COIN MECHANISMS INC.

Where The Money Meets The Machine

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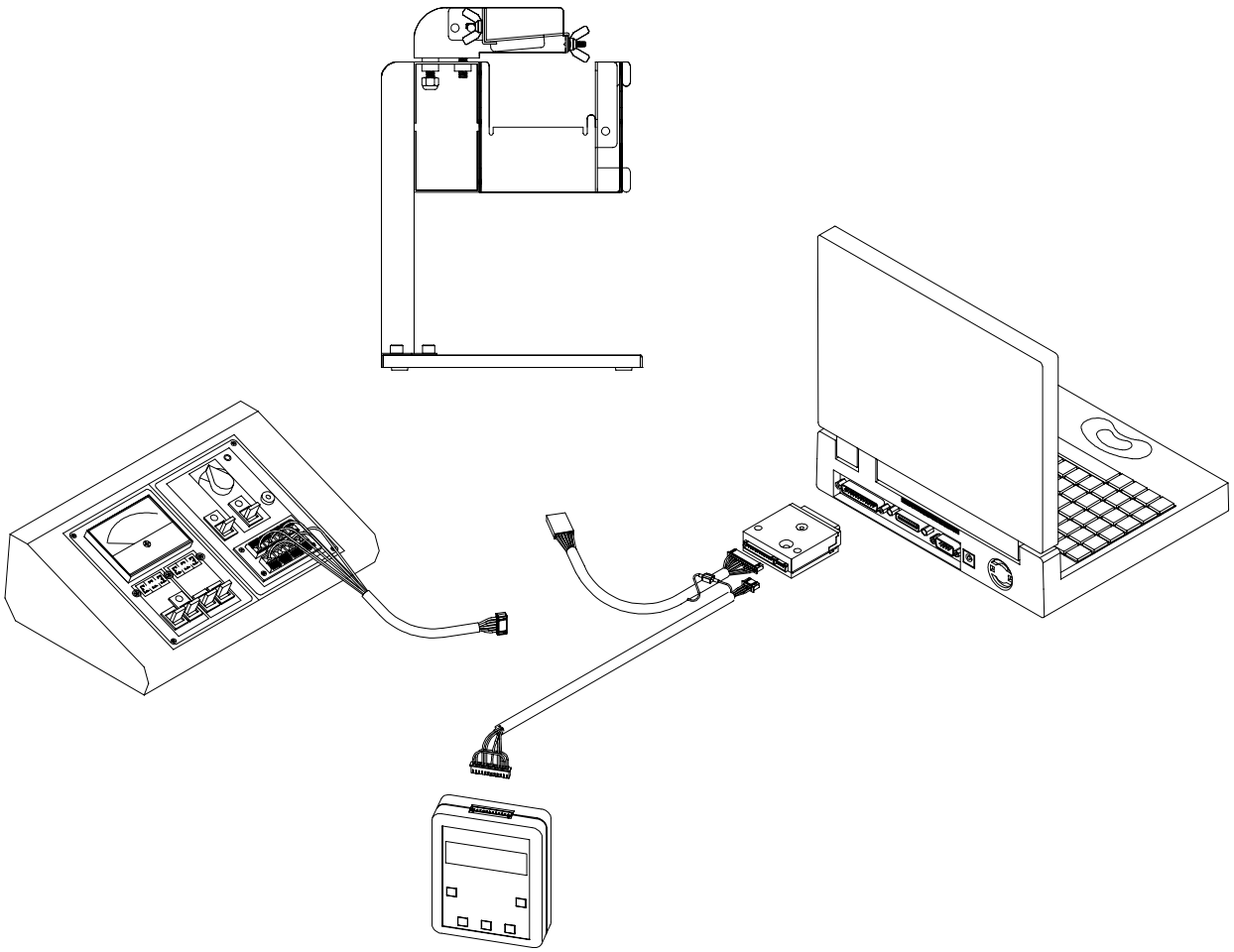
Intelligent Comparitor ®
System Plus
Technical Manual
Europe

Rev 1
6/8/2004



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THEORY OF OPERATION
INTELLIGENT COMPARITOR

Unlike the existing Coin Comparitor, the coil set used in the **Intelligent Comparitor** is located above the center line of the sample coin. This new coil location causes a null to occur twice. Once when the dropped coin is parallel to the sample and once when the dropped coin is in a position of symmetry or mirror image. refer to figure 1.

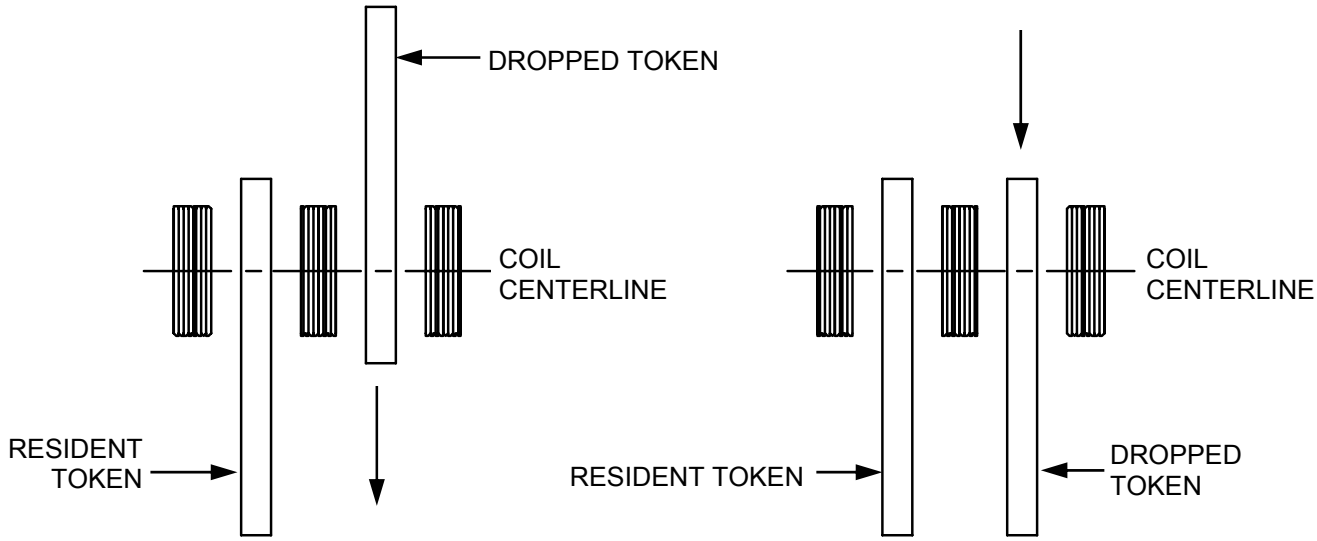
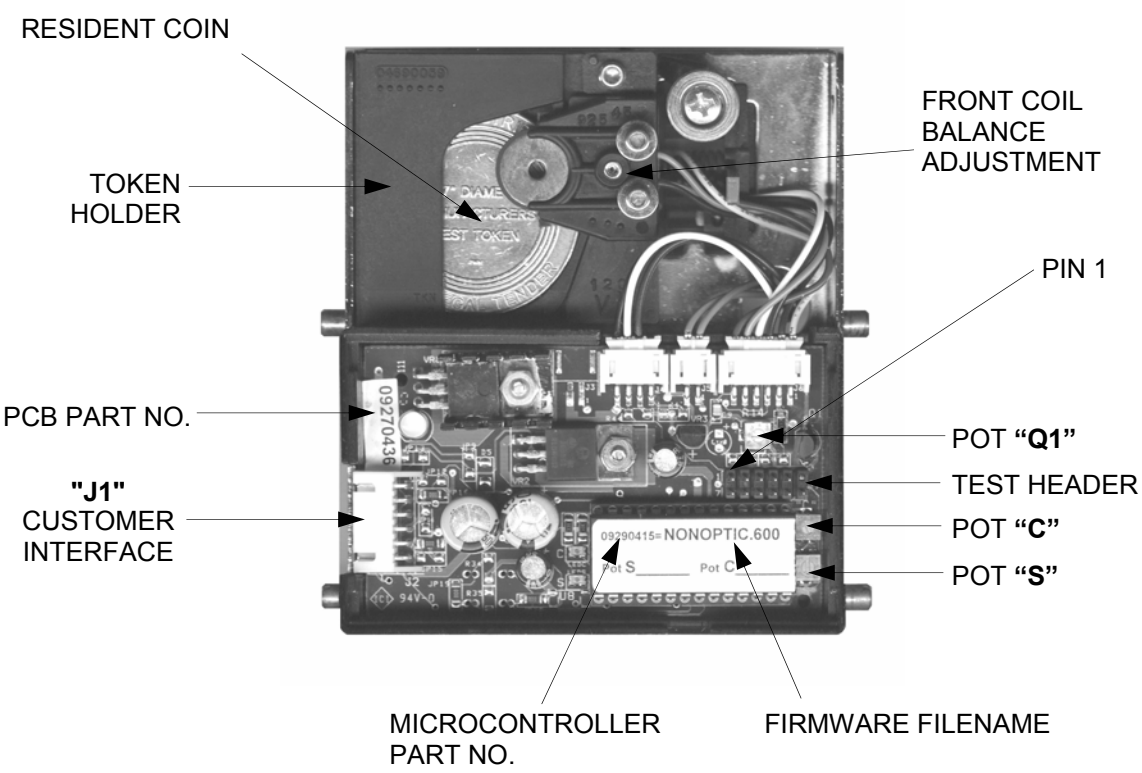


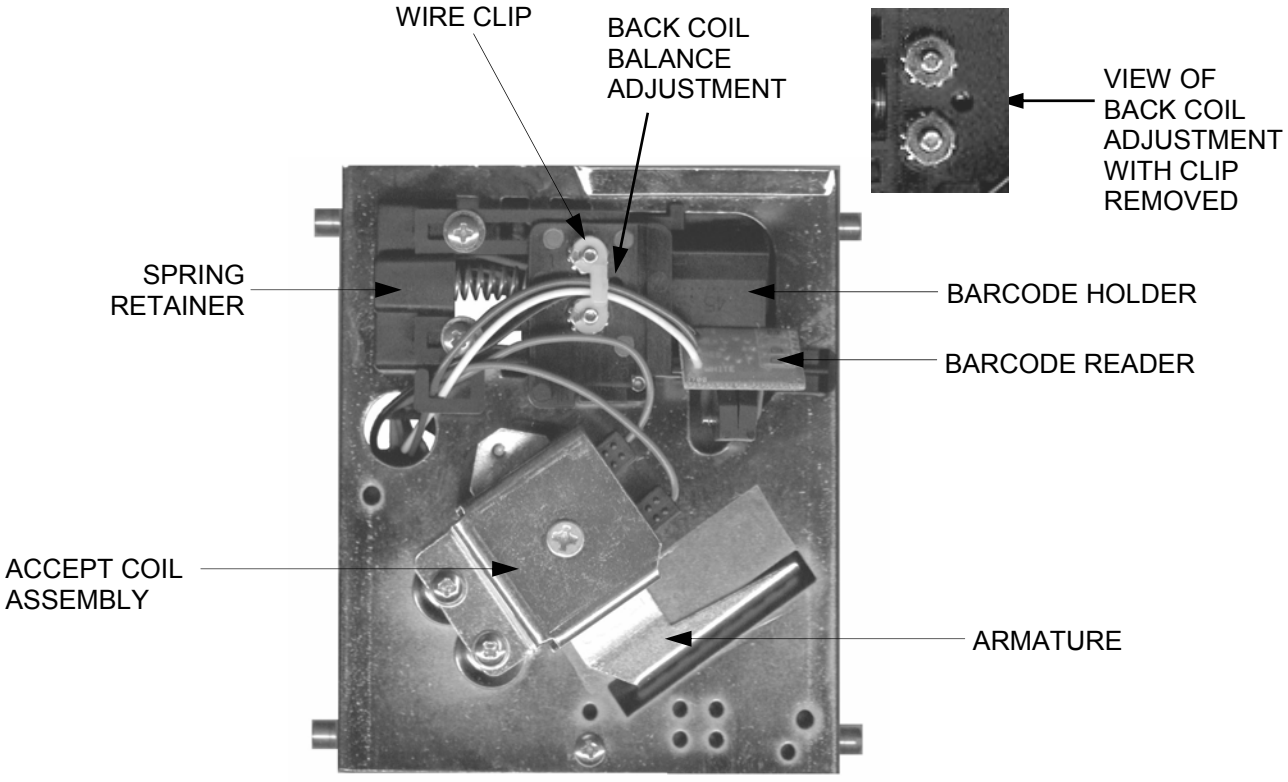
Figure 1

Since the coils are placed above the centerline it can be seen that the first null will occur when the tokens are mirror imaged and the second null will occur when the tokens are parallel. Using this coil placement allows the **Intelligent Comparitor** electronics to more accurately compare the token alloy and also have the ability to determine precisely where the centerline of the dropped token is in reference to the bar code reader. This coil configuration allows more accurate alloy analysis because the two nulls demand that the alloy and physical dimensions of the dropped token precisely match for the majority of the tokens diameter. This prevents a premature null that occurs in the existing single null Coin Comparitor design when a slug of higher conductivity is falsely accepted because a null will occur but not in the correct position in time reference to the coil centerline. By making the two nulls occur and monitoring the conductivity between these nulls, the token is tested across the entire diameter and the **Intelligent Comparitor** provides much greater accuracy.

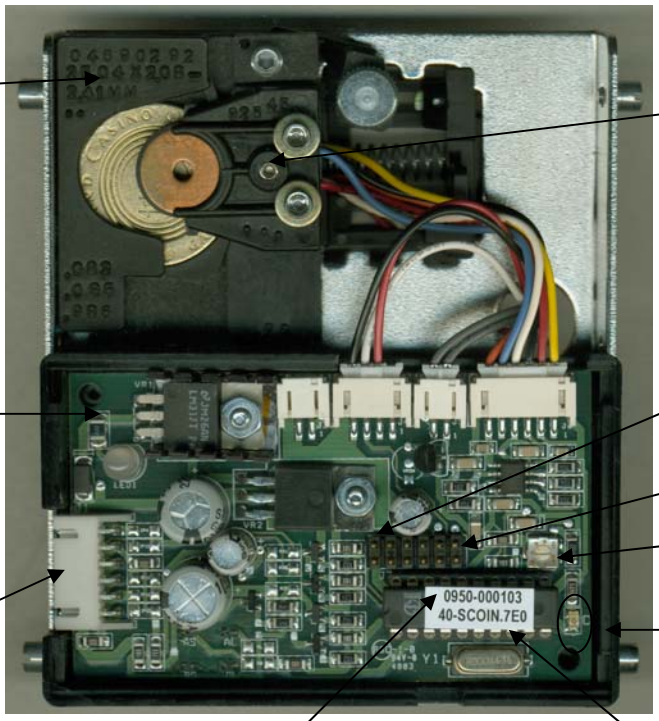
To further protect against counterfeiting the **Intelligent Comparitor** incorporates the bar code optic unit. This device reads precision mirrors that are accurately minted into the **SmartMark**® token when the token is manufactured. Since the **SmartMark**® is minted into the coin with great precision, the relationship between center of mass and the placement of the barcode is fixed into a specific pattern, known as the entire coin signature. This coin signature is unique for each token design and therefore makes counterfeiting extremely difficult.

INTELLIGENT COMPARITOR
REFERENCE GUIDE
(PCB with “REAL” Pots)





INTELLIGENT COMPARITOR
REFERENCE GUIDE
(PCB with “Virtual Pots)



TOKEN HOLDER

FRONT COIL BALANCE ADJUSTMENT

PCB PART NO. LOACATED ON BACKSIDE OF PCB

PIN1

TEST HEADER

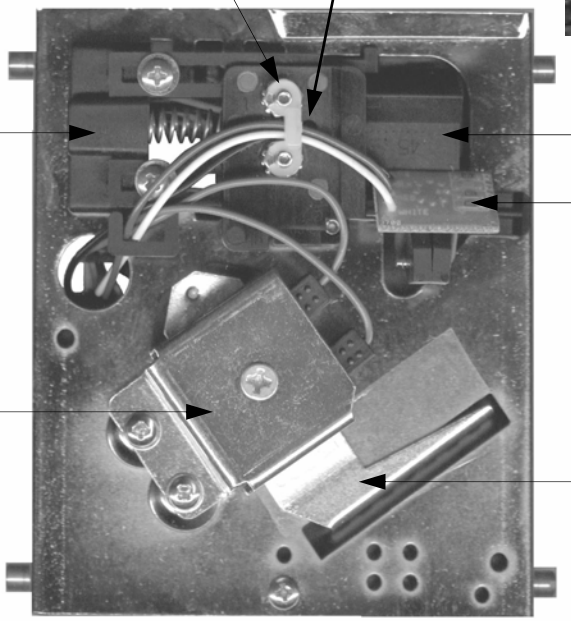
Q1

“J1” CUSTOMER INTERFACE

POT C LIGHT

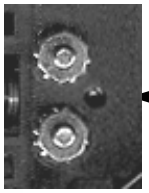
MICROCONTROLLER PART NO.

FIRMWARE FILENAME



WIRE CLIP

BACK COIL BALANCE ADJUSTMENT



VIEW OF BACK COIL ADJUSTMENT WITH CLIP REMOVED

SPRING RETAINER

BARCODE HOLDER

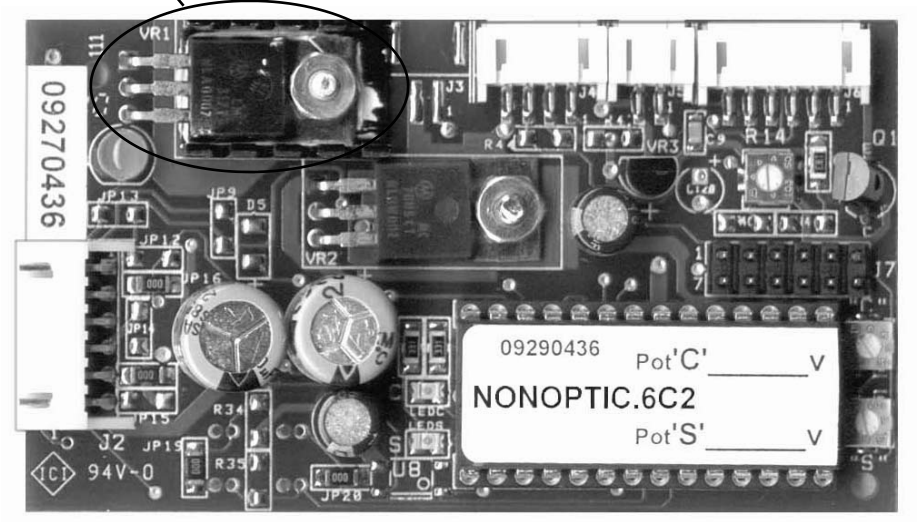
BARCODE READER

ACCEPT COIL ASSEMBLY

ARMATURE

IDENTIFYING A 12 VOLT OR A 24 VOLT CIRCUIT BOARD

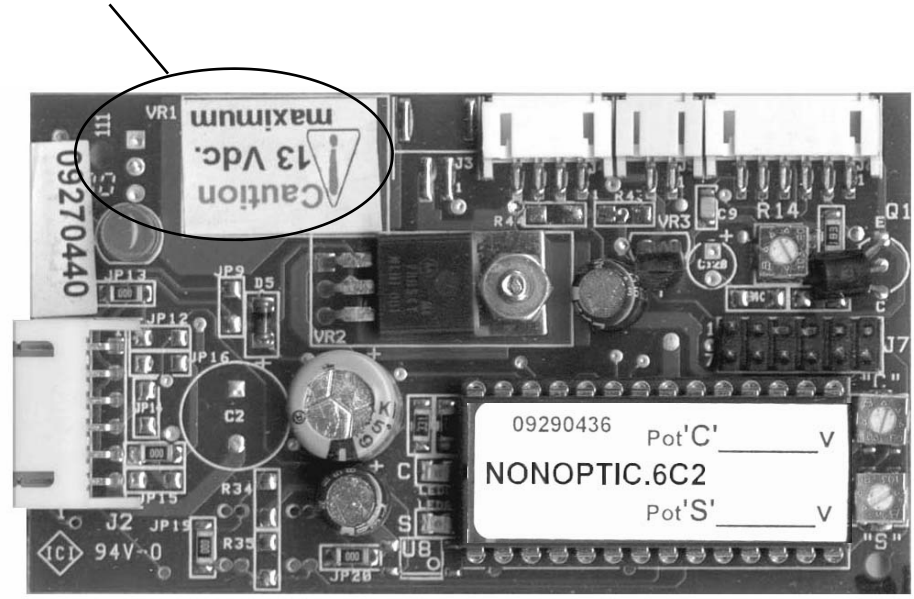
24 VOLTS HAS A SECOND
REGULATOR WITH A HEAT SINK



24 VOLT CIRCUIT BOARD

A 24 VOLT CIRCUIT BOARD USES AN ACCEPT COIL WITH GRAY LEADS
(NOTE- BALLY MODEL 16 WIDE BODY IC'S USE AN ACCEPT COIL WITH GREEN LEADS AND A GOLD BRACKET)

12 VOLTS HAS ONE REGULATOR
AND A CAUTION LABEL

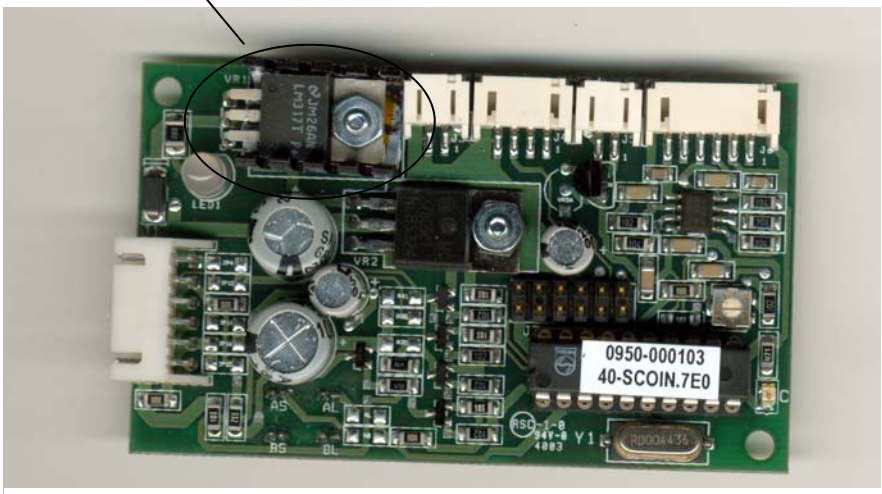


12 VOLT CIRCUIT BOARD

A 12 VOLT CIRCUIT BOARD USES AN ACCEPT COIL WITH GREEN LEADS

IDENTIFYING A 12 VOLT OR A 24 VOLT CIRCUIT BOARD

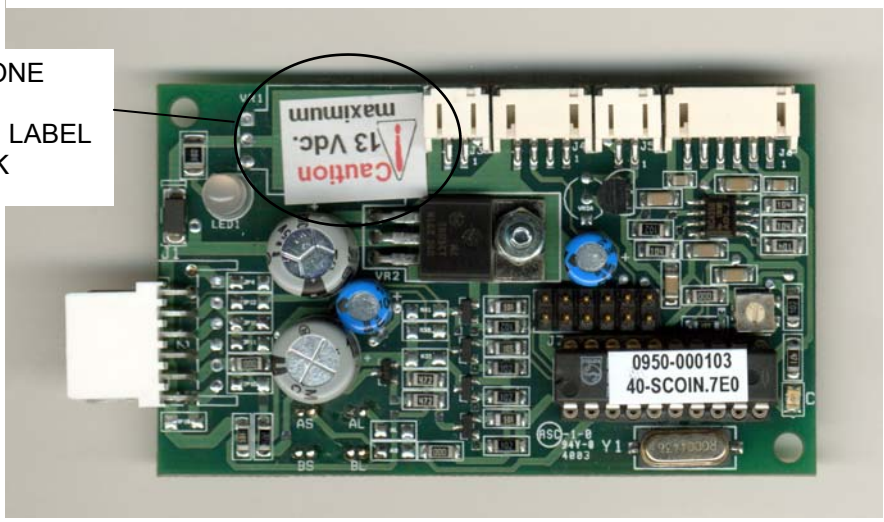
24 VOLTS HAS A SECOND
REGULATOR WITH A HEAT SINK



24 VOLT CIRCUIT BOARD

A 24 VOLT CIRCUIT BOARD USES AN ACCEPT COIL WITH GRAY LEADS (NOTE- BALLY MODEL 16 WIDE BODY IC'S USE AN ACCEPT COIL WITH GREEN LEADS AND A GOLD BRACKET)

12 VOLTS HAS ONE
REGULATOR
AND A CAUTION LABEL
WITH HEAT SINK



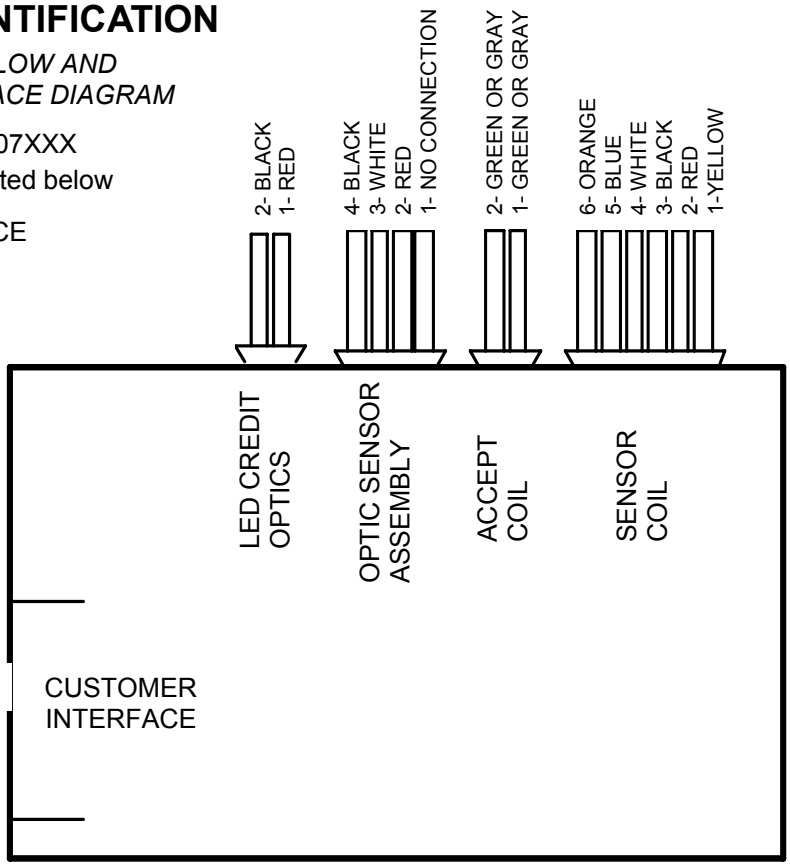
12 VOLT CIRCUIT BOARD

A 12 VOLT CIRCUIT BOARD USES AN ACCEPT COIL WITH GREEN LEADS

INTELLIGENT COMPARITOR®
SYSTEM PLUS INTERFACE IDENTIFICATION

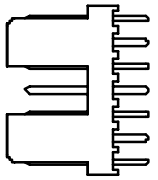
LOCATE CONTROL PCB PART NUMBER BELOW AND
REFER TO ADJACENT CUSTOMER INTERFACE DIAGRAM

Later version pcbs will have p/n format 0927-007XXX
Where XXX = Last 3 Digits of part numbers listed below



