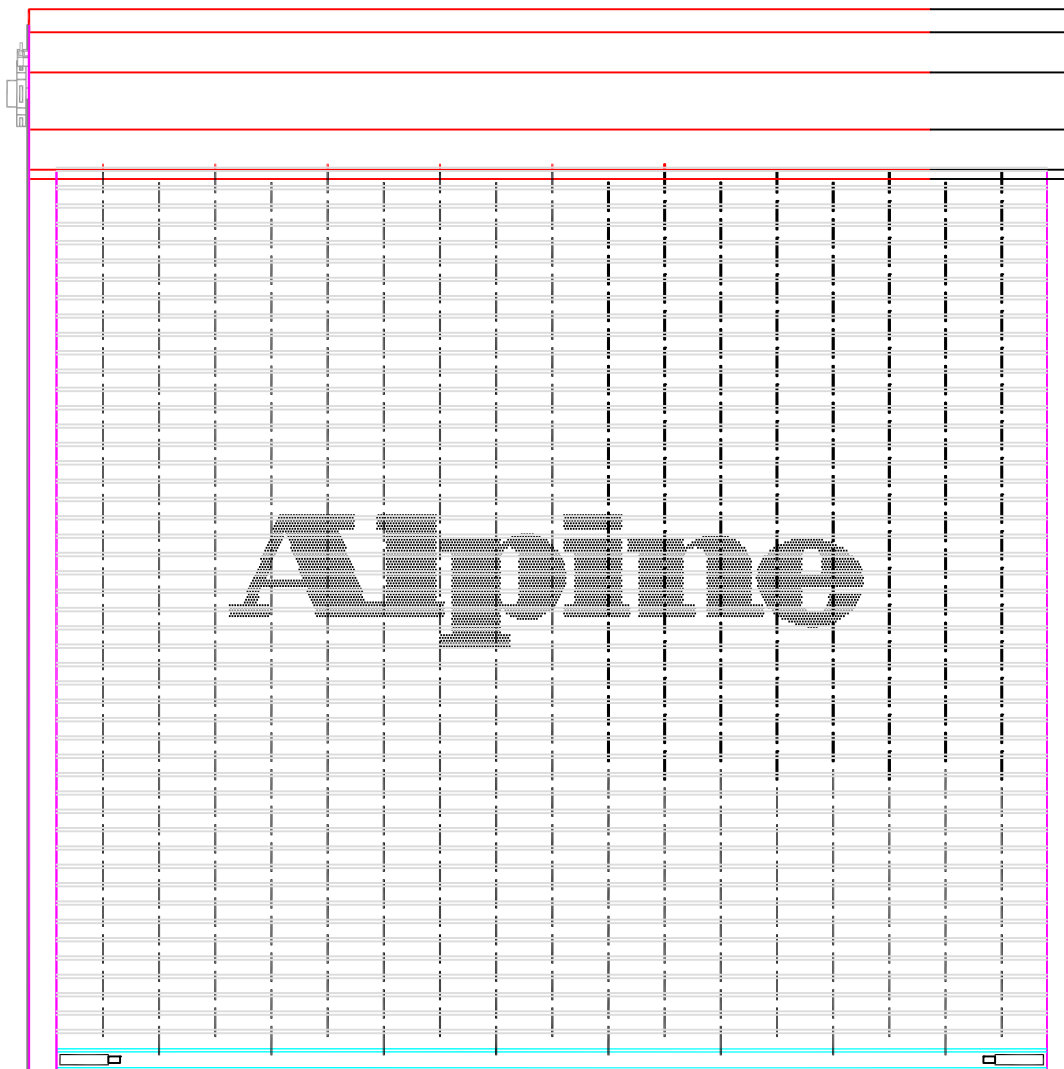




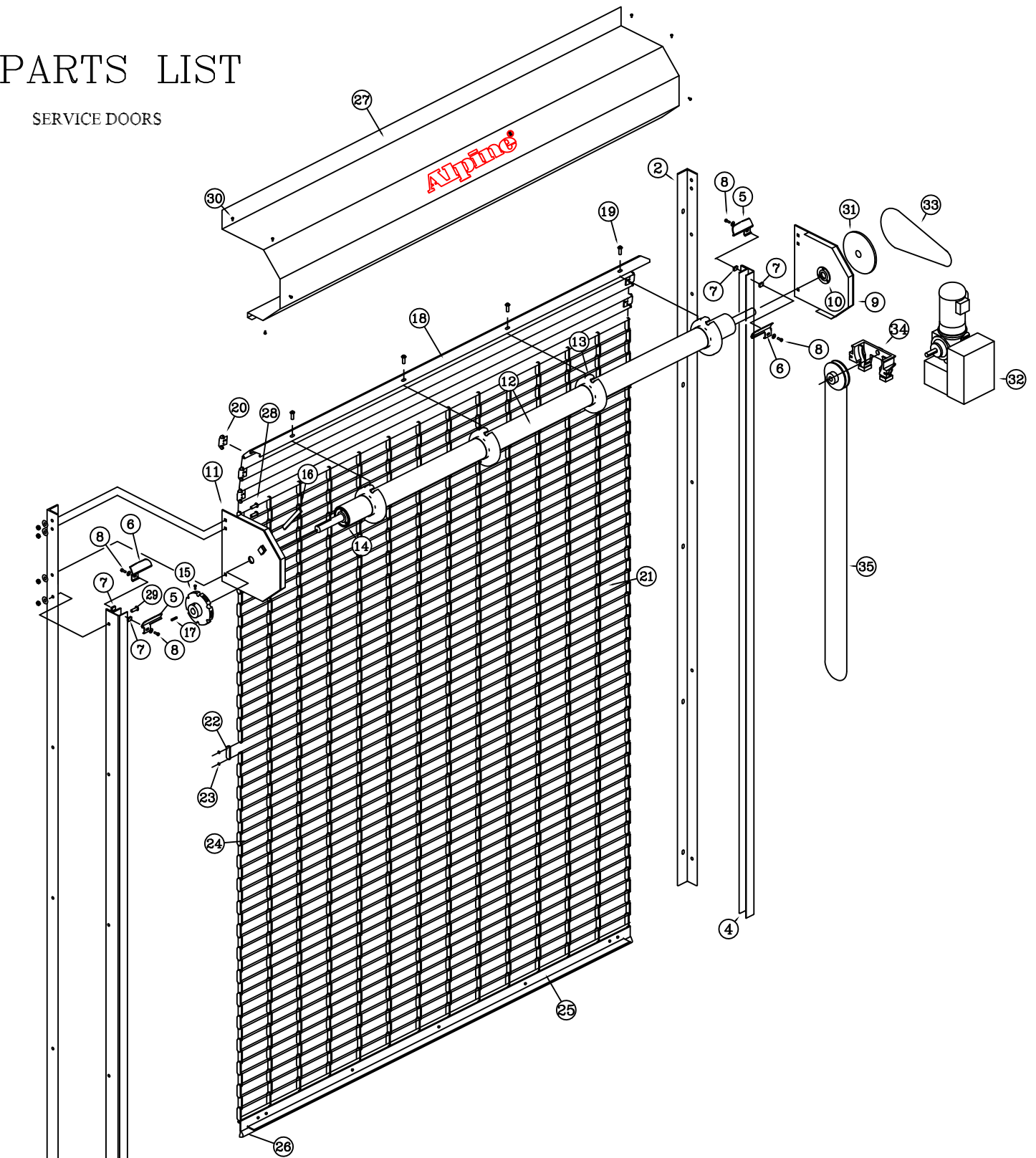
INSTALLATION GUIDE FOR GRILLE DOORS



8 HULSE ROAD, EAST SETAUKET, NY 11733
TEL (631) 473-9300 FAX (631) 642-0800

PARTS LIST

SERVICE DOORS



PART#

DESCRIPTION

- | | | | |
|-----|--|-----|---|
| 1. | LEFT HAND MOUNTING ANGLE | 19. | STARTER SCREW |
| 2. | RIGHT HAND MOUNTING ANGLE | 20. | ENDLOCK (FOR TOP SLATS) |
| 3. | LEFT HAND GUIDE | 21. | DOOR CURTAIN |
| 4. | RIGHT HAND GUIDE | 22. | VERTICAL LINK |
| 5. | LEFT SIDE BELLMOUNT | 23. | PUSH NUT |
| 6. | RIGHT SIDE BELLMOUNT | 24. | 5/16" HORIZONTAL, GALVANIZED ROD |
