Sodak Information on IDX, Inc.® Coin Acceptors

During the 2000 production year, IGT began offering an alternate coin acceptor in machines configured to $1.00 and higher denominations. IGT machines previously equipped with the Coin Mechanism® models CC32 and CC33 will now be available with the IDX X-10 acceptor. Those machines normally using models CC36 or CC37 will now be available with the IDX X-50 acceptor. These coin acceptors offer the highest level of anti-counterfeiting security while providing superior acceptance and reliability.

Front and rear views of the X-10 model

The Features

The Coin Mechanism's Comparitor® utilizes an electromagnetic sensing coil to compare the metal properties of the Sample coin to the coin inserted by the player. The IDX acceptor also evaluates the metal properties of the inserted coin, but the comparison is made to memory. The IDX acceptor does not require a Sample coin. The acceptor "learns" the properties of the coin it is setup to accept. The technology behind this is sophisticated but the operation is simple and reliable. With the Comparitor, only the portion of the coin that passes through the sensor assembly is analyzed. In the IDX acceptor, the coin or token metal is analyzed in three places, the leading edge, center, and the trailing edge of the coin. This method dramatically reduces slugging and offers increased reliability when using bimetallic tokens. Optical sensors are also used to precisely measure the diameter of the coin and the acceptor will reject coins that are off by as little as 15/1000 of an inch. This feature will eliminate the "shaved coins" that are commonly used to cheat the coin-out optics in hoppers. Additional security is added when the unit is programmed to accept only X-Mark® Tokens. Facets cut into these tokens reflect light from optical sensors at a precise angle. When the X-Mark tokens are used, the acceptor will now use five parameters to validate or reject the inserted coin. Cross-play of tokens from neighboring casinos can be virtually eliminated.

☞ *The X-Mark token is not required to operate an IDX acceptor. Use of this type of token will dramatically increase the anti-counterfeiting security capabilities of the unit.*

IDX acceptors also include self-test diagnostics and an RS232 serial data port, which can be used to connect the unit to a PC for diagnostic purposes.

X-Mark Tokens

Incorporated into every IDX acceptor are two Optical Sensor assemblies that are used to "read" the facets cut into the X-Mark token. These tokens have a ring of angled cuts on both surfaces that will reflect light back to the sensor assemblies. The acceptor is manufactured to read reflected light back from only those tokens that are cut with the correct angle. The acceptor will read reflected light from both sides of the X-Mark token, even if the facet angles are different for each side. Osbourne Coinage® produces X-Mark tokens, under a license agreement with IDX.

Angled Cuts

Example of an X-Mark Coded Token

Learning

Each IDX acceptor must be programmed for the coin(s) it is intended to accept. Both the X-10 and X-50 models have 6 memory locations, which can each be programmed with the properties of a different coin. Essentially, these acceptors can validate 6 different coins. In addition, the unit can be programmed to issue multiple credit pulses for each coin accepted. (*This feature is not available when installed in IGT equipment because the processor board in an IGT machine utilizes inputs from the coin-in optics to credit the accepted coin.*) IDX acceptors can also "learn" not to accept a specific coin.

The "learning" process is a simple procedure. Each unit is equipped with a 16 position rotary switch. Position 0 is reserved for normal operation. Positions 1-6 are used to program each of the 6 available memory locations. SW1 is used to determine the number of credit pulses issued for each accepted coin, *(for IGT machines this will be one).* Once the memory location and credit pulse has been specified, the acceptor is ready to be programmed. Six of the same type coins or tokens must be inserted into the acceptor. The LED will alternately flash red/green to indicate the coin parameters have been saved to memory. This process can be repeated for each memory location.

