EXTREME®
MOTOR OWNER'S MANUAL

2 HP, 3 HP & 5 HP

WITH SELF-ENGAGING CHAIN HOIST

FOR TECHNICAL SUPPORT PLEASE CALL
1-(855) 594-4969
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<tr>
<td><strong>Drive System</strong></td>
<td>High Efficiency hypoid gear reduction with chain and sprocket connection to door</td>
</tr>
<tr>
<td><strong>Roller Chain</strong></td>
<td>Sized based on door torque requirements</td>
</tr>
<tr>
<td><strong>Operation</strong></td>
<td>Soft Start &amp; Soft Stop (last 3”-6” of travel - adjustable)</td>
</tr>
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</table>
| **Control**         | Variable Frequency Control (separate NEMA 4 enclosure)  
                       Wall mounted starter with cycle counter and timer to close. |
| **Opening Speed**   | 24 In/s Max |
| **Closing Speed**   | 12 In/s |
| **Delay on Open/Close** | 1.5 Sec OPEN/0 Sec CLOSE |
| **Voltage**         | 208-240/1/60**, 208-240/3/60***, 480/3/60***, 600/3/60***, 230/1/50**, 380/3/50*** |
| **NEMA Rating**     | NEMA 4 Standard, NEMA 4X, NEMA 7/9 (With restrictions) optional. |
| **Cycle Rating**    | 1,000,000 or Five years |
| **Duty cycle**      | Continuous |
| **Obstruction Detection** | Light Curtain and Photo Eyes are Standard,  
                       Motion Sensor, Wireless Sensing Edge are optional. |

**Single Phase available up to 3 HP Only  
***3 Phase only on 5 HP units**

**OPERATOR**
- SEW Eurodrive, 230 Volt or 480 Volt 3 Phase 1800 RPM TEFC Brake Motor/Reducer  
- 2, 3 & 5 HP Motors sized as required to safely and reliably operate the door  
- High Efficiency Brake Motor with 120V BMG Brake (Brake torque is dependent on motor HP)  
- NEMA 4 Limit Box with terminal strip and HD Limit Switches with Linear Driven,  
  Fully Adjustable Screw type Limit Cams  
- Drive sprocket with QD bushing installed on operator  
- As-Built Electrical Schematics supplied with each unit  
- NEMA 4 flexible conduit pre-wired at limit box terminals with wire markers 5” from end - on High Voltage motor leads.  
- Quick-Connect Interface connection on low voltage leads between wall mounted starter and motor limit box,  

**CONTROL PANEL**
- NEMA 4, 24” x 20” x 8” Enclosure (Standard)  
- Open/Close Buttons with Mushroom head Stop in panel cover  
- UL 325 (rev 5) compliant B2 controls  
- 1.5 second delay on reverse timer  
- Mitsubishi variable frequency drive with overload protection.  
- Soft stop and soft start circuitry for motor control  
- Primary Fuse Block inside panel (Fuses Included)  
- Fully Adjustable Timer to Close
SPECIFICATIONS (CONT)

Current Draw (Full Load Amps)

<table>
<thead>
<tr>
<th>Motor HP</th>
<th>Single Phase, 60 Hz</th>
<th>Three Phase, 60 Hz</th>
<th>Single Phase, 50 Hz</th>
<th>Three Phase, 50 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>120 VAC</td>
<td>208 VAC</td>
<td>240 VAC</td>
<td>208 VAC</td>
</tr>
<tr>
<td>2</td>
<td>N/A</td>
<td>13.2</td>
<td>12</td>
<td>5.1</td>
</tr>
<tr>
<td>3</td>
<td>N/A</td>
<td>18.7</td>
<td>17</td>
<td>7.2</td>
</tr>
<tr>
<td>5</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>11.4</td>
</tr>
</tbody>
</table>

Environmental Requirements

Thermal Ratings – Operating Temperatures
-22 to 185 deg F panel temperature, 200 deg F maximum operator case temperature.

