

# Bull Buster™

# Points



A.u.S. Spielgeräte GesmbH  
Scheidgasse 48 A-1210 Wien  
Tel. +43-1-271 66 00 Fax. +43-1-271 66 00 75  
E-mail: verkauf@aus.at  
http://www.aus.at  
Öffnungszeiten: Mo-Fr: 9-18 Uhr

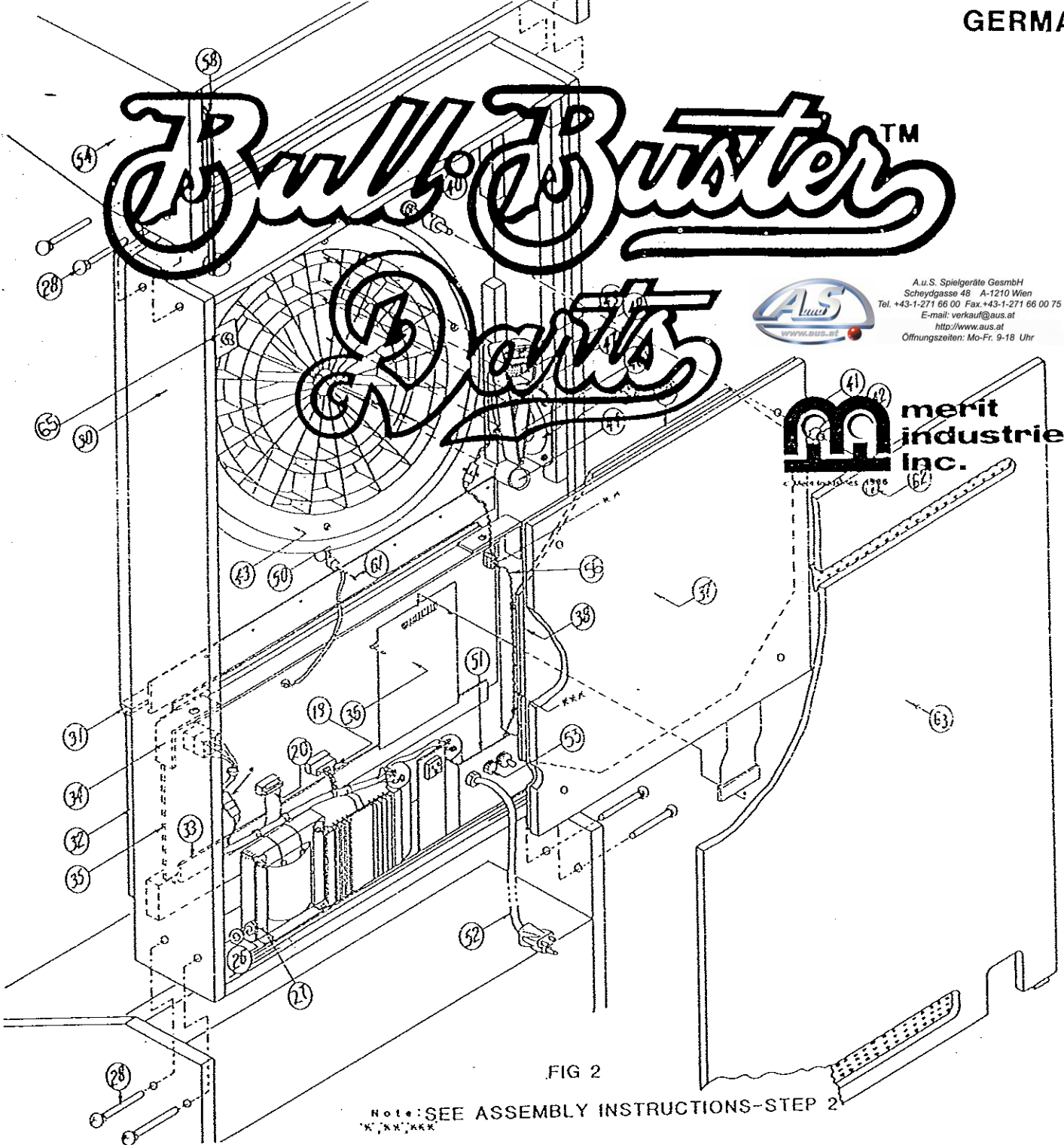


FIG 2

Note: SEE ASSEMBLY INSTRUCTIONS-STEP 2  
"X", "XX", "XXX"

# OWNERS GUIDE AND TECHNICAL REFERENCE MANUAL

BULL BUSTER DARTS OWNERS GUIDE  
AND TECHNICAL REFERENCE MANUAL

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A.u.S. Spielgeräte GmbH  
Scheydgasse 48 A-1210 Wien  
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## INTRODUCTION

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Bull Buster Darts is an electronic dart game which provides traditional play along with the convenience of computerized point scoring.

This manual provides the owner/operator with all the information needed to install, test and maintain the unit.

Although designed to be trouble free, additional assistance is available from your distributor or from MERIT INDUSTRIES, INC. (1-800-445-9353 or in Pa. 215-639-4700).

THIS EQUIPMENT COMPLIES WITH THE REQUIREMENTS IN PART 15 OF FCC RULES FOR A CLASS "A" COMPUTING DEVICE. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA MAY CAUSE UNACCEPTABLE INTERFERENCE TO RADIO AND TV RECEPTION REQUIRING THE OPERATOR TO TAKE WHATEVER STEPS ARE NECESSARY TO CORRECT THE INTERFERENCE.

