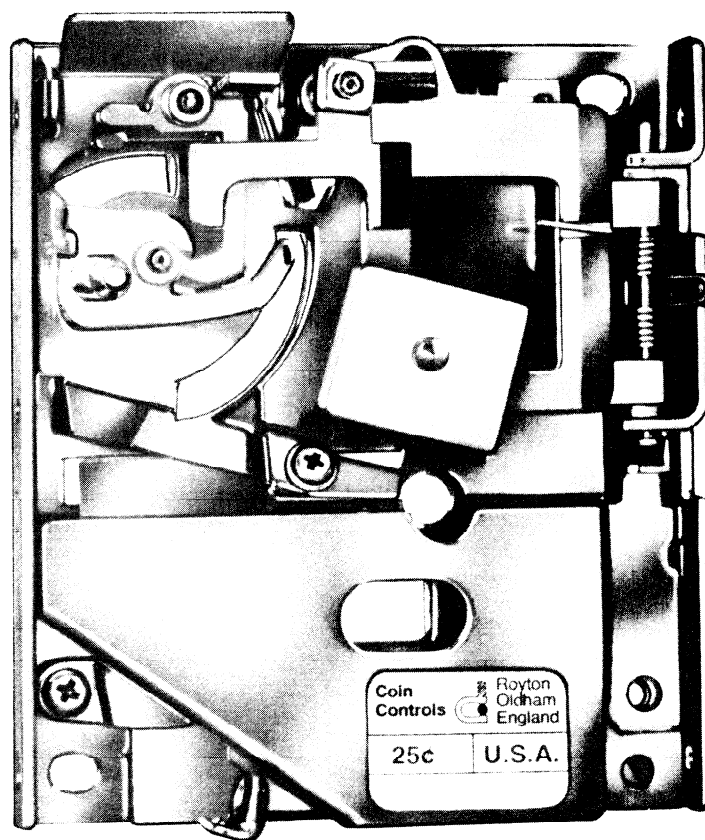


# COIN CONTROLS, Inc.

Manufacturers of Coin Handling Equipment.

## INSTRUCTION MANUAL

# S10 Acceptor



**Precision built for jam-free checking and high selectivity.**

Single coin acceptor pre-adjusted for all coins/tokens 17-30 mm. dia. Coin-on-cotton; metal content (eddy current); thickness;

diameter; weight and rim tests. Individually engineered for every coinage problem.

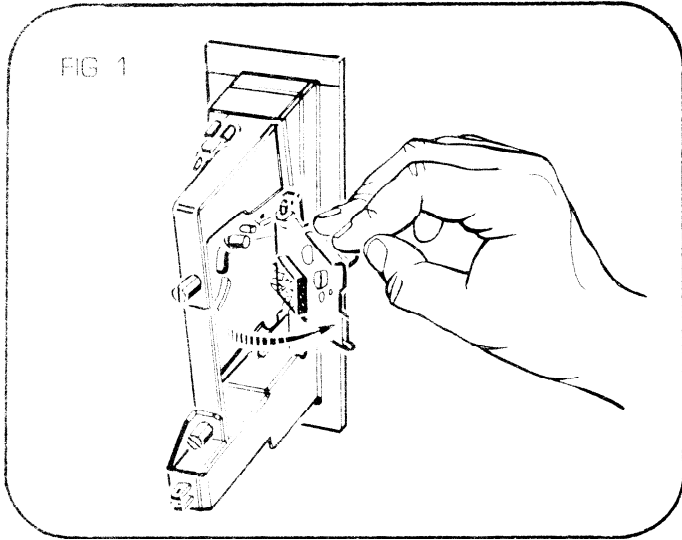
**COIN CONTROLS, Inc.**



2609 Greenleaf Ave. • Elk Grove, IL. • 60007  
(312) 228-1810 • TELEX: 254708

# S10: Service Information

## CLEANING and CARE of the MECHANISM



Whatever magnet is fitted to the mechanism, it should be kept clean from foreign particles. The standard and ¼ magnets can be cleaned by swinging the gate open, while the roll round magnet can be removed for cleaning by unscrewing the posidrive fixing screw. Remove metal filings from the magnet by guiding the point of a screwdriver along the edges of the magnet, such that the filings cling to the joint.

The bounce anvil should be cleared of any foreign matter as this could cushion the bounce of coins. Make sure that the anvil screw is tight.

The S10 mechanism can be cleaned by immersing in boiling water using a small brush to clean the mechanism. Rinse the mechanism with boiling water and dry with compressed air.

### Note:

Since the S10 relies on coins passing the magnet at a constant speed, the rejector must be free of dirt and grease which may slow down the coins. Do not lubricate the acceptor with oil as this slows down coins.

If the above procedures are not successful, check for worn or damaged parts and replace when necessary.

### Coin switch coin path adjustment

The coin switch comes in three different spring tensions identified by the colour of the plastic boss at the wire's pivot point.

**Red:** Light tension e.g. 10¢ USA, 1 Aus Sch, 25¢ NL.

**Black:** Medium tension e.g. 25¢ USA, 2p and other intermediate coins.

**White:** Heavy tension e.g. 10p, 50p, 5DM

For security reasons, the heaviest possible coin switch is fitted without causing the coin to jam on the switch wire.

### Coin path adjustment for coin switch

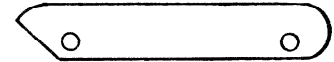
Coin switch coin path spacers are fitted to maintain the coin in contact with the switch and to produce an adequate pulse duration from the coin switch when a coin is accepted. For coins below 23.5mm diameter a white plastic spacer (which can be fitted in either of 2 ways) has been used.

