

## **Mecanismos de Accionamiento Electromecánico de Barreras**

### **M - 95 HITACHI**

Se proveerán mecanismos de barrera Hitachi Modelo M - 95 que cumplen tanto con las normas AREMA como con otras normas internacionales vigentes aplicables a la industria ferroviaria.

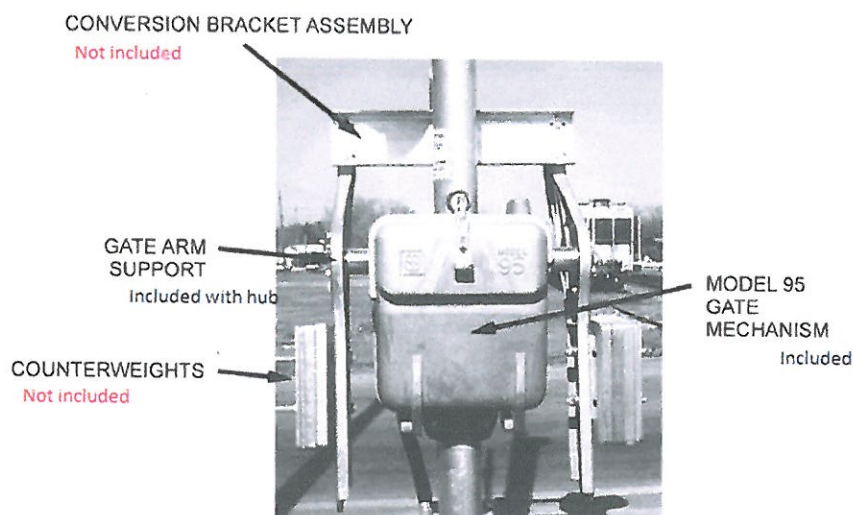
Asimismo los mecanismos a proveer son de amplio uso en nuestro país y aceptados por la CNRT.

El mecanismo poseerá un dispositivo de contrapeso regulable, para permitir el balance del sistema con cualquier largo de brazo.

Normalmente el sistema funcionará mediante energía eléctrica, pudiéndose levantar el brazo en forma manual frente a casos de emergencia. Cuando ocurra lo apuntado en el punto anterior, los circuitos de accionamiento seguirán actuando normalmente, cuando se libere el brazo, este tomará la posición horizontal, si ello correspondiera.

El mecanismo está protegido mediante una caja estanca (IP54) provista de puerta de movimiento vertical, ojal para candado, que permite el fácil acceso para su mantenimiento o reparación.

Se entregarán los manuales originales de los accionamientos de barrera.



## **PRINCIPALES CARACTERISTICAS**

Se detallan a continuación las principales características de los mecanismos de barrera ofrecidos:

Completamente diseñado para cumplir o superar las especificaciones de AREMA y de la y la Asociación Americana de Oficiales de Carreteras.

Es un dispositivo compacto, de fácil mantenimiento. Cuenta con una cubierta de aluminio y es impulsado por motor de engranajes eficiente y sólido.

Constituye una unidad pequeña y liviana, posee un par de torsión de 2,000 pies por pulgada (8896 Newtons). Incluye resortes helicoidales para amortiguación vertical y horizontal

Está diseñado para simplicidad en su instalación y facilidad de mantenimiento, con fácil acceso al sistema de engranajes.

### **Ventajas**

- Diseño y compacto
- Completamente diseñado para una mayor durabilidad y facilidad de servicio
- Fácil instalación y desinstalación
- Se adapta a mástiles de diferentes diámetros
- Disyuntores internos para restauración automática.
- Carcasa de aluminio fundido
- Disponible con relés vitales o no vitales.
- Motor de accionamiento y engranajes altamente eficientes
- Amortiguadores horizontales y verticales resistentes
- Protección térmica y contra sobretensiones incorporada
- Adaptador de brazo de barrera "separable"

### **Características de diseño**

Carcasa y brazo de puerta

Presenta una pieza de aluminio fundido de 1 pieza con puerta liviana extraíble (verticalmente con bisagras). Está provista con un cerrojo de acero de alta resistencia en la carcasa que sujeta la tapa a la carcasa y acepta cualquier candado estándar.

El montaje se puede hacer en mástiles de distintos diámetros.

Utiliza brazos de barrera estándar que se sujetan y se conectan fácilmente al brazo de accionamiento.

Posee un adaptador de ruptura universal en la articulación del brazo que incluye pasadores de seguridad en ángulo recto, para controlar la separación del brazo si se golpea por un vehículo de motor.

Dentro de la carcasa, el conjunto eléctrico está montado en una placa para que todos los componentes eléctricos puedan ser fácilmente removidos o reemplazados

Incluye un mecanismo de reducción de engranajes de alta resistencia.

El eje de transmisión principal posee amortiguadores que impiden cualquier transmisión por golpe del brazo de barrera hacia el tren de engranajes.

