

TECMO



Service Instruction Manual

Let "Tee'd Off Putt You Into the Green"



Golf

TECMO

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Warning

All control circuits are composed of IC's, and though they have a long service life, they may be instantly broken in the event of mishandling. So, fully observe the following precautions:

1. Be sure to turn power "OFF" when changing parts or pulling/inserting each connector.
2. Don't use the tester to inspect the PC board, since an IC may be broken due to the tester's internal voltage.
3. Be sure never to expose the PC board to direct rays of the sun.
4. When connecting the connector, be careful so that it is correctly directed.
5. When moving the PC board, use a PVC air mat, bubble wrap, etc., so that the board does not receive a strong shock.

* Players may receive an electrical shock if this game is not properly grounded! To avoid electrical shock, do not plug in the game until it has been inspected and properly grounded. This game should be plugged into only a grounded 3-wire outlet. If you have only a 2-wire outlet, we recommend you hire a licensed electrician to install a grounded outlet. Players may receive an electrical shock if the control panel is not properly grounded! After servicing any parts on the panel, check that the grounding clip is firmly secured to the metal tab on the inside of the control panel. Only then should you lock up the game.

Notice

Parts salvaged from your old game are required to complete your kit. These salvaged parts MUST operate perfectly, or the converted game cannot perform properly or safely. Always repair circuitboard malfunctions and cabinet damage before conversion is attempted.

Before You Begin !!!

'STOP'

Read this entire manual before beginning work on this new video conversion! We have carefully included EVERYTHING needed to make this kit more than just a conversion! When finished, this kit should look, play and earn like a brand new, dedicated, video game. We have painstakingly prepared a FIRST-CLASS complete kit. First things first. Using the KIT CONTENTS page of this

manual, inventory ALL the parts. Make sure you have them all! Next, carefully read all the various sections of this manual because it is filled with very IMPORTANT information. We want this new game to earn money for you as much as you do! So please, read through all the sections and proceed **ONLY** after you fully understand them all.

Suggested Tools

Electric Screwdriver
Wire Cutters
Center Punch
Electric Drill
Hole Bit (Size 1 3/16")
Soldering Iron
Resin Core Solder
Pliers
Phillips Screwdriver
Sand Paper
Semi-Gloss Latex Paint
Windex (or similar)
Squeegee
Knife Razor

Kit Contents

1 — TECMO Printed Circuit Board
1 — Marquee Plex 9" x 24"
1 — Clear Plexiglass
1 — Control Panel Overlay
1 — Player 1 "START" sticker
1 — Player 2 "START" sticker
1 — Shot Select sticker
2 — Side Decals
1 — Wiring Harness
1 — White Button
2 — Red Buttons
3 — Button Switches
3 — Pal Nuts
1 — Instruction Manual
1 — F.C.C. sticker

Description of Game

Tee'd Off is a golf kit manufactured by TECMO Inc. for sale in the United States as a vertical conversion kit that allows you to retro-fit a Birdie King II™ cabinet. Tee'd Off can also be utilized with a Universal cabinet with additional modifications to the control panel, electrical wiring, as further explained in the Cabinet Preparation section of your service manual.

Tee'd Off is a terrific new golf game that utilizes a multi-directional trakball which enables the player complete control of every shot direction. Tee'd Off is a 22 hole golf course with many exciting variables that will keep players interest level high and insure your return on investment!

Included Features

Tee'd Off golf features includes:

- Vibrant hi-resolution color graphics.
- 22 holes of action-packed golfing fun.
- Multi-directional trakball control.
- Split-screen scanner which allows an overview of each hole to be played.
- Variable shot select button which offers the following types of shots:
 Straight — Slice — Fade — Draw — Hook
- 1 & 2 Player select button.
- Variable wind speed and direction.
- Obstacle Course throughout every hole.
- Shot timer which limits the time between player shots.
- Extra golf ball awarded if player is under-par.
- Lose golf ball if player is over-par or gives-up.
- Number of golf balls remains constant if player hits par.
- Continual buy-in feature throughout play.

Wiring Procedures

Installing Interboard Wiring

Disconnect the old wiring harness from the CPU board. Using the schematic drawings from your old game, carefully note the function of each wire. Label the wires if this helps.

Carefully remove all circuitboards and the metal circuitboard panel from the game. Leave the transformer chassis and the power supply braid in the game.

