



Dynamo Hockey Service Manual and Instructions

See the full Valley Dynamo product line at
www.valley-dynamo.com

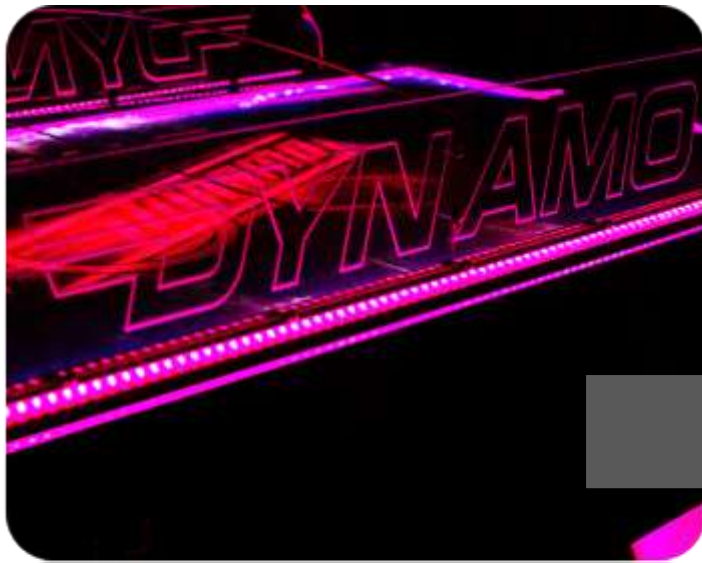


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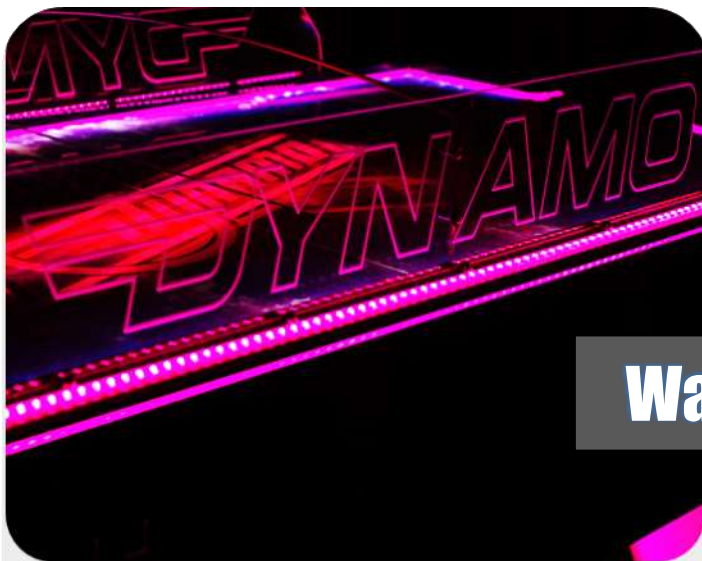




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This manual is part # 850400400



Warranty Details

Valley-Dynamo warrants its new products to be free from defects resulting from faulty manufacture or faulty components under the following terms and conditions:

WARRANTY LENGTH

One year on Dynamo® Hockey tables. **90 days** on Replacement Parts

FOR WARRANTY SERVICE

Valley-Dynamo will, at its sole option, repair, upgrade or replace this product in the event of any defect in materials or workmanship during the warranty period. This shall be Valley-Dynamo's sole obligation, and the customer's sole remedy, for any warranty claim.

Valley-Dynamo will request and you must provide the **complete Model Number & Serial Number of the unit** (not just the last 5 digits), or other proof of purchase such as an invoice or receipt.

OPERATORS AND END USERS – While our Tech Support staff is available to assist with diagnosis and troubleshooting of your problem, contact your Distributor for Warranty Service on your equipment.

DEALERS AND DISTRIBUTORS – To obtain replacement and an RMA number, contact Valley-Dynamo referencing the Model number and Serial number of the unit and the nature of the problem. Valley-Dynamo will, at its discretion, send replacement parts and/or issue an RMA for the return of failed parts. To avoid billing issues, request an RMA when the failed part is present or readily available. Credit will be issued only upon receipt and inspection of the RMA. Valley-Dynamo may send replacement parts or issue an account credit. NO REFUNDS. Valley-Dynamo reserves the right to cancel outstanding RMAs 30 days after issue. Items returned without an RMA will not

be inspected or credited and may be refused or returned at Customer Expense.

REPLACEMENT PARTS COVERAGE – Valley-Dynamo warrants replacement parts for 90 days from the date of purchase. To obtain a replacement and an RMA number, contact Valley-Dynamo referencing the nature of the problem and provide proof of purchase. Valley-Dynamo will, at its discretion, send replacement parts and/or issue an RMA for the return of failed parts. To avoid billing issues, request an RMA when the failed part is present or readily available. Upon receipt and inspection of the RMA, Valley-Dynamo may send replacement parts or issue an account credit. **NO REFUNDS**. Valley-Dynamo reserves the right to cancel outstanding RMAs 30 days after issue. Items returned without an RMA will not be inspected or credited and may be refused or returned at Customer Expense.

SCOPE OF COVERAGE

Note that our warranty is not an unconditional guarantee for the duration. Dynamo products are made to our exacting standards and known for their durability, but are not indestructible and may require periodic maintenance in order to function properly. The following are not covered by the warranty.

- 1) Shipping or transport damage
- 2) Normal wear and tear
- 3) Damage or deterioration resulting from neglect, misuse, accident, liquid spills, improper installation, abuse, pets, burns or mishandling

Hockey Playfields - The most frequent cause of warpage or laminate separation on a playfield is a liquid spill. Liquid spills are not a covered warranty failure. If warranty failure is suspected, for evaluation Valley-Dynamo will require return of the damaged playfield or at minimum at least 12 square feet (4' x 3') of the damaged section. No credit will be issued for a Playfield damaged by a liquid spill, or for incoming or outgoing freight for the replacement or returned playfield.

- 4) Incidental or consequential damage (except at Valley-Dynamo's discretion).
- 5) Removal or installation charges.
- 6) Shipping charges except at Valley-Dynamo's discretion.
- 7) Unauthorized modification of the product.
- 8) Use of this product with unapproved parts, conversion kits or accessories.
- 9) Damage from fire, flood, lightning or other acts of nature (Valley-Dynamo recommends using a surge protector)


EXCLUSION OF DAMAGES

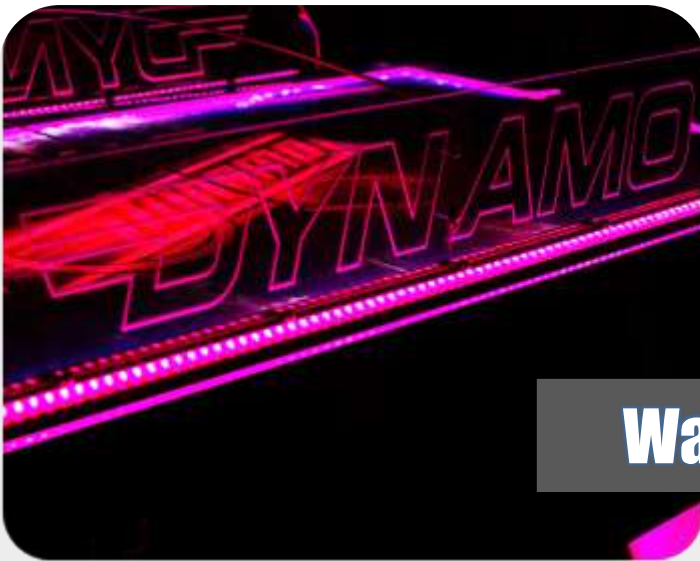
Valley-Dynamo's sole obligation and liability under this warranty is limited to the repair or replacement of a defective product at our option. Valley-Dynamo shall not, in any event, be liable for any incidental or consequential damages resulting from interruption of service, loss of business or revenue, or for liability in tort relating to this product or resulting from its use or possession.

LIMITATIONS OF IMPLIED WARRANTIES

There are no other warranties, expressed or implied, including but not limited to those of merchantability, revenue generation, or fitness for a particular purpose. The duration of implied warranties is limited to the period specified in the Warranty Length section above.

TO OBTAIN TECHNICAL SUPPORT Please check the resources at www.valleydynamoparts.com or contact **TECHHELP@valley-dynamo.com**.

EU Declaration of Conformity	
In accordance with ISO/IEC 17050	
Valley Dynamo DoC#: 0001	
Manufactured and Distributed by: Valley-Dynamo LLP 7115 Belton Street Richland Hills, TX 76118	
Amusement Machine, Model DH-100 Air Hockey Table, is compliant with the CE directives and standards listed below.	
<u>Directives:</u> Electromagnetic Compatibility (2014/30/EU) Low-Voltage (2014/35/EU)	
<u>Standards:</u> EMC Immunity: EN/IEC 61000-6-1:2016 EMC Emissions: EN/IEC 61000-6-3:2011 Appliance Safety: EN/IEC 60335-1:2014 Amusement Machine Safety: EN/IEC 60335-2-82:2017	
This product was tested by an ISO 17025 accredited laboratory and was manufactured using an internal quality system.	
By 	Signature <u>9-11-19</u> Date
Mike Prendergast Technical Manager Valley-Dynamo LLP, USA	



Warnings and Notices

USE OF NON-DYNAMO PARTS OR CIRCUIT MODIFICATIONS MAY CAUSE SERIOUS INJURY OR EQUIPMENT DAMAGE! USE ONLY GENUINE DYNAMO AUTHORIZED PARTS.

- For safety and reliability, substitute parts and modifications are not recommended.
- Substitute parts or modifications may void FCC type acceptance.
- Use only authorized components and parts. Failure to do so will void warranty and may result in incorrect and/or unsafe operation.

WARNING

- Plug this game into a properly grounded outlet to prevent shock hazards and assure proper game operation.
- Do not use an adapter plug to defeat the power cord's grounding pin.
- Do not cut off ground pin.

Information in this manual is subject to change without notice. Dynamo reserves the right to make improvements in the equipment function, design or components as process in the engineering or manufacturing methods may warrant.

FOR GENUINE DYNAMO PARTS AND SERVICE CONTACT YOUR LOCAL AUTHORIZED DYNAMO DISTRIBUTOR.

PARTS CAN ALSO BE ORDERED AT VALLEYDYNAMOPARTS.COM

**For Standard US Tables:
120v AC - Frequency : 60Hz – Amps : 5A**

These values can vary on export tables based on your country's requirements. Refer to labeling on table or contact Valley-Dynamo Tech Support



Assembly Instructions

Congratulations on purchasing a Dynamo Hockey table - the finest professional grade hockey table on the market.

BE SAFE: it is strongly recommended that you have at least two people to safely set up our hockey tables.

Lay the box flat on the floor, mindful of the section labeled "This Side Up." Cut the banding straps and remove the top portion of the box completely. Lower the sides of the box bottom by cutting or tearing vertically at all of the corners.

ON COIN TABLES: The keys for the goal end, coin door and access/service door are located in the coin return.

ON NON-COIN TABLES: The keys for the goal end and access/service door are found on the playfield pad, under the cardboard. Check packing material before discarding!

Open the service door to remove your pucks, mallets, sandpaper and manual.

The hockey table should now be carefully lifted onto its side (the coin housing assembly is on the opposite side, and will be pointing towards the ceiling when the table has been lifted). This procedure should be accomplished by two people tilting the table from the ends, **not lifting from one side. The table could land on you and cause injury if you lose your grip while lifting the table from its side.**

Removal of the legs and set up.

1. Using the access door key, open the access door on the bottom of the table.
2. Using a ½" socket or wrench, remove the bolt and woodblock that secures the legs during shipping.
3. Pull the legs on the right side out of their holding bracket and then push them up at a 45-degree angle. Then pull one leg out at a time from the left side. Next remove both right legs. This step is necessary due to the blower motor.
4. Replace the wooden block and bolt that secured the legs for future use.

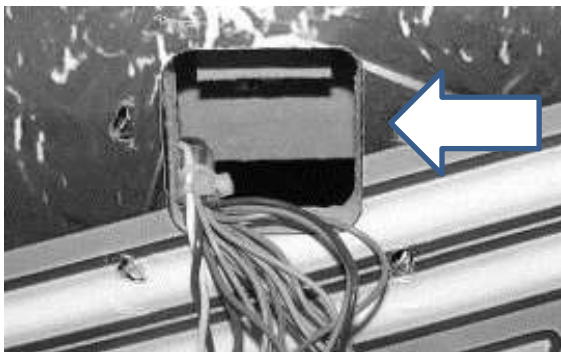
5. Replace the trap door and lock it.
6. Bolt the legs onto the bottom of the table using a ½" socket wrench or straight slot screw driver.
7. Screw the leg leveler completely into the legs and turn the table upright.
8. Position and level the table, using an adjustable wrench.

For removal and storage of the legs follow steps 1-6 in reverse order.

Fire Storm and Short Shot tables include side shields. They can be found inside the box with the table. Side Shields are available as an accessory for all Dynamo coin and Pro Style tables. Install the shields at this time if needed.

If your table is equipped with an Overhead Lighting and Scoring unit, install the unit at this time using the instructions included with the unit.

If your table is not equipped with an Overhead, it should come with a side-mount scoring unit.



On the OPPOSITE SIDE of the table from the coin door and service door, at the center line of the playfield, is this square opening, surrounded by four holes.