Approximate control panel weight is 60 Lbs – Approximate motor/reducer weights provided in table below.

MOUNTING DIMENSIONS

<table>
<thead>
<tr>
<th>H.P.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>UNIT WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>15</td>
<td>10.75</td>
<td>13.50/14.50</td>
<td>28.75</td>
<td>6.50</td>
<td>165</td>
</tr>
<tr>
<td>3</td>
<td>15.75</td>
<td>12</td>
<td>14.50/15.50</td>
<td>32.25</td>
<td>8.13</td>
<td>200</td>
</tr>
<tr>
<td>5</td>
<td>15.75</td>
<td>12</td>
<td>14.50/15.50</td>
<td>33</td>
<td>8.13</td>
<td>230</td>
</tr>
</tbody>
</table>
IMPORTANT INSTALLATION INSTRUCTIONS

WARNING - TO REDUCE THE RISK OF SEVERE INJURY OR DEATH:

1) READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.

2) Install only on a properly operating door. A door that is operating improperly could cause severe injury. Have qualified service personnel make repairs to cables, spring assemblies, and other hardware before installing this operator.

3) Remove all pull ropes and remove, or make inoperative, all locks (Unless mechanically and/or electrically interlocked to the power unit) that are connected to the door before installing the operator.

4) Install the door operator at least 8 feet or more above the floor if the operator has exposed moving parts.

5) Do not connect the door operator to the source of power until instructed to do so.

6) Locate the control station: (a) within sight of the door, (b) at a minimum height of 5 feet so small children cannot reach it, and (c) away from all moving parts of the door.

7) Install the Entrapment Warning Placard next to the control station in a prominent location.

IMPORTANT SAFETY INSTRUCTIONS

WARNING - TO REDUCE THE RISK OF SEVERE INJURY OR DEATH:

1) READ AND FOLLOW ALL INSTRUCTIONS.

2) Never let children operate or play with door controls. Keep the remote control (where provided) away from children.

3) Personnel should keep away from a door in motion and keep the moving door in sight until it is completely closed or opened. NO ONE SHOULD CROSS THE PATH OF A MOVING DOOR.

4) KEEP DOORS OPERATING PROPERLY. ONLY TRAINED DOOR SYSTEMS TECHNICIANS SHOULD MAKE REPAIRS TO DOOR AND HARDWARE.

5) SAVE THESE INSTRUCTIONS.
ELECTRICAL

1) DISCONNECT POWER AT THE FUSE/BREAKER BOX/DISCONNECT BEFORE PROCEEDING WITH ANY WIRING OF THIS UNIT.

2) THE UNIT MUST BE PROPERLY BANDED AND GROUNDED. A GROUND SCREW IS SUPPLIED IN THE ELECTRICAL BOX FOR CONNECTION OF THE POWER SUPPLY GROUND WIRE. FAILURE TO PROPERLY BOND/GROUND THIS UNIT COULD RESULT IN ELECTRICAL SHOCK, SERIOUS INJURY AND/OR DAMAGE TO CONTROL EQUIPMENT.

3) FIELD WIRING OF OPERATOR MUST BE PERFORMED BY QUALIFIED PERSONNEL.

4) OPERATOR MUST BE WIRED PER WIRING DIAGRAMS PROVIDED IN THIS OWNERS MANUAL OR INCLUDED WITH OPERATOR ONLY.

5) OPERATOR MUST BE WIRED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES. NOTE: THE OPERATOR SHOULD BE ON A SEPARATE FUSED LINE OF ADEQUATE CAPACITY.

6) USE 18 GA STRANDED COPPER WIRE MINIMUM FOR ALL CONTROL CIRCUIT CONNECTIONS.

7) DO NOT INSTALL ANY WIRING OR ATTEMPT TO RUN THE OPERATOR WITHOUT CONSULTING THE WIRING DIAGRAM.

8) SET OPERATOR LIMIT SWITCHES BEFORE CONNECTING ANY ENTRAPMENT PROTECTION DEVICES TO THE OPERATOR.