Es impulsado por un permanente compacto pero potente Motor reductor magnético que genera más torque que los motores más grandes y pesados que existen en el mercado

El par de torsión es de 2000 pies / libras. (8896 Newtons), lo que constituye una importante mejora sobre los típicos valores de 1300 ft./lbs. (5783 Newton) que promedian otros mecanismos de barrera disponibles en el mercado. Asimismo el motor es capaz de mover el mecanismo en caso que este se encuentre desequilibrado por la falta del brazo de barrera.

Si es necesario, el eje del motor también puede ser activado manualmente a través de una manivela acoplada como extensión sobre un eje cuadrado.

Para el control del motor utiliza un controlador de estado sólido.



## Especificaciones

Dimensiones	23 "Alto. X 21" An. X 13-3 / 4 "P (58.4 cm de alto x 53.3 cm de ancho x 34.9 cm profundidad)
Peso	185 libras (83.9 kg). con cubierta, 160 libras (72.6 kg) sin cubierta
Montaje	Mástiles de 4 ", 5" y 10 "" (10.2 cm, 12.7 cm y 25,4 cm)
Manipuleo	Cáncamo para elevación
Alimentación	12 Vcc o 24 Vcc
Consumo	15.0 A
Torsión	2000 ft./lbs. (8896 Newtons)
Disyuntor	12 Vcc unidad: 20A Unidad de 24 Vcc: 10A
Tiempo Ap.	100% de carga nominal durante 1 hora 125% de capacidad de carga para hasta 1 hora 200% de capacidad de carga dentro de 1 minuto
Calentador	Elemento resistivo 25W Tensiones: 24V, 120V, 240V

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## DIAGRAMA DE VOLTAJE

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General Maintenance and Troubleshooting

**Ansaldo STS**

A Hitachi Group Company

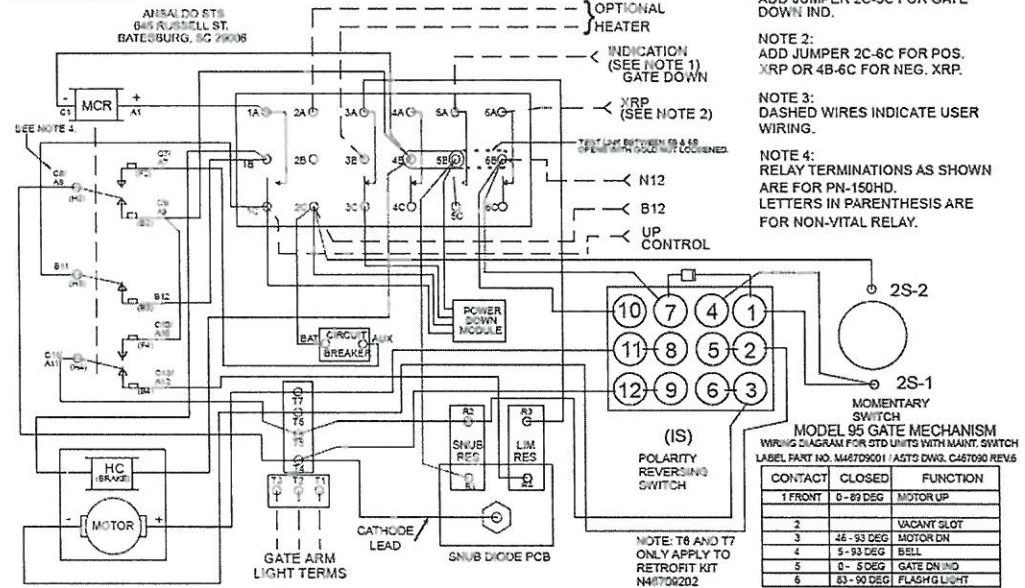


Figure 2-2. Wiring Diagram for 12-Volt Systems – with Maintenance Switch

SM 6495, Rev. 9, October, 2016

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AUTOTROL

## Model 95 Highway Crossing Gate Mechanism

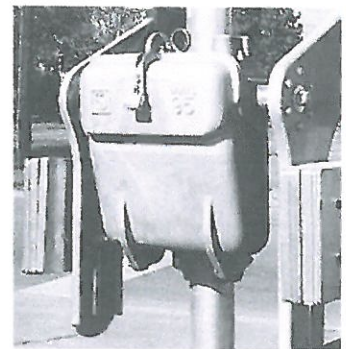
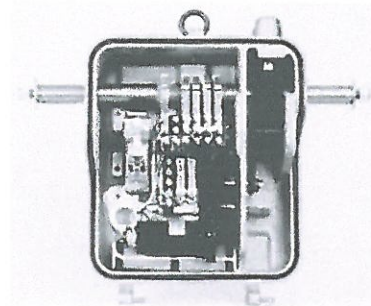
Hitachi Rail STS USA's Model 95 Highway Gate Crossing Mechanism is the industry standard for simplicity, reliability, durability, ease of maintenance and value. It is completely reengineered from earlier models, meets or exceeds AREMA and other industry standards, and responds to customer requests for a state-of-the-art mechanism built with both safety and value in mind. The mechanism represents a leap into the use of modern techniques and materials. Its modular design features an uncluttered mechanism with fewer moveable parts. Each unit part can be easily accessed and replaced in the field if necessary, making the Model 95 simpler to service. Models are available for standard highway vehicle crossing locations, sites with pedestrian sidewalks, and our Four-Quadrant Gate System (see RSE-5A3).

