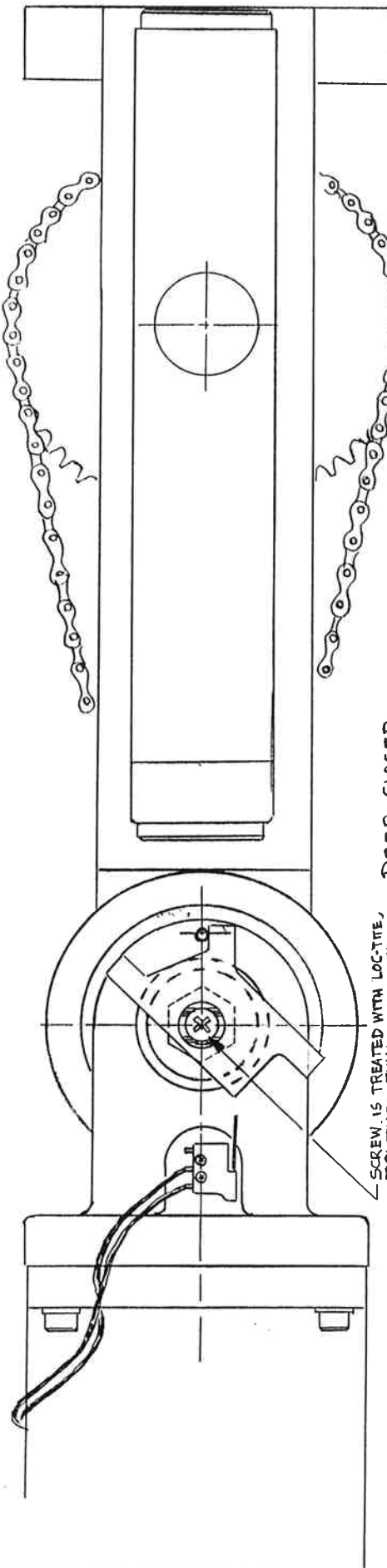
Doors of other weights and widths can be calculated using the formula:

$$T = \frac{D\sqrt{W}}{133 \text{ lbf-ft}} \quad \left(T = \frac{D\sqrt{W}}{2260 \text{ Nm}} \right)$$

Where: T = Time, seconds

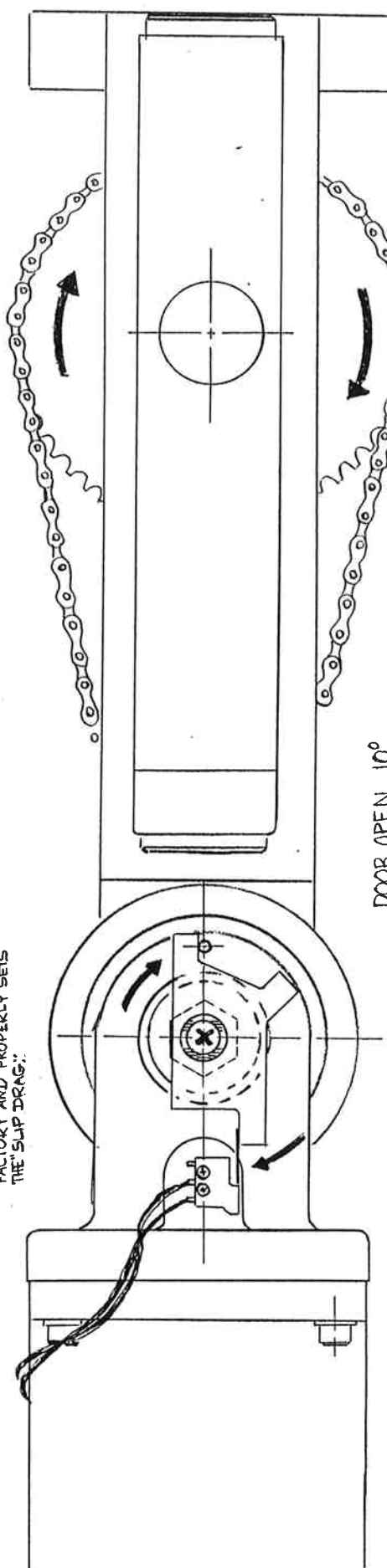
D = Door width, inches (mm)

W = Door weight, lbs. (kg)



DOOR CLOSED

SCREW IS TREATED WITH LOCTITE,
TIGHTENED FULLY, THEN BACKED
OFF 1/8 TURN. THIS IS DONE AT THE
FACTORY AND PROPERLY SETS
THE "SLIP DRAG".