| 7. | 1 1/2" x 1 1/4" x 5/16" THREADED TAB | 25. | BOTTOM BAR |
| 8. | 3/8" x 1/2" HEX HEAD BOLT w/ WASHER | 26. | SENSING EDGE (OPTIONAL, FOR USE WITH MOTOR DOORS) |
| 9. | DRIVE SIDE BRACKET PLATE (MIN. 3/16" THK) | 27. | HOOD |
| 10. | DRIVE PLATE BEARING | 28. | BRACKET BOLT w/ WASHER & NUT |
| 11. | CHARGE WHEEL SIDE BRACKET PLATE (MIN. 3/16" THK) | 29. | GUIDE BOLT w/ WASHER & NUT |
| 12. | COUNTERBALANCE BARREL | 30. | HOOD SCREW |
| 13. | COLLAR (FOR 4" BARREL ONLY) | 31. | DRIVE GEAR OR SPROCKET (NOT INCL'D w/ PUSH-UP DOORS) |
| 14. | PIPE BEARING | 32. | MOTOR OPERATOR (OPTIONAL, FOR MOTOR DOORS) |
| 15. | CHARGE WHEEL w/ KEYWAY & SETSCREW | 33. | ROLLER CHAIN (OPTIONAL, FOR USE WITH MOTOR DOORS) |
| 16. | CHARGE WHEEL TENSION RETAINER BAR | 34. | CHAIN GUIDE (OPTIONAL, FOR USE WITH CHAIN DOORS) |
| 17. | KEYWAY STOCK | 35. | HAND CHAIN & POCKET WHEEL (OPTIONAL, FOR CHAIN DOORS) |
| 18. | STARTER SLAT | | |

ROLLING STEEL DOORS INSTALLATION INSTRUCTIONS

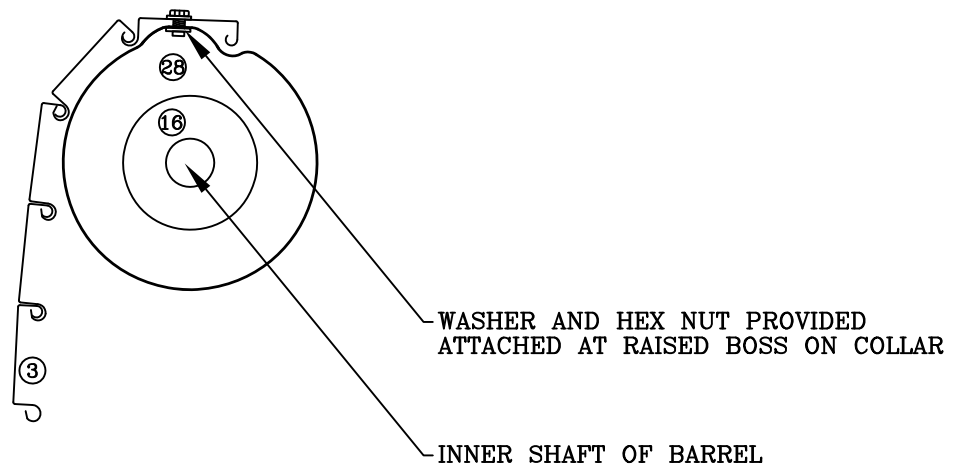
NOTE: Prior to installation, read all instructions. Open all crates to insure that all parts supplied are the parts listed for the type of door being installed.