#### Coin size

20mm or less

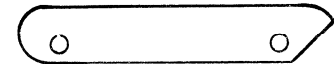
#### Method of adjustment

This face towards the coin path.



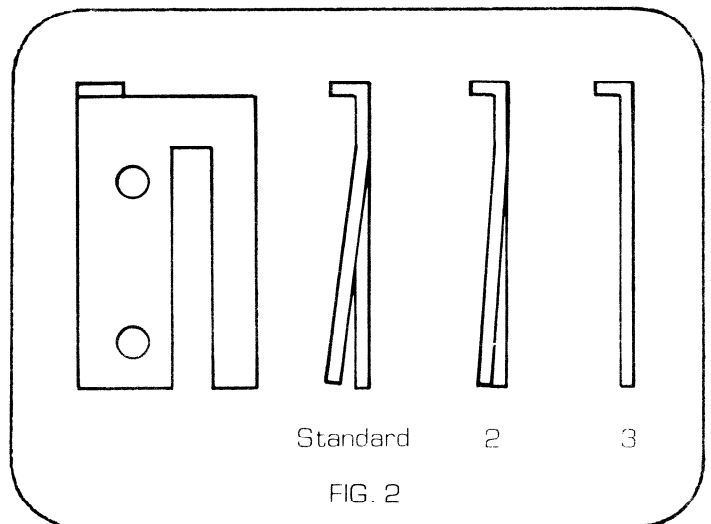
20-23.5mm

As above, but reversed to present opposite face to coin path.



The latest mechanisms have an 'adjustable plate'. This comprises of two steel legs, the largest of which is fixed, the smaller protruding into the coin switch coin path. These are made as standard with three different bends such that the smaller the coin the greater the gap between the legs. These adjustable plates can be identified by the plates being stamped 1, 2 or 3 accordingly.

### Adjustment plates



#### Coin Size

23.5-25mm

25-27mm

27-28.5mm

28.5-30mm

#### Method of adjustment

Adjuster plate 3 [stamped 3]

Adjuster plate 2 [stamped 2]

Adjuster plate 1 [stamped 1]

No adjuster plate necessary

For any further information contact our Technical Services Department.

# CRADLE/INTERLOCK MECHANISM

## Removal of Mechanism

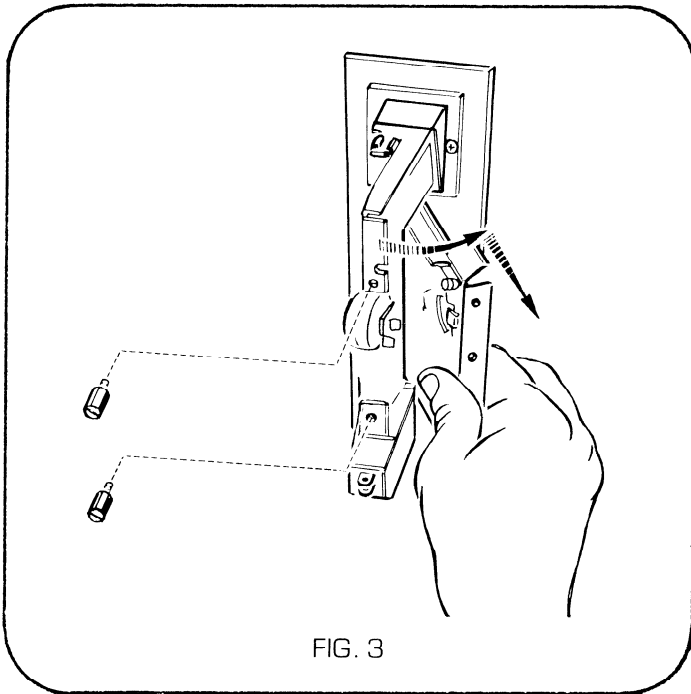


FIG. 3

To remove the coin selector: Unscrew the two hexagon bolts [as shown in Fig. 3] — swing rear of selector body away from the lock-out side and withdraw.

The S10 coin mechanisms are designed to require a minimum of maintenance and field adjustment. Coins are checked by diameter and thickness, weight, metal content, bounce, and for ferromagnetic coins such as nickel and steel, a rim test is also used.

The first check on the coin is at the entry slot which prevents the entry of grossly oversize and bent coins. The next test is at the cradle. When the correct coin falls into the cradle, the cradle tips and the coin is delivered to the magnet check. Under-diameter coins fall between the legs of the cradle and are returned to reject. Under-weight coins fail to tipple the cradle and can be returned to reject by pressing the reject button.

Working in conjunction with the cradle is the interlock. The coin has to be of sufficient diameter to pivot and disengage the interlock, yet over-diameter coins are stopped by an over-diameter stop on the interlock. Under-size and over-size coins caught by the interlock can be cleared by actuating the reject button.