The three connectors used for the side mount display are attached to the side of the table with removable tape. Plug these connectors into the Display Unit

Align the display unit housing with the center bolt in the aluminum top rail, conceal all exposed wiring inside the table cavity, and attach the housing to the wood using the screws and washers provided.

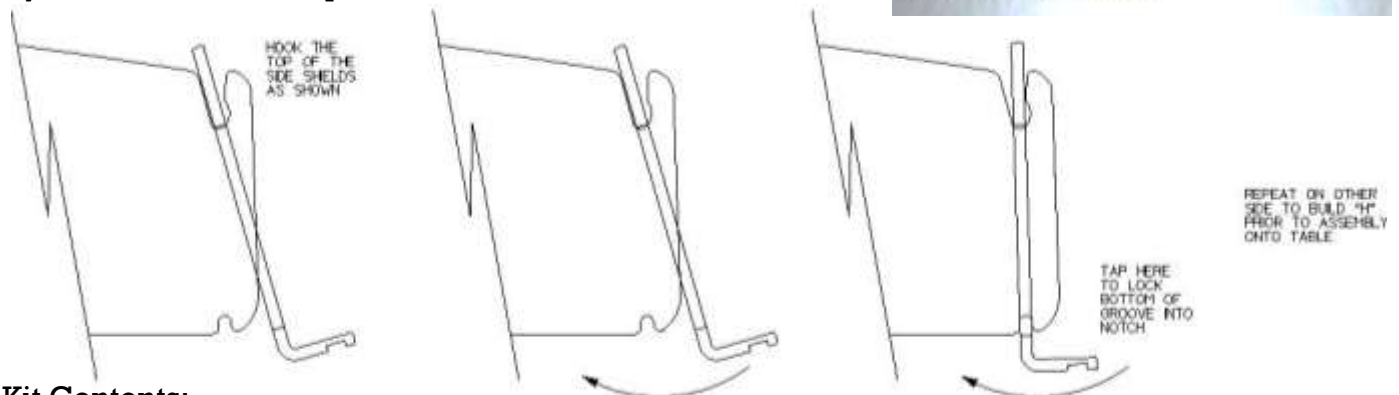
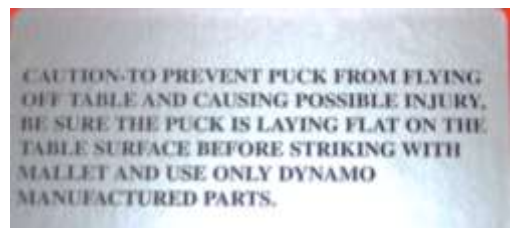
Open the access door and locate the power cord which is coiled and lying on the floor of the access area. Locate the hole in the floor and feed the cord through this hole. Near the coin door is a label indicating the operating voltage of your table. Note also that your outlet must have a working ground. Do not attempt to bypass the grounding feature of your outlet. Plug the table in after verifying that the voltage is correct.

Located in the access area of coin hockey tables is a toggle switch labeled "on" and "off." You will now need to toggle this switch into the "on" position. At this point the side-mount display unit will illuminate.



Side-Shield Installation

Dynamo's 3-piece Shield set will help to keep the puck on the table and discourage the placement of drinks on the table's side rails. While it will create a safer environment, no shield has been invented that will keep every puck on every playfield every time. Exercise caution during play, keep hands and fingers clear of the playfield, and follow the instructions from Dynamo Caution Label, part # 850404030



Kit Contents:

- Side Shields 2
- Center Shield 1

1. Snap the side shields into the center shield as shown above to form a single H-shaped unit
2. Remove the bolts from the Side Top Rail, except for the bolt at the very end of each Rail.
3. On any table with LED rail lighting, align the Side Shield over the LED light strip, so the lighting is inside the groove of Side Shield.
4. Mount with the flange of the Shields to the outside.
5. Re-install the Top Rail bolts previously removed





Rules of Play

SCORING

- The first player to score 7 points wins the game.
- A point is scored when the puck enters **and falls into** the goal.
- After a point is scored, the player scored upon receives possession of the puck for the next serve.

CENTERLINE

- If any part of the puck is on the centerline, either player may hit it. If the puck is completely within one player's half of the table, not touching the centerline, the opposing player may **not** hit it. Violation of this rule constitutes a **foul** (forfeiture of possession of the puck).
- It is a foul if a player's mallet **completely** crosses over the centerline.

PUCK OFF THE TABLE

- When a player offensively strikes the puck and causes it to leave the playing surface, that player is guilty of a **foul**.
- If, however, the puck leaves the table while a defensive player is **blocking** a shot, by moving his mallet sideways, backwards, or not at all, the **offensive** player is guilty of a foul and the defensive player gets a possession of the puck.
- If the defensive player charges **forward** to block a shot, and the puck leaves the table, the defensive player commits a foul and loses possession of the puck.

LOSS OF Mallet

- It is a foul for a player to lose total control of his mallet.
- It is a foul for a player to "top" the puck by lifting his mallet and placing it on top of the puck.
- It is a foul when a player's hand, body or clothing touches the puck while the puck is on the table and in play.

GOAL TENDING

- If a player's hand, body or clothing touches the puck while the puck is moving in a direct path toward that player's goal, "goaltending" must be called. Goaltending constitutes a **technical foul**, which allows the opponent a **free shot** at the penalized player's unprotected goal.

7 SECOND RULE

- A player has 7 seconds to execute a shot, which crosses the centerline.
- The 7 seconds begins as soon as the puck enters and remains on that player's side of the centerline. Violation of this rule is a foul.

FOULS

- If a player commits a foul and is scored upon in the course of the same play, the goal counts and the penalty is nullified.
- If a foul occurs and the innocent player immediately gains possession of the puck anyway, the referee should simply allow play to continue and not interrupt the game.

MALLETS AND PUCKS

- Mallets and pucks must meet standards and requirements of the U.S. Air-Table Hockey Association.

TOURNAMENT PLAY

- Tournament play shall begin with a coin toss. The winner has the option of the first serve or choosing which end of the table he prefers. Players then alternate first serves **and** table sides for each subsequent game of that match.

REFEREE

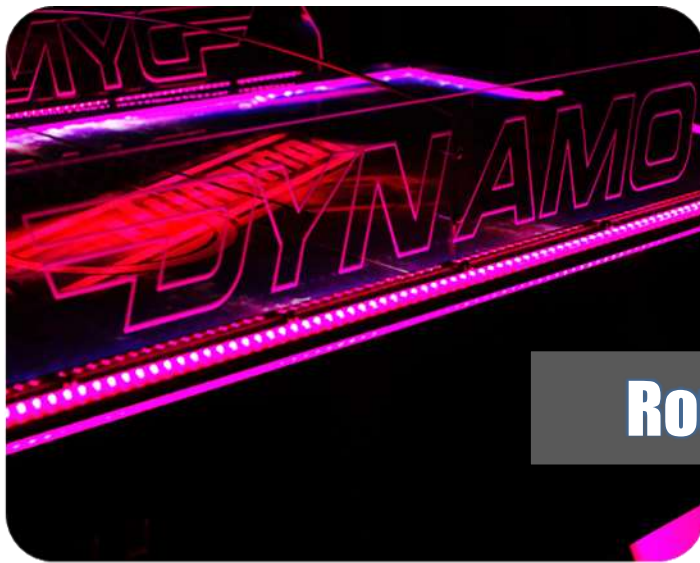
- A referee should judge each game in tournament play.

FACE-OFF

- A face-off should be used in a case where the referee is unable to determine which player committed the foul. The puck is placed flat at the center of the table, with the player's mallets allowed no closer than 1/2 inch from the puck. When the referee releases the puck, both players may hit it.

PENALTIES

- A player committing a **Foul** is penalized by loss of possession of the puck.
- A **Technical Foul** allows the penalized player's opponent one **free shot** at the player's unprotected goal. If the free shot misses, the puck is immediately in play.



Routine Maintenance

Follow these suggestions to insure your table's maximum earning power and player appeal over the years to come.

PUCKS AND MALLETS: Special pucks and mallets are made for Dynamo Hockey. The pucks and mallets you receive with your table are superior to any others available. It is extremely important to use the highest quality pucks and mallets if your table is to play properly and achieve maximum earnings.

It is important to avoid the cheaper, imported pucks, which are slower, lighter, chip more easily, and tend to fly off the table, resulting in loss of play time, player dissatisfaction, and loss of earning. Because of their inherent instability (i.e.: flying off of the table), there is a risk of player injury when the cheaper pucks are used.

Fluorescent puck: The Dynamo Fluorescent puck (860400090) is made of glass-filled Lexan and was developed specifically for the Dynamo Hockey table. This deluxe puck had been designed and tested for superior speed, visibility, durability and stability on the table. The fluorescent Lexan puck is the best puck on the market and we highly recommend its use to insure a high level of earnings and player appeal.

White quiet puck: Also available is our white quiet puck (860400150) made from a softer, noise-reducing material. The quiet puck is recommended on Cosmic Thunder and in situations where noise reduction is a necessity.

Fluorescent mallets: Our deluxe mallets (860400210) were designed to give the puck the maximum rebound yet absorb the impact and keep it away from the players' hands. This took years of testing and balancing of the chemical formula to get it right. It seems unimportant, but the sooner a player's hands are hurting the sooner they stop playing. This mallet will also outlast the lightweight imports many times over. Be sure to look for the Dynamo logo on your mallets.

The Dynamo approved pucks and mallets are available from a number of parts distributors as well as www.valleydynamoparts.com. Be sure to specify the Dynamo Deluxe pucks and mallets. We have added our logo to help identify them for you.

SANDPAPER: A piece of adhesive-backed 240-grit sandpaper (980400200) has been included with your table. This should be attached to the side or end of the table, or nearby, so players can sand the puck when it stops floating properly due to small nicks and abrasions. Do not attach the sandpaper to the back of the metal goal end where it could damage clothing. Sandpaper discs (980400200) can be obtained from www.valleydynamoparts.com, Dynamo distributors, a hardware store, or from one of the parts companies supplying this industry. Sandpaper, like pucks and mallets, should be replaced when showing excessive wear.

CLEANING: Excessive dust on the surface of your table will slow the puck significantly. To prevent this, the table should be cleaned once a week -- more often if necessary. We highly recommend rubbing alcohol (isopropyl alcohol) to clean the plastic laminate surface. Liquid window cleaners are also acceptable. Always clean the plastic laminate surface with the air on to ensure that the cleaning process does not force the dirt down into the air holes. Use a small amount of the cleaning solution on a clean paper towel to clean off the dust and dirt. Regular cleaning and maintenance of the playing surface can prevent the holes from becoming plugged.

On a yearly basis, check the condition of the air holes. If any debris has been forced down into the air holes, it can be removed with the following method: With the air ON, use a Dremel Moto-tool or equivalent, with a 1/32" drill bit. Slowly insert the rotating drill bit into the hole. This will cause the debris to "ride" up the grooves on the drill bit and out onto the playing surface. Do not use a pushpin to simply push the debris down into your table.

When cleaning the table surface, do not clean off the side rails where the puck hits. The thin layer of dirt helps the puck bank properly and keeps it on the table.

***NEVER USE SILICONES, WAXES, OR ANY OTHER PRODUCT THAT
COULD LEAVE A RESIDUE ON THE PLAYING SURFACE.
THE USE OF THESE PRODUCTS WILL CAUSE A BUILDUP
OF DEBRIS IN THE AIR HOLES.***

You may use Silicone Spray on the Cosmic Thunder's polycarbonate playfield ONLY

LIQUIDS: There should be no drinks placed on the table. Ever. Any liquid spilled on the surface must be wiped up immediately. Large amounts of any liquid can seep down the holes and into the wood, which will warp the playing surface. We recommend prohibiting drinks from being placed on the table at any time. Side shields are effective in discouraging customers from putting drinks on the table.



Operation and Programming

The following applies to all Dynamo Hockey games, regardless of logic board type.

POWER UP:

Onboard diagnostics begin as soon as your Dynamo Hockey table has been powered up. These diagnostics verify the correct functioning of the processor internal RAM and determines that the onboard timer/counter is functioning correctly. At this point, your display will show an "8" on the left segment of the score display.

If the board diagnostics pass, both I/O ports (coin switch and score optics) are then checked. Upon successful completion of this process, an "8" on the right segment of the score unit will flash once.

**If the "8" lights and stays lit, the diagnostics did not pass.
In this event, refer to the Troubleshooting chapter of this manual.**

ATTRACT MODE:

The A/C blower motor and goal solenoids are turned off.

The last game's score (if any) and the current number of pending credits (if any) are shown on the score display, as follows:

The last score (if any) is displayed for three seconds.

The letter "c" (for credits) is flashed briefly once.

The number of credits (if any) is displayed for three seconds.

If there are no pending credits, this cycle will repeat until a coin drop is detected.

If there is a pending credit in place, the game will automatically start after cycling through the attract mode once.

GAME PLAY MODE:

The A/C blower motor and the puck drop solenoids are activated for the duration of the game. The timer countdown is started, and the score display is reset to "0."

Each puck drop detected is a score awarded to the appropriate player. When either player reaches a score of 7, or the timer reaches its preset value, the game is over and the system returns to Attract Mode.

Any coin drops are accepted at any time, including during the Game Play Mode.