### General Description

Completely redesigned to meet or exceed AREMA and American Association of Highway Officials' specifications, the Model 95 Gate Mechanism is a compact, easily maintained device. It features a cast aluminum housing and cover and is driven by a highly efficient and durable gear motor. The result is a smaller, lighter unit that is extremely serviceable and stronger than other models. In fact, the Model 95 is 100 pounds (43 kg) lighter than previous mechanisms, yet has a stall torque of 2,000 foot-pounds (8896 Newtons). Other features of the Model 95 include heavy duty coil springs for vertical and horizontal dampeners; availability with vital or non-vital relay; capability of indefinite motor stall; and higher-strength gears. The Model 95 is designed for ease of installation and ease of maintenance, with convenient access to the gear train.

During development testing of the Model 95, the gear motor prototypes performed to expectations through more than 200,000 operations. At an average of 10 trains a day, that translates to more than 55 years of operation.

The latest versions of the Model 95 Gate Mechanism incorporate a solid-state electronic motor controller that improves reliability, provides more control functions and is easier to replace than earlier electro-mechanical controllers.



The Model 95 Gate mechanism has been adapted for a variety of applications including:

- Standard highway crossing entrance gate
- Highway crossing entrance combined with pedestrian (sidewalk) gate
- Pedestrian sidewalk-only
- Highway crossing "Four-Quadrant Gate" system with entrance and "Exit" gate mechanisms (see **RSE-5A3**)

### Advantages

- Lightweight, compact design
- Completely re-engineered for increased durability and serviceability
- Easily removed and installed
- Fits 4-inch or 5-inch (10.2 cm or 12.7 cm) masts
- Capable of indefinite motor stall
- Self-restoring internal circuit breakers
- Cast aluminum housing

To order, call  
1-800-652-7276

 **Hitachi Rail STS USA, Inc.**

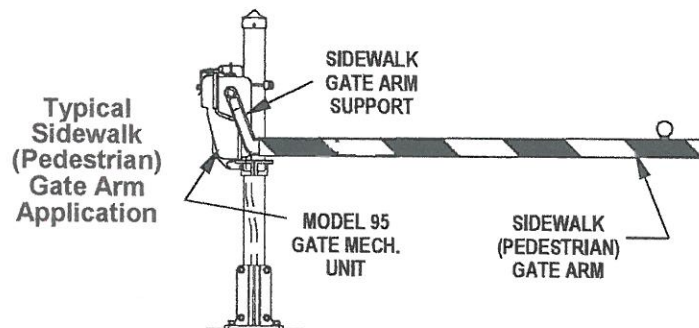
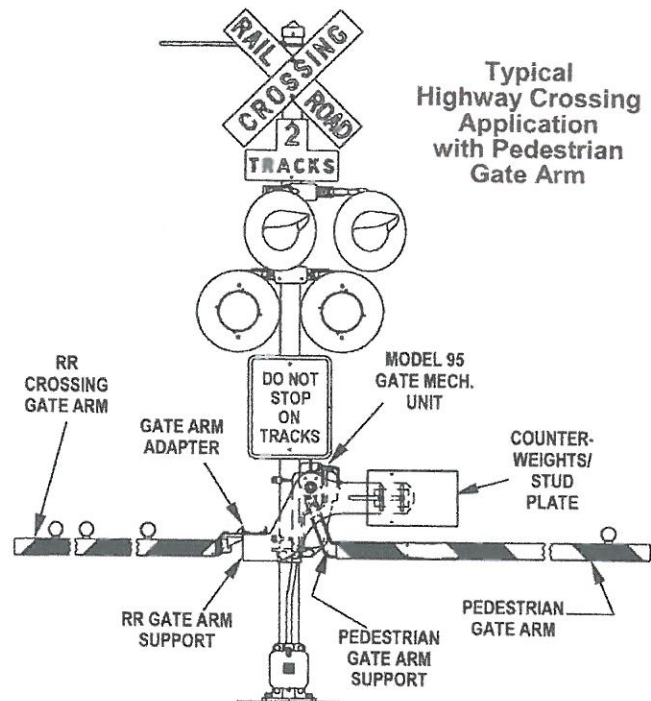
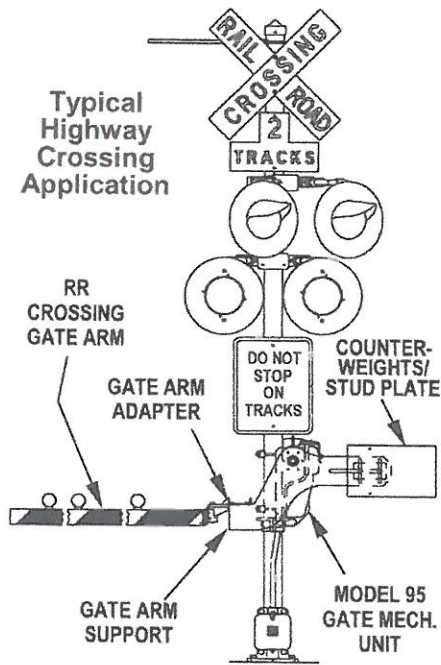
[sts.hitachirail.com](http://sts.hitachirail.com)