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## SITE PREPARATION

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In determining the location for your Bull Buster Darts, consideration should be given to the location of a suitable electrical outlet. Since the game is a computerized device it should have a separate circuit if at all possible. If a separate circuit is not available care should be taken to provide clean and constant voltage. As a basic guideline, never connect the unit to a circuit which also supplies power to freezers, coolers or other high power consuming and electrical noise generating equipment.

The area required should be prominently located to attract attention but should not be located where games would be interrupted by employees or customers walking through the shooting area. A shooting line should be placed 8 feet from the face of the target.

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A.u.S. Spielgeräte GmbH  
Scheydgasse 48 A-1210 Wien  
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<http://www.aus.at>  
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IMPORTANT : WHENEVER POSSIBLE THIS EQUIPMENT SHOULD BE ASSEMBLED ON LOCATION. TRANSPORTING AN ASSEMBLED GAME CAN RESULT IN DAMAGE OR MISSALIGNMENT OF INTERNAL PARTS CAUSED BY EXCESS STRESS ON THE CABINET.  
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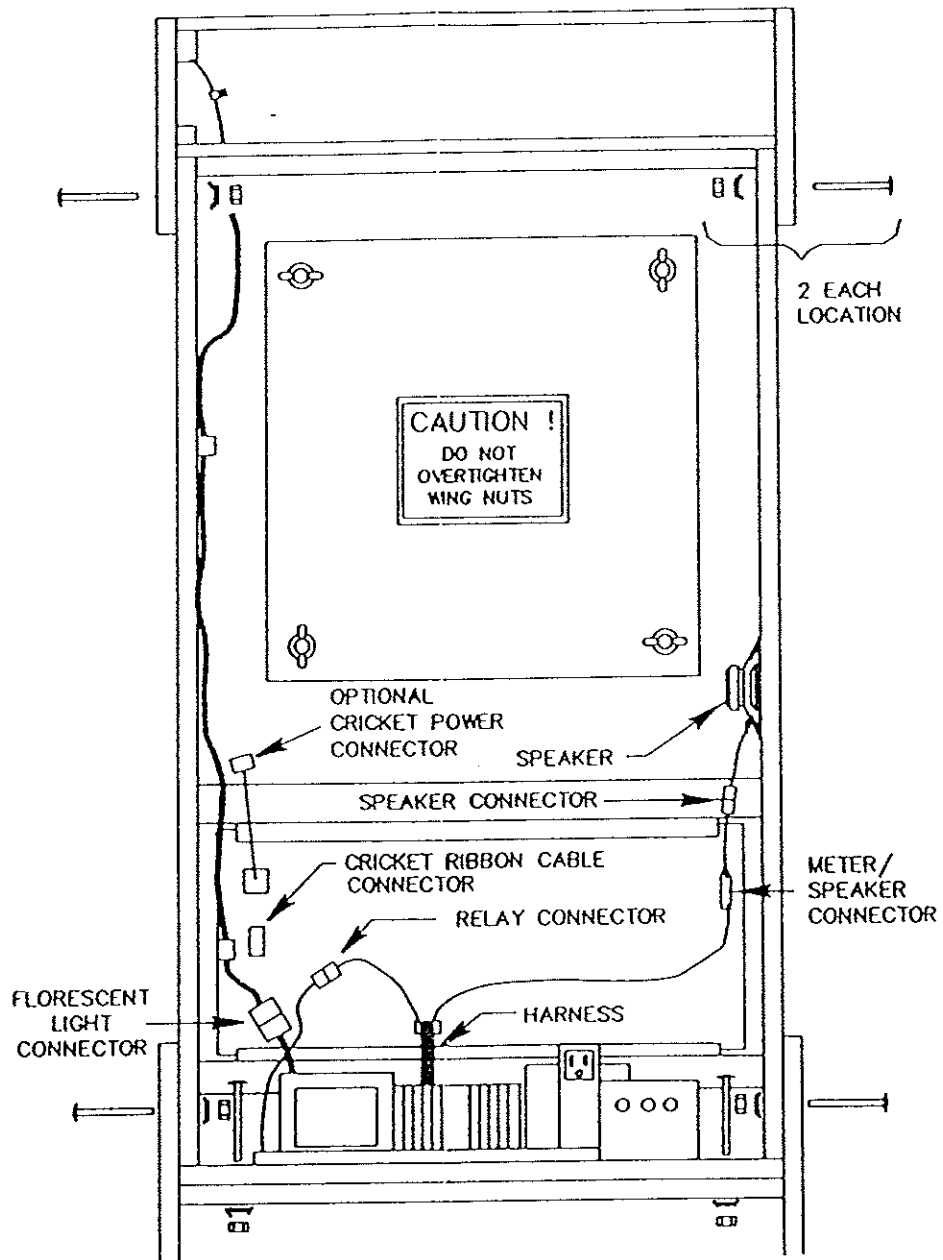
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PART No. 1 ---- PUTTING THE SECTIONS TOGETHER  
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- 1 - REMOVE (4) BOLTS, (4) DOME WASHERS AND (4) NUTS FROM THE BAG OF HARDWARE.
- 2 - UNLOCK AND REMOVE THE REAR DOOR OF THE TARGET SECTION CABINET.
- 3 - WHILE FEEDING THE LIGHT AND SPEAKER CABLES THROUGH THE LARGE MATING HOLES, PLACE THE LIGHTING HOOD ON TOP OF THE TARGET SECTION SO THAT THE FLUORESCENT LIGHT IS ABOVE THE DART TARGET.  
\*IF CRICKET OPTION IS APPLICABLE, REFER TO ADDITIONAL ASSEMBLY INSTRUCTIONS FOR DELUXE GAME (on Pages 3 - 4) ENCLOSED IN THIS MANUAL.
- 4 - LINE UP THE HOLES IN THE LIGHTING HOOD WITH THE HOLES IN THE TARGET SECTION AND INSERT THE BOLTS THRU THE HOLES.
- 5 - SLIDE A DOME WASHER AND THREAD A NUT ONTO EACH BOLT. BEFORE TIGHTENING THE NUTS MAKE SURE THAT THE LIGHTING HOOD LOOKS LEVEL - THEN TIGHTEN THE NUTS.
- 6 - LIFT THE ASSEMBLED TARGET AND LIGHT UNIT ONTO THE CABINET BASE (IT WILL BE EASIER IF TWO PEOPLE ARE USED FOR THIS).
- 7 - REMOVE THE REMAINING (6) BOLTS, (6) DOME WASHERS AND (6) NUTS FROM THE BAG OF HARDWARE. NOTE THAT A SPARE WASHER IS INCLUDED AND SHOULD BE LEFT OVER AFTER ASSEMBLY.
- 8 - CLOSE AND LOCK THE CONTROL PANEL DOOR.
- 9 - PUSH THE TARGET SECTION FORWARD SO THAT IT JUST MEETS THE BACK EDGE OF THE CONTROL PANEL, THEN INSERT THE BOLTS THRU THE SIX HOLES AS SHOWN IN THE SKETCH.
- 10 - SLIDE A DOME WASHER AND THREAD A NUT ONTO EACH BOLT. BEFORE TIGHTENING THE NUTS MAKE SURE THAT THE TWO SECTIONS LOOK LEVEL AND THAT THE CONTROL PANEL DOOR OPENS, CLOSES AND LOCKS FREELY - THEN TIGHTEN THE NUTS.
- 11 - THE DART GAME CAN BE LEVELED TO COMPENSATE FOR AN UNEVEN FLOOR BY ADJUSTING THE (4) LEVELING FEET UNDER THE CABINET BASE. (LEVELING FEET INCLUDED IN GAME)