OPERATOR MOUNTING

Before your operator is energized, be sure the door has been properly aligned and is working smoothly. Refer to the Door Installation Instructions for proper operator installation. This motor operator is an integral part of the door system. Refer to door Installation Instructions for proper anchoring and sprocket alignment.
**ENTRAPMENT PROTECTION ACCESSORIES**

In accordance with UL-325 requirements, this operator requires specific primary entrapment detection devices connected and working properly before momentary contact on the CLOSE control station is enabled. Without the proper primary entrapment detection accessories connected and working properly, the unit will require constant pressure on the CLOSE control station to close, during normal operation. **DO NOT ATTEMPT TO BYPASS OR DEFEAT THIS FEATURE.** Damage to the unit is possible. This damage is not covered under the manufacturer's warranty. When a second entrapment protection device is desired, any device with a normally CLOSED (N/C) dry contact type output is compatible with this door. (See control connection diagram for connections). Entrapement protection will not function when the CLOSE limit switch is activated.

**INERTIA BRAKE**

Your door is equipped with an inertia brake. It is imperative that the safety brake interlock is connected between Terminals "2A" and "32" in the limit box or the door will not close. **DO NOT ATTEMPT TO BYPASS.**

**READING THE CYCLE COUNTER**

When the door is closed the cycle count on the display is shown on the PLC display. (See above). Please note there are two sets of five digits. The right set indicates the multiplier or increments per count. The left set of numbers is the count. Simply multiply the number displayed in the left set of numbers by the multiplier on the right set.

The sample above indicates the cycle count as:

\[
235 \times 100 = 23,500 \text{ Cycles}
\]
OPERATOR START-UP INSTRUCTIONS

1) **Power wiring Instructions:** Connect three phase power supply to terminals L1, L2 and L3 on control panel terminal strip. Verify the incoming power supply with the power supply shown on the control panel identification label.

2) **Connect the Inertia Brake:** The inertia brake connections are terminated at terminals 2A and 32 on the limit box terminal strip. Use the provided bulkhead fitting with the cord grip in the pre-drilled hole in the limit box. The door installation instructions for your door may contain specific wire routing instructions unique to your door.

3) **Verify Motor Direction:** After the electrical power connections are made and roller chain and sprockets have been installed, aligned, and verified; manually move the door to mid-position using the chain hoist.

   **CAUTION:** Be advised that the cam nuts are positioned in the center of the limit shaft assembly. Press the temporary close push button located inside the panel for a few seconds. If door does not move in close direction, turn off incoming power and reverse wires on M1 and M2. Turn incoming power back on and press the temporary close button again. The direction of the operator should be reversed.

   If door direction is still not correct, please consult Customer Service at 1-855-594-4969.

4) **Adjust limit switch cams:** Use the temporary close and panel mounted stop button to move door to fully closed and fully open positions and set cam nuts.

   ![Diagram of limit switch components]

   - **OPEN DECEL LIMIT SWITCH**
   - **CLOSE DECEL LIMIT SWITCH**
   - **OPEN LIMIT SWITCH**
   - **CLOSE LIMIT SWITCH**
   - **SPRING LOADED DETENT PLATE**

   - **ADJUST**
   - **CAM NUT**

5) **Beginning with the curtain raised/or lowered to the approximate mid-point of the opening, open the limit switch box and identify all parts.**

   - While pressing the spring-loaded detent plate, adjust the limit switch cam nut until the micro switch clicks.
   
   **CAUTION:** BE SURE THE CAM NUTS RE-ENGAGE THE DETENT PLATE.

6) **Repeat step 6 for the opposite position.**

---

**WARNING**

**FAILURE TO PROPERLY ADJUST LIMIT SWITCHES MAY CAUSE AN UNSAFE CONDITION AND COULD DAMAGE THE DOOR**

**DO NOT BEND LIMIT SWITCH ACTUATOR ARMS WHEN ADJUSTING LIMITS. TOP AND BTM STOP LIMITS ARE FIXED. DECELERATION LIMITS ARE ADJUSTABLE (WHEN NECESSARY).**
8) Cycle the door and fine adjust all limits as necessary to get the door to stop at the desired positions.

