INSTALLATION AND OWNER’S MANUAL

AUJ-S & AUH-S

AU SERIES WITH SOLID STATE CONTROL CIRCUITRY
JACKSHAFT COMMERCIAL VEHICULAR DOOR OPERATORS

READ THIS MANUAL CAREFULLY BEFORE INSTALLATION OR USE
SAVE THESE INSTRUCTIONS!

Serial #:
Date Installed:
Your Dealer:

As of date of manufacture, meets all ANSI/UL 325 Safety Requirements for Vehicular door operators.

USA & Canada
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(760) 438-7000
Toll Free FAX (800) 468-1340
www.linearcorp.com
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**READ THESE STATEMENTS CAREFULLY AND FOLLOW THE INSTRUCTIONS CLOSELY.**

The Warning and Caution boxes throughout this manual are there to protect you and your equipment. Pay close attention to these boxes as you follow the manual.

- **WARNING** Indicates a MECHANICAL hazard of INJURY OR DEATH. Gives instructions to avoid the hazard.
- **CAUTION** Indicates a MECHANICAL hazard of DAMAGE to your operator or equipment. Gives instructions to avoid the hazard.
- **WARNING** Indicates an ELECTRICAL hazard of INJURY OR DEATH. Gives instructions to avoid the hazard.
- **CAUTION** Indicates an ELECTRICAL hazard of DAMAGE to your operator or equipment. Gives instructions to avoid the hazard.
STANDARD FEATURES:

Solid State Controls: The openers employ solid state technology with advanced standard features to provide for a complete commercial door operating system.

Switch Selectable Operating Modes: Six distinct base operation modes can be selected by resetting the switches on the motor control board: a standard Open, Close, Stop (B2, momentary button push); three constant pressure modes (C2, D1, and E2); two Timer to Close modes (T and TS). See page 17 for complete description of the modes.

Switch Selectable Characteristic Modes: Five different operating characteristics can be activated and/or modified through the switches on the motor control board: Delay On Reverse, Close Limit Delay, Mid Stop Travel, Timer to Close, Maximum Run Timer.

Limit Switches: Driven limit switches, easily adjusted over a wide range. The motor may be removed without affecting the limit switch adjustments

Manual Release: Permits manual operation of the door in the event of a power failure. The Model AUH-S is equipped with a chain hoist to aid in manual operation.

Control Circuit: Standard three button open, close and stop. 5 Volts DC.

Connections For Auxiliary Entrapment Protection Devices: For the ultimate in protection, terminals are provided to connect a Linear Corp. Photo-Beam System that consists of an emitter, Part No. 217792 and detector, Part No. 217800. This device when connected is a monitored photo-beam system. Additional connection terminals for a Normally Open and Normally Closed reversing devices such as a reversing door edge or a three wire photo-beam are provided.

OPTIONAL FEATURES:

Digital Radio Controls: Open, Close and Stop operation. Radio units are available to control up to 27 doors from one transmitter

Keyless Entry System: Connection terminals provided for hard wired or wireless keyless entry systems.

Direct Coupling (FS or FC Mount): Must be pre-ordered from the factory. Flange couplers direct connect the operator output shaft and the door shaft. Door shaft speed is 30 RPM unless otherwise specified.
Before starting the installation of the operator, the door must be in good working condition and properly counterbalanced. Inspect the door and track for loose or missing hardware. Test the door manually for balance and ease of operation. Lubricate door hinges and rollers. If necessary, employ a qualified technician to adjust the springs for proper counterbalance of the door.

Stops should be installed at the top end of each track to prevent the possibility of the door rollers moving beyond the ends of the track.

If the cross header shaft is made from hollow tubing rather than solid rod, it is recommended that it be plugged with a short length of solid bar for a more secure installation of the shaft sprocket or flange coupler.

Before removing the operator powerhead from the shipping carton, inspect the nameplate on the cover of the operator control box to verify that it is the correct model for the intended application and that the voltage and phase are in accordance with electrical power provided at the job site. If the operator was ordered with the optional chain hoist, .H. suffix, see that it is so equipped. A chain hoist CANNOT be added in the field.

Warning: Rope off the area to keep personnel and vehicles clear of the door and floor space in the vicinity of the operator during the installation.

**Component Identification**

![Component Diagram](image-url)

**Figure 1**

1. POWER HEAD
2. 3 BUTTON STATION
3. DOOR SHAFT SPROCKET
4. JACKSHAFT SPROCKET
5. HAND/RELEASE CHAIN WALL BRACKET
6. SPROCKET KEYS
7. 5/16-18 X 1 SQUARE HEAD SET SCREWS
8. RELEASE CHAIN
9. HAND CHAIN
10. DRIVE CHAIN
11. 3 PIECE CHAIN CONNECTING LINK
IMPORTANT INSTALLATION INSTRUCTIONS!

WARNING

TO REDUCE THE RISK OF SEVERE INJURY OR DEATH:

READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS!

- Install only on a properly operating and balanced garage 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 the opener.
- 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 garage door before installing the opener.
- Lightweight doors (fiberglass, aluminum etc.) must be reinforced to avoid door damage. Check the door manufacturer's instruction manual for a bracing procedure or the availability of a Reinforcement Kit.
- Model AUJ and AUH are Commercial Vehicular Door Operators and as such ARE NOT recommended for pedestrian traffic. In installations where it is known that pedestrians will be nearby ensure a pedestrian door is available for entrance and exit to the building. In addition YOU MUST install an auxiliary entrapment protection device (reversing door edge or photoelectric beam device).
- Connect an auxiliary entrapment protection device (reversing edge or photoelectric device across the door opening). A device of this type is STRONGLY ADVISED FOR ALL commercial operator installations. An auxiliary entrapment protection device is REQUIRED when the three button control station is out of sight of the door or any other automatic or manual control is used.

- Install the door operator at least 8 feet or more above the floor if the operator has exposed moving parts.
- Do not connect the opener to the source of power until instructed to do so.
- Locate the control station:
  a) within sight of the door,
  b) at a minimum height of five feet above the floor so small children cannot reach it,
  c) away from all moving parts of the door, and
d) far enough away from the door, or positioned such that the user is prevented from coming in contact with the door while operating the controls.
- Do not overtighten the clutch adjustment to compensate for a poorly working door.
- Install the Entrapment Warning Placard next to the control station in a prominent location.
- All warning signs and placards must be installed so they are visible in the area of the door.
- After installing the opener, all safety features must be tested for proper operation (see page 22).
- For products having a manual release, instruct the end user on the operation of the manual release.