DOOR OPEN 10°

WHEN DOOR IS PUSHED OPEN 10° EITHER
FROM "CLOSED" OR FROM ANY OTHER
POSITION, THE ACTUATOR SHOULD ROTATE
AS SHOWN TRIPPING THE MICRO SWITCH.

REVISIONS	DATE	DATE: 3-4-91	PART NAME: "PUSH-N-GO" ACTUATION
		SCALE: NONE	MATERIAL:
		DRAWN BY: JES	SPECIFICATIONS: LOW ENERGY OPERATOR
		APPROVED BY:	

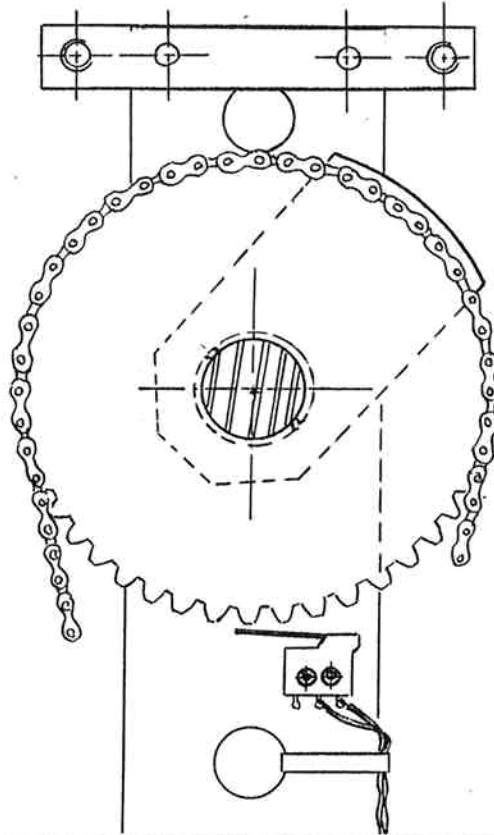
TOLERANCES
(UNLESS NOTED)
FRACTIONAL $\pm 1/64$
XX $\pm .010$
XXX $\pm .005$
ANGLES $\pm 1/2^\circ$



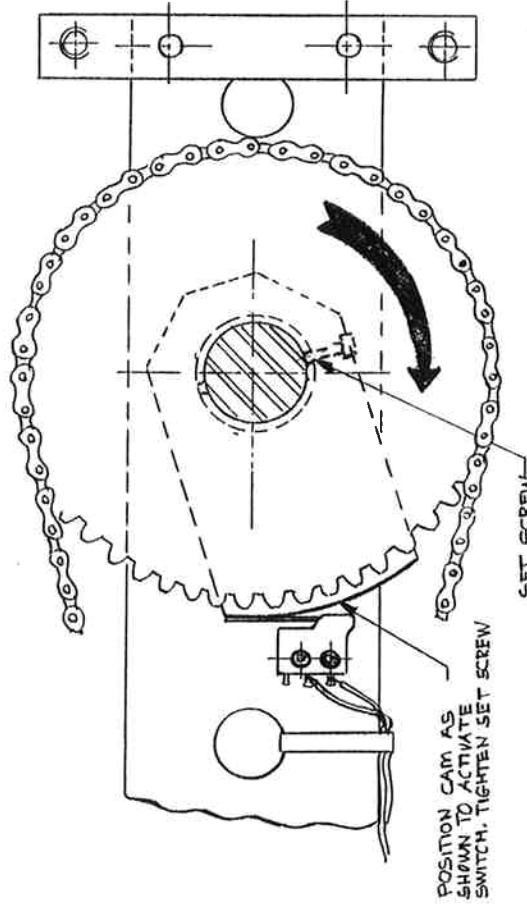
GYRO TECH inc.

DRAWING NO. 9

PART NO.