☞ *Important! The rotary switch must be returned to position "0" for normal operation.*

SW 1

LED

Personality
Plug Board

Rotary
Switch
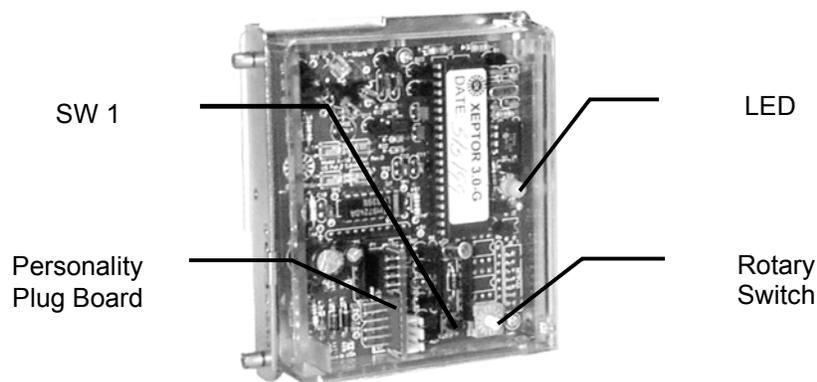
X-50 CPU Board

Installation

The IDX acceptors are designed to be a direct replacement for the Coin Mechanism Comparitor. The IDX unit will snap into the existing Coin Chassis. IDX provides a "Personality Plug" for each acceptor. These are designed to mate with the existing cabinet wiring without requiring any further modification. IDX units are designed to work a variety of coin and token sizes. The X-10 model can be used with coins up to 1.47" in diameter and .122" thick. The X-50 is used for coins with a diameter between 1.340" and 1.875" and a thickness up to .150". All IDX units are equipped with a sliding adjustment bracket that is used to specify coin thickness. For the X-10 model, coin diameter will be specified with snap in spacers. The X-50 model incorporates adjustable width guides that are used to set the coin diameter. Refer to IDX documentation for specific thickness and diameter settings.

If the X-10 is installed as a replacement for a CC32 or CC33, it will be necessary to change the Coin Head and Coin Base and the location of the Coin Chassis within the cabinet. Traditionally, the CC32 and CC33 Comparitors have been installed "backwards". The front of the unit faced into the main door of the machine. This was due to the manner in which an accepted coin exited the Comparitor. The accepted coin comes out the opposite side of the Comparitor from where it was inserted. The X-10 does not work in this fashion.

The X-50 is a two-piece model. The CPU for this acceptor is separate from the main unit. When installed into an IGT machine, the CPU assembly is usually mounted with Velcro, on the main door panel assembly. The acceptor portion of the X-50 is installed in the same manner as a CC36 or CC37, "backward" or facing into the machine door.

Thickness
Adjustment
Bracket

Snap-in
Diameter
Spacer
Location
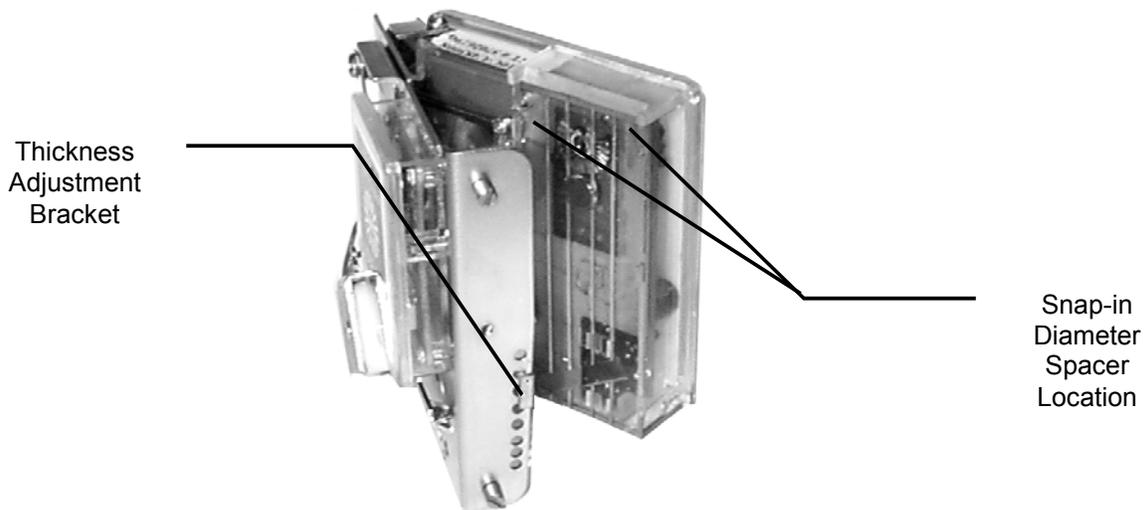
Thickness and Diameter Adjustments (X-10)