### COMPONENT IDENTIFICATION LISTING

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>PART#</th>
<th>DESCRIPTION</th>
<th>QUAN.</th>
<th>ITEM #</th>
<th>PART#</th>
<th>DESCRIPTION</th>
<th>QUAN.</th>
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<tr>
<td>1</td>
<td>005031</td>
<td>Operator Power Head</td>
<td>1</td>
<td>6</td>
<td>100413</td>
<td>1/4&quot; Square Key</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>006119</td>
<td>3 Button Station</td>
<td>1</td>
<td>7</td>
<td>5/16-18 x 1 Square Head Set Screw</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>105323</td>
<td>30 Tooth Sprocket, 1” Bore, 1/4 Key</td>
<td>1</td>
<td>8</td>
<td>Steel #80 Release Chain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>100315</td>
<td>20 Tooth Sprocket, 1” Bore, 1/4 key</td>
<td>1</td>
<td>9</td>
<td>#3 Hand Chain - Precut to 26 Ft.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>105193</td>
<td>Release/Hand Chain Wall Bracket</td>
<td>1</td>
<td>10</td>
<td>Drive Chain to Door Shaft, 4 Ft.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
<td>3 Piece Chain Connecting Link</td>
<td>1</td>
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AR - As Required
Figure 4, page 8 illustrates several positions suitable for mounting the operator; right hand or left hand, either wall mount or ceiling mount and center mount with direct coupling to the torsion shaft. Direct coupling may also be used in a side mount installation. Operators intended for direct coupling require an internal speed modification and must be ordered from the factory.

CHAIN COUPLING MOUNTING

Refer to Figure 2 (at right), Figure 1, page 4 and Figure 5, page 9 for component identification and the operator mounting slot locations. Place the sprockets [3] and [4] on the chosen side of the torsion shaft of the door and on the corresponding end of the output shaft of the operator. The sprockets should be kept as close as possible to the bearings. Fasten the connecting link to each end of the door chain and loop the chain over the sprocket [3] on the torsion shaft. Temporarily suspend the operator in its mounting position using the chain over the sprocket [4] at one end of the jackshaft and a rope or chain at the mid point (to support the operator weight). With the chain tight and straight and the jackshaft parallel with the torsion shaft, trace the mounting slot on the mounting surface then lower the operator to the floor.

IT IS ESSENTIAL THAT THE SURFACE SUPPORTING THE OPERATOR BE RIGID AND SECURE. FAILURE TO PROVIDE A FIRM MOUNTING SURFACE WILL RESULT IN DAMAGE TO THE DOOR TORSION SHAFT AND THE PREMATURE FAILURE OF THE OPERATOR.

If the construction permits, the operator should be mounted with 3/8 inch diameter bolts through the wall. If it is not feasible to go through the wall, then use lag bolts to fasten the operator to the mounting surface. Locate the four holes within the tracings of the slots made in the previous step at the positions which will allow for adjustment of the chain tension. After drilling the mounting holes and installing lag shields, if necessary, bolt the operator to the mounting surface but do not completely tighten the bolts at this time. Check the alignment of the sprockets, adjust their positions on the shafts if necessary and tighten the set screws securely on both sprockets, pulling downward on the operator to remove slack from the chain, tighten the four mounting bolts.

Inspect the installation. There should be no slack in the chain but neither should it be under severe tension which might shorten the life of the bearings. If there is any flexibility in the system due to construction of the surface supporting the operator or noticeable deflection of the door shaft, it is advisable to install a shaft support between the operator jackshaft and the door shaft to prevent the loss of limit settings due to the possibility of the chain jumping over the sprocket teeth. Shaft supports are available from the factory.

BEFORE PROCEEDING WITH THE OPERATOR INSTALLATION AND SETTINGS, MAKE A FINAL CHECK FOR TIGHTNESS OF ALL MOUNTING HARDWARE AND SET SCREWS.

Proceed to “Chain Hoist and Floor Disconnect Installation”.

![Figure 2](image-url)
DIRECT COUPLING MOUNTING

Figure 4, page 8 illustrates several positions suitable for mounting the operator including center mount with direct coupling to the torsion shaft. Direct coupling may also be used in a side mount installation. Operators intended for direct coupling require an internal speed modification and must be ordered from the factory.

Refer to Figure 2, page 6 and Figure 5, page 9 and Figure 6, Page 10 for the location of the operator mounting holes.

IT IS ESSENTIAL THAT THE OUTPUT SHAFT OF THE OPERATOR AND THE DOOR SHAFT BE CAREFULLY ALIGNED. MISALIGNMENT OF THE SHAFTS WILL CAUSE EXCESSIVE STRESS AND WEAR.

Raise the operator to a position which brings the door and operator shafts into alignment and connect them together with the flange coupling supplied with operator. Support the other end of the operator jackshaft from the ceiling with a chain or rope. Holding the operator in a vertical position, carefully measure the distance from the operator mounting plates to the wall. Lower the operator to the floor and construct a secure mounting surface using the dimension measured in the previous step. Again raise the operator to its mounting position and re-connect the shafts. Mark the mounting slots in the support structure, drill and securely bolt the operator into place.

BEFORE PROCEEDING WITH THE OPERATOR INSTALLATION AND SETTINGS, MAKE A FINAL CHECK FOR TIGHTNESS OF ALL MOUNTING HARDWARE.

CHAIN HOIST AND FLOOR DISCONNECT INSTALLATION

If the operator is furnished with a chain hoist (Model AUH-S), pass the hand chain over the chain wheel and through the chain guides on the operator clutch shaft (opposite end from the large pulley). Fasten the ends of the chain together by opening and re-closing one link using two pairs of pliers. If the chain is too long (standard length for 16 foot high doors and below is 26 feet total length of chain), shorten it to the desired length using the method described above and discard the unused portion.

Fasten the chain hoist holding bracket furnished with the operator to the wall approximately four feet from the floor. This bracket is also used to hold in place the release chain for both the chain hoist equipped units (Model AUH-S) and floor disconnect models (Model AUJ-S).
FIGURE 4 - OPERATOR MOUNTING POSITIONS

Left Side Mount

Center Mount

Direct Couple

Right Side Mount

Ceiling Mount

Wall Mount

Figure 4
NOTE: Dimensions for Model AUJ-S are similar to above, Model AUJ-S is not provided with a chain hoist.

Figure 5
NOTE: Dimensions for Model AUH-S are similar to above, Model AUH-S is provided with a chain hoist.

Figure 6
SETTING THE LIMIT SWITCHES

1) With the cover open on the electrical enclosure, reference Figure 7 below. There are two (2) switches (A and B) mounted to the ‘V’ bracket (F). The Close Limit switch (B) and the Open Limit switch (A) are mounted to the top side of the ‘V’ bracket as shown. These switches are activated by the two limit nuts (E & C) on the threaded shaft which move laterally along the shaft as the operator opens and closes the door. When a limit nut nears the end of the shaft it activates a switch.

2) Depress the Limit Nut Retention Plate (D) so it disengages from the slots in the limit nuts and move the Limit nuts to the center of the threaded shaft. Re-engage the Limit Nut Retention Plate (D).

3) Manually raise the door to a fully open position.

4) Depress the limit nut retaining Plate (D) so it disengages from the slots in the limit nuts. Turn the OPEN limit nut (E) on the shaft until it engages the Open Limit Switch (A). You will need to listen for an audible click. Release the retaining plate and be sure that it engages in slots of both limit nuts.

