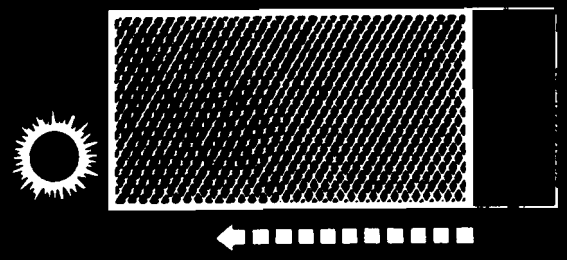
CROWN
INDUSTRIAL
OPERATORS

Read This FIRST



GENERAL INSTALLATION, OPERATION, MAINTENANCE, and PARTS MANUAL for your

Aut-o-doR

1295 SLIDE GATE OPERATOR MODEL "F"

Crown Industrial Operators
(formerly manufactured by Richards-Wilcox)

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NOTE: We reserve the right to modify or change, without prior notice, any statements or information contained herein. If exact dimensions or specifications are required by the customer certified prints will be furnished without charge upon request to Crown Industrial Operators. This manual covers standard catalogued operators only and does not cover special non-standard equipment.

1. INTRODUCTION

A. PURPOSE

This Crown Industrial Operators Installation, Operation, Maintenance and Parts Manual has been developed to assist you in the installation, operation, and maintenance of your electric operator, and thus enable you to utilize it to its maximum efficiency.

B. MODELS COVERED

At the time this manual is issued to you, it covers the current Model 1295, and contains the latest information and data available. The parts pages have been prepared so that you can easily determine the parts contained in your electric operator.

C. DESCRIPTION

(1) GENERAL: The 1295 Electric Operator consists of an instantly reversible gearmotor, solenoid brake, a safety friction disc clutch, an emergency release which can be locked open or closed, a reversing starter with overload protection and a fully automatic limit switch. This unit is compact, easy and economical to install, and is completely wired at the factory. (Figure 1) All items are mounted on a heavy steel base and are protected by a weather resistant cover with padlock attachment.

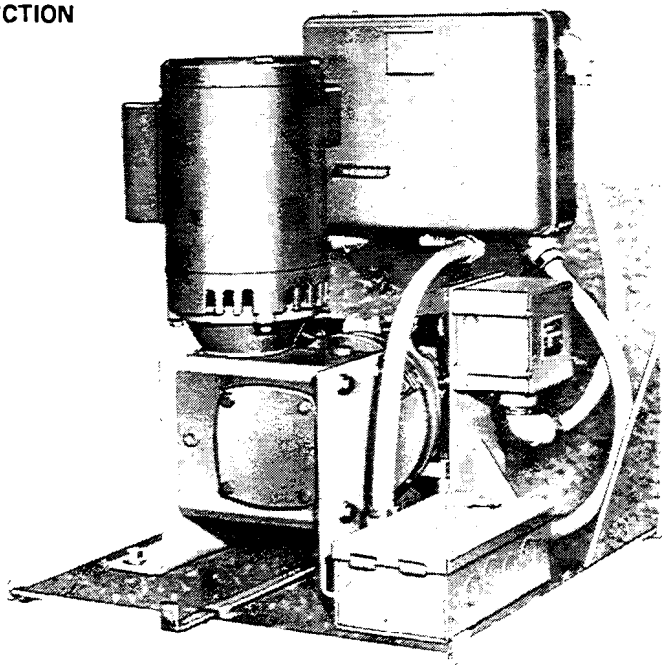


Figure 1. 1295 Slide Gate Operator
(shown without weather resistant cover)

(2) GEARMOTORS: The standard 1295 Operator can be furnished with 1/2, 3/4 or 1 H.P. gearmotors. These gearmotors are available in single phase; however, three phase current is highly recommended for best all around performance.

2. INSTALLATION AND OPERATION

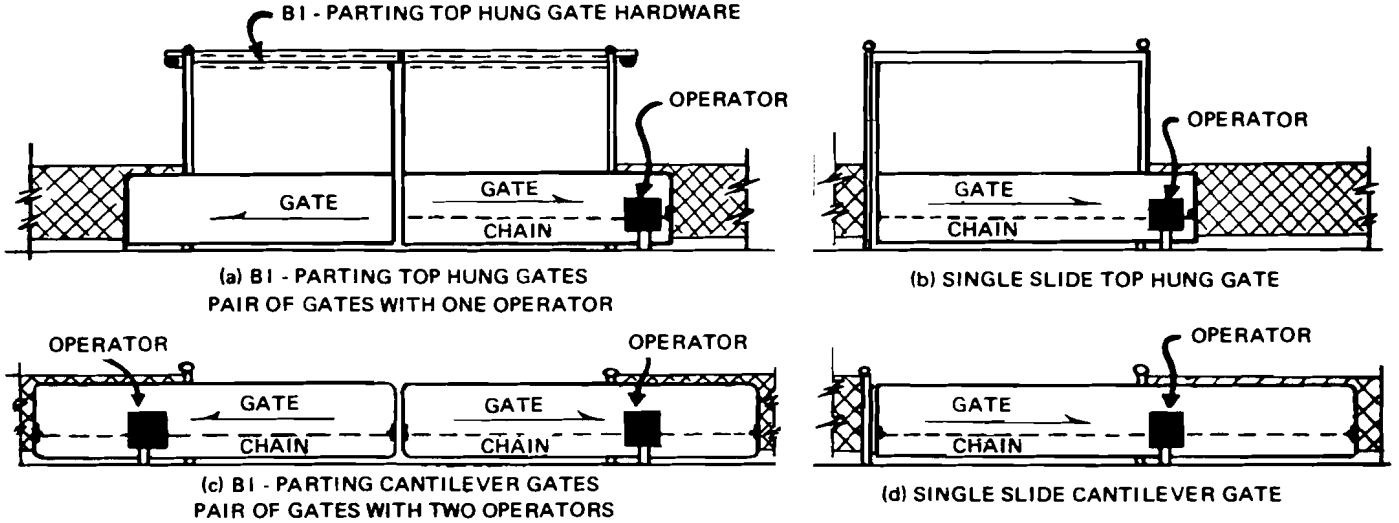
A. GENERAL

(1) The Crown Industrial Operators 1295 Electric Gate Operators have been field proven for dependable, trouble free operation of sliding gates. Four basic applications are shown in Figure 2a, b, c & d. To insure correct installation and proper operation, follow the instructions listed below.

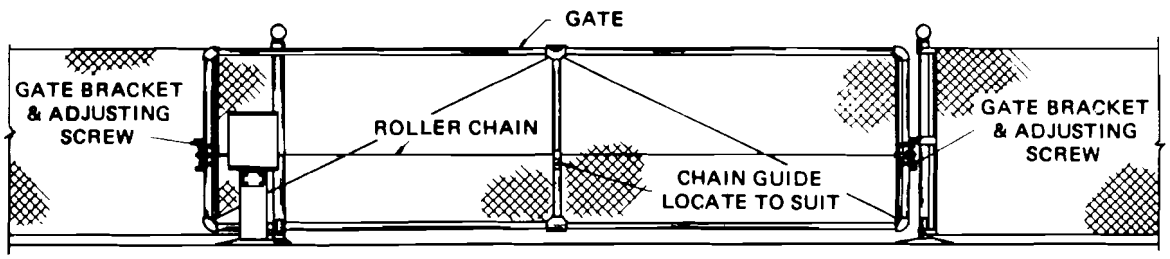
(2) CHECK THE SHIPMENT: Included with the installation packet is a copy of the material specification sheet for the components supplied with the order. Check the components received with the material specification sheets to insure that all equipment is complete.

(3) CHECK THE GATE: Before starting operator installation, inspect to insure that the gate is in good working condition, slides freely, is rigidly supported, and has no obstructions to block or retard its slide.

(4) REVIEW THE INSTALLATION DRAWING: The installation drawing shows the layout of the gate, template drilling for the gate bracket and channel post, and general terms used to described components. Review of the drawing will familiarize you with the equipment.

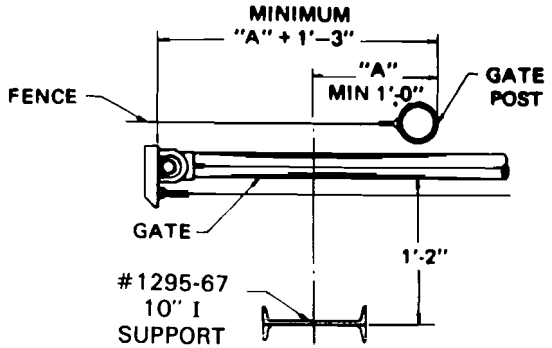


Figures 2a, b, c & d Basic Gate Applications

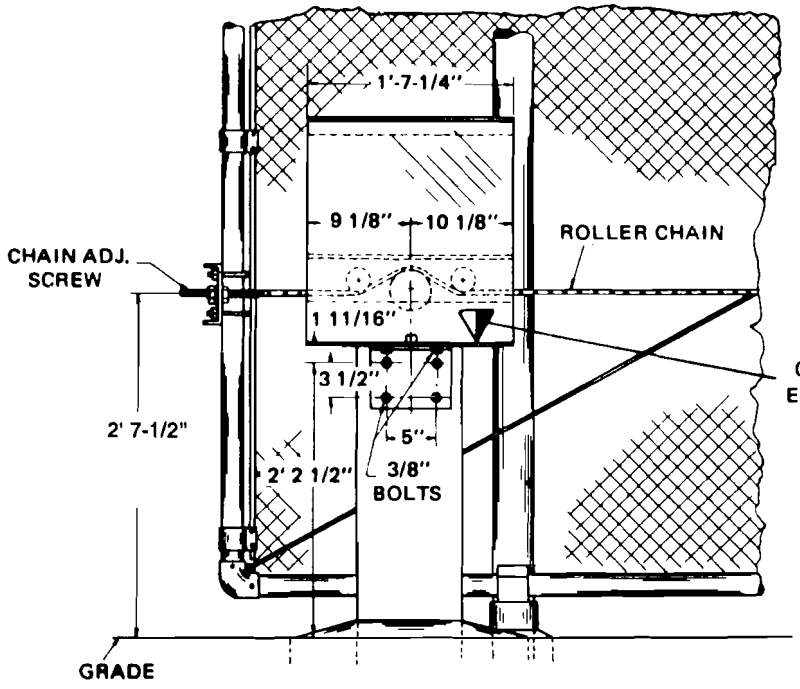


NOTE: SEE PAGE 9 FIG. 8 FOR CHAIN BRACKET AND CHAIN GUIDE MOUNTING DETAILS.