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Atenció



## Model 95 Highway Crossing Gate Mechanism



### Advantages (cont'd)

- Highly reliable, easily installed solid-state electronic motor controller versions available
- Available with vital relay or solid-state controller
- Highly efficient drive motor and gears
- Heavy duty horizontal and vertical buffers
- Built-in thermal and surge protection
- "Break-away" gate arm adapter
- Mechanisms with pedestrian and sidewalk crossing arms available
- Entrance and exit versions for Hitachi Rail STS USA's Quad Gate System

### Design Features

#### Housing and Gate Arm

The Model 95 features a 1-piece cast aluminum housing and light weight removable cover (vertically hinged). A heavy-duty spring steel hasp on the housing latches the cover to the housing and accepts any standard padlock. Mounting may be done on 5" and 10" (12.7 cm and 25.4 cm) masts. Overall, the Model 95 is smaller and about one-third lighter than similar mechanisms. Standard gate arm assemblies are easily fastened and wired to the Model 95 drive shaft. A universal breakaway adapter on the arm joint includes shear pins and a right angle, fall-away hinge to control separation of the arm if it is hit by a motor vehicle.

Within the housing, the electrical assembly is plate-mounted so that all of the electrical components can be easily removed and replaced.

# Model 95 Highway Crossing Gate Mechanism

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## Design Features (cont'd)

### Gearing and Drive Motor

The Model 95 includes a 2-stage, high-strength gear reduction mechanism. Heavy duty damper springs on the main drive shaft prevent any gate arm backlash into the gear train. The Model 95 is driven by a compact but powerful permanent magnet gear motor that generates more torque than larger and heavier motors in use. Stall torque is 2000 ft./lbs. (8896 Newtons), a major improvement over the typical 1300 ft./lbs. (5783 Newton) rating of other gate mechanisms. Also, this motor is capable of moving the gate mechanism off balance with the gate arm missing. If needed, the motor shaft can also be hand cranked via a square shaft extension.

A Solid-State Controller (SSC) is used to control the drive motor. The unique snap-action contact design extends contact life, while helping to operate the mechanism more smoothly. The MCR is de-energized when the gate is clear; therefore none of the circuit controller contacts carry motor current.

The Model 95 incorporates a simplified hold-clear circuit using an electric brake. This device permits the gate to be locked in the upright position. The brake disengages and allows the arm to lower when a train approaches the gate mechanism.

The Model 95 also has built-in self-restoring internal circuit breakers for thermal and voltage protection, which guard the device from damage due to harsh weather conditions, electrical storms and surges. It is also resistant to overload damage from gate arm obstructions.

### Electrical Controls

Model 95 mechs are available with an electronic motor controller that allows on-site operation with the gate arm missing. This is a simple, fully self-contained plug-in unit that provides greater reliability than earlier electro-mechanical controllers, and can be quickly removed and replaced if needed. Solid-state power MOSFETS in the unit control the motor current to extend the reliability of the crossing gate mechanism while helping to operate the mechanism more smoothly. LEDs and pushbuttons on the controller unit permit easy operation and testing.

The electronic controller is equipped with a power-down circuit that will lower the gate from 93 to 46 degrees (gravity completes the gate's descent). This feature is applied to crossing, pedestrian and sidewalk gates. For exit gate systems, the controller is used to power up the gate from 0 to 85 degrees (counterweights complete the movement).

### Foundation Mounting

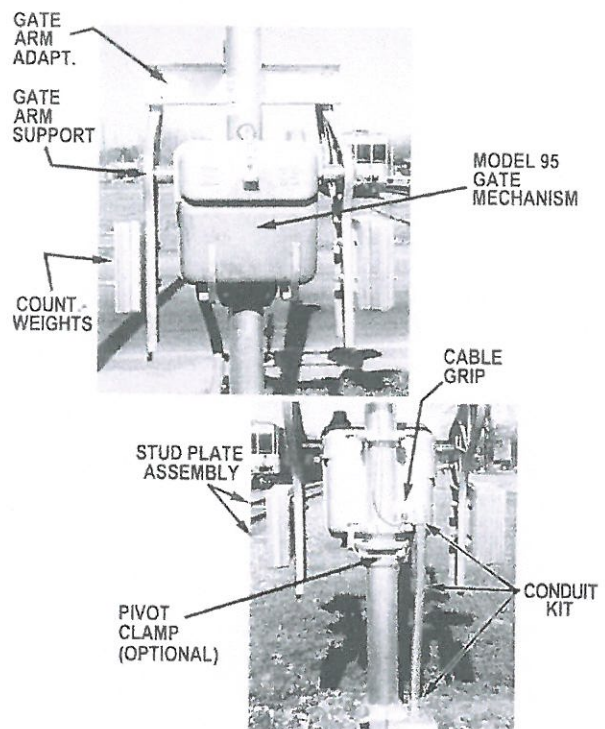
Standard pre-cast or poured concrete may be used as a foundation for the Model 95 Gate Mechanism (per AREMA guidelines). Bolt spacing is a standard 4-bolt pattern spaced 11-11/16" on centers for 5" junction box.