9) Remove factory installed jumper between terminals 2 and 19 in the wall mounted control panel to enable momentary contact operation on OPEN.

10) Activate Interface Module: After adjusting the open and close, open the door to full open position.

   Connect the black wire, with the blue label, from the interface module to terminal #6.

   **CAUTION:** YOU MUST ENSURE THE DOOR IS AT FULL OPEN POSITION BEFORE CONNECTING THE BLACK WIRE TO TERMINAL #6. IF NOT, THE DOOR WILL MOVE IN THE OPEN DIRECTION AFTER CONNECTING THE BLACK WIRE. BE ADVISED DAMAGE CAN OCCUR IF PROPER PROCEDURE IS NOT FOLLOWED.

FAILSAFE FEATURE: A monitored failsafe safety feature is built into the operator. It has provisions for ONE primary safety device (PHOTO EYES) as well as one or more non-monitored safety device.

11) Install Photo Eyes: (Primary monitored safety device) Compatible monitored photo eyes must be connected to terminals P1 and P2 in the operator limit box. Harness connections are provided for with the harness supplied to the control panel. If primary monitored photo eyes are not connected, the door will be in constant pressure to close mode. If constant pressure is removed before door reaches full closed position, the door reverses to full open. The door installation instructions for your door may contain specific wire routing instructions unique to your door.

12) Install Light Curtains: The Light Curtain connections are terminated at terminals 2, 3, 5 and S2 in the operator limit box. Please see wiring diagram. The door installation instructions for your door may contain specific wire routing instructions unique to your door.

13) Secondary non-monitored safety device(s): Please refer to the field connection schematic to connect all non-monitored reversing devices across terminals S + S1 or S + S2. Normally closed devices must be used, connected in series.

   **NOTE:** PROVISIONS HAVE BEEN MADE FOR THE INSTALLATION OF A LIGHT CURTAIN AND A WIRELESS EDGE RECEIVER. ANY ADDITIONAL N/C REVERSING DEVICES MUST CONNECT IN SERIES BETWEEN S + S1 OR S + S2.

   See Field Connection page for more details.

14) Adjusting Decel Limit Switches: There should be 3 distinct stages of motor operation.

   **Mode [1]: Ramp Up**
   **Mode [2]: Normal (Normal speed - OPEN)/(1/2 speed - CLOSE)**
   **Mode [3]: Slow (1/2 Normal speed OPEN)/(1/2 speed - CLOSE)**

   • As the door begins to approach the OPEN or CLOSE limits, it should transition from mode [2] to mode [3] before the door stops at the limits. This slow speed is a crucial step for safe operation of the door.

   • To increase the system efficiency and reduce cycle times, the distance the door travels in “Slow” speed may be adjusted by moving the decel limit switches.

   - Loosen the 2 set screws on the limit switch body to allow you to move the decel switch body side to side, tightening the screws will lock the switches in place.

   - Sliding the decel limit switch body toward the upper or lower limit switches will decrease the distance the door will travel in the mode [1] or Mode [2].

   - Properly adjusted decel limits should be about 12” to 18” of door operation.
15) Maximum Run Time Timers: Maximum Run Time Timers for open time and close time are pre-set at the factory 14 seconds open, and 25 seconds for close. For maximum safety and reliability, you can adjust the maximum run time timers to turn the timer off, and reduce the risk of significant damage to the door system if an unlikely failure of the over-travel limits. Now that the the door is operating at full speed, run the door in both directions tracking the total travel time of the door in both directions. The timers should be set to the time rounded up to the nearest second. Following the PLC adjustment procedures provided below, go to ROOB number 044 to adjust run timer in open direction. Go to ROOB number 056 to adjust run-timer in close direction.