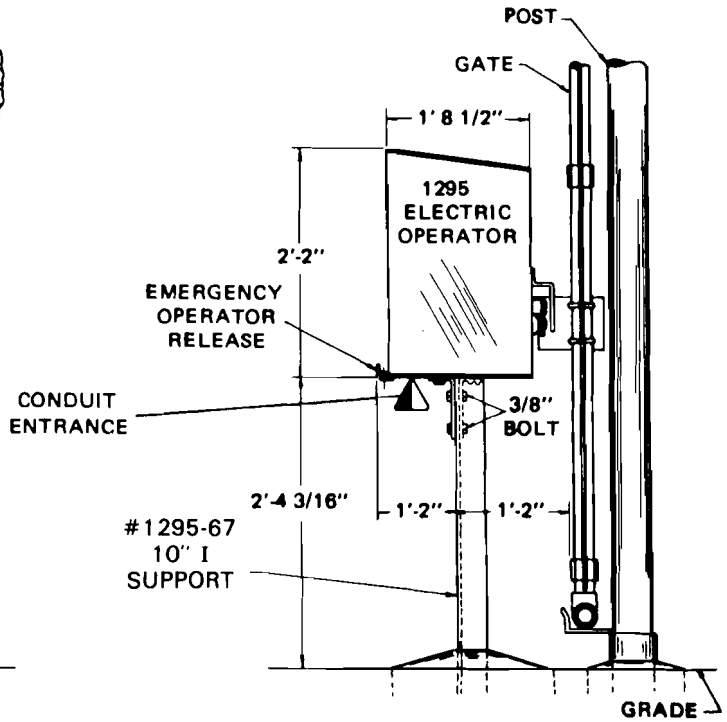
ELEVATION VIEW
LOCATION OF OPERATOR IS THE SAME FOR ALL GATES



PLAN AT OPERATOR

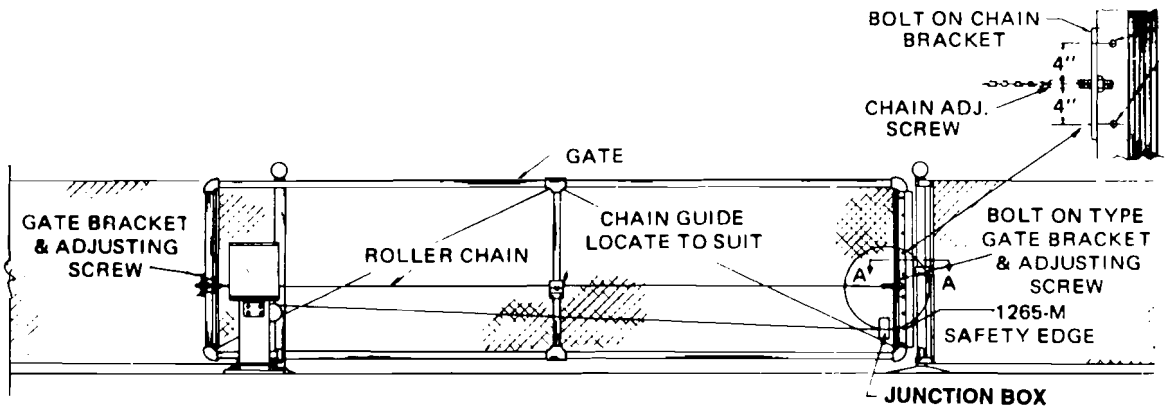


ELEVATION AT OPERATOR



SECTION AT OPERATOR

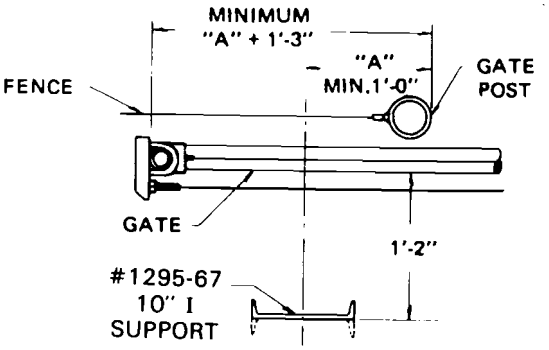
Figure 3. Installation of Operator Using Concrete Embedded Mounting Column (left slide cantilever gate shown, top hung similar)



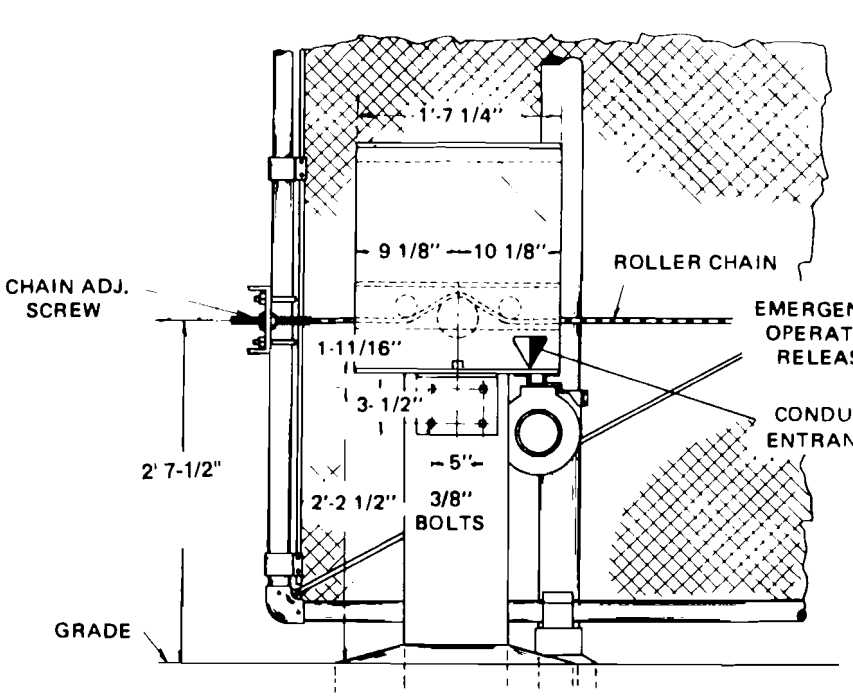
NOTE: SEE PAGE 9 FIG. 8 FOR CHAIN BRACKET AND CHAIN GUIDE MOUNTING DETAILS.

ELEVATION VIEW
LOCATION OF OPERATOR IS THE SAME FOR ALL GATES

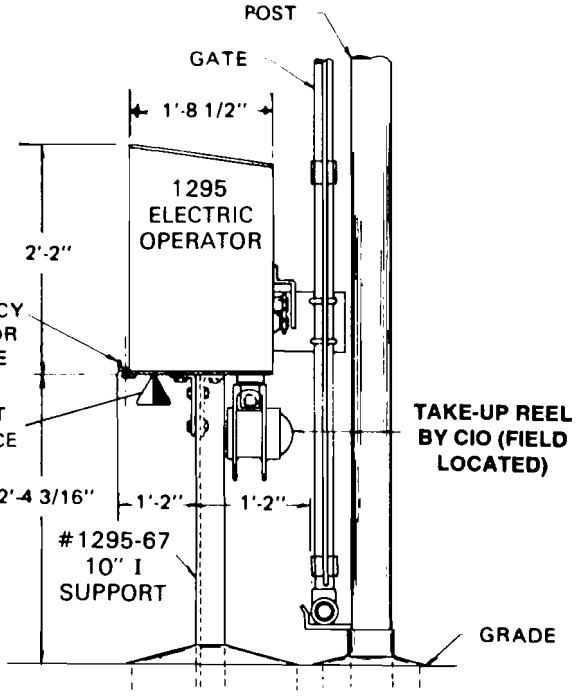
NOTE: ALL ELECTRICAL CONNECTORS NOT BY CIO



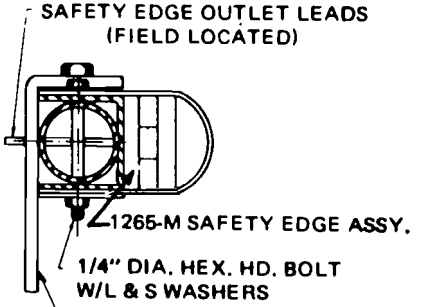
PLAN AT OPERATOR



ELEVATION AT OPERATOR

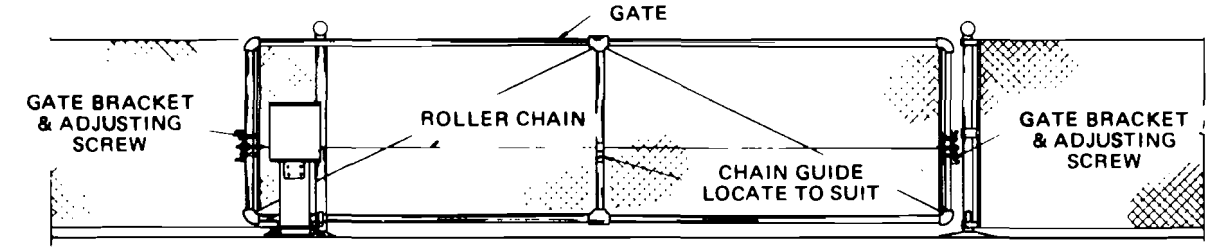


SECTION AT OPERATOR



SECTION "A-A" AT SAFETY EDGE

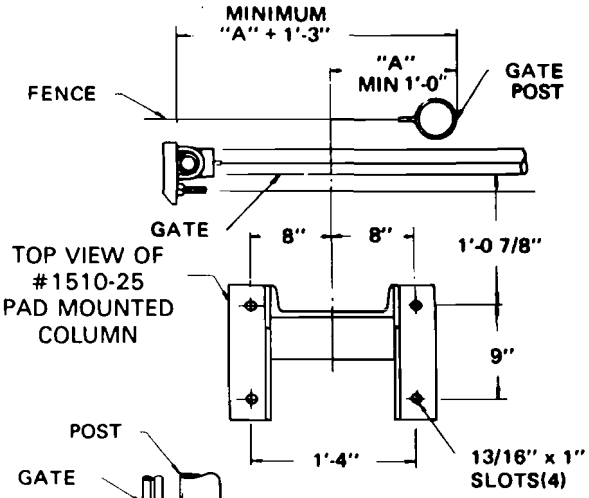
Figure 4. Installation of Operator With Safety Edge And Concrete Embedded Mounting Column
(left slide cantilever gate shown, top hung similar)