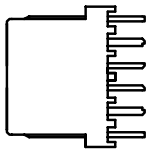
PCB PART NO. CUSTOMER INTERFACE

09270414
09270430
09270439
09270451



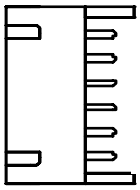
7 PIN MOLEX 12VDC IC-16 SIGMA OPTIC

09270413
09270438
09270464



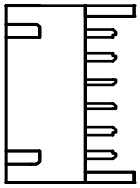
6 PIN MOLEX 13VDC IC-16 IGT 960 SERIES

09270410
09270435



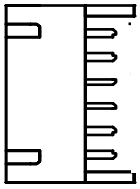
6 PIN JST 12VDC, IC-16 NO INHIBIT

09270412
09270437



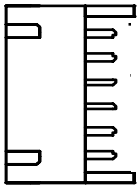
6 PIN JST 12VDC, IC-16 INHIBIT HI

09270418
09270419
09270443
09270444



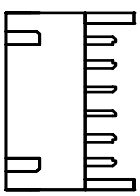
6 PIN JST 24VAC/DC, IC-40 NO INHIBIT

09270422
09270423
09270447
09270448



6 PIN JST 24VAC/DC, IC-40 INHIBIT HI

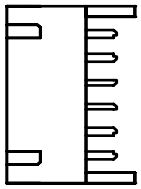
09270416
09270417
09270441
09270442



6 PIN JST 12VDC, IC-40 NO INHIBIT

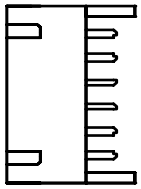
PCB PART NO. CUSTOMER INTERFACE

09270420
09270421
09270445
09270446



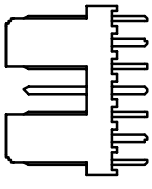
6 PIN JST 12VDC, IC-40 INHIBIT HI

09270411
09270436



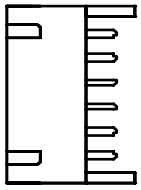
6 PIN JST 24VAC/DC, IC-16 NO INHIBIT

09270424
09270425
09270449
09270450
09270477



7 PIN MOLEX 12VDC, IC-62

09270415
09270440



6 PIN JST 13VDC, IC-32/36

DENOMINATION CHANGE WORKSHEET

Token Dimension (mm)	Token Dimension (in)	Dampner Weight (gram)	Dampener WGT P/N	Screw P/N	Sensor Coil Assembly	Token Holder P/N	Barcode Reader Holder P/N	Chassis Assy Type	Exit Spacer P/N	Screw P/N	Credit Optics Position	Firmware Type
22.80 x 2.10	0.898 x .083	2.6	04060038-01	n/a	06250328	04690337	04690342	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
23.50 x 1.42	0.925 x .056	0.7	04060005-01	n/a	06250330	04690339	04690343	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
23.50 x 2.40	0.925 x .094	4.0	04060084-02	n/a	06250320	04690375	04690383	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
24.00 x 1.70	0.945 x .067	2.6	04060038-01	n/a	06250329	04690338	04690344	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
24.00 x 1.70	0.945 x .067	2.6	04060038-01	n/a	06250329	04690338	04690344	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
24.00 x 1.80	0.945 x .071	2.6	04060038-01	n/a	06250329	04690338	04690344	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
24.00 x 1.90	0.945 x .075	2.6	04060038-01	n/a	06250329	04690338	04690344	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
24.50 x 2.80	0.965 x .110	4.0	04060084-02	n/a	06250304	04690376	04690386	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
25.00 x 1.80	0.984 x .071	2.6	04060038-01	n/a	06250298	04690292	04690300	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
25.00 x 1.83	0.984 x .072	2.6	04060038-01	n/a	06250298	04690292	04690300	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
25.00 x 2.00	0.984 x .079	2.6	04060038-01	n/a	06250299	04690292	04690300	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
25.50 x 2.00	1.004 x .079	2.6	04060038-01	n/a	06250303	04690311	04690387	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
25.65 x 2.20	1.010 x .087	4.0	04060084-02	n/a	06250303	04690377	04690345	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
25.90 x 1.60	1.020 x .063	2.6	04060038-01	n/a	06250319	04690354	04690368	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
26.00 x 1.80	1.024 x .071	2.6	04060038-01	n/a	06250307	04690324	04690368	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
26.00 x 2.00	1.024 x .079	4.0	04060084-02	n/a	06250303	04690325	04690326	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
26.40 x 2.00	1.039 x .079	4.0	04060084-02	n/a	06250303	04690355	04690351	Small Coin	04690406	P-221-4-3	Small Coin	SCOIN
26.75 x 2.70	1.053 x .106	6.0	04060039-01	n/a	06250304	04690378	04690384	Small Coin	04690021	P-221-4-3	Small Coin	SCOIN
27.80 x 2.00	1.094 x .079	4.0	04060084-02	n/a	06250303	04690357	04690352	Small Coin	04690021	P-221-4-3	Small Coin	SCOIN
28.00 x 2.00	1.102 x .079	4.0	04060084-02	n/a	06250303	04690397	04690352	Small Coin	04690021	P-221-4-3	Small Coin	SCOIN
28.00 x 2.30	1.102 x .091	4.0	04060084-02	n/a	06250320	04690356	04690372	Small Coin	04690021	P-221-4-3	Small Coin	SCOIN
28.00 x 2.50	1.102 x .098	4.0	04060084-02	n/a	06250320	04690356	04690372	Small Coin	04690021	P-221-4-3	Small Coin	SCOIN
28.50 x 2.00	1.122 x .079	4.0	04060084-02	n/a	06250303	04690341	04690370	Large Coin	04690021	P-221-4-3	Small Coin	SCOIN
28.60 x 1.90	1.126 x .075	4.0	04060084-02	n/a	06250307	04690341	04690380	Large Coin	none	n/a	Small Coin	SCOIN
28.60 x 2.20	1.126 x .087	4.0	04060084-02	n/a	06250303	04690341	04690370	Large Coin	none	n/a	Small Coin	SCOIN
29.00 x 2.10	1.142 x .083	4.0	04060084-02	n/a	06250303	04690321	04690348	Large Coin	none	n/a	Small Coin	SCOIN
29.00 x 2.90	1.142 x .114	6.0	04060039-01	n/a	06250321	04690379	04690385	Large Coin	none	n/a	Small Coin	SCOIN
29.50 x 2.10	1.161 x .083	4.0	04060084-02	n/a	06250303	04690358	04690346	Large Coin	none	n/a	Small Coin	SCOIN
29.90 x 2.20	1.177 x .087	6.0	04060039-01	n/a	06250327	04690359	04690347	Large Coin	none	n/a	Small Coin	SCOIN
30.00 x 2.20	1.181 x .087	6.0	04060039-01	n/a	06250327	04690359	04690347	Large Coin	none	n/a	Small Coin	SCOIN
30.00 x 2.30	1.181 x .091	6.0	04060039-01	n/a	06250326	04690359	04690373	Large Coin	none	n/a	Small Coin	SCOIN
30.50 x 2.20	1.201 x .087	6.0	04060039-01	n/a	06250327	04690360	04690349	Large Coin	none	n/a	Small Coin	SCOIN
30.50 x 2.30	1.201 x .091	6.0	04060039-01	n/a	06250326	04690360	04690369	Large Coin	none	n/a	Small Coin	SCOIN
30.61 x 2.10	1.205 x .083	6.0	04060039-01	n/a	06250327	04690360	04690349	Large Coin	none	n/a	Small Coin	SCOIN
30.61 x 2.20	1.205 x .087	6.0	04060039-01	n/a	06250327	04690360	04690349	Large Coin	none	n/a	Small Coin	SCOIN
30.61 x 2.40	1.205 x .094	6.0	04060039-01	n/a	06250326	04690360	04690369	Large Coin	none	n/a	Small Coin	SCOIN
31.50 x 1.90	1.240 x .075	6.0	04060039-01	n/a	06250229	04690118	04690275	Large Coin	none	n/a	Large Coin	OPTIC
32.00 x 2.00	1.260 x .079	6.0	04060039-01	n/a	06250327	04690361	04690350	Large Coin	none	n/a	Large Coin	SCOIN
32.00 x 2.20	1.260 x .087	6.0	04060039-01	n/a	06250327	04690361	04690350	Large Coin	none	n/a	Large Coin	SCOIN
32.00 x 2.30	1.260 x .091	9.0	04060083-02	P-166-6-10	06250326	04690361	04690374	Large Coin	none	n/a	Large Coin	SCOIN
34.00 x 2.50	1.339 x .098	12.0	04060080-02	P-166-6-10	06250192	04690062	04690382	Large Coin	none	n/a	Large Coin	OPTIC

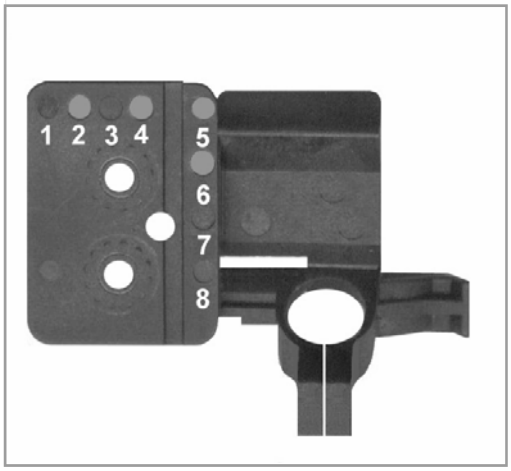
CONVERTING TOKEN DENOMINATION

Whenever the denomination of an Intelligent Comparitor is changed, the following components must be considered.

► BARCODE READER HOLDER

The Barcode Reader Holder **must** be replaced when changing denomination. The mounting holes position the holder (left to right- to read the Smart-Mark® on the centerline of the token and (up and down) - to read the Smart-Mark® in the proper location of the "W" waveform.

- See Denomination Change Worksheet to determine the correct part number.
- See Identifying the Barcode Reader Holder to identify the part number to the part .
- See Mechanical Assembly for assembly instructions

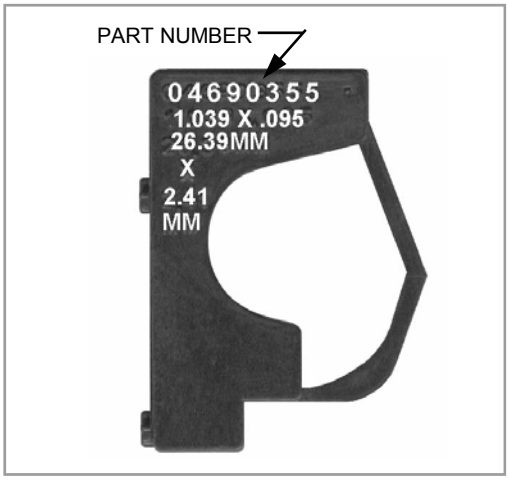


BARCODE READER HOLDER

► TOKEN HOLDER

The *Token Holder* **must** be replaced when changing denomination. The *Token Holder* positions the *Sample Token* in the *Sensor Coil Assembly* and sets the correct diameter clearance.

- See Denomination Change Worksheet to determine the correct part number.
- See picture at right to identify part number.
- See Token Installation for installation instructions

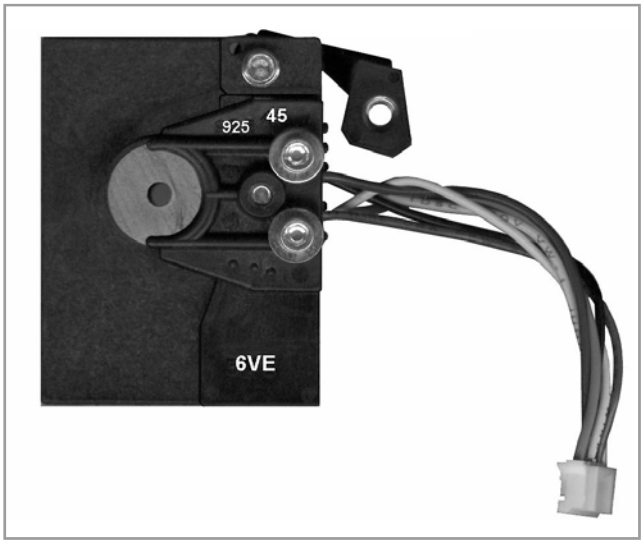


TOKEN HOLDER

► SENSOR COIL ASSEMBLY

The *Sensor Coil Assembly* **may** need to be replaced when changing denomination. The spacers in the assembly help to position the token along the *Token Holder* and the thickness of the spacer sets the clearance.

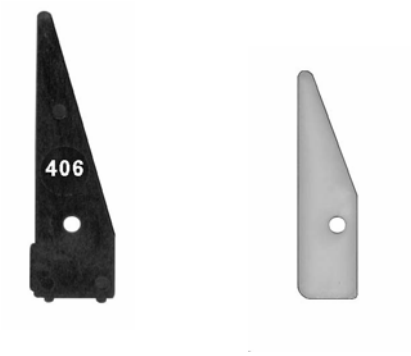
- See Denomination Change Worksheet to determine the correct part number.
- See Identifying the Sensor Coil Assembly to identify the part number to the part.



SENSOR COIL ASSEMBLY

CONVERTING TOKEN DENOMINATION - cont'd

►Exit spacers are required for tokens less than 1.120" [28.4mm] in diameter. In models with credit optics, the exit spacer ensures that the token passes the credit optics properly. In models without the credit optics, the exit spacer ensures a smooth transition into the machine's credit optics.

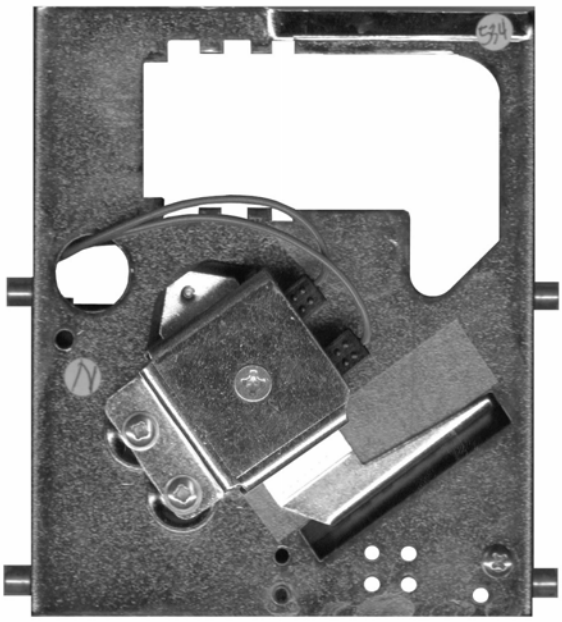


P/N 04690406 P/N 04660021

EXIT SPACERS
(ONE TO ONE TEMPLATE)

►CHASSIS ASSEMBLY
The *Chassis Assembly* which is made up of the *Mainplate*, the *PCB Housing* and the *Accept Coil Assembly* **may** need to be replaced when changing denomination. The cutout in the *Mainplate* is positioned differently for tokens less than or equal to 1.120" [28.4mm] in diameter.

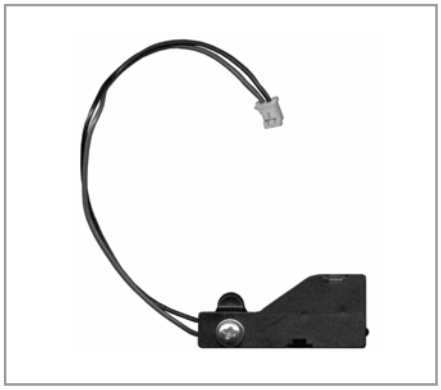
- See Denomination Change Worksheet to determine the chassis type.
- See Machine Interface worksheet to determine the correct part number.
- See Identifying the Chassis Assembly to identify the part number to the part.
- See Mechanical Assembly for assembly instructions.



CHASSIS ASSEMBLY

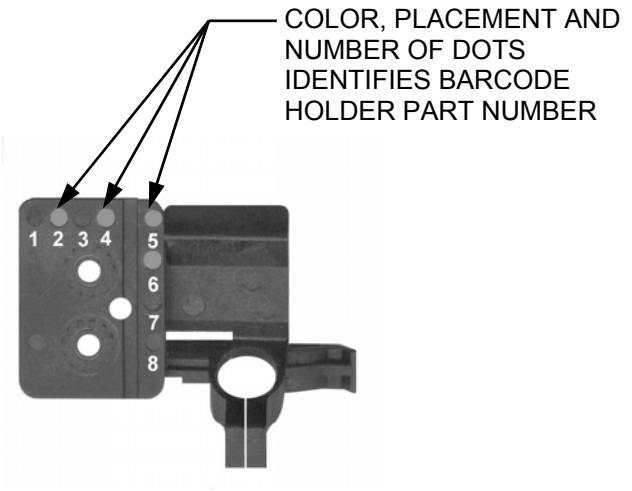
►For Intelligent Comparitor models with *Credit Optics*, it is important to note that there are two positions (Small Coin and Large Coin) to accommodate all token diameters. There are two *LED PCB Assemblies* and two of each *Control PCB Assemblies.*

- See Denomination Change Worksheet to determine the credit optics position.
- See Identifying the LED PCB Assembly to identify the part number to the part.
- See Mechanical Assembly for assembly instructions.



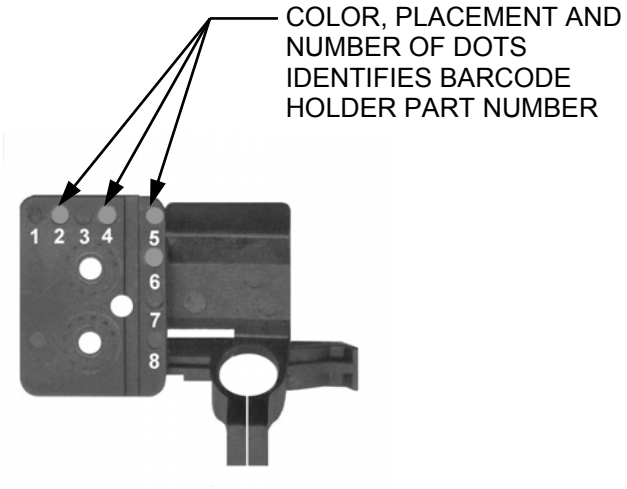
CREDIT OPTICS ASSEMBLY

IDENTIFYING THE BARCODE READER HOLDER



PART	DOT	PART NUMBER ID							
		1	2	3	4	5	6	7	8
04690091	WHITE					●			
04690092	WHITE				●	●			
04690093	WHITE	●	●						
04690094	WHITE	●				●			
04690095	WHITE		●						
04690096	WHITE	●							
04690097	WHITE			●					
04690145	WHITE	●	●		●				
04690146	WHITE	●	●			●			
04690147	WHITE		●	●	●				
04690152	WHITE			●	●	●			
04690173	WHITE		●		●				
04690174	WHITE	●	●	●					
04690201	WHITE		●	●	●	●			
04690203	WHITE	●		●					
04690207	WHITE			●		●			
04690208	WHITE	●	●	●		●			
04690209	WHITE		●	●					
04690213	WHITE	●		●	●				
04690222	WHITE				●				
04690223	WHITE			●	●				
04690224	WHITE	●			●				
04690238	WHITE		●		●	●			
04690239	WHITE	●	●	●	●				
04690240	WHITE	●	●	●	●	●			
04690253	WHITE		●			●			
04690256	WHITE		●	●		●			
04690257	WHITE	●	●		●	●			
04690267	WHITE	●			●	●			
04690275	WHITE	●		●		●			

IDENTIFYING THE BARCODE READER HOLDER - con't

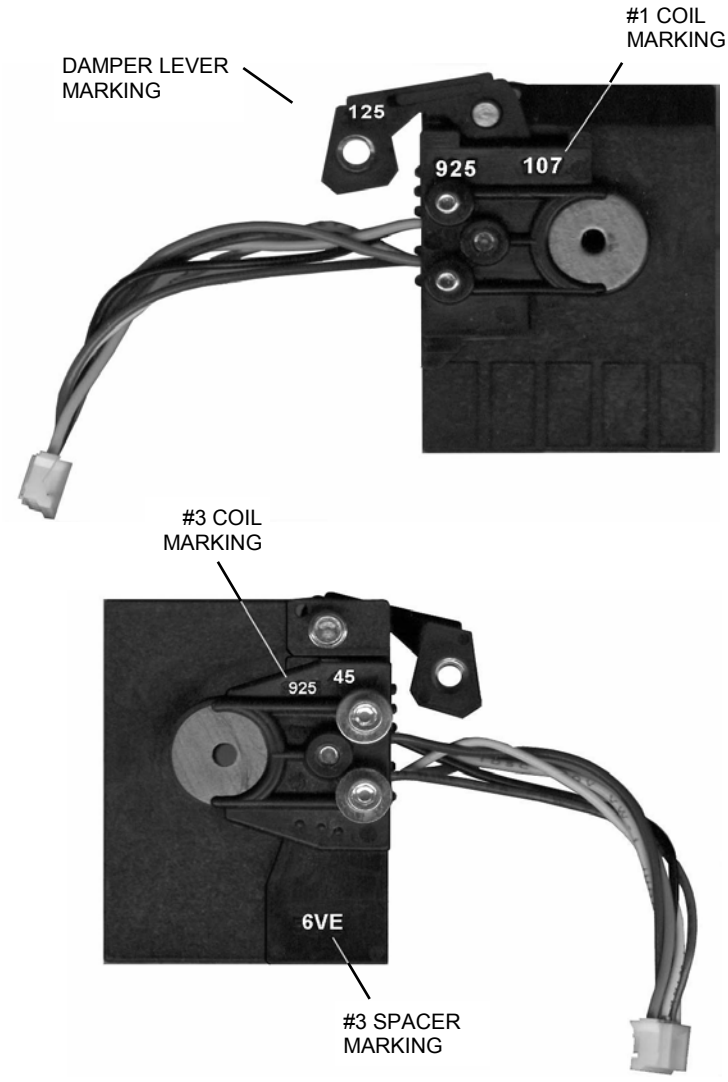


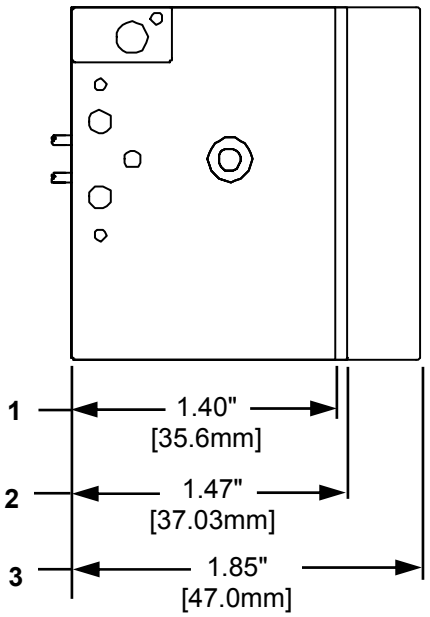
PART NUMBER	DOT COLOR	PART NUMBER ID							
		1	2	3	4	5	6	7	8
04690300	WHITE								
04690316	RED			●	●	●	●		
04690317	RED		●			●	●		
04690326	RED		●		●		●		
04690342	RED			●			●		
04690343	RED		●				●		
04690344	RED			●		●	●		
04690345	RED		●	●	●	●	●		
04690346	RED	●				●	●		
04690347	RED	●			●				
04690348	RED		●	●		●	●		
04690349	RED				●				
04690350	RED	●			●	●			
04690351	RED					●	●		
04690352	RED	●					●		
04690368	RED	●		●	●		●		
04690369	RED				●	●			
04690370	RED	●	●				●		
04690372	RED	●		●			●		
04690373	RED	●	●	●					
04690374	RED	●		●	●	●			
04690380	RED	●	●		●	●	●		
04690381	RED		●	●	●		●		
04690382	RED	●		●		●			
04690383	RED		●	●			●		
04690384	RED	●	●			●	●		
04690385	RED	●	●	●	●		●		
04690386	RED		●		●	●	●		
04690387	RED	●			●	●	●		
04690391	RED			●			●	●	
04690403	RED	●		●		●		●	
04690404	RED			●	●	●		●	

IDENTIFYING THE SENSOR COIL ASSEMBLY

Sensor Coil Assembly	# 1 Coil Marking	# 3 Coil Marking	Lever Marking	# 3 Coil Spacer Marking	#2 Coil Size
06250192	925 43	925 45	123	VL2	3
06250229	925 43	925 45	127	VL9	2
06250298	925 107	925 45	34	8S	2
06250299	925 43	925 45	35	9S	2
06250303	925 107	925 45	38	9SVE	2
06250304	925 107	925 45	37	12SVE	2
06250307	925 107	925 45	34	8SVE	2
06250319	925 107	925 45	34	72VE	2
06250320	925 107	925 45	124	5VE	2
06250321	925 107	925 45	129	4VE	2
06250326	925 43	925 45	124	5VE	2
06250327	925 43	925 45	38	9SVE	2
06250328	925 107	925 45	38	9SVE	1
06250329	925 107	925 45	34	8SVE	1
06250330	925 107	925 45	34	72VE	1

NOTE: The upper case "E" at the end of some of the #3 coil spacer markings may be backward " ∃ "



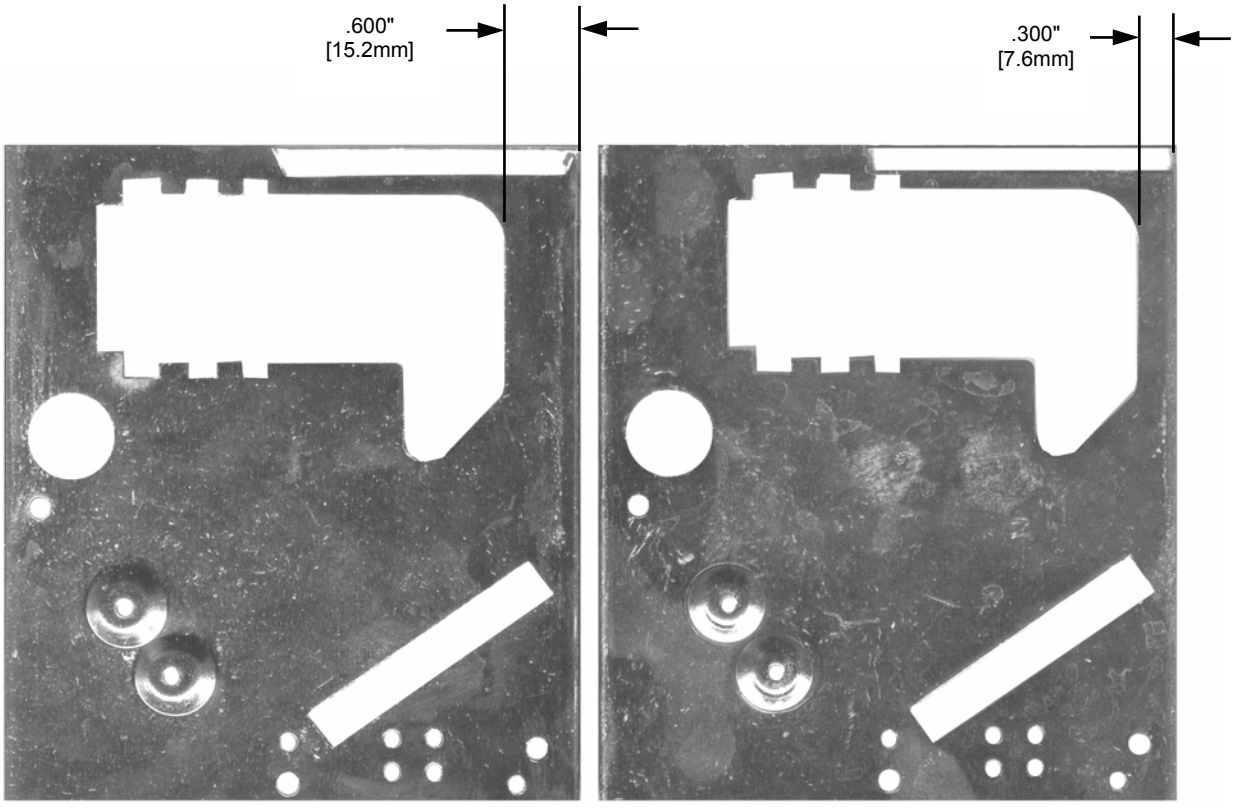


#2 COIL SIZE
(ONE TO ONE TEMPLATE)

IDENTIFYING THE CHASSIS ASSEMBLY

CHASSIS PART NUMBER	PCB HOUSING	ACCEPT COIL WIRE COLOR	CHASSIS ASSEMBLY TYPE
06660077	NO CREDIT OPTICS	GREEN	LARGE COIN
06660078	NO CREDIT OPTICS	GRAY	LARGE COIN
06660091	NO CREDIT OPTICS	GREEN	SMALL COIN
06660092	NO CREDIT OPTICS	GRAY	SMALL COIN
06660088	CREDIT OPTICS	GREEN	LARGE COIN
06660087	CREDIT OPTICS	GRAY	LARGE COIN
06660093	CREDIT OPTICS	GREEN	SMALL COIN
06660106	CREDIT OPTICS	GRAY	SMALL COIN

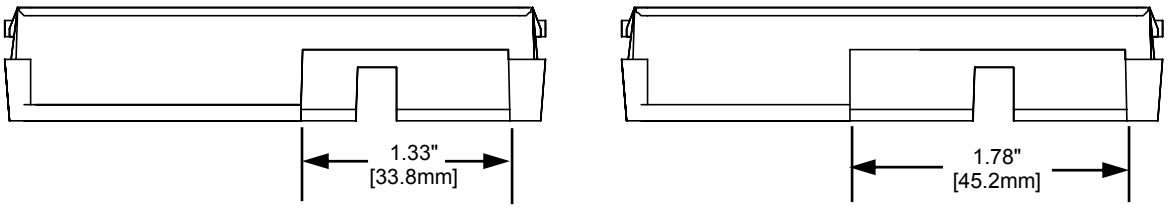
NOTE: For coin diameters ≤1.120" [28.5mm] use small coin chassis.



