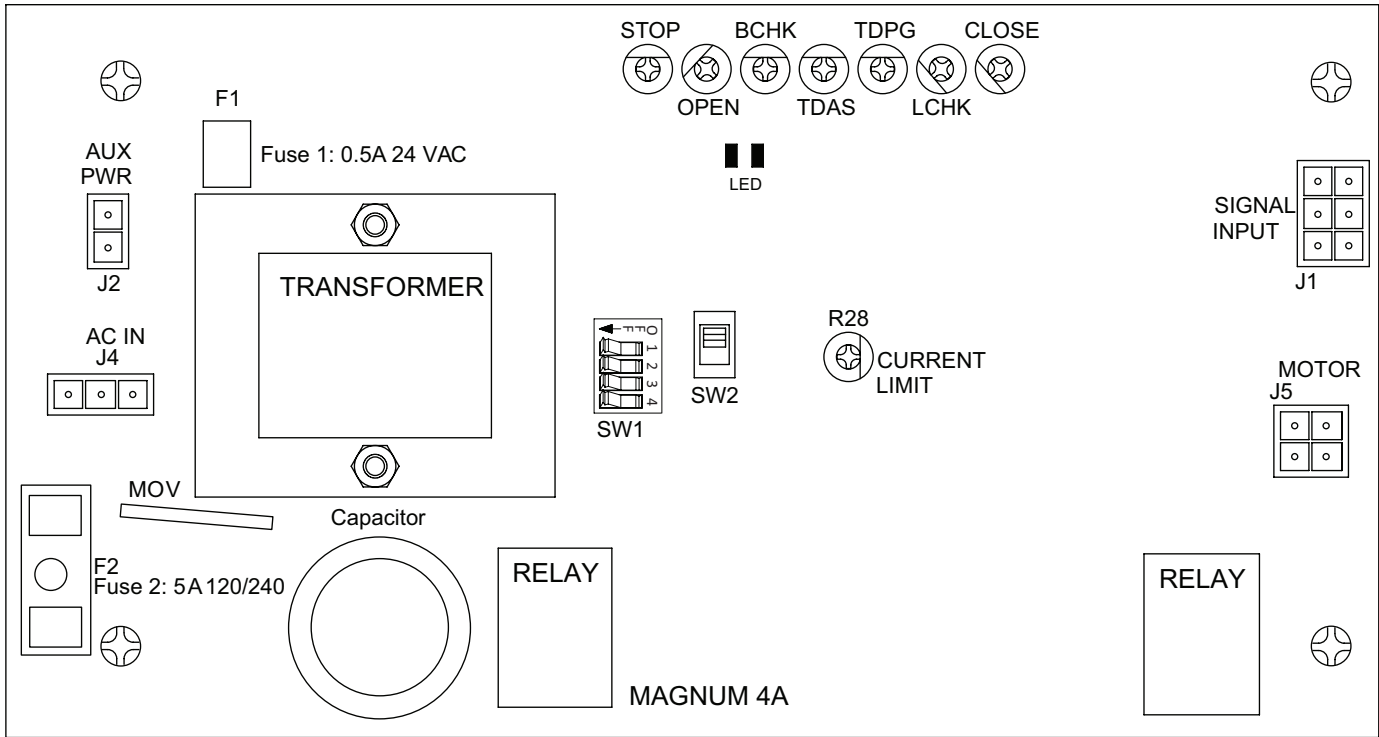




S82 W18717 Gemini Drive
 Muskego, Wisconsin 53150
 Phone: (877) 622-2694
 Fax: (888) 679-3319
 www.nabcoentrances.com
 Technical Support: (866) 622-8325

Swing Door Operator Wiring and Adjustment Manual ** with Magnum 4A Control*



DN 0557

WARNING

- Turn OFF all power to the Automatic Door if a Safety System is not working.
- Instruct the Owner to keep all power turned OFF until corrective action can be achieved by a NABCO trained technician. Failure to follow these practices may result in serious consequences.
- NEVER leave a Door operating without all Safety detection systems operational.

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WARNING LABELS

Warning labels are universal and used to alert an individual of potential harm to one's self or to others. The following warning labels are listed in a hierarchy order that defines the most potential danger first, and the least potential danger last. Please refer to this page in the event that a warning label is displayed within this manual and further definition needs to be explained.

DANGER

Indicates potentially dangerous situations. Danger is used when there is a hazardous situation where there is a *high* probability of severe injury or death. It should not be considered for property damage unless personal injury risk is present.

WARNING

Indicates a hazardous situation which has *some* probability of severe injury. It should not be considered for property damage unless personal injury risk is present.

CAUTION

Indicates a hazardous situation which *may result in a minor injury*. Caution should not be used when there is a possibility of serious injury. Caution should not be considered for property damage accidents unless a personal injury risk is present.

Attention:

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

Notice:

Indicates a statement of company policy as the message relates to the personal safety or protection of property. Notice should not be used when there is a hazardous situation or personal risk.

Note: Indicates important information that provides further instruction.

GENERAL SAFETY RECOMMENDATIONS

WARNING

Read, study and understand general safety recommendations, warning labels, installation and operating instructions contained in, or referenced in this manual before operating. If you do not understand the instruction, ask a qualified technician. Failure to do so may result in bodily injury, or property damage and will nullify all warranties.

DANGER

Disconnect all power to the junction box prior to making any electrical connections. Failure to do so may result in serious personal or fatal injury. When uncertain whether power supply is disconnected, always verify using a voltmeter.

Notice:

Wiring must meet all local, state, federal or other governing agency codes.

CAUTION

All electrical troubleshooting or service must be performed by trained, qualified electrical technicians and comply with all applicable governing agency codes.

DANGER

Do not place finger or uninsulated tools inside the electrical controller. Touching wires or other parts inside the enclosure may cause electrical shock, serious injury or death.

CAUTION

The Ground wire from the Opus Control 120 VAC Harness, and the Incoming 120 VAC Ground wire must be connected to the Ground screw located within the Swing door Header.

CAUTION

Do Not touch other parts of the Opus Control board with a screwdriver or anything else metal. Damage to electrical circuitry may occur.

CAUTION

If the door appears broken or does not seem to work correctly, it should be immediately removed from service until repairs can be carried out or a qualified service technician is contacted for corrective action.

Note: All Adjustments must be made with a small screwdriver. Do Not use a pencil.

Note: Final installation must conform to current versions of ANSI 156.19 for Low Energy Swingers or ANSI 156.10 for Full Automatic Swingers.

Note: Study and understand both ANSI Standard Codes A156.10 and A156.19.

Note: Do Not take shortcuts.

CHAPTER 1: Scope

Section 1a. To the Installer

The purpose of this manual is to familiarize the installer with the proper installation and operation of this system. It is essential that this equipment be properly installed and operational before the door is used by the public. It is the installer's responsibility to inspect the operation of the entrance system to be sure it complies with any applicable standards. In the United States, ANSI Standard 156.10 (Used to cover Full Energy doors) and ANSI Standard 156.19 (Used to cover Low Energy doors) apply. Other local standards or codes may apply. Use them in addition to the ANSI standards.

The owner should determine the door is operating properly and should immediately call for service if there is any malfunction. All installation changes and adjustments must be made by qualified, NABCO trained technicians.

Section 1b. Objective

The Opus Control is designed to be installed within the Header of:

- ▶ New or Existing Swing Door systems.
- ▶ New or Existing Fold Door systems
- ▶ Existing Slide Door systems to replace Magnum Controls, Analog Controls, and U-01 to U-19 Controls. Sold as a Retrofit Kit only. Retrofit kits can be purchased by contacting Customer Service at 1-888-679-3319.

This manual offers step by step instructions.

CHAPTER 2: Getting Started

Section 2a. Features:

- ▶ Replaces all U-Series controls except the U-30.
- ▶ Replaces all Magnum controls.
- ▶ Replaces the analog swing control (requires two controls for sim pair installations).
- ▶ Works with encoder motors or non-encoder motors with latch and back check switches.
- ▶ Programming accomplished with on board rotary switch. No Handy Terminal needed.
- ▶ Digital parameter settings for repeatability.
- ▶ On sim pair swing or bifold units, true simultaneous door motion through CANBus connection. (Dual controls required for sim pair and bifold applications).
- ▶ Astragal function for sim pair swing doors that opens the master door first and closes it last.
- ▶ Adjustable back check and latch check positions with encoder motor.
- ▶ Integrated back check lockout for swing side door mounted sensors. Adjustable angle if used with encoder motor.
- ▶ Low energy approach side sensor lockout.
- ▶ On board electric lock relay. No need for additional sequencer.
- ▶ Two transistor outputs with programmable functionality for air curtains or other devices.
- ▶ Power Close and Hold Close built in.
- ▶ Recycle on object detection during Opening cycle with all motors.
- ▶ Recycle on object detection during Closing cycle with encoder motors.
- ▶ Full Power or Low Energy application capability.
- ▶ Works with the current U-Series Rocker Switches.

Section 2b. Electrical Specifications

All Wiring Diagrams included within this manual, reflect typical primary and secondary circuits that might be commonly used. Onsite wiring may be different from that shown.

Note: NABCO factory utilizes Underwriters Laboratories (UL) recognized component wire, terminals and connector housings to manufacture Opus 10 Swing Door systems.

Table 2-1 Sensors

Sensor	Part Number	Function	Power Source	Current Consumption
Acuvision	14-10823-01	Infrared	12 to 24 AC or DC	80mA
Acuwave	14-11980-10	Infrared	12 to 24 AC or DC	80mA
Acusensor 3	14-8902-3	Infrared	12 to 24 VAC or VDC	250mA
Optex i-one	14-13036	Infrared	12 to 24 VAC or 12 to 30 VDC	130mA

(ea.unit) at 12VDC

Table 2-2 Modules

Module	Part Number	Function	Power Source	Current Consumption
CP/RX Radio Control Receiver	24-11467	RF Signal Transmission	12 to 24 AC or DC	50mA
Multi Module	14-12240	Programmable Relay	12 to 24 AC or DC	40mA

(ea.unit) at 12VDC

Table 2-3 Power Wiring

Wiring	Power	Current Consumption
Maximum Input	120 VAC ($\pm 10\%$), AC 50-60 Hz	500mA (0.5amps)
Output (Available for Accessories)	24 AC	500mA (0.5amps)
Available Wire Size for Incoming Power	14 AWG	-
Thermo-Couple	Automatic 120 VAC cutoff of overheated motor	-
Opening Hold Time	Adjustable 0-60 seconds	-
Fuses	1 x 120 VAC 5A Glass Fuse	-
	1 x 24 VAC non-replaceable	-

Section 2c. Output Power Guidelines

TOTAL current draw from the Opus 10 Control must not exceed 500mA (0.5 amps) when outputting power to:

- ▶ Sensors
- ▶ Modules
- ▶ Accessories
- ▶ Auxiliary Equipment

If *TOTAL* current draw exceeds 500 mA (0.5 amps) the installer must utilize an auxiliary power supply such as the NABCO Transformer 24 VAC, P/N 14-2101.

CAUTION

The Opus 10 Control must Not be used to output power to:

- ▶ **Magnetic Locks**
- ▶ **Electric Strikes**

To determine if an auxiliary power supply must be used, add the total current draw of all devices. Please refer to the formula shown below:

Example: A Gyro Tech Swing Door is to be fitted with the following devices:

$$\begin{aligned}
 &2 \text{ x Acusensor 3 @ } 110 \text{ mA} = 200 \text{ mA} \\
 &1 \text{ x Cp/RX Radio Control Receiver @ } 50 \text{ mA} = \underline{50 \text{ mA}} \\
 &\text{Total} = 250 \text{ mA}
 \end{aligned}$$

250mA does not exceed total current draw.
 An Auxiliary Power Supply does not need to be used.

CHAPTER 3: Magnum 4A Board Terminals

The Magnum 4A Control is used to power and control operating characteristics of the door. This is done through the use of harnesses that are connected to terminals located on the Magnum 4A Control Board, plus wiring that is connected to other components within the Header. Please see Figure 3-1.