The wiring harness enclosed is made especially for the conversion of a Birdie King II™ cabinet into Tee'd Off™. If you are using the Birdie King II™ cabinet, leave the existing Birdie King II™ harness intact. Plug the finger board on the Tee'd Off™ harness into the 22 pin double-sided connector, making sure the polarizing key is aligned with the slot in the finger board. The coin switches, player 1, player 2, speaker and monitor are now connected. The Tee'd Off™ harness also plugs into the existing trakball assembly. Disconnect the Birdie King II™ connector and plug in the Tee'd Off™ harness. Next, solder the shot select wires to the shot select button. Now wire the power supply.

Wiring To Power Supply

As mentioned in the section POWER REQUIREMENTS, this game uses +5V and +12V DC. Chances are the cabinet you are converting has a properly working power supply that is able to supply these voltages. If not, it is a good idea to install a new, inexpensive 'switching' power supply available from your local distributor. Locate the +5V leads color coded RED, and install them to the proper position on the power supply. Next, locate the +12V leads color coded YELLOW, and install them to the proper position on the power supply as well. Last, position a BLACK ground wire from the harness and connect it. The game is now wired for power.

Ground System

It is highly recommended that a continuous GROUND wire be installed that is connected to every electronic component, such as: shield to, PCB to, power supply to, coin door to, control panel to, etc.

Universal Upright Cabinet

If you decide to wire your Tee'd Off™ kit into a Universal upright cabinet, the following steps are suggested:

Leaving several inches of wire from the old wiring harness at each connector, cut the wires near the game's coin door, monitor, player panel, power supply, and speaker. **DON'T** cut the other side of these same wires (that is, at the CPU-board end).

Following the schematic drawings for your kit, solder the coin door, monitor, control panel, power supply and speaker wires to the new CPU-board harness. Using electrical tape, be sure to insulate all splices.

Notice

If you wish to use a coin meter for your Tee'd Off™ kit, you must change the existing Birdie King II™ coin meter (+12V) to a +5V coin meter. See the Tee'd Off™ coin control wiring diagram for suggested wiring.

Setting the Dip Switches

Now is a good time to set the Tee'd Off™ dip switches. Refer to the "Dip Switch Placement" and "Dip Switch Settings" included in this manual and adjust the game as desired. The PCB is now ready to install into the cabinet.

NOTE: Before you install the FCC cage top you may wish to adjust the sound level. This can be accomplished by turning the VR located on the top board either clockwise or counter-clockwise.

Installing the F.C.C. Cage Assembly

Using screws, mount the bottom of the F.C.C. cage on one of the inside walls of the cabinet.

Next, mount the PCB. Keep in mind the position of the edge connectors.

Plug the new wiring harness onto the new CPU board. Support the harness as necessary with plastic wire guides. Make sure the finger board does not touch any metal surface.

Next, position the F.C.C. cage cover over the Tee'd Off™ PCB and secure it with screws to the cabinet. Make certain there are no wires pinched.

Notice

Make sure that the F.C.C. cage is not mounted near any direct heat sources and is well ventilated.

Thank you for your purchase of a TECMO Inc. Tee'd Off™ kit.

Cabinet Preparation

Cabinet

Inspect your old cabinet for any gouges or objects stuck on the extremity such as chewing gum. Remove all foreign objects and fill in the gouges with any type of quick-hardening wood putty. Sand to make sure the surface is smooth and wipe clean the outside of the old cabinet.

If the decal of this kit does not cover all of the old games graphics, we recommend repainting the outside of your cabinet with an acrylic based semi-gloss paint. This can be applied by either paint brush, roller or spray can. In games that have woodgrain sides, please remove old decals and clean the surface so there is no glue residue remaining on the cabinet.

To apply your new side graphics take a straight edge and make a top guideline roughly where the old graphic started on your game. Lightly moisten the cabinet with spray window cleaner and begin to apply the decal starting at the top working your way to the bottom. After the decal is in place, use a piece of the foam strip that comes in the packing as a squeegee and smooth the sticker down on the surface to remove excess moisture. Please allow 12 hours for your sticker to become permanently adhered to the sides before use.

Marquee Plex

Enclosed in this kit you will find one universal size Marquee underlay and a clear plexiglass sheet. These should be ideal for the cabinet you are converting. Using the old marquee from the previous game, lay it on top of the new one. Be sure that none of the title "Tee'd Off" is excluded before marking it to the proper size. Once this is done, proceed to cut it. Unless you have the equipment to cut the plexiglass safely, we recommend taking it to a local plastics supply to do the job. They usually charge no more than a couple of dollars, and you can insure it will be done right and without breakage. After the plexi is cut, install it!