5) Manually lower the door to approx. 4 inches shy of the fully closed position and repeat Step #4 with the Close Limit nut (C) and the Close Limit switch (B).

6) Manually move the door to a half open position. With the door in a mid position there will be time to stop the door if something or someone were in the door path when initially starting the door.

7) An additional limit adjustment may be necessary after the connection of the power supply in order to ensure the door stops at the proper Open and Close positions.

8) If needed, a fine adjustment of the Close Limit switch (B) or Open Limit switch (A) is possible by loosening the screws slightly that hold the switch to the V bracket and moving the switch within its mounting slots. Ensure to retighten the switch mounting screw. Moving the Reverse Cutout switch closer to the center of the box will increase the point where the reversing feature cuts out (to allow for irregularity in the floor, etc.). The reverse cutout point is factory adjusted to approx. 4 inches off the floor.
**WARNING**

TO PREVENT THE RISK OF PERSONAL INJURY OR DEATH:
- DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING.
- ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.
- OBSERVE LOCAL ELECTRICAL CODES WHEN WIRING THE OPERATOR.

**WARNING**

TO PREVENT THE RISK OF PERSONAL INJURY AND/OR DAMAGE TO DOOR OR PROPERTY, ONLY OPERATE DOOR CONTROL WHEN DOOR IS IN CLEAR VIEW. IF CONTROL STATION CANNOT BE LOCATED WHERE THE DOOR IS VISIBLE OR IF ANY OTHER DEVICE IS USED TO CONTROL THE DOOR AN AUXILIARY ENTRAPMENT DEVICE (DOOR EDGE OR PHOTOELECTRIC) MUST BE CONNECTED.

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WARNING: The AUJ-S and AUH-S Series operators have been designed and constructed for use with voltages from 115 Volts AC to 480 Volts AC, in single or three phase. Check the operator nameplate label on the control box cover for the proper voltage and phase. The application of an improper input voltage or phase will result in catastrophic failure to the internal electrical components.

Observe local electrical codes when wiring the operator.

When hard wiring, observe state and local electrical codes. A wiring diagram is attached to the inside of the control box cover. Connect the appropriate voltage and phase power leads to the appropriate terminals as per the wiring diagram and connect a ground wire to the grounding screw. On three phase units, incorrect phasing of the power supply will cause the motor to rotate in the wrong direction (open when CLOSE button is pushed and vice versa). To correct this, interchange any two of the incoming three phase conductors.

The wiring diagram attached inside the cover of the control box details all of the field wiring terminal connections for the operator. Always connect the wires to the push-button controls and auxiliary devices exactly as shown.

Warning: Control voltage of the opener is 5 volts DC, Class 2. Do not run the power leads and control circuit wiring in the same electrical conduit.

Note: AUJ-S and AUH-S Series model operators are pre-wired for entrapment protection devices. To operate in Momentary Contact To Close mode and comply with the UL325 Entrapment Protection requirements effective Aug. 29, 2010, an approved external entrapment device as described on Page 3 must be installed and connected to the operator. Refer to Figure 8 and the manufacturer’s instructions to install and connect one of the approved door edge devices. One or more contact sensors shall be located at the bottom edge of a vertically moving door. Refer to the instructions on Page 13 & 14 for the Linear photoelectric system installation and wiring.

If the external entrapment protection device is connected, the selector switches are set properly (Page 17) and the device detects an obstruction or becomes inactive, an opening door continues to open and a closing door stops, pauses and starts open. While in this mode, if a problem is detected while the operator is stopped, a close will require constant activation of the control Close button. If an entrapment protection device as described above is attached and is properly working for 1 second, it will be auto detected and the monitored function will be turned on. Once the monitoring function is active, it will remain active even if the power is removed and the entrapment protection device is disconnected and power is restored. While in this mode, if a problem is detected while the operator is stopped, a close will require constant activation.

Operators which have an operational entrapment protection device as described above may have one or more additional means of control which should be wired in accordance with the diagram supplied in the opener and also illustrated on Pages 23 & 24. To add a second three button station, refer to Figure 11.

Number 22 gauge wire or heavier must be used for wiring the control stations and auxiliary control devices to the operator. Smaller gauge wire will cause operational problems, especially when multiple push-button stations are used or during summer months.
Install the Safety Beam

**WARNING**

Persons, particularly children, could be killed by a closing garage door without a properly installed and adjusted safety beam optical obstacle sensing system.

- **NOTE:** The safety beam’s infrared light beam must not be obstructed by the door, or by any part of the door hardware. Use wooden spacers between the beam brackets and wall if necessary to create proper clearance.
- 1. Assemble the two safety beam brackets from the four L-shaped brackets using two ¾-20 x ¾” bolts and ¾-20 keps nuts (one nut & bolt for each bracket).

**WARNING**

To protect small children, do not install the safety beam higher or lower than instructed.

- 2. Position the assembled brackets on each side of the door so the center line of the safety beam lenses will be 6’ above the floor. Use the index marks on the brackets to make the bracket assemblies equal lengths. Mark the locations for the bracket mounting screws (the brackets can be wall or floor mounted).
- **NOTE:** The safety beam receiver (the unit with two indicators) should be located on the “shady” side of the door to prevent sunlight from shining directly into the receiver’s lens.
- 3. Drill two 3/16” pilot holes for lag screws at marks. Mount the brackets with two ¾” x 1-1/4” lag screws and tighten with a 7/16” socket (or use proper concrete fasteners if floor mounting).

4. Insert the sender and receiver into the bracket holes so the lenses of the units will face each other. Twist the units until the spring clips lock into a detent mark on the brackets. To protect the units from being bunged after installation, it is recommended to mount the sender and receiver inside the brackets as shown.

5. Install the two safety beam protective covers over the beam units to protect them from damage.

**IMPORTANT:** Be careful to route the safety beam wiring away from any moving parts of the door or operator.

6. For non-prewired installations, route the wires from the sender and receiver, up the wall above the door hardware, then over to the center of the door, then along the top of the rail (or ceiling), and back to the operator head. Cut the wires about 6” longer than needed to reach the operator terminals. Strip back 3/8” of insulation from the ends of the wires.

7. For non-prewired installations, secure all the wires to the wall and ceiling with insulated staples (not supplied). Staples must straddle both wires to prevent shorts.

8. At the operator, twist one wire from each pair together, then twist the other wire from each pair together.

9. See Figure 9 for connecting the photoelectric device to the operator. See Page 17 for proper setting of the selector switches. These switches must be properly set and an approved photoelectric device or approved door edge device connected to the operator to obtain B2 Mode of Operation, Momentary Contact to Close.

