



**Operating Manual Optika
Version USA5_5**

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INTRODUCTION






This document explains the usage of the scoring system Optika using the standard Optika-Keyboard.

Beside this standard keyboard there is also a touch-screen keyboard available for Optika and this manual is in a separate document .











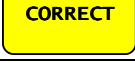









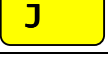




This is a visual manual with the buttons to press followed by the instructions: e.g.

Press:			means that both keys must be pressed simultaneously to achieve the action as described.
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LIST OF OPTIKA COMMANDS

		List of all available game options: OPEN LEAGUE MOONLIGHT OPEN MULTIGAME OPEN BINGO, PYTON CAR RACE, HORSE RACE(on page 2) BLACK JACK, DART (on page 2) EUROLEAGUE (on page 2)
		To start a game in OPEN. To advance to the next entry level, to exit or save programming
		To confirm an entry.
		Enter the correction mode.
		To delete entries.

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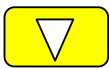
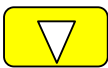

		To terminate an entry in programming mode
		After SCORE CORRECTION: To fix the position of the cursor.
		During the game: to exit the game.
		From WAIT SCREEN: to restore the last game.
		To restart a game from the beginning.
		Zoom in and out. Displays 5 or 10 frames.
		To skip a bowler.
		To delete scores beginning from the last throw.
		To mark FOUL instead of last score.
		To mark STRIKE instead of last score.
		To mark SPARE instead of last score.
		To mark a score as a SPLIT.
		To release a FAST RESET of the pinsetter or a FULL SET when pinsetters with strings. Only active during the game
		To call the GAMES MEMORY. The last game will be displayed. Only active in the STAND BY mode.
		To operate the Bumpers UP and DOWN on the lane right or left
		To call the operator (works if game in progress only)
		To move the cursor up and down.
		To move the cursor left and right.

SPECIAL OPTIKA COMMANDS




	D	To temporarily select DEUTSCH as dialogue language.				
	E	To temporarily select ENGLISH as dialogue language.				
	F	To temporarily select FRENCH as dialogue language.				
	I	To temporarily select ITALIAN as dialogue language.				
	P	R	O	G	C	To program screen colors.
	P	R	O	G	T	To test the CCD-Cameras.
HELP	(After the above selection)			To CALIBRATE the CCD-Cameras.		
START	(After the above selection)			To proceed to the next calibration step.		
START	(After the above selection)			To exit the calibration menu.		
	P	R	O	G	P	To program PARAMETERS
						See section Programming of the Parameters

A) OPEN BOWLING (without options)

1) BEGINNING A GAME:


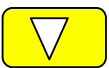

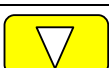
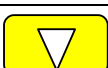

To begin press:		The monitor displays the request to enter the names of the bowlers: Note that if more than 6 players are entered (max. 18), they will be distributed evenly and the screen will change during the game.			
Type in the 1st name, then:		Type in the 2 nd name, then again:		Etc. When all names (max. 18) entered, press:	

2) AT THE END OF A GAME:

To continue with the same bowlers press:		or simply throw a ball. To begin a NEW game with other players, press:			then go to step 1.
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A1) OPEN BOWLING (with options)

1) BEGINNING A GAME:

To begin a game With options, press:		The monitor displays the several game options which are currently available: OPEN, LEAGUE, MOONLIGHT OPEN, MULTIGAME OPEN, BINGO, LIJN and HELP..			
Select the desired game by Pressing:					
When a game is Selected, press:		The monitor displays the request to enter the names of the bowlers and several options to be entered if desired. Note that if more than 6 players are entered (max. 18), they will be distributed evenly and the screen will change during the game.			
Type in the 1st name, then:		Type in the 1st option, (ID number) then:		Etc. When all names and options entered, press:	

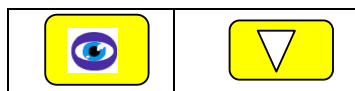
LIST OF OPTIONS:

- | | |
|-----------|---|
| 1) ID-No. | : Type the identification number of the player |
| 2) HDCP | : Type the Handicap of the player |
| 3) SERIE | : Type the Score of the previous game of the player |
| 4) NO-TAP | : Type the NO-TAP number: 7, 8 or 9 |
| 5) SPEC. | : Type the Specials as follows: |
| | L for LATE |
| | B for BLIND followed by the score, e.g.: B190 |
| | P for PACER |

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J for the BUNGEE to be activated

NOTE: To bypass entering STEPS, e.g. to go DIRECTLY from HDCP of player 1 to name of player no. 2, press the key combination:



2) AT THE END OF A GAME:

To continue with the same bowlers press:		or simply throw a ball if in OPEN. To begin a NEW game with other players, press:			then go to step 1.
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B) OPEN Bowling with No - TAP (same NO-TAP value for all players)

Same steps as under A), then, to enter the NO-TAP option (same for all players):

		Marks a STRIKE when 7 pins are knocked down with the first ball.
		Marks a STRIKE when 8 pins are knocked down with the first ball.
		Marks a STRIKE when 9 pins are knocked down with the first ball.
		To cancel the NO-TAP option.

C) SCORE CORRECTION


1) To correct the score after the last throw, press:

	then press the appropriate key (0 to 9) or X for STRIKE, S for SPARE, F for FOUL and 0 for SPLIT, SPACE for DELETE, then press: The corrected score will be underlined.	
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2) To correct the score in any frame, press:




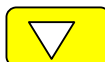

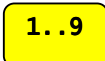
	then place the cursor under the score to be corrected with:		or:		or:		or:	
--	---	--	-----	--	-----	--	-----	--

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Then press the appropriate key (O to 9) or X for STRIKE, S for SPARE, F for FOUL and 0 for SPLIT, SPACE for DELETE, then press: The corrected score will be underlined.	
--	---

D) CHANGE THE ORDER OF THE PLAYERS (during the game)

IMPORTANT: The order of the players can only be changed, if they are in the same frame!