- FIRST:** Check opening width and height dimensions for agreement with those shown on the shop drawings. They should be the same. With guides on floor, run 5/16" diameter self-tapping screws into bellmouth mounting pads at top of guide assembly (four pieces.). This will aid in bellmouth installation later
- SECOND:** Find the best level working line such as the lintel. Check the shop drawings for any set back of the guides from face of opening, then set in place the ① left hand wall mount angle. Set the ② right hand wall mount angle equal distances at the top and bottom and level with the left hand angle as shown on shop drawings. Mark all holes using the upper section of the slot hole (this will allow for any leveling adjustments if required). Center punch marks and drill and tap (if fastening to steel) or drill for expansion shields (if fastening to masonry).
- THIRD:** Locate a good hoisting point above the center of the opening and set in place a chain block (if no other hoisting equipment is available). On larger doors it is advisable to use two chain blocks.
- FOURTH:** Place the ⑬ counterbalance barrel at the base of the guides. Check the markings on the shaft. The adjusting end will always be marked LH or RH Adjust. Left and right hand is always relative to the side of the opening on which you are installing the door. Place shaft according to these marks.
- FIFTH:** Hoist shaft two or three feet from the floor. 4" barrels will use ⑳ collars. Larger diameter barrels will use direct curtain attachment only. Next, place the ⑤ Charge wheel side bracket plate on the charge wheel end of the shaft. The ⑫ charge wheel tension retainer bar is packaged with the hardware. Install the ⑪ charge wheel on the inner shaft with tension retainer bar at this time.

NOTE: On smaller "between jamb" push up doors, the tension retainer bar will have a lug with a hole. The shaft will have an "inside" charge wheel already pinned into shaft.

CURTAIN TO COLLAR INSTALLATION

Fasten ③ curtain assembly to ring by positioning the fastening section over the raised boss on collar and line up holes. Insert screw with flat washer into tapped hole and tighten securely.



SIXTH: Assemble ④ drive side bracket plate on opposite end of shaft. Chain and crank operators are factory mounted on brackets. It will be necessary to place ③0 drive gear (or sprocket) on shaft as you are assembling the bracket and connect the roller chain drive.

SEVENTH: Hoist the shaft and brackets, then fasten the brackets to the inside of the wall angle at top with machine bolts (supplied). Larger doors use machine bolts at top and flat head bolts in the counter sunk holes at bottom. Tighten bolts and check for level of shaft. Adjustment can be made by loosening wall mount angle fastening bolts on wall and moving entire assembly. On chain or crank operated doors, make final location adjustment of drive gear and roller chain at this time.

NOTE: Extra care should be used in this step, especially with insulated curtains to protect the finish.

EIGHTH: Position the rolled up curtain, with wrapping on two pieces of 2x4 blocks at base of guides. Be sure the end of the roll is on top and the curtain is coiled in the proper direction. Cut banding from curtain without removing wrapping, just allow wrapping to flap back. Drill or punch hole in center of the fourth slat down, leaving the top three slats and fastening sections free. Insert a machine eye (unfinished) using flat washers on either side of slat. Eye should be large enough to accept hook of the chain block. On doors over 10 ft. wide use two eyes approximately 4 ft on centers to distribute the weight.

NOTE: The chain from above should be behind the shaft on the wall side. Couple hook to eye and raise curtain with chain hoist while keeping roll of curtain on cardboard wrapping as it unrolls.

NINTH: When the top four slats are near the shaft and equal distance from the brackets, attach fastening sections to collars with nuts and washers provided on either side of fastening section. (see notes provided for attaching the curtain to collar).

TENTH: Verify the number of turns to be applied to the shaft with the curtain in the fully closed position. This information is written on the charge wheel end of pipe. Begin applying torque to the barrel by inserting a proper bar (flat or round) approximately 2 feet long into the top most hole of the charge wheel. Pull bar down and away from the wall (rotate charge wheel in the curtain coiling direction) and insert the tension retainer bar through the bracket clip angle and into the top hole in the charge wheel to hold the tension applied to the barrel. Put bolt through hole in bracket clip to secure tension retainer bar.

NOTE: Be sure to wind the charge wheel in the correct direction. Apply torque in the same direction that the curtain coils. In order to apply the full amount of spring charge required, it may be necessary to alternately raise the curtain with the hand chain operator and apply turns with the charge wheel. After full spring charge has been applied, raise curtain carefully to the point where the bottom bar and curtain can be positioned in the guides. Lower the curtain (this time, inside the guides) several inches below the top of the guide.