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A.U.S. Spielgeräte GmbH  
Scheydgasse 48 A-1210 Wien  
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<http://www.aus.at>  
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REAR VIEW

Fig. 1



A.u.S. Spielgeräte GmbH  
 Scheydgasse 48 A-1210 Wien  
 Tel. +43-1-271 66 00 Fax. +43-1-271 66 00 75  
 E-mail: verkauf@aus.at  
 http://www.aus.at  
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\*\*\*\*\*  
ADDITIONAL INFORMATION AND ASSEMBLY INSTRUCTIONS FOR  
DELUXE DART GAMES  
\*\*\*\*\*

Your overhead display module has been shipped unmounted from the cabinet hood. In order to install it, follow these instructions after completing step #5 of the ONSITE ASSEMBLY INSTRUCTIONS.

- 1 - Remove the overhead module from its shipping position in the cabinet base.
- 2 - Mount the hood onto the target section as shown on the ONSITE ASSEMBLY INSTRUCTIONS.

If the cables have already been plugged into the overhead module display board skip this next step.

- 3 - Remove the power harness and the ribbon cable from the parts bag. Plug these cable into the overhead module display board.

NOTE: THE END OF THE RIBBON CABLE WITH THE RED STICKER PLUGS INTO THE DISPLAY BOARD. THE RIBBON CABLE IS KEYED SO THAT IT ONLY FITS ONE WAY. DO NOT FORCE IT IN BACKWARDS AS THIS WILL RESULT IN DAMAGE TO THE PC BOARDS.

- 4 - Run the cable for the Cricket module down through the hood as shown in Fig. #2. Stick on cable clamps as shown to keep wires from getting damaged during service.
- 5 - Loosen the side mounting brackets, then move them outward so that you can slide the Cricket module in place as shown in Fig. #2. The module should slide right in without being forced. Make sure that the module is centered before retightening the screws.
- 6 - Reinstall the hood plexiglass bracket by turning it upside down and then screwing it in. For additional security, install two screws through the holes in the top of each side bracket and into the top of the hood.
- 7 - Plug in the power harness and the ribbon cable as shown on the ONSITE ASSEMBLY INSTRUCTIONS.