		Move the cursor to the player whose order must be changed by pressing:			Then press:
		Example: player number 1 must become no. 5: press EYE and 5. Player 1 will become player 5 and vice versa. Repeat the procedure for other players.			

Once the operation is completed, press:



E) CORRECT PLAYERS' NAMES AND DATA




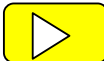

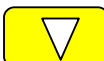
To correct names and data Press:	<div>HELP</div>	then press again:	<div>HELP</div>	The monitor displays the names and the datas of all players. Place the cursor under the name or data to be corrected by pressing:.			
<div>▲</div> or:	<div>▼</div> or:	<div>◀</div> or:	<div>▶</div>	or, to skip entering steps:	<div>👁</div>	<div>▼</div>	
Then press the appropriate keys to correct the players' names and datas, then Press:					<div>START</div>		



F) REMOVE or ADD PLAYERS:

1) To remove players:



To remove players and datas press:		then press again:		The monitor displays the names and the datas of all players. Place the cursor under the name or data to be removed by pressing:.		
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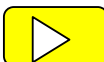


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	or:		or:		or:		or, to skip entering steps:		
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Then remove the names and Datas by pressing:		When finished, continue the game by pressing:	
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2) To add players and data:



To add players and datas press:		then press again:		The monitor displays the names and the datas of all players. Place the cursor to the next empty names line by pressing:.
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	or:		or:		or:		or, to skip entering steps:		
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Then type in the new name(s) and data(s) with the appropriate keys. When entry Completed, press:	
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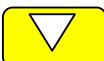
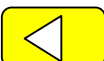
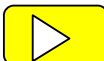


G) SKIP A PLAYER (during the game)




To skip a player during the game, press: (the player will be marked with "S")		
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Press again to DELETE the "S" mark at the players' name (cancel SKIP):		
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H) LATE OR INJURED PLAYER

To mark a player as LATE Press:		then press again:		The monitor displays the names and the datas of all players. Place the cursor under the name of the player to be set as LATE by pressing:.
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	or:		or:		or:		or, to skip entering steps:		
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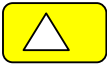
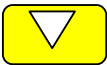
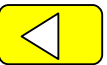
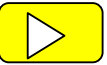

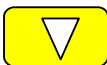



At the position "SPEC." type in:		then press:		then:	
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I) BLIND

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This feature is used to replace an absent bowler; his average will be entered and the OPTIKA then added automatically, frame by frame, to the team total.



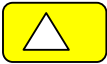
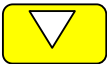
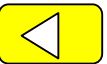
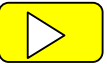

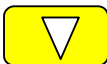



- 1) To mark a player as **BLIND** proceed according to A1)
- 2) To mark a **BLIND** when names have already been entered or during the game proceed as follows:

To mark a player as BLIND Press:		then press again:		The monitor displays the names and the datas of all players. Place the cursor under the name of the player to be set as BLIND by pressing:.		
	or:		or:		or:	
				or, to skip entering steps:		
At the position "SPEC." type in:				followed by the BLIND score, e.g.: B210, then press:		



J) PACER

A Pacer is used to keep two teams scoring evenly. This player's score will not be added to the team total.


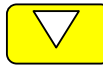
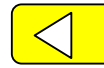
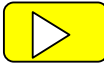

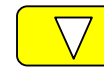
- 3) To mark a player as **PACER** proceed according to A1)
- 4) To mark a **PACER** when names have already been entered or during the game proceed as follows:

To mark a player as PACER Press:		then press again:		The monitor displays the names and the datas of all players. Place the cursor under the name of the player to be set as PACER by pressing:.		
	or:		or:		or:	
				or, to skip entering steps:		
At the position "SPEC." type in:				then press:		

K) CATCHUP FOR LATE OR SKIPPED PLAYER

To catch up a LATE player press:		then press again:		The monitor displays the names and the datas of all players. Place the cursor under the name of the player set as LATE by pressing:.		
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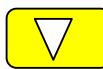
	or:		or:		or:		or, to skip entering steps:		
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At the position "SPEC, place The cursor under L, then press:		then press:		then:	
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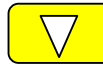
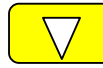

The "late" player will remain on until he / she catches up all his / her frames. Then the OPTIKA switches automatically back to the normal order of the players.

L) LEAGUE BOWLING ON ALTERNATE LANES

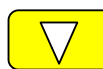
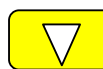

To begin a game in LEAGUE press:		The monitor displays the several game options which are currently available: OPEN, LEAGUE, MOONLIGHT OPEN, MULTIGAME OPEN, BINGO, LIJN and HELP..
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Select the LEAGUE game by pressing:	
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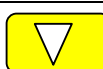
When LEAGUE is selected, press:		The monitor LEFT displays the request to enter the name of the 1stTEAM TEAM and several options to be entered if desired. Note that maximum 6 players can be entered.
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Type in the 1st name, then:		Type in the 1st option, then:		Etc. When all datas have been entered, press:	
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The monitor LEFT displays the request to enter the players' names and datas:


Type in the 1st name, then:		Type in the 1st option, (ID number) then:		Etc. When all names and options entered, press:	
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NOTE: To bypass entering STEPS, e.g. to go DIRECTLY from HDCP of player 1 to name of player no. 2, press the key combination:

	
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The monitor RIGHT displays the request to enter the name of the 2nd.team:
REPEAT thesteps as described above.

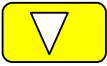
The monitors display the message: "PRESS START TO BEGIN THE GAME". The players can throw practice ball.