ADJUSTABLE TIMER:

Your Dynamo Hockey table is equipped with a length-of-game timer, which may be adjusted between one to sixteen minutes. The default setting for this timer is seven minutes. Since the average game ends within three to four minutes, this setting is usually adequate, but the timer may be adjusted to meet your requirements. Refer to section 4.0, "Logic System Type Determination" to indicate which instruction set should be followed to adjust the timer duration on your Dynamo Hockey table.

COIN COUNTER:

Your Dynamo Hockey is equipped with a coin counter. This counter is advanced once for every credit detected.

Dynamo Hockey

v7.2 Program Configuration

U.S. 110v tables

To change the default values

- Hold down the ACCESS button, the scoring display will count down from five and display the letters PE (Parameter Entry)
- Release the ACCESS button after the countdown and the menu system has been accessed
- Change values for each setting using the "VALUE" button. Press the "ACCESS" button to move to the next configurable setting.
- When all configurable values have been set, the program exits the setup routine and the values have been stored.

· SC Maximum score (for a player) per game

- Default Value 7
- Minimum Value 2
- Maximum Value 9

· LE Maximum time in minutes a game will run

- Default Value 7 minutes
- Minimum Value 0 (score setting determines game length)
- Maximum Value 16 minutes

· CC Coins per credit

- Default Value 1
- Minimum Value 1
- Maximum Value 8

· PC Plays per credit

- Default Value 1
- Minimum Value 1
- Maximum Value 3

To Set Software Defaults

User should hold down the VALUE button in the PC Board when powering up the game. The LED display flashes "FP" (Factory Parameters) when the system defaults have been set. After "FP" has flashed, the display continues into startup mode. At this point you are done setting the defaults.

Dynamo Hockey

v9.02 Program Configuration

U.S. 110v Tables with sound

Setting Software Defaults

- To set the table to Factory Defaults, hold down the 'VALUE' button on the PC Board while powering up the table. After the usual startup check display of '88', the LED display flashes 'FP' (Factory Program). Releasing the 'VALUE' button starts the program using Factory Default values.
 - To change the Default Values of the game, the user should hold down the 'ACCESS' button while the table is ON. A countdown from 5 to 1 begins on the LED display, followed by 'PE' (Program Edit). Release of the 'ACCESS' button before 'PE' is displayed will restart the game and not access the edit mode. Release of the ACCESS button when 'PE' is shown will display the TITLE of the first configurable setting for one second, followed by its value. The value may be changed by, not surprisingly, pressing the 'VALUE' button. The value increases with each push of the 'VALUE' button up to the maximum shown in the table below, and then returns to the minimum value. Pressing 'ACCESS' again will display the next value to view or change. At the end '- -' will be displayed.
- **SC Maximum score (for a player) per game**
 - Default Value 7
 - Minimum Value 2
 - Maximum Value 9
 - **LE Maximum time in minutes a game will run**
 - Default Value 7 minutes
 - Minimum Value 0 (score setting determines game length)
 - Maximum Value 16 minutes
 - **CC Coins per credit**
 - Default Value 1
 - Minimum Value 1
 - Maximum Value 8
 - **PC Plays per credit**
 - Default Value 1
 - Minimum Value 1
 - Maximum Value 3
 - **SO Sound on and off**
 - Default Value 1
 - Minimum Value 0 (= off)
 - Maximum Value 1 (= on)

HI Number of rail hits per sound *(Example: a setting of 3 allows a rail shot sound on every 3rd shot, a setting of 1 allows a sound on every rail shot. This keeps the table from making too much sound, if desired)*

- Default Value 1
- Minimum Value 0 (no strike sound)
- Maximum Value 5

· **At Attract Sound Spacing (in minutes)**

- Default Value 1
- Minimum Value 0 (no attract sound)
- Maximum Value 5

· **St Start Button (not found on coin operated games)**

- Default Value 0
- Maximum Value 1

· **tt For games with ticket printers only**

- Default Value 0
- Minimum Value 0 (tickets print at game end)
- Maximum Value 1 (tickets print when goal scored)

- User can control the Background sounds (crowd sounds and demo music) using the Background volume control
- User can control the Effects sounds (rail shots, coin drop sounds, scoring, etc.) using the Effects volume control
- User can control the Rail Shot sensitivity using the VR1 potentiometer on the board.

Dynamo Hockey

v10.0 Program Configuration

U.S. 110v Tables with LED features

- To set the table to Factory Defaults, User should hold down the 'VALUE' button on the PC Board while powering up the table. The LED display flashes 'FP' (Factory Program). Releasing the 'VALUE' button starts the program using Factory Default values and returns the display to the attract mode cycling 0-0, and 0.
- To change the Default Values of the game, the user should hold down the 'ACCESS' button **for six seconds** while the table is ON until the countdown begins on the display panel, from 5 to 1 followed by 'SC' (the first menu item). Release of the 'ACCESS' button before 'SC' is displayed will restart the game and not access the edit mode. Release the ACCESS button when 'SC' shows to access the menu system
- Change values by, not surprisingly, pressing the 'VALUE' button. The value increases with each push of the 'VALUE' button up to the maximum shown in the table below, and then returns to the minimum value. Pressing 'ACCESS' again will display the next value to view or change. At the end the display to the attract mode cycling 0-0, and 0.
 - **SC - Score to win**
 - Default Value: 7
 - Min Value: 2
 - Max Value: 9
 - **LE – Match length in minutes**
 - Default Value: 7
 - Min Value: 0 (game not timed)
 - Max Value: 16
 - **CC – Coins Per Credit**
 - Default Value: 8
 - Min Value: 1
 - Max Value: 40
 - **PC – Plays per Credit**
 - Default Value: 1
 - Min Value: 1
 - Max Value: 3
 - **CS – RGB LED Color Cycle Speed**
 - Default Value: 1
 - Min Value: 0
 - Max Value: 10
 - **C6 – RGB LED Brightness**
 - Default Value: 2
 - Min Value: 0
 - Max Value: 5

- **PG – Puck Gate Mode** **BEST LEFT UNCHANGED**

- Default Value: 2
- Min Value: 0
- Max Value: 2

- **SO – Sound Effect Enable**

- Default Value: 1
- Min Value: 0 = OFF
- Max Value: 1 = ON

- **HI – Rail Strikes per Sound**

(Example, a value of 3 would fire a rail shot sound every 3 rail shots. Keeps the table from being saturated with sounds if desired.)

- Default Value: 1
- Min Value: 0 (no strike sound)
- Max Value: 5

- **AT – Attract Sound Timing**

- Default Value: 15
- Min Value: 0 (no attract sound)
- Max Value: 30

ALL TICKET SETTINGS BEST LEFT UNCHANGED

- **TT – Ticket Type**

- Default value: 0
- Min Value: 0 (at game end)
- Max Value: 1 (when goal scored)

- **T1 – Number of Winner Tickets**

- Awarded at GAME END if tt value = 0
- Default Value: 7
- Min Value: Varies
- Max Value: Varies

- **CT – Consolation Tickets**

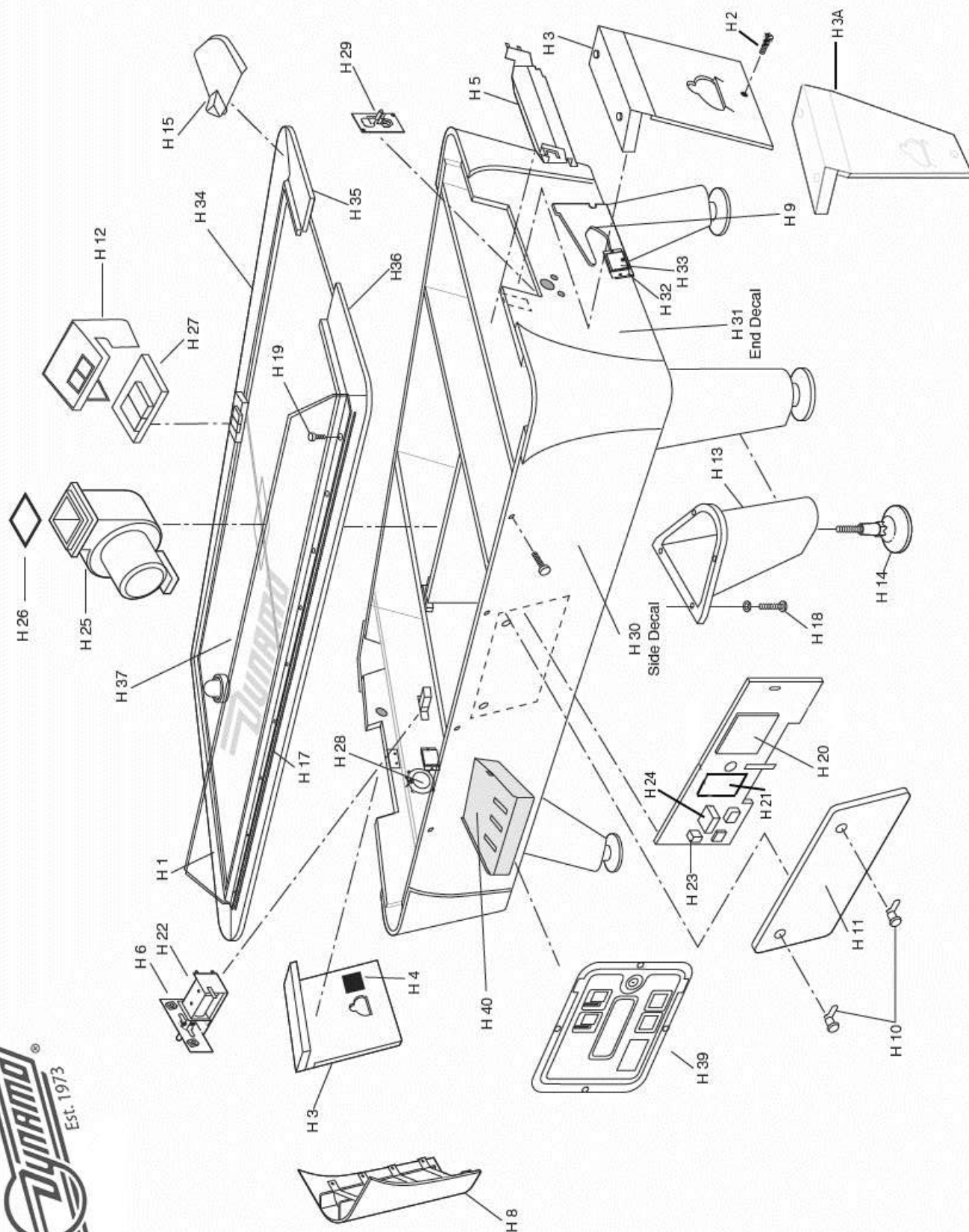
- Default Value: 1
- Min Value: Varies
- Max Value: Varies

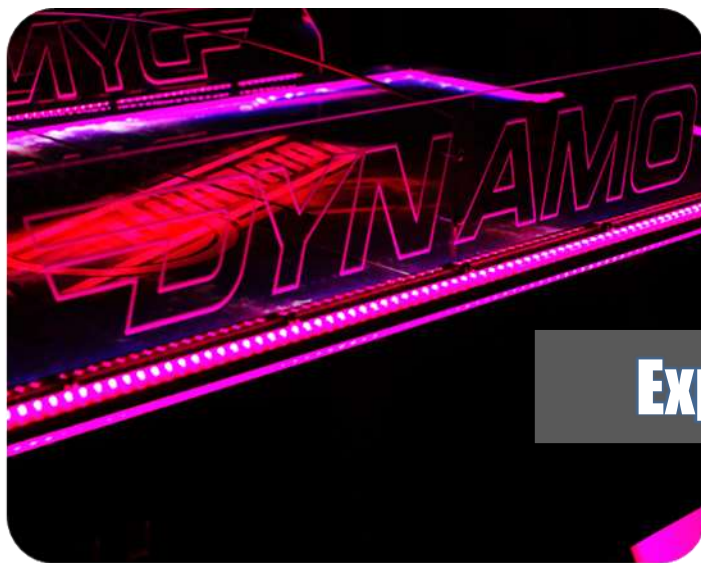
- **LD – LED Mode**

- Default Value: 1
- Min Value: 0
- Max Value: 1

- **RC – Resting LED Color**

- Default Value: 1
- Min Value: 0
- Max Value: 7





Exploded Parts Diagram

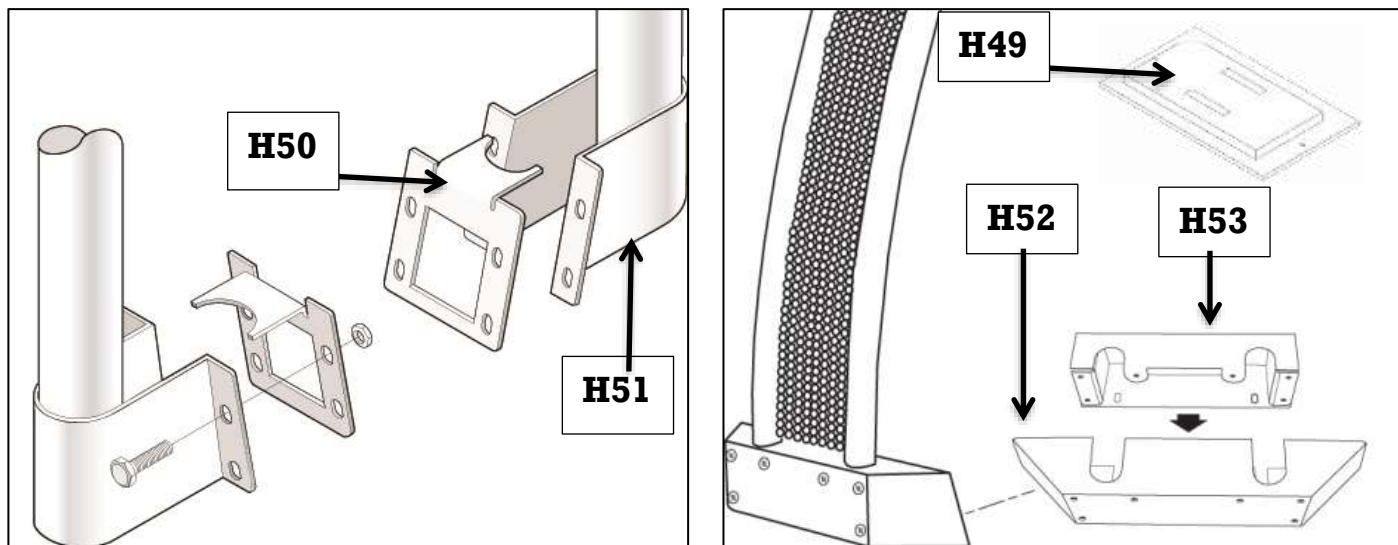
Identifiers on the drawing correspond to the part numbers listed below. Order the correct part number for your table.