LARGE COIN CUTOUT

SMALL COIN CUTOUT

IDENTIFYING THE PCB HOUSING



NO CREDIT OPTICS

CREDIT OPTICS

IDENTIFYING THE LED PCB ASSEMBLY

For credit optics choose the appropriate led pcb assembly:

P/N 09270359
Small coin led pcb

P/N 09270360
Large coin led pcb

Assemble using the following:

P/N 04660173
PCB AND DEFLECTOR PIN
HOUSING

P/N 04660031
DEFLECTOR PIN

P/N P-104-4-12
SCREW

P/N 600-4
WASHER

For mechs without credit optics the following parts are used:

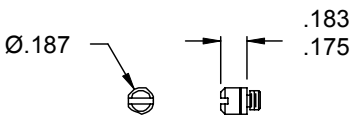
P/N 04690411
DEFLECTOR PIN
HOUSING

P/N 04660031
DEFLECTOR PIN

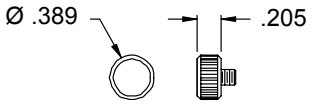
P/N P-104-4-6
SCREW

P/N 600-4
WASHER

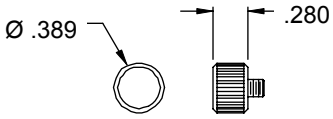
IDENTIFYING THE DAMPER WEIGHT



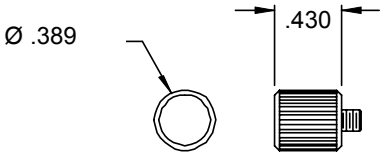
P/N 04060005-01
STUD, #6 MTG, 0.7 GRAM CLEAR FINISH



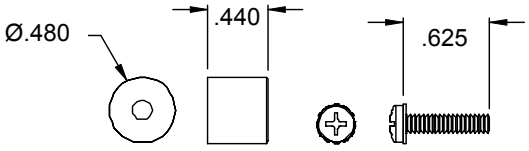
P/N 04060038-01
WEIGHT, DAMPER, 2.6 GRAM - CLEAR FINISH



P/N 04060084-02
WEIGHT, DAMPER, 4.0 GRAM - YELLOW FINISH

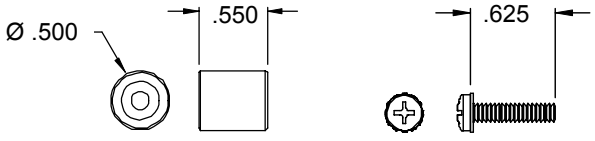


P/N 04060039-01
WEIGHT, DAMPER, 6.0 GRAM - CLEAR FINISH



P/N 04060083-02
WEIGHT, DAMPER, 9.0 GRAM YELLOW FINISH

P/N P-166-6-10
SCREW, 6-32 X 5/8, PHIL, PH, W/SEMS



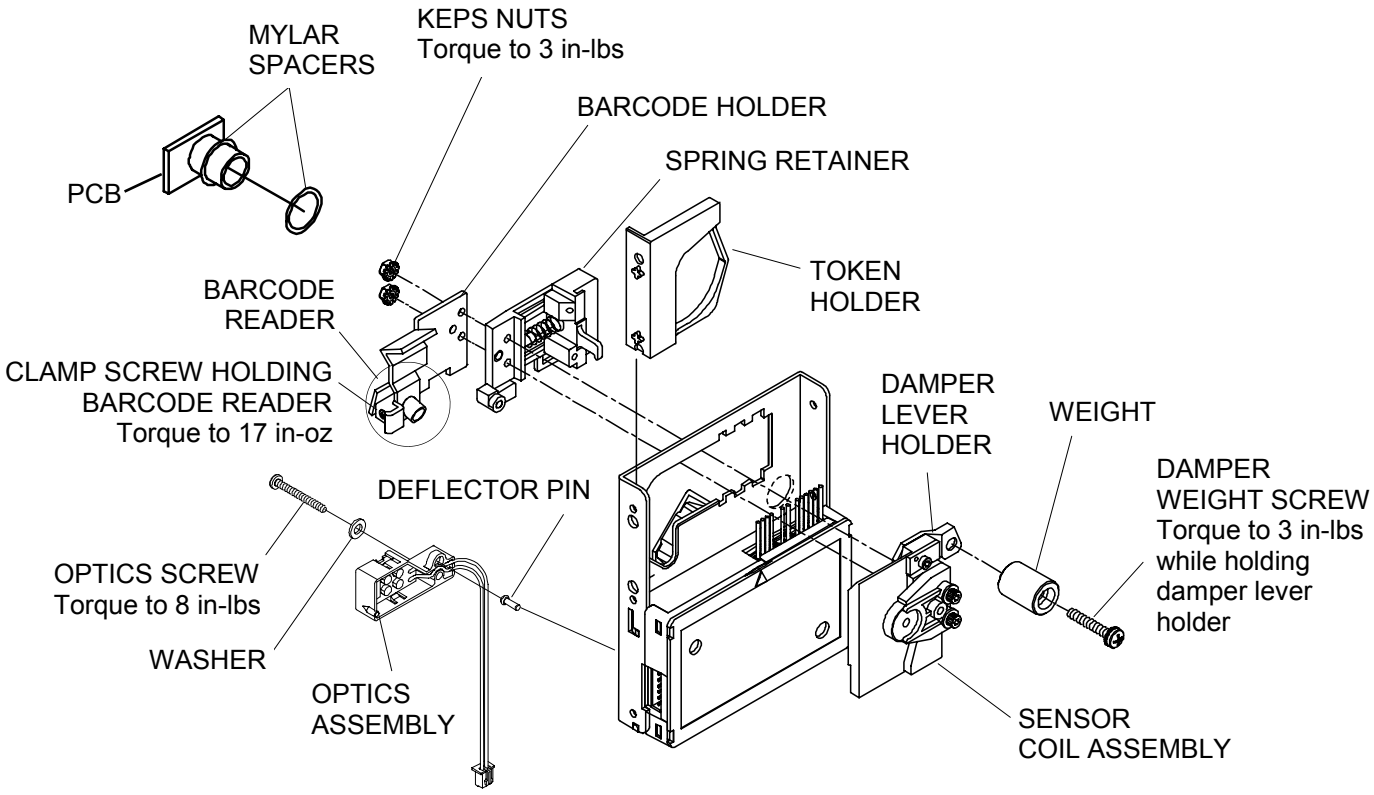
P/N 04060080-02
WEIGHT, DAMPER, 12 GRAM YELLOW FINISH

P/N P-166-6-10
SCREW, 6-32 X 5/8, PHIL, PH, W/SEMS

MACHINE INTERFACE WORKSHEET

GAMING MACHINE MFR.	MACHINE TYPE	REF. MODEL	PCB SMALL COIN	PCB LARGE COIN	SCOIN FIRMWARE FILENAME	OPTIC FIRMWARE FILENAME	CHASSIS ASSY SMALL COIN	CHASSIS ASSY LARGE COIN
Aristocrat	MVP	IC-62	09270449	09270450	09290433 62-SCOIN	09290438 62-OPTIC	06660093	06660088
Aristocrat	MK2.5	IC-16	09270436	09270436	09290430 NONSCOIN	09290436 NONOPTIC	06660092	06660078
Aristocrat	MK4/540	IC-16	09270435	09270435	09290430 NONSCOIN	09290436 NONOPTIC	06660091	06660077
Atronic	All	IC-16	09270435	09270435	09290430 NONSCOIN	09290436 NONOPTIC	06660091	06660077
Bally	Reel/Video (Slant Top)	IC-16	09270436	09270436	09290430 NONSCOIN	09290436 NONOPTIC	06660092	06660078
Bally	Reel/Video (Slant Top)	IC-16OE	09270447	09270448	0950-000011 BALSCOIN	0950-000012 BALOPTIC	06660107	06660087
Bally	Video/S5000	IC-62	09270449	09270450	09290433 62-SCOIN	09290438 62-OPTIC	06660093	06660088
Cirsa	All	IC-62	09270449	09270450	09290433 62-SCOIN	09290438 62-OPTIC	06660093	06660088
Eagle	All	IC-40	09270445	09270446	09290432 40LSCOIN	0950-00009 40LOPTIC	06660093	06660088
Franco	All	IC-62	09270449	09270450	0950-000026 62-FSCOIN	N/A	06660093	06660088
IGT	8032 Platform (e.g. S+/PE+)	IC-16	09270436	09270436	09290430 NONSCOIN	09290436 NONOPTIC	06660092	06660078
IGT	80960 Platform (e.g. Vision, Gameking, I-Game, S2000)	IC-16	09270438	09270438	09290430 NONSCOIN	09290436 NONOPTIC	06660091	06660077
IGT	Enhanced (Barcrest)	IC-62	09270449	09270450	0950-000017 62-HSCOIN	N/A	06660093	06660088
Novomatic	All	IC-40	09270449	09270450	09290431 40-SCOIN	09290437 40-OPTIC	06660093	06660088
Orion	All	IC-40	09270449	09270450	09290432 40LSCOIN	0950-00009 40LOPTIC	06660093	06660088
Universal	All	IC-62	09270449	09270450	09290433 62-SCOIN	09290438 62-OPTIC	06660093	06660088
WMS	All	IC-16	09270437	09270437	09290430 NONSCOIN	09290436 NONOPTIC	06660091	06660077
Sega	All	IC-40	09270445	09270446	09290431 40-SCOIN	09290437 40-OPTIC	06660093	06660088
Sigma (old)	All	IC-16	09270435	09270435	09290430 NONSCOIN	09290436 NONOPTIC	06660091	06660077
Sigma	All	IC-16	09270437	09270437	09290430 NONSCOIN	09290436 NONOPTIC	06660091	06660077
Universal - Sigma	All	IC-16OE	09270439	09270451	0950-000013 SIGSCOIN	0950-000008 SIGOPTIC	06660093	06660088

MECHANICAL
ASSEMBLY INSTRUCTIONS



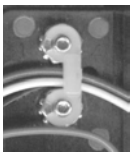
- The barcode holder, spring retainer and sensor coil are held together by two keps nuts fastened to the screws of the sensor coil assembly. To replace the bar code holder, and sensor coil assembly,
    1. Remove the token holder (*see the TOKEN HOLDER INSTALLATION SECTION*)
    2. Using a 1/4 in. hex socket wrench, remove the keps nuts
    3. Remove the barcode holder by sliding off threads of sensor coil
    4. Unhook the barcode holder wires from loop in spring retainer
    5. Remove the spring retainer by slightly compressing spring assembly and detach from back.
    6. Using a #0 phillips driver, loosen clamp screw and remove the barcode reader
    7. Unplug the barcode reader from pcb.
    8. Remove the barcode reader from the old barcode holder by loosening the screw clamping it in place. The reader may have mylar spacers on it. Do not discard the spacers. They are for focusing the barcode reader. (*see the FOCUSING THE BARCODE READER SECTION*)
    9. Unplug the optics assembly from pcb. Carefully remove the screw, washer and assembly to avoid dropping the deflector pin nested in a depression in the assembly housing.
    10. Slide the sensor coil until the tabs line up with the slots in mainplate and separate from mainplate
    11. Unplug sensor coil from control pcb

TOKEN HOLDER INSTALLATION PROCEDURE

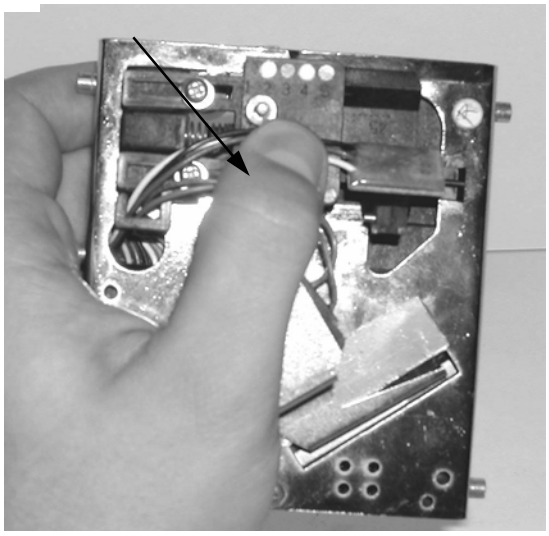
Caution !!

Coin Mechanism's and most game manufacturers recommend that the Game be powered down before changing any parts including the coin acceptor.

You must unplug the power connector from the Intelligent Comparitor before removing the token holder or Intelligent Comparitor from the channel. Otherwise there is a risk of electrical damage to the mechanism or the machine.

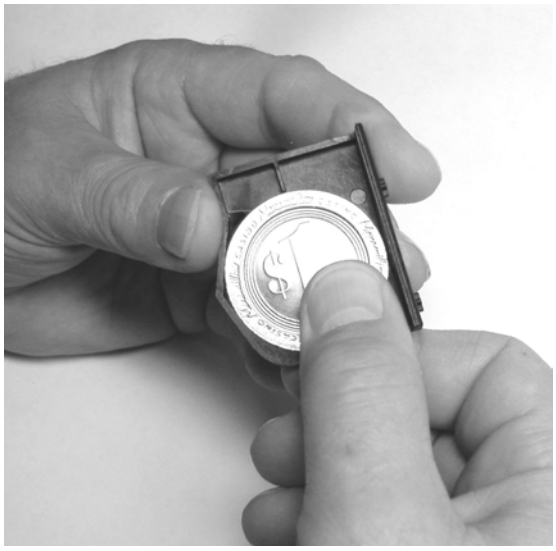


Clip and screws on back

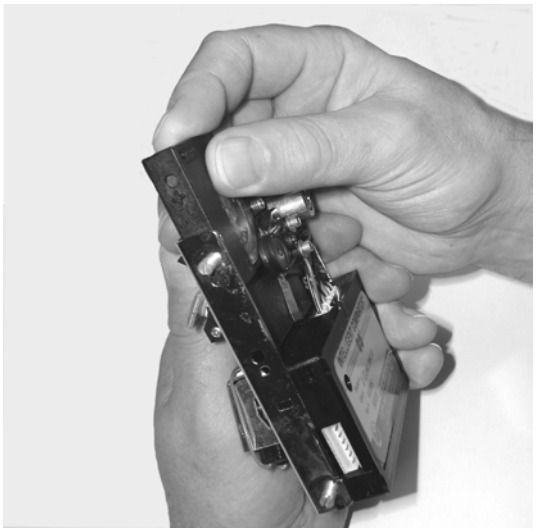


Using clip and screws on back for leverage, slide sensor coil assembly back to loosen token holder. **CAUTION! <u>Do not</u> push on the damper lever to slide open the coil**

Pull token holder up and free of assembly.



Turn token holder over and insert token as shown



Slide sensor coil stack back and replace token holder

SENSOR COIL ELECTRONIC BALANCING

1. Remove the sensor coil from the chassis following the procedure in the **MECHANICAL ASSEMBLY SECTION**.
2. Prior to installing the replacement sensor coil assembly to the chassis, use a 1/16 in. hex drive bit and loosen both coil adjustment screws.
3. Use a torque driver set to 4 in.-lbs. With a 3/32 in. hex drive bit, torque each of the (2) screws that hold the sensor coil stack together. (see fig. 1)
4. Install the sensor coil assembly to the chassis.
5. Install the spring retainer assembly and use a 1/16 in. hex drive bit to loosen the spring retainer adjustment screw. (see fig. 2)
6. Install the barcode holder to the sensor coil assembly stack screws using (2) Keps nuts.
7. Using a torque driver set to 3 in.-lbs. with a 1/4 in. hex socket, torque on the Keps nuts. (see fig. 2)
8. Slide the coil assembly to the right. (see fig. 3) Holding the coil assembly open, slide the token holder up until it is held captive due to the gap between the #2 and #3 coils.
9. Using the 1/16 in. hex drive bit, turn front coil adjustment screw clockwise, just until the token holder falls. (see fig. 1) There should be no more than 0.2mm (0.008") of clearance between the token holder and the #3 coil or between the coin and the #3 coil if the coin thickness is greater than the token holder web.
10. Using the 1/16 in. Hex drive bit, turn the spring retainer adjustment screw clockwise until it just touches the mainplate.

- If you are using the CPM see the TO CHECK AND ADJUST SENSOR COIL section
- If you are using the SPMT see the BALANCING THE SENSOR COIL section
- If you are using an oscilloscope see document #00300001

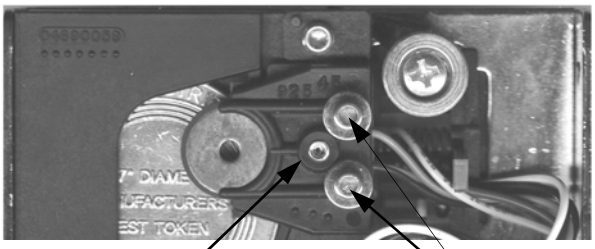


Fig. 1

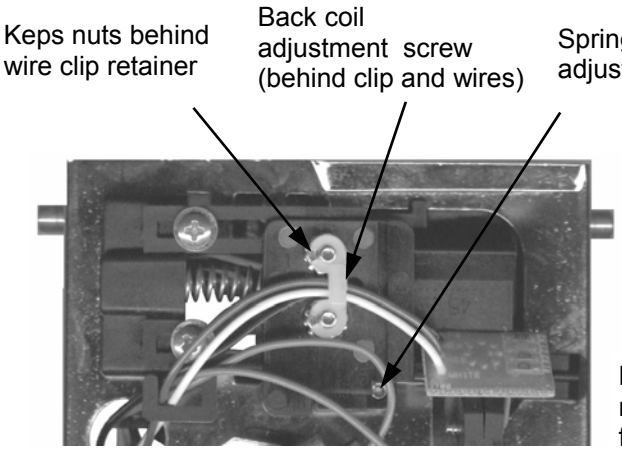


Fig. 2

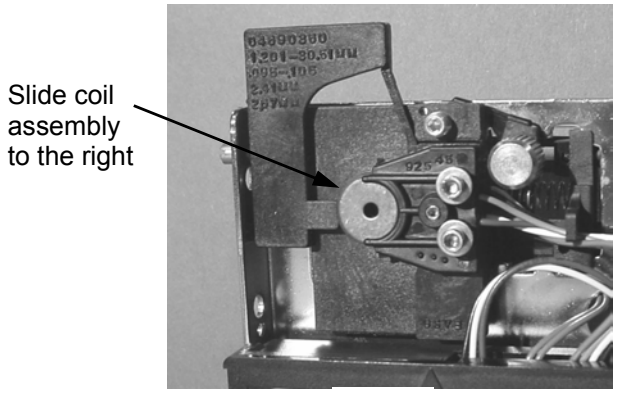


Fig. 3

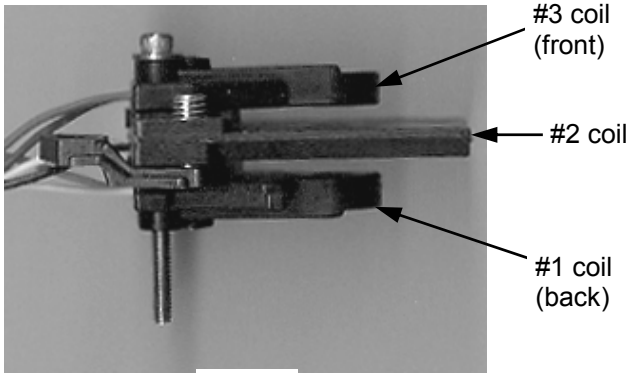


Fig. 4

Scenario 1

- Turn the back coil adjustment screw clockwise until the amplitude is smallest.

Note: Once the front adjustment screw bottoms (amplitude begins to decrease), it should not take more than a quarter turn before the smallest amplitude has been reached. If more than a quarter turn is required, replace the assembly.

- Slide the proper token into the drop gap between the number #1 coil and the number #2 coil. The clearance should be 0.2mm (0.008in).(If the token population varies significantly in thickness, use thickest token)

- If it is not, continue to turn the back coil adjustment screw clockwise until the clearance is 0.2mm (0.008in). Then insert the 1/16 in. hex drive bit back into the front coil adjusting screw and turn the screw with 1/16 in. hex drive wrench clockwise until the smallest amplitude has again been reached.

- If the clearance is greater, turn the spring retainer adjustment screw clockwise until the gap is reduced to 0.2mm (0.008in). Then insert the 1/16 in. hex drive bit back into the number (3) coil adjusting screw and turn it clockwise until the smallest amplitude has again been reached.

  Note: The barcode holder "Foot" must always remain in contact with the mainplate.

Scenario 2

- If, while adjusting the front coil adjusting screw, the amplitude (for oscilloscope this is voltage amplitude, for CPM this would be number of bars) decreases, slide the proper token into the gap between the #1 coil and the #2 coil, and turn the back coil adjusting screw clockwise until the clearance is 0.2mm (0.008in).

- Insert the 1/16 in. Hex drive bit back into the front coil adjusting screw again and turn the screw clockwise until the smallest amplitude is reached.

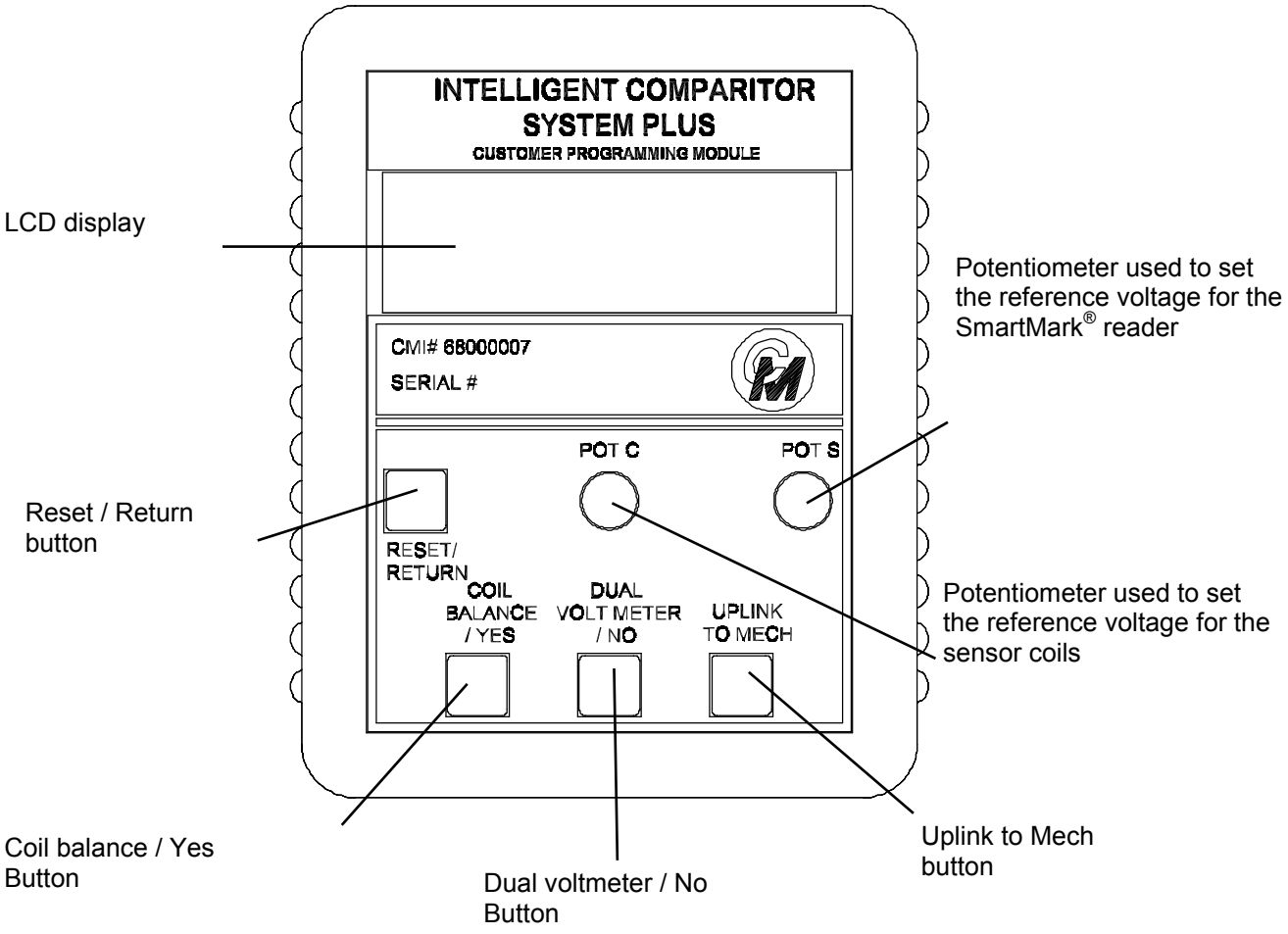
THE CUSTOMER PROGRAMMING MODULE

The Customer Programming Module (CPM) allows the user the ability to:

- Program the **Intelligent Comparitor** ® for your casino's SmartMark® tokens
- Update the coin data file for any denomination of your casino's tokens
- Check and adjust the reference voltages of pot "C" and pot "S"
- Check and adjust sensor coil balance

The illustration below will familiarize you with the **CPM's** functions:

FUNCTION OF BUTTONS



PROGRAMMING OR UPDATING THE INTELLIGENT COMPARITOR USING THE CPM

Programming the Intelligent Comparitor ® for your casino's SmartMark ® tokens

If you are purchasing a new gaming machine, you can specify that it comes from the manufacturer with the Intelligent Comparitor ® already installed. Coin Mechanisms programs all Intelligent Comparitors ® that are supplied to gaming machine manufacturers to accept a '**M**anufacturer's **T**est **T**oken' . The **MTT** token is supplied to the various machine manufacturers so they can test the Intelligent Comparitor ® after they install it in the machine. When the machine arrives at your casino, it will be necessary to program the **I**ntelligent Comparitor ® for your casino's SmartMark® tokens

Updating the coin data file for any denomination of your casino's tokens

It may be necessary at some point in time to update the coin data file for one or more denominations of your casinos tokens for the following reasons:

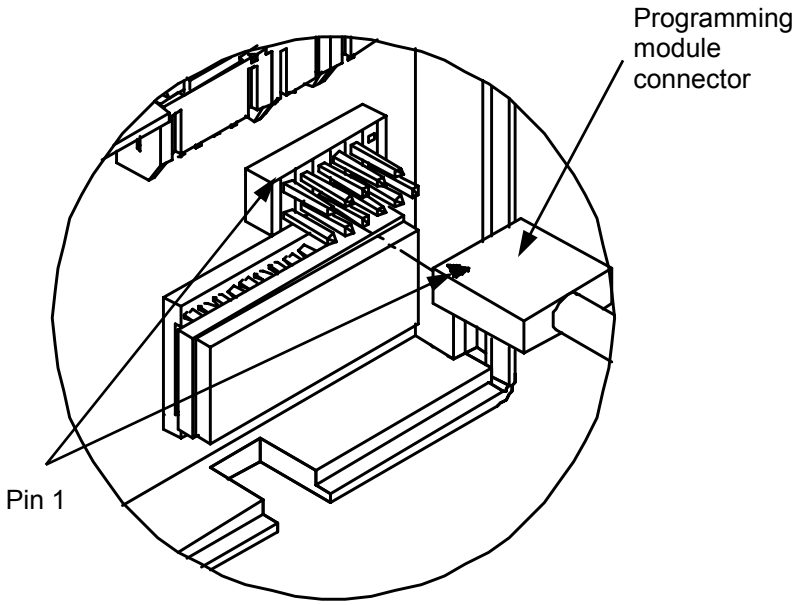
- Improve accept rate of tokens which may have diminished due to wear or to a refill
- Reject an unwanted cross-play token or fraud

To update a coin data file, you must first update your CPM. (see updating your CPM section in the Intelligent Comparitor ® users manual)

The CPM holds all of the coin data files for your casino. The Intelligent Comparitor® is programmed to interrogate the CPM to look for the appropriate coin data file. This feature prevents accidental uplinking of the wrong denomination or from uplinking coin data files from another casinos' CPM.

HOOKING UP THE CPM TO THE IC

Remove the snap-on cover of the Intelligent Comparitor ®, locate the (12) pin dual-row header located just above the microcontroller and plug in the **CPM** connector as shown at right. Be sure that the pin 1 arrow on the **CPM's** connector lines up with pin 1 of the 12-pin dual-row header.



Note: Pressing the *Reset/ Return* button at any time reinitializes self test and returns the *Home Screen*

The Intelligent Comparitor must be powered by either your machine or an external power source. The **CPM** derives its power from the Intelligent Comparitor. Upon power-up, the system goes through a self test. The 2 line, 16 character LCD screen will momentarily display "Intelligent Comparitor Test" followed by the *Home Screen* - your casino name, and a version identification of the **CPM**.

➔

Intelligent Comparitor Test

—Your Casino Name—
POD VERSION and ARRAY REVISION

PROGRAMMING OR UPDATING USING A CPM

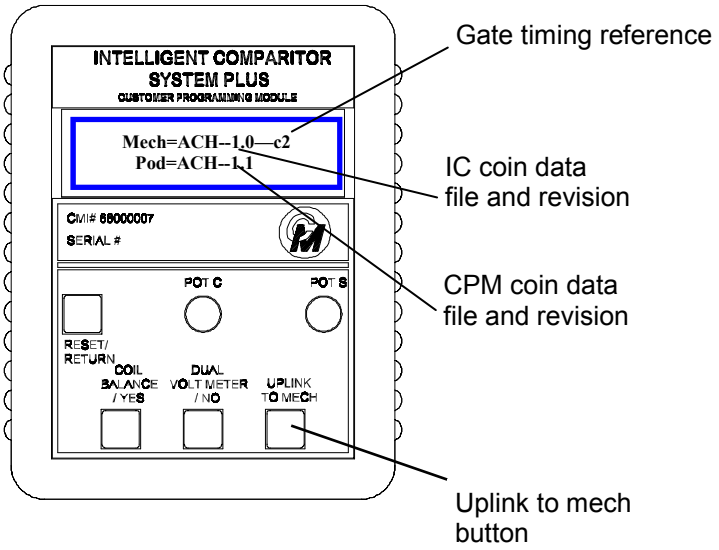
Your casino has been assigned a 3 digit alpha acronym.

The 3 digit alpha acronym is part of the coin data file name. (e.g. ACH—1.0), where **ACH** is the casinos 3 digit acronym, **1** is the denomination of the coin and **.0** is the revision level.

Press the ***Uplink to Mech*** button. If the Intelligent Comparitor® locates the appropriate coin data file, the LCD screen will display the file that is currently programmed into the validator on line one, and the file for the corresponding denomination that is in the CPM on line two.

Note: Before proceeding, be sure that the revision of the coin data file of the **CPM** is the same or later than the revision of the coin data file of the mech.

The gate timing reference (e.g. c2) is displayed at the end of line one.

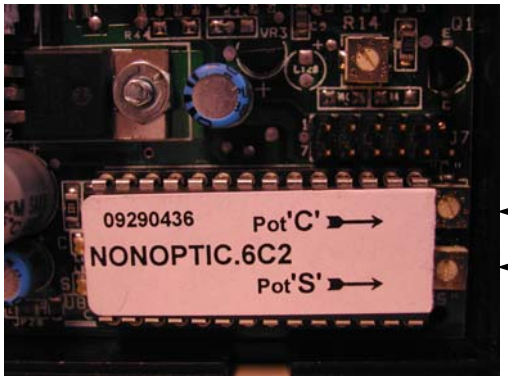


Press the ***Uplink to Mech*** button a second time and the LCD screen will display a prompt to confirm that you want to uplink the coin data file contained in the **CPM** to the validator.

MechRev0-PodRev1
Press to Uplink

Procedure for PCB with Pots

If your pcb looks like the picture at the right follow the next two steps.
If your pcb does not look like the picture at the right turn to page 27
Procedure for PCB without Pots



Press the ***Uplink to Mech*** button a third time. If your pcb has potentiometers the display will confirm that the uplink is completed

MechRev1-PodRev1
Uplink Completed

PROGRAMMING OR UPDATING USING A CPM - CONTINUED

Press the ***Uplink to Mech*** button again to show that Mech and Pod contain the same coin data file. The process is now complete.

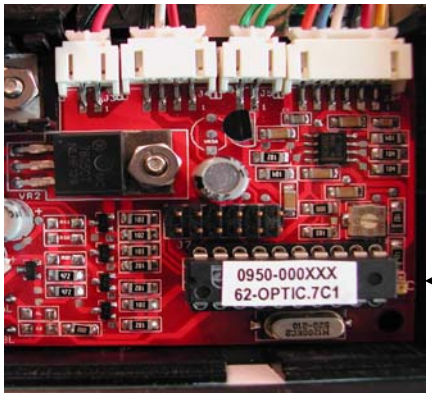
➔

Mech=ACH- -1.1
-Pod=ACH- -1.1

Procedure for PCB without Pots

If your pcb looks like the picture at the right follow the next three steps.
If your pcb does not look like the picture at the right turn to page 26.

➔



No pots

If you press the ***Uplink to Mech*** button a third time and your pcb does **not** have potentiometers, the CPM asks if you want to uplink the factory pot settings.

➔

Uplink Factory
Pots ? (Y) (N)

If token acceptance on your floor is good and you haven't previously made adjustments to the reference voltages, press the ***Coil Balance/ Yes*** button. The display will confirm that the coin data file with the factory setting has been uplinked.

➔

MechRev1-PodRev1
Uplink Completed

Press the ***Uplink to Mech*** button again to show that Mech and Pod contain the same coin data file. The process is now complete.

➔

Mech=ACH- -1.1
-Pod=ACH- -1.1

PROGRAMMING OR UPDATING
USING A CPM - CONTINUED

If your token acceptance on your floor is poor at the factory settings, press the ***Dual Voltmeter/No*** button. The display will ask you if the potentiometers on the CPM are set properly and show the voltage settings that the potentiometers on the CPM are set to.

➔

Are pots set? (Y)
Pot C= 1.8V Pot S= 1.2V

Turn over your CPM and refer to the denomination information on the label.

➔

Example Only

Denomination	Pot 'S'	Pot 'S'	Pot 'C'
	New Token	Worn Token	+/- 0.4volt
50 Cent	1.7 volts	0.8 volts	2.3 volts
1 Dollar	1.9 volts	0.5 volts	1.2 volts
2 Dollar	2.5 volts	0.8 volts	2.0 volts
5 Dollar	2.5 volts	0.8 volts	3.2 volts
10 Dollar	1.6 volts	1.1 volts	1.8 volts

As you adjust the potentiometers on the **CPM** you will notice the voltage readings change on the LCD display. When reference voltages are set the way that you want, press the ***Coil Balance/Yes*** button. The display will confirm that the coin data file with the new settings has been uplinked.