To begin the game, press:	
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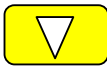
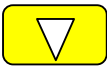

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L1) LEAGUE BOWLING ON ALTERNATE LANES (one team only)

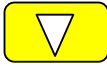
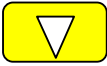

To begin a game in LEAGUE press:		The monitor displays the several game options which are currently available: OPEN, LEAGUE, MOONLIGHT OPEN, MULTIGAME OPEN, BINGO, LIJN and HELP..
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Select the LEAGUE game by pressing:	
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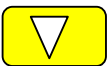
When LEAGUE is selected, press:		The monitor LEFT displays the request to enter the name of the 1stTEAM TEAM and several options to be entered if desired. Note that maximum 6 players can be entered.
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Type in the 1st name, then:		Type in the 1st option, then:		Etc. When all datas have been entered, press:	
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The monitor LEFT displays the request to enter the players' names and datas:

Type in the 1st name, then:		Type in the 1st option, (ID number) then:		Etc. When all names and options entered, press:	
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NOTE: To bypass entering STEPS, e.g. to go DIRECTLY from HDCP of player 1 to name of player no. 2, press the key combination:

	
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The monitor RIGHT displays the request to enter the name of the 2nd.team:

Do not enter names, just press:		then:	
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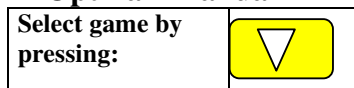
The monitors display the message: "PRESS START TO BEGIN THE GAME". The players can throw practice ball, then:

To begin the Game, press:	
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M) BINGO, PYTHON, Car- Horserace, Blackjack, Dart, 5-Frame

To begin a game in BINGO or PYTHON press:		The monitor displays the several game options which are currently available: OPEN, LEAGUE, MOONLIGHT OPEN, MULTIGAME OPEN, BINGO, PYTHON, Car- and Horserace, Blackjack, Dart, 5 Frame and HELP..
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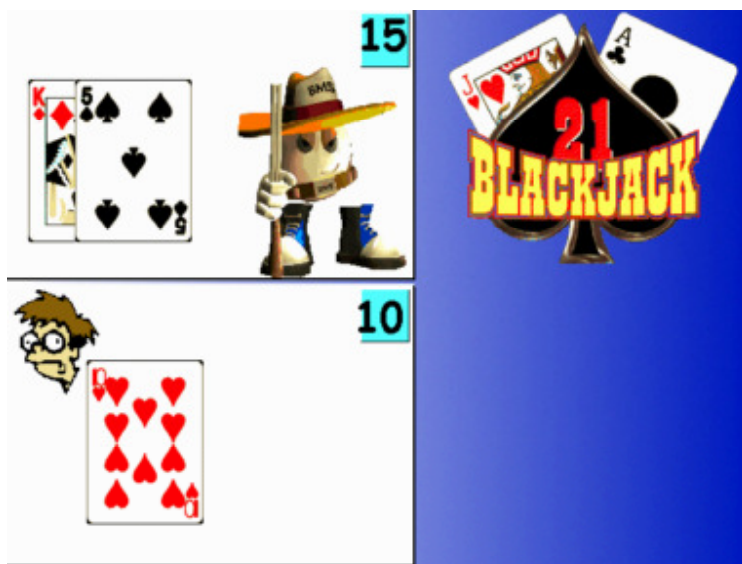
These two games (Bingo, Lijn) are good for beginners, as well as company groups. There are no teams and therefore no prescribed order of players have to follow. The games are set up in tournament style on many lanes and started at the same time. The lane that finishes first gets the prize. Then follow (per design of the game) for the second and third place winners.

The goal of **Bingo** is to mark all circles in the pyramid. A circle will be marked, when the correct number of pins drop. The only restriction comes from the pinsetter hardware.: since it works in two cycles (as is usual for bowling), the cycle number (1 or 2) for the next toss is displayed in the top right corner of the screen. Every possible combinations present three times in the Bingo pyramid. When a combination is thrown that is not available any more, it will be refused.

The same principles are applied in Python. Unavailable combinations will be refused, and the combinations are computed according to the pinsetter cycle. So a 10 can only be marked with a strike in the first throw, or a spare after a gutter ball in the second throw. The goal of Lijn is different from Bingo in that the screen shows two honeycomb grids. You start from top left and must down 7 pins to start, then you must mark a ribbon that leads to the bottom right ten. A cell will be marked only if its left, top or bottom neighbor is already marked. So if your second throw is a spare (after the 7 a 3), you have already two cells marked and thus more possibilities to advance. The cell with an arrow next to it is central link of the two halves; you only have to mark it once.

Black – Jack

Game for one player against the computer. The winner is the one that scores as close to 21 as possible. The one that scores above 21 will lose the game. The computer is always the first that gets a card and waits until the player scores better before taking another card.



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Dart (Cricket):

Dart is a game for multiple players. The goal is to score each pin combination (1-10) at least twice. Then the corresponding pin combination will be displayed with a “smiley”. And the next time this pin combination is thrown, the score of all other players (without “smiley” at this position) will be reduced by the number of pins downed.

VERA										
Spiel:1										
MAR	😊	2	2	2	2	2	2	2	2	😊 48
VER	2	😊	2	2	2	2	2	2	2	1 39
	1	2	3	4	5	6	7	8	9	10 Pts.

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Players with credit 0 will not participate in the game anymore.

N) GRAPHICS MANAGEMENT OF THE OPTIKA

This feature of the Optika enables the direct management of the graphics (pictures and animations) loaded into the memory **directly** from the keyboard of the console.

Start the programming sequence by pressing the key combination:



P

R

O

G

B

The following table will be displayed:

1 : LOGO.FLC	10BAG1.FLC	CYCLE_F.FLC	CYCLE_D.FLC
2 : STANDBY1.FLC	10BAG2.FLC	DOUBLE1.FLC	SPARE1.FLC
3 : LOGO3.FLC	11BAG1.FLC	DOUBLE2.FLC	SPARE2.FLC
4 :	11BAG2.FLC	DOUBLE3.FLC	SPARE3.FLC
5 :	BALL.PCX	DOUBLE4.FLC	SPARE4.FLC
6 :	BMS.PCX	FOUL1.FLC	SPARE5.FLC
7 :	4BAG1.FLC	FOUL2.FLC	STRIKE1.FLC
8 :	4BAG2.FLC	GUTTER1.FLC	STRIKE2.FLC
9 :	5BAG1.FLC	GUTTER2.FLC	STRIKE3.FLC
10:	5BAG2.FLC	GUTTER3.FLC	STRIKE4.FLC
11:	6BAG1.FLC	GUTTER4.FLC	TURKEY3.FLC
12:	6BAG2.FLC	GUTTER5.FLC	0PIN4_T.PCX
13:	7BAG1.FLC	GUTTER6.FLC	1PIN2_T.PCX
14:	7BAG2.FLC	LOGO.FLC	1PIN3_T.PCX
15:	8BAG1.FLC	STANDBY1.FLC	2PIN1_T.PCX
16:	8BAG2.FLC	LOGO3.FLC	2PIN2_T.PCX
17:	9BAG1.FLC	STRK5_T.PCX	3PIN_T.PCX
18:	9BAG2.FLC	0PIN_T.PCX	3PIN2_T.PCX
19:	PIN1_T.PCX	PERF1.FLC	4PIN1_T.PCX
20:	CYCLE_E.FLC	PERF2.FLC	9PIN_T.PCX

selected graphic to be copied into an EVENT by pressing the key HELP

List of the graphics memorized on the Hard Disk of the Lane PC

19: WAIT-SCREEN

Grafiksatz 0

programmed graphics for the EVENT no. 19 (WAIT SCREEN=STAND-BY)

EVENT where the listed pictures 1 to 3 will be displayed

The right column(s) lists the available pictures in the memory (only a part of it). The actual list is on 3 pages. The left column lists the "assigned" pictures for the concerned "event".

This assignment belongs to "graphic set 0". It is possible to create up to 9 different graphic sets.



At the bottom of the screen is displayed the actual "ASSIGNEMENT" t.m.event where the assigned picture will be displayed, e.g. WAIT SCREEN, FOUL, SPLIT, STRIKE, SPARE etc. To operate, proceed as follows:

a) Select or mark a picture:


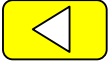
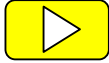
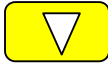
Press the indicated keys to move the cursor to "mark" a picture:		or:		or:		or:	
Press the indicated keys to proceed to the next pages of the list of images		and:		or:		and:	
Press the indicated key to display the marked picture:		then press again the key:		to quit the display mode			


b) Assign and/or delete the selected (marked) or assigned picture:


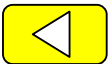
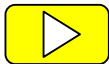
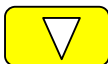
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Press the indicated key to COPY the marked picture into the column left which lists the "assigned" pictures:		To DELETE an ASSIGNED and marked picture (only) press:	
--	---	--	---

c) Overwrite a picture in the assignement column:


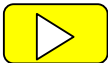
Press the indicated keys to move the cursor to "mark" a picture in the left column:		or:		or:		or:	
---	---	-----	---	-----	---	-----	---


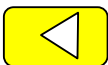
Press the indicated key to permanently mark the picture, whose color will turn "red":	
---	---

Press the indicated keys to move the cursor to "mark" a picture in the right column(s):		or:		or:		or:	
---	---	-----	---	-----	---	-----	---



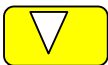
Press the indicated key to overwrite the marked picture with the selected:	
--	---


d) Go to the next page of the pictures list:

Press:			to go to the next page of the PICTURES list.
--------	--	--	--

Press:			to return to the previous page of the PICTURES list.
--------	---	---	--

e) Navigate between the EVENTS:

Press:			or:		to select the different EVENTS.
--------	---	---	-----	---	---------------------------------

Press:		to SAVE and to EXIT.
--------	---	----------------------

N1) PROGRAMMING THE PARAMETERS OF OPTIKA


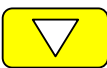
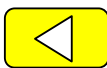
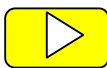
In order to work propely in connection with the different types of pinsetters, different countries, different wishes and needs of the bowling operators, the Optika can easily be configurated to accomplish every expectations. Proceed as follows:

Start the programming sequence by pressinnng the key combination:						
---	---	---	---	--	---	---

The left screen shows in sequence the following entry fields. Proceed as follows:

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Move the cursor by pressing the appropriate keys:		or:		or:		or:	
---	---	-----	---	-----	---	-----	---

CONFIRM the last entry by pressing:		EXIT by pressing:		DELETE all new entries by pressing:	
-------------------------------------	---	-------------------	---	-------------------------------------	---

Measuring delay 1 + 2	2500 3300	Type in delay time 1 then delay time 2
-----------------------	-----------	--

Enter the time the ccd-camera has to wait after the interruption of the second photocell before reading the pins in thousandth of second, ed.g. 2500 for 2,5 seconds. First entry for the first ball (pinsetter cycle : pick up remaining pins, sweep, set pins down), second entry for the second ball (cycle : sweep, set ten pins).

Lane number	001	Type in the number of the lane left
-------------	-----	-------------------------------------

Enter the lane number for the left lane of the pair controlled by the OPTIKA console.
Note: Always enter three digits **001** for lane pair 1 / 2)

Language		Select the desired language by scrolling with:	
----------	---	--	---

TOP-5 (0/1/5,6=Lösch. L/R)	1	0 TOP-5 deactivated 1 TOP-5 activated. 5 Reset list LEFT (and activate) 6 Reset list RIGHT (and activate)
----------------------------	---	--

Graphic set	0	Currently active Graphic set
-------------	---	------------------------------

Sets the active graphic set (up to 9).

Distance of photocells (cm)	30	Default distance of photocells
-----------------------------	----	--------------------------------

Display of graphics		Select the desired option by scrolling with:	
---------------------	---	--	---

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Display of ball speed	Open+Ligue	Select the desired option by scrolling with:	
-----------------------	------------	--	---

Keyboard type	U S A	Select the desired option by scrolling with:	
---------------	-------	--	---

Handicap na / % / max	0 0 0	Type in the pertinent figures
-----------------------	-------	-------------------------------

The three programmable values NA = national average, P = percentage and H = max. Handicap is entered here to compute the actual handicap.