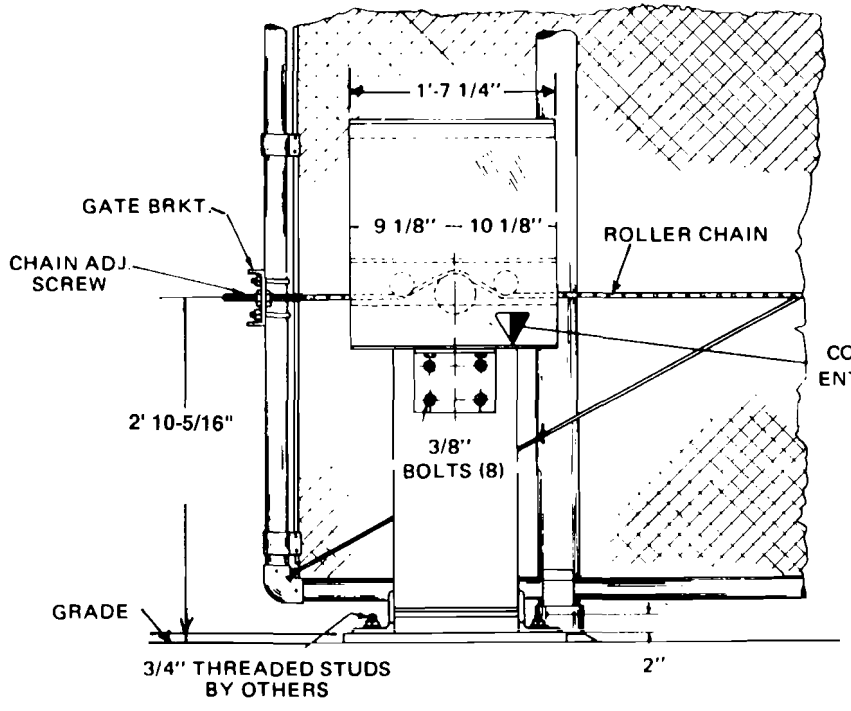
ELEVATION VIEW

LOCATION OF OPERATOR IS THE SAME FOR ALL GATES

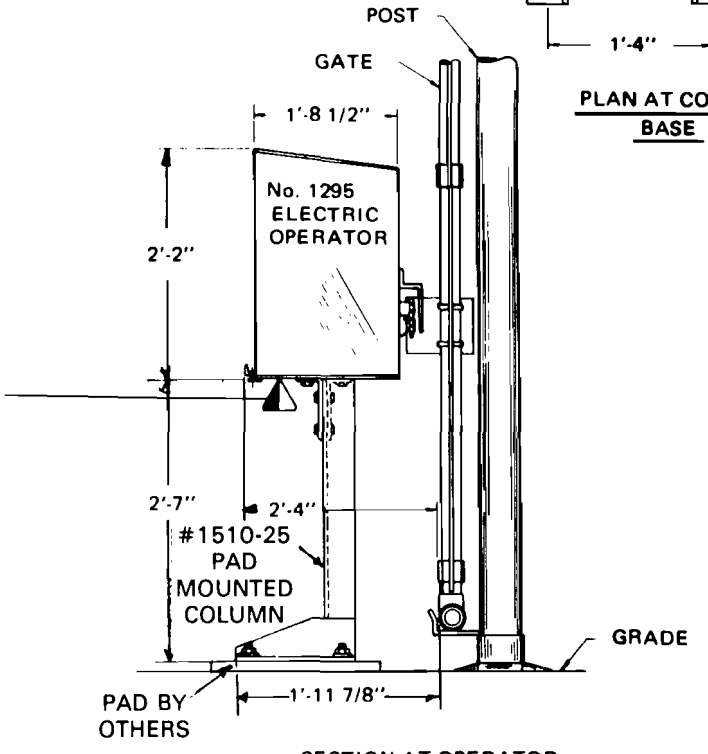
NOTE: SEE PAGE 9 FIG. 8 FOR CHAIN BRACKET AND CHAIN GUIDE MOUNTING DETAILS.



PLAN AT COLUMN BASE



ELEVATION AT OPERATOR



SECTION AT OPERATOR

Figure 5. Installation of Operator

Using Pad Mounted Column

(left slide cantilever gate shown, top hung similar)

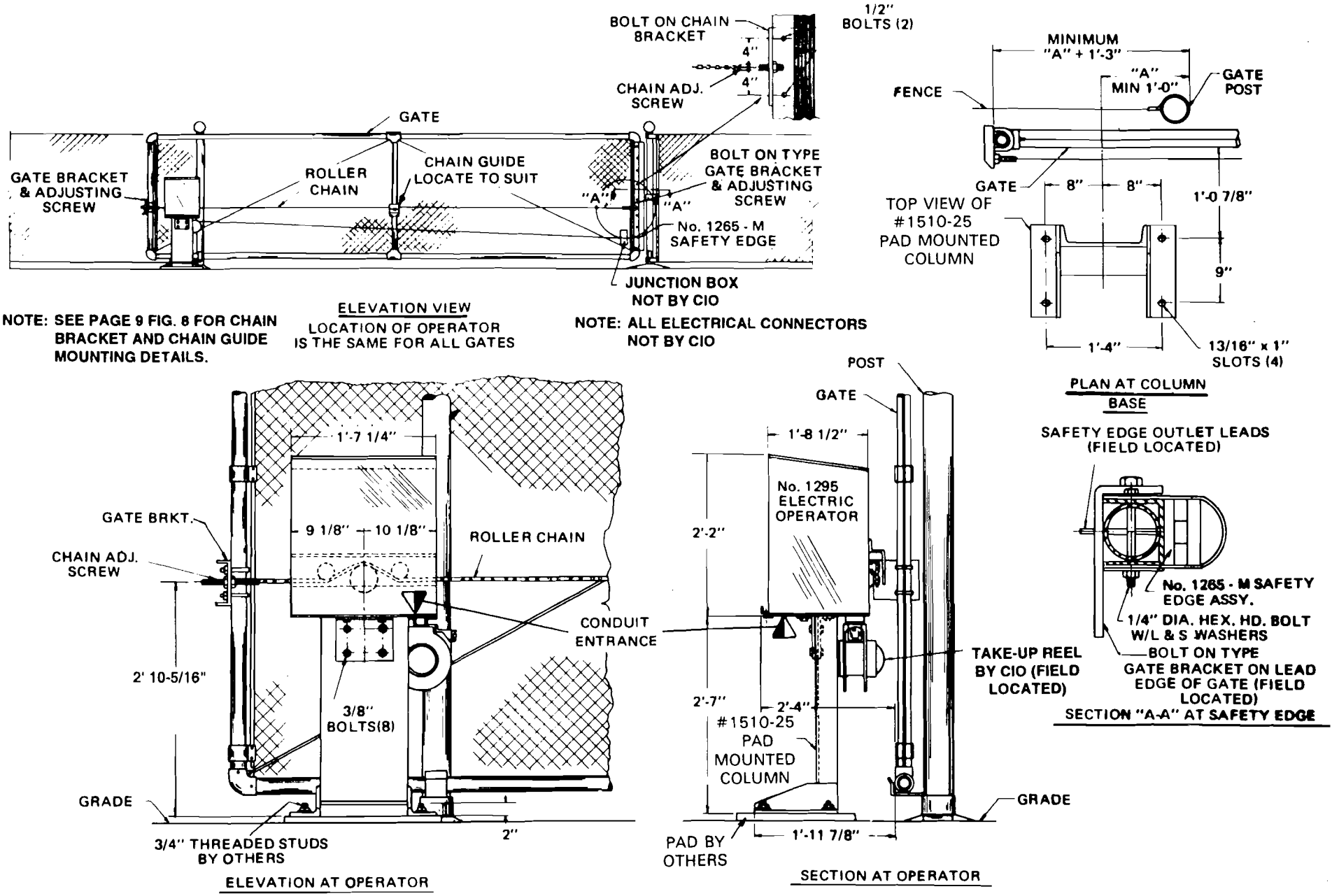
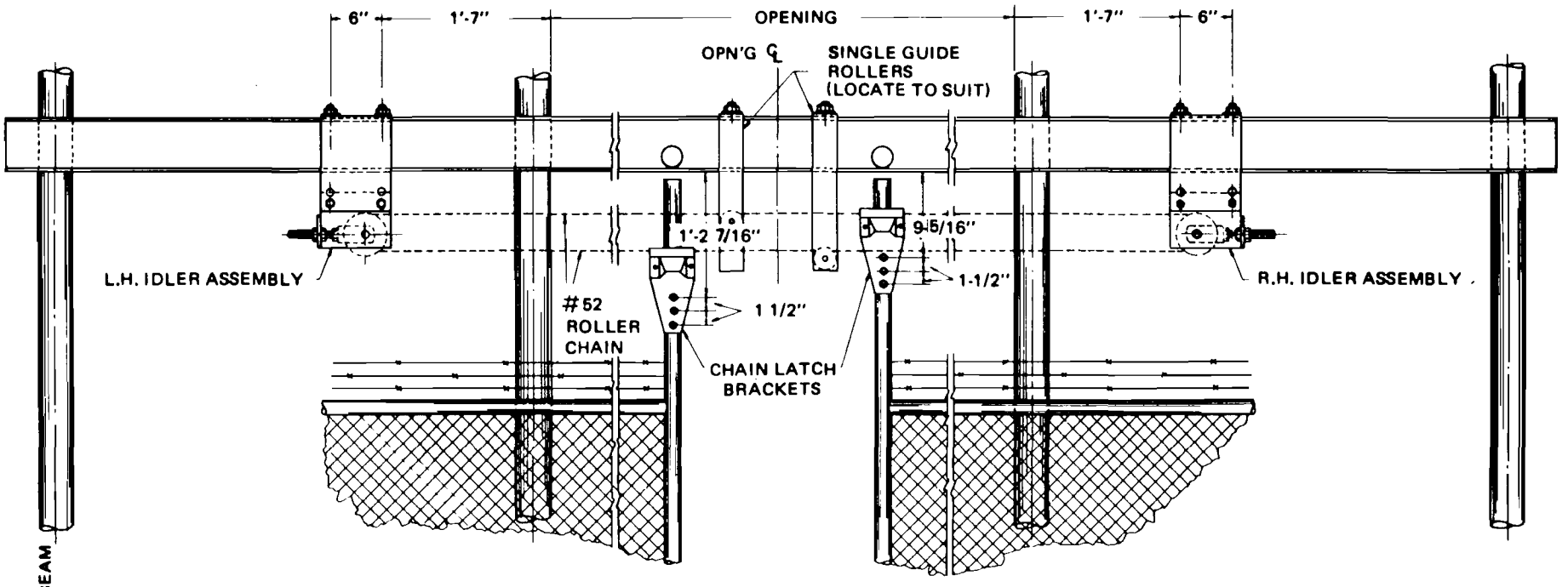
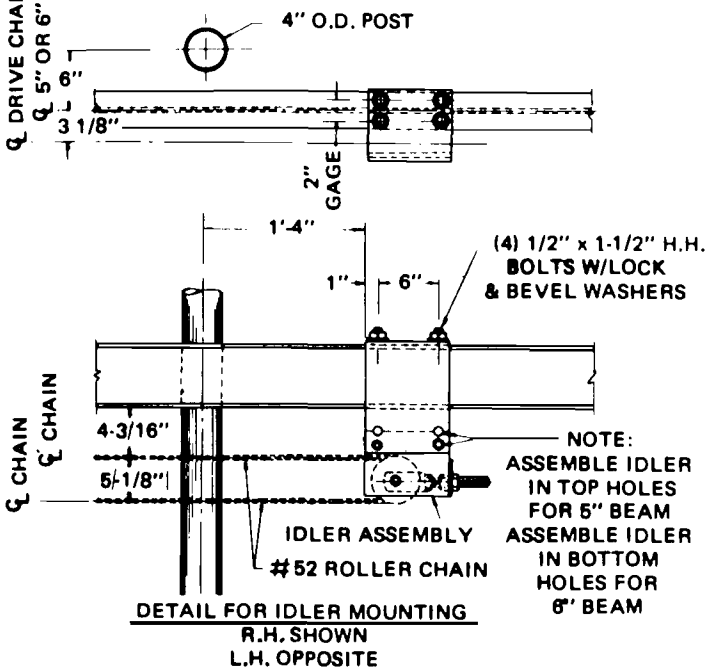


