

# **IDX COIN ACCEPTORS**

## **SETUP & TROUBLESHOOTING**

**Marcello Bruno  
Extension 5193**

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# PREPARATION FOR PROGRAMMING

**Important:** It is imperative that the proper personality plug be used when programming the coin acceptor. If you are using a 24Vdc or 24Vac supply, use the PP16 personality plug. If you are using a 12Vdc supply, use the PP16IC personality plug.

In order for accurate performance to take place after programming, the coin acceptor must be checked for the following BEFORE programming occurs:

## FULL CLOSURE OF DOOR

Does the coin acceptor door fully close so there is no space between the left hand guide and the frame? If it does not, optimal performance of the acceptor can not occur, as there is a chance installation into the machine will either increase or decrease the space. Once this space is altered, the metallic properties of the coin read by the acceptor will change, and coin rejections will occur. If the door does not close all the way, check that the white ribbon cable on the back of the unit is not keeping it from doing so. Also check that the spring is installed properly. Finally, check that the tabs on the coin guides are not twisted outward and preventing full closure of the door.

## MODIFICATION COMPLETE

Is the screw in place in the bottom left hand corner of the coin acceptor so that it holds down the board enough to keep the cover from rubbing on capacitor C6? If it is not, install the screw. If the cover rubs on the capacitor, the board will flex, causing coin readings to be lower than they should be. This will cause quarters to fall into the Franc range, and therefore they will be rejected. Do not proceed with programming until the cover slides freely over the acceptor with NO rubbing on the capacitor.

# PROGRAMMING

The coin acceptor can be programmed with up to 6 coins. We use only 4 of the 6 Channels. The acceptor has a “shadow coin” feature where you can program OUT an unwanted coin that is very similar to the valid coin. The shadow coin MUST be programmed into Channel 1. In our case, we will be programming out the Franc coin. The Channel designations are as follows:

Ch.1	Franc
Ch.2	Quarters with low metallic properties
Ch.3	Quarters with high metallic properties
Ch.4	New plated quarters

The IDX coin acceptor works by taking 3 different metal readings of coins as they pass through. During programming, 6 coins are passed through, and the average metal readings of the 6 coins are recorded in memory.

To program the acceptor, perform the following steps:

1. Remove the acceptor cover
2. Apply power to the acceptor \*USE CORRECT PERSONALITY PLUG!!!
3. Connect the X-Key to the acceptor
4. Turn the rotary switch to position 1
5. Press the push button 13 times (13 times to denote this coin as unwanted)
6. Drop the Franc coin through 6 times
7. Turn the rotary switch to position 2
8. Press the push button once
9. Drop the “low” quarters through 6 times
10. Turn the rotary switch to position 3
11. Press the push button once
12. Drop the “high” quarters through 6 times
13. Turn the rotary switch to position 4
14. Press the push button once
15. Drop the new plated quarters through 6 times
16. Return the rotary switch to position 0
17. Remove the X-Key
18. Connect the acceptor to a PC with Hyperterminal and do a report (see instructions below)

## **VIEWING CONTENTS OF ACCEPTOR MEMORY USING HYPERTERMINAL**

Set up Hyperterminal as shown in the Hyperterminal Setup Instructions sent to you.

Once Hyperterminal is open, turn Caps Lock ON. Connect the acceptor to the PC, and type “HH”. The message “Humanly Hexadecimal” should appear. If it does not, check the connection between the PC and the acceptor and try again. If this does not work, check double check the Hyperterminal setup. Each time a different acceptor is connected to Hyperterminal, the “HH” command must be used.