Remember : there's no such thing as an "H15". *The Part number is key.*

Ref #	Part Number	Item Description
H1	030400265	3-PIECE SHIELD SET - 8-FOOT TABLES
H1	030400270	3-PIECE SHIELD SET - 7-FOOT TABLES
H1	030400300	3-PIECE SHIELD SET FOR SHORT SHOT
H2	980000705	LOCK WITH KEY #J8045 SCREW LOCK GOAL ENDS
H2	030000140	KEY J8045 GOAL ENDS
H3	800401921	GOAL END, LOCK ENTRY, BLACK, BEST SHOT / PROSTYLE
H3	800401991	GOAL END, LOCK ENTRY, FLUORESCENT, HOT FLASH II
H3	800400961	GOAL END, LOCK ENTRY W/SPEAKER GRILLE, BLUE, SHORT SHOT
H3	800450011	GOAL END, LOCK ENTRY W/SPEAKER GRILLE, ORANGE, FIRE STORM
H3	800400951	GOAL END, LOCK ENTRY, SILVER, BLUE STREAK
H3A	800400990	GOAL END, LOCK ENTRY TAPERED - LUNAR GREEN BLACK HOLE
H3A	800400995	GOAL END, LOCK ENTRY TAPERED - PURPLE COSMIC THUNDER
H4	850400470	OPTO-SHIELD DECAL FOR GOAL END
H5	800401800	GOAL ENTRY
H6	800402300	BRACKET, SOLENOID
H6	800402310	BRACKET, DC SOLENOID
H8	860000300	CORNER, DOWN, BLACK
H8	860404700	CORNER, DOWN, WHITE (COSMIC THUNDER)
H9	960402805	DROP, PUCK
H9A	960402800	DROP, PUCK FOR BLACK HOLE / COSMIC THUNDER ONLY (2 PER END)
H10	980000530	LOCK WITH #106 KEY FOR SERVICE DOORS
H10	030000130	KEY #106 - SERVICE DOORS
H11	990400603	SERVICE ACCESS DOOR - BLANK
H12	030402015	KIT, SIDE MOUNT SCORING DISPLAY
H12	800401910	BRACKET, SCORE SIDE MOUNT, BLACK
*	860400300	LENS, RED SIDE MOUNT SCORE DISPLAY
*	730408400	WIRE HARNESS, SCORE, SIDE MOUNT EXTENSION
H13	860001325	LEG, BLACK
H13	860404700	LEG, WHITE (COSMIC THUNDER)
H14	20607560	LEG LEVELER
H15	860400030	CORNER, PLASTIC COVER HOCKEY (ONLY ON TABLES WITHOUT ROUNDED RAILS)

Ref #	Part Number	Item Description
H17	730450061	LED LIGHT STRIP FOR FIRE STORM
H17	730450056	LED LIGHT STRIP FOR SHORT SHOT
H18	NI020200030	LEG BOLT : 5/16-18 x 1½ SLT HEX W/WASHER
H19	NI870012309	BLACK RAIL/GOAL BOLT : MS, ¼"-20 X 1½" PAN PHILLIPS
H19	NI870054205	THREADED INSERT : ¼"-20 x .984 GOAL ANCHOR
H20	880406035	SWITCHING MODE POWER SUPPLY
H21	880400147	PCB, v9.02 DOMESTIC HOCKEY FOR TABLES WITH SOUND
H21	880400127	PCB, v7.2 DOMESTIC HOCKEY LOGIC
*	030402075	PCB, v7.2 INTERFACE KIT FOR OLDER TABLES
H21	880400150	PCB, v10 COSMIC THUNDER
*	730400100	COMPLETE WIRE HARNESS, MAIN HOCKEY v7.0
*	730400105	COMPLETE WIRE HARNESS, MAIN HOCKEY v7.2
	730400540	COMPLETE WIRE HARNESS, MAIN HOCKEY v9.0x
*	730400200	WIRE HARNESS, EXPORT CE HOCKEY
*	730408305	WIRE HARNESS, SCORE DISPLAY MAIN
H22	880400300	SOLENOID,120 AC - USA DOMESTIC
H22	880400320	SOLENOID,12 DC CE TABLES ONLY
*	NI879900150	SOLENOID LOCKING PIN, 1/8 x 3/4 ROLL PIN
*	980400110	SOLENOID RETURN SPRING
H23	880400600	RELAY,G4W-11123A USTV8HP12DC
H24	880400710	TRANSFORMER, 120V TO 12 VAC - FOR v6.11 AND OLDER TABLES
H24	880400715	TRANSFORMER, 120V TO 10 VAC - FOR v7.0 TABLES
H24	880400720	TRANSFORMER ,STEP DOWN 220V TO 110V AC
H25	880400900	BLOWER MOTOR 110V - USA DOMESTIC
H25	880400910	BLOWER MOTOR, 220V - EXPORT
H26	980400400	BLOWER MOTOR GASKET
H27	880400202	BOARD, LED SCORE SIDE MOUNT
H28	880300360	SPEAKER SET (OF 2) FOR TABLES WITH SOUND ONLY
H29	880404200	SCORE OPTIC BOARD
H30	860401458	DECAL,SIDE HOT FLASH II (PRE 2017 - WHILE SUPPLIES LAST)
H30	860450010	DECAL SIDE FIRE STORM
H30	860404160	DECAL,SIDE BLUE STREAK
H30	860402458	DECAL,SIDE BEST SHOT
H30	860404712	DECAL SIDE COSMIC THUNDER
H30	860404458	DECAL SIDE SHORT SHOT
H31	860450000	DECAL END FIRE STORM
H31	860404150	DECAL,END BLUE STREAK
H31	860404717	DECAL,END COSMIC THUNDER
H32	800401000	GOAL END NUT BLOCK BRACKET
H33	960402810	GOAL END NUT BLOCK
H34	720400700	SIDE RAIL WITH ROUND CORNER, SILVER 7-FOOT (PRO-STYLE, BLUE STREAK)
H35	720400720	END RAIL WITH ROUND CORNER, RIGHT, SILVER 7-FOOT (PRO-STYLE, BLUE STREAK)
H36	720400710	END RAIL WITH ROUND CORNER, LEFT, SILVER 7-FOOT (PRO-STYLE, BLUE STREAK)
H34	7204PU800	SIDE RAIL WITH ROUND CORNER, PURPLE COSMIC THUNDER
H35	7204PU820	END RAIL WITH ROUND CORNER, RIGHT PURPLE COSMIC THUNDER
H36	7204PU810	END RAIL WITH ROUND CORNER, LEFT PURPLE COSMIC THUNDER
H34	720400800	SIDE RAIL WITH ROUND CORNER, SILVER 8-FOOT (BEST SHOT / PRO STYLE)
H35	720400820	END RAIL WITH ROUND CORNER, RIGHT, SILVER 8-FOOT (BEST SHOT / PRO STYLE)
H36	720400810	END RAIL WITH ROUND CORNER, LEFT, SILVER 8-FOOT (BEST SHOT / PRO STYLE)
H34	7204TY800	SIDE RAIL WITH ROUND CORNER, FLUORESCENT HOT FLASH II

Ref #	Part Number	Item Description
H35	7204TY820	END RAIL WITH ROUND CORNER, RIGHT FLUORESCENT HOT FLASH II
H36	7204TY810	END RAIL WITH ROUND CORNER, LEFT FLUORESCENT HOT FLASH II
H34	7204TR800	SIDE RAIL WITH ROUND CORNER, ORANGE FIRE STORM
H35	7204TR820	END RAIL WITH ROUND CORNER, RIGHT ORANGE FIRE STORM
H36	7204TR810	END RAIL WITH ROUND CORNER, LEFT ORANGE FIRE STORM
H37	020407031	PLAYFIELD, 8-FOOT BLUE W/SMALL LOGO (PRO-STYLE, BEST SHOT)
H37	020407181	PLAYFIELD, HOT FLASH II UV (BLUE W/LARGE LOGO – DISCONTINUED / NOT AVAILABLE)
H37	020407150	PLAYFIELD, HOT FLASH II UV (PURPLE W/LARGE LOGO - 2017-PRESENT)
H37	020407135	PLAYFIELD, FIRE STORM UV (BLACK W/FLAME TRIM)
H37	020407425	PLAYFIELD 7-FOOT BLUE W/SMALL LOGO (PRO-STYLE, BLUE STREAK)
H37	020407040	PLAYFIELD 5-FOOT BLUE W/SMALL LOGO (SHORT SHOT)
H39	880303140	COIN DOOR WITH LOCK, FRAME AND ROLL-DOWN MECHS
H40	800200750	METAL CASH BOX BOTTOM
H40	800200760	METAL CASH BOX LID
H40	860000815	PLASTIC CASH BOX FOR TABLES WITH 8-DEGREE DOOR