➔

MechRev1-PodRev1
Uplink Completed

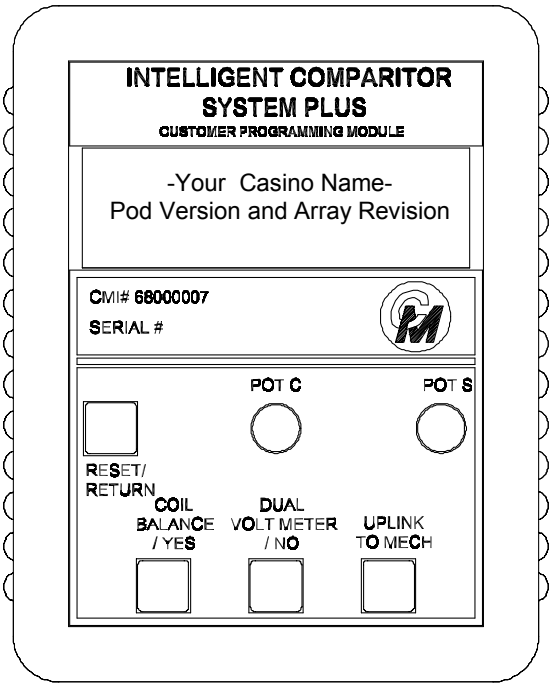
Press the ***Uplink to Mech*** button to show that Mech and Pod contain the same coin data file. The process is now complete.

➔

Mech=ACH- -1.1
-Pod=ACH- -1.1

TO CHECK OR ADJUST POT “C” AND POT “S” IF YOUR PCB HAS POTENTIOMETERS

From the *Home Screen*, press the ***Dual Voltmeter*** button ➔



When the ***Dual Voltmeter*** Button is pressed the LCD will display the reference voltage levels that pot “C” and pot “S” on the control pcb are set to. ➔

Use pots on Mech
pot C= 1.8V pot S= 1.2V

Example Only

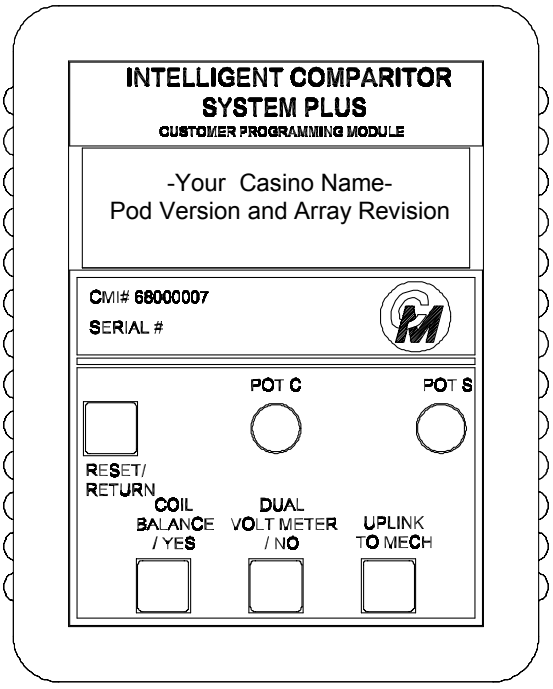
Denomination	Pot 'S'	Pot 'S'	Pot 'C'
	New Token	Worn Token	+/- 0.4volt
50 Cent	1.7 volts	0.8 volts	2.3 volts
1 Dollar	1.9 volts	0.5 volts	1.2 volts
2 Dollar	2.5 volts	0.8 volts	2.0 volts
5 Dollar	2.5 volts	0.8 volts	3.2 volts
10 Dollar	1.6 volts	1.1 volts	1.8 volts

Turn over your **CPM** and refer to the denomination information on the label. ➔

As you adjust the potentiometers on the pcb you will notice the voltage readings change on the LCD display. ➔

TO ADJUST POT "C" AND POT "S" IF YOUR PCB DOES NOT HAVE POTENTIOMETERS

From the *Home Screen*, press the ***Dual Voltmeter*** button ➔



When the ***Dual Voltmeter*** Button is pressed the LCD will indicate that the potentiometers on the CPM are to be used and that you are to press the ***Uplink To Mech*** button. ➔

Use pots on Mech
Press to Uplink

Pressing the ***Uplink to Mech*** button takes you through the same steps as if you were programming or updating . If the Intelligent Comparitor® locates the appropriate coin data file, the LCD screen will display the file that is currently programmed into the validator on line one, and the file for the corresponding denomination ➔

Mech=ACH--1.0—c2
Pod=ACH--1.1

TO ADJUST POT "C" AND POT "S" IF YOUR PCB DOES NOT HAVE POTENTIOMETERS - CONTINUED

Press the ***Uplink to Mech*** button a second time and the LCD screen will display a prompt to confirm that you want to uplink the coin data file contained in the **CPM** to the validator.

➔

MechRev0-PodRev1
Press to Uplink

Press the ***Uplink to Mech*** button a third time and the screen at the right is displayed. Press the ***Dual Voltmeter/No*** button.

➔

Uplink Factory
Pots ? (Y) (N)

The display will ask you if the potentiometers on the **CPM** are set properly and show the voltage settings that the potentiometers on

➔

Are pots set? (Y)
Pot C= 1.8V Pot S= 1.2V

Example Only

Denomination	Pot 'S'	Pot 'S'	Pot 'C'
	New Token	Worn Token	+/- 0.4volt
50 Cent	1.7 volts	0.8 volts	2.3 volts
1 Dollar	1.9 volts	0.5 volts	1.2 volts
2 Dollar	2.5 volts	0.8 volts	2.0 volts
5 Dollar	2.5 volts	0.8 volts	3.2 volts
10 Dollar	1.6 volts	1.1 volts	1.8 volts

Turn over your **CPM** and refer to the denomination information on the label.

➔

As you adjust the potentiometers on the **CPM** you will notice the voltage readings change on the LCD display. When reference voltages are set the way that you want, press the ***Coil Balance/Yes*** button. The display will confirm that the coin data file with the new settings has been uplinked.

➔

MechRev1-PodRev1
Uplink Completed

Press the ***Uplink to Mech*** button to show that Mech and Pod contain the same coin data file. The process is now complete.

➔

Mech=ACH- -1.1
-Pod=ACH- -1.1

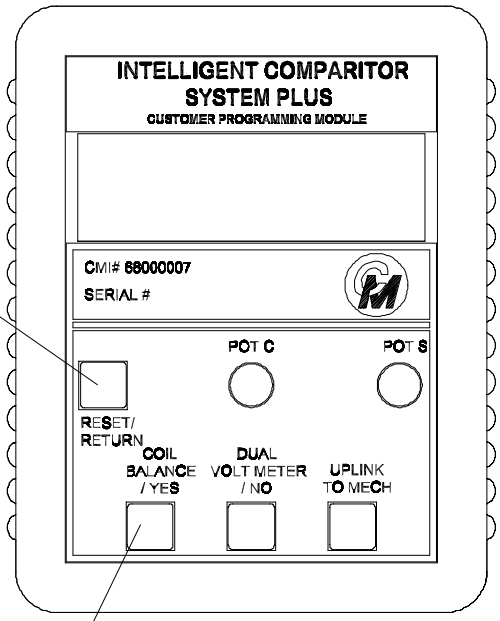
CHECKING AND ADJUSTING THE SENSOR COIL

Note: Coil balancing is done without a resident coin in token holder. The token holder must be in place.

Note: The Coil balancing button operates the same for boards using the 87C752 or the 87C767 micro.

Press the ***Reset / Return*** button in the upper left corner of the **CPM.**

Press the ***Coil Balance/Yes*** button in the lower left hand corner of the **CPM.**



Coil balance button

Example Only

If the sensor coil assembly is balanced, the LCD screen will display between three to six bars (LO), the lowest number of bars is most desirable.

COIL BALANCE -LO
■■■

If the sensor coil requires balancing the LCD screen will display more than six bars and if > 0.7 volts a “HI” voltage value will display. Refer to **SENSOR COIL BALANCING SECTION** to adjust coil balance into the "LO" region.

COIL BALANCE - HI
■■■■■■■■■■■ **1.2**

Example Voltage

ERROR MESSAGES

Note: The following are the explanations for each respective error message(s). If your CPM displays any of these messages, contact Coin Mechanisms customer service for assistance. These messages are the same regardless of which micro is used

If the validator is programmed for a different casino, the LCD screen will display the error:

➔ **POD & Mech Have Different Names**

If the coin data file for the denomination of the validator is not contained in the **CPM**, the LCD will display:

➔ **Mech Denomination Not in this POD**

If the validator memory is empty, incorrect or corrupted, the LCD screen will display these alternating messages:

➔ **Data in CoinMech E2RAM is Corrupt**

Special Pod Reqd See RepairManual

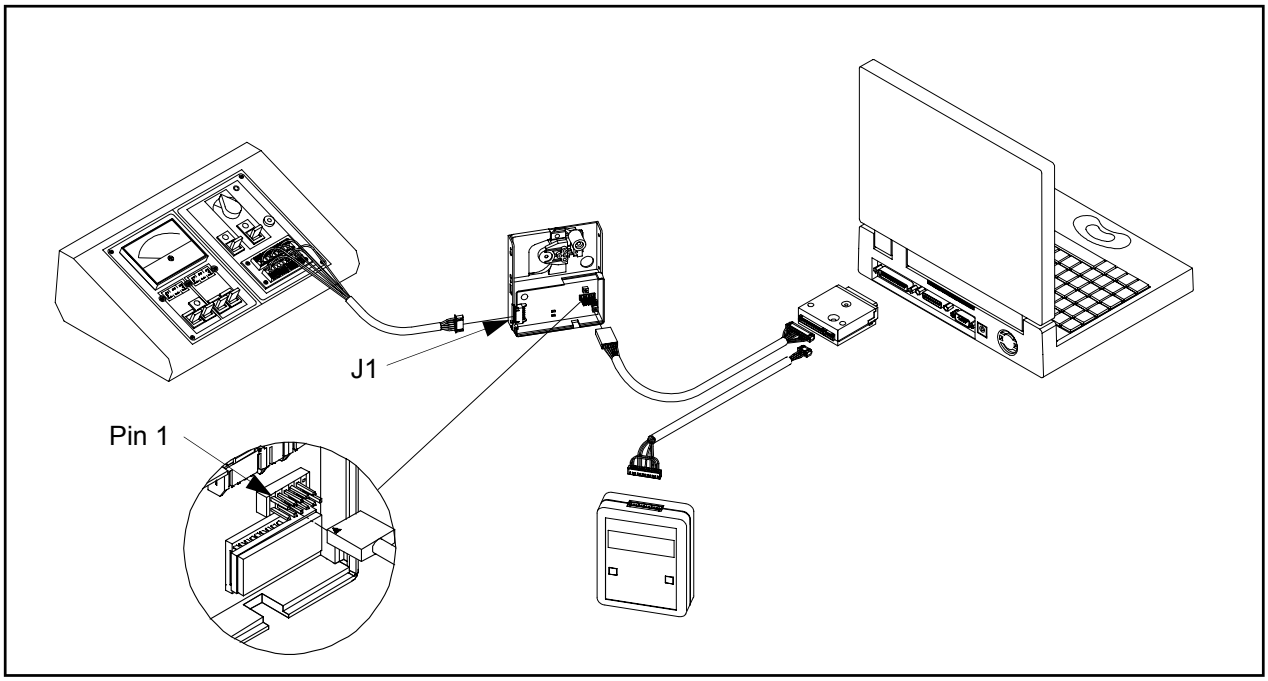
If there is a communication problem between the validator and the **CPM**, the LCD screen will display these alternating messages:

Try plugging in the **CPM** into another validator to isolate which device may be malfunctioning.

➔ **Special Pod Reqd See Repair Manual**

I2C Bus Failure! See RepairManual

SYSTEMS PLUS MANAGEMENT TOOL KIT



To use your **SYSTEMS PLUS MANAGEMENT TOOL KIT (SPMT)** connect the peripherals as shown above. Apply power to Intelligent Comparitor. (In the illustration above power is being supplied by the test station.) Turn on laptop. The laptop home screen will appear as shown below.

SYSTEMS PLUS MANAGEMENT TOOL KIT SHOWN ABOVE WITH TEST STATION (P/N 00660010)

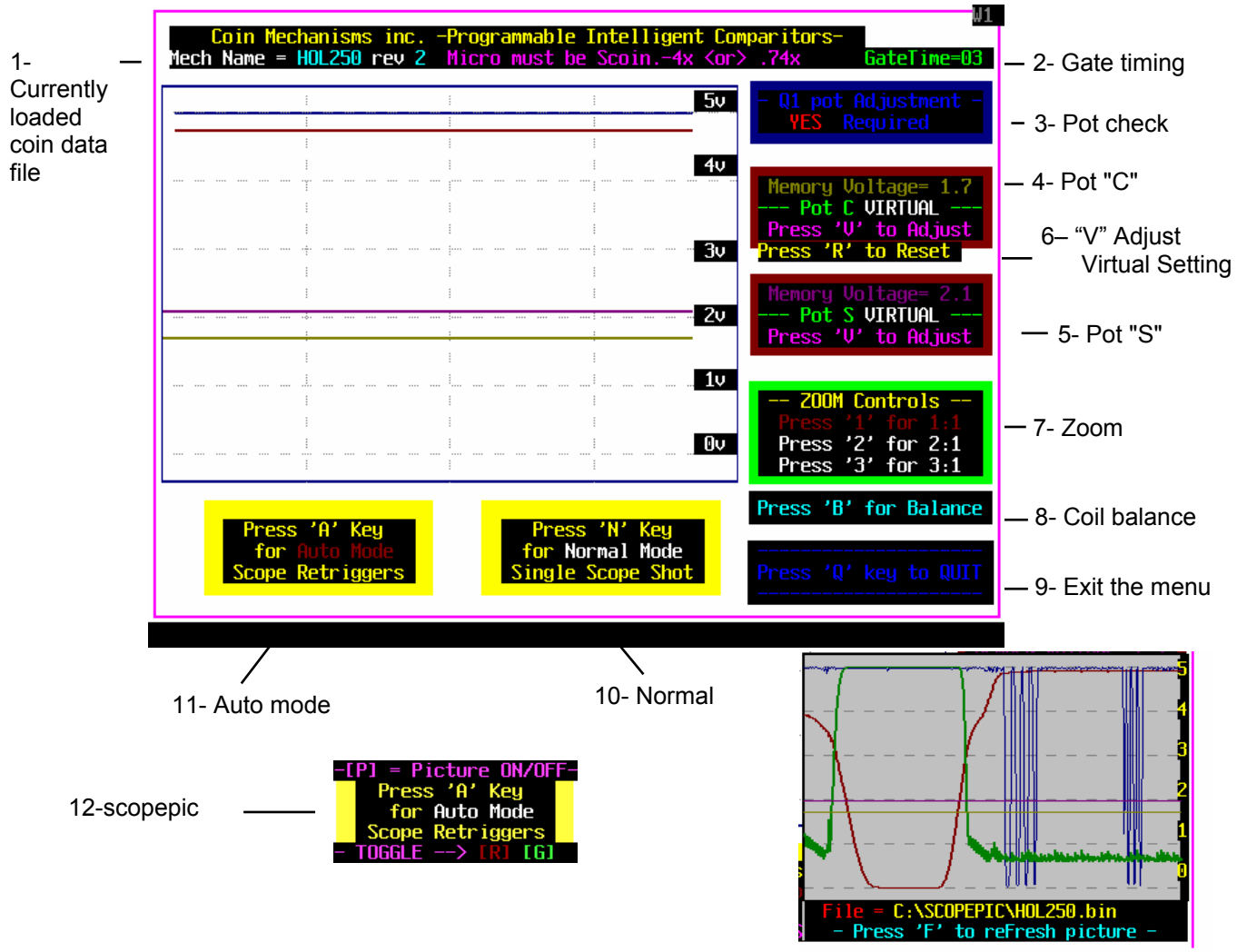
THE SYSTEMS PLUS MANAGEMENT TOOL KIT HOME SCREEN

Opening Menu Screen ➔

USING THE PC-SCOPE UTILITY - *OPTION 1*

From the opening menu screen select option 1

FUNCTIONS OF PC-SCOPE SCREEN

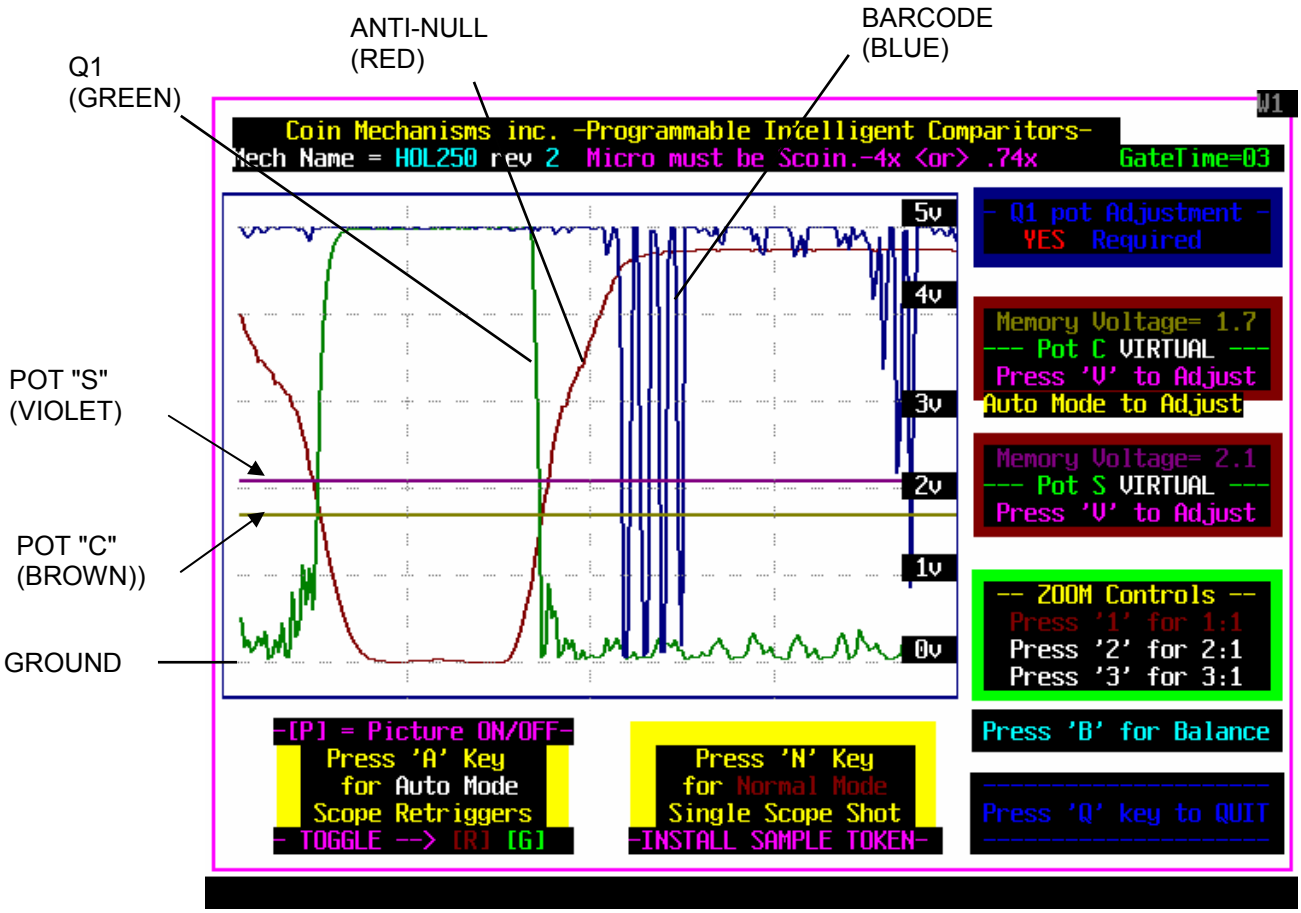


FUNCTIONS

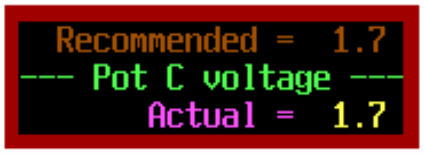
1. Loaded file- Identifies the coin data file loaded in the IC mech memory
2. Gate timing- Time between gate opening and closing after electronic signal has been received
3. Pot check- Indicates if the Q1 potentiometer needs adjustment
4. Pot "C"- Displays the recommended and actual voltage of pot "C" when testing a pcb with “Real” pots
5. Pot "S"- Displays the recommended and actual voltage of pot "S" when testing a pcb with “Real” pots
6. “V” adjusts the virtual settings of both pot “C” and pot “S” when testing a pcb with “Virtual” pots.
7. Zoom controls- Allows expansion of displayed wave forms for greater detail
8. Coil balancing- Pressing "B" takes you to the sensor coil balancing screen
9. Exit the menu- Pressing "Q" takes you out of the current screen
10. Normal Mode- Pressing "N" allows you to trigger pc-scope on a coin drop
11. Auto Mode- Pscope is in auto run mode
12. Scopepic- Pressing "P" displays picture of typical waveform. (NOTE: Must have files in scopepic directory). Refresh- Pressing "F" refreshes the picture and picture screen after additional coin drop.

USING THE PC-SCOPE UTILITY - *OPTION 1-* cont'd

IDENTIFYING THE WAVEFORMS

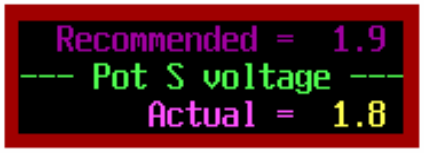


TO CHECK AND ADJUST ON BOARD POTENTIOMETERS



Pot "C" Recommended voltage

Pot "C" Actual voltage



Pot "S" Recommended voltage

Pot "S" Actual voltage

Note that the voltage settings for the two adjustable potentiometers may be required to change. See the recommended and actual voltage displayed on the pc-scope screen.
Should the settings on the display be different then those recorded on the label, use a small slotted 2.0 mm screwdriver to turn the respective potentiometer until the actual voltage matches the recommended voltage display.

Q1 is normally left at factory adjustment but can be used to discriminate close fraud coins

POT "Q"

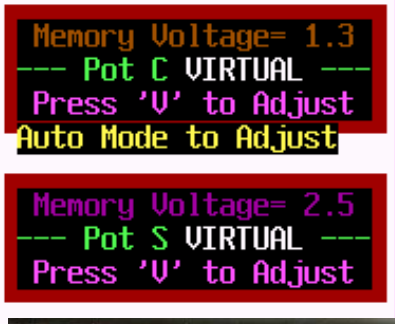
POT "C"

POT "S"

TO CHECK AND ADJUST VIRTUAL POTENTIOMETERS Cont'd

Note that the voltage settings for the two adjustable potentiometers may be required to change. Should your setting need to change the display will show a **Press 'V' to Adjust** command. By pressing the 'V' key you can change both your pot setting. The screen below will appear when the 'V" key is pressed and guides you through the pot setting change.

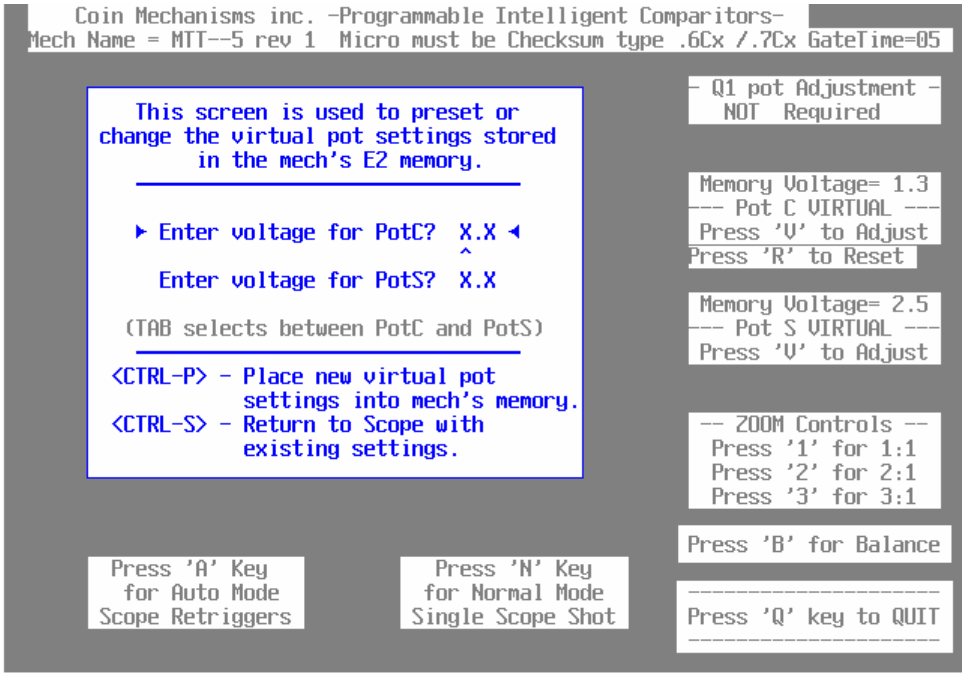
NOTE: For recommended pot settings refer to the CPM back label or contact Coin Mechanisms.



Pot "C" Recommended voltage

Pot "S" Recommended voltage

To adjust your pot setting from this screen simply enter the new desired pot setting for pot "C". Once the voltage has been entered press the **TAB** key to toggle to the pot "S" line. Enter desired pot setting for pot "S". Once all pot settings have been entered press **CTRL-P** to load new pot settings into the mechanisms E2 memory. Once the pot settings have been loaded the program will return you to the PC-Scope screen.



USING THE PC-SCOPE UTILITY - *OPTION 1-* cont'd

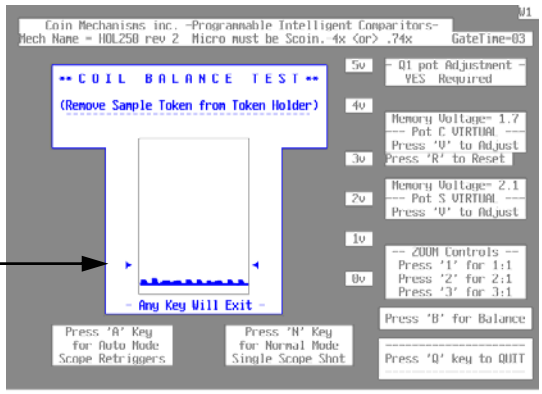
CHECKING AND BALANCING THE SENSOR COILS USING THE PC-SCOPE UTILITY

After following the SENSOR COIL REPLACEMENT AND MECHANICAL ADJUSTMENT PROCEDURE to correctly assemble and torque the sensor coil assembly, the next steps will show you if your coil set is balanced and how to adjust it for electronic balance.

Note: Coil balancing is done without a resident coin in token holder. The token holder must be in place.

After selecting the pc-scope option on your SPMT, press "B" to access the coil balance option on the pc-scope screen. If the coil set is balanced the wave form amplitude will display below the arrows as in fig. 1, no further adjustment is necessary.

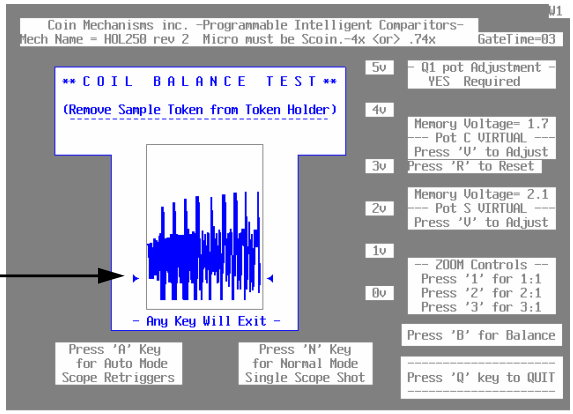
arrows →



balanced sensor coil
wave form below arrows
Fig.1

If the wave form amplitude displays above the arrows as in figure 2, the coil set needs to be balanced. See **SENSOR COIL ELECTRONIC BALANCE SECTION**

arrows →



unbalanced sensor coil
wave form above arrows
Fig. 2

USING THE PC-SCOPE UTILITY - *OPTION 1-* cont'd

FOCUSING THE BARCODE READER

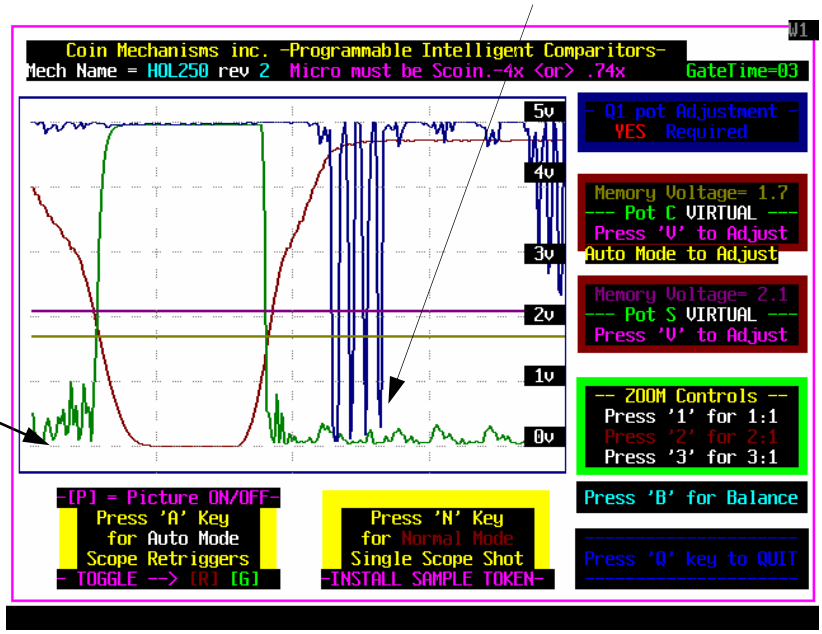
A sample token must be installed in the token holder. Be sure the barcode reader is flush to the holder. Activate the oscilloscope utility by choosing the pc-scope option. Default of the pc-scope is automatic mode. Press "N" to switch to normal mode.