## The Adjustment of the Cradle and Interlock.

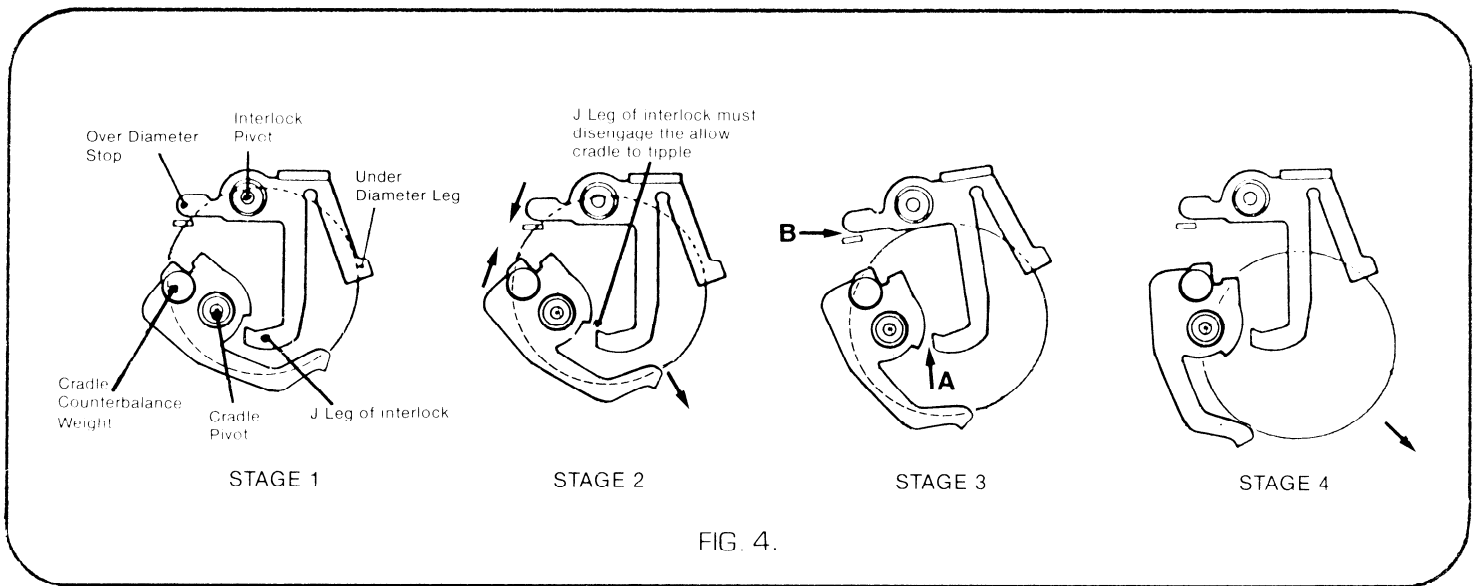


FIG. 4.

For finer settings when required, minimize gap A & B in 3 by bending over-diameter stop and under-diameter leg. Check with new and well worn coins.

Note: For small coins, the J-leg may be omitted. This is to lighten the interlock which would otherwise be too heavy for the coin and would impede its passage.

# MAGNETS

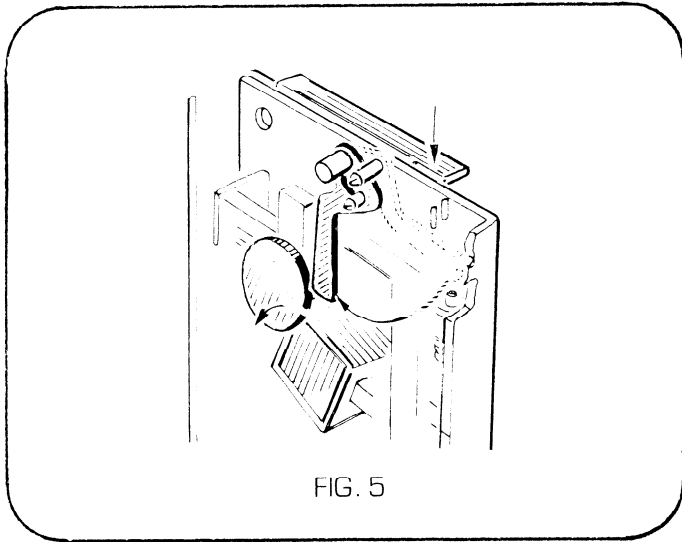


FIG. 5

Coins that are too thick will fail to pass between the magnet and the backplate of the mechanism; and will be cleared by the magnet wiper when the reject button is actuated.

The metal content of the coin is next checked using magnets. The use of magnets make sure that if coins are travelling down the runway at the same speed a magnet will cause this speed to alter according to the metal content of the coin. This retardation of the coin is caused by the induction of eddy currents within the coin due to its passage through the magnetic field. Cupro-nickel is least affected by the magnetic field and leaves the runway fastest of all metals, followed by brass, bronze, copper and silver. Ferromagnetic coins i.e. iron, steel and nickel are stopped and held by the magnet and can be cleared by the reject wiper.

There are three types of magnet used in the S10 Acceptor — the standard or full magnet, the  $\frac{1}{4}$  square magnet and the  $\frac{1}{8}$  round magnet.

## The Standard Magnet

This is used for cupro-nickel coins and non-ferromagnetic coins. The cupro-nickel coins are hardly affected by the magnet, they therefore hit the bounce test and rebound in arc into the accept chute. Brass blanks are slowed down, they miss the bounce test and fall directly into the reject chute. For 25¢ U.S.A., the coin is slowed down and deflected into accept by a separator.

## The $\frac{1}{4}$ Magnet

This magnet is used for coins with a certain degree of ferromagnetism, which would be slowed down too much or stopped by the standard magnet e.g. 5 French Franc which is cupro-nickel bonded to a nickel core. A rim test is used in conjunction with the magnet such that semi-ferrous blanks without a rim but of the same thickness are caught. Either a bounce test, a swinging leg or a separator is used to deflect the true coin into the accept chute.

## The $\frac{1}{8}$ Magnet

This is a roll-round magnet for highly ferromagnetic coins such as nickel coins e.g. Canadian and Dutch Coins. These would stick against the full and  $\frac{1}{4}$  magnets. The edge of the coin attaches onto the round magnet. As the coin drops it maintains contact with the magnet and is pivoted around it. The coin is then teased off the magnet by a plastic protrusion and the coin is deflected into the accept chute. To prevent washers of the correct dimensions, both a washer catch and a rim test may be used. Non-ferromagnetic coins do not stay attached to the magnet and drop straight into reject.

