



Crown Industrial Operators

Read

This

First



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

Aut-o-dor[®]

**1285-DC
SLIDE GATE
OPERATOR Model "E"**

**Crown Industrial Operators
(formerly manufactured by Richards-Wilcox)
213 Michelle Ct.
So. San Francisco, CA 94080**

G-1000

1. INTRODUCTION

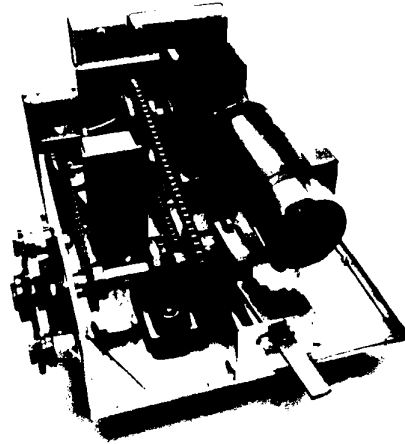
A. PURPOSE: This Crown Industrial Operator Installation, Operation, Maintenance and Parts Manual has been developed to assist you in the installation, operation and maintenance of your electric operator, and thus enable you to utilize it to its maximum efficiency.

B. MODELS COVERED: At the time this manual is issued to you, it covers the current Model 1285, 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 1285 electric operator consists of an instantly reversible gearmotor, safety friction disc clutch, an emergency release which can be locked open or closed, a direct current reversible controller with overload protection and a fully automatic limit switch. This unit is compact, easy and economical to install, and is completely wired and tested at the factory. All items are mounted on a heavy steel base and are protected by a weather resistant galvanized steel cover with padlock attachments.

(2) GEARMOTORS: The standard 1285 Operator is furnished with 1-1/2, 2, 3, 5 H.P. gearmotors.



2. INSTALLATION AND OPERATION

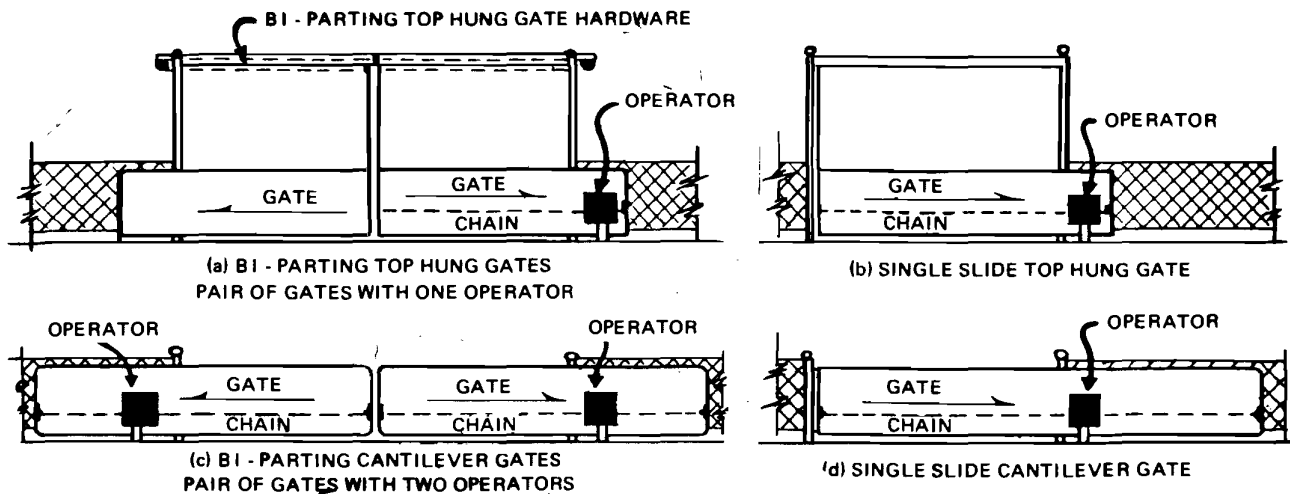
A. GENERAL

(1) The Crown Industrial Operators 1285 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 describe components. Review of the drawing will familiarize you with the equipment.