Now is also a good time to inspect the lighting system. If the bulb(s) is old, replace it! This will insure a 'shining' and bright advertisement to lure paying customers to your newest game.

Control Panel

From the control panel previously removed, take off the old buttons, switches, trakball, and wiring. Strip off the older lexan overlay and any vinyl button stickers. Using sandpaper, prepare the control panel surface until all remains of the previous material are gone. Lacquer thinner may be necessary if glue is still present. Clean the surface with soapy water, and then thoroughly rinse it. Dry the control panel completely!

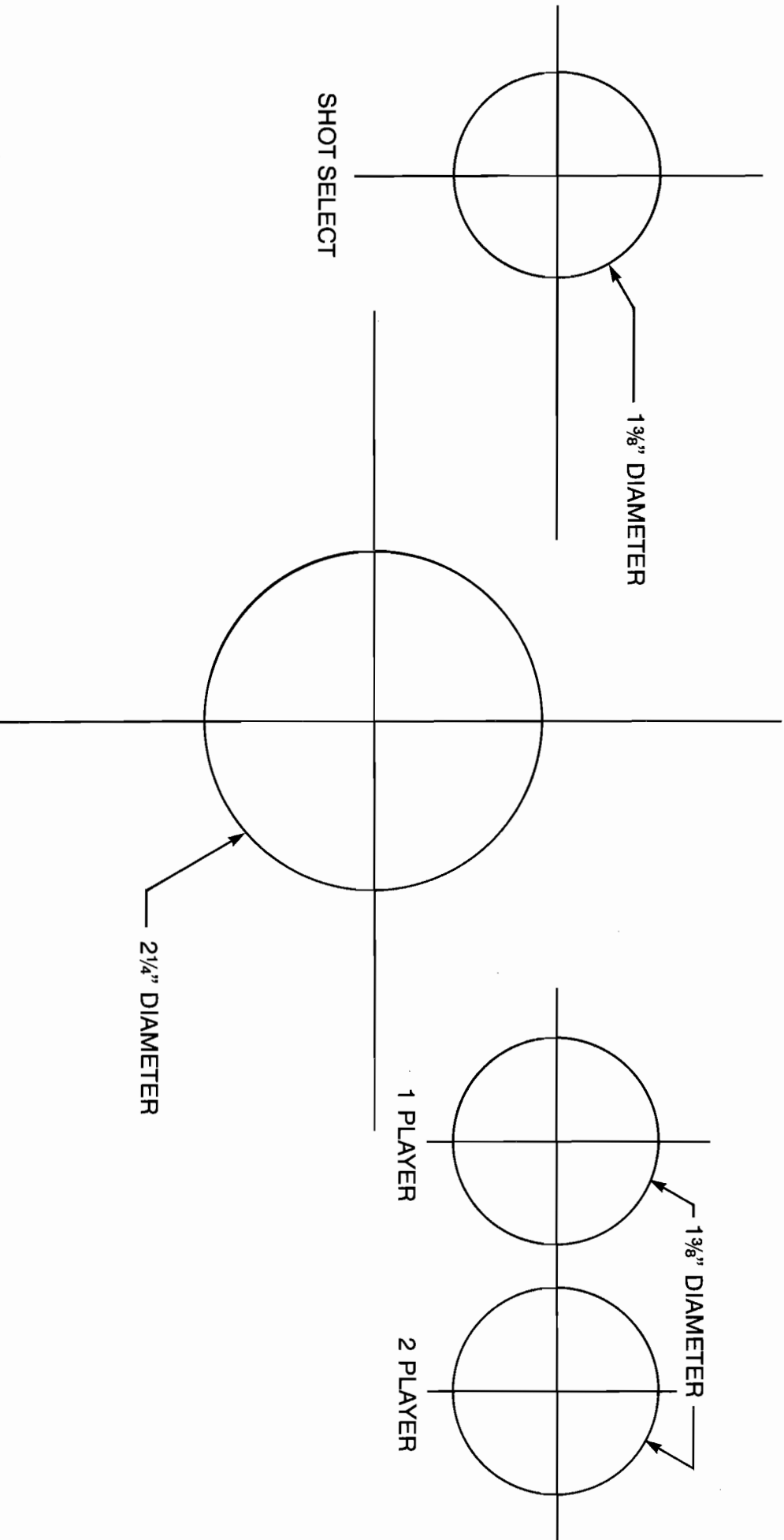
Use the CONTROL PANEL TEMPLATE included in this kit. Lay it on the control panel centering at the trakball location. Leave your existing 1 or 2 player start button holes where they are. Mark the necessary holes, then drill as needed. We suggest plugging any hole that is no longer needed with wood blocks, putty, cardboard or epoxy. Remove the backing from the rear and carefully place the control panel overlay over the control panel, being careful not to get any air bubbles in the vinyl when it's applied.