With these three basic types of mechanism, the speed of the coin has to be essentially constant and therefore the mechanism has to be upright and clean. The speed is determined by the rate at which the cradle tipples over [dependant upon the center of gravity and the height of the coin in the cradle.] The setting of the track determines the point at which the coin starts to fall. The setting of the magnet also effects the speed of the coin as well as the clearance for the coin to pass.

## Adjustment

The S10 coin mechanisms are factory adjusted for optimum performance. If more critical adjustments are desired, or if the unit has been disassembled, the following adjustment procedure is suggested.

1. Ensure that the mechanism is in an upright and level position.
2. Loosen the square locking screw on the magnet/rim test holder and unscrew the Allen screw.
3. Place a correct coin in the mechanism. Turn the Allen screw clockwise until the coin falls into the cradle. The cradle should tipple and the coin come to rest on the side of the magnet. Turn the Allen screw clockwise until the coin just clears the magnet. Give this screw a further  $\frac{1}{2}$  turn clockwise for optimum clearance and tighten the square locknut.
4. Place the coin in the mechanism again to check that the cradle tipples, that the J leg on the interlock [if fitted] only just clears the cradle, and that the over-diameter stop just allows the coin to pass. Check with both new and well worn coins.

The next adjustment varies according to the type of magnet fitted.

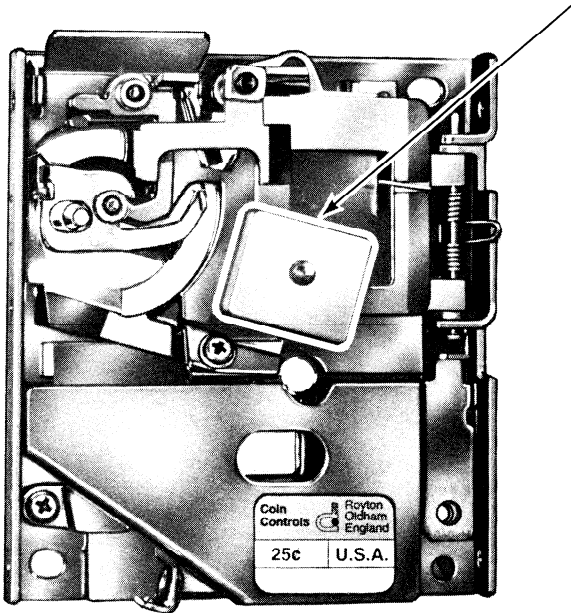


FIG. 6

**Standard Magnet**

**Standard Magnet with bounce test**

For cupro-nickel coins, set the track at the midpoint of the screw. Test the mechanism with true and false coins. If the true coins are falling straight into the reject and missing the bounce test, adjust the track to the right and test again. If for example brass blanks are being accepted, move the track to the left.

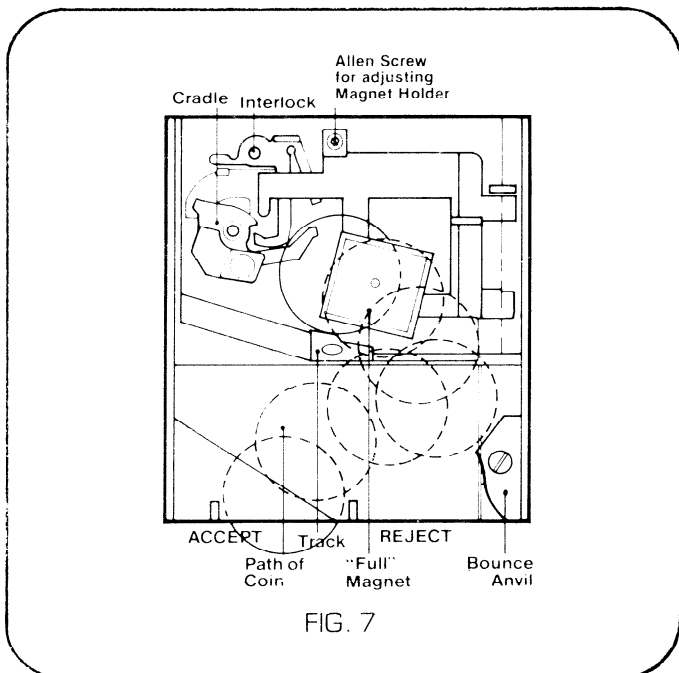


FIG. 7

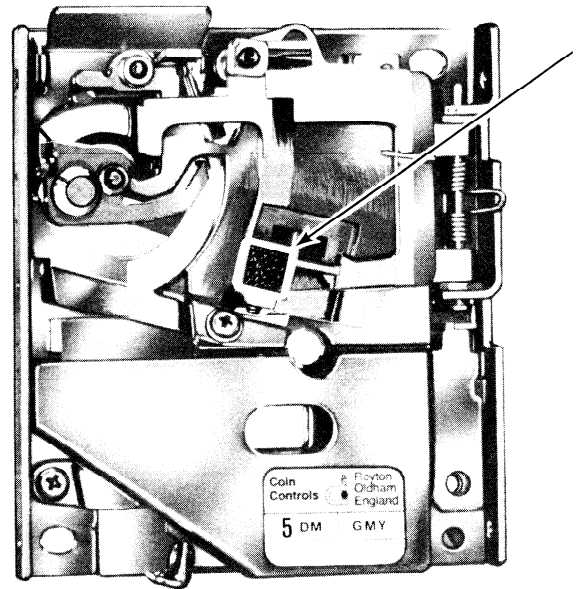


FIG. 8

**1/4 Magnet**

This is often used in conjunction with a rim test. If this is so, then adjusting the Allen screw on the magnet holder will vary the gap at the rim test. This should be minimal, just allowing the true coin through yet stopping blanks and thicker coins. When set, tighten the locknut.