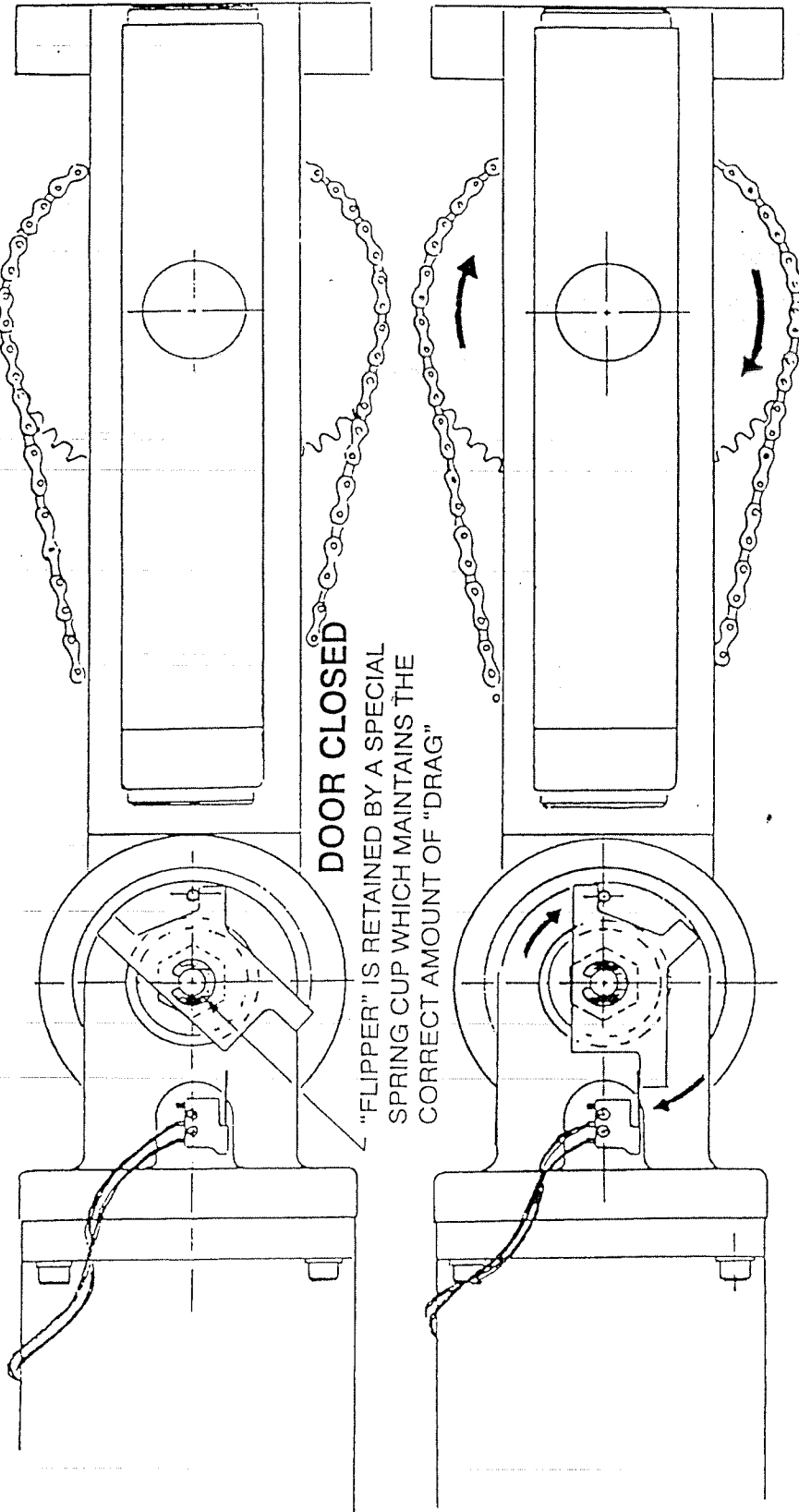
DOOR CLOSED



DOOR FULLY OPEN

THE CONTROL HAS A CIRCUIT THAT SENSES WHEN THE MOTOR HAS STALLED (IE AN OBSTRUCTION) AND CUTS THE POWER WHEN THIS OCCURS ALLOWING THE DOOR TO RECLOSE. HOWEVER SINCE THE MOTOR ALSO STALLS WHEN THE DOOR IS FULLY OPEN, A SWITCH IS NECESSARY TO TELL THE CONTROL THAT THE DOOR IS OPEN AND TO IGNORE THE STALLED MOTOR.