PLC Adjustment Procedures
1) Press the "Menu/OK" button.
2) While "Parameters" option is blinking, press the "Menu/OK" button again.
3) Press " ↑ " button until the ROOB number is changed to desired value.
4) Press " → " button "Now Active" value starts blinking.
5) Press " ↑ " or " ↓ " button to change the value and press "Menu/OK" - Now you see yes option.
6) Press "Menu/OK" button again to confirm changes.

AFTER THE LIMITS HAVE BEEN SET, RUN THE CURTAIN AND ALIGN IT ONTO THE PIPE.
THE CURTAIN SHOULD BE CENTERED INSIDE THE COIL BOX AND ONTO THE PIPE.

16) Use enable timer to close procedure on Page 13.

WIRELESS SENSING EDGE (OPTIONAL EQUIPMENT)

If selected with the door order, a Wireless Sensing Edge Receiver has been mounted and wired in the Control Panel at the Factory. The receiver and transmitter have been addressed and paired.

Do not mix Receiver/Transmitter pairs on multiple doors or manual pairing will be required for proper function. (See Radio Manufacturer’s Instructions provided with equipment).

Please refer to door installation instructions to mount transmitter on bottom bar.
FDG WIRING DIAGRAM

240V - 3 PHASE

WIRING SCHEMATIC

[Diagram of wiring connections and labels for 240V - 3 Phase system]
CONTROL CONNECTION DIAGRAM

FIELD CONNECTIONS

NOTE: FOR ANY MODIFICATIONS TO THE PARAMETERS IN SMART RELAY, POWER TO SMART RELAY SHOULD BE ON.
REMOVE FACTORY INSTALLED JUMPER BETWEEN TERMINALS 2 AND 18. IF TIMER TO CLOSE FEATURE IS REQUIRED.
TIMER TO CLOSE IS PRESET AT THE FACTORY FOR 20SEC.

ENABLE TIMER TO CLOSE *1

- PRESS THE "MENU/OK" BUTTON.
- WHILE "PARAMETERS" OPTION IS BLINKING PRESS THE "MENU/OK" BUTTON.
- PRESS 02." Button until the ROOB number is changed to 051.
- PRESS "D" button, now Active Time Delay starts blinking.
- USE "A" OR "V" ARROW TO CHANGE THE VALUE AND PRESS "MENU/OK". NOW YOU SEE YES OPTION BLINKING.
- PRESS "MENU/OK" BUTTON AGAIN TO CONFIRM CHANGES.

NOTE: ALL THE TIMER VALUES ARE DISPLAYED ON SCREEN IN SECONDS.

RUN-TIMER ADJUSTMENT *2

- THE RUN OUT TIMER VALUE IS PRE-SET AT THE FACTORY FOR 14 SECONDS ON OPEN AND 25 SECONDS ON CLOSE.
- TO MODIFY THE RUN-OUT TIME IN THE OPEN DIRECTION, GO TO ROOB NUMBER 044 AND CHANGE ITS ACTIVE TIME DELAY VALUE AND CONFIRM THE CHANGES.
- TO MODIFY THE RUN-OUT TIME IN THE CLOSE DIRECTION, GO TO ROOB NUMBER 056 AND CHANGE ITS ACTIVE TIME DELAY VALUE AND CONFIRM THE CHANGES. TO RESET THE RUN-TIMER, PRESS AND HOLD PANEL STOP FOR 5 SECONDS. IF RUN-TIMER ADJUSTMENT IS REQUIRED CONTACT CUSTOMER SUPPORT AT 1-855-594-4969

*3 MACHAN COMPATIBLE MONITORED PHOTO BEAM MUST BE CONNECTED TO P1 AND P2 FOR THE DOOR TO CLOSE IN MOMENTARY MODE.
IF MACHAN MONITORING DEVICES ARE NOT CONNECTED, DOOR CAN ONLY BE CLOSED BY CONSTANT PRESSURE ON CLOSE AND IF CONSTANT PRESSURE IS REMOVED BEFORE DOOR REACHES FULL CLOSE POSITION, DOOR REVERSES TO FULL OPEN POSITION.