The adjustment for the track is the same as for the standard magnet — even when a swinging leg is used — e.g. 5 French Franc and 5 DM.

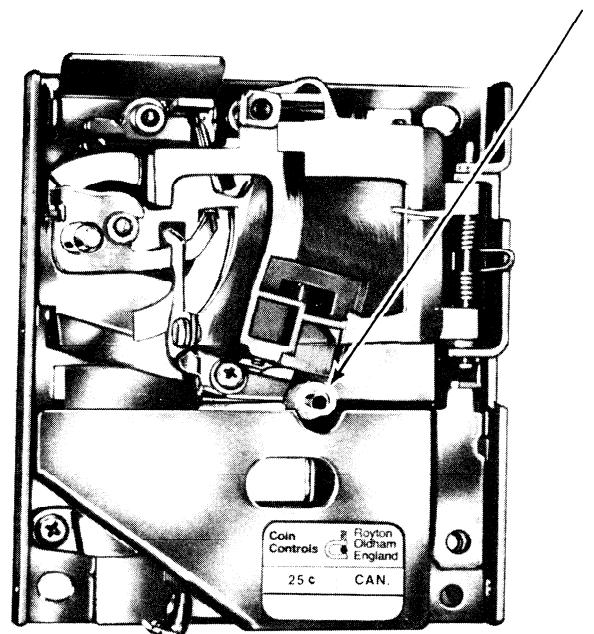
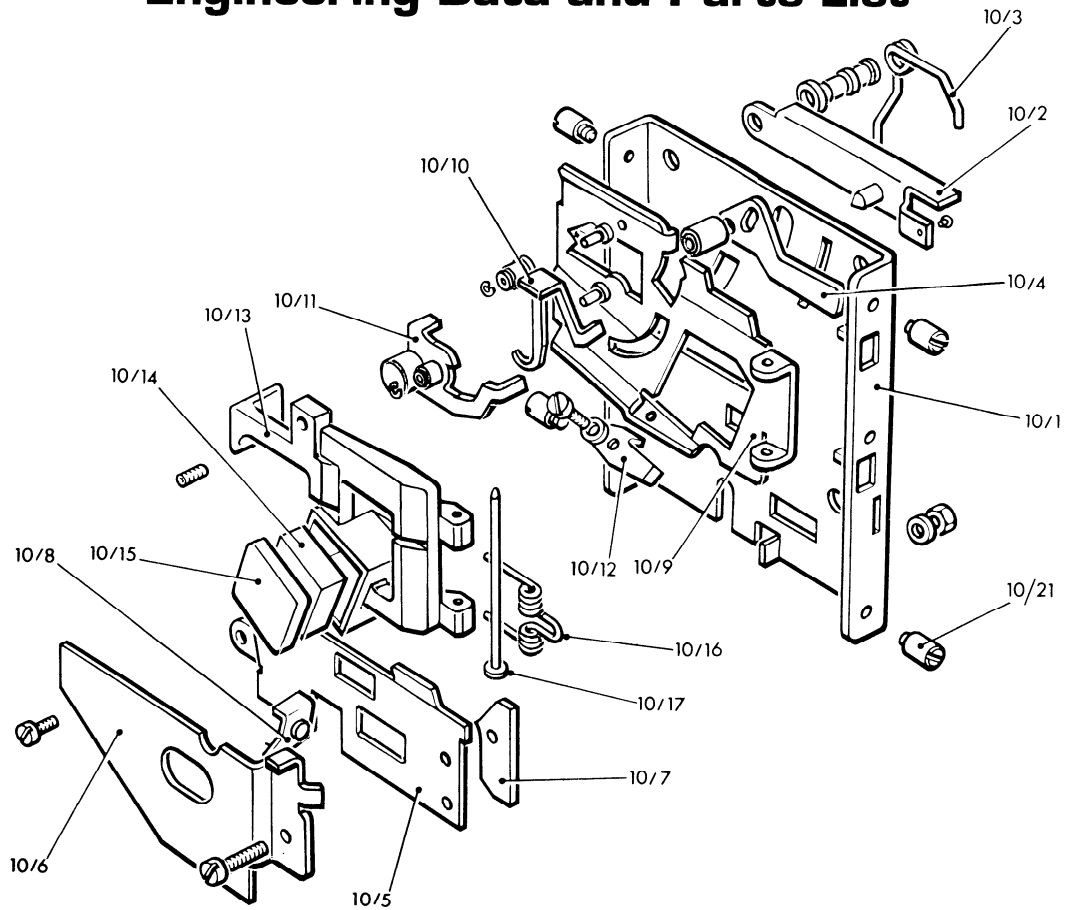