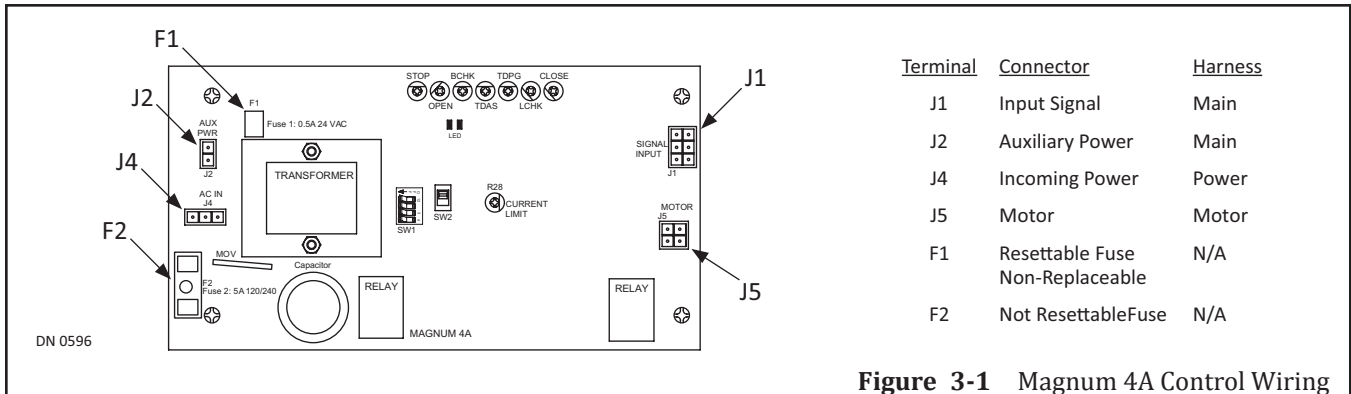


Figure 3-1 Magnum 4A Control Wiring

Section 3a. Main Harness

The Main Harness is used on both a Full Automatic door and Low Energy door. Wiring consists of:

- ▶ (3) Connecting Harnesses
- ▶ (1) 6 Pole Terminal Block.

Please see Figure 3-2.

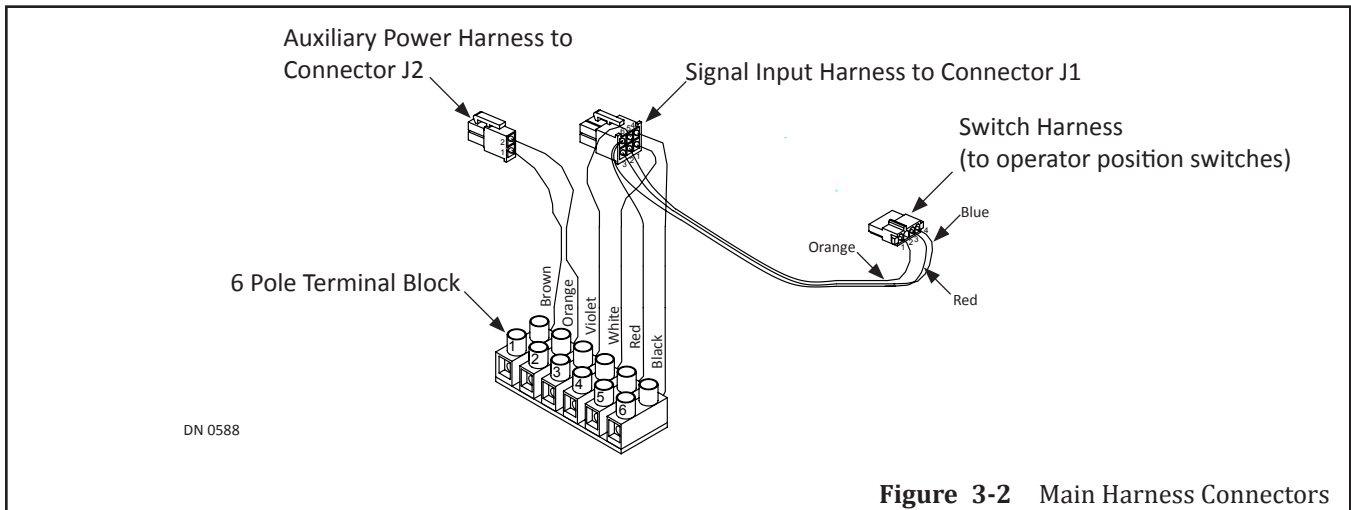


Figure 3-2 Main Harness Connectors

The 6 Pole Terminal Block is where accessories such as press switches, sensors and and safety devices are connected.

Table #-1 Terminal Block Connections

Pole	Wire	Harness	Circuit	Description
1	Brown	Aux Pwr	24 VAC Neutral	<ul style="list-style-type: none"> ▶ Circuit is used for any Sensor that operates on 24 VAC. ▶ Sensor must not exceed 0.5 amp current draw. ▶ If Sensor exceeds 0.5 amp current draw Fuse (F1) will trip. A separate power supply must be used.
2	Orange		24 VAC Hot	
3	Violet	Terminal	Continuous Safety	<ul style="list-style-type: none"> ▶ Circuit is used with door mounted Sensors on Pull side of door: ▶ When Pin (3) is shorted to Pin (5) Sensor will: <ul style="list-style-type: none"> • Stop door during opening • Prevent door from moving when door is fully closed ▶ Circuit is always active.
4	White		Safety w/Lockout	<ul style="list-style-type: none"> ▶ Circuit is used with Header mounted Presence Sensors or Mats on pull side of door. ▶ When Pin (4) is shorted to Pin (5) Sensor or Mat will: <ul style="list-style-type: none"> • Prevent door from opening if already closed • Hold door open if already open ▶ Circuit is only active while door is fully closed or fully open.
5	Red		Signal Common	This Terminal is the Common to activation, safety, back check and latch check switches.
6	Black		Activation	Circuit is used for activation of door. When Pin 6 is shorted to Pin 5 door is activated.

Table #-2 Switch Harness

Pin	Wire	Circuit	Description
1	Orange	Door Closed	Door closed or Latch check signal
2	N/A	N/A	N/A
3	Red	Common	Common for Check Signals
4	Blue	Back Check	Door open or back check signal.

Section 3b. Power Harness

The 120 VAC Power Connector Harness is connected to J4. Please see Figure 3-3.

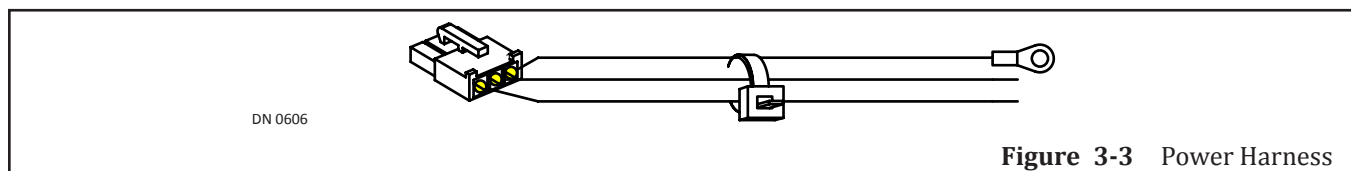
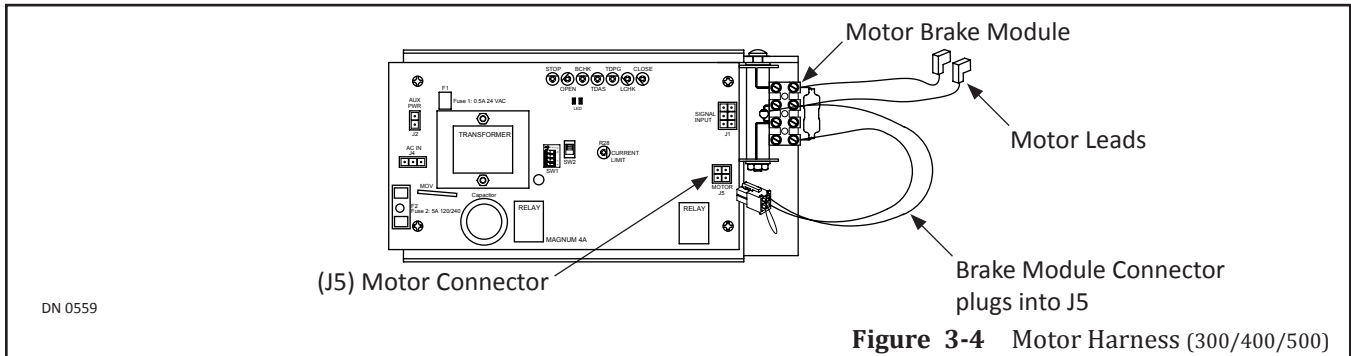


Figure 3-3 Power Harness

Table #-3 Power Connector Harness

Pin	Wire	Circuit	Description
1	Green	120 VAC	Incoming Ground wire
2	White	120 VAC	Incoming Neutral wire
3	Black	120 VAC	Incoming Hot wire

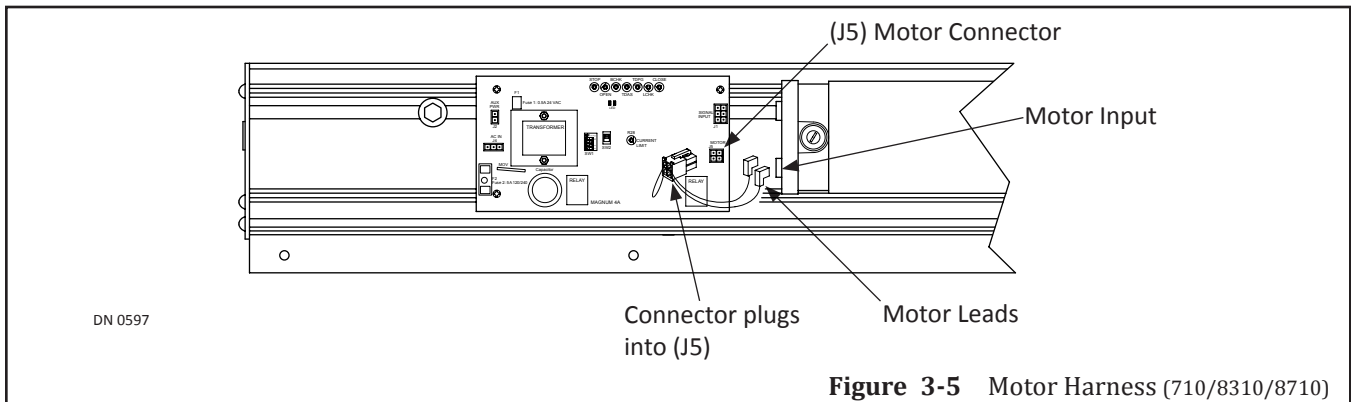
Section 3c. Motor Harness (300/400/500)



The Motor Brake module:

- ▶ Outputs power from J5 (Motor Feed Terminal) to Motor Leads.
- ▶ Slows door down if Brake Module Connector is accidentally unplugged from J5.

Section 3d. Motor Harness (710/8310/8710)



Section 3e. Fuses

Fuse	Amp	Usage	Description
F1	.5	Resettable	<ul style="list-style-type: none"> ▶ Non-Replacable ▶ Protects the 24 VAC Auxiliary power circuit of Magnum 4A Control Board.
F2	5	Not Resettable	Protects 120 VAC Power Circuit of the Magnum 4A Control Board.

CHAPTER 4: Adjustments and Status LEDs

CAUTION

Do Not touch other parts of the Magnum 4A Control board with a screwdriver or anything else metal. Damage to electrical circuitry may occur.

Section 4a. Swing Door Positions

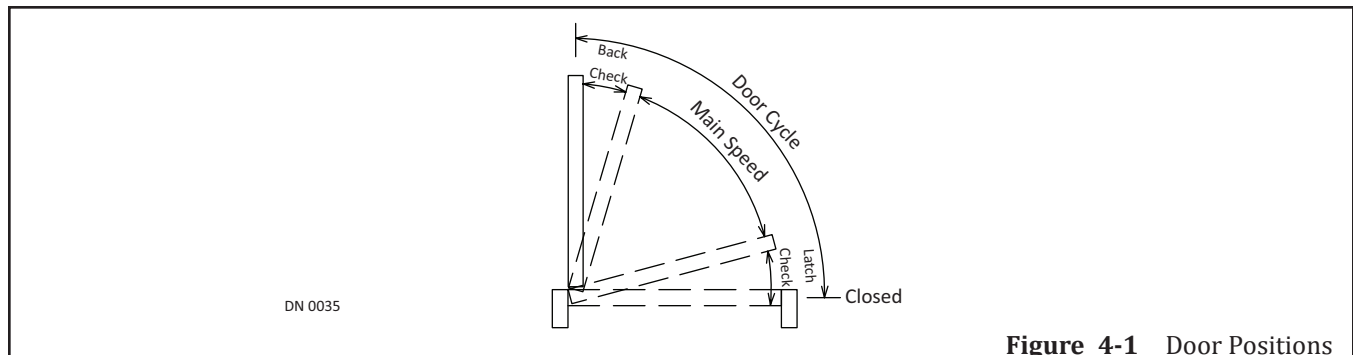


Figure 4-1 Door Positions

Position	Description
Opening	Range from fully closed to 10° from fully open.
Back Check	10° from fully open to fully open.
Closing	Range from fully open to 10° from fully closed.
Latch Check	10° from fully closed to fully closed.