Using a test token, drop the token several times observing the amplitude waveform. If the amplitude deflection is approximately at ground for the duration of the code, the reader is focused

See following page for examples of 14 code waveform

Wave representative of focused barcode reader

GROUND



FOCUSED 36 CODE WAVEFORM

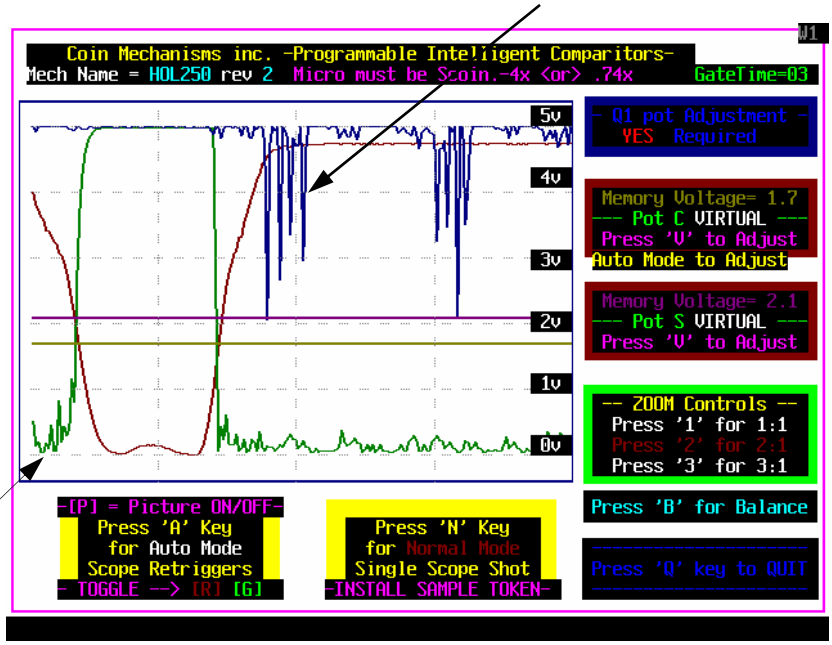
If the waveform is not at ground, add or subtract spacers until the greatest deflection is achieved.

Be sure to properly torque the clamp screw after each adjustment using a #0 phillips torque driver set not to exceed 11 in-oz.

Spacers are available in .010 in. (p/n 04690243) and .020 in. (p/n 04690244) thicknesses.

Wave representative of unfocused barcode reader

GROUND



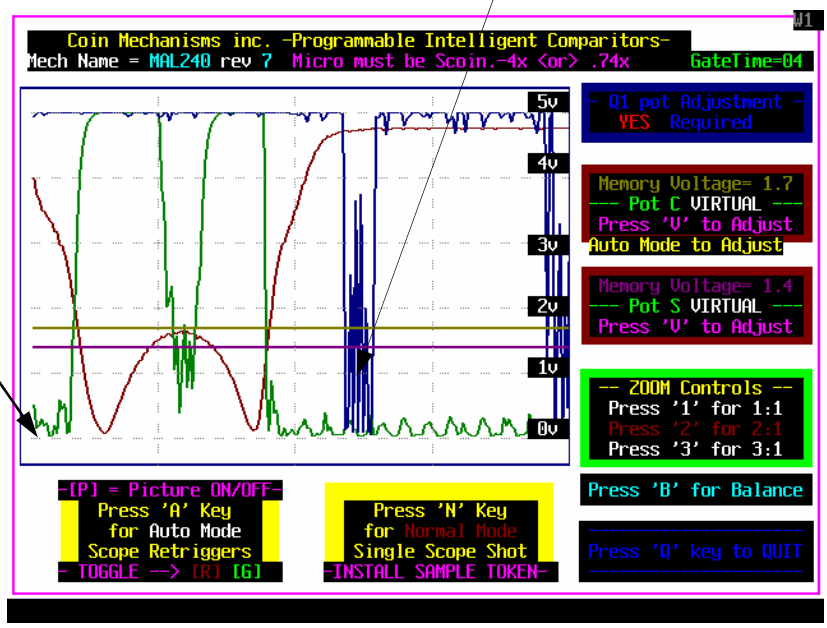
UNFOCUSED 36 CODE WAVEFORM

USING THE PC-SCOPE UTILITY - *OPTION 1- cont'd*

FOCUSING THE BARCODE READER
Cont'd

Wave representative of
focused barcode reader

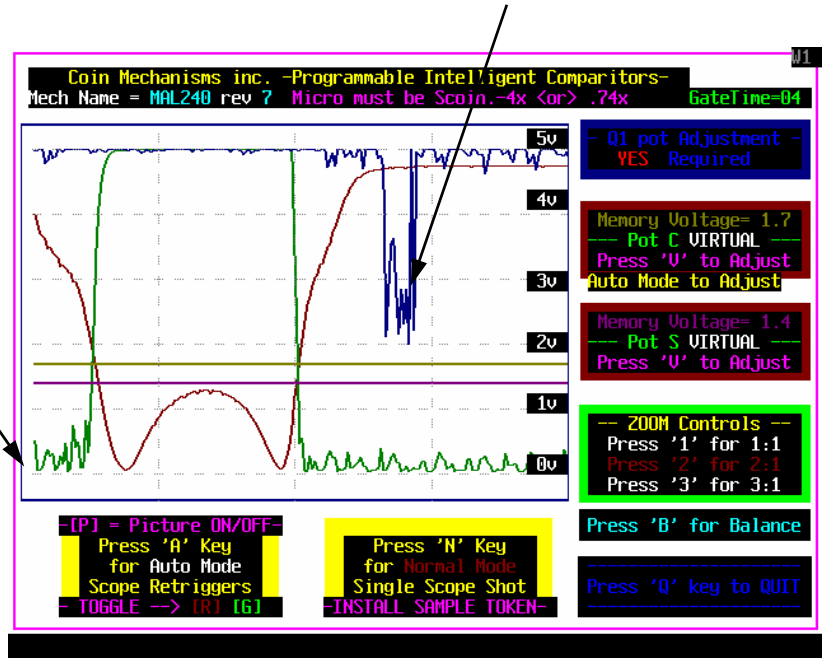
GROUND



FOCUSED 14 CODE WAVE FORM

Wave representative of
unfocused barcode reader

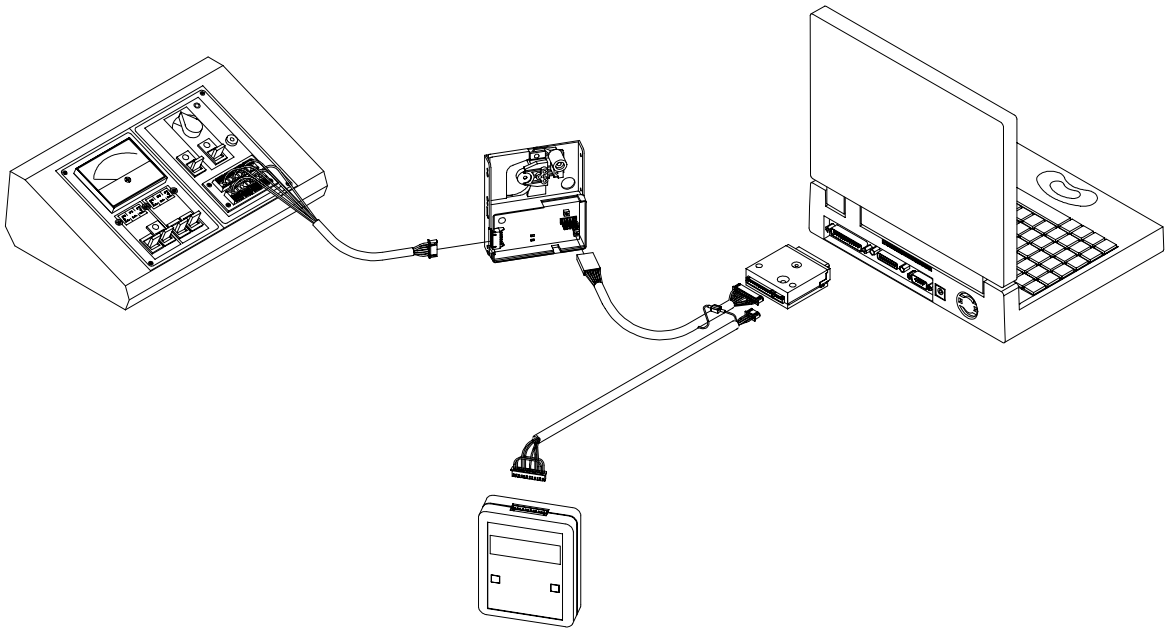
GROUND



UNFOCUSED 14 CODE WAVE FORM

TO UPDATE THE CUSTOMER PROGRAMMING MODULE *OPTION 2*

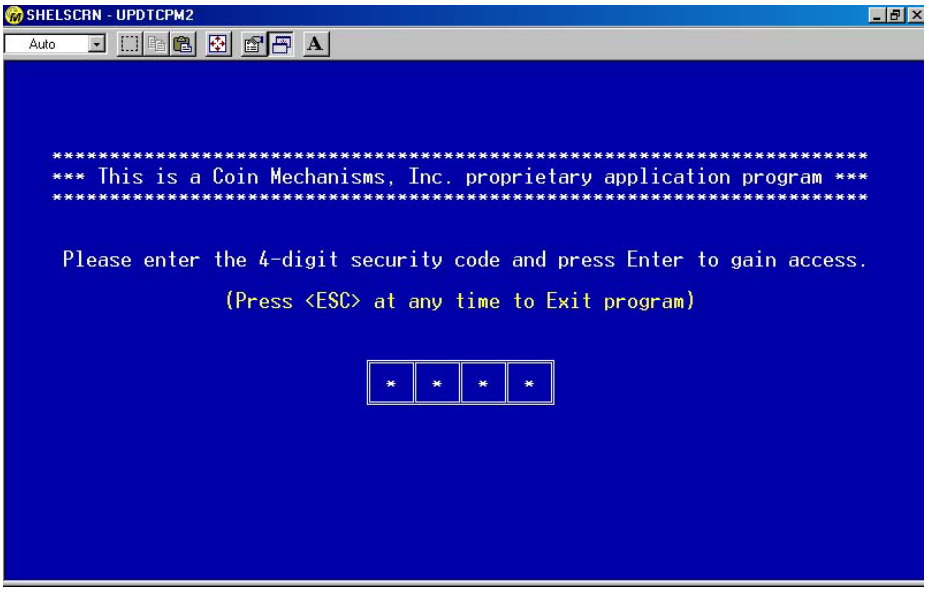
Connect the laptop and dongle to a powered Intelligent Comparitor and to a Customer Programming Module as shown



From the opening menu screen (see page 34) select option 2.

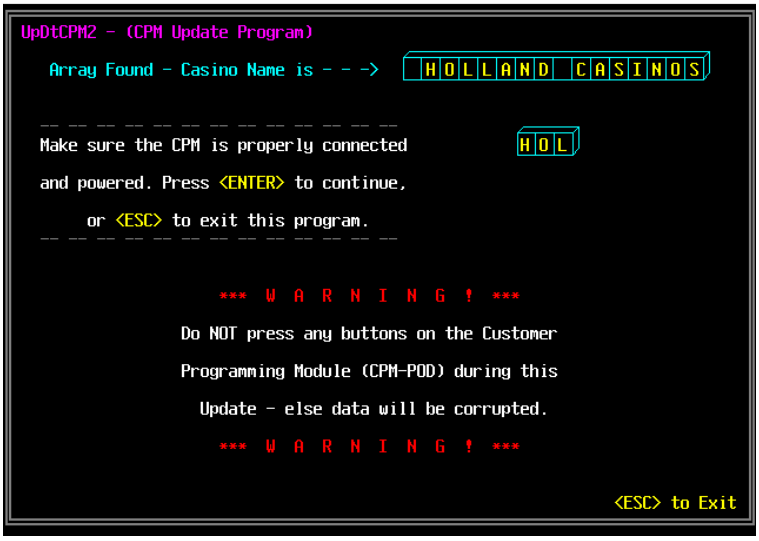
Note: You must first copy the updated CPM array to the laptop hard drive (see page 54)

After selecting option 2, you will see this screen. Type your 4-digit security code (TEST) and press Enter.

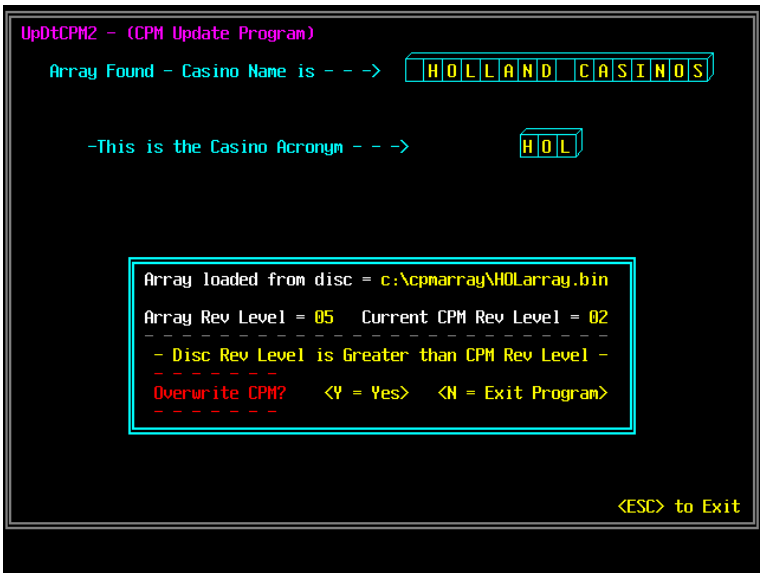


TO UPDATE THE PROGRAMMING MODULE *OPTION 2* - cont'd

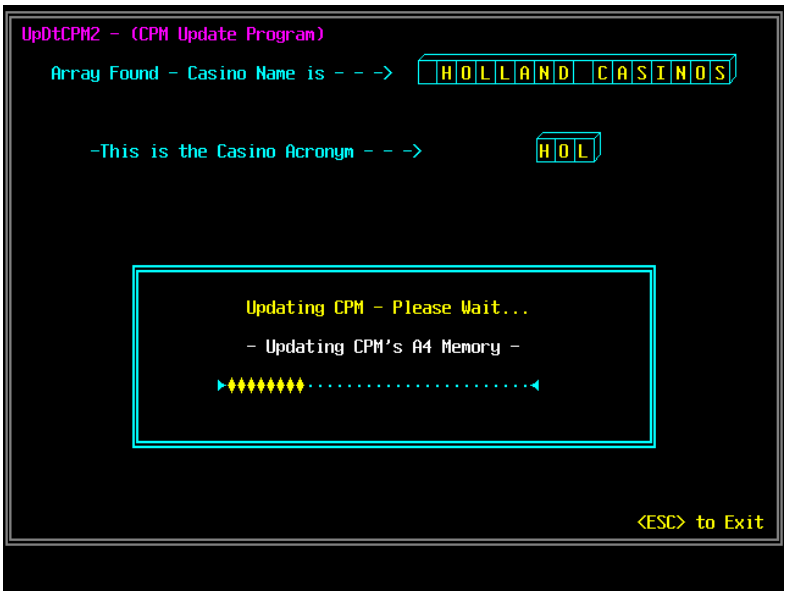
After you enter your acronym, the laptop will look for your array. The screen will confirm that it is found and display the warning not to press any buttons while the CPM is updating.



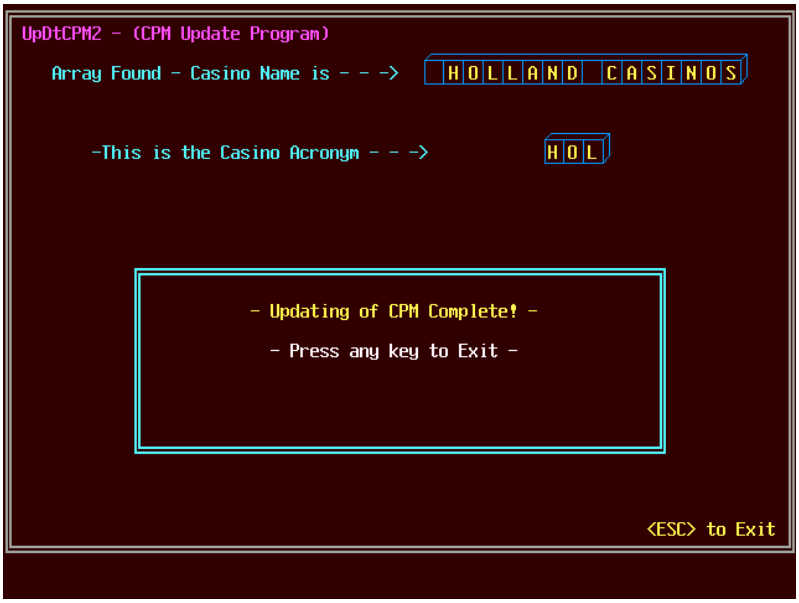
Once you have hit the enter key the screen will display what revision your pod is at and what revision your array that you are loading is at. The screen will then ask your if you want to overwrite your pod. If the array revision is greater than the pod revision overwriting is recommended. Overwriting a lower array revision into a higher pod revision is not allowed.



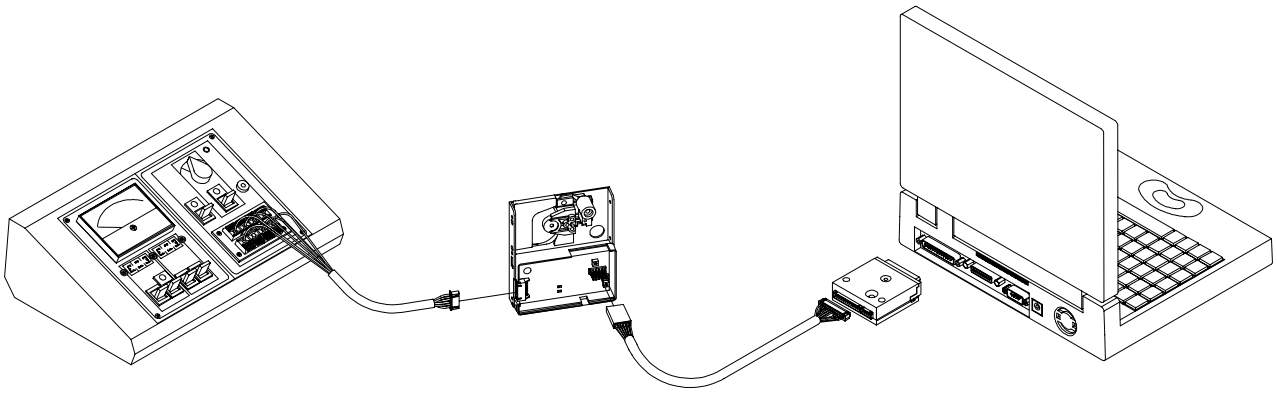
You should now see this screen indicating that the CPM is being updated. This will take approximately 2 minutes.



When the process is complete, you will see this screen indicating that the CPM has been updated



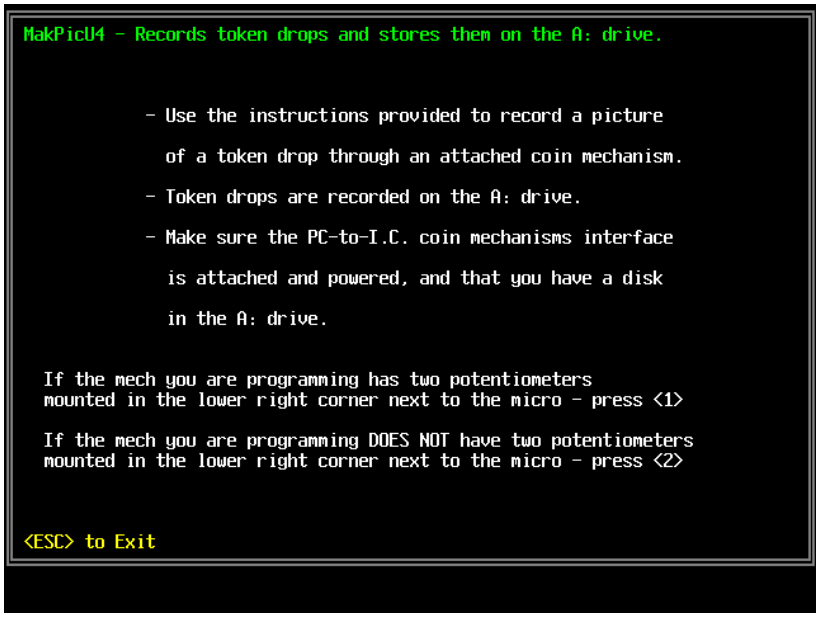
TO RECORD TOKEN DROP ONTO A:FLOPPY *OPTION 3*



Connect the laptop and dongle to a powered Intelligent Comparitor as shown above.

From the opening menu screen (see page 34), select option 3

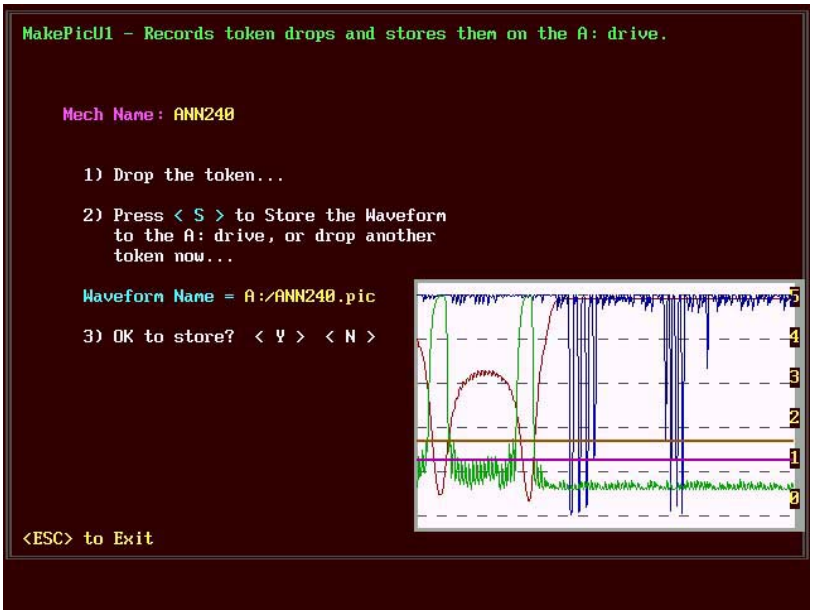
After selecting option 3, you will see this instruction screen. Read the instructions carefully and determine which mechanism you are working with and press the corresponding number.



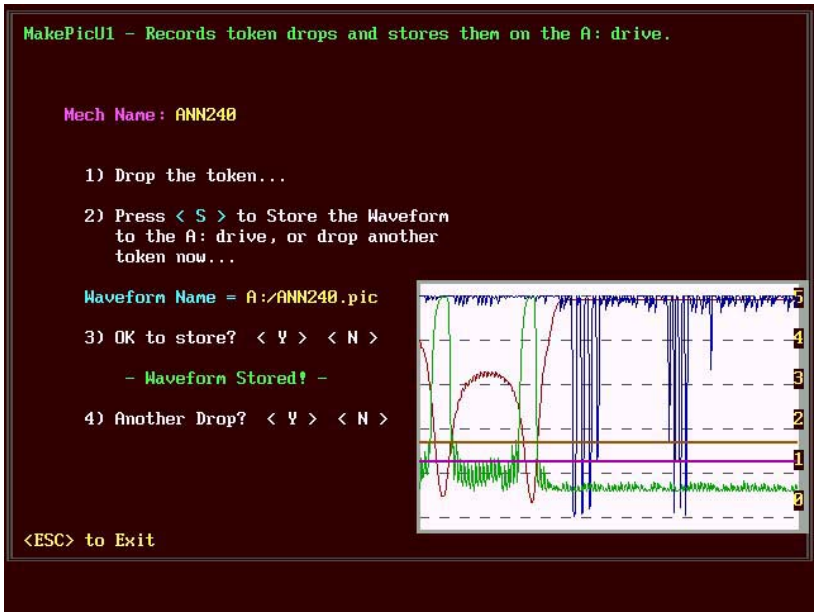
When you are satisfied that you have the picture that you want, press “S”.

TO RECORD TOKEN DROP ONTO A:FLOPPY *OPTION 3* - cont'd

This screen reminds you that you need to have a floppy disk in drive A:

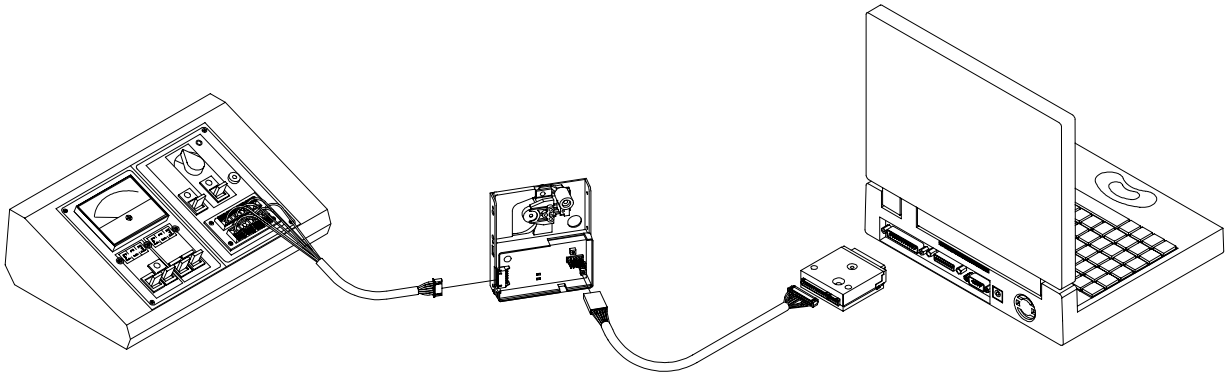


You will see this screen when the file has been copied to the A: drive.



TO PROGRAM THE INTELLIGENT COMPARITOR *OPTION 4*

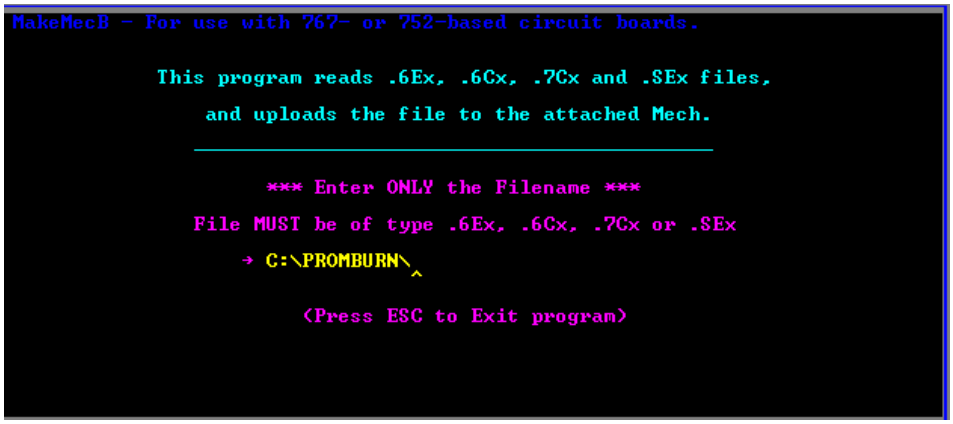
Connect the laptop and dongle to a powered Intelligent Comparitor as shown



From the opening menu screen (see page 34), select option 4

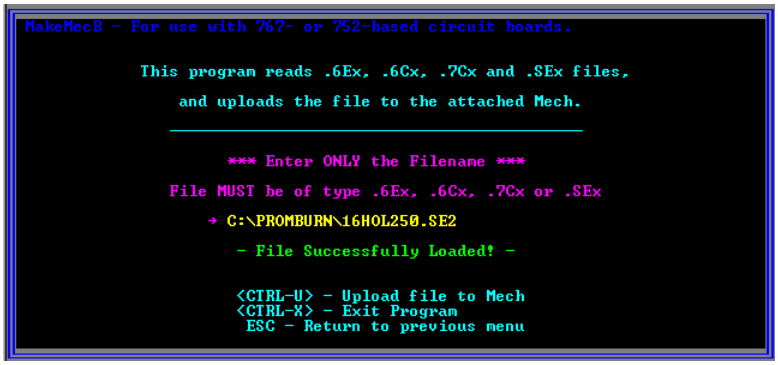
After selecting option 4, you will see this screen. At the prompt, enter the complete filename for the coin data that you want to upload to the Intelligent Comparitor. (e.g. 16CCCDDD.SEx), where CCC is the casino acronym, DDD is the EUC code representing the diameter in millimeters and x is the latest revision of the file.

Press Enter.

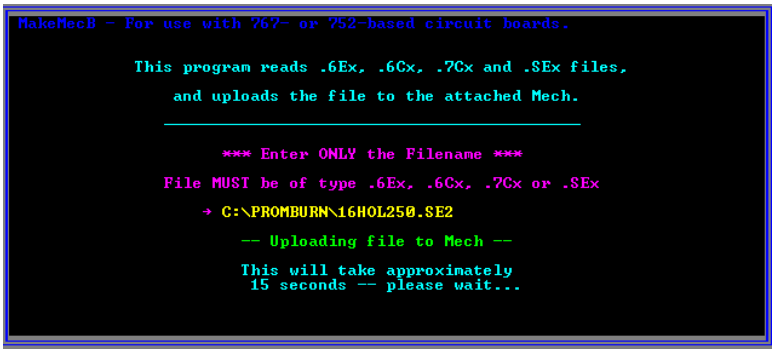


TO PROGRAM THE INTELLIGENT COMPARITOR *OPTION 4* - cont'd

If the application finds the file that you entered, you will see this screen indicating that the file has successfully loaded and that you are now ready to upload the file to the Intelligent Comparitor. If you want to continue, hold down the CTRL key and press "U".

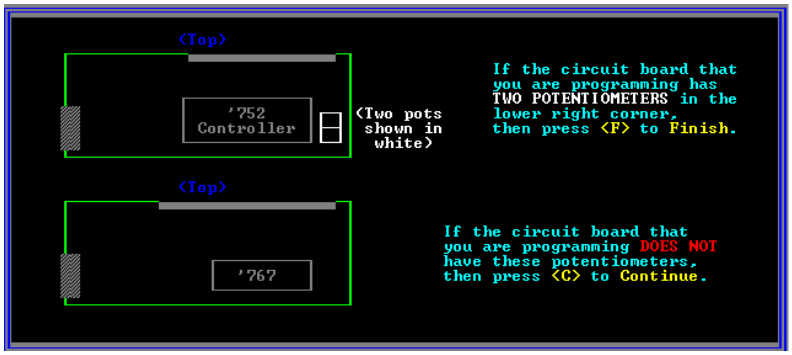


You should now see this screen indicating that the file is uploading and the process will take approximately 15 seconds.



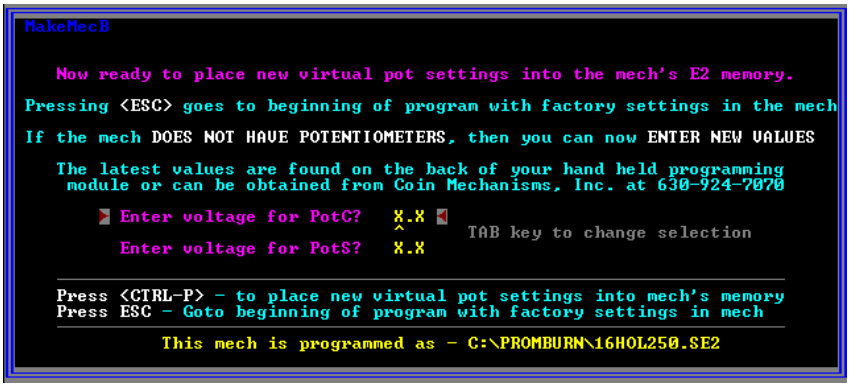
When the program has loaded the file into the mechanism the screen at the right will come up.