FIG. 9

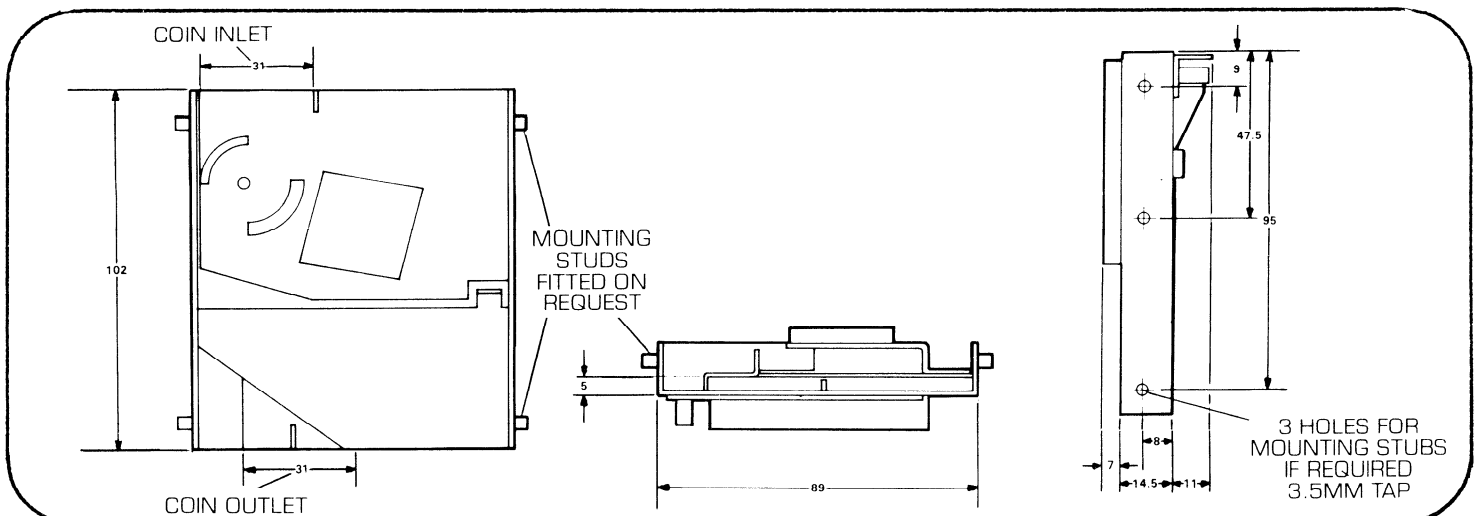
**1/8 Magnet**

# S10 Acceptor Body Engineering Data and Parts List

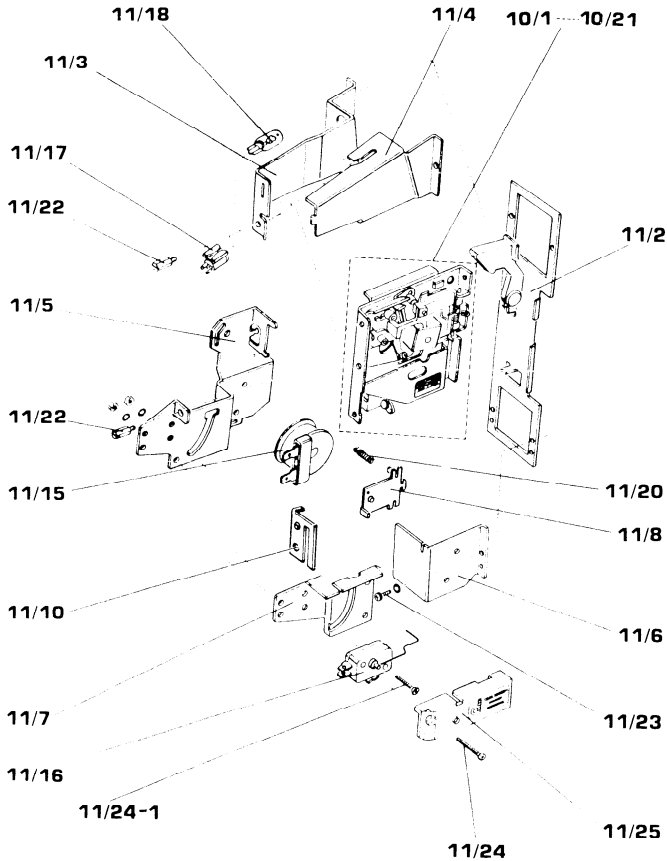


## Parts List

|             |                            |              |                        |              |                                    |
|-------------|----------------------------|--------------|------------------------|--------------|------------------------------------|
| <b>10/1</b> | Back plate [state coinage] | <b>10/8</b>  | Cotton catch           | <b>10/15</b> | Magnet cover                       |
| <b>10/2</b> | Reject lever               | <b>10/9</b>  | Gate [state coinage]   | <b>10/16</b> | Gate spring                        |
| <b>10/3</b> | Reject lever spring        | <b>10/10</b> | Interlock              | <b>10/17</b> | Gate pin                           |
| <b>10/4</b> | Wiper                      | <b>10/11</b> | Cradle [state coinage] | <b>10/18</b> | 'Ferrous Coin' Magnet [fitted      |
| <b>10/5</b> | Divider plate              | <b>10/12</b> | Track [state coinage]  | <b>10/19</b> | Separator if appropriate]          |
| <b>10/6</b> | Cover plate                | <b>10/13</b> | Magnet holder          | <b>10/20</b> | Rim test                           |
| <b>10/7</b> | Anvil [state coinage]      | <b>10/14</b> | Magnet [state coinage] | <b>10/21</b> | Mounting stubs [fitted on request] |