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

(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. Locate each bracket at the appropriate level, square with the gate and mount. Included with the operator will be one or more chain guide brackets. Mount the chain guide bracket at a height to suit that will clear the operator as it passes in front of it. Space the chain guide brackets accordingly.

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.

NOTE: SUITABLE MOUNTING OF POST IS THE RESPONSIBILITY OF THE CUSTOMER AND/OR CONTRACTOR. THE POST MUST BE INSTALLED PLUMB AND IN EXACT POSITION.

(2) **PAD MOUNTED TYPE:** The pad mounted column 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 and 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.

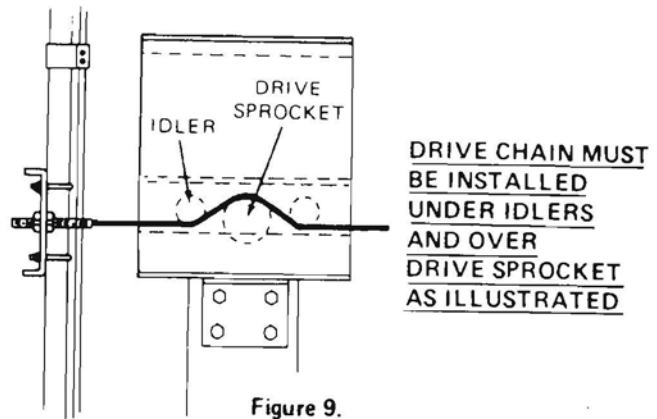
C. MOUNTING THE OPERATOR

- (1) Remove the Electric Gate Operator from the crate and then remove the weather resistant cover by lifting it straight up and off.
- (2) Raise the operator into position being sure the operator drive sprocket is on the side facing the gate. With the operator parallel to the gate, secure in place.

D. CONNECTION OF CHAIN

- (1) Slide the operator release arm located on the end of the operator. Hold release arm in by placing a pin through the matching holes. Check to see if the drive sprocket is free to rotate.
- (2) As noted on the red tag attached to the operator, thread the drive chain under the idler sprockets and over the drive sprocket.
- (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 THE 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 on 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 the 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.

G. ROTARY LIMIT SWITCH ADJUSTMENT- SERIES 51

(1) DESCRIPTION

This rotary limit switch is designed to accurately control the end limits of gate travel provided by the electric gate operator as well as determining the locations of when run and creep speeds occur. The limit switch input shaft drives a planetary gear system which in turn drives the internal nylon cams limit switch actuators. Each limit switch can be independently adjusted by turning the appropriate nylon adjusting screw. The adjusting screws are self locking (See Figure 10). The Rotary limit switch is located in its own enclosure within the operator.

1. Unscrew 4" x 6" electrical enclosure clamp to expose the limit switch assembly.
2. Refer to Rotary limit switch diagram. (See Figure 10)
3. The limit switches are adjusted by turning the independent cam adjustment screws clockwise or counter clockwise to increase or decrease the travel of the operator.
4. There are 4 separate limit switches

LSO = limit switch open - This limit shuts off the electric operator when the door has reached the full open position.

LSCO = limit switch creep open - This limit activates the creep speed mode during the open cycle. When this limit switch is actuated the operator shall travel in the open direction at a reduced speed.
(This limit has an extended cam.)

LSCC = limit switch creep close - This limit activates the creep speed mode during the close cycle. When this limit switch is actuated the operator shall travel in the close direction at a reduced speed.
(This limit has an extended cam.)