Once “Humanly Hexadecimal” appears, type “R”. This will show a report of the acceptor’s memory contents and operational parameters. Here is an example of what the report should look like:

```

Xeptor 30 (d) ID# 1F5E
Coin Memory:      01    02    03    04    05    06
Pulse Count:      0D    01    01    01    00    00
Token Code:       00    00    00    00    00    00
E-Metal S:        1B    1D    1E    15    00    00
E-Metal A:        1F    22    23    1A    00    00
C-Metal A:        1D    1E    1F    16    00    00
Diameter:         19    19    18    17    00    00
Options:          01    01    01    81    00    00
Thresholds:       03    03    03    07                                08 08 05 00 00
Tank Calib:       46    Tank now: 45 51
Sys Config:       B8    Tilt time 1/3 sec: 03
Credit ms:        20    Divert Dly/Pls ms: 00 00
  
```

The 6 vertical columns represent the 6 coin Channels. Ch.1 is programmed with the Franc as the “shadow coin”, and therefore must have a pulse count of OD as it does in the report above. OD is 13 in Hex, and corresponds to the 13 pushes of the push button when the Franc was programmed. Channels 2, 3, and 4 are programmed with coins we wish to accept, so make sure that the pulse count for those coins is 1. The pulse count will determine how many credits the particular coin will issue to the machine, so it is imperative that it is 1. As you can see from the report, channels 5 & 6 don’t contain any coin values, as these channels have not been programmed.

**TOKEN CODES**

Make sure that the token code for each coin is 0, since we are not using tokens. If for some reason a coin has a token code other than 0, re-program the particular coin.

**METAL VALUES**

The IDX acceptor reads the coin metal in 3 different locations, and stores a value for each Channel. These values can be seen in the report above. They are:

	Franc	Low quarter	High quarter	New quarter
E-Metal S	1B	1D	1E	15
E-Metal A	1F	22	23	1A
C-Metal A	1D	1E	1F	16

As you can see, the Franc is lower than both the low and high quarter, but is very close. The high quarter readings should typically be higher than the low quarter by 1 as they are in this report. The metal readings of the new quarter are substantially different than the other three coins.

## **DIAMETER VALUES**

When looking at the diameter readings in the report, check to see that each coin's diameter reading is reasonable. For example, if coin 2 had a diameter reading of 84, you would have to reprogram Channel 2. Readings between 15 and 1D are normal. The slight variance in readings is due to the sensor inconsistencies.

## **TILT TIME**

In the report, locate the Tilt Time. It is in 1/3 seconds, so if your acceptor shows a Tilt Time of 3, then the Tilt Time is set for 1 second, since  $3/3 = 1$ . The Tilt Time is the time the acceptor will be disabled for if 3 or more bad coins are inserted, or if coin stringing occurs. On some units, the tilt time is set at 9/3, meaning the unit would disable for 3 seconds if a customer put a bad quarter in 3 times. This poses a problem: if the customer tries a good coin after the acceptor has gone into tilt mode, the good coin will not be accepted until the customer stops inserting coins for at least 3 seconds. When this happens, it appears that the acceptor is malfunctioning. To eliminate this, set the tilt time to 0 by typing in the following:

P20000000

Followed by "S" to save the change.

If you type "R" again, you will see "Tilt Time 1/3 sec: 00" indicating no disabling of the acceptor will ever occur.

## **CREDIT PULSE TIME**

The last line of the report indicates the duration of the credit pulse in milliseconds. It should be set at 20ms. If it is not set at 20, do so by typing in the following:

P2000000X        - where "X" is the Tilt Time value in thirds of a second. (see above)

Be sure to type "S" to save the change made.

## TESTING

Once you are satisfied with the contents of the report, test the acceptor by inserting coins. When each coin is inserted, you will see a line of numbers appear like those shown below:

2      1D    22    1F    18    00

The 2 indicates that the coin properties most closely matched those stored in Ch. 2.

The next three numbers (1D, 22, 1F) are the three metallic property readings the acceptor made when the coin passed through. These numbers correspond to E-Metal S, E-Metal A, and C-Metal A.

The number 18 represents the diameter of the coin measured by the acceptor.

**NOTE:** Keep in mind that variance in the metal and diameter values of 1 to 2 is common, even when the same coin is re-inserted.