Field Tests and Diagnostics

The Rotary switch used for programming is also used for self-test functions. The LED is used as a service indicator and will display the results of each self-test. Rotary Switch should be in position "0" is for normal operation. A green LED indicates normal condition; flashing yellow or alternating red/green will indicate a malfunction. The table below illustrates the diagnostic functions associated with each switch setting and the corresponding LED condition. Additional diagnostic functions are available through the RS232 serial interface. Refer to IDX documentation for more details.

IDX Diagnostic Functions

Rotary Switch	Function	Action	Result
0	Gate Relay Test	Press SW 1	Activates Gate Relay
7	Memory Test	Observe LED color	Green LED = pass Red LED = fail
8	Credit Sensor Test	Observe LED color	Yellow LED = not installed Green LED = pass Orange/Red LED = dirty/blocked
9	Optic Sensor Calibration (front side optics)	Insert small piece of white paper, folded twice, into center of coin chute and press SW 1	Orange LED = Unit has successfully adjusted the Optical Sensor sensitivity.
A	Optic Sensor Calibration (rear side optics)	Follow procedures for Front Side Optics	Same as for Front Side Optics
B	Diameter Optics Sensor	Observe LED	Green LED = pass RED/Orange Led = dirty/blocked
C	Diameter Optics Sensor	Observe LED	Green LED = pass RED/Orange Led = dirty/blocked
D	Diameter Optics Sensor	Observe LED	Green LED = pass RED/Orange Led = dirty/blocked
E	Inductive Metal Sensor	Observe LED	Green LED = pass Red LED = fail
F	Inductive Metal Sensor	Observe LED	Green LED = pass Red LED = fail

De-learning

To clear a memory location within the IDX unit:
1. Select memory location with rotary switch.
2. Press SW 1.
3. Return rotary Switch to position "0".

Unwanted Coins

To program the IDX acceptor *not* to accept a certain coin:
1. Turn Rotary Switch to position "1"
2. Press SW 1 13 times
3. Insert 6 of the undesired coins into the acceptor
4. Return Rotary Switch to position "0"
5. Desired coins can be programmed in any of the remaining memory locations.

Additional IDX Products

X-Key

The X-Key provides a means of controlling access to the programming features of the IDX acceptors. The "learning" capabilities of the acceptor can be enabled/disabled with the X-Key. This can prevent unauthorized programming of the unit. Once an acceptor has been secured with the X-Key, it cannot be reprogrammed again without the X-Key.

X-Tracker

X-Key management software. This is a Windows® based utility program that is used to enable/disable the X-Key. It also allows the user to download information from the X-Key. Each time the X-Key is used, it will record the electronic serial number of each acceptor it is connected to. The X-Tracker software can be used to retrieve this information as well as to log in/out X-Key users.

DD-1050

Token Diverter Driver. This accessory can be added to an IGT machine and used to drive the Coin Diverter. The IDX unit can be programmed to accept up to 6 different coins. The DD-1050 will divert certain coins directly to the to the drop, regardless of the current hopper level. For example: a casino offers a non-redeemable promotional token to their guests. This token could be accepted in a dollar machine and diverted to the drop with the DD-1050, the same machine could accept the normal dollar token and it would be directed to either the hopper or drop, depending on the current hopper level.

X-Terminator

This accessory will alert floor personnel to attempts at cheating the acceptor, i.e. stringing and slugging. A tilt output is sent to an LED panel placed in the top section of the machine's Service Light. This can also be used to detect coin jams in the acceptor.