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**CAUTION**

**TO AVOID DAMAGE TO DOOR AND OPERATOR ENSURE ALL DOOR LOCKS ARE DISABLED.**

**USE AN INTERLOCK SWITCH IF A LOCK IS REQUIRED TO RETAIN FUNCTIONALITY.**

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Note: See the door edge manufacturer’s installation instructions for the complete installation procedure. See Figure 9 for connecting the edge to the operator. See Page 17 for proper setting of the selector switches. These switches must be properly set and an approved photoelectric device or approved door edge device connected to the operator to obtain B2 Mode of Operation, Momentary Contact to Close.
Note A: Connect only one (1) approved entrapment protection device to terminals “Photo” and “Com”. If additional entrapment protection is desired connect additional photoelectric and door edges devices to “NC REV”, “NO REV” and “COM” terminals as shown here.

Any Miller Edge ME, MT/MU, and CPT family of edges, must be connected to the SM-102 Edge Module, Recognized by UL as per UL325 2010 on 08-29-2010. See Note A to the left.

Door Edge and Photoelectric Wiring

After properly connecting an approved Entrapment Protection Device (see above and Page 3) to the operator, see Page 17 for setting of the selector switches. These switches must be properly set and an approved photoelectric device or approved door edge device connected to the operator to obtain B2 Mode of Operation, Momentary Contact to Close.
NOTE: It is now necessary to turn on the power in order to change the Operating Mode (if applicable), program any changes desired to the operator’s other settings, check for proper performance of all the operator’s features to include the brake (if applicable) and clutch (adjusting settings if necessary); and to set and finalize any adjustments to the limit settings. Before doing so, ensure that all mounting hardware are installed and properly tightened, that all electrical connections are per local code requirements, and that proper wiring practices have been followed. Also, double-check that all ropes have been removed from the door and that the doorway is clear.
READ AND FOLLOW ALL INSTRUCTIONS!

- Understand all of the operating features of your door control system at the time of its installation. Your installing dealer will demonstrate them for you.
- NEVER let children operate or play with door controls. Keep the Remote Control (where provided) away from children.
- Personnel should keep away from a door in motion and keep the moving door in sight until the door is completely closed or opened. NO ONE SHOULD CROSS THE PATH OF A MOVING DOOR.
- TEST THE DOOR OPENER’S SAFETY FEATURES AT LEAST ONCE A MONTH. After adjusting either the force setting or the limit of travel, ALWAYS RETEST the Operator’s safety features. Failure to ADJUST THE OPERATOR PROPERLY may cause SEVERE INJURY OR DEATH.
- DO NOT over adjust the force setting to compensate for a poorly working door.
- If possible, USE THE MANUAL RELEASE only when the door is closed. Use caution when using this release when the door is open. WEAK OR BROKEN SPRINGS MAY ALLOW THE DOOR TO CLOSE RAPIDLY, CAUSING SEVERE INJURY OR DEATH.
- KEEP THE GARAGE DOOR PROPERLY BALANCED. See the door manufacturer’s owner's manual. An improperly balanced door COULD CAUSE SEVERE INJURY OR DEATH. Have a TRAINED DOOR SYSTEMS TECHNICIAN MAKE REPAIRS TO CABLES, SPRING ASSEMBLIES AND OTHER HARDWARE.
- Inspect and maintain your door system as described in this manual.
- SAVE THESE INSTRUCTIONS

WARNING

AVOID ELECTROCUTION: DO NOT ROUTE LOW VOLTAGE WIRES IN SAME CONDUIT AS HIGH VOLTAGE WIRES. FOLLOW ALL LOCAL ELECTRICAL CODES OR THE NATIONAL ELECTRICAL CODE.

WARNING

FAILURE TO TEST REVERSING SYSTEM COULD RESULT IN DEATH OR SERIOUS INJURY. TEST THIS SYSTEM ONCE A MONTH.
SETTING THE SWITCH SELECTABLE OPERATING MODES

Changing the Switch Selectable Operation Modes
The following modes are selected by setting the on-board dip switches, Figure 20 at right shows where the switches are located on the operator control board. For each Operational Mode, the switches are set to either ON or OFF according to the table at right below. For all the modes, if an approved entrapment protection (EP) reversing device as described on page 3 of this manual is attached to the input labeled “Photo”, it will function as noted. Once an approved EP device is recognized by the control board it is monitored for correct operation. If the device becomes inactive then the mode will default to constant pressure activation for close regardless of the dip switch setting. In order for any of the Momentary Contact to Close operation modes (B2, TS, T) to become active an approved Entrapment Protection (EP) Reversing device (see Page 3) must be properly installed and connected to the operator. The switches must be set to one of the six Operational Mode combinations for the operator to function. In order for the NO (Normally Open) Reverse or NC (Normally Close) Reverse inputs to function, you must first install an operational approved Entrapment Protection (EP) Reversing Device.

B2 Operation (Factory Default)
Open Button: Momentary activation; open override of closing door.
Close Button: Momentary activation.
Stop Button: Momentary activation; stops open, close or reverse action.
Single Button: Momentary activation to open; open override of closing door, closes door from mid-stop or open limit.
EP Reverse (Photo Input): Momentary activation will reverse a closing door, reverse to full open (ignores mid-stop) unless stopped by stop pushbutton input.
Mid-Stop: Activation stops an opening door; momentary contact of open button at mid stop will restart door to full open position; if door is moving open, constant pressure on open button will bypass mid-stop.
Auto Close Timer: N/A.

C2 Operation
Open Button: Momentary activation; open override of closing door.
Close Button: Constant activation, door will stop when button is released.
Stop Button: Momentary activation; stops open, close or reverse action.
Single Button: Momentary activation to open; open override of closing door.
EP Reverse (Photo Input): Momentary activation will reverse a closing door, reverse to full open (ignores mid-stop) unless stopped by stop pushbutton input.
Mid-Stop: Activation stops an opening door; momentary contact of open button at mid stop will restart door to full open position; if door is moving open, constant pressure on open button will bypass mid-stop.
Auto Close Timer: N/A.

D1 Operation
Open Button: Constant activation; open override of closing door.
Close Button: Constant activation, door will stop when button is released.
Stop Button: Momentary activation; stops open, close or reverse action (not required).
Single Button: N/A.
EP Reverse (Photo Input): Momentary activation will stop a closing door.
Mid-Stop: Activation stops an opening door; after the door stops at the mid stop, constant contact of open button at mid stop will restart door to full open position.
Auto Close Timer: N/A.

E2 Operation (roll-back)
Open Button: Momentary activation; open override of closing door.
Close Button: Constant activation, door will reverse to full open (ignores mid-stop) when button is released.
Stop Button: Momentary activation; stops open, close or reverse action.
Single Button: N/A.
EP Reverse (Photo Input): Momentary activation to reverse a closing door, reverse to full open (ignores mid-stop) unless stopped by stop pushbutton input.