Section 4b. Adjustments

Adjustments to the\ Magnum 4A Control can be made using the Dip Switch (SW1) or the the Potentiometer (1-8) or the Slide Switch (SW2).

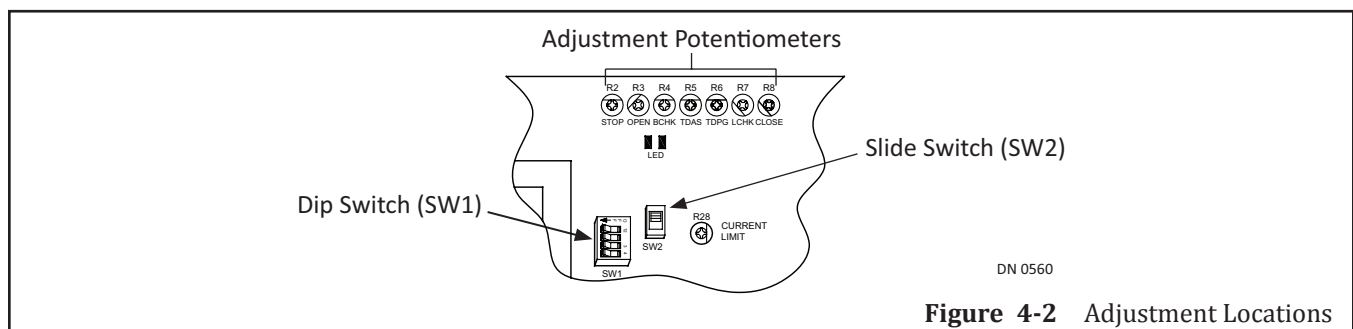


Figure 4-2 Adjustment Locations

4.b.a: Dip Switch Bank (SW1)

Note: Off position is clearly marked on top of the Dip Switch Bank that points to the left of numbers 1-4.

Note: Use a screwdriver to toggle Dip Switches On and Off. Do not use a pencil.

The Dip Switch Bank (SW1) is comprised of (4) switches numbered 1-4. These switches are used for Safety, Push-N-Go, Timer Mode and Sequential Mode. Please see Figure 4-3.

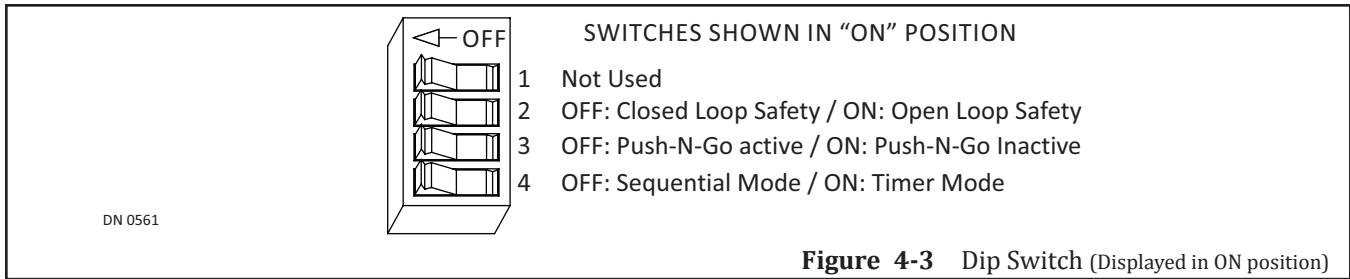


Table 4-1 Dip Switch Settings

Switch		Adjustment	
1		Not Used	
2	On	Open Loop Safety	▶ Safety triggered when contact is closed by a Switch or Sensor
	Off	Closed Loop Safety (Fail Safe)	▶ * Safety triggered when contact is opened by a Switch or Sensor
3	On	Push-N-Go Inactive	▶ Push-N-Go is not active
	Off	Push-N-Go Active	▶ GT710 and swingers with clutchless operators: Push-N-Go is active in any position. ▶ GT300/400/500 Swingers with clutched operator: Push-N-Go is only active when door is pushed out of latch check. ▶ Door opens when pushed. • Switch 4 must be turned "On" for door to time out and close.
4	On	Timer Mode	▶ Door will open, time out and then close.
	Off	Sequential Mode	▶ One activation opens door, second activation closes door.

* Door will not work if dipswitch 2 is OFF without a closed circuit between terminals 5 & 4 and 5 & 3. The Red LED will also blink.

4.b.b: The Slide Switch (SW2)

The Slide Switch is used to select Operator mode during motor operation. These two modes are:

- ▶ Upper Position
 - Used for Low Energy Operators.
 - Motor power is reduced to approximate ANSI 156.19 Low Energy Standards.
- ▶ Lower Position
 - Used for Standard Full Automatic Operators.
 - Can also be used for GT-500 or GT-710 if opening speed of door needs to be increased.
 - Motor power is increased to approximate ANSI 156.10 Standards.

It is recommended to set door speeds as slow as the owner will accept, and no more than the applicable ANSI Standards. Use a stopwatch for assistance. Please see Figure 4-2.

4.b.c: Potentiometers (1-8)

Note: Each Potentiometer is adjusted to meet field requirements.

There are (8) Potentiometers located on the Magnum 4A Control. Use a small #0 Cross Point or Phillips screwdriver to adjust each potentiometer by turning it:.

- ▶ Clockwise to *increase* a parameter.
- ▶ Counterclockwise to *decrease* a parameter.

Recommended settings correspond with positions on a clock with 12 o'clock at the top as the starting point. Potentiometer settings might need to be adjusted accordingly. After each adjustment, wait at least 5 seconds before testing.

CAUTION

All electrical troubleshooting or service must be performed by trained, qualified technicians and comply with all applicable governing agency codes.

Table 4-2 Potentiometers

Potentiometer	Description	
Stop	<ul style="list-style-type: none"> ▶ Stops or slows door when object is detected in path of opening door (not yet in Back Check). ▶ Turn Potentiometer: <ul style="list-style-type: none"> • Clockwise = door stops and creeps open • Counterclockwise = door stops and closes ▶ Also adjusts the power to the motor when the door is held open for extended periods of time. The motor power is reduced from “back-check” power to “Stop” power (assuming “stop” power is lower than “back-check” power) This reduces the risk of the motor overheating at hold open allowing the door to close as well as reducing stress on mechanical and electrical components. To adjust power applied to the door at hold open: <ol style="list-style-type: none"> 1. Turn STOP potentiometer fully counterclockwise 2. Place the “on-off-hold open” switch to hold open 3. After the door has been in the back-check area for 8 seconds, motor power will be reduced according to the “STOP” setting. If the door begins to slowly drift close turn the “STOP” potentiometer slightly clockwise to increase power. 4. Turn “On/Off/Hold Open” switch off and allow the door to time out and fully close 5. Turn the “On/Off/Hold Open” switch to hold open again and observe door at the full open position. Door should hold open and not drift close. <ol style="list-style-type: none"> a. If door still drifts close, continue increasing STOP power until the door holds open against the door stop. b. Each time an adjustment is made, the door must be allowed to close, and then reactivated for the change to take place. 	
	Event	Action
	Object is detected in path of opening door by Door Mounted Sensor that is mounted on swing side of door and connected to Terminal 3 and 5 on Magnum 4A Control.	<ul style="list-style-type: none"> ▶ Recommended start position 12 o'clock. ▶ Clockwise: Opens door at slower speed. ▶ Counterclockwise: Door will stop.
Open	Sets opening speed of door.	
	Event	Action
	Door opened at wrong speed.	<ul style="list-style-type: none"> ▶ Recommended start position 12 o'clock. ▶ Clockwise: Door will open faster. ▶ Counterclockwise: Door will open slower.
BCHK (Back Check)	Sets Back Check speed.	
	Event	Action
	Back check speed requires adjustment.	<ul style="list-style-type: none"> ▶ Recommended start position 11 o'clock. ▶ Clockwise: Increases Back Check speed. ▶ Counterclockwise: Decreases Back Check speed.

Potentiometer	Description	
TDAS (Time Delay Activating Signal)	Determines how long door will stay open after activation (or input signal) is released. Used when door is in Timer Mode (Dip Switch #4). <i>Note: The time delay does not begin counting until after loss of activation and door has reached Back Check.</i>	
	Full Automatic door	1 - 60 seconds
	Low Energy door	
	Event	
Hold Open time requires adjustment.		<ul style="list-style-type: none"> ▶ Recommended start position 12 o'clock. ▶ Dip Switch #4 must be ON ▶ Clockwise: Increases time door will stay open. ▶ Counterclockwise: Decreases time door will stay open.
TDPG (Time Delay Push-N-Go)	Determines how long door stays open after Push-N-Go is activated (Dip Switch #4).	
	Full Automatic door	1 - 60 seconds
	Low Energy door	
	Event	
Hold Open time requires adjustment after door is pushed.		<ul style="list-style-type: none"> ▶ Recommended start position 12 o'clock. ▶ Clockwise: Increases time door will stay open. ▶ Counterclockwise: Decreases time door will stay open.
<ul style="list-style-type: none"> ▶ GT300/400/500 units come standard with a clutch gear in the operator. On operators that use a clutch gear, Push n Go is only active from the fully closed position once the door is manually pushed out of latch position. ▶ If Push n Go is desired for all door positions, a clutchless operator must be ordered. The GT-710 uses a Direct Drive and that is equivalent to a clutchless operator. 		
LCHK (Latch Check Adjustment) (Not used on 710/8310/8710)	Sets Latch Check speed from last 10° of sweep to the full closed position.	
	Full Automatic door	1.5 - 5.0 seconds / 10 degrees
	Low Energy door	
	Event	
Latch Check speed requires adjustment.		<ul style="list-style-type: none"> ▶ Recommended start position 11 o'clock. ▶ Clockwise: Increases Latch Check speed. ▶ Counterclockwise: Decreases Latch Check speed.
<i>Note: The GT-710 uses the LCN closer to regulate closing and latch check speed.</i>		
CLOSE (Closed Speed Adjustment) (Not used on 710/8310/8710)	Sets Closing speed of door.	
	Full Automatic door	3.0 - 12 seconds / 80 degrees
	Low Energy door	
	Event	
Closing speed speed requires adjustment.		<ul style="list-style-type: none"> ▶ Recommended start position 12 o'clock. ▶ Clockwise: Increases closing speed. ▶ Counterclockwise: Decreases closing speed.
<i>Note: The GT-710 uses the LCN Closer to regulate closing and latch check speed.</i>		
Current Limit	Adjusts how hard the door will push against an obstacle (while opening) before recycling. <ul style="list-style-type: none"> ▶ Current Limit is affected by Opening Speed. Set Opening speed first. ▶ Current Limit adjustment should be set to fully clockwise position until all other adjustments are made to the door and door operation is satisfactory. 	

Potentiometer	Event	Description	Action
Current Limit	Recycle sensitivity needs adjusting.	<ul style="list-style-type: none"> ▶ Recommended setting fully clockwise position until all other adjustments are made. ▶ When recycle is triggered, door will stop and coast to a close. Wait at least (5) seconds before Reactivating. ▶ Current Limit is affected by Opening Speed. Set Opening speed first. ▶ Clockwise <ul style="list-style-type: none"> • Decreased Recycle Sensitivity. ▶ Counterclockwise <ul style="list-style-type: none"> • Increased Recycle Sensitivity. 	
	<ul style="list-style-type: none"> ▶ To satisfy ANSI 156.19 Low Energy Standards, settings for GT-500 or GT-710 must be adjusted according to door weight and speed. ▶ Strong wind gusts against door may inadvertently cause Current Limit to engage and stop door from opening. 		

Section 4c. Status LEDs

(2) LED Indicators are used to display what the Magnum 4A Control *is reacting to* at any instant within the Swing door cycle. This helps to identify when the Swing door system is functioning properly. Please see Figure 4-4.