NOTE: Look at screen at right and make a determination as to what circuit board your mechanism contains. Follow the instructions on the screen at the right. If you have a 752 based circuit board press "F" to complete uploading. Once uploading is complete the program will take you to your home screen. If you have a 767 based circuit board then press "C" and follow the instructions on page 48.

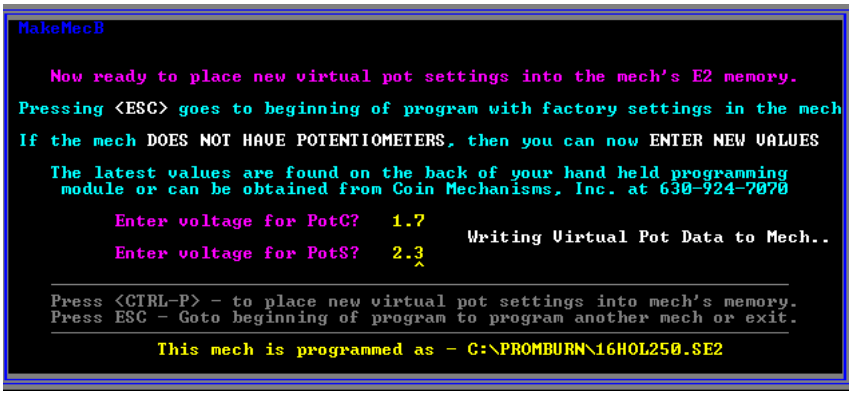


TO PROGRAM THE INTELLIGENT COMPARITOR *OPTION 4* - cont'd

Begin by entering the appropriate voltage for Pot C. Press the "TAB" key to toggle the arrow from one digit to another and from Pot C to Pot S. Keep pressing the "TAB" key until the arrow is on the Pot S line. Enter desired voltage and press "CTRL P" to place voltage settings into the mechanisms memory. These voltages can be found on the back of your Customer Programming Module.

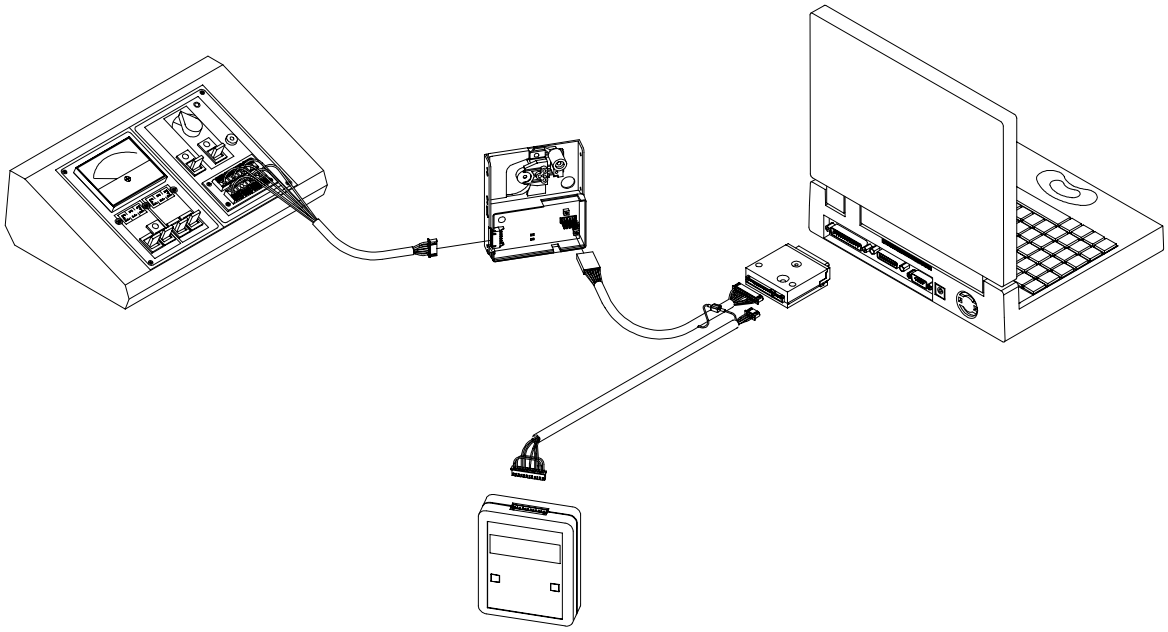


The screen will display it is writing virtual pot data to mech. Once the program is done writing the data it will take you to your home screen.



TO PROGRAM A FIELD PROGRAMMING MODULE - *OPTION 5*

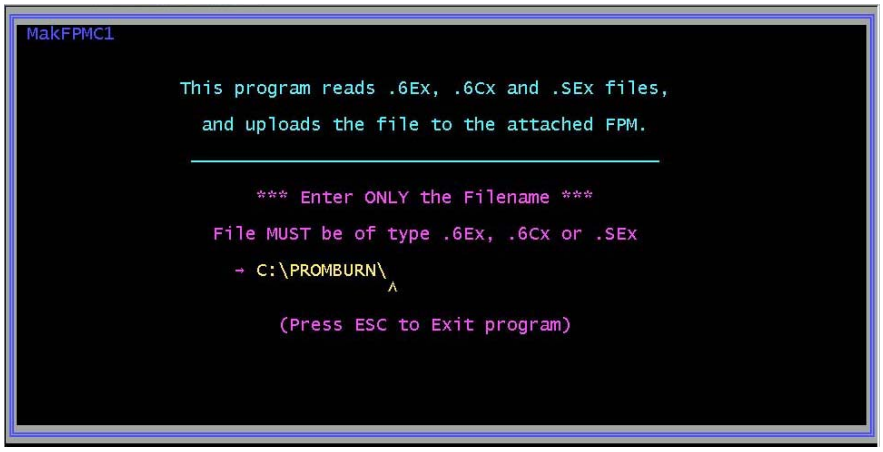
Connect the laptop and dongle to a powered Intelligent Comparitor and to a Field Programming Module as shown



From the opening menu screen (see page 34), select option 5

After selecting option 5, you will see this screen. At the prompt, enter the complete filename for the coin data that you want to upload to the Field Programming Module. (e.g. 16CCCDDD.SEx), where CCC is the casino acronym, DDD is the EUC code representing the diameter in millimeters and x is the latest revision of the file.

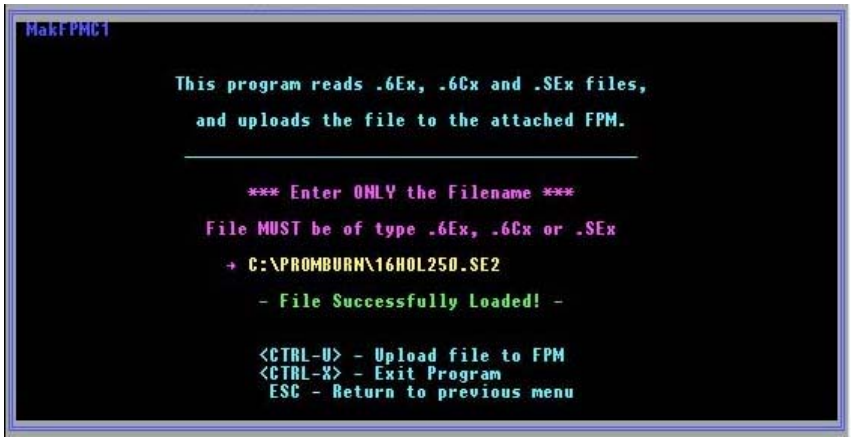
Press Enter.



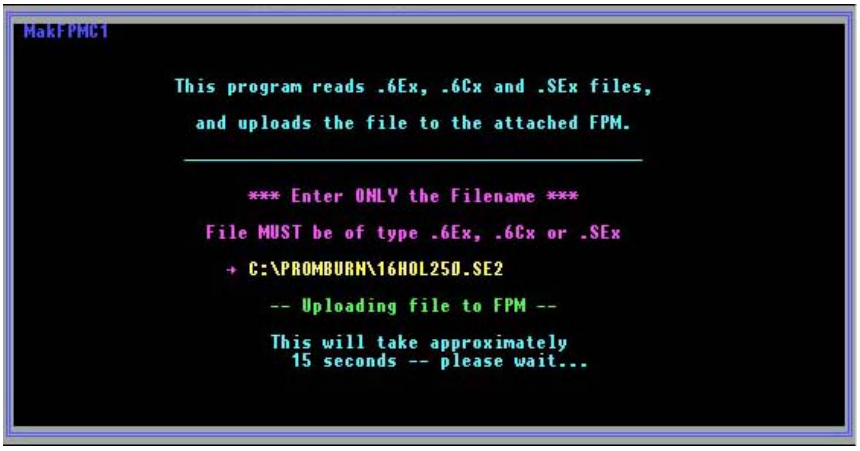
TO PROGRAM A FIELD PROGRAMMING MODULE *OPTION 5* - cont'd

If the application finds the file that you entered, you will see this screen indicating that the file has successfully loaded and that you are now ready to upload the file to the Field Programming Module.

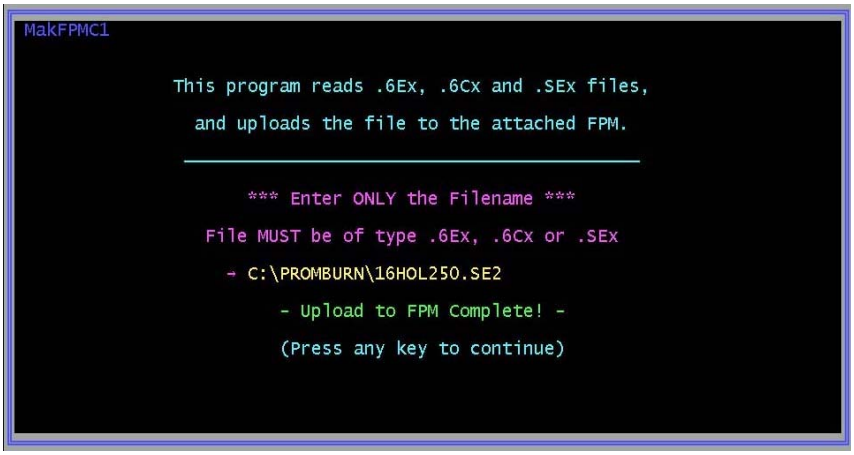
If you want to continue, hold down the CTRL key and press "U".



You should now see this screen indicating that the file is uploading and that the process will take approximately 15 seconds.

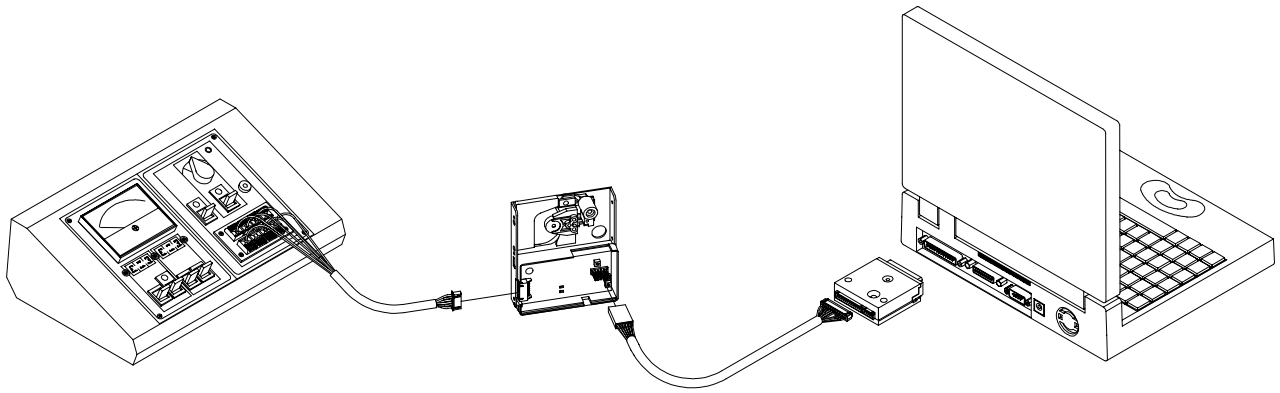


When the process is complete, you will see this screen indicating that the upload to the FPM is complete.



NOTE: After programming the Field Programming Module, press the reset button on the FPM to verify that the coin data has been updated.

USING THE ASSET MANAGEMENT APPLICATION *OPTION 6*

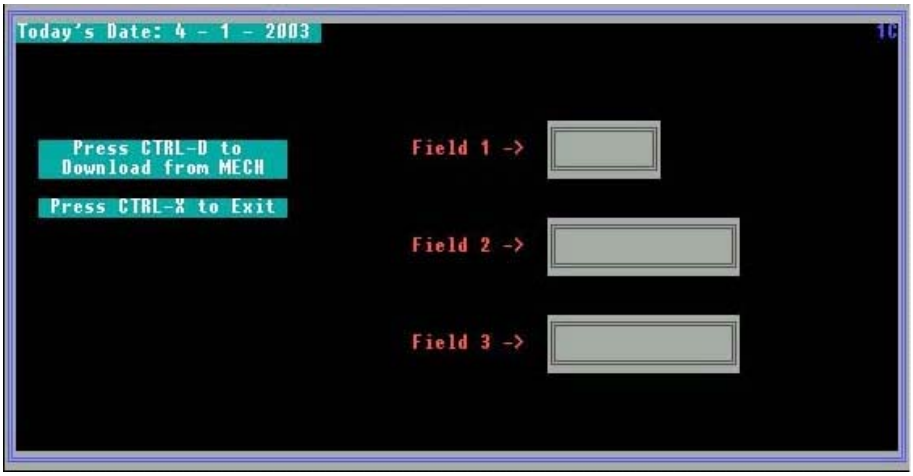


Connect the laptop and dongle to a powered Intelligent Comparitor as shown above.

From the opening menu screen (see page 34), select option 6

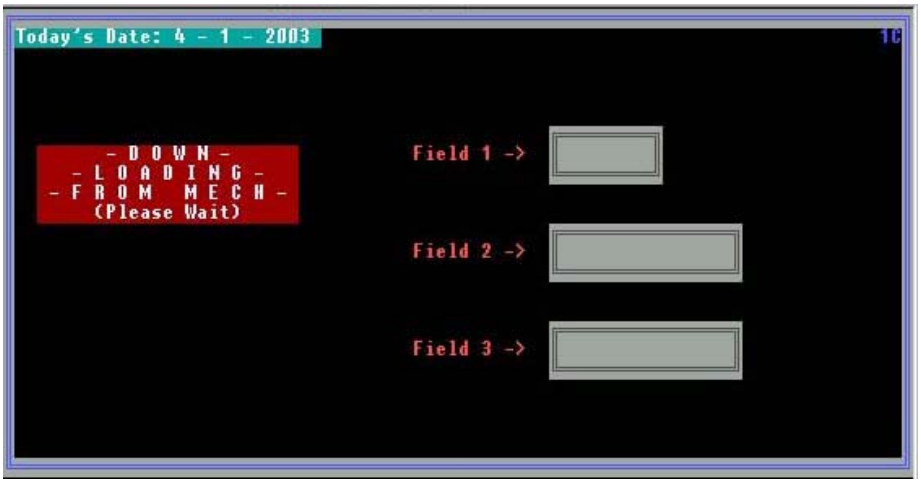
After selecting option 6, you will see this screen. Type your 4-digit security code (TEST) and press Enter.

To download the current data from Intelligent Comparitors' read/write scratch-pad memory, hold down the CRTL key and press "U".



USING THE ASSET MANAGEMENT APPLICATION *OPTION 6* - cont'd

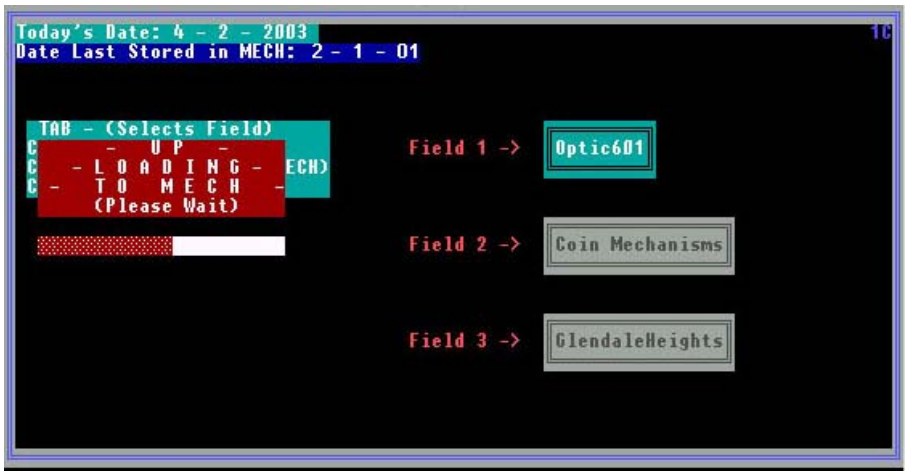
The application then accesses the Intelligent Comparitor memory and you will see this screen indicating that downloading from the mech is occurring.



You will then see this screen which has three fields, one 8-digit and two 15-digit. These fields will be filled with data similar to this illustration, which is loaded as a default from the factory. You now have the ability to use these fields to store information such as machine number, serial number, denomination etc..

Using the tab key to navigate through the fields, enter data that would be useful to your operation. When you have finished editing each field, hold down the CTRL key and press "U" to upload back to the Intelligent Comparitor.

You should now see this screen indicating that the file is uploading to the mech.



When the process is complete, you will see this screen indicating that the upload is complete. You will note that the date last stored matches today's date.

TO UPDATE FILES ON LAPTOP HARDDRIVE *OPTION 7*

From the opening screen menu (page 34) select option 7
-**GO TO SYSTEM FOR A SPECIAL FUNCTION**

Note: File updates may either be provided on diskette or via e-mail attachment. If you have received the updates as an e-mail attachment, save the attachments to a floppy disk.

Begin by inserting the floppy disk with the updated files into the A: drive of the Laptop.

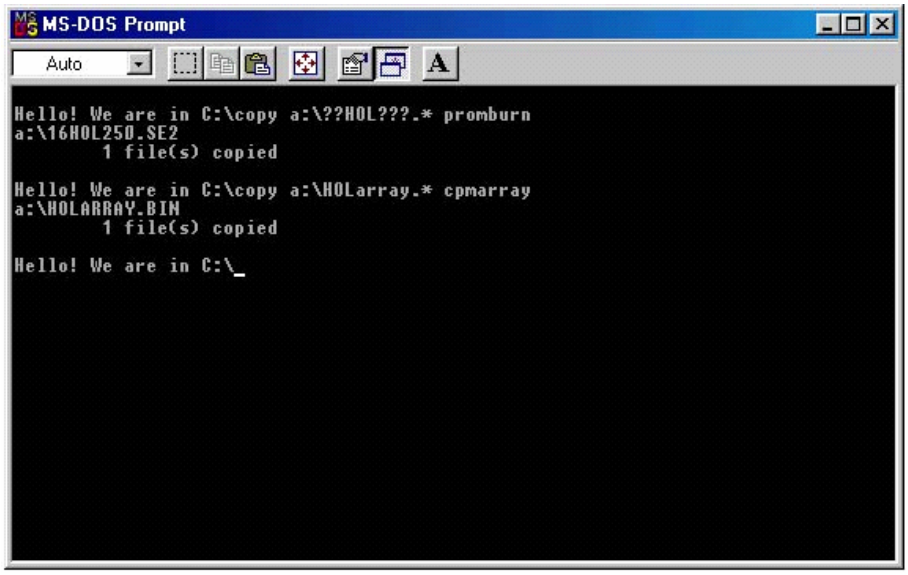
From the prompt **Hello ! – We are in C:**

Type copy a:\16(your 3 digit casino acronym)???.* promburn and press enter.

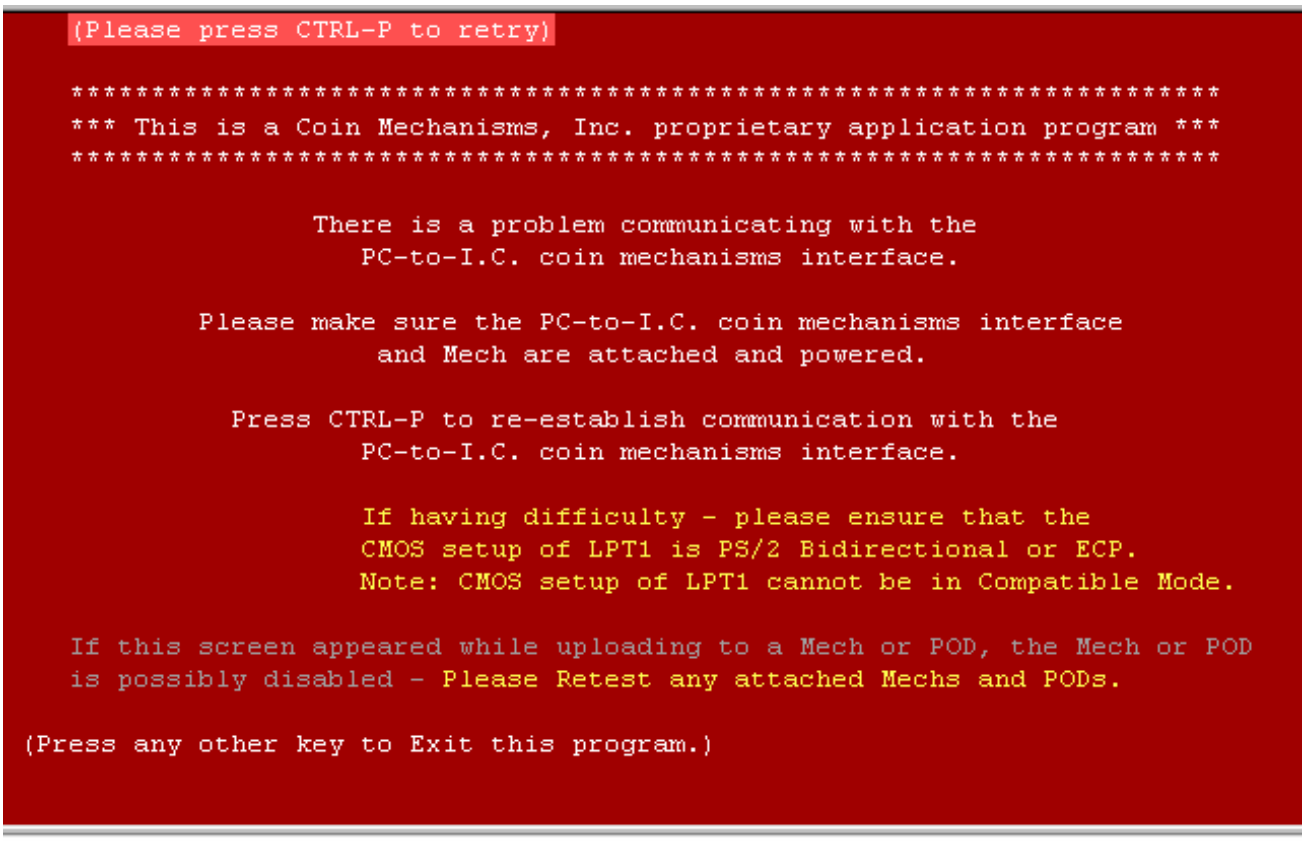
This copies all of the updated coin data files to the appropriate directory.

Next type copy a:\(your 3 digit casino acronym)array.* cpmarray and press enter.

This copies the updated CPM array to the appropriate directory. Once completed press 1 and ENTER to return to main menu.



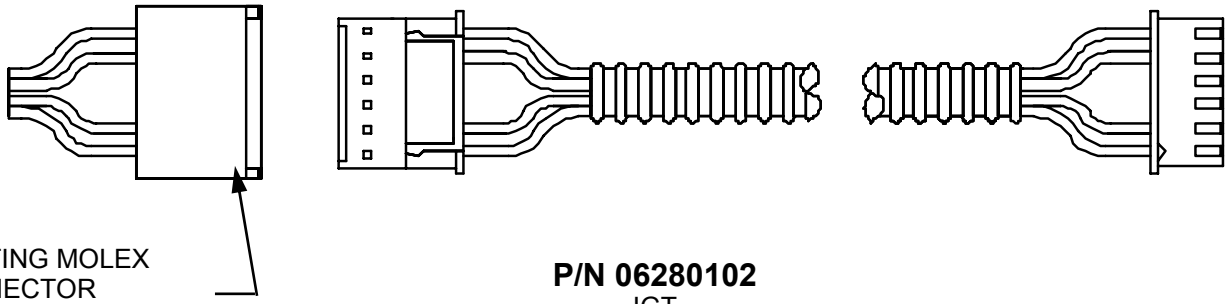
If this screen appears it may be because the CPM is disabled or the power connection is broken. Check for power and breaks in the interfaces. Press <CTRL-P> to retry after correcting connection or any key to exit this program.



TROUBLE SHOOTING GUIDE

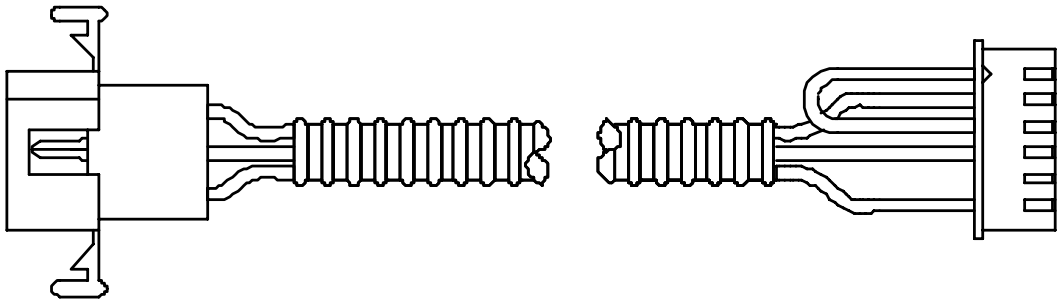
CONDITION	CAUSE	FIX	TIPS
Poor coin acceptance	• dirty lens on barcode reader	clean by swabbing with alcohol and buff dry with soft lint free cloth	*spilled drinks, cigarette smoke and fingerprints often cause this type of malfunction* **WARNING:** do not use ammonia based cleaners- damage to lens will occur.
	• incorrect damper lever installed during conversion		
	• sticky or frozen damper lever	disassemble and clean	damper lever will not move or operates slowly *spilled drinks often cause this type of malfunction*
	• sticky or frozen accept gate	disassemble and clean	*spilled drinks often cause this type of malfunction*
	• incorrect potentiometer settings	check settings	*floor personnel adjusting potentiometer unnecessarily*
	• extremely worn tokens	contact Coin Mechanisms or Eurocoin	may require software adjustment
No acceptance	• mech installed in incompatible host machine	Confirm pcb voltage and denomination with CPM	
	• mech installed in incorrect location	verify property with CPM	
	• incorrectly denominated circuit board	check part numbers	
	• no power	check for broken wires on mech or harness connection from slot machine	
	• sticky or frozen damper lever	disassemble and clean	damper lever will not move or operates slowly *spilled drinks often cause this type of malfunction*
	• sticky accept gate.	disassemble and clean	*spilled drinks often cause this type of malfunction*
	• dirty lens on barcode reader	clean by swabbing with alcohol and buff dry with soft lint free cloth	*spilled drinks, cigarette smoke and fingerprints often cause this type of malfunction* **WARNING:** do not use ammonia based cleaners- damage to lens will occur.
	• defective or damaged barcode reader	change barcode reader	oscilloscope wave form will not appear correct
	• defective or damaged circuit board	change circuit board	produces flat line in oscilloscope analysis

HARNESSES FOR IGT MACHINES



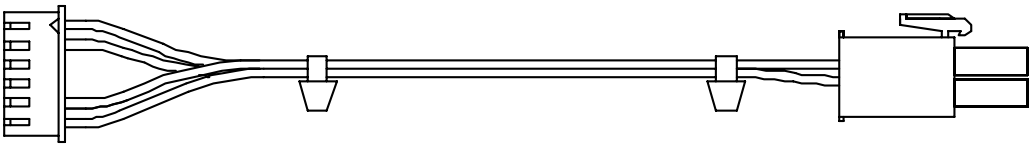
EXISTING MOLEX
CONNECTOR
FROM MACHINE

P/N 06280102
IGT
INTERFACE FOR IC-32 AND IC-36
ALWAYS SUPPLIED WITH IC-32
NOT SUPPLIED WITH IC-36 BUT MAY BE
ORDERED SEPERATELY

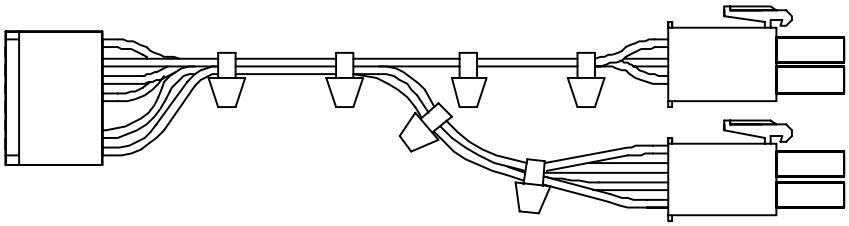


P/N 09280044
IGT
INTERFACE FOR IC-33 AND IC-37
MAY NOT BE SUPPLIED IF MACHINE
WAS PURCHASED FROM IGT

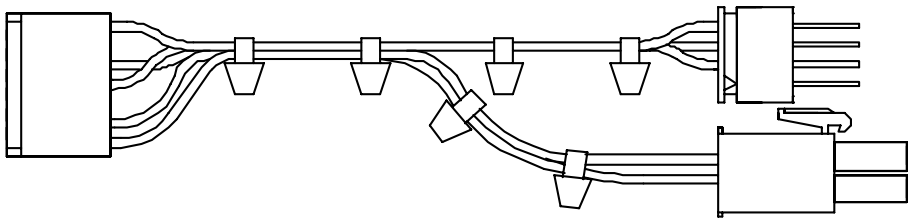
HARNESSES FOR SIGMA MACHINES



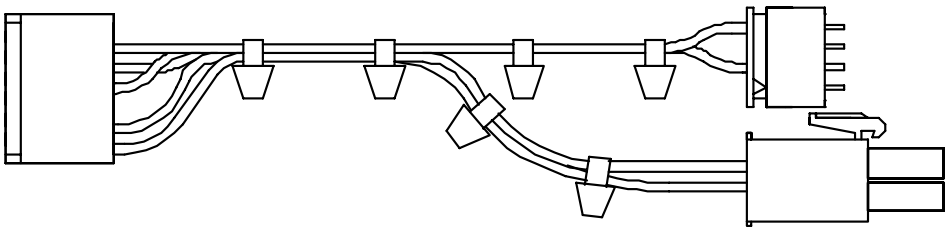
P/N 09280034
SIGMA GAMES
INTERFACE FOR IC-16 TO REPLACE CC-16,
12VDC, INHIBIT HI, SENSE (SR)



P/N 09280076
SIGMA GAMES
INTERFACE FOR IC-16OE TO REPLACE MC-16OE

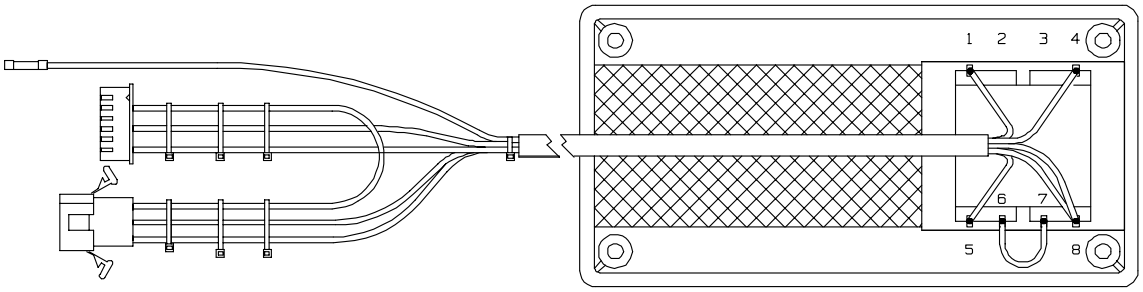


P/N 0928-000123
SIGMA JAPAN
INTERFACE FOR IC-16OE
TO REPLACE CC-16, 12VDC, NO INHIBIT, NO SENSE



P/N 0928-000124
SIGMA JAPAN
INTERFACE FOR IC-16OE
TO REPLACE CC-16, 12VDC, INHIBIT HI, SENSE (SR)

ISOLATION TRANSFORMER INTERFACE ASSEMBLY
FOR IGT S-PLUS/PE-PLUS MACHINES
P/N 0928-000121



Isolation Transformer Interface Assembly - p/n# 0928-000121

If your casino has installed an IC product into an IGT S-Plus/Players Edge Plus slot machines, and you are experiencing blown 6 Amp fuses in your machines you may choose to install the isolation transformer interface assembly. If a short condition exists between the Smartmark reader and the IGT chassis, a potential of 12VAC will cause the 6 Amp fuse to blow in the IGT machine. This may occur if the sample coin is installed/removed without removing power from the IC-16 or it may happen during play. Installing the isolation transformer assembly removes the potential between the ground of the IC-16 and the ground of the S-Plus/Players Edge Plus slot machines.