CAUTION: THE CURTAIN AT THIS POINT HAS THE ABILITY TO LIFT AND SPIN AROUND ON THE SHAFT, THUS LOSING THE TORQUE JUST APPLIED. THEREFORE, SOME PRECAUTION IN SECURING THE CURTAIN IN THE GUIDES SHOULD BE TAKEN BEFORE INSTALLING THE STOPPERS. INSTALL REMOVABLE BELLMOUTHS ON GUIDE ASSEMBLIES WITH SELF-TAPPING SCREWS SUPPLIED. RE-ALIGN DRIVE GEAR IF NECESSARY AND TIGHTEN SET SCREWS AT THIS TIME.

ELEVENTH: Check curtain for ease of operation. Spring tension adjustment if needed, should be added or released, as required, with the curtain fully raised.



CAUTION: INSERT PROPER BAR (FLAT OR ROUND) INTO CHARGE WHEEL. RELIEVE TENSION ON TENSION RETAINER BAR AND REMOVE. TURN WHEEL ONE NOTCH AT A TIME REPLACING THE TENSION RETAINER BAR AT EACH INTERVAL. TO INCREASE TENSION ROTATE CHARGE WHEEL IN DIRECTION OF RAISING OF CURTAIN. TO DECREASE, ROTATE CHARGE WHEEL UNDER ITS OWN POWER IN DIRECTION OF LOWERING CURTAIN.

TWELFTH: Check curtain for ease of operation. Spring tension adjustment if needed, should be added or released, as required, with the curtain fully raised.



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ROLLING STEEL DOORS SERVICE AND WEATHERED

MOTOR OPERATED DOORS ARE OPERATING CORRECTLY WHEN:

- Door runs to full open position and shuts off without slamming against upper guide stops.
- Door runs to full closed position and stops without buckling. Bottom bar should make adequate contact with the floor.
- Safety bottom edge stops or reverses door travel when tested as door is closing.
- Functions of all control stations work properly (open, close, and stop).
- Door does not drift more than 6 inches when stop button is depressed while door is closing and at middle of travel.
- Door operates full cycle without catching or binding.
- Door is level in open and closed position.
- Emergency hand chain on operator raises and lowers door adequately.
- Emergency disconnect on operators allows door to be manually raised or lowered.

MANUAL DOORS ARE OPERATING CORRECTLY WHEN:

- Door stays open without drifting down.
- Door balances in closed position or has slight lift.
- Door operates without excessive force to lift (less than 25 pounds).
- Door operates full cycle without catching or binding.
- Door is level in fully opened and fully closed positions.
- No excessive component wear exists.

<u>COMPONENT:</u>	<u>SUGGESTED LUBRICANT:</u>
BEARINGS/GREASE FITTINGS	MULTI-PURPOSE GREASE
LOCK MECHANISMS AND SHAFTS	GENERAL PURPOSE SPRAY LUBRICANT
ROLLER CHAINS	ROLLER CHAIN LUBRICANT WITH PENETRATING AGENT. (ALSO IN SPRAY CANS)
SPUR GEARS	GEAR LUBE DESIGNED FOR SPUR GEARS WITH TACKY CONSISTENCY (ALSO IN SPRAY CANS)
WEAR POINTS ON BRACKETS, GUIDES AND ENDLOCKS	PARAFIN BASED LUBRICANT IN STICK FORM (ALSO IN SPRAY DRY GRAPHITE)

DOOR MAINTENANCE:

Improper maintenance procedures can damage a good door and injure the technician doing the work. The following recommended procedures for keeping a door performing at it's maximum potential are:

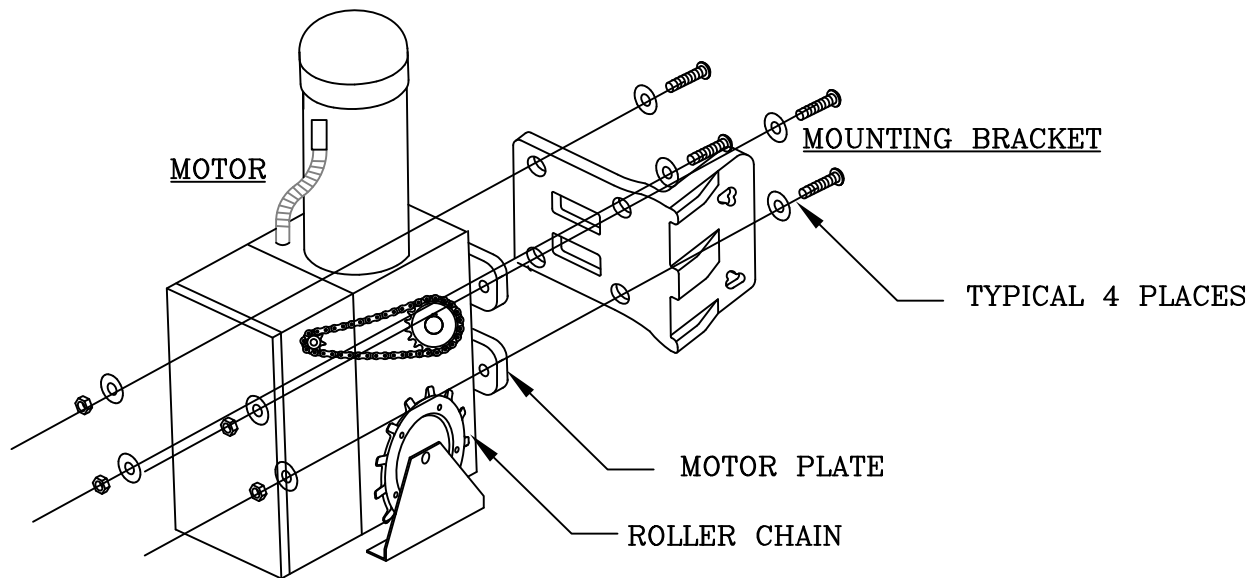
- Inspect door for alignment, level, and proper working clearances.
- Check curtain for damage, loose or missing parts.
- Check guides for damage and secure attachment.
- Inspect upper guide stops for damage, proper alignment, and secure attachment.
- Inspect guide, head, and bottom bar weather-stripping for wear or damage.
- Examine curtain to shaft attachment.
- Inspect end brackets for secure attachment. Check inside of end brackets for curtain rubbing. If there are signs of this, adjust curtain and lubricate wear points on brackets.
- Test the operation of the door for proper spring balance (on motor operated doors use emergency hand chain operator to test balance). When the door has proper balance, the curtain should have lift at the stops in the open position and not drift down. At the floor, the curtain should be balanced or lift up slightly. The door should not be difficult to raise through the middle of travel. The door may run through the middle of travel.
- Lubricate roller bearings which have grease fittings. Bearings are located at the operator end bracket and at charge wheel end of barrel shaft.
- Operate the door while closely watching curtain movement, correct any deficiencies which may cause the door to catch or snag.
- Inspect, align and lubricate the chains, shafts and gears of manual chain hoists or crank operators. Tighten all set screws and check roller chain tension.
- Inspect hand operating chain, crank eye, and removable crank for damage or wear.
- Check spring adjusting wheel and keeper for damage and secure installation.
- Check hood for secure attachment.
- Check operation of locks or slide bolts. Tighten cylinder locking set screws and lubricate the locking mechanism.

FOR MOTOR OPERATED DOORS REFER TO THE MOTOR MAINTENANCE SECTION.

MOTOR OPERATOR INSTALLATION INSTRUCTIONS

On door guides mounted to steel, angle is supplied with pre-drilled tapped holes matching the motor base plate. Using these holes layout the four outboard holes for the base plate. Insert expansion shields. Hoist and bolt motor into place. Fit and align chain around drive gears. Cut chain to size with chain cutter. Adjust for correct chain tension and tighten bolts securely. It is important to use the lock washers supplied. On Doors mounted to masonry, the holes for the inboard side of the base plate are pre-drilled and tapped in the leg of the wall angle. Operator must be mounted securely to prevent movement during operation.

NOTE: Mounting bracket and some wall mount operators require outboard bracing from motor plate to nearby construction. Refer to shop drawings for arrangement required using brace angles and hardware supplied.