Show time pictures (sec)	4	Type in the desired time in Seconds the picture has to be displayed.
--------------------------	---	--

Show time Sparemaker (sec)	3	Type in the desired time in Seconds the Sparemaker has to be displayed.
----------------------------	---	---

Show time wait picture (sec)	15	Type in the desired time in Seconds the picture has to be displayed.
------------------------------	----	--

Show scroll text 1/0	1	Type in the desired option: 1 = Scroll text ON 2 = Scroll text OFF
----------------------	---	--

Speed: 0 = mph; 1 = km/H	1	Type in the desired option:
--------------------------	---	-----------------------------

Pulse time trigger-relay (msec)	1000	Type in the appropriate puls time to cycle the pinsetter (1000 = 1sec)
---------------------------------	------	--

Pulse time set-relay (msec)	1000	Type in the appropriate puls time to cycle the pinsetter (1000 = 1sec)
-----------------------------	------	--

Pulse time set-relay 10 th frame (msec)	15000	Type in the appropriate puls time to cycle the pinsetter (1000 = 1sec)
--	-------	--

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Pulse set-relay 10th frame 0/1	1	Type in the appropriate option: 0= continuous, 1=pulsing
ON-time set-relay (msec)	1000	Type the desired puls length of the set-relay puls to cycle the pinsetter
OFF-time set-relay (msec)	1000	Type the desired pause length of the set-relay puls to cycle the pinsetter
Pulse time stepper 1-relay (msec)	1000	Type in the appropriate puls time to "STEP" the pinsetter (1000 = 1sec)
Pulse time stepper 2-relay (msec)	1000	Type in the appropriate puls time to "STEP" the pinsetter (1000 = 1sec)
Pulse time ball lift-relay (sec)	180	Type in the appropriate ON-time of the ball lift relay after the last ball.
Bumper-Relay: Pulse = 1; Cont = 0	1	Type in the desired option: 0 = Relay continuously ON 1 = Relay pulsing
Pulse time Bumper-relay (sec)	1	Type in the appropriate puls time to activate the BUMPER
Pulse time CALL-relay (sec)	10	Type in the appropriate puls time to activate the CALL
Delay time pinsetter OFF (sec)	10	Type in the desired time the pinsetter switches OFF after the command
Time for practice in Min.	10	Type in the desired time in minutes the players can practice in LEAGUE
Machine active in practice 0/1	1	Type the desired option: 0 = machine NOT active 1 = machine active
Automatic correction 0/1/2	2	Type the desired option: 0 = no autom. correction 1 = partial aut. correction 2 = full autom. correctio

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Note: Above feature only works if a RAKE SWITCH is installed. If NOT, 0 MUST be set (no automatic correction).

Count Frame 11 and 12	0	Type the desired option: 0 = frame 11 & 12 not counted. 1 = counted
-----------------------	---	--

Monitor Type: VGA=2 15 KHz=1 25 KHz=0	2	Type the desired option: 2=VGA (Default) 1= resolution 340x220 dots 0= resolution 640x400 dots
---------------------------------------	---	---

Note: 25 KHz monitors work also with the lower resolution.

puls time relay stepper 3 msec	1000	Type in the operation time of the cushion motor (1000=1 sec)
--------------------------------	------	---

Pinsetter: 1=A-2/s, 2=GSxx	0	0=All Pinsetters 1=A-2/S (w 10 th Pin Sol.) 2=GSxx-Pinsetter
----------------------------	---	---

Foul set: 0=Normal, 1=A-2	0	0=All Pinsetters 1=A-2
---------------------------	---	---------------------------

Block keyb. After name entry(0,1)	0	Allows to block the keyboard after players have entered their names 0=deactivated(Default) 1=activated
-----------------------------------	---	---

Assignment of the RELAYS on the Pinsetter-Interface Board

Maschine ON/OFF relay	Relay 1	Type in the number of the RELAY to switch ON/ OFF the pinsetter
-----------------------	---------	---

Trigger relay	Relay	Type in the number of the RELAY to TRIGGER the pinsetter (for AMF only)
---------------	-------	---

Set relay	Relay 2	Type in the number of the RELAY to CYCLE the pinsetter
-----------	---------	--

Stepper 1 relay	Relay 3	Type in the number of the RELAY to STEP the pinsetter
-----------------	---------	---

Stepper 2 relay	Relay 4	Type in the number of the RELAY to STEP the pinsetter
-----------------	---------	---

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Ball lift relay	Relay 5	Type in the number of the RELAY to switch ON/OFF the ball lift
-----------------	---------	--

Bumper relay	Relay 6	Type in the number of the RELAY to switch ON/OFF the BUNGEE
--------------	---------	---

Call relay	Relay 7	Type in the number of the RELAY to CALL service
------------	---------	---

Set relay 10 th frame	Relay 2	Type in the number of the SET relays in the 10 th frame
----------------------------------	---------	--

.. and of the INPUTS..

Foul input	Input 1	Type in the number of the INPUT to detect the FOUL
------------	---------	--

2 nd throw input	Input 2	Type in the number of the INPUT to detect the 2 nd ball signal
-----------------------------	---------	---

Free input	Input	Not assigned
------------	-------	--------------

Sweeper Input	Input 4	Type in the number of the Input of the Rake-up signal
---------------	---------	---

3 rd Serial Port (0,1,3)	0	0=No 1=Used for AMF Pinsetters 3=Always Trigger
-------------------------------------	---	---

IRT (InpRelTime)	0	Allows to call a Relays on the machine interface when an Input signal is present: e.g. 236: On Input 2 call Relays 3 for 6 seconds
------------------	---	--

TCP/IP (0,1)	0	0=Deactivated 1=Activated
--------------	---	------------------------------

IP (Port 23)	192.168.001.020	Type in the IP-Address of the lanePc Address must be in format: xxx.xxx.xxx.xxx use space button for the dot
--------------	-----------------	---

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Foul inversion	0	0=No 1=Foul input signal is inverted (No signal →Foul)
-----------------------	----------	---