REVISIONS	DATE	DATE: 3-18-91	PART NAME: SWITCH ADJUSTMENT/DOOR OPEN
	SCALE: NONE		MATERIAL:
	DRAWN BY: JES		SPECIFICATIONS: LOW ENERGY OPERATOR
	APPROVED BY:		
	TOLERANCES (UNLESS NOTED)		
	FRACTIONAL: $\pm 1/64$		
	XX: $\pm .010$		
	XXX: $\pm .005$		
	ANGLES: $\pm 1/2^\circ$		
			DRAWING NO. 10
			PART NO.
 GYRO TECH inc.			

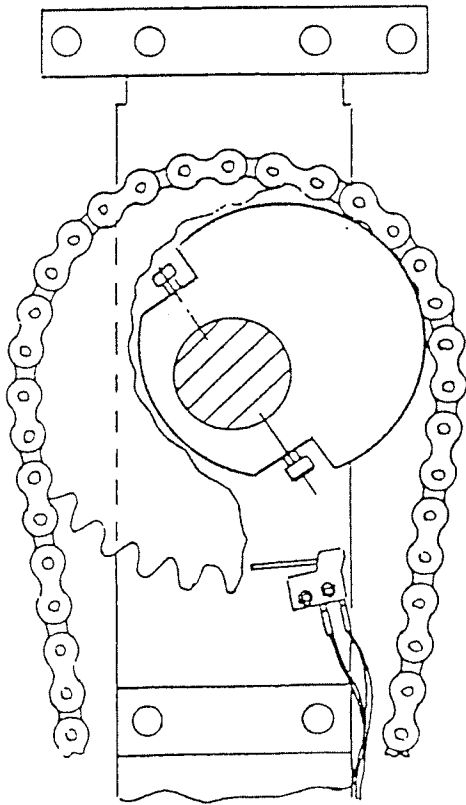


WHEN DOOR IS PUSHED OPEN 10 DEGREES EITHER FROM "CLOSED" OR FROM ANY OTHER POSITION, THE ACTUATOR SHOULD ROTATE AS SHOWN TRIPPING THE MICRO SWITCH.

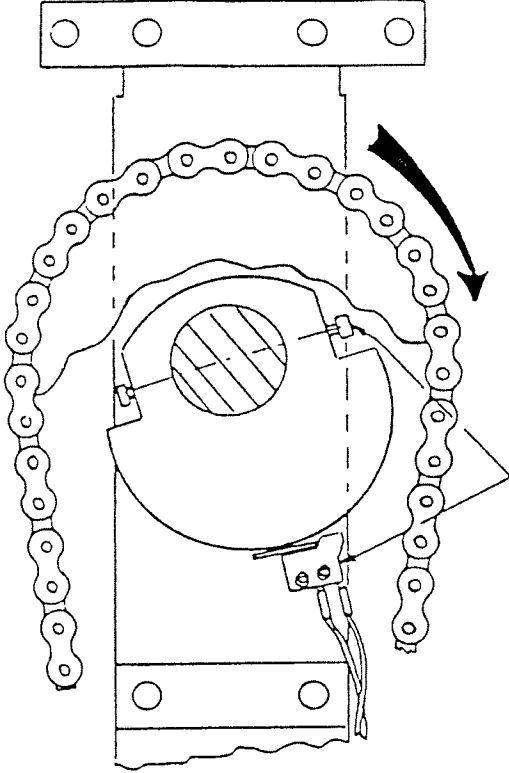


GYRO TECH

DOOR OPEN 10 DEGREES - PUSH-N-GO ACTUATION



DOOR CLOSED



POSITION CAM AS SHOWN SO THAT IT
ACTIVATES SWITCH. TIGHTEN SET SCREW.