<table>
<thead>
<tr>
<th>Operating Mode</th>
<th>Switch 1</th>
<th>Switch 2</th>
<th>Switch 3</th>
<th>Switch 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2 Operation</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>C2 Operation</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>D1 Operation</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>E2 Operation</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>TS Operation</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>T Operation</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
</tr>
</tbody>
</table>

Figure 13
Motor Control Board

Switch 1
ON
OFF
OFF
OFF

Switch 2
OFF
ON
OFF
OFF

Switch 3
OFF
OFF
ON
OFF

Switch 4
ON
OFF
ON
OFF

Settable Switches Location

Switch 5
ON
OFF
OFF
OFF

Switch 6
OFF
ON
OFF
OFF

Switch 7
OFF
OFF
ON
OFF

Switch 8
ON
OFF
ON
OFF

Switch 9
ON
OFF
ON
OFF

Switch 10
ON
OFF
ON
OFF

Figure 20
Settable Switches Location

Switch 11
ON
OFF
OFF
OFF

Switch 12
OFF
ON
OFF
OFF

Switch 13
OFF
OFF
ON
OFF

Switch 14
ON
OFF
ON
OFF

Switch 15
ON
OFF
ON
OFF

Switch 16
ON
OFF
ON
OFF

Figure 13
Motor Control Board

Switch 1
ON
OFF
OFF
OFF

Switch 2
OFF
ON
OFF
OFF

Switch 3
OFF
OFF
ON
OFF

Switch 4
ON
OFF
ON
OFF

Switch 5
ON
OFF
OFF
OFF

Switch 6
OFF
ON
OFF
OFF

Switch 7
OFF
OFF
ON
OFF

Switch 8
ON
OFF
ON
OFF

Switch 9
ON
OFF
ON
OFF

Switch 10
ON
OFF
ON
OFF

Figure 13
Motor Control Board
Mid-Stop: Activation stops an opening door; momentary contact of open button at mid stop will restart door to full open position; if door is moving open, constant pressure on open button will bypass mid-stop.
Auto Close Timer: N/A

**TS Operation**
Open Button: Momentary activation; open override of closing door.
Close Button: Momentary activation.
Stop Button: Momentary activation; stops open, close or reverse action.
Single Button: Momentary activation to open; open override of closing door, closes door from mid-stop or open limit.
EP Reverse (Photo Input): Momentary activation will reverse a closing door, reverse to full open (ignores mid-stop) unless stopped by stop pushbutton input.
Mid-Stop: Activation stops an opening door; momentary contact of open button at mid stop will restart door to full open position; if door is moving open, constant pressure on open button will bypass mid-stop.
Auto Close Timer: Closes door from mid-stop or open limit after pre-set time. Stop will deactivate the auto close timer. Open will reactivate the auto close timer or reset the auto close timer when the door is at the mid-stop or open limit. Single button will reset the auto close timer from the mid-stop or open limit. Reverse will reactivate the auto close timer or reset the auto close timer when the door is at the mid-stop or open limit.

**Setup Modes**

Various operating characteristics can be modified via the setup modes. The operator is moved to the close limit position and the on-board dip switches (see Figure 13, page 17) are TEMPORARILY set according to the table at right to enter a Setup Mode. The on board OPEN and STOP buttons are used to modify the characteristic. Once set, the values are stored in non-volatile memory.

These values are set to factory defaults that should be satisfactory for many applications. **ALL VALUES AS DESCRIBED HERE CAN BE RESET TO THE FACTORY DEFAULTS AS FOLLOWS:**
- Remove 24 VAC power from the control board.
- Press and hold the on-board stop button.
- Re-apply 24 VAC while holding the on-board stop button.

After completing the procedure to modify the operating characteristic the switches must be returned to the originally set Operating Mode setting (see section previous).

### Delay on Reverse Setup
To help prevent stress on the door components, this feature allows for a delay time between the door stopping and reversing when a command to reverse is received as the door is closing. The factory default time is 0.75 seconds; the minimum time is 0.4 seconds; the maximum time is 2 seconds.
After moving the door to the close position and temporarily setting the switches to the appropriate settings in the table, pressing STOP will reset the time to the minimum setting.
Every time OPEN is pressed, 200 mS is added to the time (up to the maximum).

### Operation, Dip-Switch Setting
**Open Button**: Momentary activation; open override of closing door.
**Close Button**: Momentary activation; stops open, close or reverse action.
**Stop Button**: Momentary activation; stops open, close or reverse action.
**Single Button**: Momentary activation to open; open override of closing door, closes door from mid-stop or open limit.
**EP Reverse (Photo Input)**: Momentary activation will reverse a closing door, reverse to full open (ignores mid-stop) unless stopped by stop pushbutton input.
**Mid-Stop**: Activation stops an opening door; momentary contact of open button at mid stop will restart door to full open position; if door is moving open, constant pressure on open button will bypass mid-stop.
**Auto Close Timer**: Closes door from mid-stop or open limit after pre-set time. Stop will deactivate the auto close timer. Open will reactivate the auto close timer or reset the auto close timer when the door is at the open limit. Single button will reset the auto close timer from the mid-stop or open limit. Reverse deactivates the auto close timer if the door is closing. Reverse will reset the auto close timer at the mid-stop or open limit if the auto close timer has not been previously deactivated.

<table>
<thead>
<tr>
<th>Setup Mode</th>
<th>Switch 1</th>
<th>Switch 2</th>
<th>Switch 3</th>
<th>Switch 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay on Reverse</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Close Limit Delay</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Mid-Stop Delay</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Auto Close Timer</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Maximum Run Time</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
</tr>
</tbody>
</table>

Changing the dip-switch setting to any other setting will save the new time. Return the dip switches to the originally set Operating Mode setting (see section previous).

**Close Limit Delay Setup**
To provide for irregularities in the floor, this feature allows for the door to continue to travel down after the Reverse Cutout Limit is activated. The factory default time is 0.32 seconds; the minimum time is 0.12 seconds; the maximum time is 0.66 seconds.
After moving the door to the close position and temporarily setting the switches to the appropriate settings in the table, pressing STOP will reset the time to the minimum setting.
Every time OPEN is pressed, 0.02 seconds are added to the time (up to the maximum).
Changing the dip-switch setting to any other setting will save the new time. Return the dip switches to the originally set Operating Mode setting (see section previous).
Mid-Stop Limit Setup
This feature provides a timing function to stop a door as it is traveling open at a Mid Stop position instead of the full open position. The door can then be moved to the full open position if desired by pressing the Open button. A single button input when the door is at the mid stop position will cause the door to begin moving in the close direction. The factory default is not set; the minimum run time to mid-stop limit is 6 seconds. After moving the door to the close position and temporarily setting the switches to the appropriate settings in the table, pressing STOP will remove the mid-stop limit setting. Pressing OPEN will start the door open. When the door reaches the desired mid-stop position, press STOP. Changing the dip-switch setting to any other setting will save the mid-stop limit position. Return the dip switches to the originally set Operating Mode setting (see section previous).

Note: The door must move a sufficient distance to fully disengage the Reverse Cutout Limit nut from the Reverse Cutout Limit switch to set the mid-stop limit.