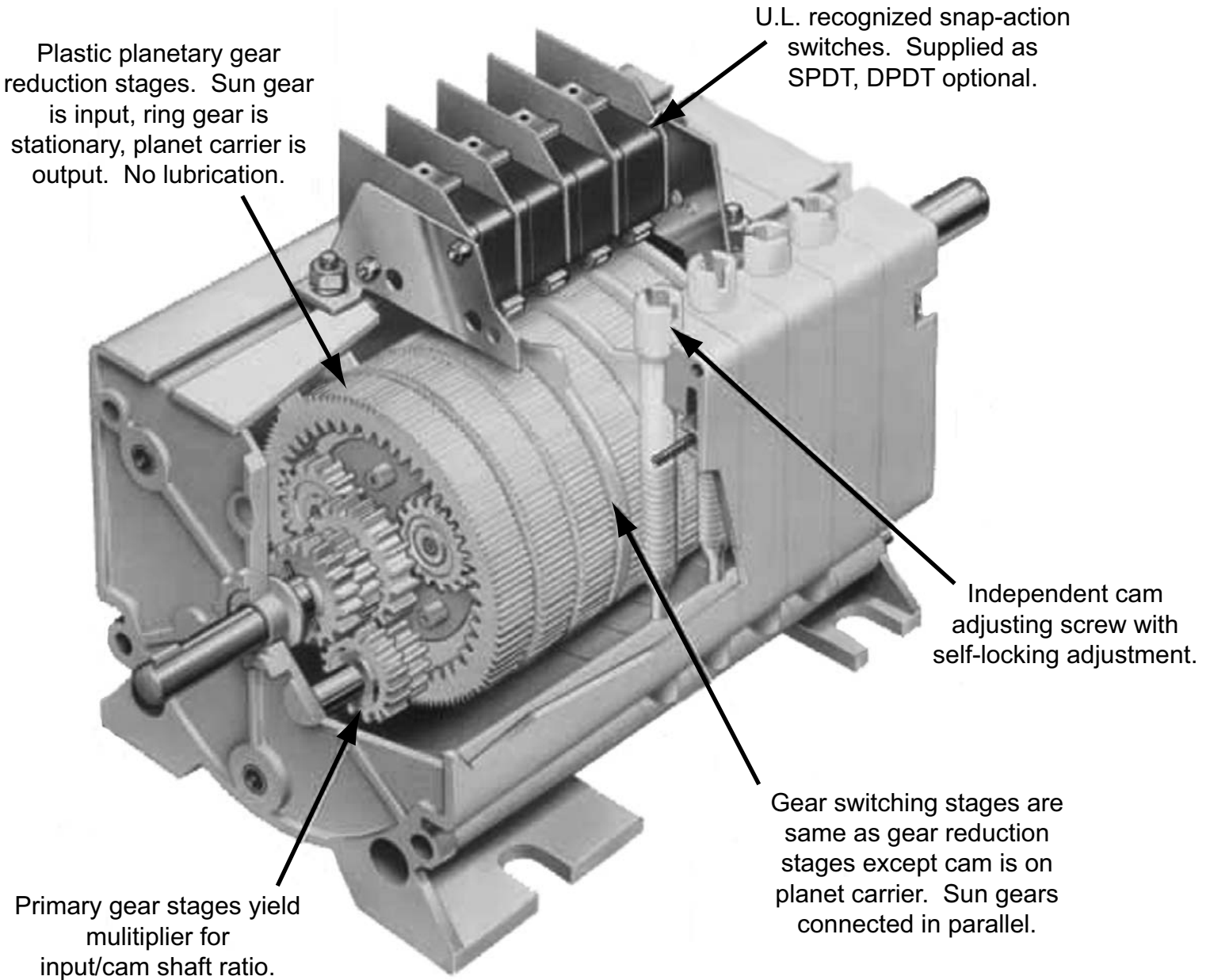
LSC = limit switch close - This limit shuts off the electric operator when it has reached the full closed position.