DOOR FULLY OPEN

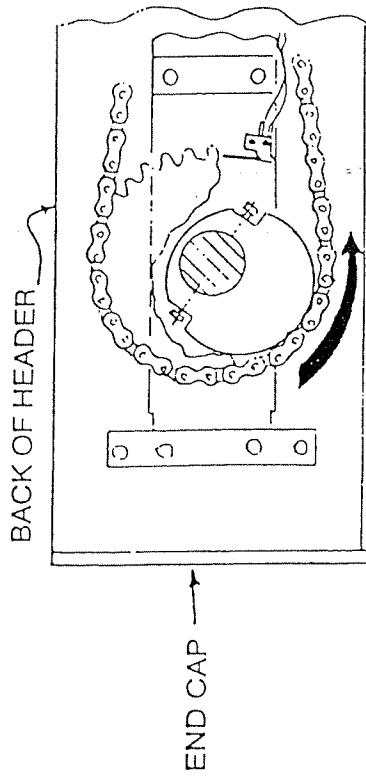
The control has a circuit which senses when the motor has stalled (i.e. an obstruction) and cuts the power when this occurs, allowing the door to reclose. However, since the motor also stalls when the door is fully open, a switch is necessary to tell the control the door is open and to ignore the stalled motor. This switch also reduces motor voltage to prevent overheating during extended "HOLD OPEN" periods.

SWITCH ADJUSTMENT - DOOR IN OPEN POSITION

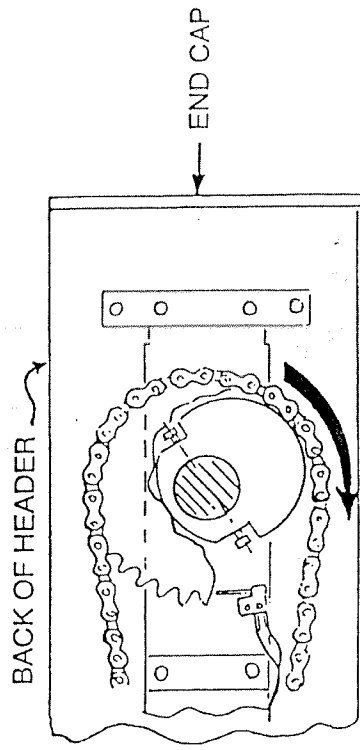


GYRO TECH

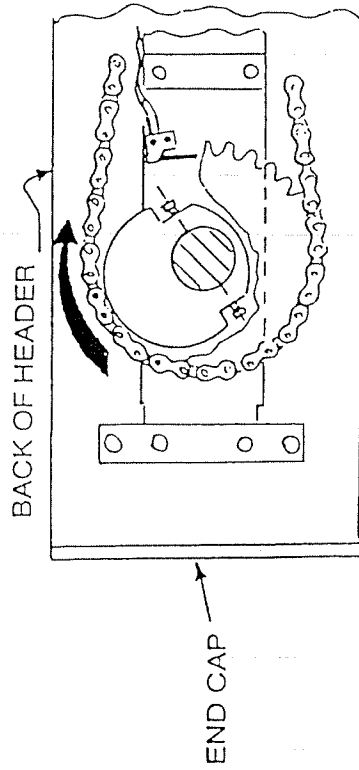
ALL VIEWS LOOKING DOWN FROM TOP



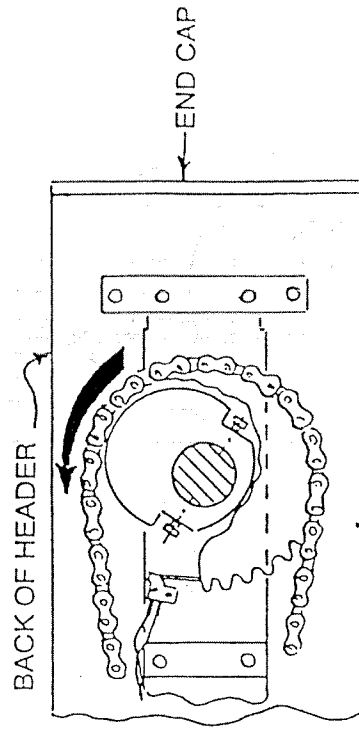
415657 - LEFT HAND OUT-SWING



415655 - RIGHT HAND OUT-SWING



415658 - RIGHT HAND IN-SWING



415656 - LEFT HAND IN-SWING



GYRO TECH

SWITCH ADJUSTMENT - DOOR IN CLOSED POSITION