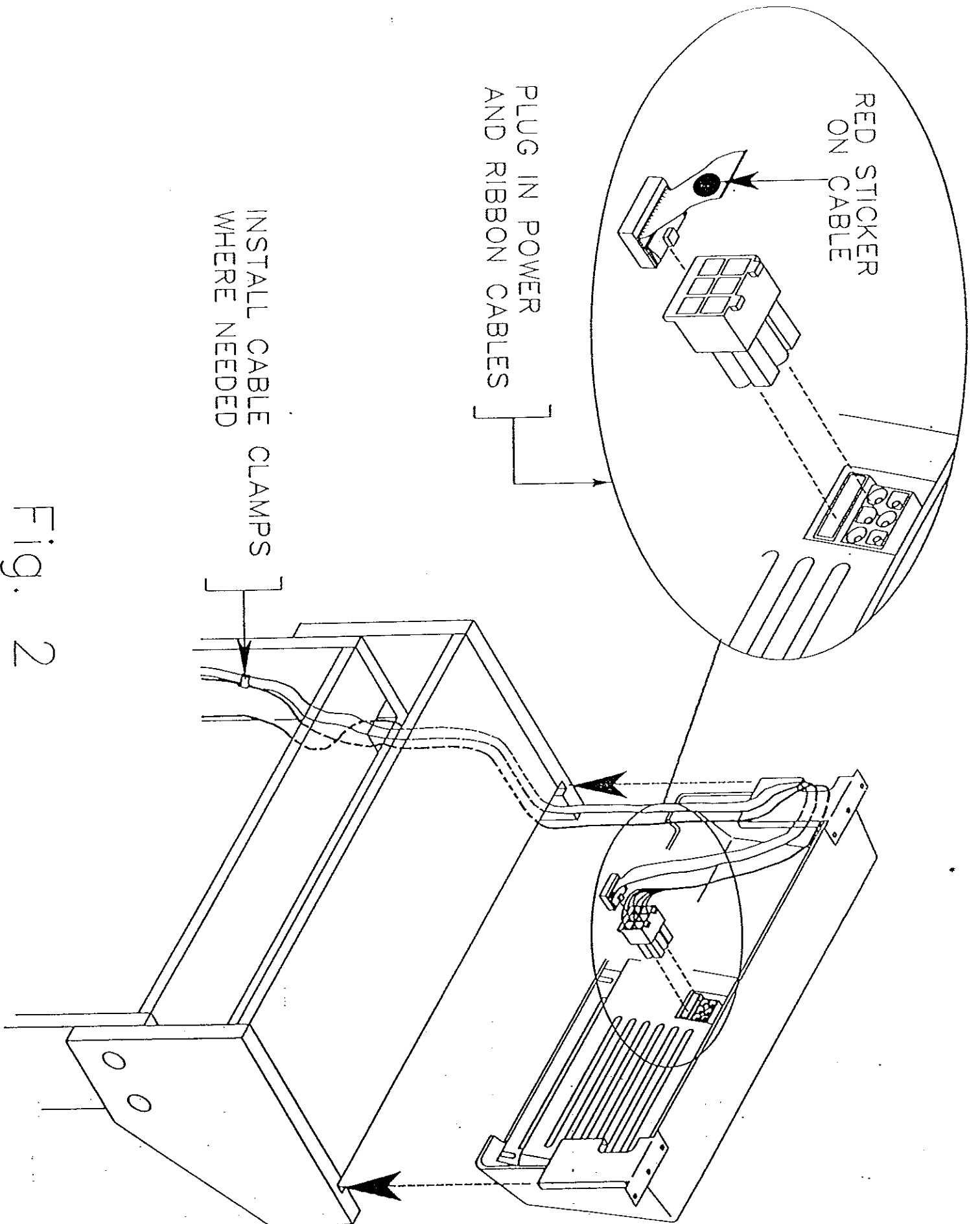
NOTE: THE RIBBON CABLE IS KEYED SO THAT IT ONLY FITS ONE WAY. DO NOT FORCE IT IN BACKWARDS AS THIS WILL RESULT IN DAMAGE TO THE PC BOARDS.

- 8 - Continue with step #6 of the ONSITE ASSEMBLY INSTRUCTIONS.

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RED STICKER  
ON CABLE

PLUG IN POWER  
AND RIBBON CABLES

INSTALL CABLE CLAMPS  
WHERE NEEDED

Fig. 2



A.u.S. Spielgeräte GmbH  
 Scheydgasse 48 A-1210 Wien  
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Your Deluxe Bull Buster Dart Game is equipped with an overhead module that will display all games scores as well as provide a scoreboard for Cricket.

Deluxe Bull Buster Games differ from non-Cricket games by having a special program EPROM (8278-04) and an overhead module containing a microprocessor based display board (DRT-300).

The overhead module gets power and signals from cables which connect it to the lower display board (DRT-150) and run up through the hood.

Also included is an additional connector housing installed on the back of the DRT-150 board. This connector housing is used to plug in the signal cable that runs up to the overhead module. If your DRT-150 board should require replacement, it will require a replacement board with this connector. Note that all factory replacement boards are equipped this way.

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**SERVICE NOTES:**

Your overhead module display board has been designed to be removed easily for service. To remove, just disconnect the two cable and remove the two screws at the bottom edge of the PC board cage. Then slide it down and out. To reinstall, slide the unit up so that the back PC board goes in front of the upper bracket. Put the screws in and check the display alignment before tightening.

THE OVERHEAD MODULE PC BOARDS ARE SERVICED AS ONE UNIT - DO NOT REMOVE THE FLEXIBLE CONNECTORS IN ORDER TO DISCONNECT THE PC BOARDS.