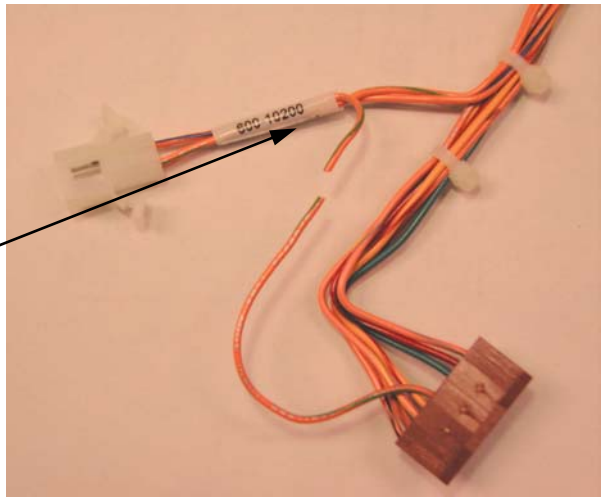
Technical Explanation

The IGT 8032 machine supplies 24VAC to the Intelligent Comparitor product as a potential of 24VAC obtained across two 12VAC windings on a center-tap transformer. The center-tap of the transformer is tied to the chassis of the IGT machine creating a 12VAC potential between the machine ground and the Intelligent Comparitor ground. The Smartmark reader uses an off-the-shelf bar-code sensor that is packaged in a cylindrical metal can. The can is tied to the device ground, which is in turn tied to the Intelligent Comparitor ground.

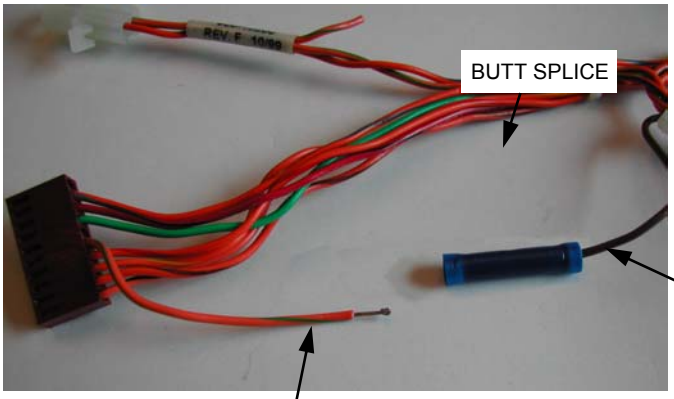
Installation: See attached drawings for reference

1. Remove power from machine.
2. Disconnect the three-wire interface from the coin mechanism to the door harness. Discard.
3. Remove the mech channel assembly by removing the two Philips mounting screws.
4. Locate IGT harness assembly 600-10200 used to connect the IGT diverter, optic board, and coin mechanism. Note: This harness can be modified in the door or completely removed during modification if desired.
5. Locate the ORG/GRN wire from pin 5 of the optic board connector.
6. Cut this wire approximately 8cm from the connector.
7. Strip away approximately 10mm of insulation from this wire.
8. Secure the other cut end with electrical tape.
9. Insert stripped ORG/GRN wire into butt splice in transformer harness.
10. Crimp securely with pliers or crimping tool.
11. Add additional cable ties to redress butt spliced wires.
12. Locate position for transformer, clean surfaces with alcohol or degreaser, and prepare velcro adhesive in pairs to mount transformer and securely press velcro adhesive in place.
13. Run transformer cable along existing spiral wrapped door harness and secure with additional wire ties.
14. Reconnect connectors to their original mates using new connectors in the transformer harness.
15. Re-install mech mounting channel with two philips screws.

ISOLATION TRANSFORMER INTERFACE ASSEMBLY - con't

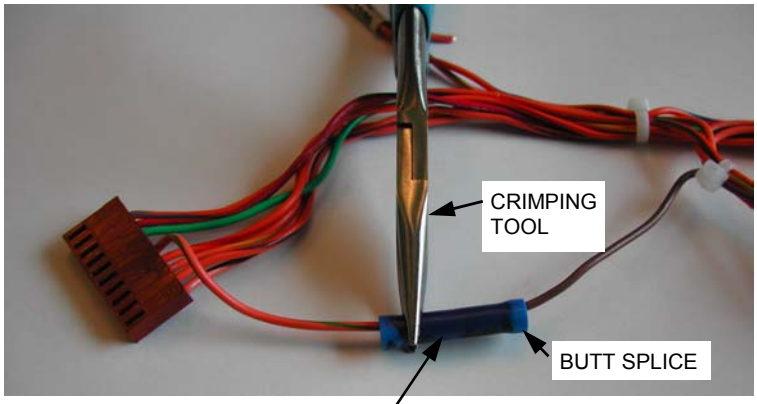


CUT ORG/GRN WIRE FROM PIN 5 OF OPTIC CONNECTOR



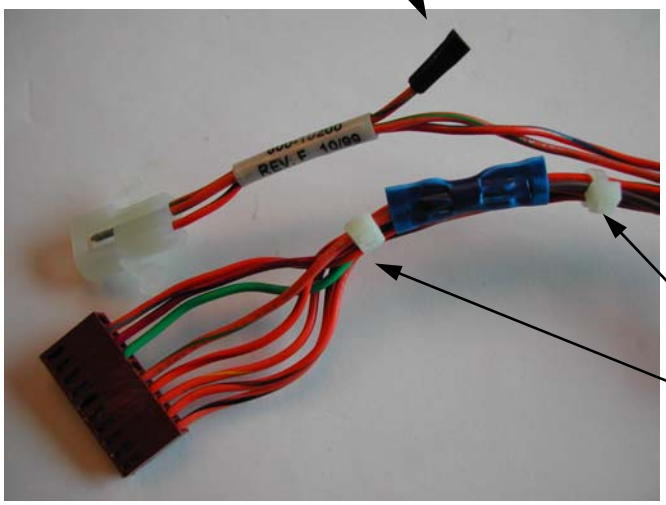
BROWN OR ORANGE TRANSFORMER WIRE WITH BUTT SPLICE

STRIP AWAY 10 mm OF INSULATION FROM THE ORG/GRN (PIN 5) WIRE



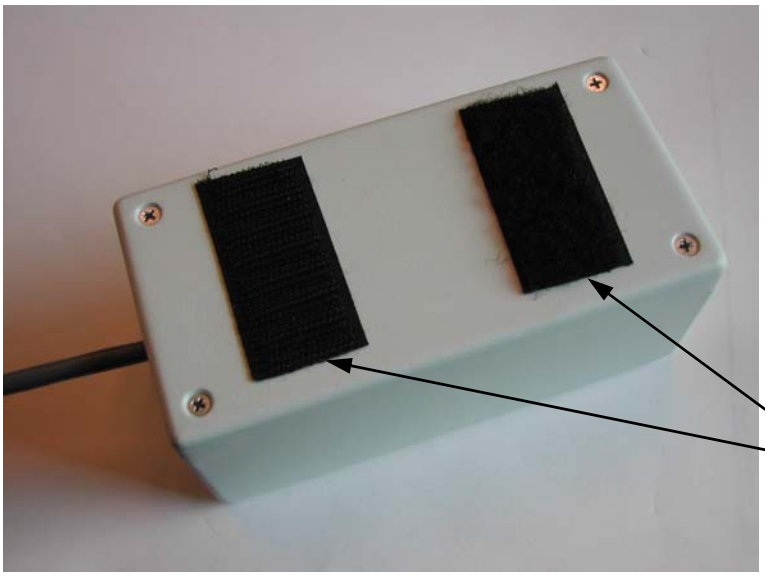
INSERT STRIPPED WIRE INTO END OF BUTT SPLICE AND CRIMP SECURELY WITH PLIERS OR CRIMPING TOOL

SECURE CUT WIRE WITH TAPE



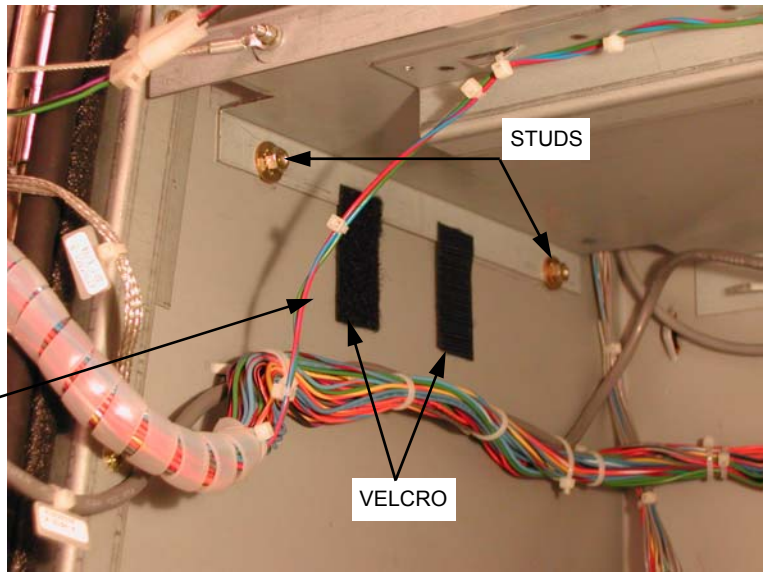
SECURE BUTT SPLICED WIRE WITH ADDITIONAL CABLE TIES

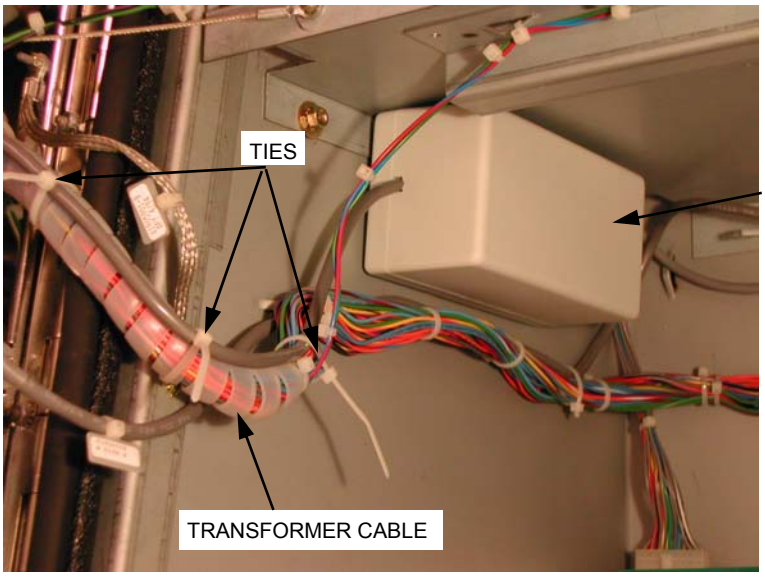
ISOLATION TRANSFORMER INTERFACE ASSEMBLY - cont'd



MOUNT VELCRO ASSEMBLIES TO TRANSFORMER BOX COVER USING SELF ADHESIVE BACKING

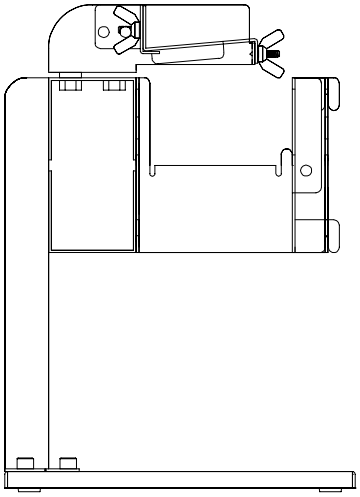
POSITION TRANSFORMER BOX WITH VELCRO ATTACHED ABOVE HOPPER JUST UNDER SHELF AND BETWEEN TWO SHELF MOUNTING STUDS



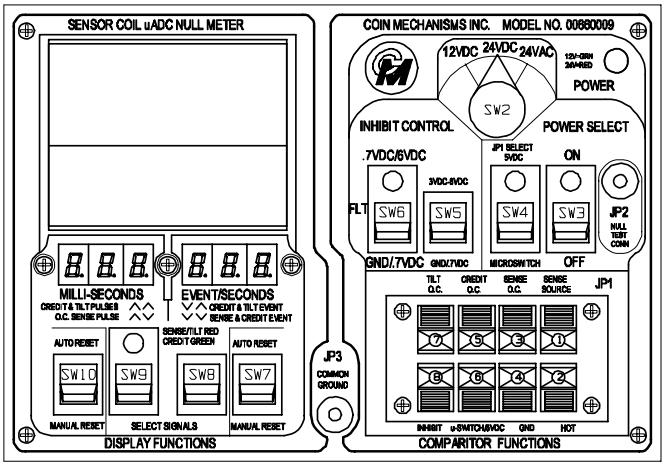


ATTACH TRANSFORMER BOX AS SHOWN AND ROUTE CABLE ALONG SPIRAL WRAPPED DOOR HARNESS. SECURE WITH ADDITIONAL WIRE TIES.

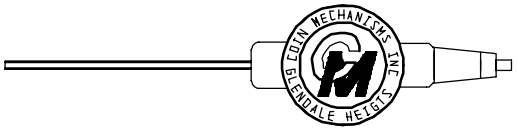
TEST EQUIPMENT
REFERENCE GUIDE



TEST STAND
P/N 05000009

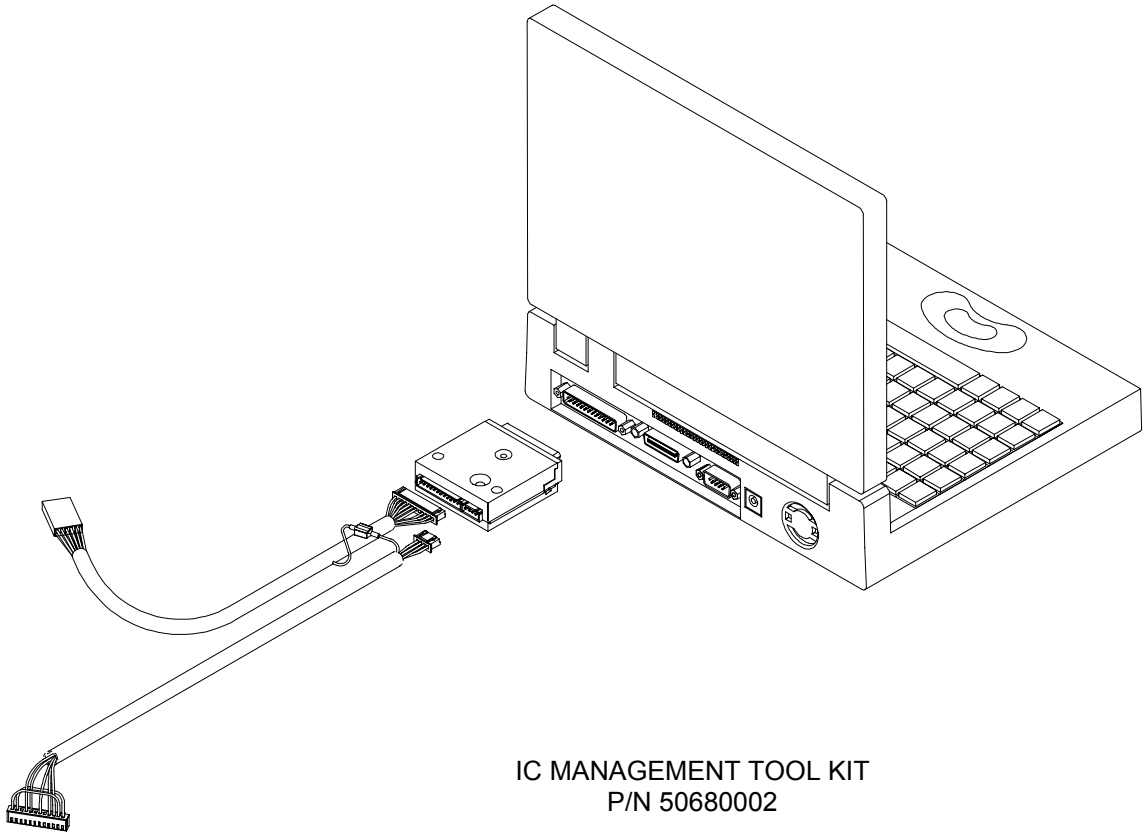


TEST STATION
P/N 00660010

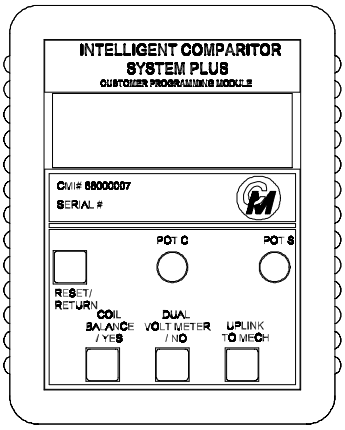


ADJUSTING TOOL
(1/16 in hex drive)
P/N 05090004

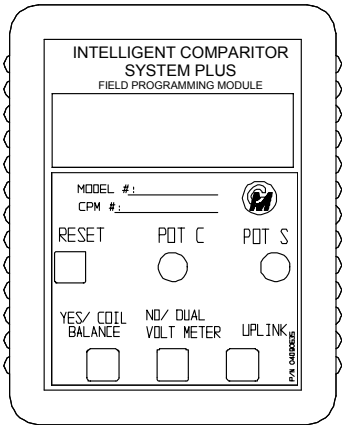
TEST EQUIPMENT
REFERENCE GUIDE
Cont'd



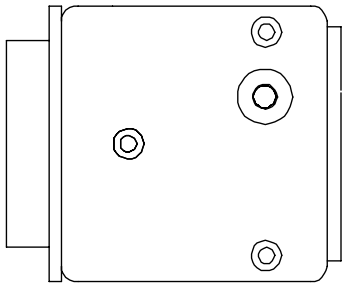
IC MANAGEMENT TOOL KIT
P/N 50680002



CPM
P/N 68000007

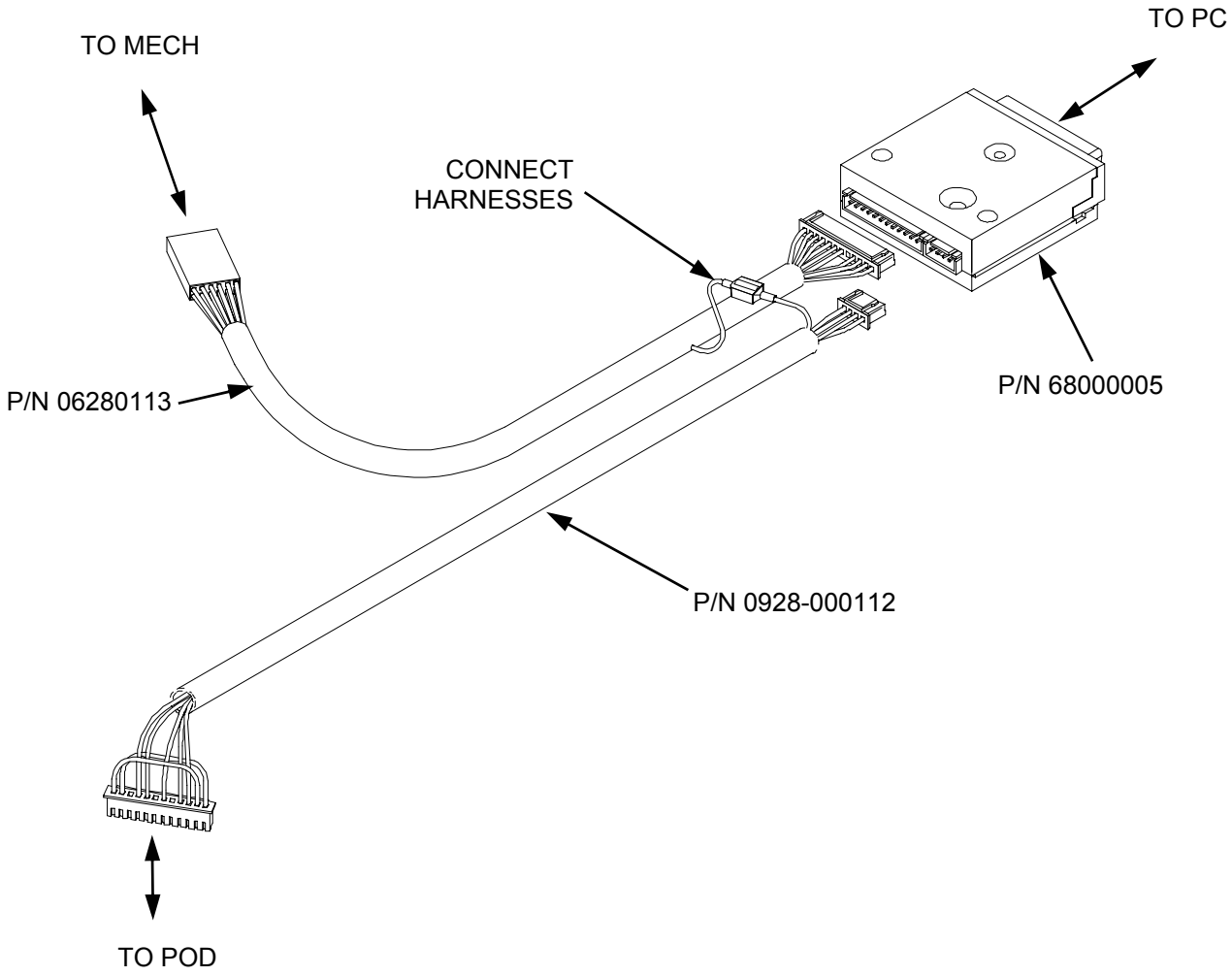


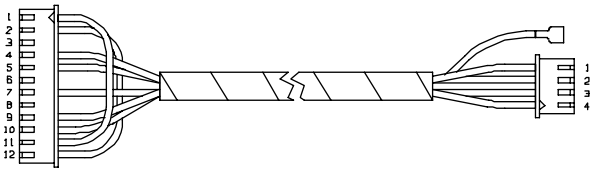
FPM
P/N 68000011



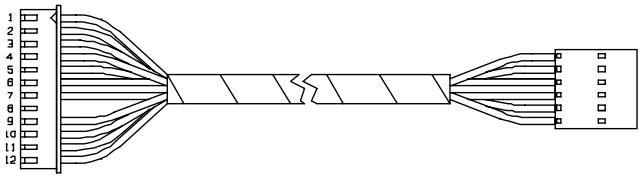
DONGLE
P/N 68000005

TEST EQUIPMENT
REFERENCE GUIDE
Cont'd

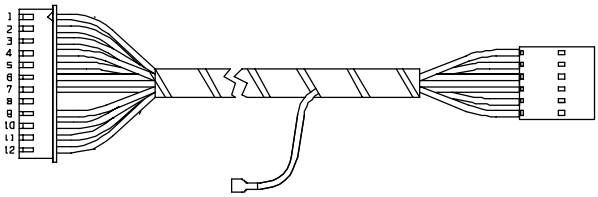




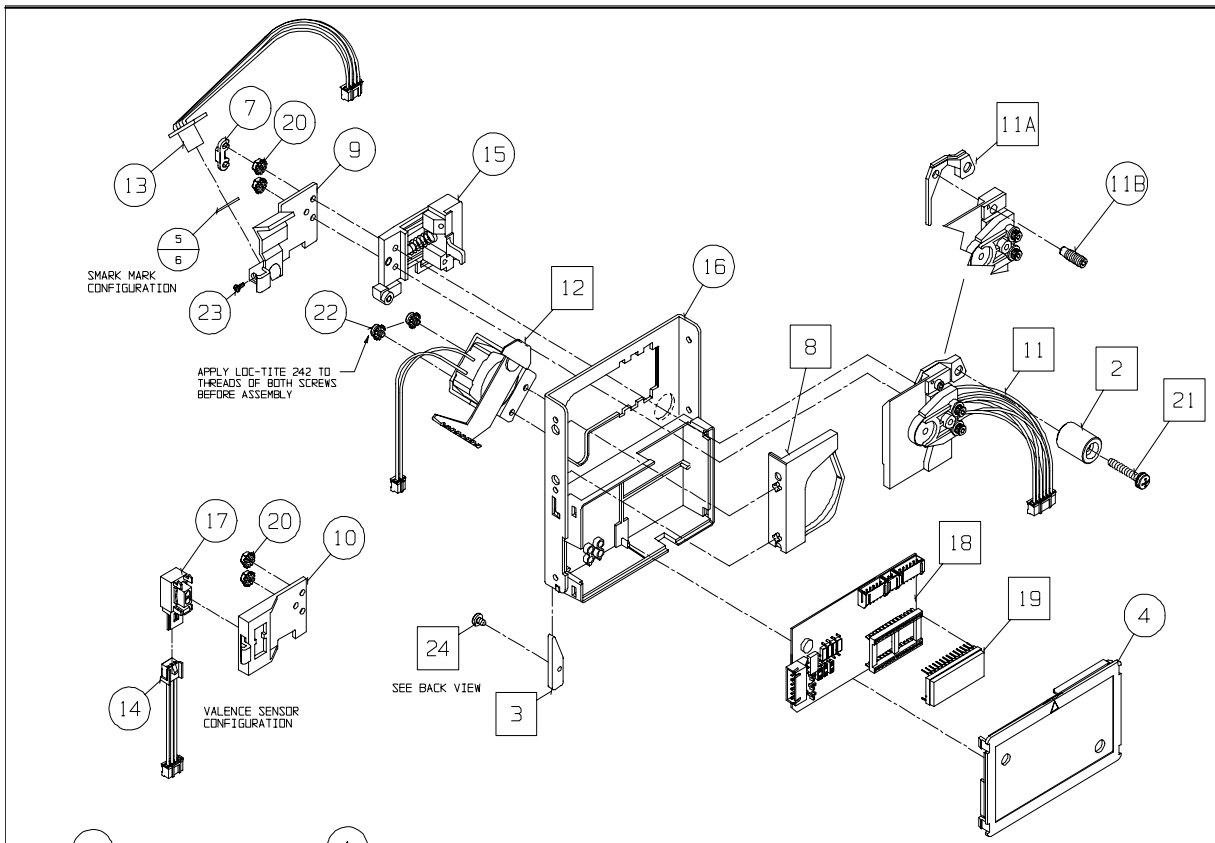
P/N 0928-000112
FOR DONGLE

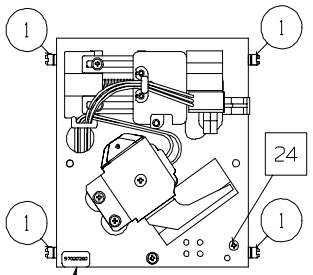


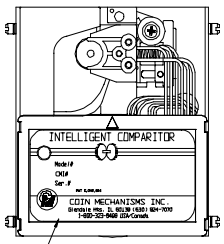
P/N 09280109
FOR PROGRAMMING POD

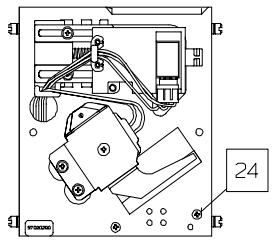


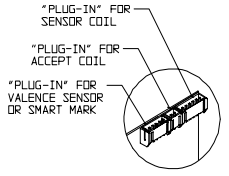
P/N 06280113
FOR DONGLE











MATERIAL COLUMN			
ITEM	P/N	QTY	MATL' DESCRIPTION
1	04060005-01	4	STUD, #6
2	0406XXXX	1	WEIGHT, DAMPER, (SEE DOC #09300019)
3	04660113	1	SPACER, COIN EXIT, .113 (SEE PAGE 2)
	04690406	1	SPACER, COIN EXIT, IC,.146, EURO (SEE PAGE 2)
4	04660165	1	COVER, PCB HSG, UNIVERSAL
5	04690243	A/R	SPACER, IC, .010
6	04690244	A/R	SPACER, IC, .020
7	04690276	1	CLIP, WIRE, BARCODE, IC
8	0469XXXX	1	HOLDER, TKN, IC, (SEE PAGE 2)
9	0469XXXX	1	HOLDER, BC RDR, (SEE PAGE 2)
10	04690104	1	HOLDER, VALENCE READER
11	0625XXXX	1	COIL, ASSY, SENSOR, IC (SEE PAGE 2)
11A	0569XXXX	——	LEVER, ASSY, DAMPER, IC, (SEE PAGE 2)
11B	04690266-01	——	PIN, PIVOT, DAMPER, IC
12	06250134	1	COIL & BRKT, ASSY, GRN, 4", PHR (SEE PAGE 2)
	06250195	1	COIL & BRKT, ASSY, GRY, 4", PHR (SEE PAGE 2)
13	06270045	1	PCB, ASSY, BC RDR, SM, TESTED
14	06280101	1	HARNESS, VAL, 3 PIN AMP, 4 PIN PHR, RED/BLK/VIO, 5.25
15	06650258	1	RETAINER, ASSY, IC, SPRING
16	06680017	1	CHASSIS, IC-16, STANDARD COIN (SEE PAGE 2)
	06680022	1	CHASSIS, IC-16, SMALL COIN (SEE PAGE 2)
17	08290208	1	PHOTOINTERRUPTER, REFLECTIVE
18	0927XXXX	1	PCB, CTRL, IC, (SEE PAGE 2)
19	0950-000XXXX	1	IC, 87C752 (SEE PAGE 2)
20	436-4	2	NUT, 4-40, HEX, KEPS
21	P-166-6-X	1	SCREW, 6-32 X (SEE DOCUMENT #09300019)
22	P-186-4-3	2	SCREW, 4-40 X 3/16, PHIL/SQ, INT SEMS WASHER
23	P-217-2-5	1	SCREW, 2 X 5/16, PHIL, PH, HI-LO
24	P-221-4-3	1	SCREW, 4 X 3/16, PHIL, TYPE 45, PLASTITE

NOTES:

1. SEE INDIVIDUAL BILLS OF MATERIALS FOR VARIABLE SINGLE COMPONENTS INDICATED BY SQUARE BALLONS.
2. SEE INDIVIDUAL BILLS OF MATERIALS FOR HARNESS REQUIREMENTS.