After the control panel is securely on, with an exacto knife or razor blade carefully cut out holes on the control panel. Next install the button stickers on the control panel in their proper locations. Replace the buttons on the control panel and tighten them down. Return the control panel to the game for the next step in the kit process.

Notice

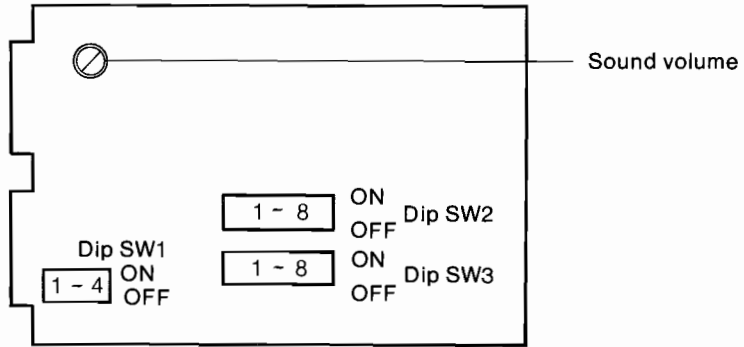
Refer to the control panel layout for suggested placement of button switches and control trakball. Make sure that the control panel is on straight.

Control Panel Layout



Dip Switch Settings

• Position of Dip SW



• Setting for Dip SW

	1	2	3	4	5	6	7	8
Dip SW1	Unused				/			
Dip SW2	Coin/Credit				Unused	Cabinet Type	Demo Sound	
	Coin 1	Coin 2						
Dip SW3	Initial Number of Balls			Ball Extend	Add. Balls	Difficulty		

• Dip SW(2)

	SW	1	2	3	4
	1 Coin - 1 Play	Off	Off		
	2 Coin - 1 Play	On	Off		
	1 Coin - 2 Play	Off	On		
	1 Coin - 3 Play	On	On		
	1 Coin - 1 Play			Off	Off
	2 Coin - 1 Play			On	Off
	1 Coin - 2 Play			Off	On
	1 Coin - 3 Play			On	On

Coin/Credit

	SW	5	6
Unused		Off	Off

Unused

	SW	7
Cocktail		Off
Upright		On

Type of Cabinet

	SW	8
Demo Sound		Off
No Sound		On

Demonstration Sound

• Dip SW(3)

	SW	1	2	3
3		Off	Off	Off
4		On	Off	Off
5		Off	On	Off
6		On	On	Off
7		Off	Off	On
8		On	Off	On

Initial Number of Balls

	SW	4	5
2 (Moderate)		Off	Off
1 (Easy)		On	Off
3 (Difficult)		Off	On
4 (More Difficult)		On	On

Ball Extend Option

Option Number	2	1	3	4
+1 (Bogey)	1	1	1	2
+2 (Double Bogey)	2	1	2	3
+3 (Triple Bogey)	2	2	3	4
+4	3	3	4	4
Give Up	4	4	4	4

Scoring for Ball Extend Option

NOTE: Numbers represent the number of balls subtracted from your score for the corresponding shot.

	SW	6
Sub-Par		Off
Sub-Par + 1		On

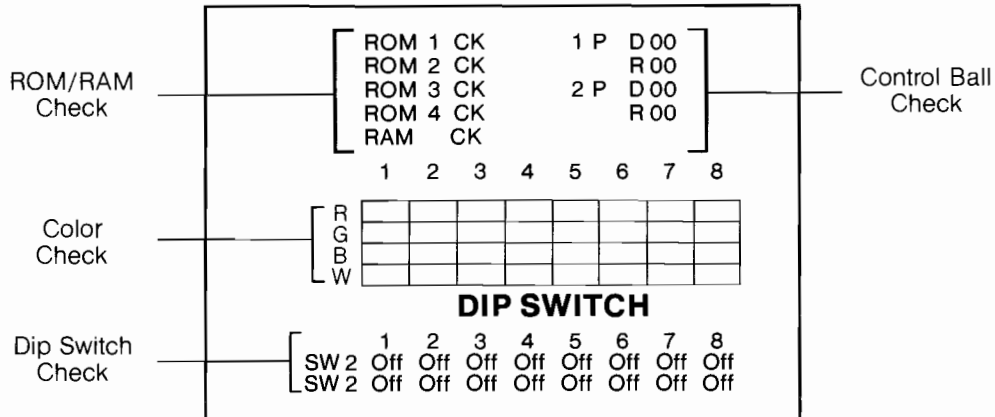
**Additional Balls
for Sub-Par Play**

	SW	7	8
2	(Moderate)	Off	Off
1	(Easy)	On	Off
3	(Difficult)	Off	On
4	(More Difficult)	On	On