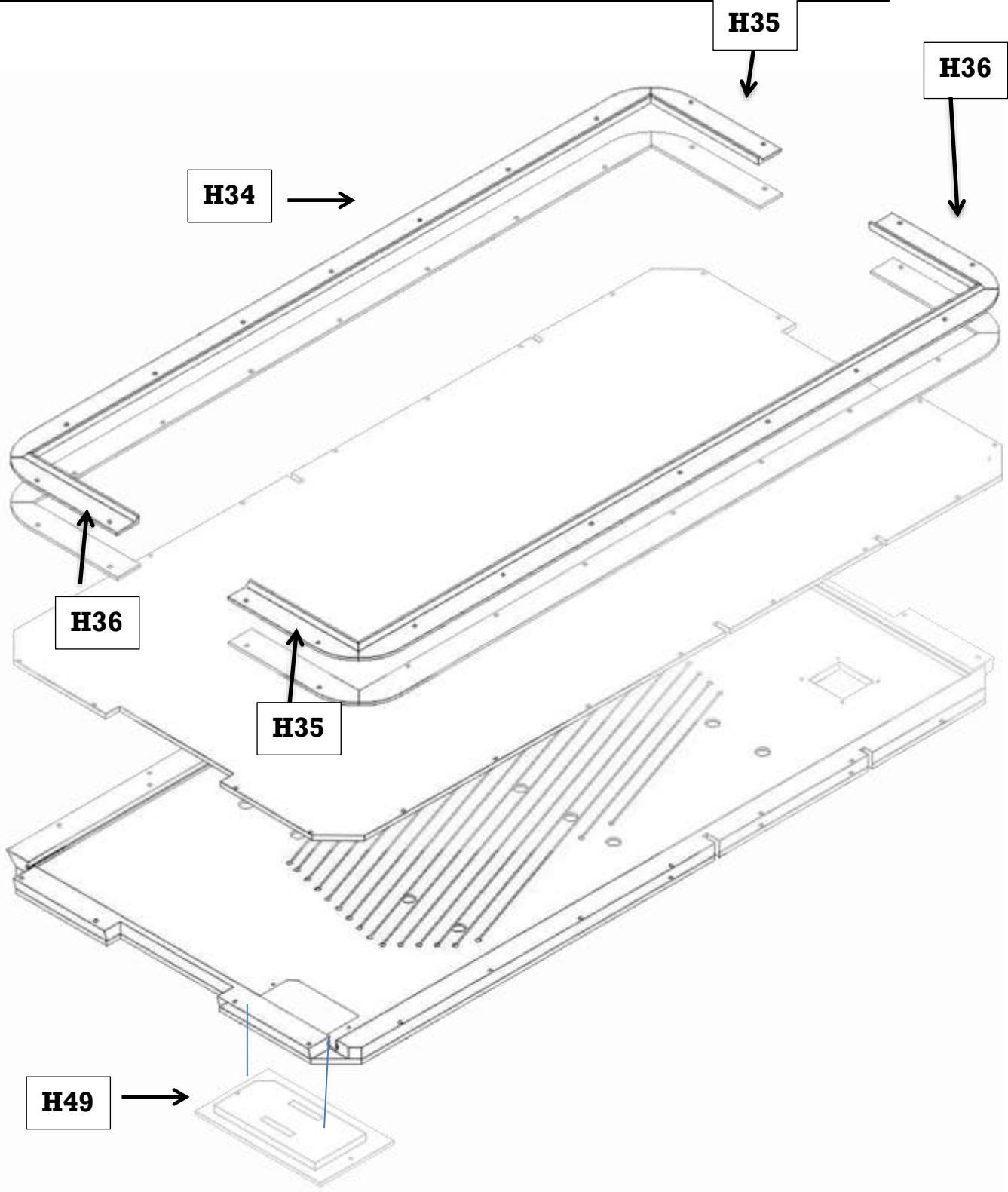


MOST OVERHEADS

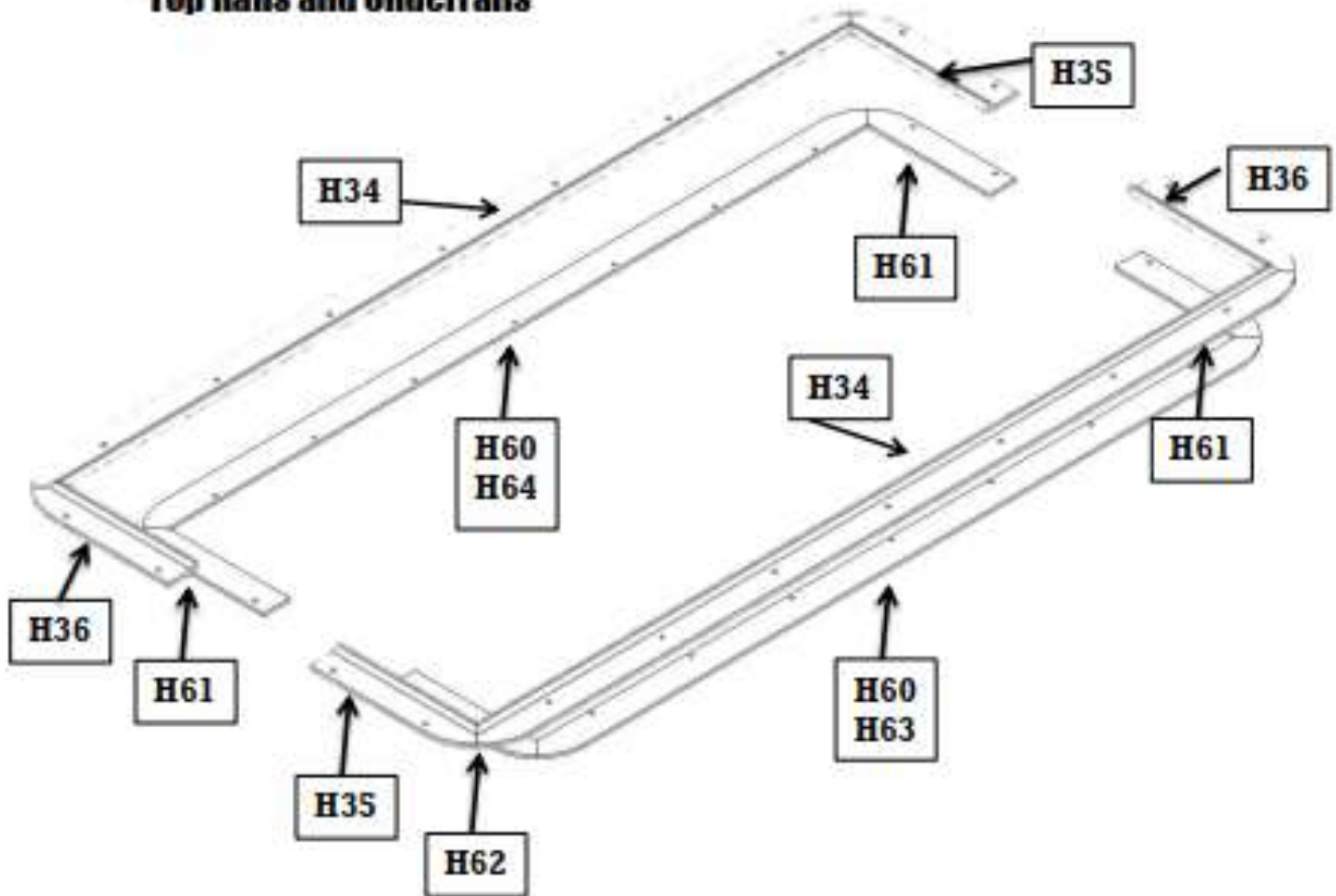
Ref #	Part Number	Item Description
H49	880403101	OVERHEAD LED SCOREBOARD
H50	800404750	MOUNTING BRACKET CLAMP - HF II FLUORESCENT
H50	800404752	MOUNTING BRACKET CLAMP - SILVER
H50	800404762	MOUNTING BRACKET CLAMP - BLACK
H51	800404726	MOUNTING BRACKET (SIDE) - HF II FLUORESCENT
H51	800404728	MOUNTING BRACKET (SIDE) - SILVER
H51	800404738	MOUNTING BRACKET (SIDE) - BLACK
	870048150	WASHER 1/4" ZINC
	870012307	SCREW, BLACK, PAN HEAD PHILLIPS 1/4-20 x 1"
FIRE STORM OVERHEAD ONLY		
H52	800450090	OVERHEAD TUBE COVER - FIRE STORM
H53	800450100	MOUNTING BRACKET CLAMP - FIRE STORM

Cosmic Thunder Polycarbonate Playfield

H34	7204PU800	SIDE RAIL WITH ROUND CORNER, PURPLE COSMIC THUNDER
H35	7204PU820	END RAIL WITH ROUND CORNER, RIGHT PURPLE COSMIC THUNDER
H36	7204PU810	END RAIL WITH ROUND CORNER, LEFT PURPLE COSMIC THUNDER
H49	880403101	OVERHEAD LED SCOREBOARD



Top Rails and Underrails



Ref #	Part Number	Item Description
H35	7204TY820	END RAIL WITH ROUND CORNER, RIGHT FLUORESCENT HOT FLASH II
H36	7204TY810	END RAIL WITH ROUND CORNER, LEFT FLUORESCENT HOT FLASH II
H34	7204TR800	SIDE RAIL WITH ROUND CORNER, ORANGE FIRE STORM
H35	7204TR820	END RAIL WITH ROUND CORNER, RIGHT ORANGE FIRE STORM
H36	7204TR810	END RAIL WITH ROUND CORNER, LEFT ORANGE FIRE STORM
H34	7204PU700	SIDE RAIL WITH ROUND CORNER, PURPLE COSMIC THUNDER
H35	7204PU720	END RAIL WITH ROUND CORNER, RIGHT PURPLE COSMIC THUNDER
H36	7204PU710	END RAIL WITH ROUND CORNER, LEFT PURPLE COSMIC THUNDER
lexan underrails are located beneath the aluminum top rails on tables with LED lighting		
H60	860405100	UNDERRAIL, SIDE FOR FIRE STORM (TRANSPARENT RED)
H61	860405101	UNDERRAIL, LEFT END FOR FIRE STORM (TRANSPARENT RED)
H62	860405102	UNDERRAIL, RIGHT END FOR FIRE STORM (TRANSPARENT RED)
H63	860404760	UNDERRAIL, SIDE FRONT (RIGHT) FOR COSMIC THUNDER (7-FOOT)
H64	860404761	UNDERRAIL, SIDE REAR (LEFT) FOR COSMIC THUNDER (7-FOOT)
H61	860404762	UNDERRAIL, LEFT END FOR COSMIC THUNDER (7-FOOT)
H62	860404763	UNDERRAIL, RIGHT END FOR COSMIC THUNDER (7-FOOT)



**For Non-coin
home-model
tables only**



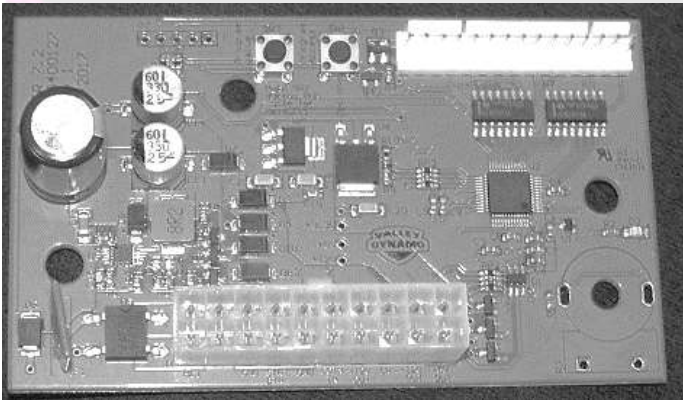
860400090	PUCK, STANDARD FLUORESCENT 3 1/4"
860400150	PUCK, QUIET WHITE 3 1/4"
860400210	MALLET, FLUORESCENT WHITE
980400200	SANDPAPER DISC FOR PUCK AND MALLET MAINTNANCE



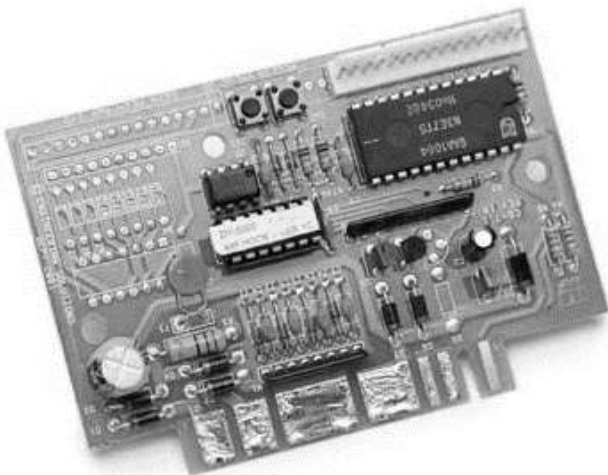
**All U.S. 120V Dynamo
Hockey tables use this
C-13 style of power cord,
available at most
electronics and hardware
stores**



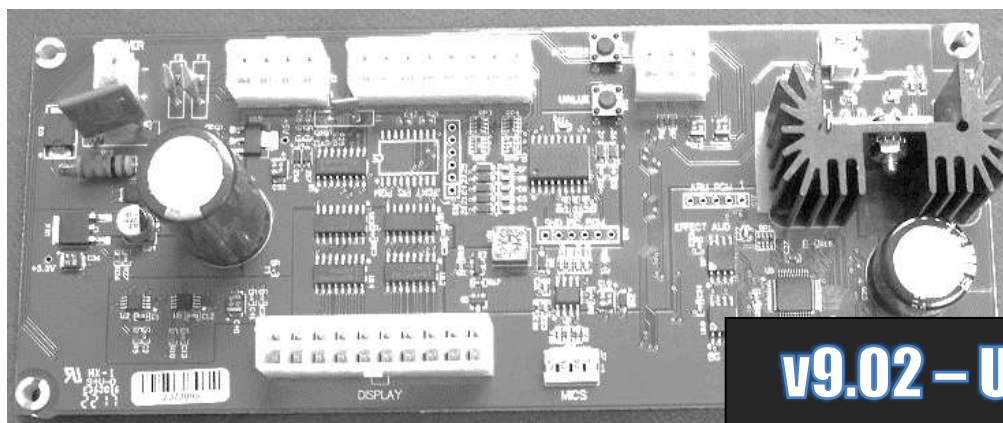
PCB Identification



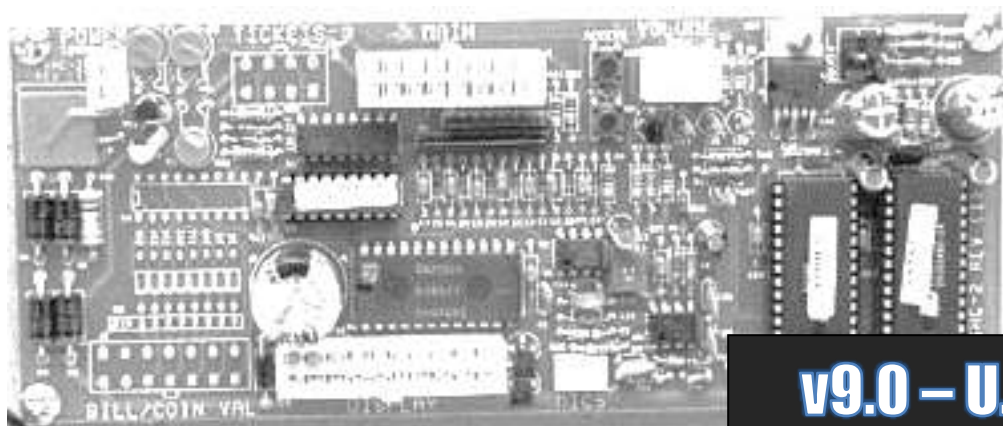
v7.2 – U.S. 110v tables
Without sound
 part # 880400127