5. Limit switch setup:
 - a. Disconnect line voltage power source.
 - b. Note that as you manually slide the gate open and closed the rotary limit switch cams rotate and activate the limit switches. Both the open and creep open cams make contact with the limit switches from the same direction and inversely for the close and creep close cams.
 - c. Adjust the LSCO to activate at a location approximately 6" to 8" from the full open position.
 - d. Adjust the LSO to activate and shut off the operator approximately 4" from the fully open position to start with.
 - e. Adjust the LSCC to activate 6" to 8" from the full closed position.
 - f. Adjust the LSC to activate and shut off the operator approximately 4" from the fully closed position to start with.
 - g. Manually slide the gate back and forth and check the limit switches for proper adjustment.
6. Manually slide the gate into the fully closed position.
7. Turn On power source.
8. Activate the open signal. The gate will slide open at run speed until it reaches the creep open limit. The gate will then decelerate and operate at creep speed until it reaches the fully open position.
9. Activate the close signal. The gate will slide closed at run speed until it reaches the creep closed limit. The gate will then decelerate and operate at creep speed until it reaches the fully closed position.
10. Operate the gate back and forth and adjust the open and closed limits until the desired positions are set.
11. Adjust the run speed to the desired setting by rotating the run speed potentiometer.
12. Adjust the creep speed to the desired setting by rotating the creep speed potentiometer.
13. Adjust the Accel/Decel potentiometer. This feature varies the time it takes to accelerate and decelerate from full speed to creep speed. It is variable from .8 to 10 seconds. The setting must take into account travel speed, weight of the door and the length of the creep mode. The faster and heavier the gate the longer the transition time should be.
Note: If the setting is too high or the distance in creep mode is too short, the creep mode will not be achieved. An optimum setting will accelerate and decelerate the gate smoothly.
The Accel/Decel potentiometer is labeled as ACCEL and is located on the DC control board.

DO NOT ATTEMPT TO ADJUST THE OTHER POTENTIOMETERS ON THE CONTROL BOARD. THEY ARE FACTORY SET AND SEALED. ADJUSTMENTS WILL DAMAGE THE UNIT AND VOID THE WARRANTY.

14. Adjust the LSCC and LSCO limit switches to regulate the desired length of time the gate travels in creep mode.
Note: The length of time the operator is operating in creep mode must be long enough to allow for it to decelerate from run speed to creep speed and to creep until the gate reaches the full stop position.
15. Open and close the gate several times and fine tune the limit switch adjustments.
16. Periodically the limit switches may require fine adjustment. This is typically necessary during the initial few weeks after start up due to chain stretch and wear in.

Rotary Cam Limit Switch Assembly



SRLS51-($\frac{17.5}{29}$)-SP4
75

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 18 shows the proper location of vent, oil level, and drain plugs.

(b) The gearunit is prelubricated and shipped with Mobil "SHC 634" synthetic lubricant. This oil is a lifetime lubricant rated for operation in ambient temperatures ranging from -40°F to + 125°F.

(2) Every 900 cycles, where one cycle consists of opening and closing of the door, 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.

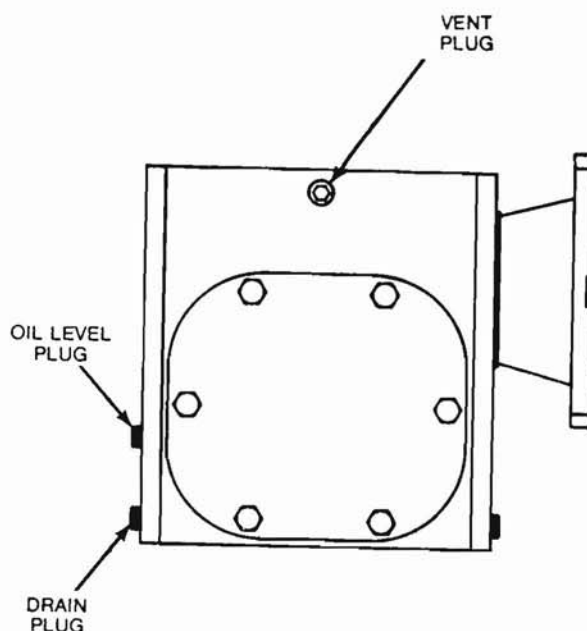


Figure 18. Gearmotor Plug Locations

(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.