**Difficulty:
Stength of Wind
Direction of Wind
Number of Trees**

Display Check

After turning the power on, the following display check should be viewed. The display shows for 4 seconds. Push the shot select button for continued viewing.



Dip Switch Check

Check the dip switch settings. Adjust as desired. (Push the shot select button once more and the screen will change to a cross hatch.)

ROM/RAM Check

If a ROM or RAM fails, "ERROR" will be displayed. If this occurs, it must be replaced.

Control Ball Check

Spin the trakball to check both "Direction" (left, right, up, down) and "Revolution".

Cross Hatch Check

The cross hatch check will be displayed for 4 seconds. Push the shot select button for continued viewing. Push one more time for game demonstration.

Wiring Diagram

TV-Blue	1	2	B
	3	4	G
TV-Green	5	6	R
TV-Red	7	8	Bk
GND	9	10	W
TV-Sync	11	12	
	13	14	
	15	16	
	17	18	
	19	20	
	21	22	
	23	24	
	25	26	
	27	28	
	29	30	
	31	32	
	33	34	
	35	36	

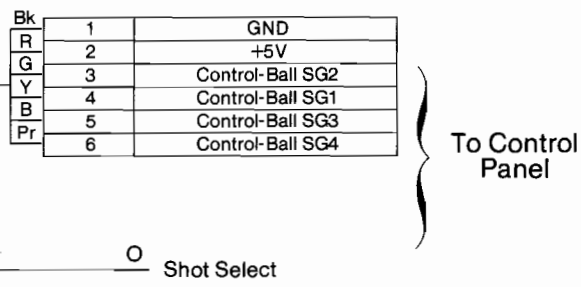
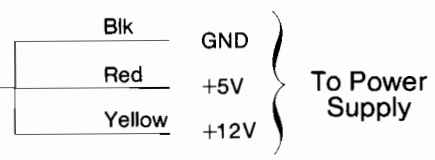
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	1	A	
R	2	B	TV-Red
Bk			GND
G	3	C	TV-Green
B			TV-Blue
W	4	D	TV-Sync
	5		Sound (+)
Y			Sound (-)
G	6	F	Key Slot
	7		
Pr	8	H	Coin In
	9	J	
	10	K	
	11	L	
Br		M	
W/R	12	N	1 Play Start
			2 Play Start
	13	P	
	14	R	
	15	S	
	16	T	
	17	U	
	18	V	
	19	W	
	20	X	
	21	Y	
	22	Z	

Br	Brown
R	Red
O	Orange
Y	Yellow
B	Blue
Pr	Purple
W	White
Bk	Black
W/R	White/Red
G	Green