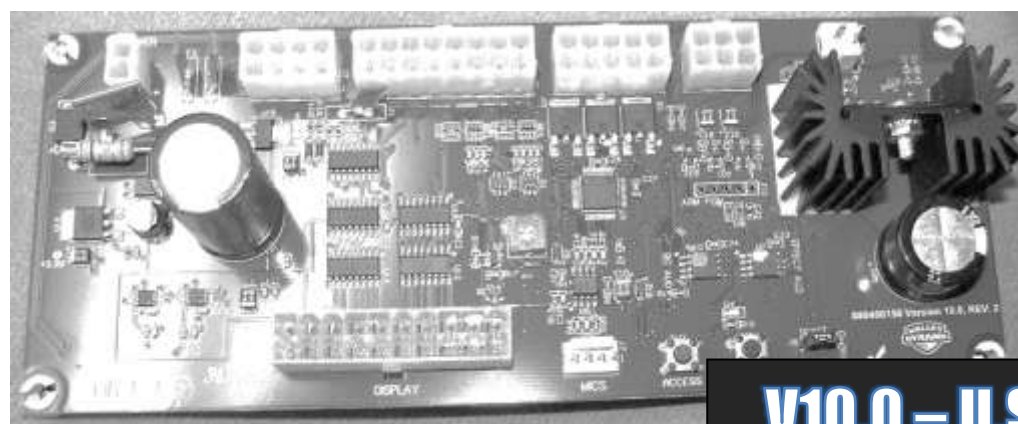
v7.0 – U.S. 110v tables
Without sound
 part # 880400125 – replaced by v7.2
 PCB in 2017, no longer available



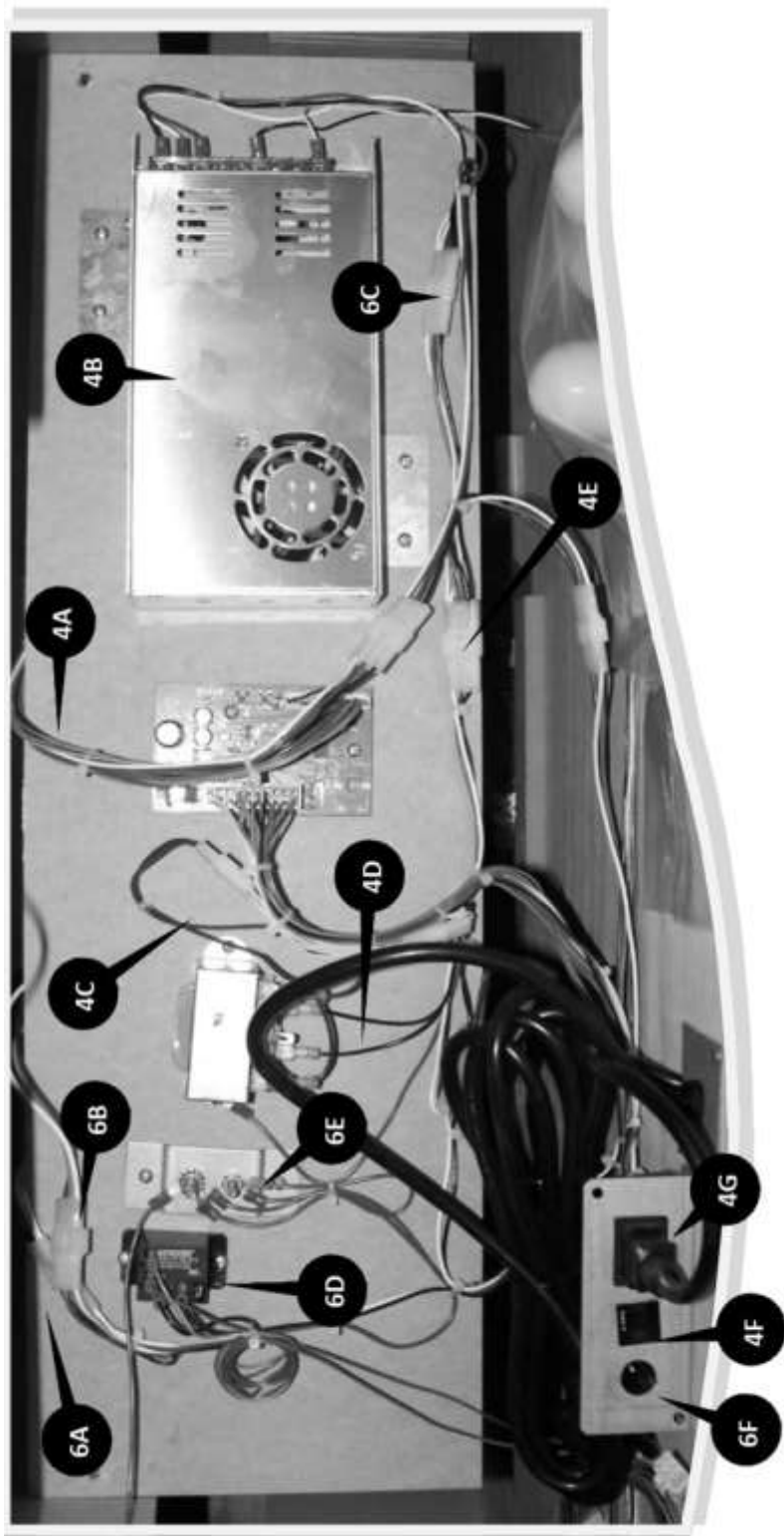
v9.02 – U.S. 110v tables
With sound
part # 880400147



v9.0 – U.S. 110v tables
With sound
part # 880400145 – NO LONGER AVAILABLE
replaced with v9.02 PCB in 2018
(note the no-longer-available removable EPROMs)



v10.0 – U.S. 110v tables
Cosmic Thunder
part # 880400150



4A—Display Connector

4B— Switching Mode Power Supply (some models)

4C— Transformer Output

4D— Transformer Input

4E— DBA AC Power

4F—5-amp Breaker

4G—Power Cord

6A—Blower Motor Connector

6B—Solenoid Connector

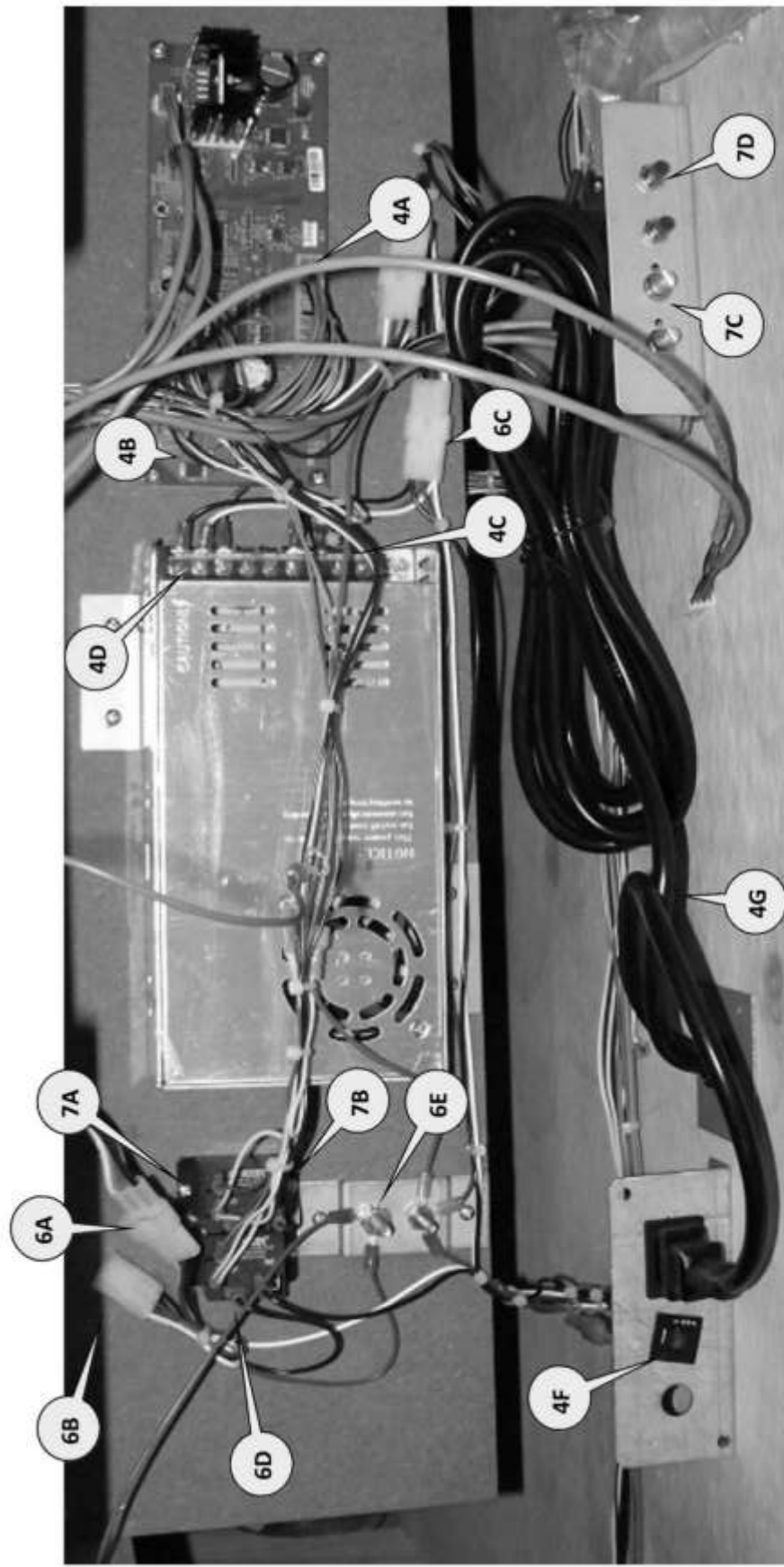
6C—Constant 120v Test Point

6D—Relay

6E—Ground Bracket

6F—On/Off Switch Location (Coin Tables)

v7.2 – U.S. 110v tables Without sound

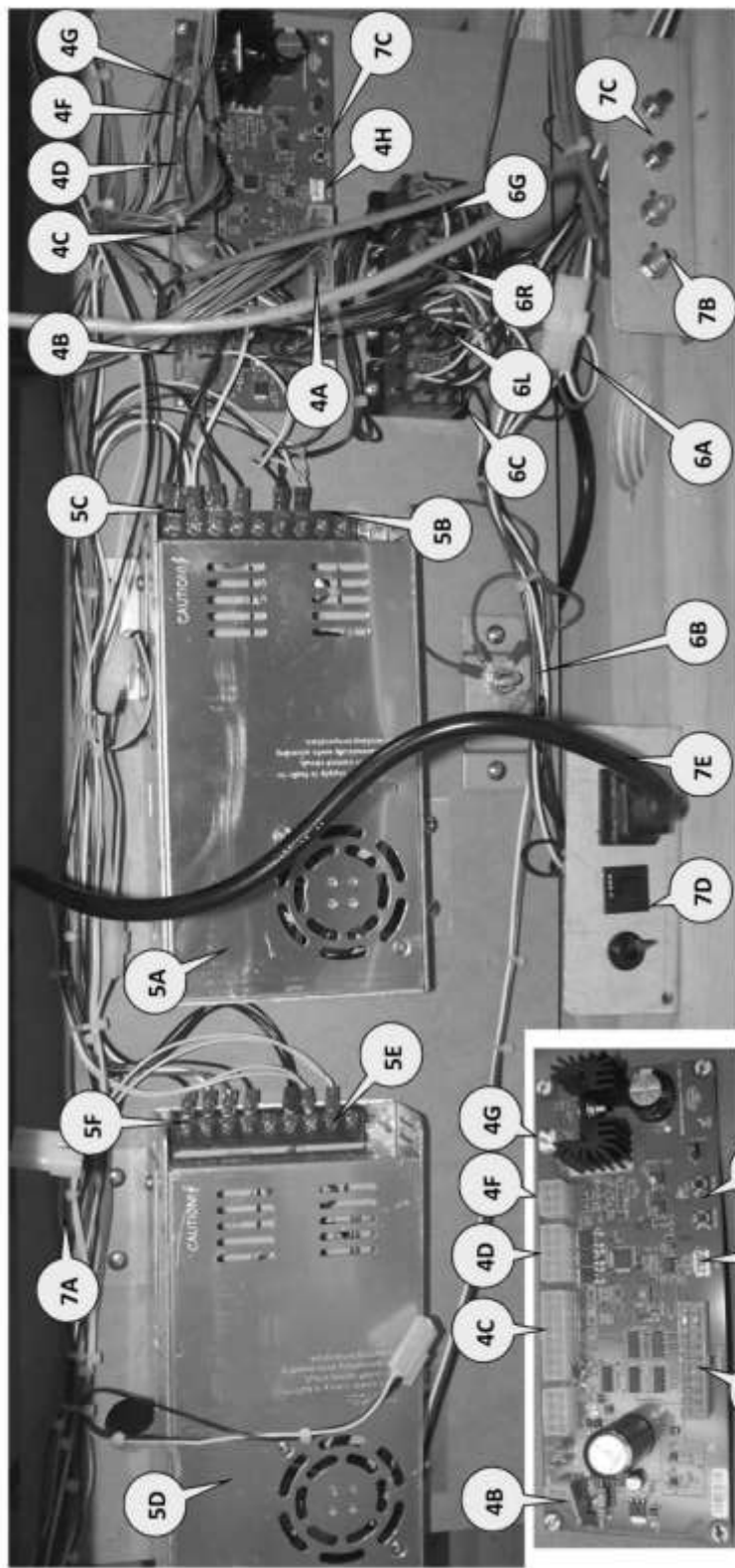


4A—Display Connector
 4B—12v 2-pin Connector
 4C—12v DC Output
 4D—120v AC Input
 4F—5-amp Breaker
 4G—Power Cord

6A—Blower Motor Connector
 6B—Solenoid Connector
 6C—Blower Motor—Constant 120v Test Point
 6D—Motor/Solenoid Relay
 6E—Ground Bracket