Auto Close Timer Setup
This feature allows for a modification of the amount of time between the door reaching either the Mid Stop or the Full Open position and automatically starting in the close direction. The Auto Close feature is only active when the operator is set to the T or TS Operating Mode (see section previous). The factory default is 30 seconds; the minimum time is 5 seconds; the maximum time is 5 minutes. After moving the door to the close position and temporarily setting the switches to the appropriate settings in the table, pressing STOP will clear and turn off the auto close timer. Every time OPEN is pressed, 5 seconds is added to the time. Changing the dip-switch settings to any other settings will save the new time. Return the dip switches to the originally set Operating Mode setting (see section previous).

Maximum Run Time Setup
This feature provides for a maximum amount of time the motor will be energized after an input is recognized. The factory default time is 30 seconds; the maximum time is 60 seconds. After moving the door to the close position and temporarily setting the switches to the appropriate settings in the table, pressing STOP will reset the time to the factory default setting. Pressing OPEN will start the door open. The run time will be recorded when the door reaches the open limit. To prevent nuisance problems, 0.75 seconds are added to this time. Pressing stop before the door reaches the open limit will stop the door and reset the time to the factory default. Changing the dip-switch setting to any other setting will save the new time. Return the dip switches to the originally set Operating Mode setting (see section previous).

BRAKE ADJUSTMENT

After moving the door to the close position and temporarily setting the switches to the appropriate settings in the table, pressing STOP will clear and turn off the auto close timer. Every time OPEN is pressed, 5 seconds is added to the time. Changing the dip-switch settings to any other settings will save the new time. Return the dip switches to the originally set Operating Mode setting (see section previous).

The solenoid operated brake may require occasional adjustment. Adjustment is necessary if door tends to drift downward after reaching the open limit. Follow the instructions below and use Figure 14 as a guide.
1. Loosen shoe adjusting screw and bottom bracket arm of solenoid.
2. Move tab until drum has a slight drag.
3. Reverse drag slightly from tab and tighten shoe adjustment screw.

(1) Loosen shoe adjusting screw and bottom bracket arm of solenoid.
(2) Move tab until drum has a slight drag.
(3) Reverse drag slightly from tab and tighten shoe adjustment screw.
The clutch serves to protect the door, the electric operator and other equipment from undue stress or damage caused by starting forces and/or an obstruction to the door. It should be set no tighter than is necessary to smoothly and consistently move the door throughout its full range of travel. When properly set, it will slip freely if the door should encounter an obstruction, and it should be possible to stop the travel of the door by hand.

WARNING: Before adjustment remove power to the operator.

To adjust the clutch, loosen the jamb nut, and turn the adjusting nut, as shown at right. Make adjustments in 1/4 turn increments. Always re-tighten the jamb nut before running the operator to prevent clutch from changing its setting.

CAUTION
NEVER COMPRESS CLUTCH SPRING BEYOND POINT LIMITED BY THE DESIGN OF THE OPERATOR OR REPLACE IT WITH A HEAVIER SPRING

Due to changing conditions of the door and normal wear, it may be necessary to occasionally readjust the clutch to obtain dependable operation.

WARNING: BEFORE DOING SO BE CERTAIN THAT THE DOOR IS IN GOOD WORKING CONDITION, PROPERLY COUNTERBALANCED AND THAT THE CLUTCH IS NOT SLIPPING BECAUSE OF LOOSE OR MISSING HARDWARE, BINDING IN THE TRACK.

The clutch pad will wear during normal operation and should be replaced when it becomes difficult or impossible to sufficiently tighten the clutch to obtain smooth operation of the door when it is in good working condition. To replace the clutch pad, first loosen the motor mounting bolts and remove the V-belt then the clutch adjusting nuts, spring and clutch pulley. Check condition of V-belt before reassembly and replace if required. After reassembly, adjust clutch as described above.

WARNING
RUBBING AGAINST THE DOOR STOPS OR DEFECTIVE OR MISADJUSTED SPRINGS. ANY SERVICE REQUIRED TO THE DOOR, DOOR SPRINGS OR DOOR OPERATOR MUST BE PERFORMED BY A QUALIFIED PROFESSIONAL DOOR INSTALLER.

The clutch serves to protect the door, the electric operator and other equipment from undue stress or damage caused by starting forces and/or an obstruction to the door. It should be set no tighter than is necessary to smoothly and consistently move the door throughout its full range of travel. When properly set, it will slip freely if the door should encounter an obstruction, and it should be possible to stop the travel of the door by hand.

WARNING: Before adjustment remove power to the operator.

To adjust the clutch, loosen the jamb nut, and turn the adjusting nut, as shown at right. Make adjustments in 1/4 turn increments. Always re-tighten the jamb nut before running the operator to prevent clutch from changing its setting.

CAUTION
NEVER COMPRESS CLUTCH SPRING BEYOND POINT LIMITED BY THE DESIGN OF THE OPERATOR OR REPLACE IT WITH A HEAVIER SPRING

Due to changing conditions of the door and normal wear, it may be necessary to occasionally readjust the clutch to obtain dependable operation.

WARNING: BEFORE DOING SO BE CERTAIN THAT THE DOOR IS IN GOOD WORKING CONDITION, PROPERLY COUNTERBALANCED AND THAT THE CLUTCH IS NOT SLIPPING BECAUSE OF LOOSE OR MISSING HARDWARE, BINDING IN THE TRACK.
Aligning the Infrared Safety Beam

The safety beam has two components, a sender and a receiver. The sender produces a narrow infrared beam that travels across the bottom of the door opening to the infrared receiver. If an object blocks the infrared beam while the door is closing, the door will stop, then reverse and fully open.

As a safety feature, the operator will inhibit close commands if the door is open and the infrared safety beam is blocked or out of alignment. In this case, the door can be forced closed by pressing and holding the wall station’s CLOSE pushbutton (be sure the door area is in clear view).

⚠️ WARNING ⚠️
STAY CLEAR OF THE DOOR DURING THESE TESTS!

Safety Beam Test

1. Check that the operator has power. The green lights on the sender and receiver should be lit.

2. If the receiver’s green light is on, but the red light is off, the receiver has power but is not detecting the infrared beam from the sender. The red light might flash when the beam is partially detected. This can be caused by mis-alignment or something blocking the beam. Adjust the safety beam sender and receiver while watching the receiver’s red light (stay out of the beam while aligning it). When the red light stays on, the beam is aligned.

<table>
<thead>
<tr>
<th>SAFETY BEAM INDICATOR TABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREEN ON</td>
</tr>
<tr>
<td>GREEN OFF</td>
</tr>
<tr>
<td>RED ON</td>
</tr>
<tr>
<td>RED OFF</td>
</tr>
<tr>
<td>RED FLASHING</td>
</tr>
</tbody>
</table>

> NOTE: If the receiver’s red light remains off, check for: 1) Dirt on the receiver’s lens, 2) Sunlight shining into the receiver’s lens, 3) A short in the safety beam wiring (from staples or at the operator terminals).

3. If the door is closed, press the wall station’s OPEN button to fully open the door.

4. Push the wall station’s CLOSE button. While the door is moving to the close position, CAREFULLY block the safety beam. THE DOOR MUST STOP, THEN REVERSE TO THE OPEN POSITION.