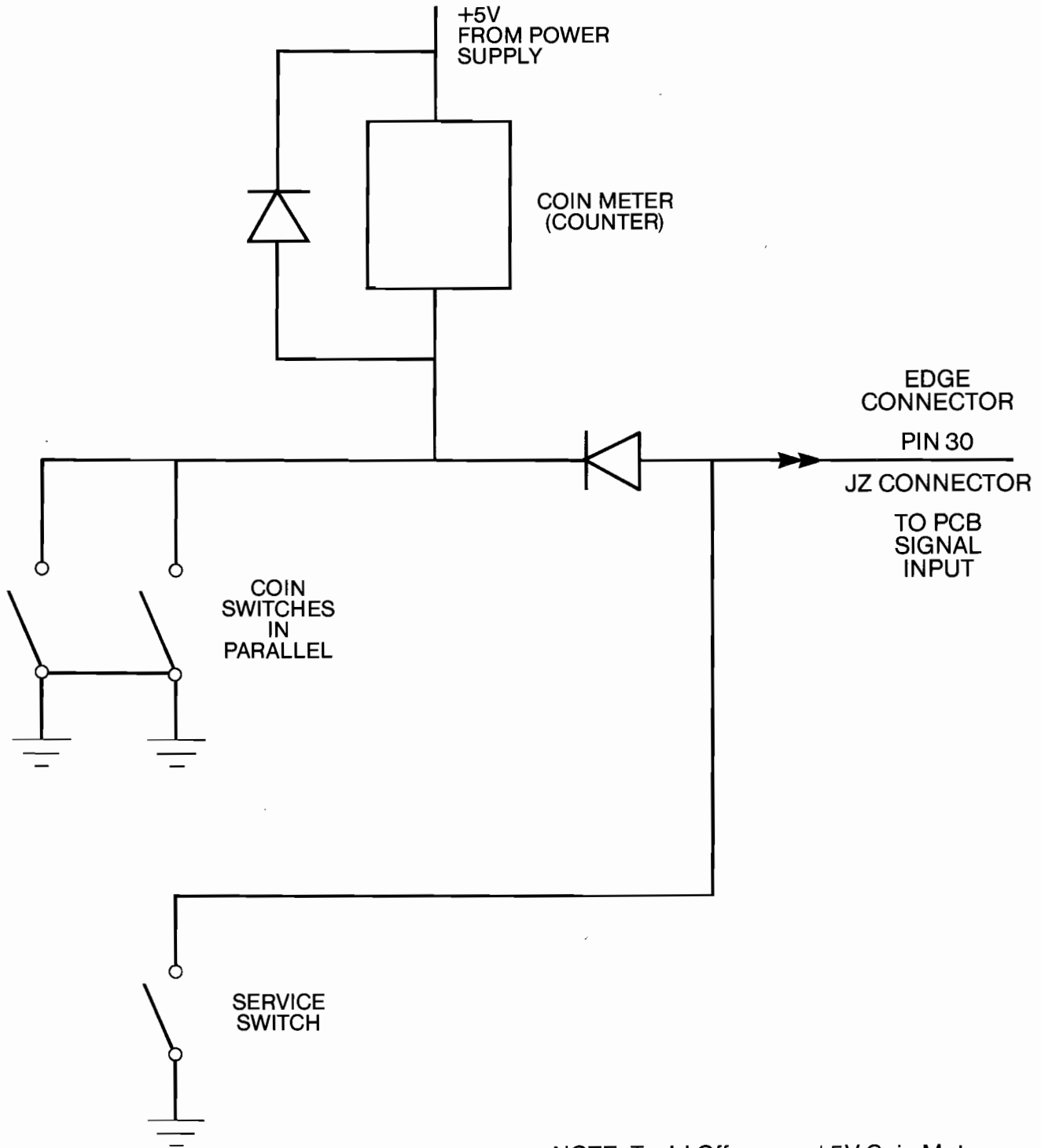
GND	1	Bk
GND	2	Bk
GND	3	Bk
	4	
+5V	5	R
+5V	6	
	7	
+5V	8	R
+12V	9	Y
+12V	10	Y
Sound (-)	11	G
Sound (+)	12	Y
Control-Ball SG2	13	G
Control-Ball SG1	14	Y
Control-Ball SG4	15	Pr
Control-Ball SG3	16	B
	17	
	18	
	19	
	20	
	21	
	22	
	23	
2 Play Start	24	W/R
	25	
	26	
1 Play Start	27	Br
Shot Select	28	O
Coin In	29	Pr
	30	
	31	
	32	
	33	
	34	
	35	
	36	

J2 Kel 1150N-036-009



Tee'd Off™

Coin Control



NOTE: Tee'd Off uses a +5V Coin Meter

Notes

Notes

Power Requirements

The TECMO printed circuit board included in this kit requires +5 voltage and +12 voltage. The +5 voltage should be exactly 5V for this P.C.B. 5.2V is OK, but use no higher than this and not lower than 5.0V. This should be rated at 5 amps. +12V should be rated at 1 amp.

Monitor Requirements

This TECMO printed circuit board requires interfacing with NEG (-) composite sync. Most monitors have provisions for composite sync. Some monitors require that the vertical and horizontal negative sync be tied together in order to achieve a composite signal. For best results consult the monitor manufacturer or the distributor service department where this kit was purchased.

NOTE: Tee'd Off™ uses a vertical monitor.

Service Information

TECMO, INC. guarantees this product to be free of defects for a period of 30 days after purchase. TECMO will repair or replace this product upon our inspection. Proof-of-Purchase may also be required. If you have any questions, please call our out-of-state WATS number at 1 (800) 457-6050. Or write to: TECMO, Inc., 18010 South Adria Maru Lane, Carson, CA 90746