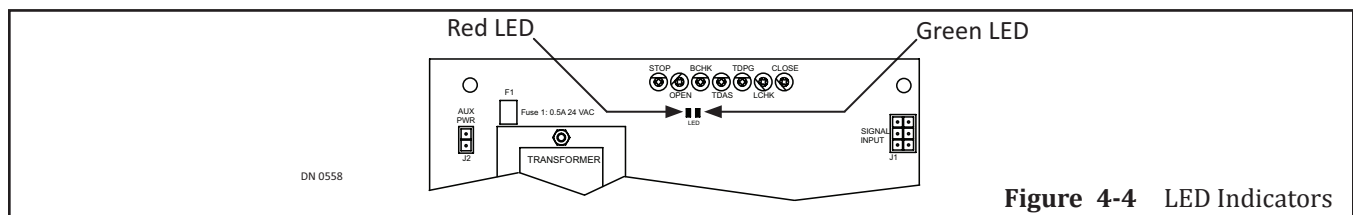


Figure 4-4 LED Indicators

Table 4-3 Status LED Indicators

LED	Status	Description	Action
Green	Cycle	Indicates door position during an open and closed cycle.	
		Indicator	Action
		Fast Flashing (2 flashes per second)	Door is opening.
		On Solid	Door is in Back Check.
		Slow Flashing (1 flash per second)	Door is closing.
	Off	Door is in Latch Check or Closed	
Red	Safety	Indicates state of the (2) Safety Signals, or the state of the Current Limit at any instant during the Swing door cycle.	
		Indicator	Action
		Slow Flashing (1 flashes per second)	<ul style="list-style-type: none"> ▶ Door mounted Sensor on Swing side of door is activated. ▶ Continuous Safety.
		Fast Flashing (2 flashes per second)	<ul style="list-style-type: none"> ▶ Header Mounted Sensor on Swing side of door is activated. ▶ Safety with Lockout.
	On Solid	▶ Current Limit is activated.	

CHAPTER 5: Connect Incoming 120 VAC Wires

DANGER

Disconnect 120 VAC power prior to making any electrical connections. Failure to do so may result in serious personal or fatal injury. When uncertain whether power supply is disconnected, always verify using a voltmeter.

Notice: Wiring must meet all local, state, federal or other governing agency codes.

1. Ensure all power is disconnected.
2. All high voltage electrical connections must be made by licensed electricians.
3. Insert all Incoming 120 VAC, single phase, 5 amp (minimum per Operator) power wires into the pre drilled Electric Service Access Hole located at the left or right side of Header End Cap.
 - a. It is recommended for the Installer to house all Incoming 120 VAC wires within an Electrical Conduit.

CAUTION

Keep all Incoming 120 VAC wiring separate from low voltage wiring within Header.

4. Obtain (self sticking) white plastic Wire Clips that were provided within Header.
5. Pull off backing of each Wire Clip to expose adhesive. Adhere each Wire Clip to sides of Header.
6. Insert wiring into Wire Clips (as deemed necessary).
 - a. 120 VAC Power wires must be routed (separate from other wiring) within plastic Wire Clips located near the top of inside Header.

Note: For more wiring details, please refer to "Associated Manuals Part Numbers"; Section 2d.

Note: If 120 VAC Power wires must be installed from Hinge Side of Header, ensure that wires are securely clipped, to prevent pinching of the wires during the Motor/Operator installation process.

CHAPTER 6: Wiring Safety Devices

CAUTION

Do Not touch other parts of the Magnum 4A Control board with a screwdriver or anything else metal. Damage to electrical circuitry may occur.

Note: If an Inswing Operator must be equipped for panic breakout, a panic breakout switch must be used to turn off the automatic operator when the door is broken out.

Section 6a. Panic Breakout Latch/Switch (Open Loop Continuous Safety Circuit)

The Panic Breakout Feature is available on all Gyro Tech swing units except GT710 models. The following section explains how to connect the panic latch switch for breakout and/or the operator mounted microswitch to shut the unit off and prevent activation when the door is broken out.

When door is broken out, the Panic Breakout Switch CLOSSES the circuit to activate the Continuous Safety feature and disable the Operator.

1. Turn OFF Power.
2. Go to Panic Latch located at bottom of Header.
3. Ensure that the ← EXT arrow points to the Interior side of the building. Panic Breakout Limit Switch will CLOSE when door is broken out. Please see Figure 6-1.

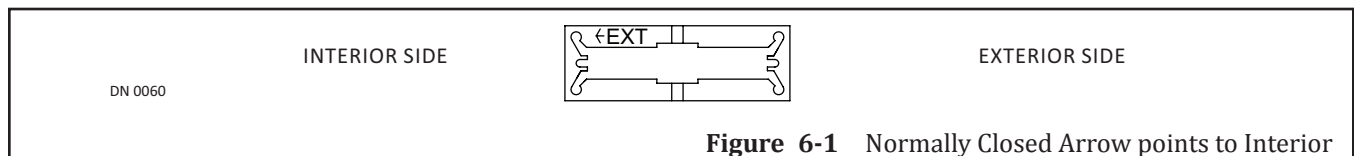


Figure 6-1 Normally Closed Arrow points to Interior

4. Go to Dip Switch (2). Ensure switch is in the ON position (factory default is ON).
5. Locate the Cam Switch Harness on operator.
6. Cut white plastic connectors off ends of Brown wire and Black wire. Please see Figure 6-2.
7. Strip all wire ends 1/4 inch.

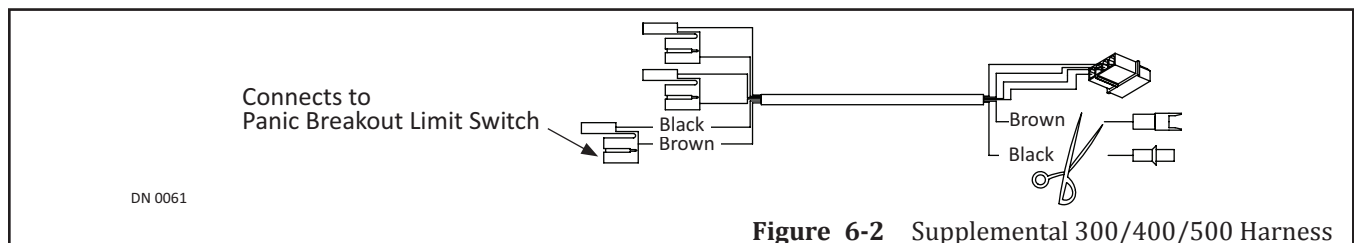


Figure 6-2 Supplemental 300/400/500 Harness

8. Go to the 6 Pole Terminal Block.
9. Insert (Brown) wire into Pole 3 (Continuous Safety). Please see Figure 6-3.
10. Insert (Black) wire into Pole 5 (Common).

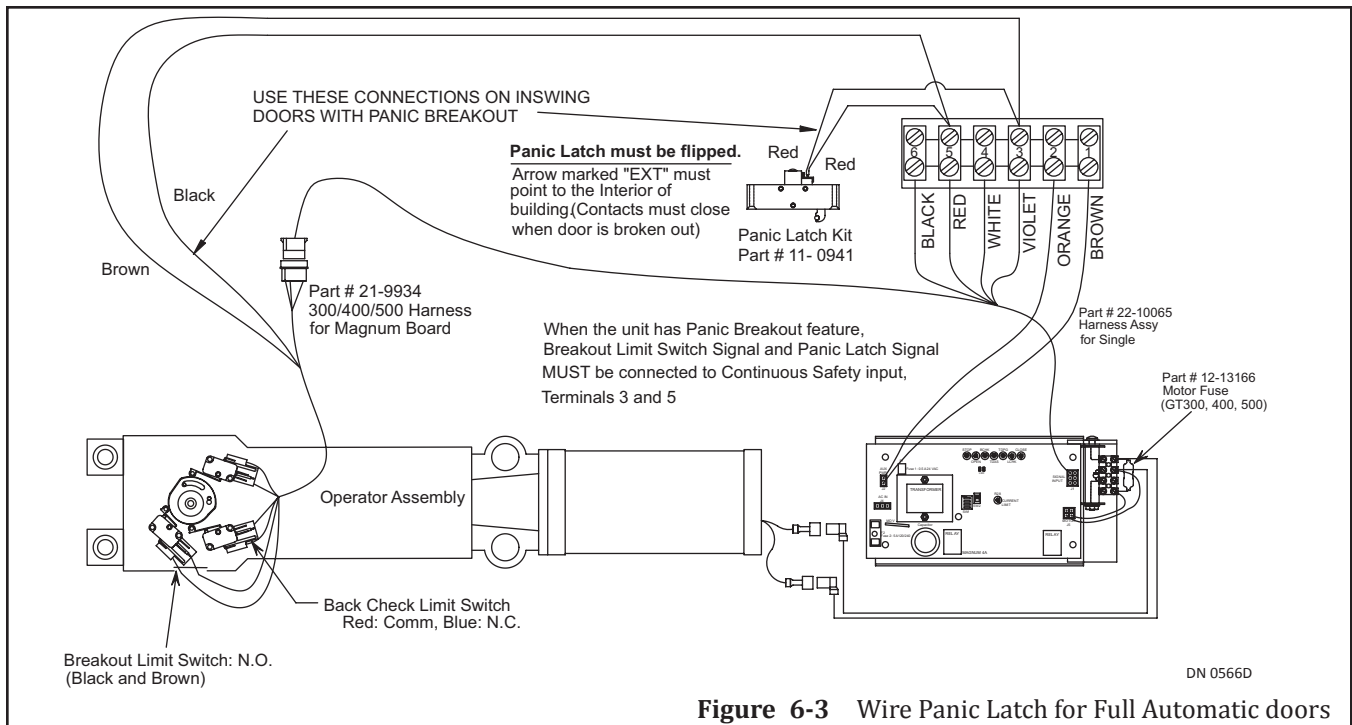


Figure 6-3 Wire Panic Latch for Full Automatic doors

11. Go to ends of each (Red) wire connected to Panic Latch Harness. Cut white plastic connectors off. Please see Figure 6-4.
12. Strip all wire ends 1/4 inch.

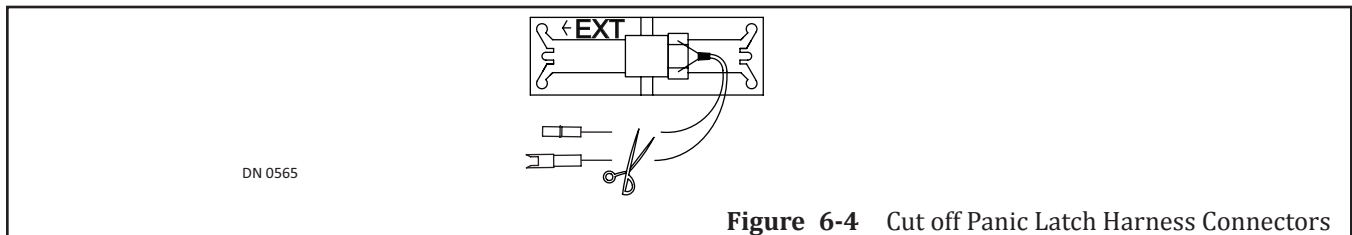


Figure 6-4 Cut off Panic Latch Harness Connectors

13. Go to the 6 Pole Terminal Block.
14. Insert Red wires into Pole 3 (Continuous Safety) and into Pole 5 (Common). Please see Figure 6-3.

Section 6b. Panic Breakout Latch/Switch (Closed Loop Continuous Safety Circuit)

The new “Fail Safe” safety circuit feature on the Magnum control is only available on recent controls as identified by the last (3) digits reading (13X or Higher) on a Label that is adhered to a Microprocessor IC located on the Magnum 4A Control board.

MEC
8512A13X

Magnum Control boards that display UL Labels with the last (3) digits reading (12X or Lower) do not have the Fail Safe feature. When the Fail Safe feature is activated and the door is broken out, the Panic Breakout Switch OPENS the circuit to activate the Safety w/Lockout feature.

The Panic Latch Switch is used to prevent activation when the door is broken out in a normally closed circuit (when safety is fail-safe). When the door is broken out, the Panic Breakout Limit Switch will OPEN the circuit to activate the Continuous Safety feature and disable the Operator.

1. Turn OFF Power.
2. Go to Panic Latch located at bottom of Header.
3. Ensure that the EXT → arrow points to the **Exterior** side of the building. Panic Breakout Limit Switch will OPEN when door is broken out. Please see Figure 6-1.