NOTE: Motor assembly is shipped ready to be installed with mounting brackets. All necessary hardware and correct length of roller chain required. Follow these instructions carefully for correct mounting of motor operator.

- FIRST: Remove the bolts from the drive side only of the motor assembly, which fasten the motor to the bracket.
- SECOND: Line up slots in mounting bracket with holes through motor plate as shown in sketch. The top of the mounting bracket should line up with the top of the motor plate. Fasten through these with hex bolts and washers.
- THIRD: Hoist motor and fasten motor mounting bracket through holes provided.
- FOURTH: Install motor bracket. One end of the bracket to be fastened to the motor plate, the other end to be fastened to drive side bracket plate.
- FIFTH: Align drive and driven sprockets on motor coil shaft, tighten set screws and install roller chain provided.

MOTOR OPERATOR MAINTENANCE

Motor operators require very little special maintenance other than periodic checking to see that mechanical parts where necessary are lubricated and the electrical compartments are clear of dirt.

Service technicians should first familiarize themselves with proper sequence of operation of operator and all related controls. Power to operator must be shut off when removing or replacing covers on electrical components, making adjustments, or performing maintenance.

Check wire connections for tightness and wire insulation for defects of abrasions.

Check to see that all conduit connections are secure.

Check wires to safety edge if unit is equipped with a safety to reverse feature.

Inspect, align and adjust belt operator V-belt.

Inspect gear operator brake.

Inspect gear operator gearbox for leaks.

Inspect roller chain and drive gears (sprockets). Align, lubricate the sprockets and tighten the set screws. Adjust chain tension.

Generally inspect the motor mounting, and tighten the fasteners and bracing.

Test the operation of the emergency disconnect or hand chain mechanisms and lubricate the friction points.

Check the disconnect cutoff switch for correct mechanical and electrical operation.

Verify that all conduit connections are tight and have no exposed wires.

Inspect the wiring panel for debris, arching or moisture. Check for and tighten loose wiring connections.

Test motor operation through all control stations.

Check limit switch setting.

Examine safety edge, coil cord and take up reel for damage.

Test the operation of the safety edge.

Check motor amperage draw for a full open and close cycle. Compare readings to those listed on the amperage table.

Inspect and test track mounted lock cutout switches for correct mechanical and electrical operation.

OPERATOR TROUBLE SHOOTING GUIDE

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>	<u>CURE</u>
Motor does not run when open or close button is pushed	Circuit breaker tripped or power fuse blown	Check circuit breaker, power fuses, safety switch, and check for cause
	Thermal overload tripped	Reset, and check for cause
	Manual interlock switch open	Shift into "motor" operation
	Operate contact on start by hand. If motor runs, the cause is in the control circuit	Check push button wires. Check wiring to the manual interlock
	External interlock open (if applicable)	Close interlocks
Motor runs but door does not move	Sprocket key missing or drive chain broken	Check drive train for operation
	Clutch slipping (if applicable)	Adjust clutch
Motor hums but does not run	Door jammed. Drive train jammed	Check door, try to operate manually
	Dead phase in 3 phase system	Check power supply
	Brake does not release	Check power to brake solenoid
	Open motor winding	Check all motor connections
Operator runs in wrong direction and limits do not function	On 3 phase operators power supply is out of phase	Interchange any 2 power leads to unit
	Note: All units are checked for proper rotation at factory. Limit switch adjustment instructions in limit housing indicates proper direction of travel for open and close limit nuts	
Limit switches do not hold their setting	Drive chain loose allows chain to jump sprocket teeth	Adjust chain to proper tension
	Limit nut retainer not engaging slots in limit nuts	Be sure retainer is in slots of both nuts
	Limit nuts binding on screw threads which allow them to jump position on retainer	Lubricate screw thread then limit nuts should turn freely
Door still moves when motor is shut off	Brake inoperative or improperly adjusted	Check brake operation and solenoid
Operator does not shut off at full open or full close positions	Limit nuts not properly adjusted	Adjust limit nuts and lubricate screw thread
	Sprocket on limit shaft loose or limit drive chain broken	Tighten set screw and replace chain
	Defective limit switch	Operate limit switch manually to check