Max 6 player	0	0=Deactivated 1=Allow only 6 players to be entered
---------------------	----------	---

Prepaid: timeout[s]	60	Number of seconds at gameend (prepaid game) after switching screens into idle
----------------------------	-----------	--

Bungee Timeout[x50ms]	0	Time to ignore the photocells when bumper comes up
------------------------------	----------	---

This might be used when bumper interact with the photocell and thus trigger a throw result

Delay PinRel. After O [ms]	50	Timer after which the spick holds the pins after passing the “O” Signal
-----------------------------------	-----------	--

Only for Pinsetters with Strings

The next section is only for Optika with CCD camera systems

TEST AND CALIBRATION OF THE CCD CAMERA SYSTEM

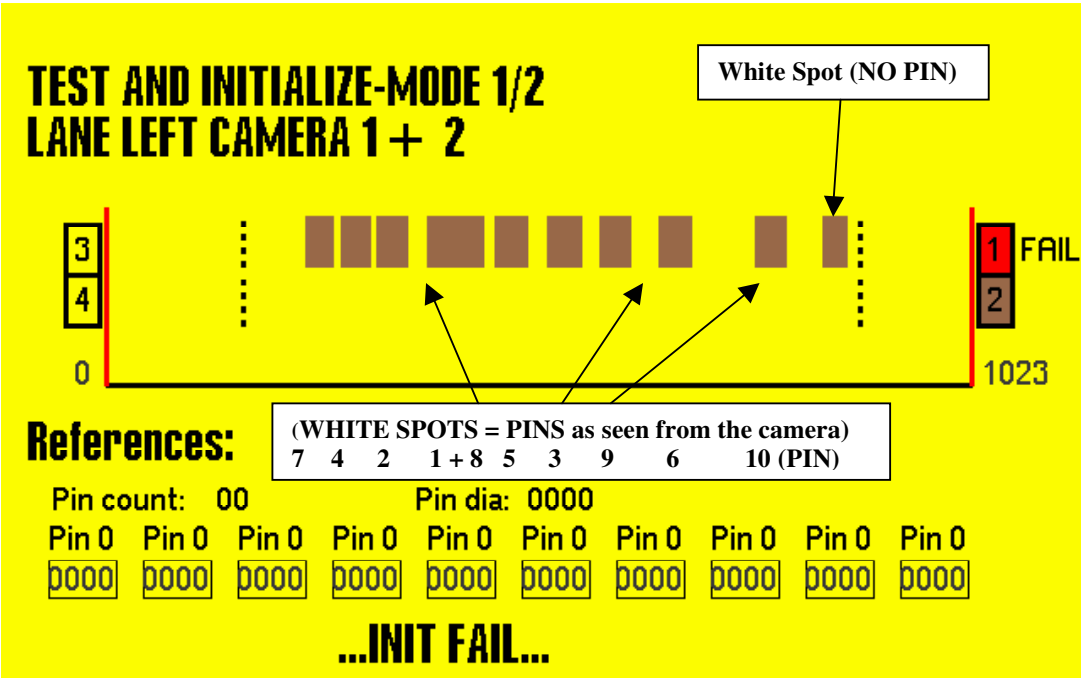
Conditions for a successful calibration of the CCD camera system are that the camera be leveled (bubble eye centered level), that all 10 pins be on the pindeck and that both overheads show the “wait” or “stand by” screen. “Calibration” means the storage of the coordinates of the pin heads as “seen” by the CCD Camera. The stored data is displayed as dark blue rectangles with the corresponding pin number. The light blue rectangles on top of the dark blue show the pin heads actually “seen” from the CCD Camera. If both rows of rectangles are alligned, no calibration is necessary. Start the TEST and CALIBRATION procedures as follows:

- Adjust the CCD-Camera to horizontal position by means of the level adjusting screws.
The bubble level on the camera indicates the cross lane horizontality.
- Clear all pins from the pin deck and switch on the power of the console.
- Wipe the ball pit curtain with a clean towel and make also sure that no white spot or surface be visible within the pin range. It may be necessary to cover or overspray very bright spots e.g. on the kickbacks or on the down sweep. Set the 10 pins on both lanes on their pinspots.
- Switch on the pin lights.
- Press the following key combination:

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	P	R	O	G	T	To test and CALIBRATE the CCD Camera.
---	----------	----------	----------	----------	----------	---------------------------------------



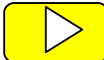
The following picture will be prompted on the screen of the left lane:



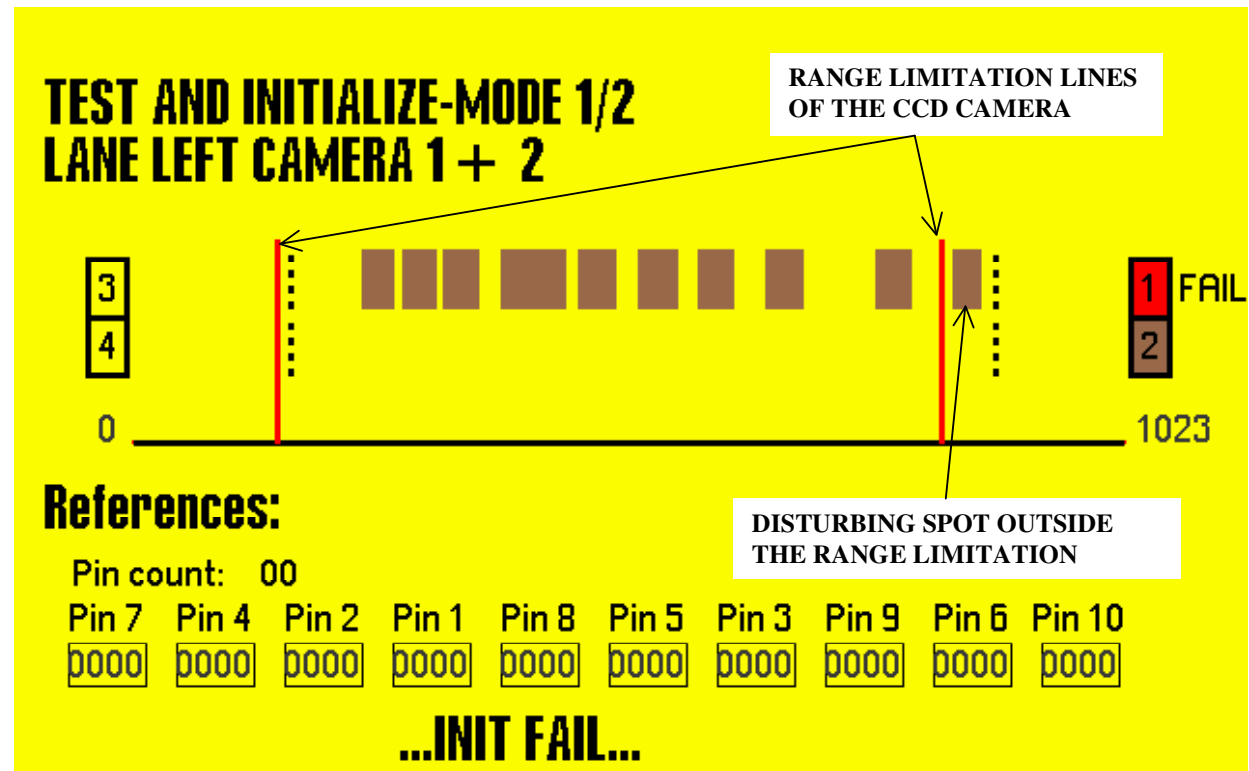
To calibrate the camera for the lane LEFT:

Press the key:	HELP	on the left side of the keyboard	The message “NEW INITIALIZE” is displayed on the left screen. After a few seconds one message is prompted on the screen:
----------------	-------------	----------------------------------	--

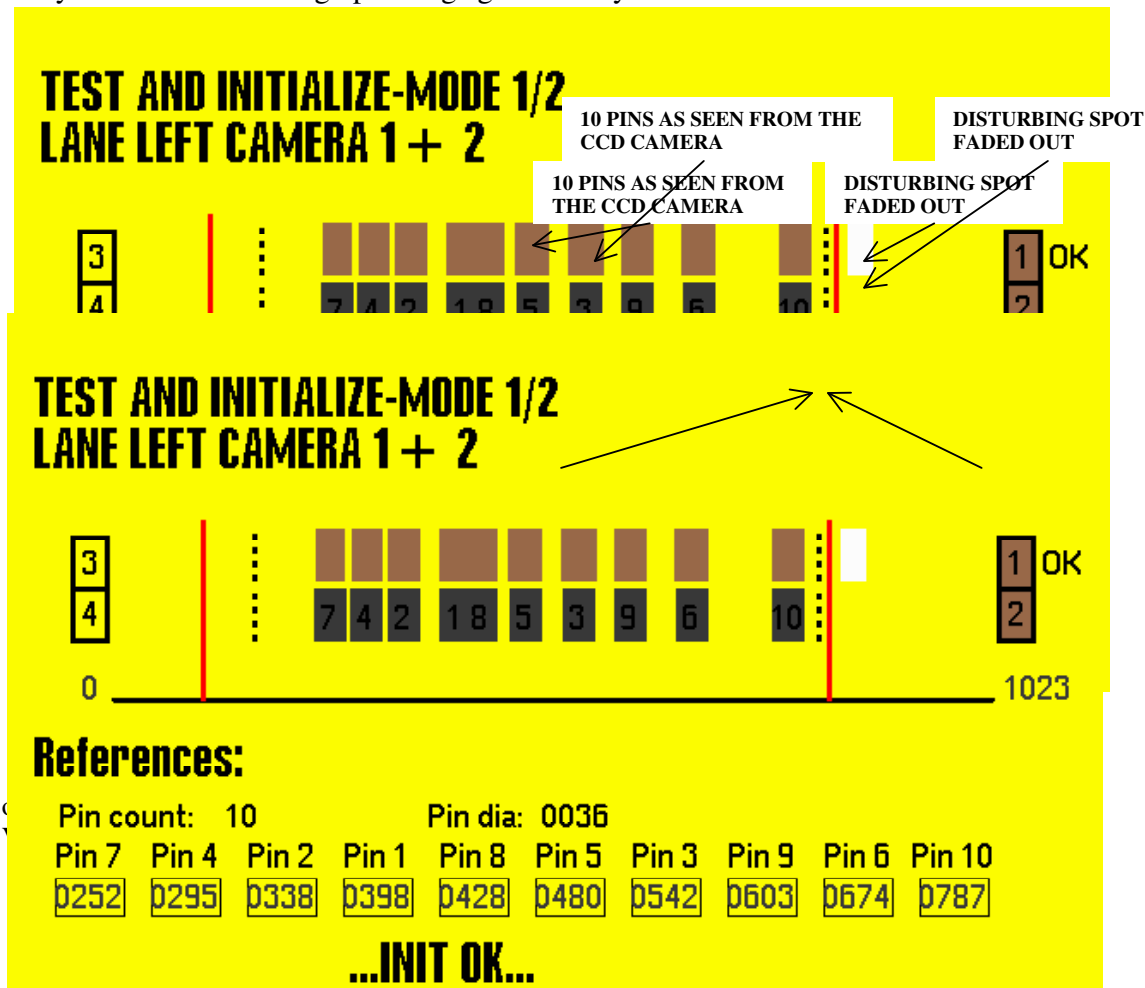
A): In case the calibration is not successful, the message “INIT FAIL” is displayed. In the example shown above, a bright spot on the left side of pin 10 makes the calibration impossible. The spot must be faded out by setting artificial limitations to the detecting range of the CCD camera.

Move the RED VERTICAL LINE by pressing the appropriate keys:		and:		or:	or just:	
--	---	------	---	-----	----------	---

Move the RED VERTICAL LIMITATION LINES until the disturbing SPOT is outside the limit.



Retry the calibration trough pressing again the key **HELP**.