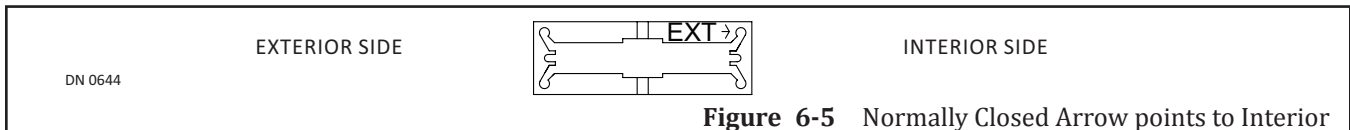


Figure 6-5 Normally Closed Arrow points to Interior

4. Go to Dip Switch (2). Flip switch OFF.
5. Go to ends of each (Red) wire connected to Panic Latch Harness. Cut white plastic connectors off. Please see Figure 6-4.
6. Strip all wire ends 1/4 inch.
7. Insert Red wires into Pole 3 (Continuous Safety) and into Pole 5 (Common). Please see Figure 6-6.

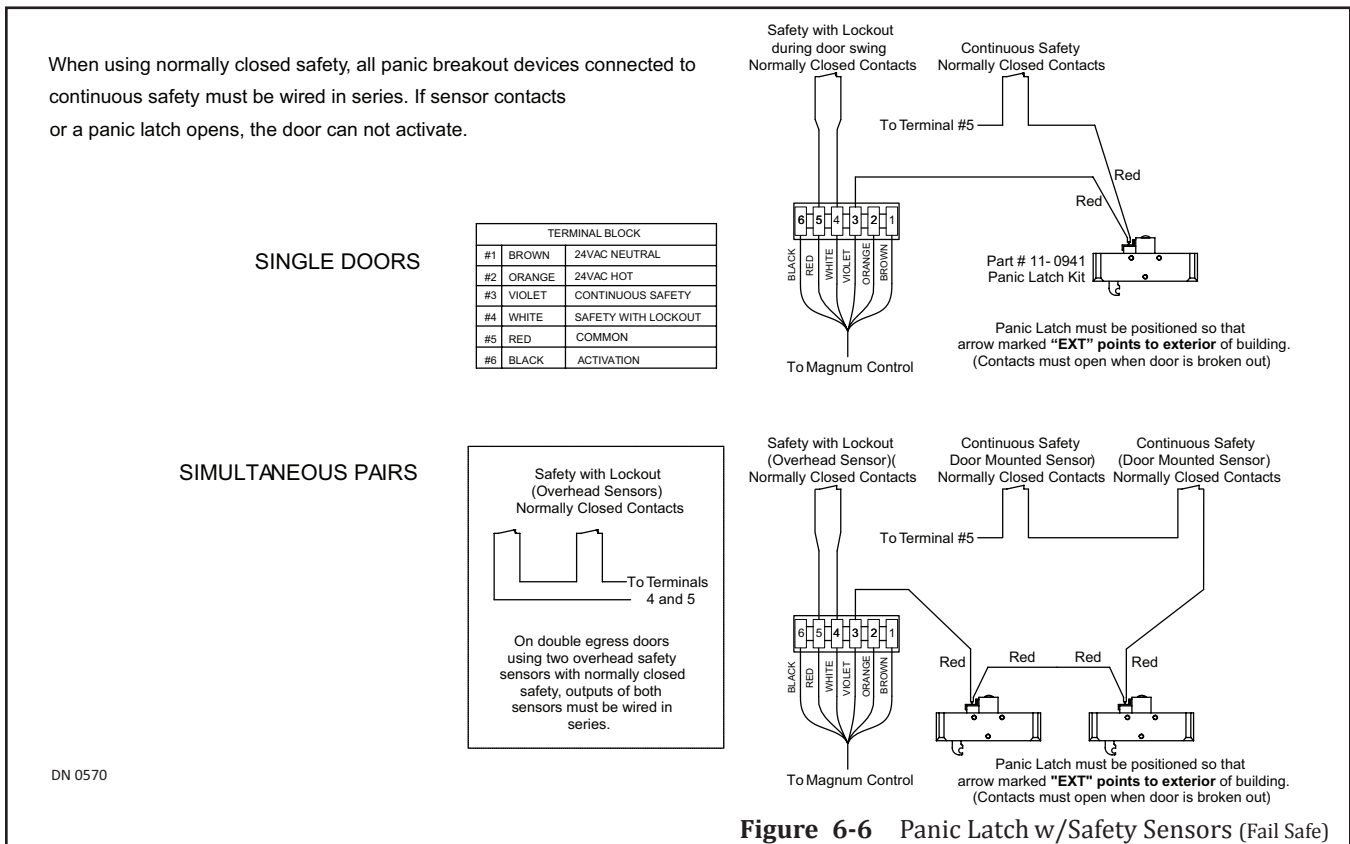
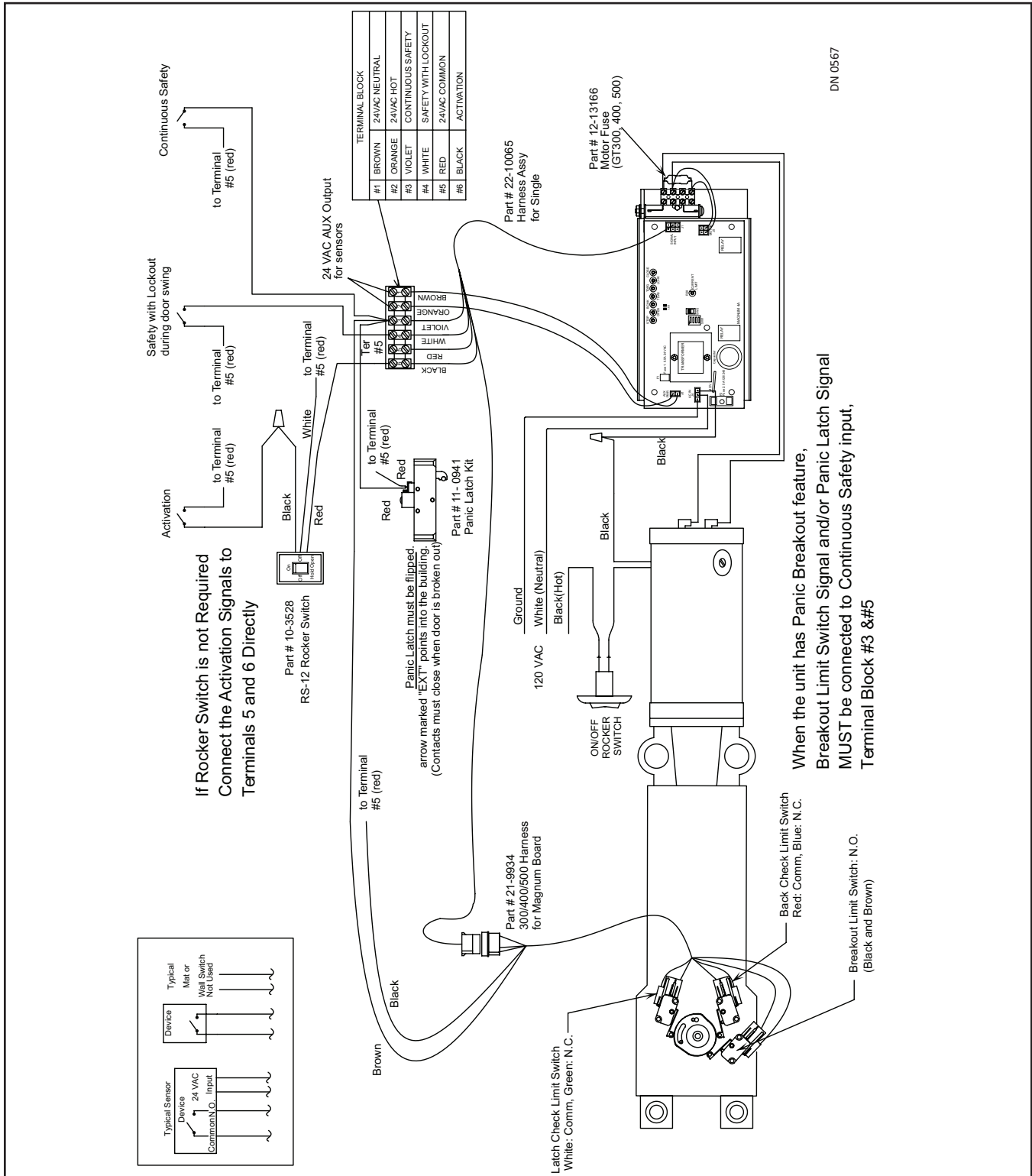


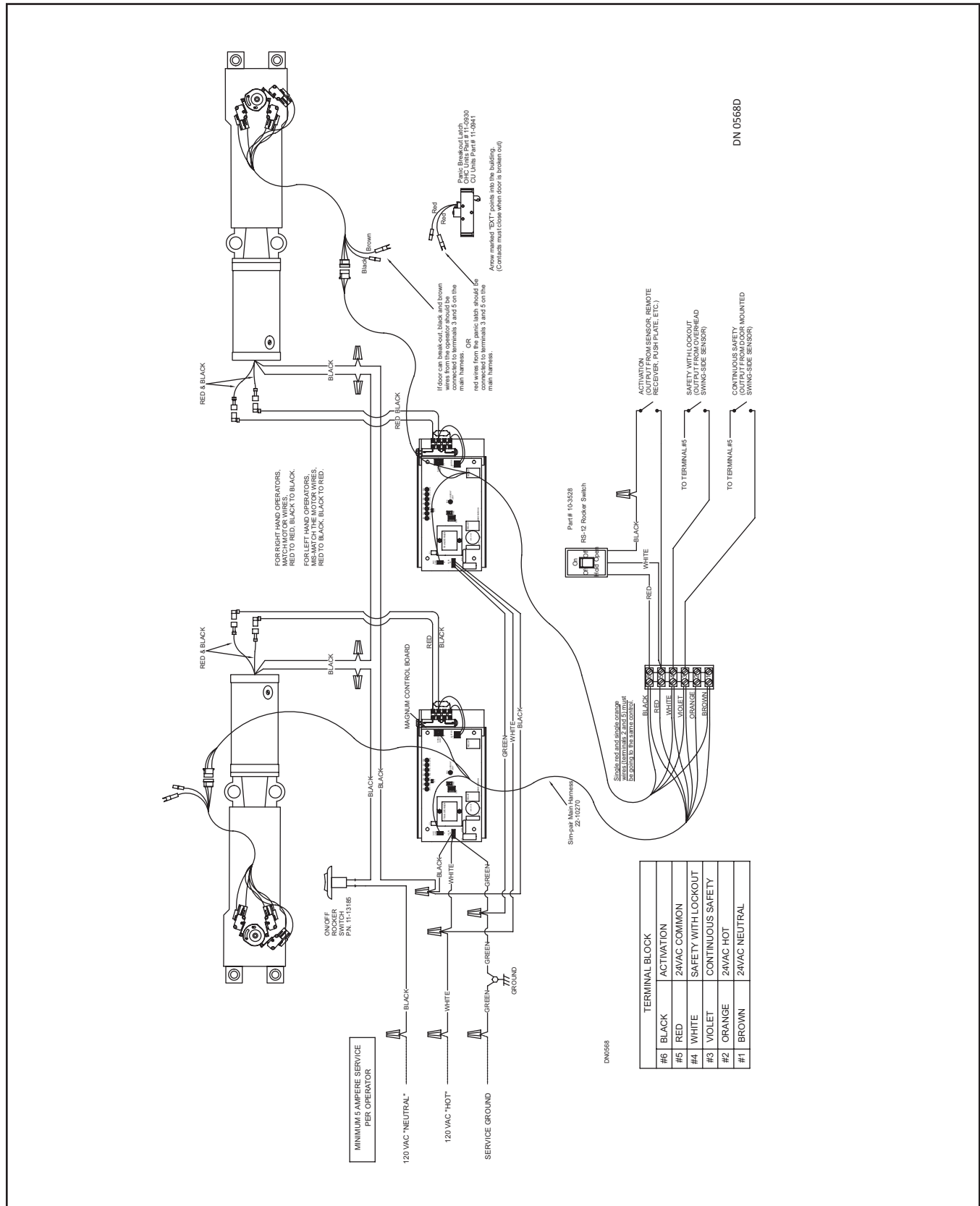
Figure 6-6 Panic Latch w/Safety Sensors (Fail Safe)

CHAPTER 7: Wiring Diagrams (General)