7A—Light Relay Input
 7B—Light Relay Output
 7C—Volume Controls
 7D—Programming Controls

v9.02 – U.S. 110v tables
With sound



- | | | | |
|---------------------------|----------------------------------|------------------------------|-----------------------------|
| 4A—Display Connector | 5A—Power Supply—Logic and Relay | 6A—Blower Motor Connector | 7A—Playfield LED connection |
| 4B—12v 2-pin Connector | 5B—12v DC Output—Logic and Relay | 6B—Ground Bracket | 7B—Volume Controls |
| 4C—Main PCB Connector | 5C—120v AC Input—Login and Relay | 6C—Blower Motor Relay | 7C—Programming Controls |
| 4D—RGB Solenoid Connector | 5D—Power Supply—LED Lighting | 6G—White LED Relay | 7D—5-amp Breaker |
| 4F—Volume Connector | 5E—12v DC Output—LED Power | 6L—Left Goal Solenoid Relay | 7E—Power Cord |
| 4G—Speaker Connector | 5F—120v AC Input—LED Power | 6R—Right Goal Solenoid Relay | |
| 4H—Microphone Connector | | | |

v10—U.S. 110v tables
Cosmic Thunder

Air Hockey Troubleshooting Flowchart

- These sheets are designed to help identify known common service issues with Dynamo Hockey tables, but are not a complete guide to everything that can possibly go wrong. It is our hope your table provides decades of reliable service and you never end up having to use them.
- If you are uncomfortable with these steps, or use of a voltmeter or ohmmeter, contact your distributor or a trained service professional to help diagnose and repair your table
- The current PCB versions are covered. For help with troubleshooting older Air Hockey tables with PCBs prior to the v7.01 model, visit www.valleydynamoparts.com.
- While repeatedly noted on the charts, it bears repeating once more : be absolutely sure your table is plugged into a known good 120v AC outlet.
- For several troubleshooting steps, we ask that you make sure you table is NOT plugged into this 120v outlet. Use caution. 120v AC is fine for Hockey tables, but can be very dangerous to people.
- Dynamo Tech Support : 972-595-5300 techhelp@valley-dynamo.com

CHART # 1, PROBLEM ISOLATION FLOWCHART

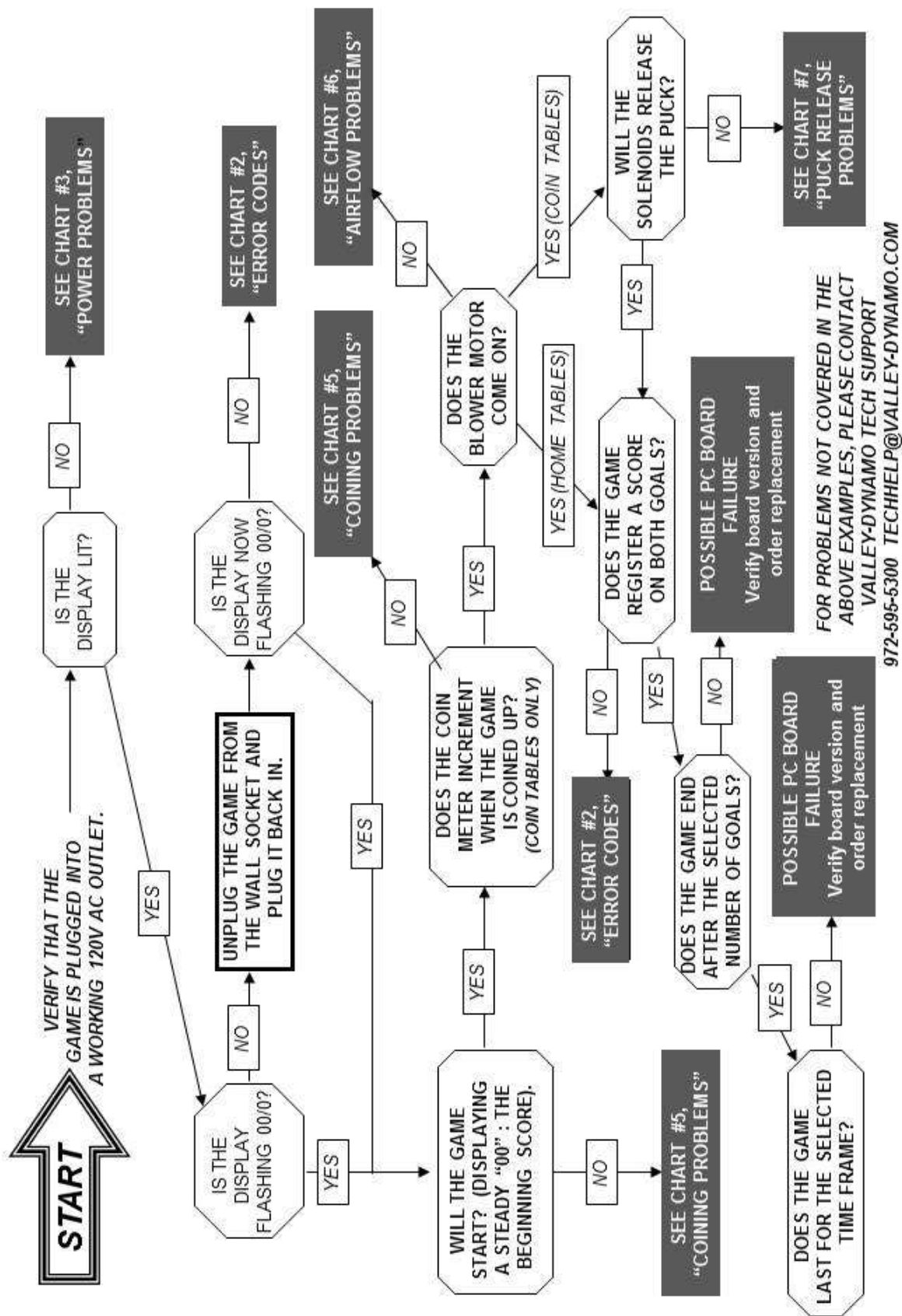


CHART # 2, ERROR CODES

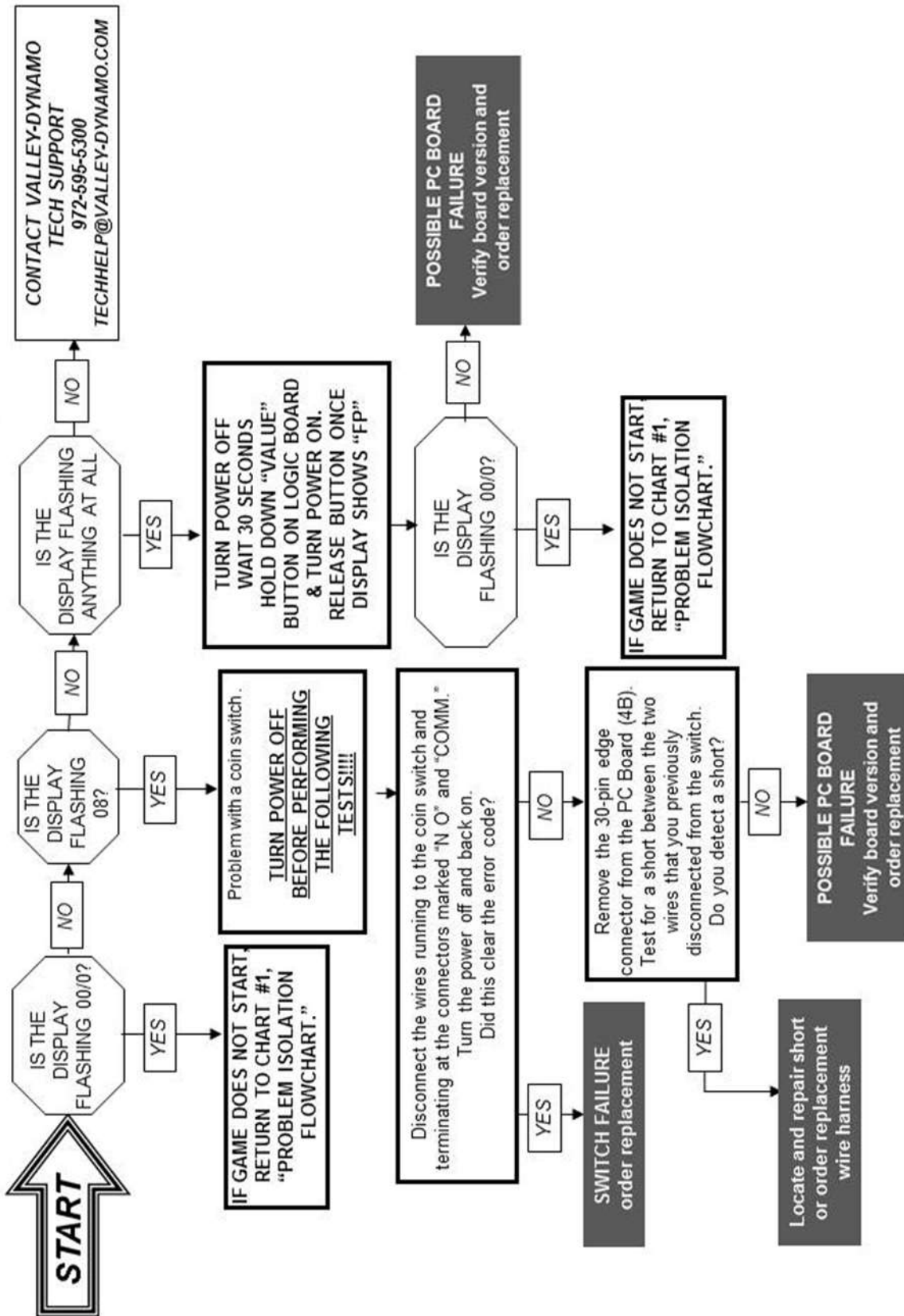


CHART # 3A, POWER PROBLEMS – VERSION 7.0 PCB

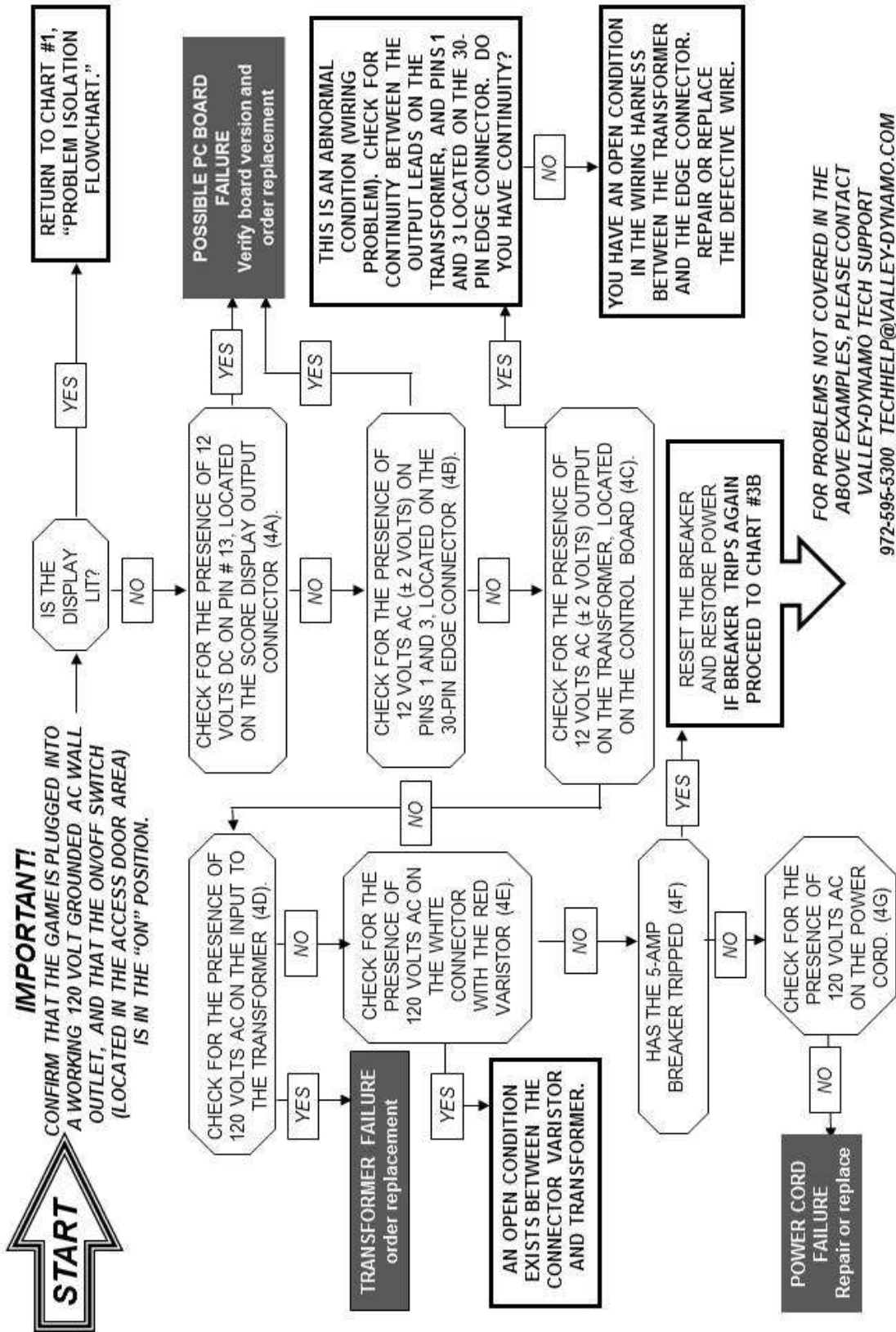
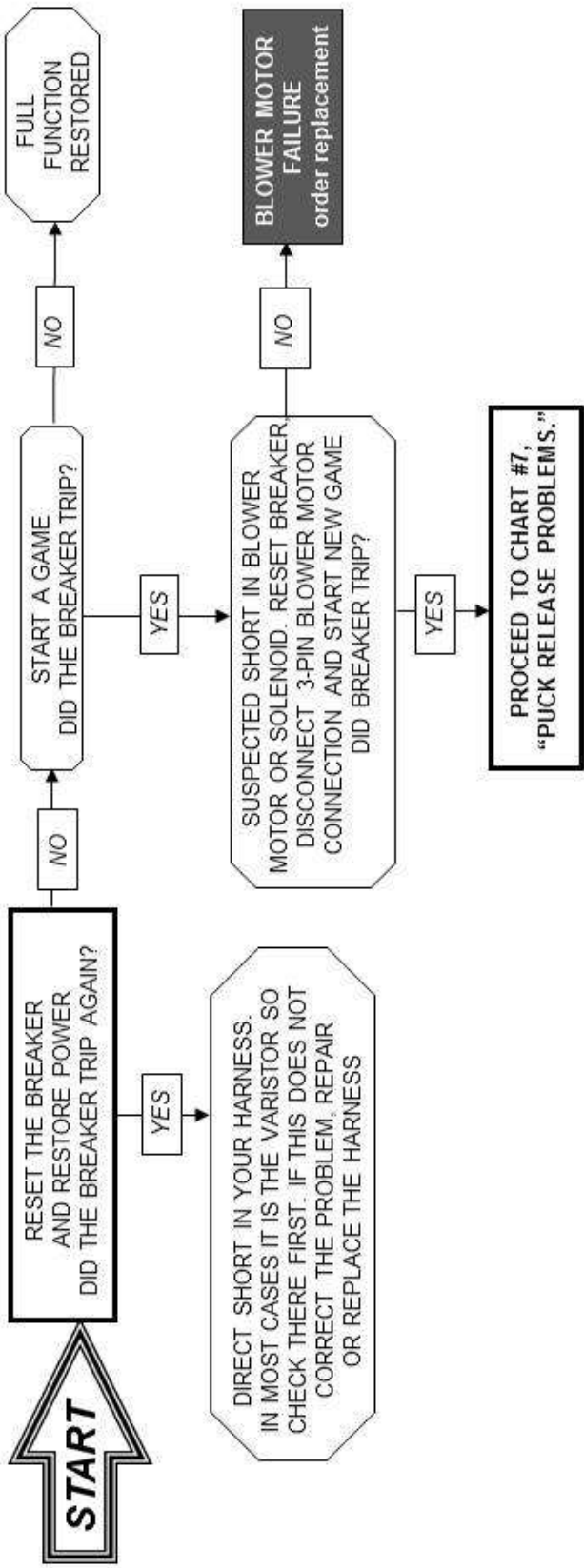