### Additional Model 95 Applications

The Model 95 Pedestrian Gate Mechanism utilizes the same basic design as the standard highway crossing version, but is equipped with an additional 8 foot (2.4 m) arm for deployment over a pedestrian sidewalk adjacent to the highway. Both the main highway arm and the pedestrian arm deploy at the same time and same speed from the internal mechanism. Versions of this mechanism are available with vital relay or Solid-State Controller (SSC). Gate arm support hubs permit right-hand or left-hand placement of the pedestrian arm.

In addition to the complete Highway/Pedestrian assembly, Hitachi Rail STS USA provides several retrofit kits for converting an existing Model 95 crossing mechanism to include the pedestrian arm feature. The Model 95 Sidewalk Gate mechanism is also based on the standard gate mechanism, but is only equipped with the 8 foot (2.4 m) pedestrian arm for locations where only a pedestrian sidewalk crosses the tracks. Left and right-hand arm versions are available with this assembly.

The Model 95 Exit Gate Mechanism is an integral part of our "Four-Quadrant Gate" system. This gate mechanism is mounted on the signals installed on the exit-side of the crossing (the side through which a motor vehicle must pass when leaving the crossing).



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Autotrol S.A.



**Additional Model 95 Applications (cont'd)**

It is designed to raise should power to the highway-crossing warning system fail, thus preventing a motor vehicle being trapped on the crossing by a down gate blocking the crossing location's exit-side lane. Refer to **RSE-5A3** for additional details.

**Specifications**

Dimensions:	23" H x 21"W x 13-3/4"D (58.4 cm H x 53.3 cm W x 34.9 cm D)
Weight:	185 lbs (83.9 kg). with cover, 160 lbs. (72.6 kg) without cover
Mounting:	5" and 10" " (12.7 cm and 25.4 cm) pipe masts
Handling:	Eyebolt for lifting
Motor Voltage:	12 Vdc or 24 Vdc
Motor Current:	15.0 A
Motor Stall Torque:	2000 ft./lbs. (8896 Newtons)
Hold Clear:	12 Vdc unit: 150 to 160 mA 24 Vdc unit: 185 mA
Ckt. Breaker:	12 Vdc unit: 20A 24 Vdc unit: 10A
Ckt. Brkr. Open Time:	100% of load rating for 1 hour 125% of load rating for up to 1 hour 200% of load rating within 1 minute

**Specifications (cont'd)**

Ckt. Breaker Reset:	Within 1 minute to several minutes
Heater:	25W resistive element Voltages: 24V, 120V, 240V
Motor Relay:	PN-150HD vital plug-in (see <b>RSE-4E2</b> ) or non-vital

**Ordering Information**

- Refer to ordering tabulation below and on page 5 to order the following Model 95 items:
  - Standard highway crossing entrance mechanism
  - Highway crossing mechanism with pedestrian (sidewalk) gate arm
  - Pedestrian (sidewalk) gate mechanism only
- If replacing a non-Hitachi Rail STS USA gate mechanism with the Model 95, gate arm supports must be ordered.
- Model 95 Exit Gate Mechanism only available as part of "Quad Gate" system; contact your Hitachi Rail STS USA Account Executive for details and any other special equipment configurations required.
- Request Service Manual SM-6495 for highway, pedestrian and sidewalk gate mechanism replacement parts.
- Refer to **RSE-5A2** for various Model 95 Gate Mechanism installation, upgrade and retrofit assemblies:

Order No.	Model 95 Crossing Gate Mechanisms				
	Gate Controller	Control Type	Motor	3-Wire Control	Maint. Switch (1)
N46790001	Electronic	SCC	12 Vdc	--	--
N46790002	Electronic	SCC	24 Vdc	--	--
N46780201	Electro-Mech.	Vital Relay	12 Vdc	--	--
N46780202	Electro-Mech.	Vital Relay	24 Vdc	--	--
N46780204	Electro-Mech.	Vital Relay	12 Vdc	X	--
N46780206	Electro-Mech.	Vital Relay	12 Vdc	--	X
Note (1): See RSE-5A2 for description.					