Although our high quarters were programmed in Ch.3, most of the time they will be accepted as a Ch.2 coin, because the acceptor looks at the Channels from 1 to 6 trying to make a match. As you can see from the report, the high and low quarters metal values are very close. The acceptor will look at the incoming coin's readings and they will be close enough to the values stored in Ch.2 causing acceptance to occur under Ch.2. However, if the high coin happens to be read higher than normal (that can occur on certain occasions), the acceptor will look past Ch.2, and make a match with Ch.3, producing a list like the following:

3      1F    25    1F    18    00

If Ch.3 had not been programmed, the coin in question would have been rejected. So in essence, the higher values in Ch.3 prevent quarters with an abnormally high metal reading from being rejected.

The new plated quarter is very different from all the other coins, so it should only be accepted as a Ch.4 coin, and should produce a list like the one below:

4      15    1A    17    18    00

When the Franc was programmed, the push button was pressed 13 times, meaning that it is an Unwanted coin. When you insert the Franc, you should see a list like the one that follows:

U      1B    1F    1E    19    00

The “U” indicates that this coin is an unwanted coin. Make sure the “U” appears when the Franc is inserted. If “M” appears instead, reprogram the Franc.

If you put the Franc or any other invalid coin through more than 3 times, you will see this list:

B 1B 1E 1D 18 00

This indicates that the coins being inserted are bad, and won't be accepted. If the acceptor's Tilt Time was set above 0 seconds, the acceptor would disable and reject all incoming coins until the tilt mode terminated.

When a coin with a diameter that doesn't closely match any of those in memory is inserted, it will be rejected, and a list such as this one will appear:

D 1D 22 1E 06 00

In this case, the diameter value 06 is much too low.

When a coin other than one of the 4 programmed is inserted, it will be rejected, and you will see the following message:

M 2A 30 30 18 00

The “M” indicates that the coin failed on edge metal values. In this case, the 3 metal values 2A, 30, & 30 are much too high in comparison with our quarters.

If the low, high, and new quarters are being accepted, and the Franc is being rejected, programming is complete. If however, a low quarter is rejected and “U 1B 1F 1D 19 00” appears, the coin is being rejected because its values matched those of the Franc's too closely. This can happen if the Franc's programmed values are too close to those of the low quarter. Try re-programming the Franc to correct this. If this does not work, try re-programming the low quarter.

## **POST PROGRAMMING CHECKS**

After programming is complete, there are two more checks you should make before the unit is ready for installation:

1. When the cover is slid over the unit, make sure it does not cause the coin opening to enlarge. If it does, file down the tab on the outer edge of the cover. If this doesn't solve the problem, try interchanging covers until you find one that does not enlarge the opening.
2. Check that the screw on the back of the solenoid assembly is tight. If it is loose, coin rejections will occur.

# TROUBLESHOOTING

PROBLEM	SOLUTION
Rejecting coins	<ul style="list-style-type: none"> <li>• No power to unit</li> <li>• Door is not fully closed – check the following for the cause of the partially open door: White ribbon cable on back of unit; Power cable; Obstructions in coin path; Coin guide tabs; Spring; Cover</li> <li>• Incorrect programming – Hook acceptor up to Hyperterminal and examine memory contents</li> <li>• Cover is pressing down on capacitor, causing board to flex, and coin values to be read differently – Perform modification and re-program</li> <li>• Gate assembly screw is loose, causing faulty gate operation – Tighten screw</li> <li>• “P” Version software causing occasional gate glitches – Replace with “Q” Version software</li> </ul>
Excessive Coin Jams	<ul style="list-style-type: none"> <li>• Acceptor not installed/lined up properly – when installing the acceptors on IGT machines, push the acceptor all the way to the left</li> <li>• Broken or worn plastic clips on IGT machine’s</li> <li>• Machine’s mounting bracket is not level – Loosen screws, straighten bracket, re-tighten screws</li> <li>• Gate assembly screw is loose, causing faulty gate operation – Tighten screw</li> </ul>
Accepts coins without issuing credits	<ul style="list-style-type: none"> <li>• Gate assembly screw is loose causing faulty gate operation – Tighten screw</li> <li>• Incorrect Pulse Time – set Pulse Time to 20 milliseconds</li> <li>• Faulty transistor on board</li> </ul>