CHART # 3B, POWER PROBLEMS – VERSION 7.0 PCB



FOR PROBLEMS NOT COVERED IN THE
ABOVE EXAMPLES, PLEASE CONTACT
VALLEY-DYNAMO TECH SUPPORT
972-595-5300 TECHHELP@VALLEY-DYNAMO.COM

CHART # 5, COINING PROBLEMS

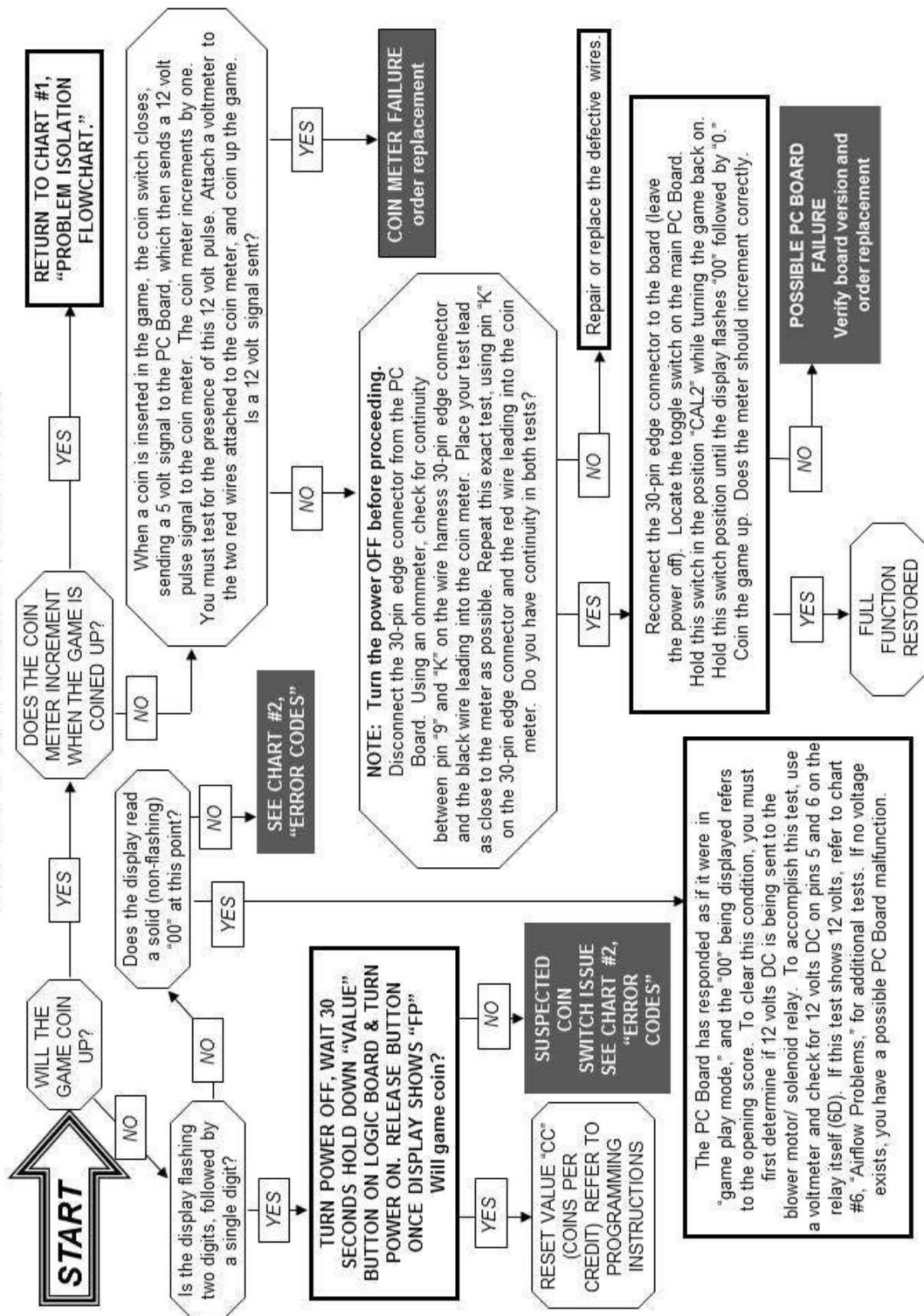
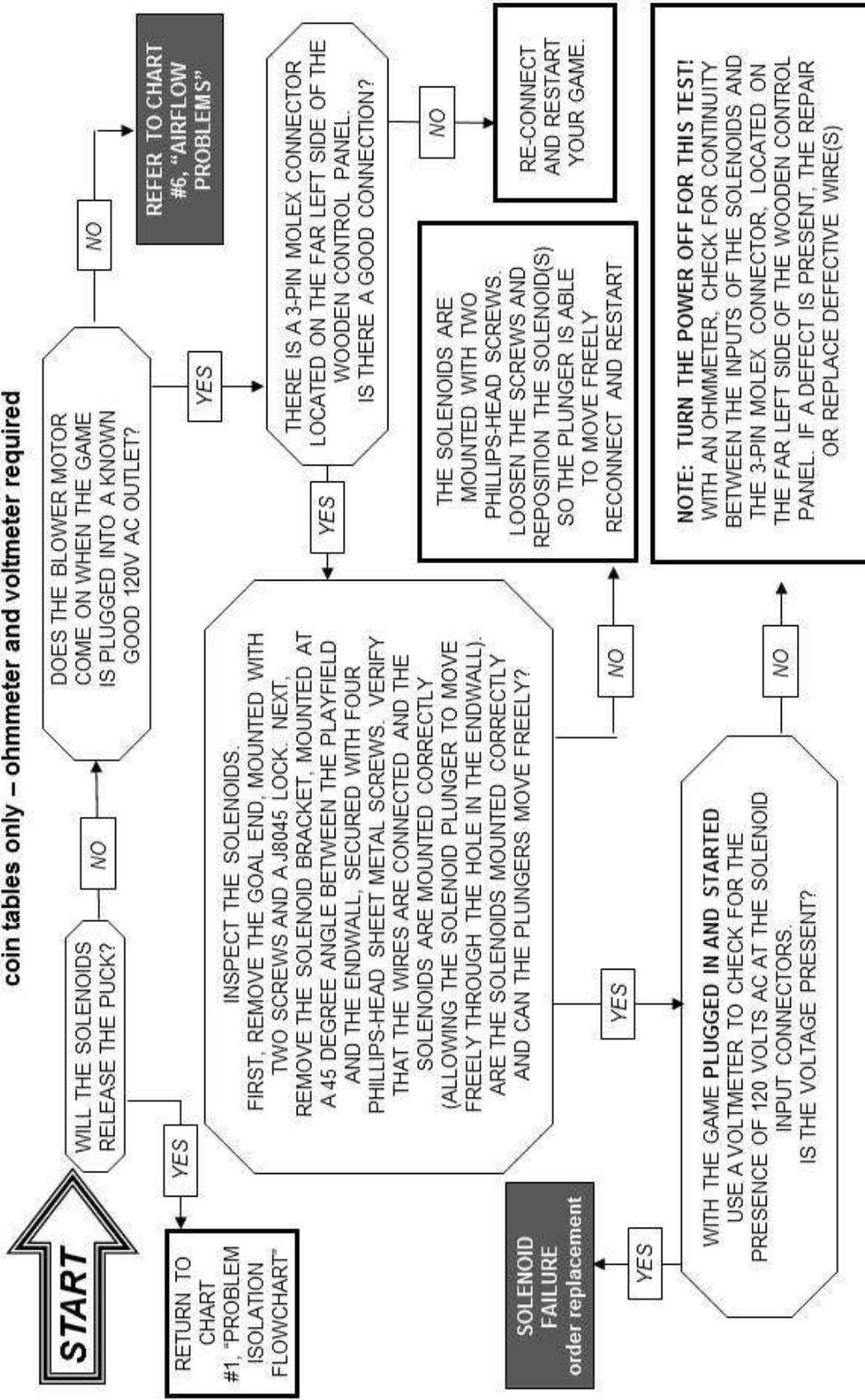
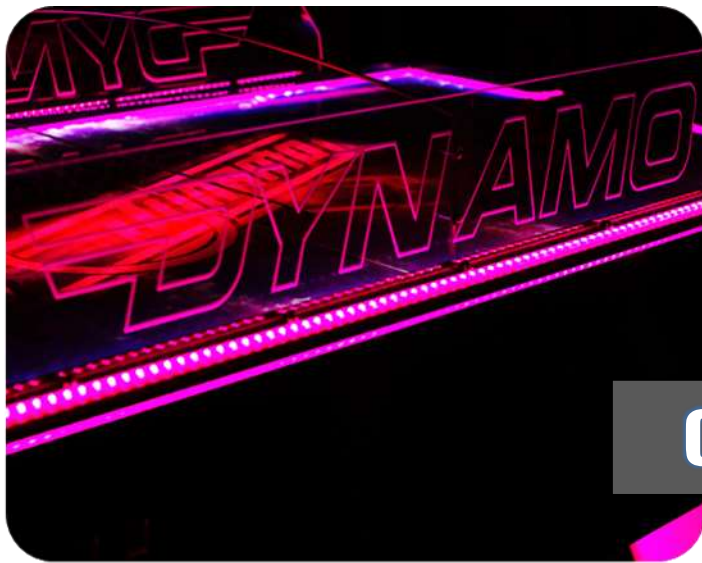


CHART # 7, PUCK RELEASE PROBLEMS

coin tables only – ohmmeter and voltmeter required



FOR PROBLEMS NOT COVERED IN THE
ABOVE EXAMPLES, PLEASE CONTACT
VALLEY-DYNAMO TECH SUPPORT
972-595-5300 TECHHELP@VALLEY-DYNAMO.COM



Closing Notes

Just as with the disks and instructions sent with that brand new Computer, Phone, Television, Printer, practically ANY electronic device these days, information can and will change between the time this was printed and the time you reached for the manual. Sometimes between printing and actual purchase.

The most current and complete troubleshooting, technical and parts breakdown information can be found at any time at

www.valleydynamoparts.com

For additional assistance:

Email anytime: techhelp@valley-dynamo.com

During business hours (Central US Time): call 972.595.5300 and follow the prompts for Tech support

We hope your proudly American-built Dynamo Hockey table provides decades of trouble-free enjoyment. Thanks again for considering Dynamo.





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Contact your distributor today, or check out the full Dynamo line at

valley-dynamo.com