*4 ANY SECONDARY REVERSING DEVICE(S) WITH A N.O. CONTACT CAN BE INSTALLED TO S1 AND S2.

*5 INERTIA BRAKE MUST BE CONNECTED BETWEEN TERMINALS 2A AND 32 IN ORDER FOR THE DOOR TO RUN.

*6 THIS OPERATOR IS WIDED AT THE FACTORY FOR CONSTANT PRESSURE ON OPEN. FOR MOMENTARY ON OPEN, REMOVE THE JUMPER ACROSS TERMINALS 2 AND 19.

*7 SINGLE CHANNEL RADIO RECEIVER IS WIDED AS OPEN REVERSE/REFRESH TIMER DEVICE.
 IF OPEN/CLOSE FEATURE IS REQUIRED, CONNECT THE RADIO RECEIVER CONTACT TO TERMINAL 21 IN LIEU OF TERMINAL 10.

*8 IF BLACK WIRE IS NOT CONNECTED TO TERMINAL 6, CLOSE BUTTON ON PANEL WILL NOT FUNCTION. USE TEMPORARY CLOSE BUTTON TO CLOSE THE DOOR FOR LIMIT ADJUSTMENT PURPOSES. AFTER LIMIT ADJUSTMENTS ARE COMPLETED CONNECT BLACK WIRE TO TERMINAL 6.

*9 RED LIGHT IS SOLID ANY TIME DOOR IS NOT FULLY OPEN OR FULLY CLOSED. RED LIGHT TO FLASH WHEN FLASHER IS USED.

*10 DRY CONTACT FOR FULL-CLOSE STATUS IS FACTORY SET AT N.O. TO CHANGE THE CONTACT TO N.C. GOTO ROOB 447 AND CHANGE THE VALUE TO 1.

*11 DRY CONTACT FOR FULL-OPEN STATUS IS FACTORY SET AT N.O. TO CHANGE THE CONTACT TO N.C. GOTO ROOB 448 AND CHANGE THE VALUE TO 1.
INSTALL MOVING DOOR WARNING PLACARD IN A CONSPICUOUS PLACE NEAR OPEN/CLOSE/STOP STATION AS INDICATED

PLEASE REFER TO DOOR INSTALLATION MANUAL FOR PROPER MOTOR CONNECTION AND ORIENTATION ON DOOR

WALL-MOUNTED STARTER

WARNING PLACARD
MAINTENANCE SCHEDULE

COORDINATE OPERATOR MAINTENANCE SCHEDULE W/MANUFACTURER’S MAINTENANCE SCHEDULE FOR YOUR DOOR.

Gearbox - The gearbox on the motor operator is factory sealed, and non vented, and should not require service for the life of the operator.

Brake Friction Material - The electromagnetic brake on the motor operator is factory adjusted, and should not require service for the life of the operator.

Do not lubricate motor. Motor bearings are lubricated and sealed at the factory.

Inspect and service whenever a malfunction is observed or suspected.

CAUTION: BEFORE SERVICING, ALWAYS DISCONNECT OPERATOR FROM POWER SUPPLY.

FOR TECHNICAL SUPPORT PLEASE CALL
1-(855) 594-4969

MOTOR OPERATOR MAINTENANCE

Operators require practically no special maintenance other than periodic checking to see that mechanical parts where necessary are lubricated and the electrical components are free of dirt.

The Service Technician should familiarize himself/herself with the proper sequence of operation and all related controls. Power to operator must be disconnected when removing or replacing covers on electrical components, making adjustments, or performing maintenance.