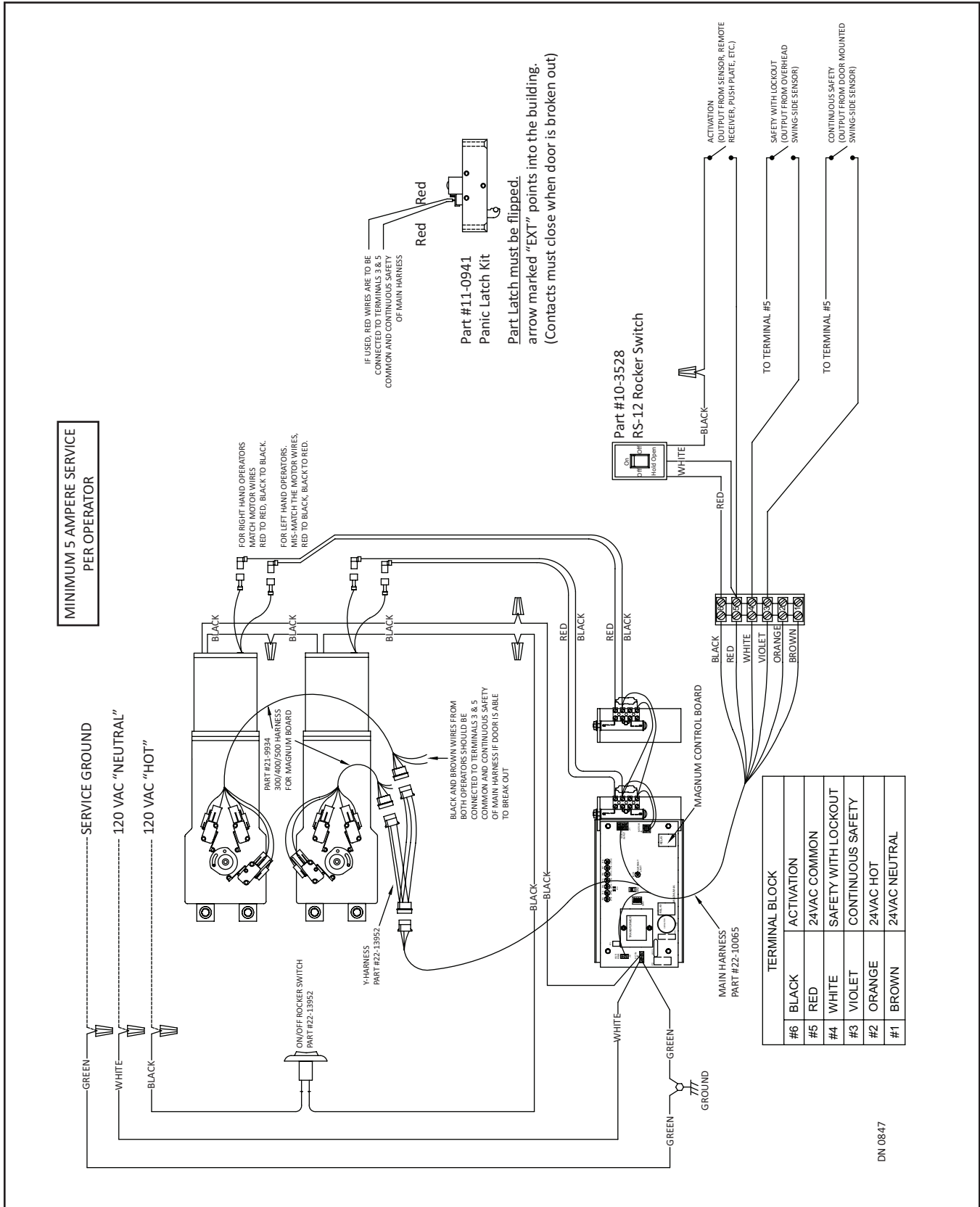
Section 7a. GT-300-400-500 Single Door



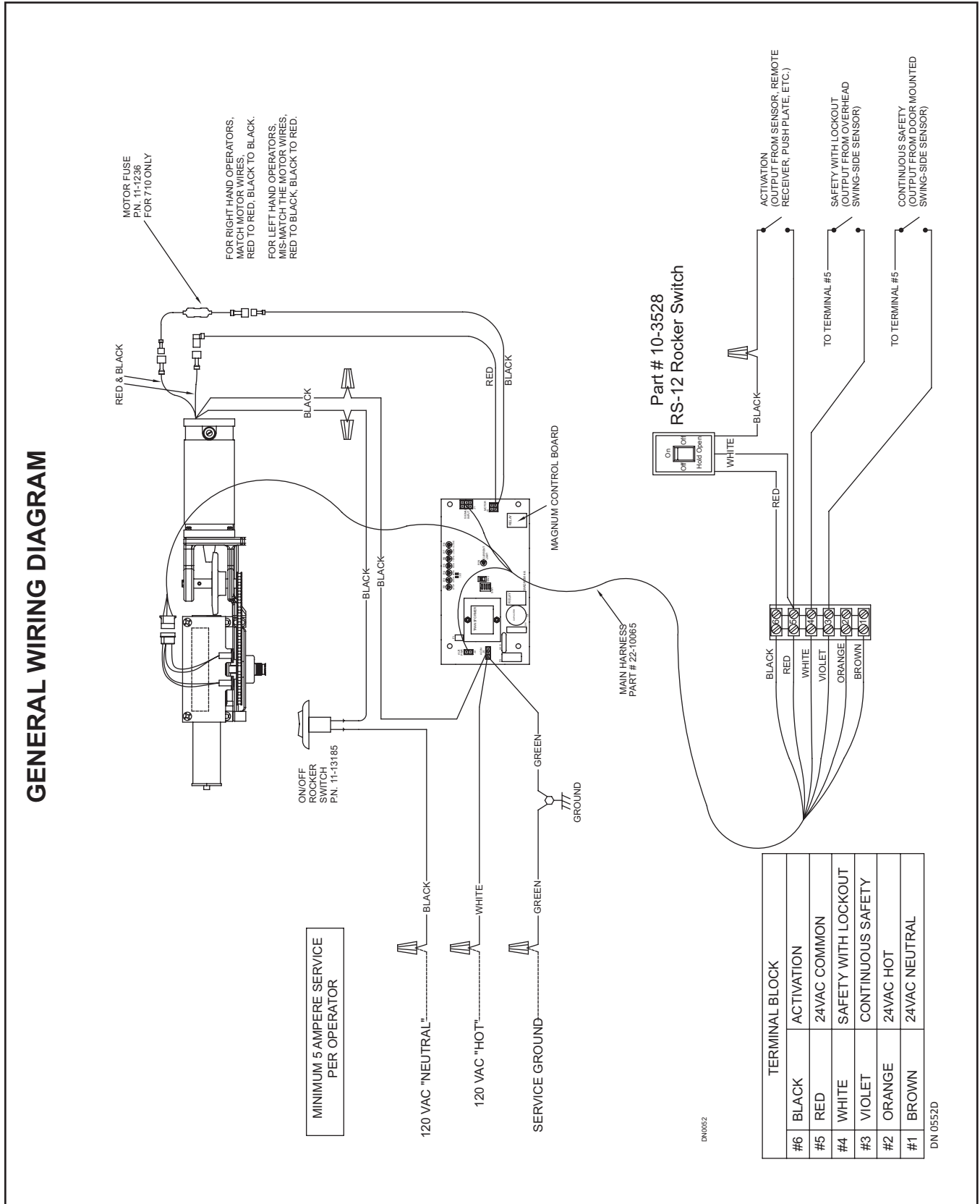
Section 7b. GT-300-400-500 (Simultaneous Pair)



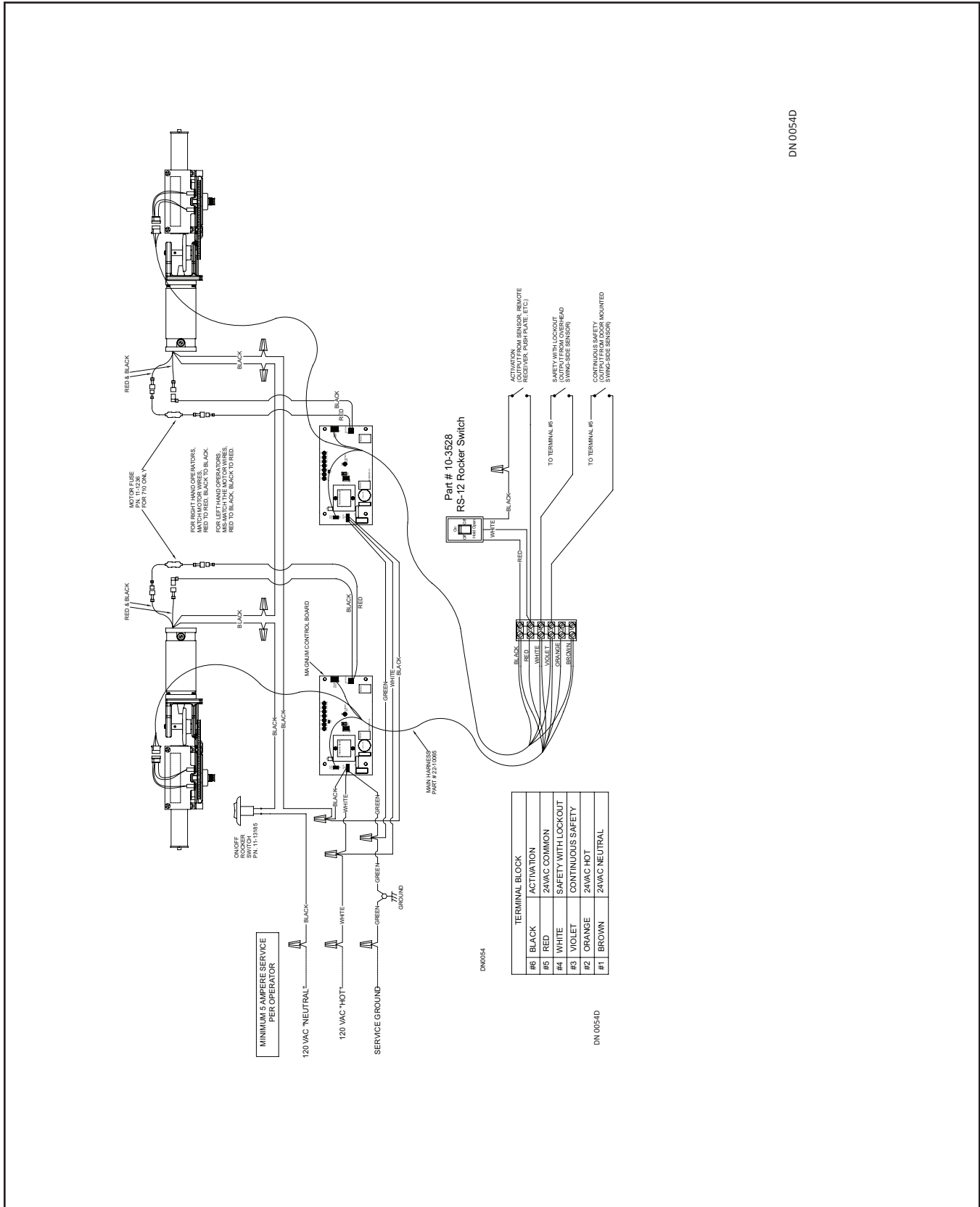
Section 7c. GT-300-400-500 (Simultaneous Pair w/One Magnum 4A Control)



Section 7d. GT-710-8310-8710 Single Door



Section 7e. GT-710-8310-8710 (Simultaneous Pair)