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The calibration of the camera portion for the left lane has been carried out successfully.

The picture on the screen contains the following informations:

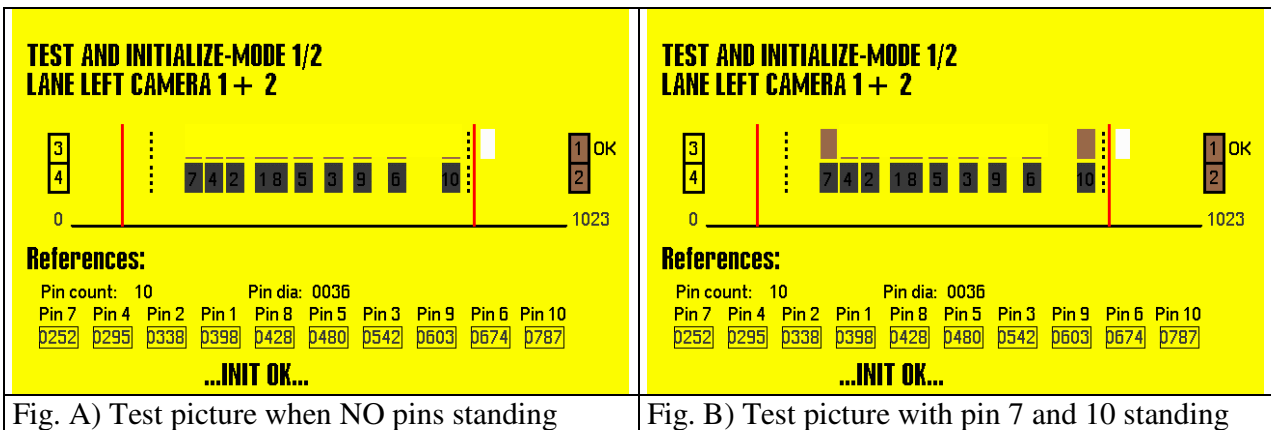
- actual location and size of the pins on the pin deck: upper brown row of squares
- memorized location and size of the pins on the pin deck at the calibration: lower dark row

The upper and the lower row should match unless the camera has been mechanically relocated or the pinsetter sets the pins not accurately. In this case a new calibration is necessary.

- camera unit which has been calibrated: in this case no. 1 (in case of Dead Wood there are 4 cameras per lane)
- Pin count: 10. The number of pins seen by the camera
- Pin dia: average diameter of the pins (virtual value)
- coordinates of each pin on a virtual line
- red vertical range limitation lines as manually set
- actual, calculated range limitation lines (dashed lines)
- message about the calibration: INIT OK or INIT FAIL.

The following test MUST be carried out after the calibration:

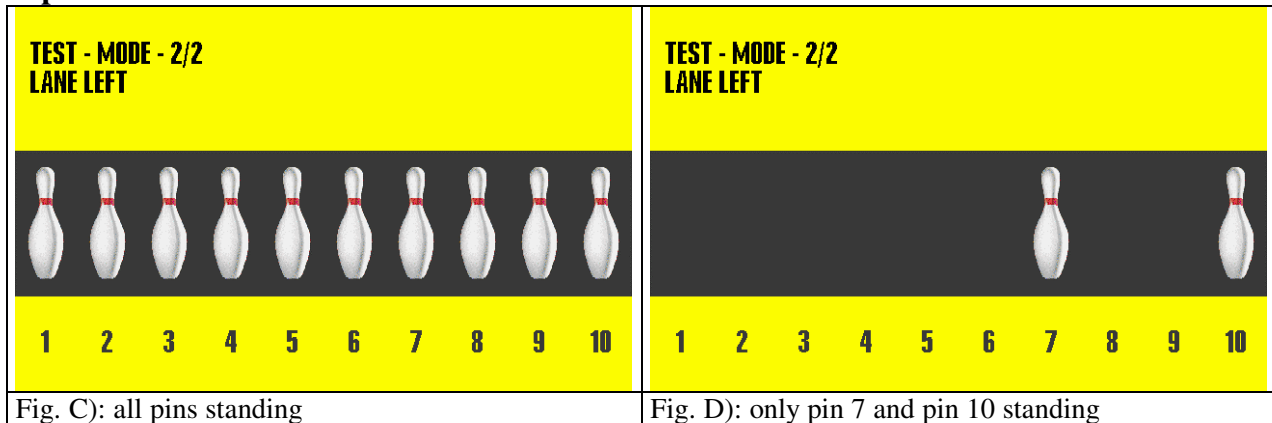
- knock down ALL pins: the screen should prompt the picture below (Fig. A): NO brown square above the dark, memorized squares within the range limitation lines.



Note that the Test in the calibration mode shows an one dimentional picture of the pins standing on the pindeck as seen from the stand point of the CCD camera. The picture refreshing rate is approximately 10 secs.

Continuation of the calibration by pressing:	START
---	--------------

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Exit the calibration procedure by pressing again:	START
---	-------

Repeat the procedure for the lane right.

It is also possible to proceed to the advanced programming of the camera systems:

In the camera TEST MODE press on the left keyboard block:	CORRECTION
---	------------

The left screen shows:

<p>CAMERA SETTINGS V02.56/B//A/A/B/A/A/A</p> <p>qty of cameras : 1</p> <p>correction of pin width : 0</p> <p>deadwood measuring delay : 1.0s</p> <p>pin tolerance deadwood : 50mm</p> <p>distance of photocells : 0.3m</p>	
---	--

CAMERA SETTINGS

Number of cameras	: 1	1 = standard, 4 if DEAD WOOD option
Correction pin diameter	: 0	From -15% to +20%. Normal value = 0
Mesuring delay Dead Wood	: 1.5 s	Measuring delay after the throw
Pin Tolerance Dead Wood	: 40 mm	Parameter according to the pin conditions
..Photocells distance	: 0.3m	Type in value if different as 30 cm

For test continuation, press:	START	and:	START	and:	START	to exit the test mode.
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