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.

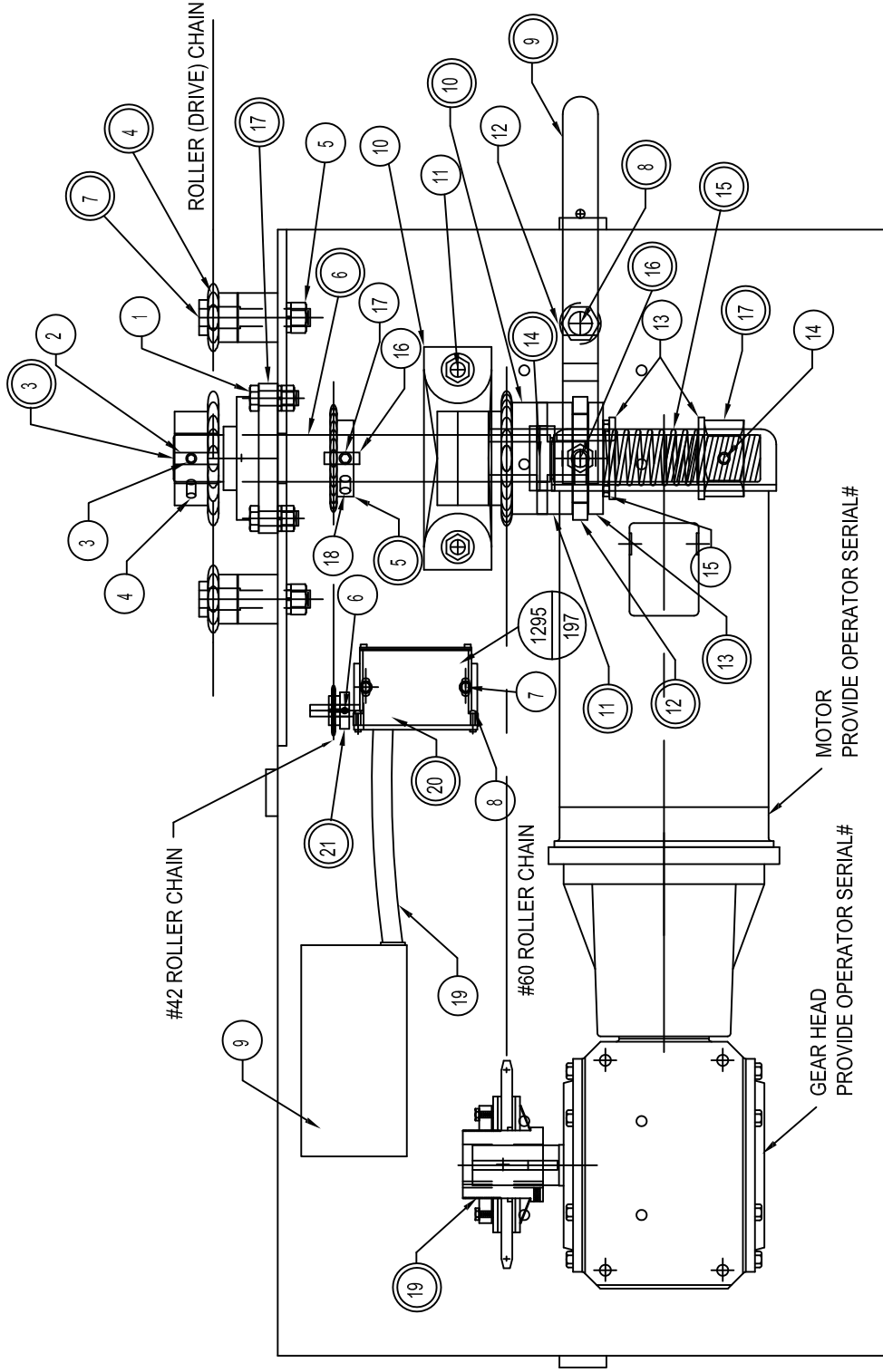
(6) Give name and address of person or company to whom parts are to be shipped.