5. Place an object in the path of the safety beam. Check that constant pressure is required on the wall station’s CLOSE button to cause the door to move toward the close position. Release the pushbutton before the operator stops; check that the door returns to the up position.
Following installation, the operator MUST be tested and respond correctly to all controls as specified on the wiring diagram. KEEP personnel and equipment clear of the area beneath the door when performing the tests. When testing the 3-button wall station, first observe that each button operates the door in the direction indicated and that the STOP button performs that function. With the door stopped at its full open position, the OPEN button should be inoperative. This should be verified and, likewise, the CLOSE button should be inoperative with the door fully closed.

Certain operator control circuits use only a single button or a two button control station and may be designed to function differently than the more common three-button circuit described above. Test the controls in accordance with the description of operation as indicated on the wiring diagram and as selected on pages 17, 18, and 19, OPERATING and SET-UP MODES.

Observe the door when traveling in each direction for smoothness of operation. Test the setting of the clutch by restraining the door by hand. The clutch should slip. Re-check the limit settings. The door should close tightly at the floor without excessive impact. Likewise, it should fully clear the door opening without the carrier striking the stops on the rail.

The AUJ-S and AUH-S series operators are equipped with a reversing circuit and to allow for Momentary Close Contact operation an approved entrapment protection device as described on Page 3 needs to be properly installed and connected to the operator. To test it for proper reversal, place an object beneath the leading edge of the door. The door should instantly reverse when it comes into contact with the object provided the height of the object exceeds the cut out point built into the close limit switch (approximately four inches).

Normally, very little maintenance is required. A monthly visual inspection must be made for loose or missing hardware and for excessive slack in the V-Belt and jackshaft chain. The clutch must be tested periodically and adjustments made if necessary (see page 20). The brake is adjusted at the factory and will need periodic adjustment for wear. When adjustment becomes necessary see Figure 14 on page 19 for the adjustment procedure.

Test the reversing edge circuit at least once a month by permitting the door to contact an obstruction while closing.
TO REVERSE MOTOR, SWITCH LEADS 1 & 3

ANY TWO INCOMING LEADS.

TO REVERSE MOTOR DIRECTION, SWITCH ANY TWO INCOMING LEADS.
TO REVERSE MOTOR, SWITCH LEADS L1 & L2

BLUE (AU)  BLACK
P3  C8  ORANGE
BL/BLK  YELLOW
3  4
60 VOLTS, 3 PHASE
R12

GROUND
INCOMING LEADS TO TERMINALS 5 AND 8.

TO REVERSE MOTOR DIRECTION, SWITCH MOTOR WIRING CHART
SINGLE VOLTAGE - 115 VAC, 1P MOTOR
BRAKE +
INCOMING LEADS TO TERMINALS 5 AND 8.

TO REVERSE MOTOR DIRECTION, SWITCH ANY TWO INCOMING LEADS.

YELLOW  BLUE (T,J,H)
TO REVERSE MOTOR, SWITCH LEADS 1 & 3
RED (T,J,H)
YELLOW
BLUE (T,J,H)
208/230 VOLTS, 3 PHASE
R12

DUAL VOLTAGE MOTOR - 115V  1P
RED (AU)
WHITE
4  8
BALDOR
YELLOW
5 1 2 3
BRAKE
BL/BLK
BL/BLK

DUAL VOLTAGE MOTOR - 230V  1P
RED (AU)
BLUE (T,J,H)
WHITE
4  8
BALDOR
YELLOW
5 1 2 3
BRAKE
BL/BLK
BL/BLK

24 VAC TRANSFORMER

OVERLOAD DEVICE

GROUND

SINGLE BUTTON
EXTERNAL INTERLOCK

2-WIRE EDGE

OPERATING MODES

SWITCH SETTINGS

NOTE A:
Connect only one (1) approved entrapment protection device (see Page 3) to Terminals “COM” and “PHOTO” - additional devices may be connected to Terminals “NC Rev”, “NO REV” and “COM”.

MOTOR WIRING CHART

CDD OPERATORS WITH CDD-MCB MOTOR CONTROL SYSTEM

BALDOR
DUAL VOLTAGE MOTOR - 115V 1P
TO REVERSE MOTOR DIRECTION, SWITCH INCOMING LEADS TO TERMINALS 5 AND 8. 24 VAC

BALDOR
DUAL VOLTAGE MOTOR - 230V 1P
TO REVERSE MOTOR DIRECTION, SWITCH INCOMING LEADS TO TERMINALS 5 AND 8.

A.O. SMITH
SINGLE VOLTAGE - 115 VAC, 1P MOTOR
TO REVERSE MOTOR, SWITCH LEADS 1 & 3

A.O. SMITH - DUAL VOLTAGE MOTOR WIRED FOR 115 VAC, 1P
WIRE CONNECTION SHOWN FOR 208 & 230V - FOR 460V SEE MOTOR DIAG.
ON INSIDE OF CONT. BOX COVER

A.O. SMITH - DUAL VOLTAGE MOTOR WIRED FOR 208/230 VAC, 1P
Wire Nut Connection
TO REVERSE MOTOR, SWITCH LEADS 3/4 & 2/1

208/230 VOLTS, 3 PHASE
DUAL VOLTAGE MOTOR

460 VOLTS, 3 PHASE
DUAL VOLTAGE MOTOR

575 VOLTS, 3 PHASE
SINGLE VOLTAGE MOTOR

TO REVERSE MOTOR DIRECTION, SWITCH ANY TWO INCOMING LEADS.

TO REVERSE MOTOR DIRECTION, SWITCH ANY TWO INCOMING LEADS.

TO REVERSE MOTOR DIRECTION, SWITCH ANY TWO INCOMING LEADS.

THREE PHASE MOTOR
208/230/460 VAC

OVERLOAD DEVICE

CLOSE LIMIT
OPEN LIMIT

COM
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# PARTS IDENTIFICATION

## Assemblies

<table>
<thead>
<tr>
<th>Ref</th>
<th>Part#</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>109351</td>
<td>Frame Assembly w/Shafts, AUJ</td>
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<tr>
<td></td>
<td>109358</td>
<td>Frame Assembly w/Shafts, AUH</td>
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<tr>
<td>C</td>
<td>110076</td>
<td>Clutch Shaft Assembly, AUJ</td>
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<tr>
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<td>110077</td>
<td>Clutch Shaft Assembly w/Hoist, AUH</td>
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<tr>
<td>E</td>
<td>109848</td>
<td>Secondary Shaft Assembly, AUJ / H (1/3 HP)</td>
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<td>109274</td>
<td>Secondary Shaft Assembly, AUJ / H (1/2 &amp; 3/4 HP)</td>
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<td>G</td>
<td>109273</td>
<td>Brake Assembly, AUJ / H, 115 VAC</td>
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<td>109274</td>
<td>Brake Assembly, AUJ / H, 230 / 460 VAC</td>
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<tr>
<td>I</td>
<td>CALL</td>
<td>Control Box Assembly</td>
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## Motors