Figure 6. Installation of Operator With Safety Edge
And Pad Mounted Column
(left slide cantilever gate shown, top hung similar)

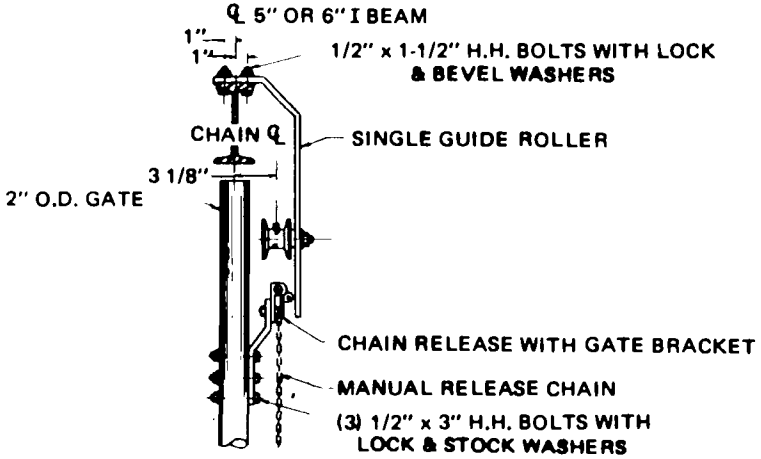


ELEVATION



DETAIL FOR IDLER MOUNTING
R.H. SHOWN
L.H. OPPOSITE

FOR USE WITH SINGLE OPERATORS, SEE FIGURE 2a



SECTION AT GATE BRACKET & GUIDE ROLLER

Figure 7. Installation of 1295 Bi-Parting Top Hung Gate Hardware (for 5" or 6" I beam only)

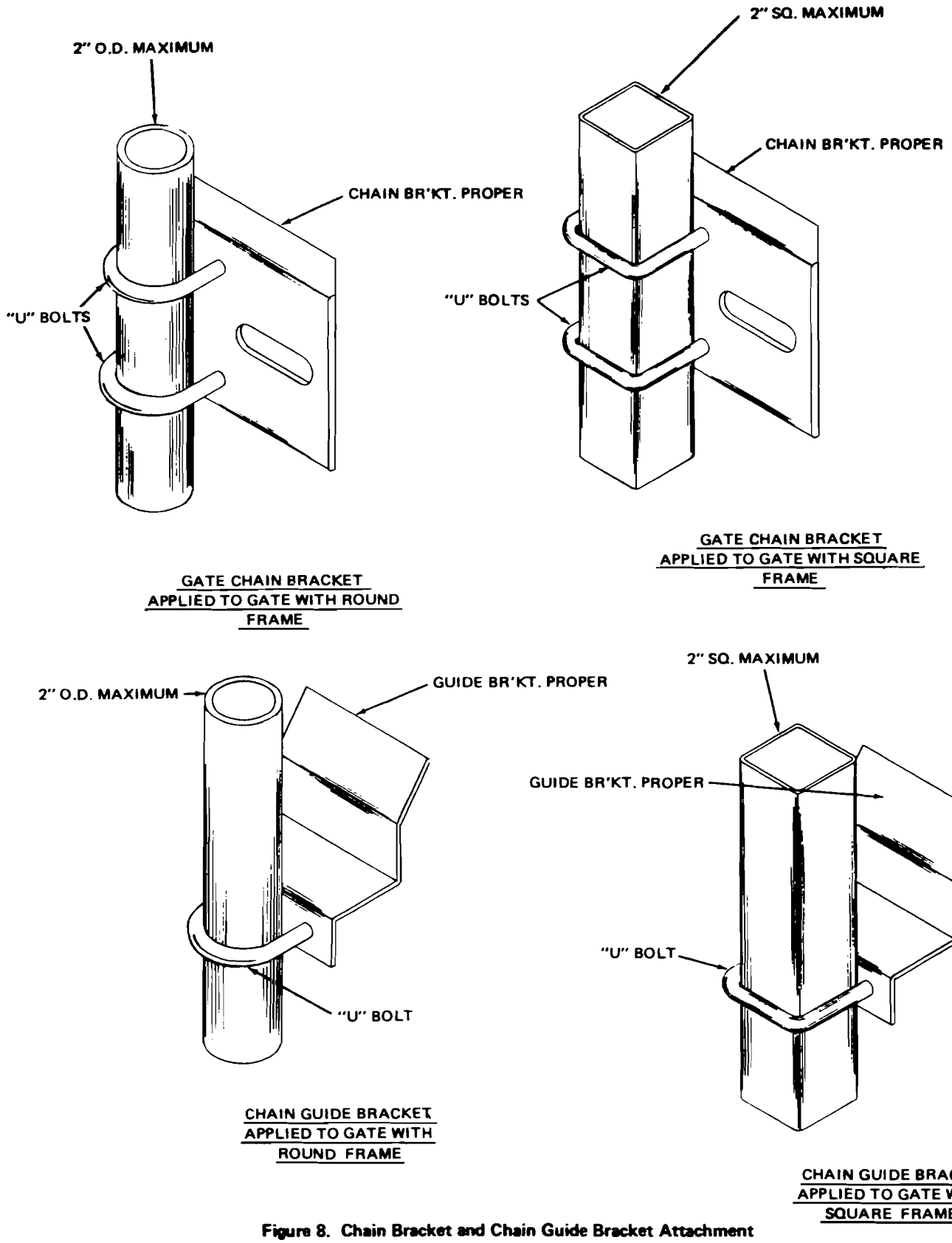


Figure 8. Chain Bracket and Chain Guide Bracket Attachment

(5) PREPARING THE GATE: The Electric Gate Operator powers the gate through the use of a single horizontal strand of heavy duty roller chain connected to a gate bracket on each end of the gate. The center of these gate brackets is located 2'9-1/2" from grade line (imbedded channel type) or 3'0-5/16" from top of pad (pad mounted). See Figure 3, 4, 5 or 6. Locate each bracket at the appropriate level, square with the gate and mount per Figure 3, 4, 5 or 6. Included with the operator will be one or more chain guide brackets, one per each 16 foot of gate length. For gates 31 feet or shorter, mount the chain guide bracket as close to the center of the gate as possible at a height to suit that will clear the operator as it passes in front of it. See Figure 8. For wider gates, space the chain guide brackets accordingly. For Bi-parting gates with overhead track using one operator to operate both gates, mount bi-parting hardware as shown on Figure 7.

B. PREPARING THE MOUNTING CHANNEL

(1) CONCRETE EMBEDDED TYPE: The channel post for support of the operator is an optional extra cost item. When furnished as an optional part of the operator equipment, it will be pre-drilled for the mounting of the operator. When the channel posts are not provided, posts of the size indicated on Figure 3 or 4 are required. These posts should be drilled according to the dimensions shown. It is recommended that posts be hot galvanized or specially treated to avoid corrosion. The channel posts should be set in concrete piers according to the dimensions shown on Figure 3 or 4. The size and depth of piers may vary with soil and fill types. The top of the channel should be 2'4-3/16" up from grade line, 1'2" away from the gate frame and parallel to it. The center line of the channel to the edge of the opening should also be no closer than 1 foot.