1. Check wire connections for tightness and wire insulation for defects or abrasions.
2. Check to see that all conduit connections are secure.
3. Check wires to sensing edge or photo-eyes.
4. Inspect operation of brake.
5. Inspect gearbox for leaks.
6. Inspect roller chain and drive sprockets. Align, lubricate* the sprockets, and tighten the.
7. Lubricate* limit shaft very lightly, carefully not to get lubricant on limit switches or other electrical components.
8. Generally inspect the motor mounting, and tighten the fasteners and bracing.
9. Verify that all conduit connections are tight and have no exposed wires.
10. Inspect the electrical enclosure for debris, arcing and moisture. Check for and tighten loose wiring connections.
11. Test motor operation through all control stations.
12. Check limit switch settings.
13. Examine sensing edge for damage and proper operation.
14. Test the operation of the sensing edge.
15. Check motor amperage draw for a full open and close cycle. Compare readings to those listed on the motor nameplate.

* Use a moly based chain lubricant for chain, sprockets and limit shaft lubrication.
## MOTOR OPERATOR TROUBLE SHOOTING GUIDE

<table>
<thead>
<tr>
<th>MOTOR OPERATOR PROBLEM</th>
<th>CAUSE</th>
<th>CORRECTION</th>
</tr>
</thead>
</table>
| A) EMERGENCY HAND CHAIN OR CRANK FAILS OR IS DIFFICULT TO OPERATE DOOR | 1) DOOR MAY BE JAMMED OR OBSTRUCTED.  
2) PROBLEM IN GEARBOX HOUSING. | 1) REMOVE OBSTRUCTION.  
2) CONSULT DEALER. |
| B) EMERGENCY HAND CHAIN OR CRANK TURNS BUT DOES NOT TURN THE OUTPUT SHAFT OF GEAR BOX | 1) KEYS FIXING GEARS TO SHAFTS ARE SHEARED. | 1) CHECK KEYS AND KEYWAYS. |
| C) MOTOR FAILS TO RUN OR CONTROL CIRCUIT FAILS TO ENERGIZE | 1) FUSES BLOWN OR CIRCUIT BREAKER TRIPPED.  
2) OPERATORS ARE PROTECTED FROM RUNNING IN OVERLOAD CONDITION BY THERMAL OVERLOAD DEVICES OF THE AUTOMATIC RESET TYPE.  
3) IF CONTACTS FOR MOTOR CONTROLLER ENERGIZE BUT MOTOR STILL FAILS TO OPERATE.  
4) PUSHBUTTONS ENERGIZED ON ONLY ONE SIDE OF THE CONTROL CONTACTS. | 1) CONSULT DEALER.  
2) CONSULT DEALER.  
3) CONSULT DEALER.  
4) CHECK ALL ELECTRICAL CONNECTIONS FOR BROKEN OR LOOSE WIRES, ETC. |
| D) MOVEMENT OF THE DOOR IS IN AGREEMENT WITH PUSHER BUTTON STATION, BUT THE LIMIT SWITCH DOES NOT STOP DOOR. | 1) ELECTRICAL CONNECTIONS ARE SWITCHED. | 1) CHECK ELECTRICAL CONNECTIONS AND JUMPER WIRE LEAD BETWEEN THE MICRO SWITCHES. CONSULT DISTRIBUTOR. |
| E) ELECTRICAL CONTROL CIRCUIT ENERGIZES BUT PUSHER BUTTON STATION DOES NOT RUN OR MOTOR OVERLOADS TRIP | 1) INCORRECT WIRING. | 1) CONSULT DEALER. |
| F) LOW VOLTAGE TO MOTOR | 1) INCORRECT ELECTRICAL POWER TO MOTOR. | 1) CHECK VOLTAGE AGAINST THE CORRECT VOLTAGE STAMPED ON THE MOTOR. IF THE VOLTAGE IS 10% BELOW THE RATING, THERE IS NOT SUFFICIENT VOLTAGE TO RUN MOTOR. |
| G) MOTOR IS BURNED OUT | 1) INCORRECT WIRING. | 1) CONSULT DEALER. |

**VFD ERROR CODES**

CALL FACTORY TECH SUPPORT @ 1-855-594-4969 WITH JOB# WITH OPERATOR SERIAL# AND VFD ERROR CODE FOR ASSISTANCE