# Front Plate and Double Frame Mini-Door Data and Parts List



## FRONT PLATE ASSEMBLY

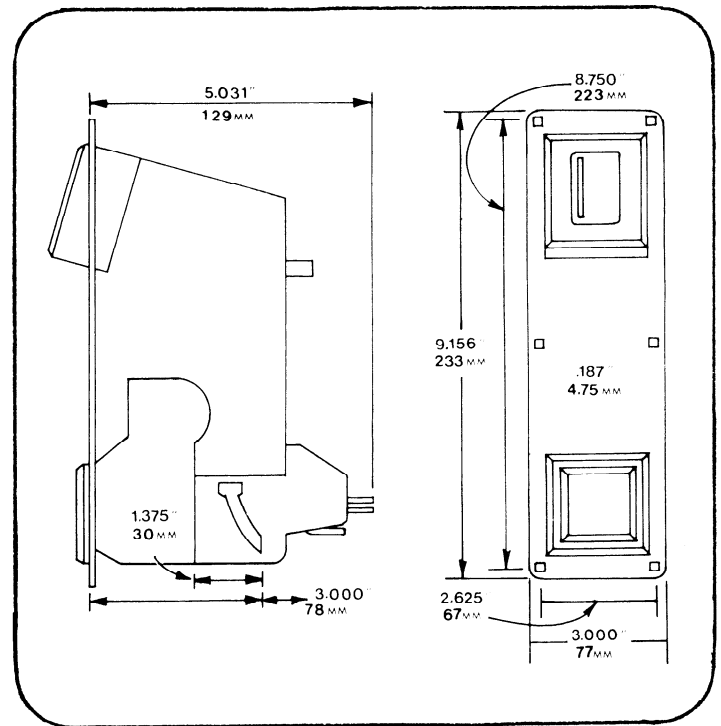
### Parts List

|              |  |              |   |
|--------------|--|--------------|---|
| <b>11/1</b>  | Front plate (state 1, 2, 3 or 4 entries)           | <b>11/14</b> | Reject pivot  |
| <b>11/2</b>  | Base plate   | <b>11/15</b> | Lockout coil, pole piece, CS/HD brass screw, washer |
| <b>11/3</b>  | Coin inlet lamp side                               | <b>11/16</b> | Microswitch (state coinage)                         |
| <b>11/4</b>  | Coin inlet cover side                              | <b>11/17</b> | Lampholder  |
| <b>11/5</b>  | Reject cup side plate                              | <b>11/18</b> | Lamp (state voltage)                                |
| <b>11/6</b>  | Reject cup base plate                              | <b>11/19</b> | Button spring                                       |
| <b>11/7</b>  | Microswitch bracket                                | <b>11/20</b> | Lockout spring                                      |
| <b>11/8</b>  | Lockout flap (state coinage and volts of assembly) | <b>11/21</b> | Pivot stud  |
| <b>11/9</b>  | Reject flap  | <b>11/22</b> | Retaining screws (2)                                |
| <b>11/10</b> | Switch Adjuster (state coinage)                    | <b>11/23</b> | Bezel screws (2:3x8mm (2:3x7mm))                    |
| <b>11/11</b> | Button bezel                                       | <b>11/24</b> | Microswitch screws and nuts (2 sets)                |
| <b>11/12</b> | Reject bezel                                       | <b>11/25</b> | Polycarbonate Microswitch Cover                     |
| <b>11/13</b> | Button assembly, (state coinage)                   |              |   |

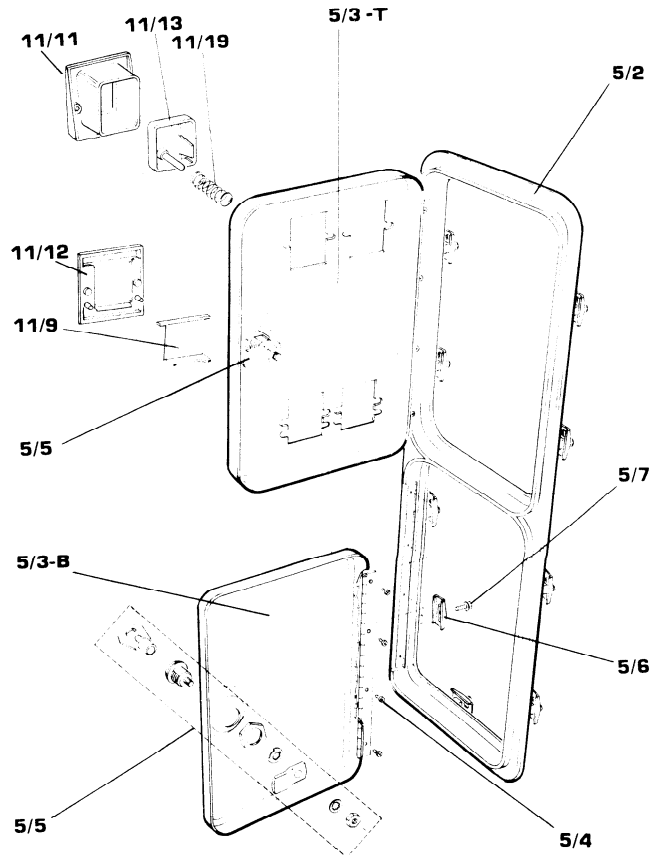
## DOUBLE FRAME MINI-DOOR ASSEMBLY

### Parts List

|              |  |            |   |
|--------------|--|------------|---|
| <b>5/1</b>   | Frame (Mini Door)  | <b>5/5</b> | Lock, including 2 Keys and latch            |
| <b>5/2</b>   | Frame (Double Frame Mini Door)   |            | 1 per Mini Door Assembly                    |
| <b>5/3</b>   | Door + Spot welded hinge   |            | 2 per Double Frame Mini Door Assembly       |
|              | State finish — Black or Stainless Steel, State No of Acceptor cut-outs | <b>5/6</b> | Clamps                                      |
| <b>5/3-B</b> | Lower Door (Cash Box)  |            | 6 each per Mini Door Ass.                   |
| <b>5/4</b>   | Hinge fixing screws (4)  | <b>5/7</b> | Clamp screws                                |
|              |  |            | 10 each per Double Frame Mini Door Assembly |



## DOUBLE FRAME MINI DOOR



# UNIVERSAL TOKEN CONVERSION KIT

## For COIN CONTROLS Series 10 Acceptor Mechanism

### CONTENTS OF KIT:



To convert the mechanism from 25c to a brass token, the following steps should be followed.