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A. u. S. Spielgeräte GesmbH  
Scheydgasse 48 A-1210 Wien  
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PART No 2 - HOOKING UP THE INSIDE CABLES

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- 1 - OPEN THE CONTROL PANEL.
- 2 - LOCATE THE WIRING HARNESS WHICH IS ATTACHED TO THE CONTROL PANEL SWITCHES AND LIGHTS AS WELL AS THE COIN MECHS AND METERS.
- 3 - SLIDE THE HARNESS THROUGH THE OPENING IN FRONT OF THE POWER SUPPLY AND PLUG IT INTO THE CONNECTOR ON THE BACK OF THE LARGE DISPLAY BOARD MARKED "HARNESS". THIS CONNECTOR IS LOCATED LEFT OF CENTER ALONG THE BOTTOM EDGE OF THE PC BOARD (WHEN VIEWING THE DART GAME FROM THE BACK).
- 4 - FROM THE HARNESS THAT IS CONNECTED INTO THE BACK OF THE DISPLAY BOARD LOCATE A SINGLE WIRE WITH A CONNECTOR ON THE END. THIS CONNECTOR PLUGS INTO A MATING CONNECTOR WHICH IS LOCATED ON THE LEFT END OF THE POWER SUPPLY NEXT TO THE TRANSFORMER.
- 5 - LOCATE THE METER/SPEAKER PART OF THE HARNESS (A TWO PIN CONNECTOR AND A FOUR OR FIVE PIN CONNECTOR). PLUG THE TWO PIN CONNECTOR INTO THE CONNECTOR COMING FROM THE SPEAKER AND THE CONNECTOR INTO THE PC BOARD CONNECTOR LOCATED AT THE UPPER RIGHT HAND CORNER OF THE DISPLAY BOARD.
- 6 - LOCATE THE FLOURESCENT LIGHT CABLE (TWO WHITE LAMP CORD TYPE WIRES) WHICH GOES THROUGH THE LARGE HOLES IN THE LIGHTING AND TARGET SECTIONS.
- 7 - PLUG THE CONNECTOR ON THE END OF THE FLOURESCENT LIGHT CABLE INTO THE MATCHING CONNECTOR ON THE LEFT SIDE OF THE POWER SUPPLY WIRING HARNESS.
- 8 - INSTALL AND LOCK THE REAR DOOR OF THE TARGET SECTION CABINET.

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A.u.S. Spielgeräte GesmbH  
Scheidgasse 48 A-1210 Wien  
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## WARRANTY AND SERVICE

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All Bull Buster Dart Games are warranted by Merit Industries, Inc. for a period of six months. This warranty covers defects in material and workmanship (both electrical and mechanical) but does not cover damage due to physical abuse or attempted repair by untrained service personnel.

Should a problem occur, service and troubleshooting must be performed by a qualified service technician familiar with microprocessor based equipment. In order to quickly process equipment in need of repair (when a qualified technician is not available) it should be returned to your distributor and not directly to Merit Industries, Inc. Following this procedure will return your equipment to operation in the shortest time possible.

In order to assist Merit Industries, Inc. in providing the best quality and service possible, please complete and return the enclosed postage paid Equipment Registration Card.

## MAINTAINENCE

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The light bulbs on the DRT-150 Display Board can be replaced by :

- 1 -- Open the front access door.
- 2 -- Remove the plexiglass display glass by pulling down and outward past the metal clips.
- 3 -- Locate the defective bulb location.
- 4 -- Remove and replace with a new #73 bulb.
- 5 -- Replace the plexiglass by inserting the top edge into the aluminum extrusion (above and forward of the DRT-150 Board) and pushing the bottom up and in so that it snaps over the two metal clips.

The light bulbs for the push button switches can be replaced by :

- 1 -- Open the front access door.
- 2 -- Locate the defective bulb location.
- 3 -- Pull out the microswitch/bulb assembly.
- 4 -- Remove and replace with a new #161 bulb.
- 5 -- Replace the microswitch/bulb assembly by snapping it back into place.

The fluorescent bulb can be replaced by :

- 1 -- Remove the plastic bulb cover.
- 2 -- Remove and replace with a new 'F15T 8 CW' bulb.
- 3 -- Replace the plastic bulb cover.

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## MAINTAINENCE

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Stuck segments can be caused by excess pressure on the target matrix switch. If a stuck segment occurs, it may be caused by the wing nuts holding the back board being too tight. This can be taken care of by opening the back door of the cabinet and insuring that the wing nuts are only lightly finger tightened.

Broken dart tips can sometimes be pushed into the cavity behind the segment but if a broken tip becomes wedged between the back of a segment and the rubber target backing mat (causing a stuck segment) it will be necessary to remove the target matrix switch assembly. Open the back door and remove the four wing nuts. Carefully remove the back board and clean out all broken dart tips. Reassemble being careful to not over tighten the wing nuts.

The wood cabinet, plexiglass display panel, operation panel and target decal should all be cleaned with a damp cloth or a mild detergent. The plexiglass display panel may be cleaned with a solution for use on plexiglass or acrylic surfaces. The area surrounding the target can be cleaned with a damp cloth. The target segments should not require any care.

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A.u.S. Spielgeräte GmbH  
Scheydgasse 48 A-1210 Wien  
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E-mail: [verkauf@aus.at](mailto:verkauf@aus.at)  
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## TEST PROCEDURE USING BUILT IN DIAGNOSTIC SOFTWARE

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Merit's Bull Buster Darts has built in test and diagnostic functions which enable the operator to exercise each individual function of the game's operation, without actually playing all of the games.