NOTE: SUITABLE MOUNTING OF POST IS THE RESPONSIBILITY OF THE CUSTOMER AND/OR CONTRACTOR. THE POST MUST BE INSTALLED PLUMB AND IN EXACT POSITION AS SHOWN ON FIGURE 3 OR 4.

(2) PAD MOUNTED TYPE: The pad mounted channel for support of the Operator is available as an optional extra cost item. When furnished, they will be pre-drilled for mounting of the Operator to the concrete pad.

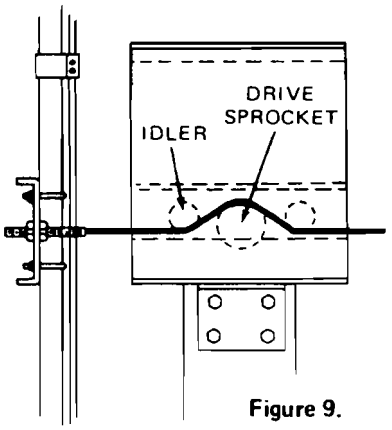
NOTE: A SUITABLE MOUNTING PAD WITH (4) 3/4" DIAMETER STUDS IS THE RESPONSIBILITY OF THE CUSTOMER AND/OR CONTRACTOR. THE PAD MUST BE LEVEL AND THE STUDS IN THE EXACT POSITION AS SHOWN ON FIGURE 5 OR 6.

C. MOUNTING THE OPERATOR

(1) Remove the Electric Gate Operator from the crate and then remove the weather resistant cover by lifting it straight up and off.

(2) Mount the two angle supports to the channel with 4 each bolts (3/8" x 1-3/4"), flat washers, lock washers and nuts as shown in Figure 3, 4, 5 or 6.

(3) Raise the operator into position on top of the channel, being sure the operator drive sprocket is on the side facing the gate. With the operator parallel to the gate, secure in place with 4 each cap screws (3/8" x 1" H.H.), flat washers and lock washers.



DRIVE CHAIN MUST BE INSTALLED UNDER IDLERS AND OVER DRIVE SPROCKET AS ILLUSTRATED

Figure 9.

D. CONNECTION OF CHAIN

(1) Push in on the operator release rod located on the lower rear side of the operator. Hold release rod in by placing a screwdriver or pin through the matching holes. Check to see if the drive sprocket is free to rotate. See Figure 3, 4, 5 or 6.

(2) As noted on the red tag attached to the operator, thread the drive chain under the idler sprockets and over the drive sprocket. Also see Figure 9.

(3) Connect the chain to the adjusting screws on each gate bracket and proceed to apply proper tension. For correct chain tension the chain should sag at midspan, approximately 1% of the total free run of the chain.

CAUTION: EXCESSIVE CHAIN TIGHTNESS COULD CAUSE EXTREME WEAR ON THE IDLER SPROCKET BUSHINGS AND SHORTEN THEIR LIFE. CONVERSELY, A LOOSE CHAIN COULD JUMP THE DRIVE SPROCKET AND JAMB OR CHANGE GATE STOPPING POINTS.

E. WIRING TO OPERATOR

(1) The operator itself is prewired and tested at the factory for a particular voltage and is marked as such. Check to insure your power source is the same. As shown on the wiring diagram from the packing list envelope, bring power and control leads to the operator and connect to the proper numbered terminals in the operator terminal box. BE SURE ALL POWER IS OFF.

F. PHASING OUT MOTOR

(1) Three Phase: With gate still free to move by hand, turn the power on. Using the left side reversing contactor for the left movement of the gate, and the right side contactor for the right movement of the gate, press one of the control buttons and note the direction that the clutch rotates. If the clutch rotates in the direction as though to power the gate to the right, then the right side contactor coil should be energized. If the coil on the left side contactor happens to be energized, for this right movement, exchange any two power leads.

(2) Single Phase: The operator assembly is wired at the factory for correct phasing.

(3) Check both directions of travel several times to insure proper phasing of motor. In case the motor continues to run and the limit switches do not stop rotation, check the power source and review the wiring diagram.

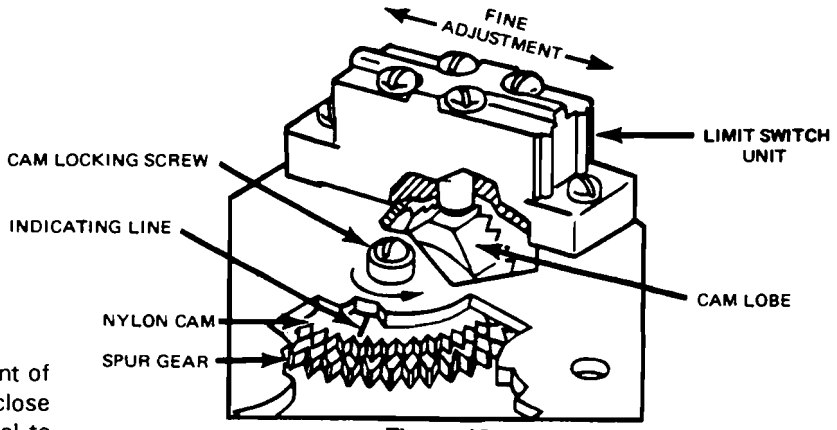


Figure 10.

G. ADAPTING CONTROLS:

(1) Using the left side contactor for the left movement of the gate, determine if the left movement will open or close the gate. Wire the corresponding open or close signal to terminal #8 in the operator terminal box.

(2) Using the right side contactor for right movement of the gate, wire the opposite cycle signal to terminal #9 in the operator terminal box.

H. PRELIMINARY ROTARY LIMIT SWITCH ADJUSTMENT

(1) DESCRIPTION

This rotary limit switch is designed to accurately control the end limits of gate travel provided by the electric gate operator. The limit switch input shaft drives a worm and worm gear which in turn drives the nylon cams through spur gears. (See Figure 10). Each precision limit switch unit is actuated by a cam lobe on its individual nylon cam. This switch is provided with both rough and fine adjustments. The rough adjustment is accomplished by the rotational positioning of the nylon cam lobe in respect to its limit switch unit. The fine adjustment is accomplished by linear adjustment of the limit switch unit in respect to its cam lobe.

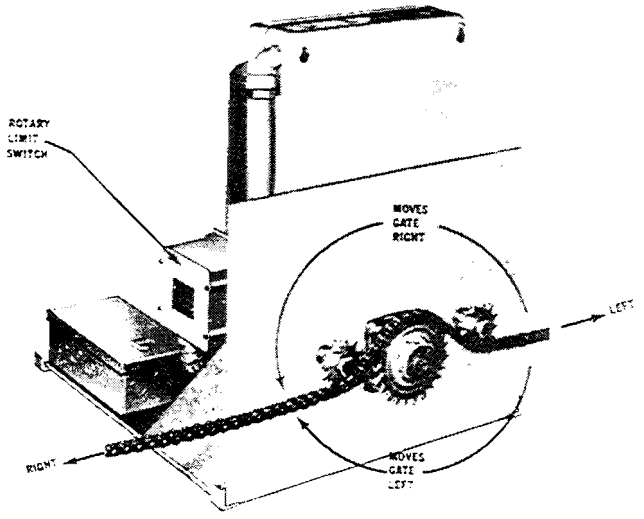


Figure 11.

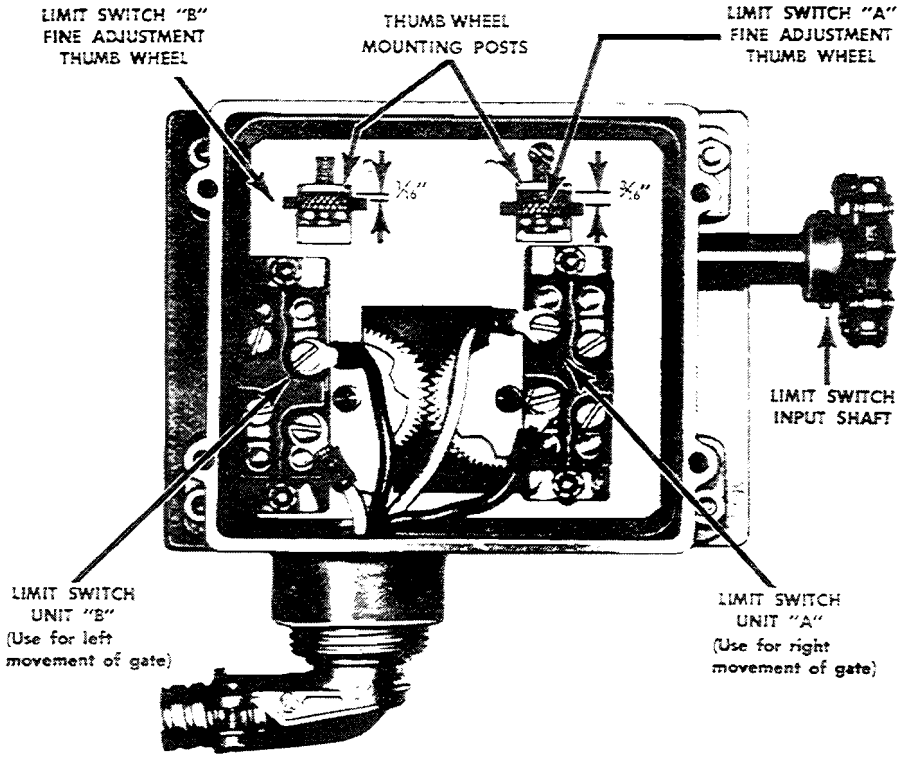


Figure 12.

(2) WIRING

The rotary limit switch should be wired to the electric operator control circuit with the limit switch unit closest to the limit switch input shaft (Mark "A") controlling the right movement of the gate and, the limit switch unit farthest from the input shaft of the limit switch (Mark "B") controlling the left movement of the gate. See Figure 11 for determining right and left movement of gate when standing on the gate side of the opening. See Figure 12 for determination of limit switch Mark "A" and Mark "B".