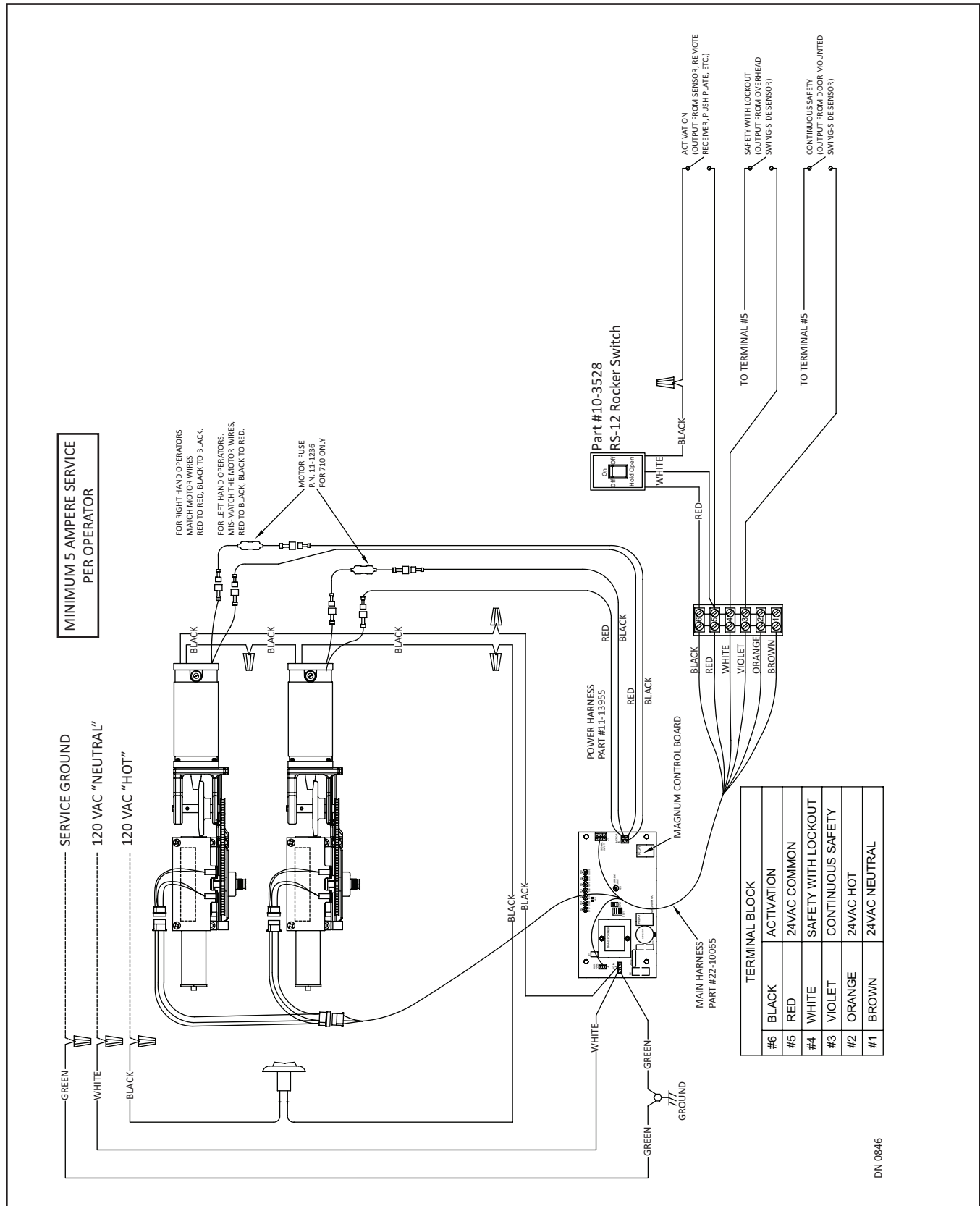


DN 0054D

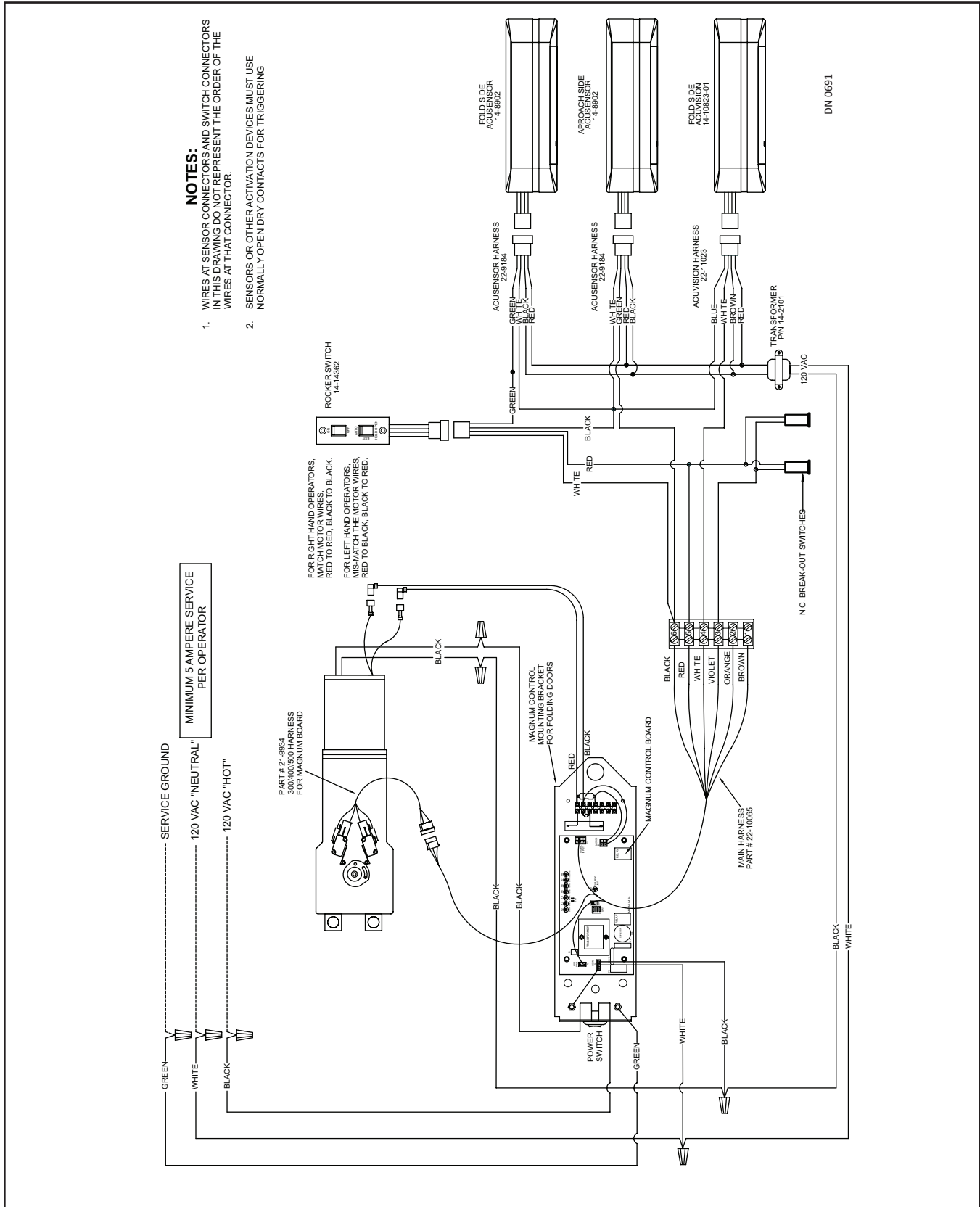
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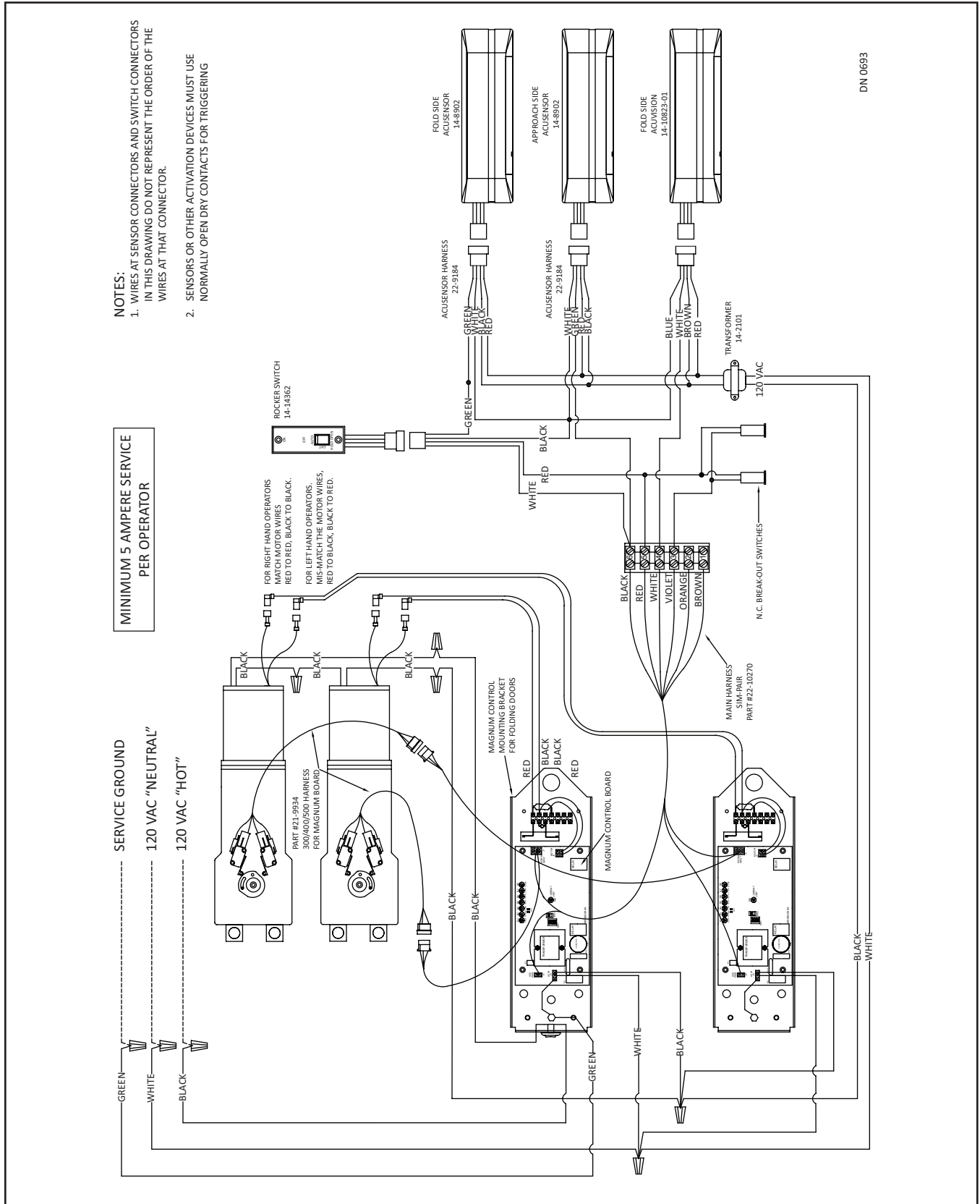
Section 7f. GT-710-8310-8710 (Simultaneous Pair w/One Magnum 4A Control)