To enter the test and diagnostic mode, the operator must press one of two "TEST" buttons. One Test button is located at the bottom left (bottom right when viewing the board from the rear of the unit) on the rear of the processor board. The other Test button is located at the bottom left on the front of the Display board (Loc. SW3). After either one of the buttons is released, the game will be in test mode.

Once entered, each of the button lamps should be lit. The temporary score display will show the word "tSt". There will also be a "1" displayed in the game number display. Both of the game control buttons will now be active and should be tested by pressing them while verifying that the game number display advances from "1" to "7". In the case of a Bull Buster Deluxe, the game number display advances from "1" to "8".

After each of the buttons have been tested, return the game number display to "2". This will allow test #2 (the display segment test) to begin. To actuate the test, press and release the "TEST" button again. The game will now light each of the individual segments of the score displays on the display panel. Starting with the temporary score, and finishing with the round/dart display. If more than one segment is lit at any time, this indicates a problem in the display circuit on the display board.

Once the display segment test has ended, the word "tSt" will appear again in the temporary score display window. The matrix/target test may be activated by advancing the game number display to "3" and then pressing the "TEST" button. The temporary score will now go blank, and the test is ready to begin. Press each of the segments on the target, one by one. As the segment is detected its value will be displayed in the temporary score display window. Segments in the double and triple rings will be displayed with a "d" or "t" prefix. i.e. "d20" or "t17". The bullseye will be displayed as "bE". The double bullseye, if the game is so equipped, as "dbE".

After all of the segments have been tested, exit the test by pressing the test button. This will return you to the test select mode. Advance the test number to "4" with any of the buttons, and press the test button to actuate the lamp test. Once started, this test will flash all of the lamps three times followed by all of the lamps being turned off. The test ends with each lamp being turned on and off again in sequence.

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A.S. Spielgeräte GmbH  
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Upon completion of the fourth test, advance the game number display to "5". Test #5 is the sound test. Push the test button to begin the test. The game will emit a continuous 1.0 kilohertz test tone which may be used to troubleshoot the audio amplifier circuit and speaker. The test may be ended by pressing the test button for a second time.

Advance the game number display to "6". Test #6 will test each DIP switch and each control panel switch. Start the test by turning each switch "ON" one by one. As each switch is turned on a display segment in the "TEMPORARY SCORE" display window will be activated. When all switches have been turned "ON", reverse the sequence turning each switch "OFF". The push button control panel switches activate segments only when held down. The following chart indicates which switch operates which segment. Note that after the test, each DIP switch should be returned to its original position.

HUNDREDS		TENS		UNITS	
+--A--+		+--A--+		+--A--+	
F	B	F	B	F	B
+--G--+		+--G--+		+--G--+	
E	C	E	C	E	C
+--D--+	X	+--D--+	X	+--D--+	X
X -----	MIC	X -----	1	X -----	SELECT
A -----	2	A -----	2	A --	PLYR CHNG
B -----	3	B -----	3	B -----	
C -----	4	C -----	4	C -----	
D -----	5	D -----	5	D -----	
E -----	6	E -----	6	E -----	
F -----	7	F -----	7	F -----	
G -----	8	G -----	8	G -----	
DIP SW #2		DIP SW #1		OTHER SWITCHES	

Advance the game number display to "7". This feature will show the current program version in the player score displays. End the test by pressing the test button for a second time.

Test #8 is for Deluxe games. This test will check the display segments and lamps in the Cricket enclosure. To actuate this test, advance the game number display to "8", press and release the "Test" button again. Each of the individual segments will light as well as each lamp starting with "15" thru "20" and finishing with players "1" thru "4". If more than one segment is lit at any time, this indicates a problem in the Cricket display board.



The last test is test #1. This is called the burn in test, and is used as the final "durability" test of the electronic components before leaving the factory. The test should be used as a method to "warm-up" the game while trying to find a heat related or intermittent problem. This is a good test to run in the shop or overnight to check overall operation of the electronics and power supply. To begin the test, press the test button. To exit the test program, power to the game must be turned off.

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## GAME PLAY FOR STANDARD GAMES (U.S.)

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After inserting quarters, the temporary score display will show the number of credits on the game. The "SELECT" button will be lit, allowing the player to choose the game to be played. The cost per player will be displayed in the Player #1 score window. As the "SELECT" button is pressed, the game number will be displayed in the game window, to correspond with the games numbered on the instruction panel. After the player has selected the game to be played, the game may be started by pressing the "START/PLAYER CHANGE" button, which will also be lit. Once this button has been pressed, the game is locked in until it has been played through. Any unused credits will be saved for use in the next game.

## GAME PLAY FOR STANDARD GAMES (INTERNATIONAL)

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After inserting quarters, the temporary score display will show the number of credits on the game. The "SELECT" button will be lit, allowing the player to choose the game to be played. The cost per player will be displayed in the Player #1 score window. As the "SELECT" button is pressed, the game number will be displayed in the game window, to correspond with the games numbered on the instruction panel. After the player has selected the game to be played, the amount of players may be selected by pressing the "START/PLAYER CHANGE" button for each player. If 20 seconds passes once this button has been pressed, the game is locked in until it has been played through. Any unused credits will be saved for use in the next game.