# Model 95 Highway Crossing Gate Mechanism

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## Ordering Information (cont'd)

Model 95 Sidewalk Gate Mechanisms						
Order No.	Gate Controller	Control Type	Left or Right Hand	120 Vac Heater	Maint. Switch (1)	Notes
N46790301	Electronic	SCC	R.H.	--	--	(2)
N46780207	Electro-Mech.	Vital Relay	R.H.	--	--	--
N46780208	Electro-Mech.	Vital Relay	L.H.	--	--	--
N46780209	Electro-Mech.	Vital Relay	R.H.	X	X	--
N46780210	Electro-Mech.	Vital Relay	L.H.	X	X	--
Note (1): See RSE-5A2 for description.						
Note (2): With 12V motor.						

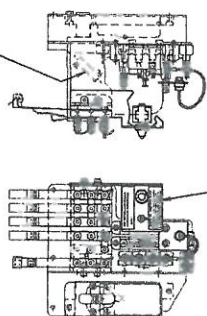
Model 95 Pedestrian Gate Mechanisms (Highway and Sidewalk Crossings in same unit)					
Order No.	Gate Controller	Control Type	120 Vac Heater	Maint. Switch (1)	Notes
N46790201	Electronic	SCC	--	--	(3)
N46790202	Electronic	SCC	--	--	(4)
N46780401	Electro-Mech.	Vital Relay	--	--	--
N46780402	Electro-Mech.	Vital Relay	X	--	--
N46780403	Electro-Mech.	Vital Relay	--	--	(2)
N46780405	Electro-Mech.	Vital Relay	X	X	--
Note (1): See RSE-5A2 for description.					
Note (2): With upgrade option (see description).					
Note (3): With 12 Vdc motor					
Note (4): With 24 Vdc motor					

Model 95 Exit Gate Mechanisms						
Order No.	Gate Controller	Control Type	Mode	120 Vac Heater	Timer	Notes
N46710402	Electro-Mech.	Vital Relay	Fail Up	X	X	--
N46710401	Electronic	SCC	--	--	--	(1)
N46790102	Electronic	SCC	--	--	--	(2)
Note (1): With 12 Vdc motor						
Note (2): With 24 Vdc motor						

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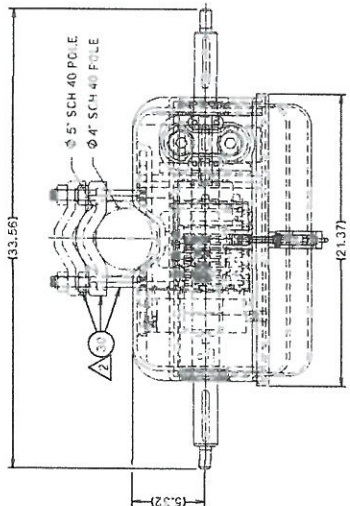


HEATER KIT (ITEM 145)  
LOCATION AS REQUIRED



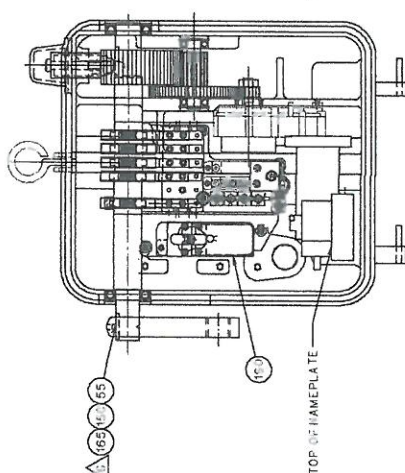
MAINTENANCE SWITCH (ITEM 15)  
AS REQUIRED