(3) PREPARATION FOR ADJUSTMENT

(a). DISCONNECT THE ELECTRICAL POWER SUPPLY TO THE ELECTRIC GATE OPERATOR.

(b). Remove the limit switch cover plate.

(c). Inspect the fine adjustment thumb wheels. An approximate 3/16" clearance should exist between the face of the wheel and its mounting post on limit switch unit "A". An approximate 1/16" clearance should exist between the face of the wheel and its mounting post on limit switch unit "B". If necessary, adjust the thumb wheels to these clearances.

(4) ROUGH ADJUSTMENT

(a). Manually slide the gate to the right until it reaches its full travel position.

(b). See Figure 13. With the limit switch cover removed, loosen the cam locking screw "A" by turning it 360° in a counter clockwise direction.

(c). With tip of a screwdriver, rotate the limit switch cam "A" until the black indicating line "A" on the cam is positioned in the spotting slot "A" as shown in Figure 13.

(d). Securely tighten cam locking screw "A" to properly seat lockwasher.

WARNING: DO NOT OVERTIGHTEN THIS SCREW SINCE OVER TORQUEING CAN DAMAGE THE LIMIT SWITCH CAM AND RESULT IN ERRATIC OPERATION OF THE LIMIT SWITCH.

(e) Manually slide the gate to the left until it reaches its full travel position.

(f). See Figure 14. Loosen the cam locking screw "B" by turning it 360° in the counterclockwise direction.

(g). With the tip of the screwdriver, rotate the limit switch cam "B" until the black indicating line "B" on the cam is positioned in the spotting slot "B" as shown in Figure 14.

(h). Securely tighten cam locking screw "B" to properly seat lockwasher.

WARNING: DO NOT OVERTIGHTEN THIS SCREW SINCE OVER TORQUEING CAN DAMAGE THE LIMIT SWITCH CAM AND RESULT IN ERRATIC OPERATION OF THE LIMIT SWITCH.

(i). Pull out the operator release lever to re-engage the operator's dog clutch.

WARNING!! SOME ELECTRICAL GATE OPERATOR CONTROL CIRCUITS CAN CAUSE IMMEDIATE GATE OPERATION UPON APPLYING POWER. INSURE THAT THE PATH OF THE GATE IS FREE FROM OBSTRUCTIONS AND PERSONNEL.

(j). Reconnect the electrical power supply to the electric gate operator. For final adjustment see section K (page 11).

I. SETTING THE CLUTCH

(1) The purpose of the clutch is to protect the equipment from shock loads that might be introduced into the system. Under normal operation the clutch will not slip. Therefore, the clutch should be adjusted to a sufficient torque that will allow the operator to start and stop the gate without any slipping. However, the clutch should not be so tight that it cannot slip under excessive loads.

(2) To adjust the clutch, tighten the bolts marked "A" as shown in Figure 15. Never tighten bolts <u>consecutively</u>, but always directly across from each other so as to provide even tension. An <u>equal turn</u> of each bolt is an important adjustment procedure.

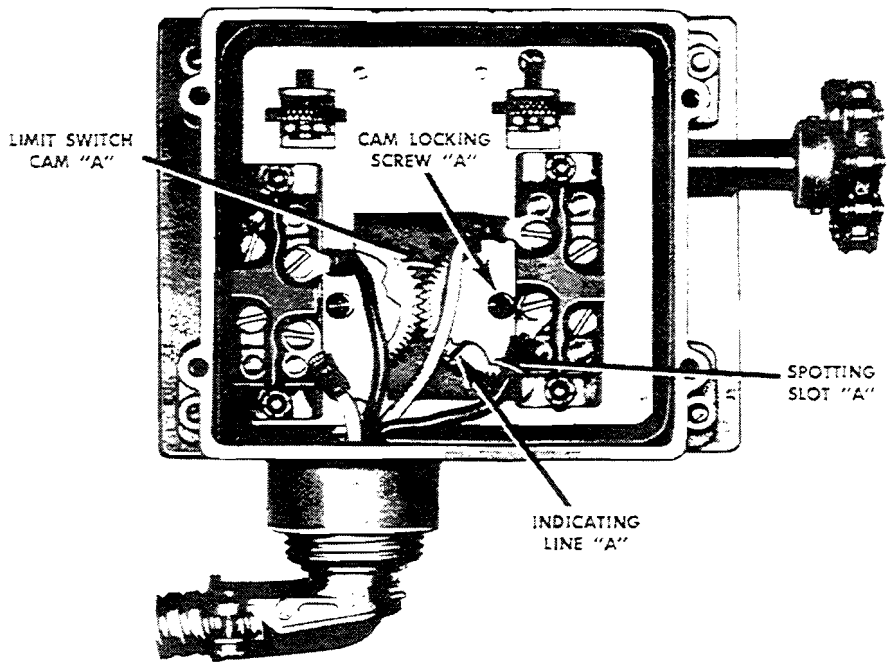


Figure 13.

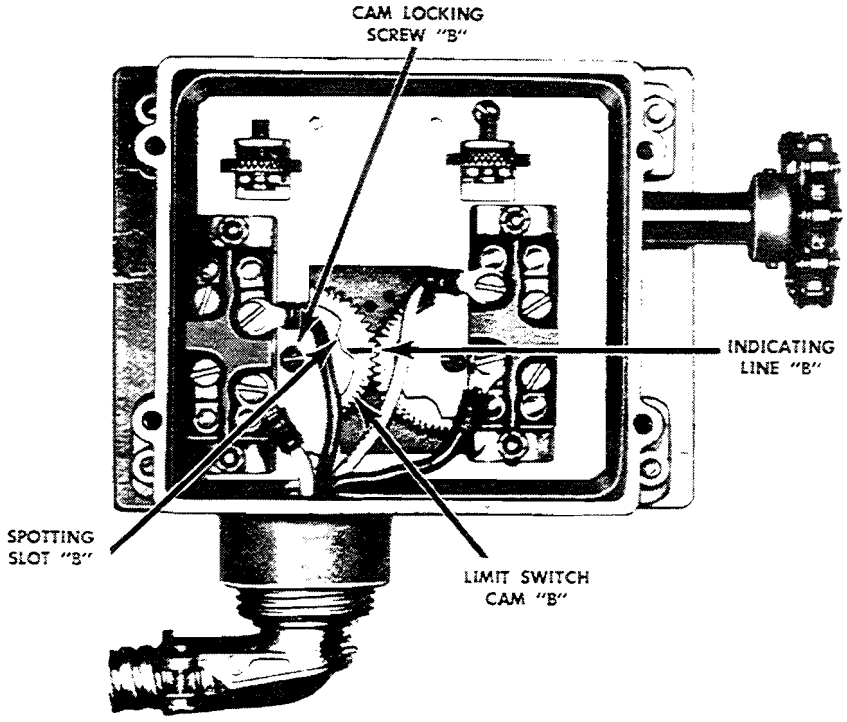


Figure 14.

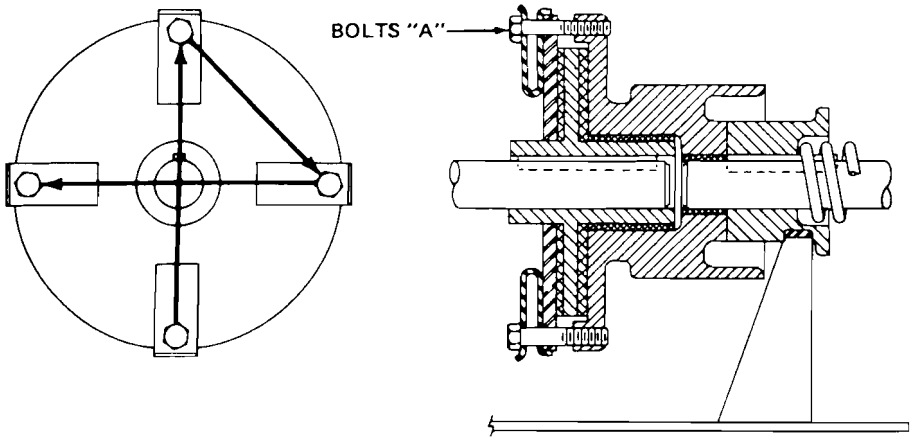


Figure 15. Adjusting Clutch

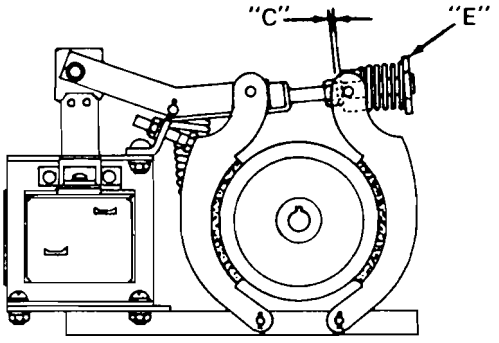


Figure 16. Solenoid Brake

J. BRAKE ADJUSTMENT

(1) The brake has been preadjusted at the factory and requires no further adjustment at initial installation. When adjustment is required due to brake lining wear, follow the instruction sheet found in the starter enclosure or paragraph 2.

(2) See Figure 16. When the lining wears, the clearance "C" decreases. Never permit this clearance to become zero. When the clearance "C" becomes low, adjust to 1/64" by turn screw "E".

K. FINAL ROTARY LIMIT SWITCH ADJUSTMENT

(1) With the controls provided, operate the gate so it slides to the right. You will note that the limit switch will stop the gate short of its intended full travel position.

(2) DISCONNECT THE ELECTRICAL POWER SUPPLY TO THE ELECTRIC GATE OPERATOR.