NO.	ECO NO.	REVISIONS	DATE/BY
		RELEASED; SEE INDIVIDUAL P/N'S FOR REVISION LEVELS	9/11/02 DF

COIN MECHANISMS INC.
400 REGENCY DR.
GLENDALE HEIGHTS, IL 60139

TOLERANCES NOT SPECIFIED
FRACTIONS= ± 1/64
ANGLES= ±1°
.XX= ± .010
.XXX= ± .005
HOLE DIA.= ± .002

TITLE: IC-16, P/N IDENTIFICATION

DRAWN	DF	DATE	4/30/02
CHKD		DATE	
APP		DATE	

DWG NO. D0681603

CRITICAL SYMBOLS
▼ = CUSTOMER
▼ = PROCESS
▼ = BOTH

SIZE: D | SCALE: N/A | FINISH: N/A | SHT 1 OF 2

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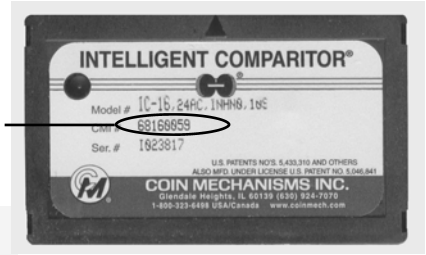
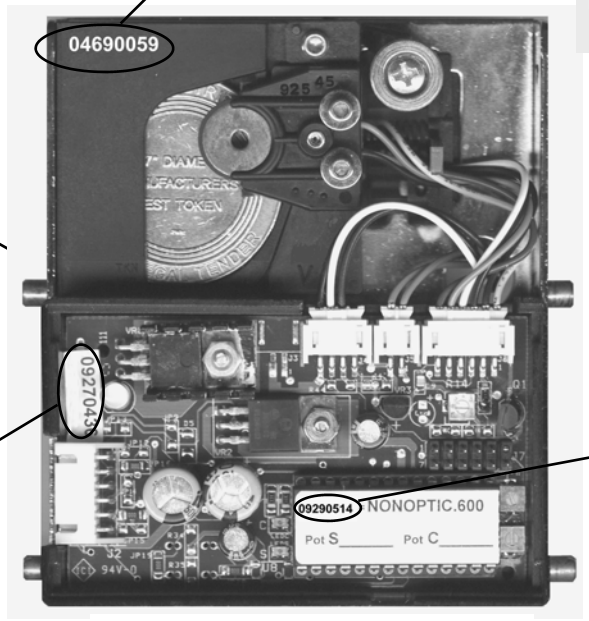
12 VOLT WILL HAVE IDENTIFYING LABEL INSTEAD OF REGULATOR

TOKEN HOLDER P/N

INTELLIGENT COMPARITOR P/N



IC COVER

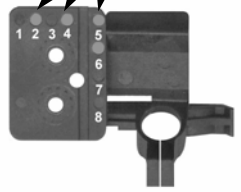


PCB P/N

MICRO P/N
(MAY HAVE 0950-000XXX FORMAT)

IC WITH COVER REMOVED

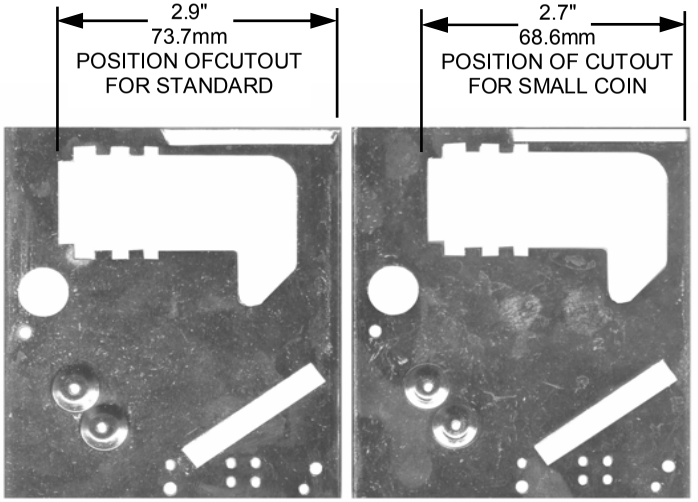
COLOR, PLACEMENT AND NUMBER OF DOTS IDENTIFIES BARCODE HOLDER P/N



BARCODE HOLDER

P/N 05690XXX
LAST SIGNIFICANT DIGITS MOLDED ON DAMPER LEVER

DAMPER LEVER



P/N 06680017-STANDARD COIN
COIN DIAMETERS
1.045" [26.5mm] -1.575" [40.0mm]

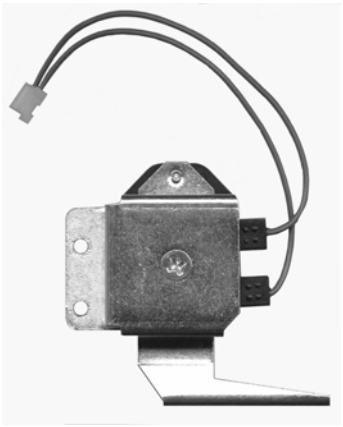
P/N 06680022-SMALL COIN
COIN DIAMETERS
.870" [22.1mm] -1.575" [40.0mm]

SENSOR COIL SLOT POSITION ON MAINPLATE IN CHASSIS ASSEMBLY

P/N 04660113
FOR COIN DIAMETERS
BETWEEN
1.044" [26.5mm]-1.124" [28.5mm]

P/N 04690406
FOR COIN DIAMETERS
BETWEEN
.898" [22.8mm] -1.043" [26.5mm]

COIN EXIT SPACERS



ACCEPT COIL ASSEMBLY

P/N 06250134= GREEN WIRES FOR LOW VOLTAGE (12VDC)

P/N 06250195= GRAY WIRES FOR HIGH VOLTAGE (24VAC)

NO.	ECO NO.	REVISIONS	DATE/BY
		RELEASED; SEE INDIVIDUAL P/N'S FOR REVISION LEVELS	9/12/02 DF

COIN MECHANISMS INC.
400 REGENCY DR.
GLENDALE HEIGHTS, IL 60139

TOLERANCES NOT SPECIFIED
FRACTIONS= ± 1/64
ANGLES= ±1°
.XX= ±.010
.XXX= ±.005
HOLE DIA.= ±.002

CRITICAL SYMBOL

SIZE: B | N/A

TITLE: **IC-16 P/N IDENTIFICATION**

DRAWN	DF	DATE	6/7/02
CHKD		DATE	
APP		DATE	

DWG NO. D0681603

FINISH: N/A | SHT 2 OF 2

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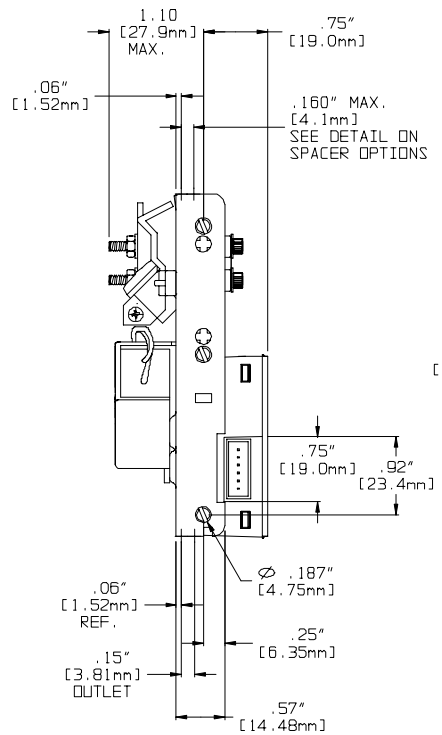
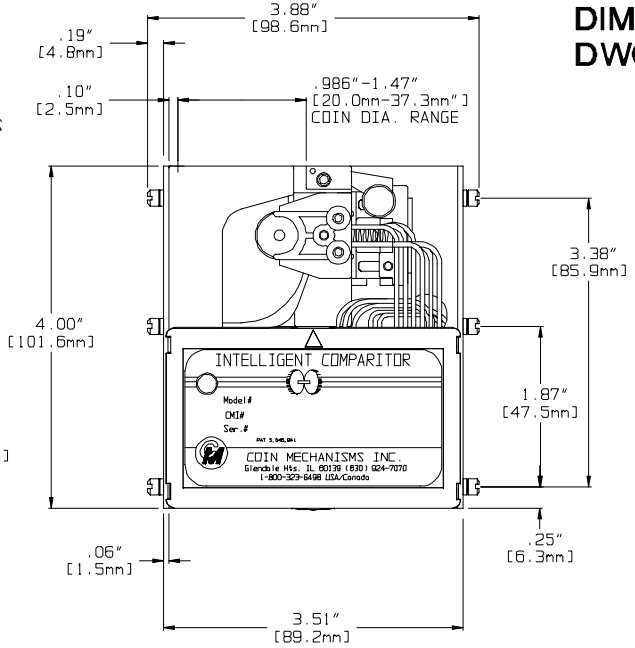
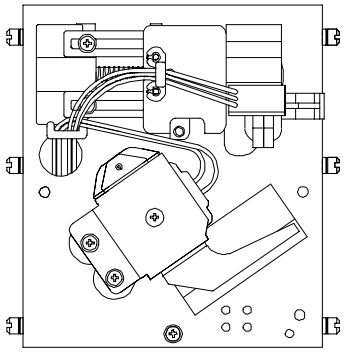
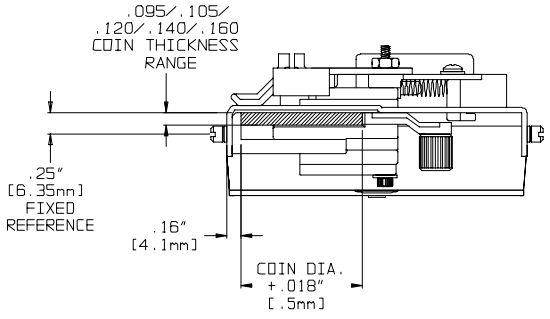
IC-16
SMART MARK
DIMENSIONS
DWG# ENG00089



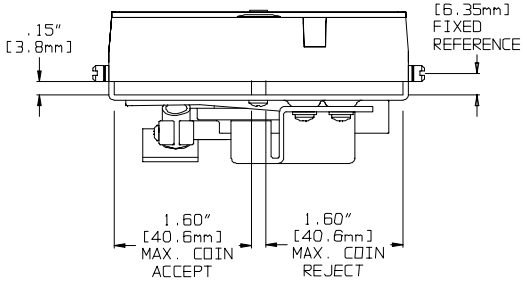




BACK VIEW
ROUTING FOR ACCEPT COIL LEADS

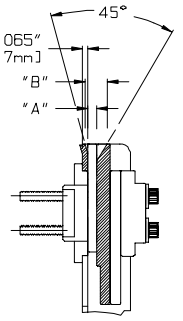


COIN ENTRY



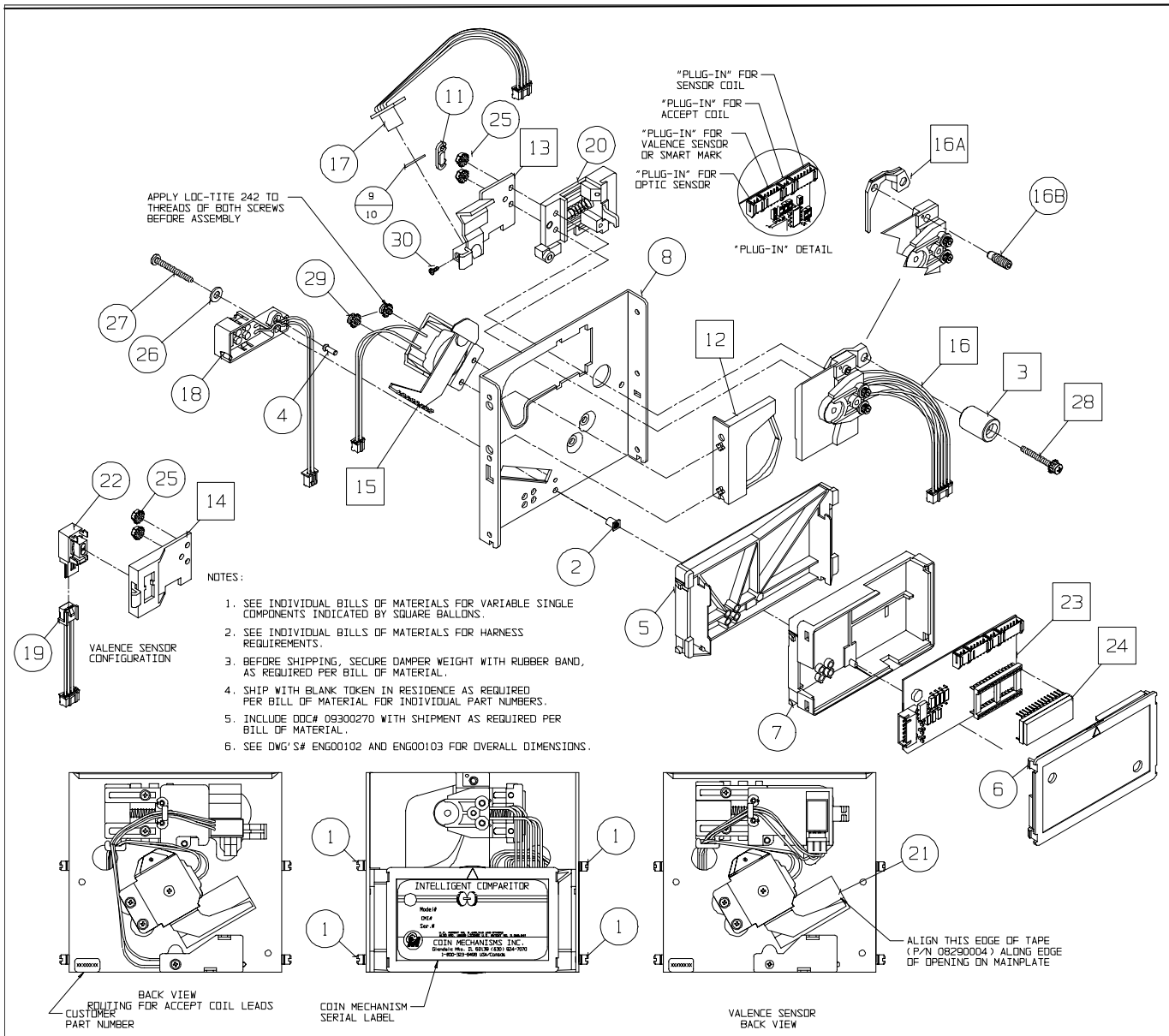
COIN EXIT

.160" [4.1mm]	.310" [7.9mm]
.140" [3.6mm]	.290" [7.4mm]
.120" [3.0mm]	.270" [6.9mm]
.105" [2.7mm]	.255" [6.5mm]
.095" [2.4mm]	.245" [6.2mm]
.082" [2.1mm]	.232" [5.9mm]
.072" [1.8mm]	.222" [5.3mm]
"A" SPACER	"B" ENTRY
SPACER	OPTIONS



COIN MECHANISMS INC.

P.O. Box 5128, Glendale Heights, IL 60139-5128 P/N ENG00089 -5/02
630/924-7070*1-800/323-6498*FAX 630/924-7088*E-MAIL-coinnech@coinnech.com
VISIT OUR WEB SITE AT www.coinnech.com



MATERIAL COLUMN			
ITEM	P/N	QTY	MATL' DESCRIPTION
1	04060005-01	4	STUD, #6
2	04060036	1	INS, NUT, #4-40
3	0406XXXX	1	WEIGHT, DAMPER,
4	04660034	1	PIN, COIN DEFLECTOR
5	04660164	1	COVERPLATE, WIDEBODY, UNIVERSAL
6	04660165	1	COVER, PCB HSG, UNIVERSAL
7	04660166-23	1	HSG, PCB, UNIVERSAL, MILLED
8	04690161-05	1	MAINPLATE, IC-16WB/62WB
9	04690243	A/R	SPACER, IC, .010
10	04690244	A/R	SPACER, IC, .020
11	04690276	1	CLIP, WIRE, BARCODE, IC
12	0469XXXX	1	HOLDER, TKN, IC,
13	0469XXXX	1	HOLDER, BC RDR,
14	0469XXXX	1	HOLDER, VALENCE READER,
15	0625XXXX	1	COIL & BRKT, ASSY,
16	0625XXXX	1	COIL, ASSY, SENSOR, IC
16A	0569XXXX	——	LEVER, ASSY, DAMPER, IC
16B	04690266-01	——	PIN, PIVOT, DAMPER, IC
17	0627XXXX	1	PCB, ASSY, BC RDR,
18	0627XXXX	1	PCB, ASSY, OPTICS
19	06280101	1	HARNESS, VAL, 3 PIN AMP, 4 PIN PHR, RED/BLK/VIO, 5.25
20	0665XXXX	1	RETAINER, ASSY, IC, SPRING
21	08290004	.0006	TAPE, MYLAR, .5 WIDE
22	08290208	1	PHOTOINTERRUPTER, REFLECTIVE
23	0927XXXX	1	PCB, CTRL, IC
24	0929XXXX	1	IC, 87C752,
25	436-4	2	NUT, 4-40, HEX, KEPS
26	600-4	1	WASHER, FLAT, #4
27	P-104-4-12	1	SCREW, 4-40 X 3/4, PHIL, PH, MS
28	P-166-6-X	1	SCREW, 6-32
29	P-186-4-3	2	SCREW, 4-40 X 3/16, PHIL/SQ, INT SEMS WASHER
30	P-217-2-5	1	SCREW, 2 X 5/16, PHIL, PH, HI-LO

NO.	ECO NO.	REVISIONS	DATE/BY
		RELEASED; SEE INDIVIDUAL P/N'S FOR REVISION LEVELS	4/30/02 DF

COIN MECHANISMS INC.
400 REGENCY DR.
GLENDALE HEIGHTS, IL 60139

TOLERANCES NOT SPECIFIED
FRACTIONS= ± 1/64
ANGLES= ±1°
.XX= ±.010
.XXX= ±.005
HOLE DIA.= ±.002

TITLE: IC-40/62WB

DRAWN	DF	DATE	4/30/02
CHKD		DATE	
APP		DATE	

DWG NO. D0684003

FINISH: N/A | SIZE: D | SCALE: N/A | SHT 1 OF 1

CRITICAL SYMBOLS
▼ = CUSTOMER
▼ = PROCESS
▼ = BOTH

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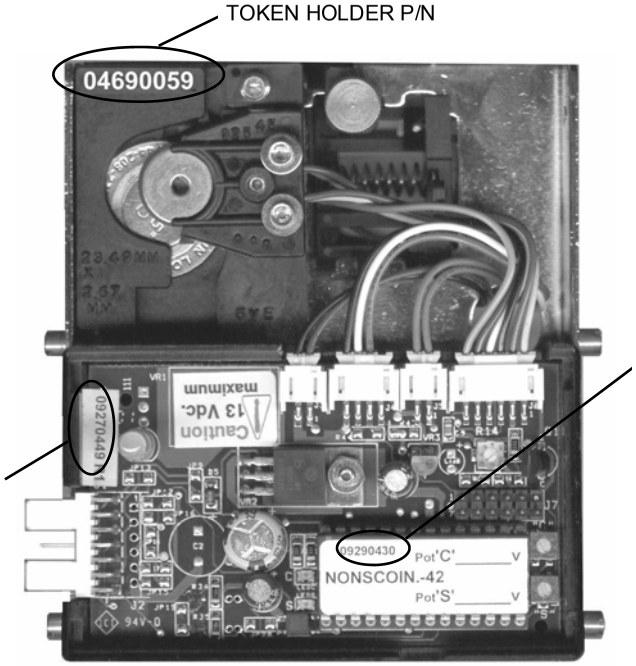
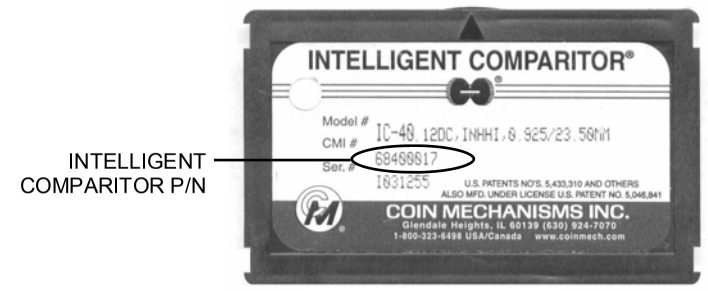
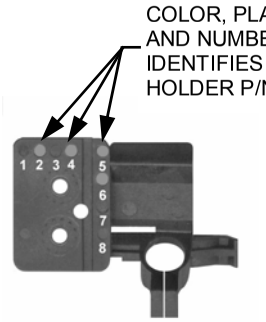


IC WITH COVER REMOVED



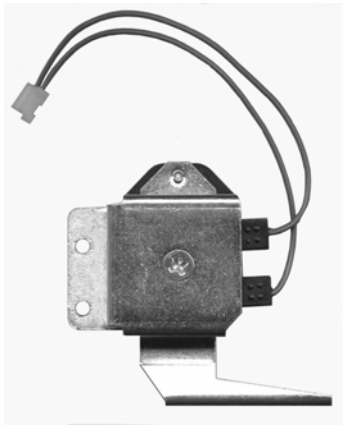
IC COVER

DAMPER LEVER

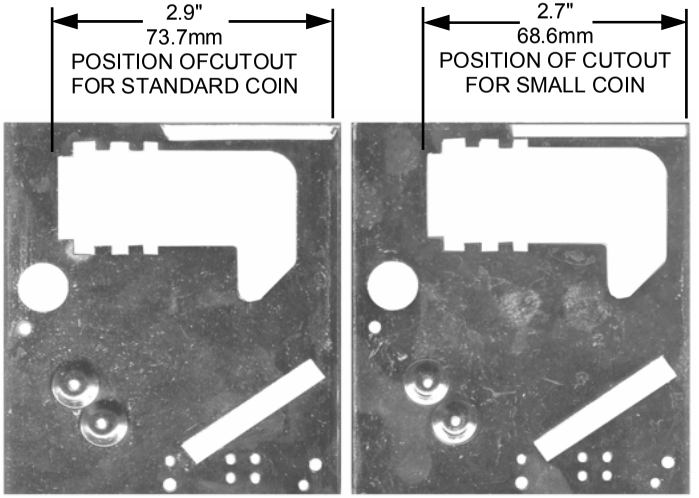


BARCODE HOLDER

OPTIC ASSEMBLY
(BACK VIEW)



ACCEPT COIL ASSEMBLY



P/N 06680019-STANDARD COIN
COIN DIAMETERS
1.045" [26.5mm] -1.575" [40.0mm]

P/N 06680021-SMALL COIN
COIN DIAMETERS
.870" [22.1mm] -1.575" [40.0mm]

SENSOR COIL SLOT POSITION ON
MAINPLATE IN CHASSIS ASSEMBLY

P/N 04660113
FOR COIN DIAMETERS
BETWEEN
1.044" [26.5mm]-1.124" [28.5mm]

P/N 04690406
FOR COIN DIAMETERS
BETWEEN
.898" [22.8mm] -1.043" [26.5mm]

COIN EXIT SPACERS

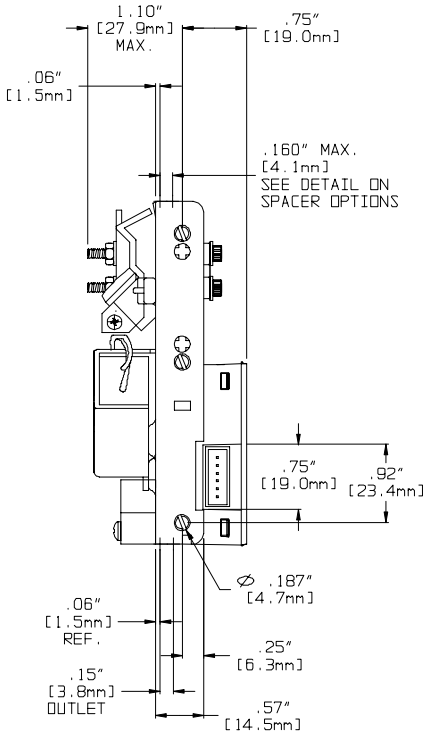
P/N 06250134= GREEN WIRES FOR LOW VOLTAGE (12VDC)

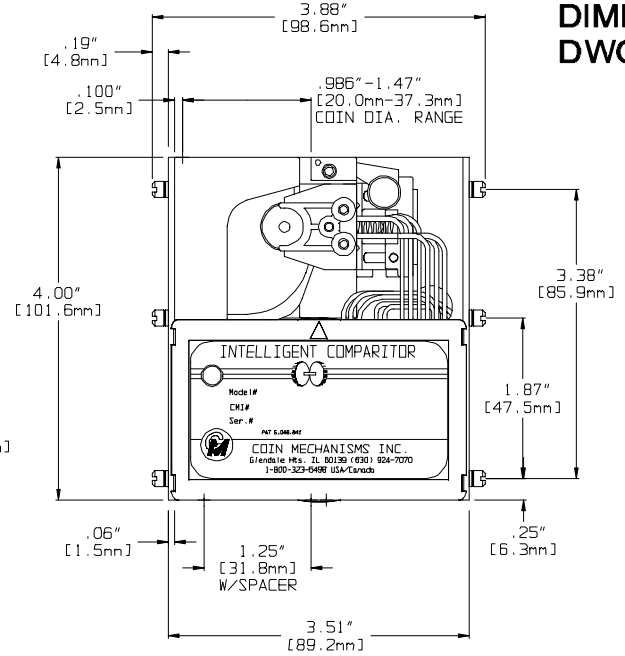
P/N 06250195= GRAY WIRES FOR HIGH VOLTAGE (24VAC)

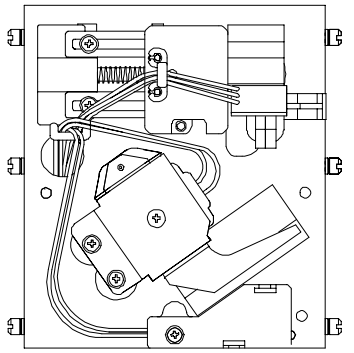
NO.	ECO NO.	REVISIONS — RELEASED; SEE INDIVIDUAL P/N'S FOR REVISION LEVELS — DATE/BY 9/12/02 DF
COIN MECHANISMS INC. 400 REGENCY DR. GLENDALE HEIGHTS, IL 60139		TOLERANCES NOT SPECIFIED FRACTIONS= ± 1/64 ANGLES= ±1° .XX= ± .010 .XXX= ± .005 HOLE DIA.= ± .002
This drawing is the property of and contains proprietary information of Coin Mechanisms Inc. The drawing shall be returned upon request and is not to be copied or disclosed without written authorization and will not be used in any way detrimental to the interest of Coin Mechanisms.		CRITICAL SYMBOL
SIZE: B N/A		TITLE: IC-40/62 P/N IDENTIFICATION; DRAWN DF DATE 6/7/02; CHKD DATE; APP DATE; DWG NO. D0684603; FINISH: N/A; SHT 2 OF 2

IC-40/62
SMART MARK
DIMENSIONS
DWG# ENG00106

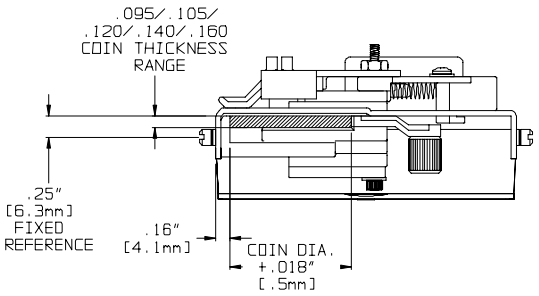
Comparitor™



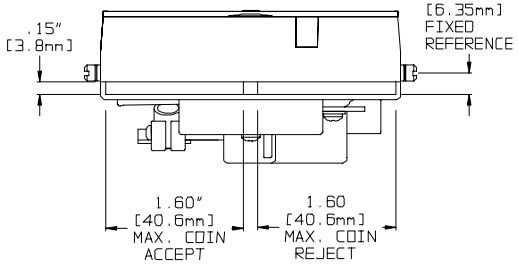




BACK VIEW
ROUTING FOR ACCEPT COIL LEADS

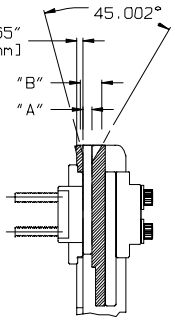


COIN ENTRY



COIN EXIT

.160" [4.1mm]	.310" [7.9mm]
.140" [3.6mm]	.290" [7.4mm]
.120" [3.0mm]	.270" [6.9mm]
.105" [2.7mm]	.255" [6.5mm]
.095" [2.4mm]	.245" [6.2mm]
.082" [2.1mm]	.232" [5.9mm]
.072" [1.8mm]	.222" [5.3mm]
"A" SPACER	"B" ENTRY
SPACER OPTIONS	



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