VIEW "C"  
SHOWING LOCATION OF HEATER  
& MAINTENANCE SWITCH



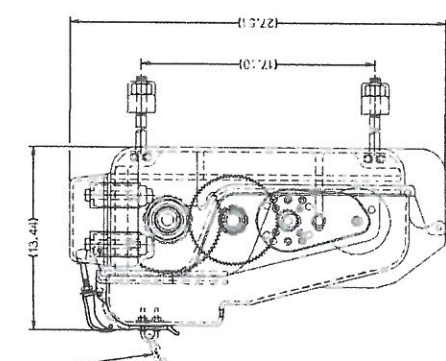
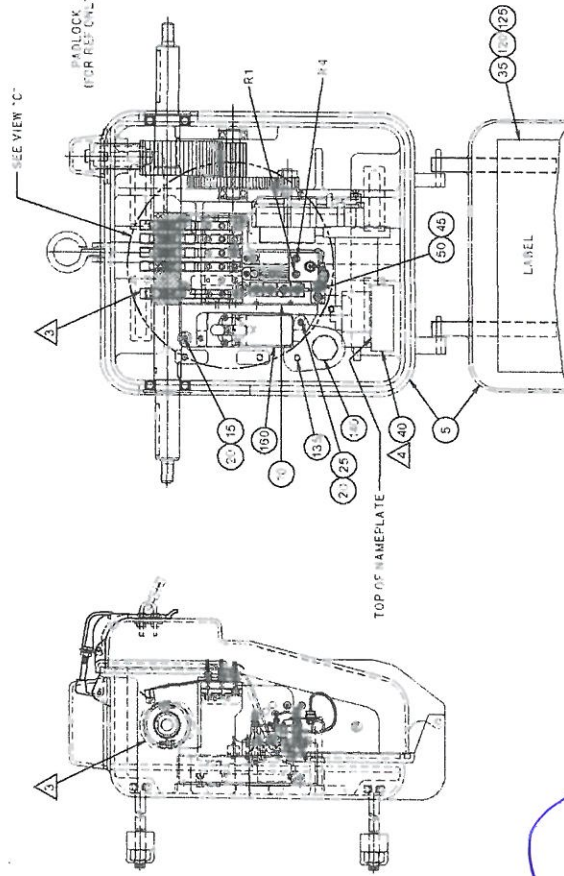
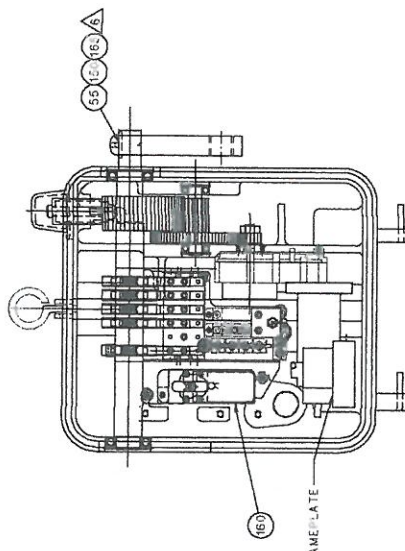
VIEW "A"

VIEW OF R.H. SIDEWALK MECH  
N467802-5, N467802-7 OR N467802-9



VIEW "B"

VIEW OF R.H. SIDEWALK MECH  
N467802-5, N467802-7 OR N467802-9



TOP OF NAMEPLATE

7. FOR MODEL 95 GATE MECHANISM-VITAL RLY SEE DWG. F467801.
8. PLACE SCREW SET ITEM 150 & KEY ITEM 151 IN BAG (ITEM 175) AND ATTACH TO ADAPTER ARM (ITEM 55) WITH WIRE (ITEM 170). ADAPTER ARM SHIPS WITH GATE MECH UNINSTALLED.
9. FOR COMPONENT PART NO. REC. S. SEE COMPUTER BOM.
10. PRINT NAMEPLATE ITEM 401 PER 50-5700 WITH PRODUCT NAME, PART NUMBER, SERIAL NUMBER AND BAR CODE. LOCATE APPROX. WHERE SHOWN.
11. THE CAMS ASSEMBLED TO THE MAIN SHAFT MUST BE LOOSENEED & THEN ALIGNED WITH EACH OF THE 151 CONTACT ASSEMBLIES BEFORE RETIGHTENING.
12. T-BOLT KIT (ITEM 301) IS PROVIDED FOR USE WITH EITHER 4" OR 5" DIAMETER POLES. OTHER KITS MUST BE ORDERED WHEN APPLICATION INVOLVES LARGER DIAMETER POLES (SEE DWG. D467037).
13. TEST AND INSPECT PER 50-8170

ITEM	DESCRIPTION	QTY	UNIT
18	N4678-210	MOD 95 LHS SW. MECH/PLN-150 W/HT & INT SW	SEE VIEW "A"
19	N4678-209	MOD 95 RHS SW. MECH/PLN-150 W/HT & INT SW	SEE VIEW "B"
20	N4678-208	MOD 95 LHS SW. MECH/PLN-150	SEE VIEW "A"
21	N4678-207	MOD 95 RHS SW. MECH/PLN-150	SEE VIEW "B"
22	N4678-206	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
23	N4678-205	MOD 95 R.H. S.W. MECH/PLN-150/3 WIRE	SEE VIEW "B"
24	N4678-204	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
25	N4678-203	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
26	N4678-202	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
27	N4678-201	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"