## GAME PLAY FOR DELUXE GAMES (U.S. & INTERNATIONAL)

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After inserting quarters, the temporary score display will show the number of credits on the game. The "SELECT" button will be lit, allowing the player to choose the game to be played. The cost per player will be displayed in the Player #1 score window. As the "SELECT" button is pressed, the game description will be displayed in the Cricket enclosure, and the game number will be displayed in the game window, to correspond with the games numbered on the instruction panel. After the player has selected the game to be played, the amount of players may be selected by pressing the "START/PLAYER CHANGE" button for each player. If 20 seconds passes once this button has been pressed, the game is locked in until it has been played through. Any unused credits will be saved for use in the next game.



## PRO SELECT FEATURE

PRO MODE : CENTER BULLSEYE "50" , OUTER BULLSEYE RING "25"  
(IF EQUIPPED WITH DOUBLE BULL)

The "PRO MODE SELECT" feature now allows the additional option of the double bullseye to be selected. This option provides the opportunity for players of different skill levels to challenge one another competitively. The option applies to "301", "301 MASTERS", "301 DOUBLE IN/DOUBLE OUT", "501", "501 MASTERS", "HIGH SCORE" and "CRICKET". By setting the dipswitch positions on Dipswitch 2, The double bullseye may be used in three possible ways:

A) PRO BULL MODE (Standard & Deluxe games) - In this usage, the bullseye has a value of 25 points (Outer Bull) and 50 points (Inner Bull). For this option, DIP switch 2 & 3 must be in the "OFF" position.

B) STANDARD PLAY (Standard & Deluxe games) - This configuration will score the entire bullseye as 50 points without asking the player. This may be selected by setting DIP switch 2 to the "ON" position.

C) CRICKET PRO BULL MODE (Deluxe games only) - In this mode, the bullseye has a value of 25 points (Outer Bull) and 50 points (Inner Bull) for CRICKET ONLY. All other games ie. 1 thru 7 will score the entire bullseye (Inner & Outer) as 50 points. For this option, DIP switch 2 must be in the "ON" position and DIP switch 3 must be in the "ON" position.

### Additional Game Features :

1 - "Lights Out" mode - With dip switch #1 position 1 in the 'ON' position, overhead light will go out at end of game. The light will remain off until the game is recoinced. When not in this mode, the overhead light will remain on during the attract cycle.

2 - Dart alarm lights out - If darts are thrown without credits in the game, the overhead light will go out for one minute. Turning on position B of dip switch #2 keeps the light on at all times.

NOTE: This feature is only available if the above "Lights Out" feature is not activated.

3 - Stuck segment indicator - Game will display in temp score window a segment that is stuck. (t12 = triple 12, d17 = double 17, be = bullseye, and dbe = double bullseye and "tARGET" will appear in the player "2" & "3" window). All game lights will go out except for the "REMOVE" lamp.

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A.u.S. Spielgeräte GmbH  
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- 4 - Extended "WINNER" mode - All scores at the end of the game will remain in the displays for a period of three minutes. This mode may be aborted in two ways: 1) Inserting coins. 2) If previous credits remain on game, pressing any front panel button will start game selection mode.
- 5 - Sounds - Game play sounds have been enhanced. Win song has been shortened to a few notes.
- 6 - Select mode timeout - If the PLAYER CHANGE button has not been pressed within three minutes of inserting coins, the game selected game will automatically start.
- 7 - Additional players - After PLAYER CHANGE button has been pressed, more players may be added to game, if added within 20 seconds and if no darts have yet been thrown.
- 8 - Catch Ring - If a dart is thrown outside the double segments of the target, a catch ring is provided so that the dart which has missed the target will be easily accessible between rounds.



## GAME INSTRUCTIONS

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**301** -- Each player will start with a score of 301 points. Each dart thrown will decrease the player's score, provided that it was a scoring dart. Players must try to reach zero points exactly. If a player goes below zero, he will "BUST" and retain his score from the beginning of that round.

**301 MASTERS** -- Plays the same as "301" except players must reach zero by scoring a "DOUBLE", "TRIPLE", or "BULLSEYE" on their last dart.

**501** -- Plays the same as "301" except players start with 501 points.

**501 MASTERS** -- Plays the same as "301 MASTERS" except players start with 501 points.

**301 DOUBLE IN/DOUBLE OUT** -- Plays the same as 301 except players may not begin until they score a "DOUBLE" (obtained by scoring a dart on the outermost ring of the target) or "BULLSEYE", and reach zero by scoring a "DOUBLE" on their last dart.

**HIGH SCORE** -- Players start with a zero score. After seven rounds, the highest score wins the game.

**BASEBALL** -- Players throw for 9 "innings" (rounds). Any sector from one thru nine will score. A single is worth one point, a double is worth two points, a triple is worth three points and a Bullseye is worth four points. The highest score after 9 "innings" (rounds) wins.

**SHANGHAI** -- Players start with a zero score. Each round, players try to hit consecutive sectors from 1 to 20. A "SHANGHAI" (three consecutive numbers in one round; one each of a single, double, and a triple) is an automatic winner. Otherwise, the highest score after seven rounds wins the game.