(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 19 and 20.



CROWN
 INDUSTRIAL
 OPERATORS
 SO. SAN FRANCISCO, CA
 (650)952-5150



SHEET: 1 OF 2

DESCRIPTION		DRAWING NO.	
1285 ELECTRIC OPERATOR ASSY.		EO-85790	
REV. BY:	DATE:	CHECKED BY:	DATE:
BCM	7-29-97		
CHECKED BY:	DATE:	CHECKED BY:	DATE:
BCM	7-29-97		
SHEET		1 L	

- 1 5/8"x2" H.H.M. BOLT(4) W/L WASHERS & HEX NUT
- 2 1/2"SQ x 1 1/2 LG KEY
- 3 3/8" x 3/4" A.H.SET SCR.
- 4 3/8" x 1" A.H.SET SCR.
- 5 (2)3/4" L.WASH. & HEX NUTS
- 6 1/8"x1" ROLL PIN
- 7 (2)1/4"x1/2" H.H.M. SCR W/S.&L. WASHERS
- 8 (4)#8x1" R.H.M. BOLT W/SHAKEPROOF WASHER & #8 HEX. NUT. (4 EA)
- 9 1/4"x3/8" R.M. SCR'S (4) W/STOCK WASHERS
- 10 #MP-32 BEARING
- 11 (2) 5/8"x1 3/4"H.H.M. SCR.W/L&S WASHERS
- 12 5/8" STOCK WASHER
- 13 2"PLAIN WASHER (2)
- 14 3/8"x1/2" A.H.SET SCR
- 15 (3) 5/16"x1 1/4" H.H.M.SCR W/L WASHERS
- 16 1/2"SQ.x1 1/2" LG. KEY
- 17 3/8"x1/2" A.H.SET SCREW
- 18 3/8"x3/4" A.H. SET SCR.
- 19 1/2" SEALTITE CONDUIT

MATERIAL LIST		
PART NO.	QUAN.	DESCRIPTION
1	1	OPER. BASE PLT. ASSEMBLY
2	1	OPER. SADDLE
3	1	DRIVE SPROCKET
4	2	IDLER SPROCKET ASSY.
5	1	TIMING SPROCKET ASSY.
6	1	JACKSHAFT 2"
7	2	IDLER AXLE
8	1	LEVER STUD
9	1	RELEASE LEVER
10	1	CLUTCH DRIVEN SPROCKET ASSY.
11	1	CLUTCH ENGAGEMENT HD.
12	1	CLUTCH DISC
13	1	CLUTCH COLLAR
14	1	RETAINING RING
15	1	SPRING
16	2	COLLAR STUDS
17	1	#MSF-32 BEARING
18	1	#MP-32 BEARING
19	1	#1285.103-3 CLUTCH
20	1	#SRLS51-75-SP4-12 LIMIT SWITCH
21	1	LIMIT SWITCH SPRKT. 065480S

PROVIDE OPERATOR SERIAL NUMBER
HORSE POWER & VOLTAGE WHEN ORDERING PARTS

SHEET: 2 OF 2



C R O W N
INDUSTRIAL
OPERATORS
SO. SAN FRANCISCO, CA
(650)952-5150

DESCRIPTION	
1285 ELECTRIC OPERATOR ASSY.	
DRAWN BY: BCM	DATE: 9-29-99
CHECKED BY:	DATE:
REV. BY:	DATE:
REV. BY:	DATE:
DRAWING NO. EO-85791	SHEET 2 L