<table>
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<th>Part#</th>
<th>Description</th>
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<tbody>
<tr>
<td>K</td>
<td>100465</td>
<td>Motor, 1/3 HP, 48 ODP, 115 VAC, 1 PH</td>
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<tr>
<td></td>
<td>100466</td>
<td>Motor, 1/2 HP, 48 ODP, 115 VAC, 1 PH</td>
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<td>005156</td>
<td>Motor, 1/3 HP, 56 ODP, 115/230 VAC, 1 PH</td>
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<td>005026</td>
<td>Motor, 1/2 HP, 56 ODP, 115/230 VAC, 1 PH</td>
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<tr>
<td></td>
<td>005027</td>
<td>Motor, 3/4 HP, 56 ODP, 115/230 VAC, 1 PH</td>
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## Parts

<table>
<thead>
<tr>
<th>Ref</th>
<th>Part#</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>009020</td>
<td>Shaft Collar, 3/4&quot;</td>
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<tr>
<td>2</td>
<td>008071</td>
<td>Flange Bearing, 3/4&quot;</td>
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<tr>
<td>3</td>
<td>106810</td>
<td>Pillow Block Bearing, 1&quot;</td>
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<tr>
<td>4</td>
<td>105549</td>
<td>Snap Ring, 3/4&quot;</td>
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<td>5</td>
<td>100315</td>
<td>Hand Chain, AUH</td>
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<td>6</td>
<td>106814</td>
<td>Sprocket, 65B10, 3/4&quot; Bore, AUJ / H</td>
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<td>7</td>
<td>106815</td>
<td>Sprocket, 65B27, 3/4&quot; Bore, AUJ / H</td>
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<tr>
<td>8</td>
<td>100210</td>
<td>Sprocket, 65B10, 3/4&quot; Bore, AUJ Disconnect</td>
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<td>9</td>
<td>009070</td>
<td>Sprocket, 65B30, 1&quot; Bore, AUJ / H (1/3 HP)</td>
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<tr>
<td>10</td>
<td>100134</td>
<td>Sprocket, 41B10, 3/4&quot; Bore, AUJ / H (1/2 &amp; 3/4 HP)</td>
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<td>009062</td>
<td>Sprocket, 41B30, 1&quot; Bore, AUJ / H (1/2 &amp; 3/4 HP)</td>
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<td>009061</td>
<td>Drive Sprocket, 41B20, 1&quot; Bore, AUJ / H (1/3 HP)</td>
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<td>13</td>
<td>009062</td>
<td>Drive Sprocket, 41B30, 1&quot; Bore, AUJ/H (1/3 HP)</td>
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<td>009057</td>
<td>Drive Sprocket, 40B20, 1&quot; Bore, AUJ/H (1/2 &amp; 3/4 HP)</td>
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<td>15</td>
<td>009136</td>
<td>Drive Sprocket, 40B30, 1&quot; Bore, AUJ/H (1/2 &amp; 3/4 HP)</td>
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<td>16</td>
<td>107144</td>
<td>Limit Chain, #65, 17&quot; with Master Link</td>
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<td>17</td>
<td>009246</td>
<td>Secondary Chain, #40, 18&quot;, AUJ</td>
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<td>18</td>
<td>009244</td>
<td>Secondary Chain, #41, 18&quot;, AUH</td>
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<td>19</td>
<td>009249</td>
<td>Primary Chain, #65, 24&quot;, AUJ / H (1/3 HP)</td>
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<td>20</td>
<td>009242</td>
<td>Primary Chain, #41, 24&quot;, AUJ / H (1/2 &amp; 3/4 HP)</td>
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<td>21</td>
<td>009239</td>
<td>Drive Chain, #41, 4&quot;, AUJ / H, (1/3 HP)</td>
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<tr>
<td>22</td>
<td>009240</td>
<td>Drive Chain, #40, 4&quot;, AUJ / H, (1/2 &amp; 3/4 HP)</td>
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<td>23</td>
<td>105385</td>
<td>Brake Solenoid, 115 VAC</td>
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<td>24</td>
<td>105386</td>
<td>Brake Solenoid, 230 VAC (also used on 460 VAC units)</td>
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<td>25</td>
<td>110042</td>
<td>Brake Shoe</td>
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<td>26</td>
<td>106806</td>
<td>Brake Drum w/4L Pulley, 5/8&quot; Bore</td>
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**Ref**

**Part#**

**Description**
### SPECIFICATIONS

**MODEL:** AUJ____S  **HP:**

**VOLTS:**  **PHASE:**

* UL AND CANADIAN UL LISTED
* HIGH STARTING TORQUE, CONTINUOUS DUTY MOTOR
* MOTOR OVERLOAD PROTECTION
* CLASS 2 (24 VOLT) CONTROL CIRCUIT
* SOLENOID BRAKE
* SOLID STATE MOTOR CONTROL CIRCUITRY WITH ADVANCED OPERATIONAL FEATURES STANDARD
* THREE BUTTON CONTROL: OPEN, CLOSE, STOP
* WIRED TO ACCEPT REVERSING EDGE INPUT
* HEAVY GAUGE, POWDER-COATED STEEL FRAME RAILS AND CONTROL BOX
* ALL SPROCKETS AND PULLEYS PINNED OR KEYED, SOLID STEEL DRIVE SHAFTS
* FULLY ADJUSTABLE FRICTION CLUTCH
* HEAVY DUTY PILLOW BLOCK BEARINGS ON OUTPUT SHAFT
* FLOOR LEVEL DISCONNECT
* FULLY ADJUSTABLE, INTERNAL, SHAFT DRIVEN LIMITS

### SPECIFICATIONS

**MODEL:** AUH____S  **HP:**

**VOLTS:**  **PHASE:**

* UL AND CANADIAN UL LISTED
* HIGH STARTING TORQUE, CONTINUOUS DUTY MOTOR
* MOTOR OVERLOAD PROTECTION
* CLASS 2 (24 VOLT) CONTROL CIRCUIT
* SOLENOID BRAKE
* SOLID STATE MOTOR CONTROL CIRCUITRY WITH ADVANCED OPERATIONAL FEATURES STANDARD
* THREE BUTTON CONTROL: OPEN, CLOSE, STOP
* WIRED TO ACCEPT REVERSING EDGE INPUT
* HEAVY GAUGE, POWDER-COATED STEEL FRAME RAILS AND CONTROL BOX
* ALL SPROCKETS AND PULLEYS PINNED OR KEYED, SOLID STEEL DRIVE SHAFTS
* FULLY ADJUSTABLE FRICTION CLUTCH
* HEAVY DUTY PILLOW BLOCK BEARINGS ON OUTPUT SHAFT
* INTEGRAL MANUAL CHAIN HOIST WITH FLOOR LEVEL ENGAGEMENT AND DISCONNECT.
* FULLY ADJUSTABLE, INTERNAL, SHAFT DRIVEN LIMITS

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All products returned for warranty service require a Return Product Authorization Number (RPA#). Contact Linear Technical Services at 1-800-421-1587 for an RPA# and other important details.