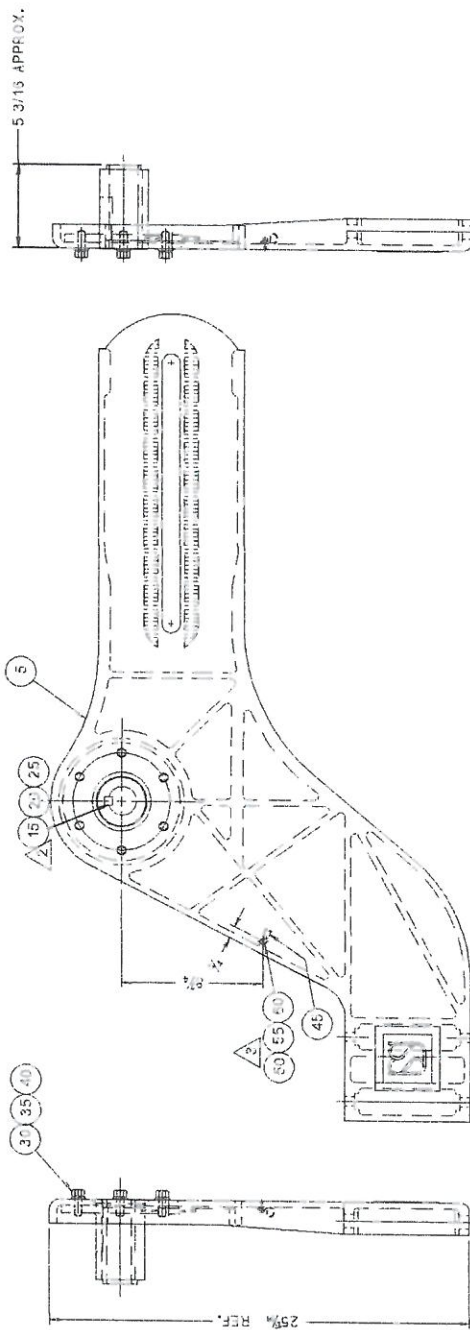
ENVELOPE ITEM 120 TO BE PLACED AS FAR LEFT AS PRACTICABLE  
IN COVER AREA AS SHOWN. LABEL ITEM 301 TO BE CENTERED IN  
ENVELOPE AS SHOWN & TO BE READABLE WITH COVER OPEN.

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ITEM	DESCRIPTION	QTY	UNIT
1	N4678-210	MOD 95 LHS SW. MECH/PLN-150 W/HT & INT SW	SEE VIEW "A"
2	N4678-209	MOD 95 RHS SW. MECH/PLN-150 W/HT & INT SW	SEE VIEW "B"
3	N4678-208	MOD 95 LHS SW. MECH/PLN-150	SEE VIEW "A"
4	N4678-207	MOD 95 RHS SW. MECH/PLN-150	SEE VIEW "B"
5	N4678-206	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
6	N4678-205	MOD 95 R.H. S.W. MECH/PLN-150/3 WIRE	SEE VIEW "B"
7	N4678-204	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
8	N4678-203	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
9	N4678-202	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
10	N4678-201	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
11	N4678-200	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
12	N4678-199	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
13	N4678-198	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
14	N4678-197	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
15	N4678-196	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
16	N4678-195	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
17	N4678-194	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
18	N4678-193	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
19	N4678-192	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
20	N4678-191	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
21	N4678-190	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
22	N4678-189	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
23	N4678-188	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
24	N4678-187	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
25	N4678-186	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
26	N4678-185	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
27	N4678-184	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
28	N4678-183	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
29	N4678-182	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
30	N4678-181	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
31	N4678-180	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
32	N4678-179	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
33	N4678-178	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
34	N4678-177	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
35	N4678-176	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
36	N4678-175	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
37	N4678-174	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
38	N4678-173	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
39	N4678-172	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
40	N4678-171	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
41	N4678-170	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
42	N4678-169	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
43	N4678-168	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
44	N4678-167	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
45	N4678-166	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
46	N4678-165	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
47	N4678-164	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
48	N4678-163	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
49	N4678-162	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
50	N4678-161	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
51	N4678-160	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
52	N4678-159	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
53	N4678-158	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
54	N4678-157	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
55	N4678-156	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
56	N4678-155	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
57	N4678-154	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
58	N4678-153	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
59	N4678-152	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
60	N4678-151	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
61	N4678-150	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
62	N4678-149	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
63	N4678-148	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
64	N4678-147	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
65	N4678-146	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
66	N4678-145	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
67	N4678-144	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
68	N4678-143	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
69	N4678-142	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
70	N4678-141	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
71	N4678-140	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
72	N4678-139	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
73	N4678-138	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
74	N4678-137	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
75	N4678-136	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
76	N4678-135	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
77	N4678-134	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
78	N4678-133	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
79	N4678-132	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
80	N4678-131	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
81	N4678-130	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
82	N4678-129	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
83	N4678-128	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
84	N4678-127	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
85	N4678-126	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
86	N4678-125	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
87	N4678-124	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
88	N4678-123	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
89	N4678-122	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
90	N4678-121	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
91	N4678-120	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
92	N4678-119	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
93	N4678-118	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
94	N4678-117	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
95	N4678-116	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
96	N4678-115	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
97	N4678-114	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
98	N4678-113	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
99	N4678-112	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"
100	N4678-111	MOD 95 GATE MECH/PLN-150 W/HT & INT SW	SEE VIEW "C"







△ #2-32 TAP DURING ASSEMBLY.

2. PLACE KEY (IT. 15) IN PARTS BAG (IT. 20).  
THERMOSEAL & TIE TO SUPPORT AFM (IT. 5)  
WITH WIRE (IT. 25) RUNNING THRU BAG.

FOR COMPONENT PART NO. REFS. SEE COMPUTER B/M.

AUTOTROL S.A.  
GUSTAVO REY GOYANES  
AFIDELADO

[illegible]