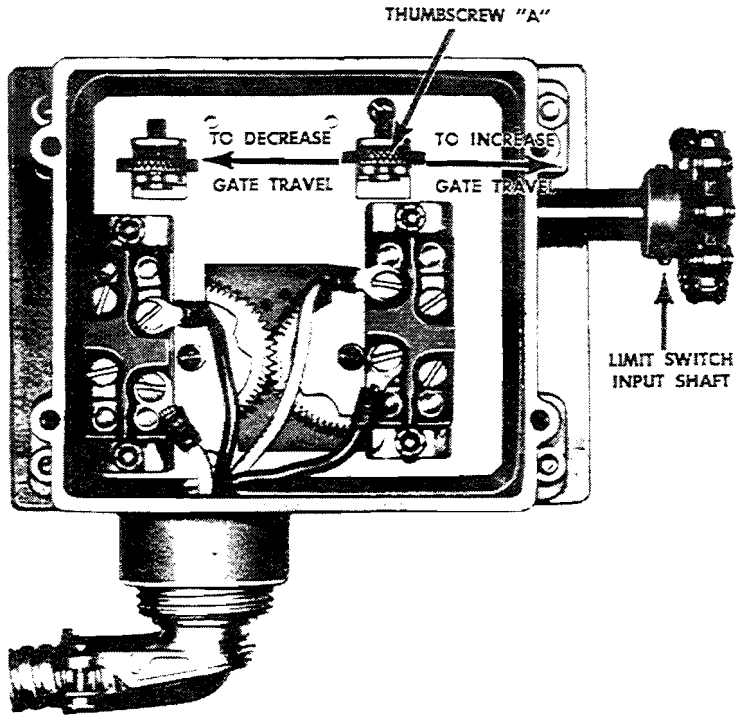


Figure 17.

(3) See Figure 17. Rotate the thumbscrew "A" in a direction toward the limit switch input shaft. A complete turn of the thumbscrew will increase the gate travel by approximately six inches.

(4) Connect the electrical power supply to the electric gate operator.

(5) With the controls provided, operate the gate so it slides to the left. You will note that the limit switch will stop the gate short of its intended full travel position.

(6) DISCONNECT THE ELECTRICAL POWER SUPPLY TO THE ELECTRIC GATE OPERATOR.

(7) See Figure 18. Rote the thumbscrew "B" in a direction away from the limit switch input shaft. A complete turn of the thumbscrew will increase the gate travel by six inches.

(8) Connect the electrical power supply to the electric gate operator.

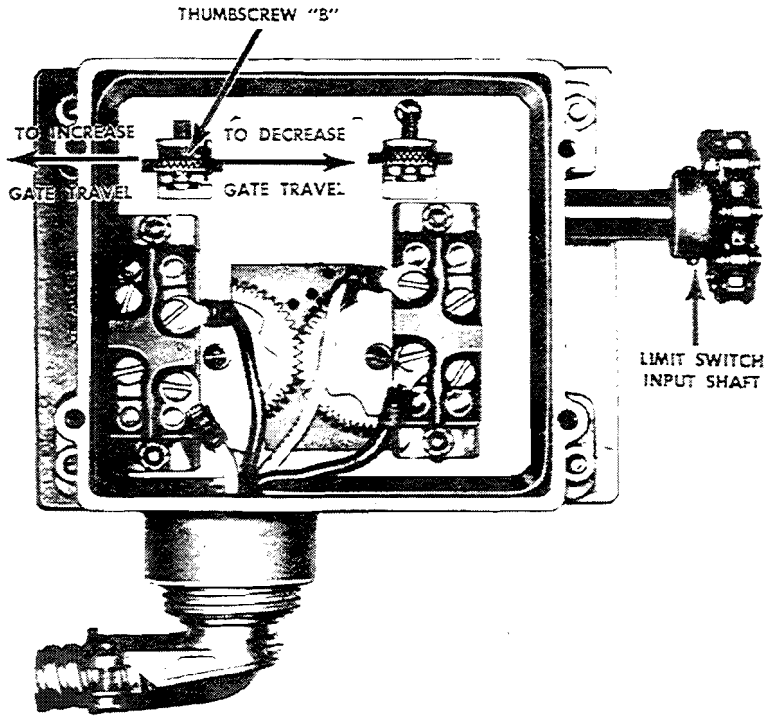


Figure 18.

(9) Repeat steps one (1) through eight (8) until the end limits are accurately set for the desired end positions of the gate in each direction of its travel. Note that if during the fine adjustment, the gate should overtravel its desired end positions, the travel can be shortened by rotating the thumbscrews in the opposite direction given in steps three (3) and seven (7).

(10) Replace the limit switch cover.

3. MAINTENANCE

A. GENERAL

To insure that the electric operator is ready for operation at all times, it must be inspected systematically which will preclude serious damage or failure. Proper adjustment and lubrication must be maintained and checked as recommended below.

B. LUBRICATION

(1) LUBRICATION FOR GEARMOTOR

(a) Figure 19 shows the proper location of vent, oil level, and drain plug.

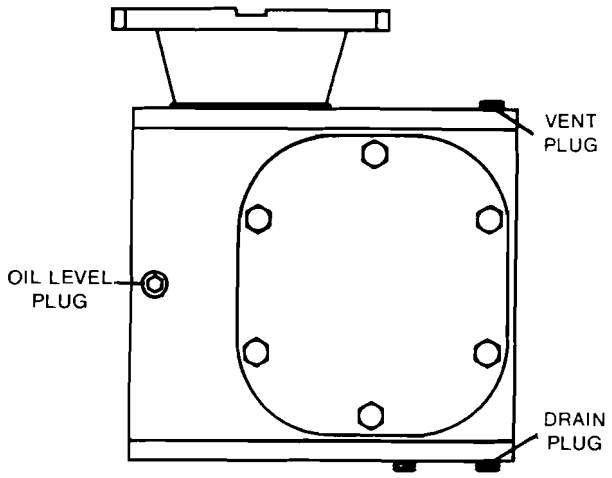


Figure 19. Plug Locations

(b) The gearbox is shipped with Mobil #SHC 634 synthetic lubricant. This oil is a lifetime lubricant rated for operation in ambient temperature ranging from -40°F to +125°F.

(2) Every 6 to 12 months lubricate the flange bearing located behind the drive sprocket with a good quality number 2 consistency grease.

(3) Every 900 cycles, where one cycle consists of opening and closing of the gate, or every 3 months whichever comes first, clean and lubricate the chain with a SAE lubricant as required for ambient temperature.

C. PREVENTIVE MAINTENANCE

To prevent damage or improper operation, the following inspections should be made at least EVERY 6 MONTHS.

(1) Check oil level by removing the oil level plug. Oil should be up to the bottom of the plug hole.

(2) Check Tension of chain.

(3) Check all electrical components and wiring for tightness.

(4) Check clutch to see that it doesn't slip under normal operation.

(5) Check all bolts and nuts for tightness.

(6) Check brake for proper adjustment.

4. PARTS

A. TO ORDER REPLACEMENT PARTS

Order all replacement parts using the number shown on the following parts list pages.

(1) SEND IN SERIAL NUMBER OF ELECTRIC OPERATOR.

(2) SPECIFY the number of pieces needed.

(3) Order by part number and name of part.

(4) State whether to ship by freight, truck, parcel post, or air express.

(5) State whether transportation charges are to be prepaid or collect.

(6) Give name and address of person or company to whom parts are to be shipped.

(7) Give name and address of person or company to whom invoice is to be sent.

B. PARTS LIST

The following pages list the replacement parts which are illustrated in Figures 20 and 21.

PARTS LIST--1295 OPERATOR, GATE BRACKET AND CHAIN GUIDE

FIGURE NO.	PART NUMBER	(PRIOR #)	DESCRIPTION
20			Gear reducer per specifications
20			Reversing starter per specifications
20			Motor per specifications
20			Solenoid brake per specifications
20	SF-16		Bearing
20	925-122		Ferrule
20	1250-138		Bearing
20	1265-6		Clutch disc (2 per operator)
20	1265-7		Outer clutch plate
20	1265-20		Clutch spring (4 per operator)
20	1265-156		Limit switch assembly
20	1295-2		Angle support (2 per operator)
20	1295-19		Adjusting screw (2 per installation)
20	1295-28		Bolt on chain bracket (One per assembly w/safety edge)
20	1295-38		Clip (2 per operator)
20	1295-40		Brake spacer (2 per operator)
20	1295-41		Sliding clutch
20	1295-42		Release spring
20	1295-43		Bearing
20	1295-48		Driver disc (For 3/4 H.P. unit)
20	1295-52		Release assembly
20	1295-53		Clutch and drum
20	1295-64		Key
20	1295-91		Clutch assembly (for 1 H.P. gearmotor and consisting of parts: 41, 43, 53, 92, 1265-6, 1265-7, 1265-20 and 1250-138)
20	1295-92		Driver disc (for 1 H.P. unit)
20	1295-153		Chain bracket (2 per installation)*
20	1295-154		"U" Bolt (2 per chain bracket*, 1 per chain guide) (For square frames)
20	1295-156		Chain guide bracket (1 for 16' to 31' gate, 2 for 32' to 47' gate)
20	1295-168		"U" bolt (2 per chain bracket*, 1 per chain guide) (For round frames)
20	1295-190		Clutch assembly (for 1/2 unit and consisting of parts: 41, 43, 53, 191, 1265-6, 1265-7, 1265-20 and 1250-138)
20	1295-191		Driver disc (for 1/2 H.P. unit)
20	1295-195		Cover assembly
20	1295-197		Limit switch bracket
20	1295-239		Spacer (for 1/2 H.P. unit)
20	1295-240		Spacer (for 3/4 H.P. unit)
20	1295-241		Spacer (for 1 H.P. unit)
20	1295-242		Motor support (for 3/4 & 1 H.P. unit)
20	1295-243		Motor support (for 1/2 H.P. unit)
20	1295-271		Terminal box assembly
20	1295-272		Base assembly
20	1295-275		Clutch Assembly (For 3/4 H.P. unit and consisting of parts 41, 43, 48, 53, 1265-6, 1265-7, 1265-20 and 1250-138)
20	1295-324	(1295-51)	Shaft extension
20	1295-327	(1295-187)	Drive sprocket assembly
20	1295-328	(1295-183)	Idler sprocket (2 per operator)
20	1295-331	(1295-62)	Timing sprocket assembly
20	1295-332	(1250-307)	Timing sprocket
20	1295-333	(1295-189)	Idler axle (2 per operator)

*ONLY ONE REQUIRED FOR INSTALLATION W/SAFETY EDGE.