Section 7g. GT-1400 Single Fold with One Magnum 4A Control

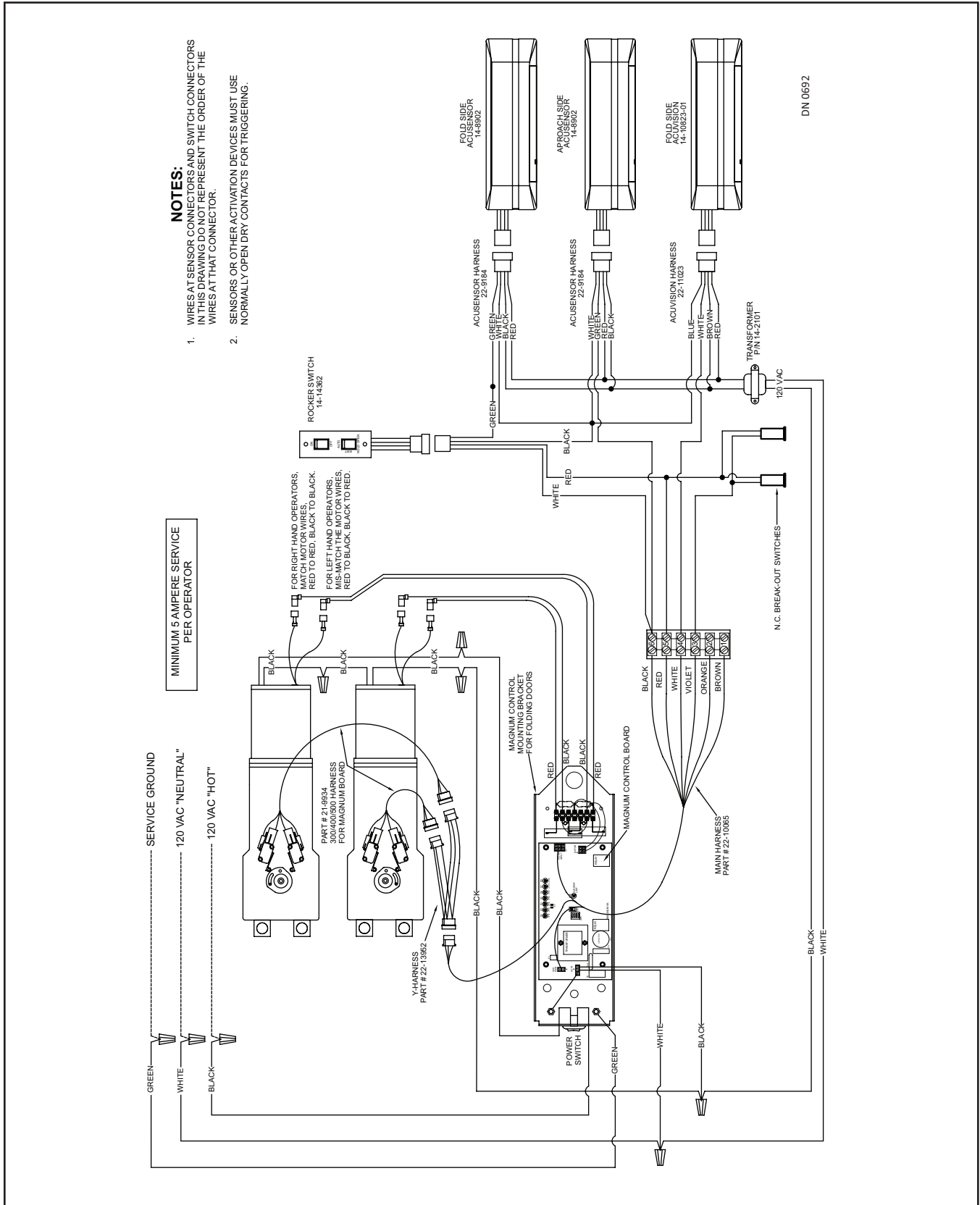


Section 7h. GT-1400 Bi-Fold with Two Magnum 4A Controls



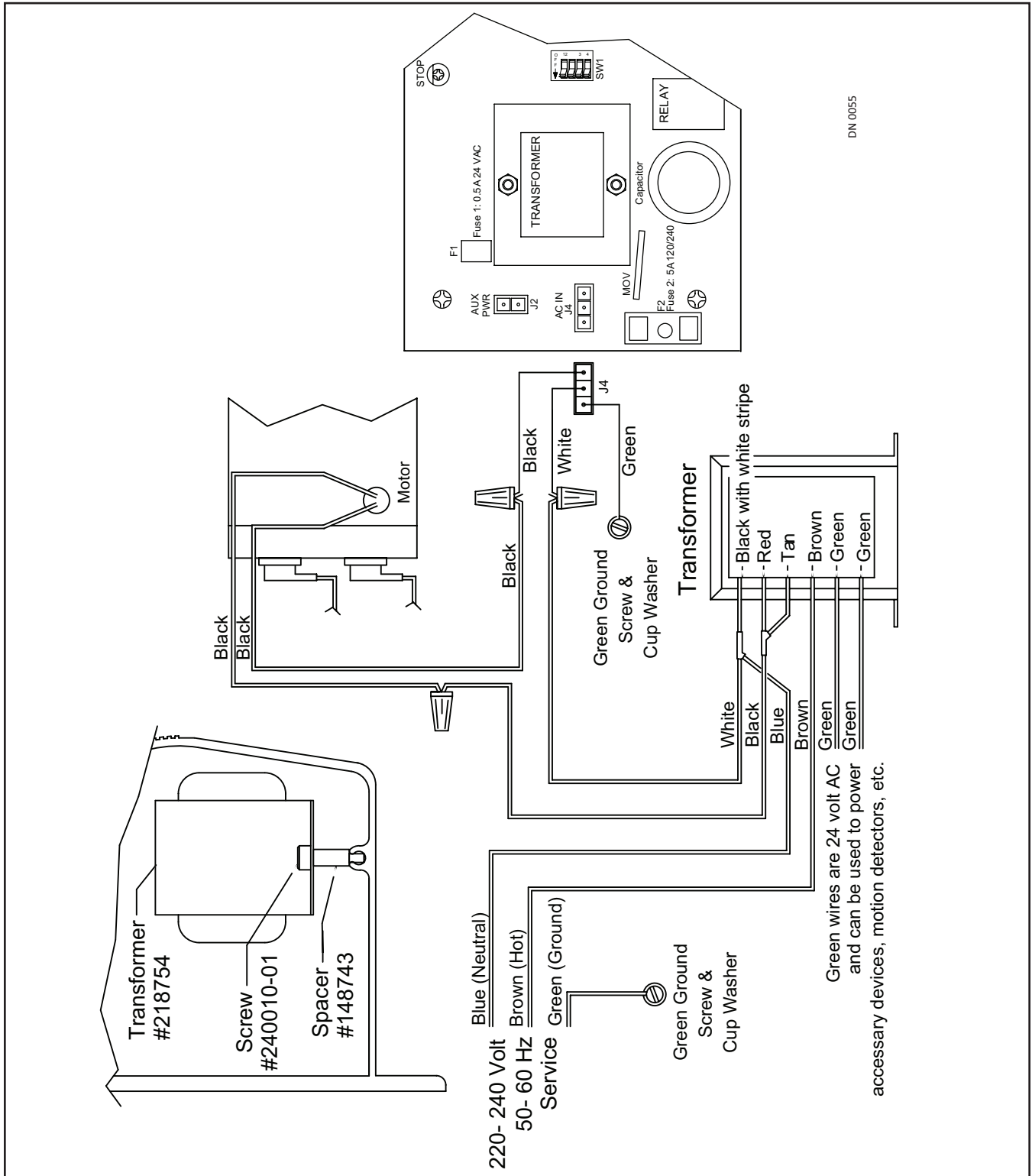
DN 0693

Section 7i. GT-1400 Bi-Fold with One Magnum 4A Control



CHAPTER 8: Wiring Diagrams (Accessories)

Section 8a. Transformer Installation and Wiring for 240 Volts



CHAPTER 9: Troubleshooting

Trouble	Possible Cause	Action
Operator does not function	Fuse 2 (F1) may be blown.	Replace Fuse.
	Fuse installed on Brake Module may be blown (except GT-710).	Test and Replace Fuse.
	No incoming power.	Ensure 120 VAC incoming power is connected.
	J5 Motor circuit may not be properly connected.	<ul style="list-style-type: none"> ▶ GT-300/400/500: <ol style="list-style-type: none"> 1. Go to J5 Motor Feed. 2. Check connections to Pin (1) and Pin (2) and also both Motor Leads connected to brake module. 3. Replace motor if necessary. ▶ GT-710: <ol style="list-style-type: none"> 1. Go to J5 Motor Feed. 2. Check connections to Pin (1) and Pin (2) leading to Motor. 3. Replace motor if necessary.
	Current consumption overload.	<ol style="list-style-type: none"> 1. Go to Terminal Block. 2. Check current consumption at Terminals 1 & 2. 3. If current draw exceeds 0.5 amps at 24 VAC, disconnect auxiliary devices such as sensors from Terminals 1 and 2 and install an alternate power supply such as a Transformer.
	Motor may be blown.	Replace motor.
	Safety circuit is activated.	<ul style="list-style-type: none"> ▶ Check to ensure Dip Switch (2) is set correctly. ▶ Ensure safety sensors are not activated.
	GT-710: Activation Circuit may not be properly connected.	To signal a Door Open command activation devices must provide a Dry Switch closure across Terminals 5 and 6.
Door slams closed	GT-710: Main speed on Hydraulic Closer needs adjustment.	Turn main speed adjustment on Hydraulic Closer clockwise to decrease closing speed.
	GT-300/400/500: Closing speed on Magnum control needs adjustment.	<ol style="list-style-type: none"> 1. Go to CLOSE Potentiometer. Operation should continue as soon as recycling is done. 2. Turn counterclockwise to decrease closing speed.
	Motor circuit may be open.	<ol style="list-style-type: none"> 1. Go to J5 Motor Feed. 2. Check connections on Pin (1) and Pin (2).
	Latch Check may be set too high.	<ul style="list-style-type: none"> ▶ GT-300/400/500: <ol style="list-style-type: none"> 1. Go to LCHK Potentiometer. 2. Turn counterclockwise to decrease speed. ▶ GT-710: <ol style="list-style-type: none"> 1. Adjust latch check speed on hydraulic closer. 2. Turn clockwise to decrease speed.

Trouble	Possible Cause	Action
Door slams open.	Back Check may be set too high.	<ul style="list-style-type: none"> ▶ GT-300/400/500: <ol style="list-style-type: none"> 1. Go to BCHK Potentiometer on Magnum 4A Control board. 2. Turn counterclockwise to decrease speed. ▶ GT-710: <ol style="list-style-type: none"> 1. Adjust Back Check speed on hydraulic closer. 2. Turn clockwise to decrease speed.
	GT-710: Back check magnet not in place.	Reposition magnet back to its proper location.
	Operator may not be correctly preloaded.	Pre-load operator by correctly installing arm on operator spindle per hardware installation manuals.
If Fuse 1 (F1) opens	Current consumption overload.	<ol style="list-style-type: none"> 1. Go to Terminal Block. 2. Check current consumption at Terminals 1 & 2. 3. If power exceeds 0.5 amps at 24 VAC, disconnect auxiliary devices such as sensors from terminals 1 and 2 and install an alternate power supply such as a transformer.
Motor spins when activated but door does not open.	GT-300/400/500: motor connected backwards.	Reverse motor leads on motor.
	Motor/Operator coupling or spider coupling loose between motor and operator.	<ol style="list-style-type: none"> 1. Remove motor and operator from Header. 2. Separate motor from operator. 3. Inspect couplings for looseness.
Back Check adjustment on Magnum 4A has no effect.	Door is not going into Back Check at 80 ° position.	<ul style="list-style-type: none"> ▶ Pre-load operator by correctly installing arm on operator spindle per Hardware Installation manuals. ▶ GT-710: Reposition Back Check magnet.
	GT-710: Back check resistance on Hydraulic closer set too high and motor cannot power door through back check to open position.	Adjust the Back Check screw on the bottom of the header out one turn.
No Back Check.	Back Check switch may not be closing at correct position.	Pre-load operator by correctly installing arm on operator spindle per Hardware Installation manuals.
	GT-710: Magnets on main sprocket not in correct position.	Align magnets per Hardware Installation manual.
Door does not stay tightly closed.	Preload may not be correct.	Pre-load operator by correctly installing arm on operator spindle per hardware installation manuals.
	GT-710: Closing spring tension on Hydraulic Closer may be too light.	Adjust spring tension on Hydraulic Closer.
	GT-710: Building stack pressure is excessive.	Upgrade Operator Unit to GT-500 or install power close module. <ul style="list-style-type: none"> ▶ GT-300/400/500: Kit Part Number: 11-13140. ▶ GT-710 Swinger: Kit Part Number: 11-13141. <i>Note: Please refer to section C-1 in Price Binder for more information.</i>

Trouble	Possible Cause	Action
Safety Sensor does not function.	No power to sensor.	Check wiring on harness and power to sensor.
	Sensor may not be properly connected to Terminal Block.	<ol style="list-style-type: none"> 1. Go to Terminal Block. 2. Connect the output of sensor to: <ul style="list-style-type: none"> ▶ Header mounted sensor: <ul style="list-style-type: none"> • Terminals 5 (Red) and Terminal 4 (White). ▶ Door mounted sensor: <ul style="list-style-type: none"> • Terminals 5 (Red) and Terminal 3 (Violet).
	Dip Switch (2) Safety may be Off instead of On or vice versa.	<ul style="list-style-type: none"> ▶ Sensors using N.O. Contacts, turn Dip Switch ON. ▶ Sensors using N.C. Contacts, turn Dip Switch OFF.
Header mounted Swing Side Presence Sensor is activated by opening or closing door.	Connection of Sensor to Terminal Block was to "Continuous Safety" not "Safety w/Lockout".	<ol style="list-style-type: none"> 1. Rewire Safety Sensor to "Safety w/Lockout". 2. Go to Terminal Block. 3. Connect the output of the Sensor to Terminal (5) Red Wire and Terminal (4) White Wire.
Sensor, safety mats, holding beams, or all other accessories mounted on swing side of door do not function while door is moving.	Connection of Sensor to Wiring harness was to "Safety w/Lockout" not "Continuous Safety".	<ol style="list-style-type: none"> 1. Rewire Safety Sensor to "Continuous Safety". 2. Go to Terminal Block. 3. Connect the output of the Sensor to Terminal (5) Red Wire and Terminal (3) Violet Wire.
Sensor shows activation signal was sent, but door does not open.	Sensor not properly connected activation circuit.	Check wiring on harness.
	Safety signal preventing door from opening.	Correct cause of safety signal.
One sensor does not activate both doors on a simultaneous pair.	Sensor is not connected to both control boards.	Install simultaneous pair harness (P/N 22-9953).