- ❑ **Step 1.** Remove the body of the mechanism by unscrewing the 2 hexagonal mounting studs. (See figure 1)
- ❑ **Step 2.** Install the bounce anvil as indicated in the diagram with the anvil's peg positioned in the lower of the two holes. Firmly tighten the fixing screw.
- ❑ **Step 3.** Remove the separator screwed onto the rear of the body of the mechanism. **SAVE ALL PARTS REMOVED** for future use or as replacement parts for other units not converted.
- ❑ **Step 4.** Remove the existing track, and replace with the longer track in the kit. Position the track with the screw mid-way in the slot.
- ❑ **Step 5.** For tokens smaller than a quarter, install the replacement cradle (marked "E") contained in the kit. Make certain that the circlip is fully engaged. Do not lubricate.

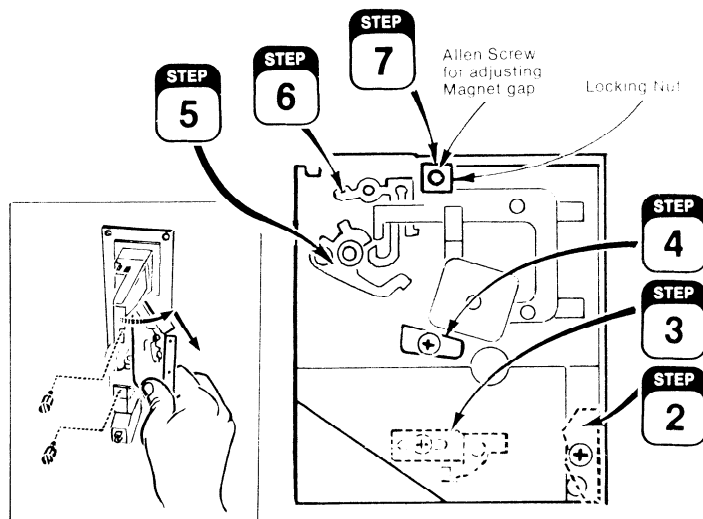
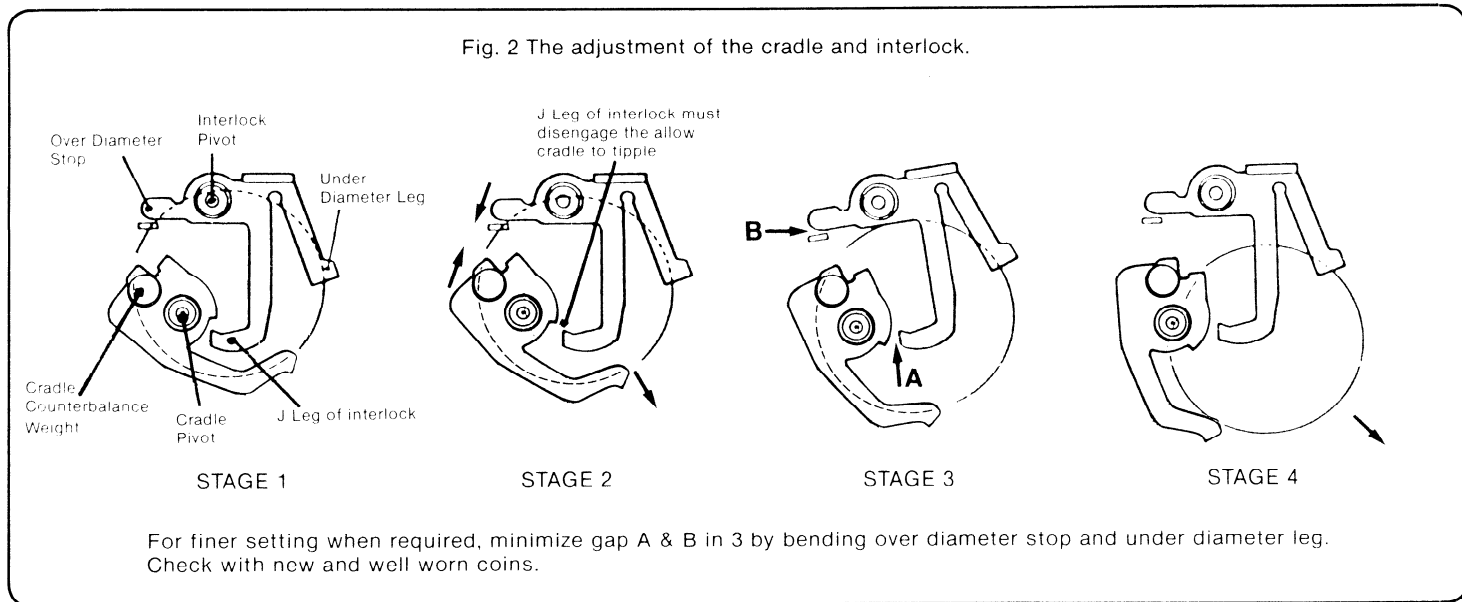


Fig. 1

- ❑ **Step 6.** Adjust the interlock setting (if necessary) as indicated in figure 2.
- ❑ **Step 7.** If required, the clearance at the magnet gap can be varied by loosening the square locknut and adjusting the Allen screw accordingly.
- ❑ **Step 8.** Check the mechanism in the machine with the correct tokens and with unacceptable blanks and duds. If required, the acceptance can be increased or decreased by moving the track to the right or left respectively.

Fig. 2 The adjustment of the cradle and interlock.



For finer setting when required, minimize gap A & B in 3 by bending over diameter stop and under diameter leg. Check with new and well worn coins.