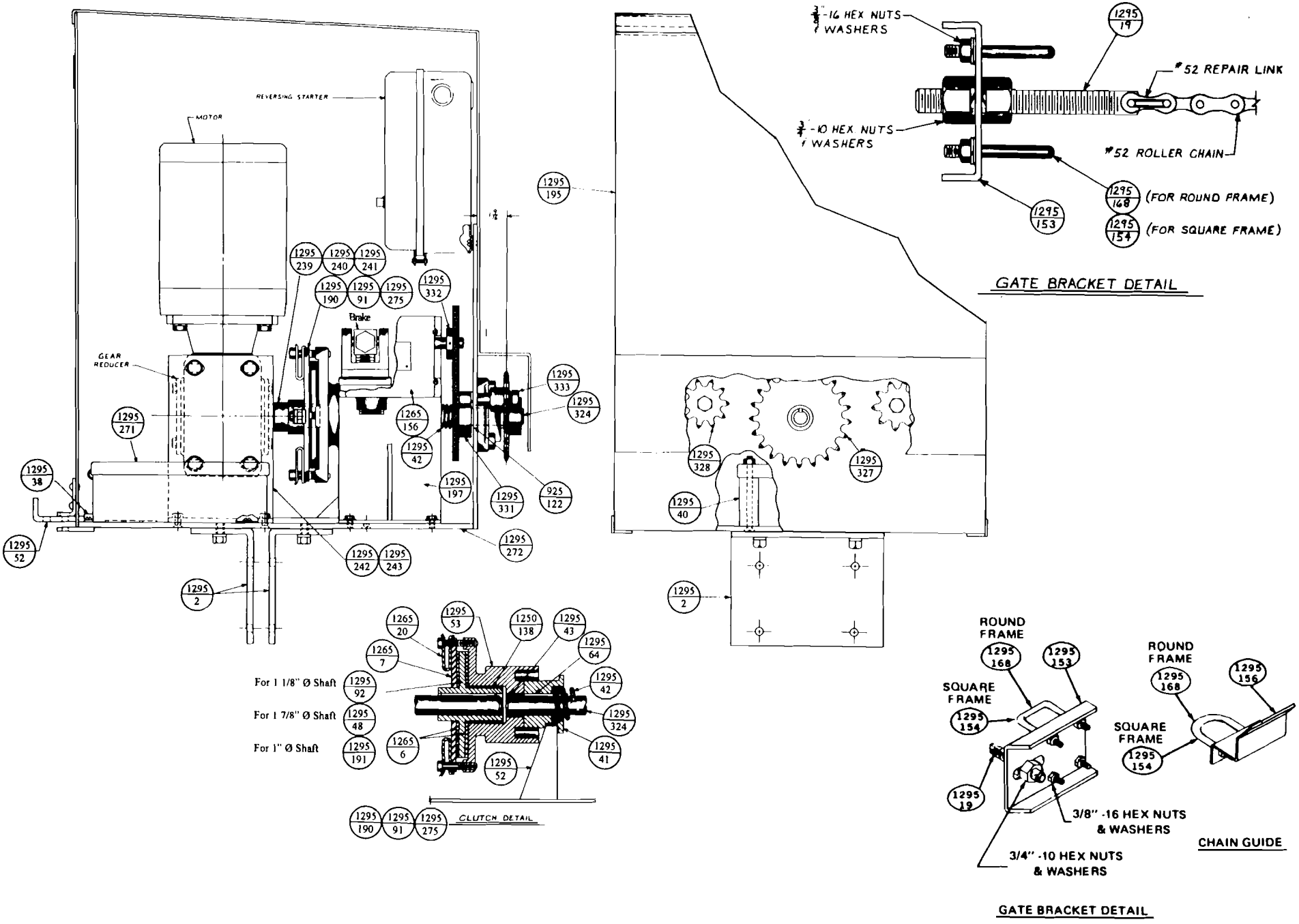


Figure 20. Illustration of Parts - 1295 Operator, Gate Bracket, and Chain Guide

PARTS LIST--BI-PARTING TOP HUNG GATE HARDWARE

FIGURE NO.	PART NUMBER	DESCRIPTION
21	1250-18	Roller (2 per assembly)
21	1250-20	Bolt
21	1250-21	Latch housing
21	1250-22	Latch cover
21	1250-23	Latch washer (2 per assembly)
21	1250-149	Guide Roller
21	1250-269	Chain latch assembly (consisting parts: 1250-18, 1250-20, 1250-21, 1250-22, 1250-23 and 1300-28)
21	1265-59	Clevis
21	1265-60	Spacers (2 per assembly)
21	1265-177	Long link assembly
21	1265-402	Sprocket assembly
21	1265-403	Idler assembly (consisting of parts: 3021DS bearing, 1265-59, 1265-60 and 1265-402)
21	1275-1	Support angle
21	1275-31	Chain latch bracket
21	1275-71	Guide roller support
21	1275-78	Guide roller assembly (consisting of parts: 1250-149 and 1275-71)
21	1275-83	Bracket, lower half
21	1275-84	Bracket, upper half
21	1275-128	Idler bracket assembly (consisting of parts: 1265-403, 1275-1, 1275-83 and 1275-84)
21	1300-28	Spring
21	1300-180	Handle
21	3021DS	Bearing

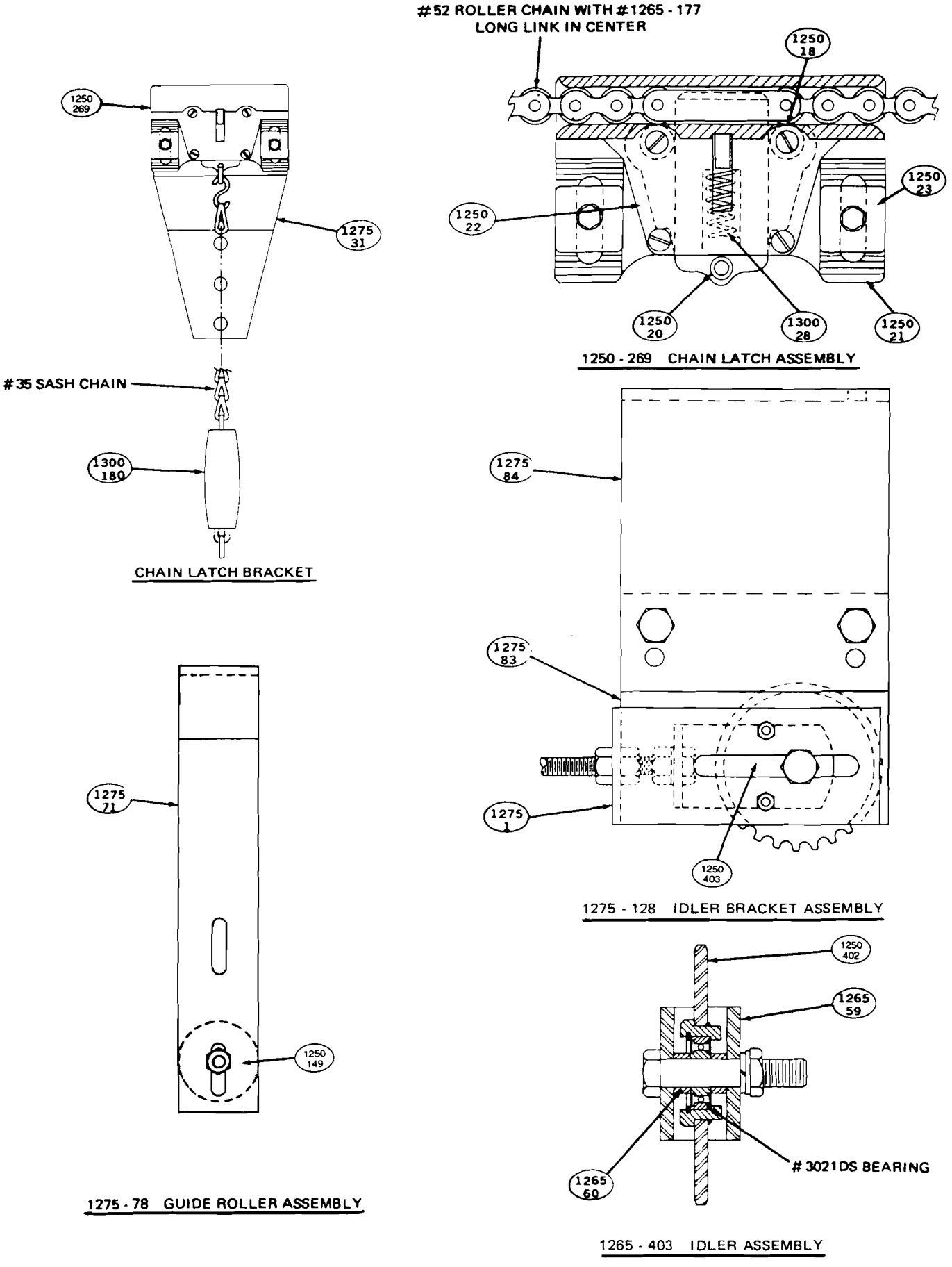


Figure 21. Illustration of Parts - 1295 Operator Bi-Parting Top Hung Gate Hardware

MAINTENANCE INFORMATION

(To Be Filled Out By User)

Operator Serial Number 1295 _____ H.P. _____

Supplied on CIO Order Number _____

Power Supply _____ Volts _____ Hz _____ Phase _____

Installed At: _____ Date: _____

Notes: _____

GUARANTEE

If, within a period of one year from date of shipment, any part of a CIO Electric "Aut-o-doR" Operator is found defective due to poor materials or workmanship, new parts will be furnished free of charge F.O.B. manufacturer's plant, providing the equipment has been given normal and proper usage, lubrication, and maintenance and is still the property of the original purchaser and/or part of the original installation. THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND THE MANUFACTURER MAKES NO IMPLIED WARRANTY OF MERCHANTABILITY BEYOND THE EXPRESS TERMS HEREOF. MANUFACTURES'S LIABILITY FOR DAMAGES, INCLUDING CONSEQUENTIAL DAMAGES, RESULTING FROM ANY SUCH DEFECTIVE PRODUCT IS STRICTLY LIMITED TO THE DELIVERY OF NEW PARTS, AS SET FORTH ABOVE.

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