**CRICKET** -- Two players or two teams may only play. Players use the overhead display to monitor numbers as they are closed and use lower display to show points which are scored after a number is closed. Players shoot at 15 thru 20 and Bullseye. A number is CLOSED by scoring three MARKS in that number. TRIPLES score 3 Marks, DOUBLES score 2 Marks, Singles score 1 Mark. Additional hits on a closed number will score points only if the opponent is still open on that number. The first Player to close all 6 numbers, the Bullseye AND have the highest score wins the game.



# DIP-SCHALTER EINSTELLUNGEN für DRT-1.50

Die DIP-Schalter befinden sich auf der Bauteile-Seite der großen Planine. Sie können sie erreichen, indem Sie das Pult vorne öffnen und dann die Buntscheibe nach vorn herausnehmen.

PROGRAM # 8278-03

## DIP-SCHALTER 1

OFF ON

Oberbeleuchtung  
immer eingesch

1 X 1 DM = 1 SP  
1 X 5 DM = 5 SP

+ 1 Spiel

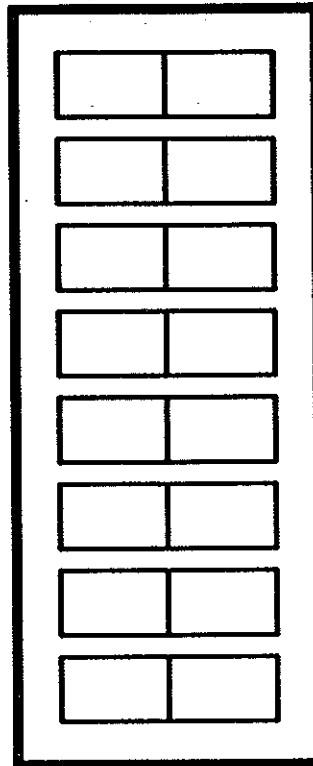
kein Runden-Limit

nicht belegt



Type 3

1  
2  
3  
4  
5  
6  
7  
8



Oberbeleuchtung nur  
bei Spielbetrieb

1 X 1 DM = 1 SP  
1 X 5 DM = 6 SP

+ 2 Spiele

10 Runden-Limit 301

nicht belegt



Type 4 oder Type 2  
mit DRT-201 Adapter

## DIP-SCHALTER 2

OFF ON

Zukünftig Gebrauch

50 / 25 Bulleye

nicht belegt

Pausenmelodie

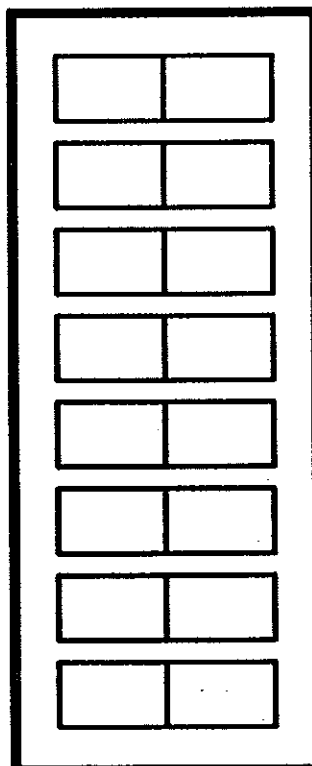
DM 1 301 DBL  
EIN / AUS

4 Sekunden  
Wurf-Pause

Normal AUS

Alarm mit  
Oberbeleuchtung

1  
2  
3  
4  
5  
6  
7  
8



"AUF" Für Eigentlich Spiel

50 - Bulleye )Option

nicht belegt

Pausenmelodie aus

DM 2 301 DBL  
EIN / AUS

8 Sekunden  
Wurf-Pause

Test läuft nach  
dem Einschalten

Oberbeleuchtung  
bleibt an

Bitte achten Sie darauf, daß die Kontaktscheibe mit den 4 Flügelmuttern {5500/0019 rev - 8/3/87} nur mit leichtem Andruck befestigt wird.

## DIP - SCHALTER - BESCHREIBUNG "DRT 150"

### DIP-SCHALTER BANK 1

---

#### Schalter 1 - Oberbeleuchtung

- ON - Oberbeleuchtung nur während des Spielbetriebes eingeschaltet.
- OFF - Oberbeleuchtung immer eingeschaltet.  
Werden ohne Kredit Pfeile auf das Bulleye geworfen, schaltet sich das Licht für 1 Minute ab.

#### Schalter 2 - Bonus-Kredit in Verbindung mit Schalter 3

- ON - Es wird für eine 5 DM-Münze 1 Bonus Kredit gegeben.
- OFF - Kein Bonus.

#### Schalter 3 - Bonus-Kredit in Verbindung mit Schalter 2

- ON - Es werden zwei Bonus-Kredite für ein 5 DM Stück gegeben, wenn Schalter 2 sich in ON-Position befindet.
- OFF - Es wird ein Bonus-Kredit gegeben, wenn Schalter 2 sich in ON-Position befindet.

#### Schalter 4 - Runden-Limit

ON - Runden-Limit wie folgt:

<u>Spiel</u>	<u>Runden</u>
301	10
301 Masters	10
501	15
501 Masters	15
301 Db1 in/out	10
Shanghai	7
High Score	7
Base Ball	9



A.u.S. Spielgeräte GmbH  
Scheydgasse 4B A-1210 Wien  
Tel. +43-1-271 66 00 Fax +43-1-271 66 00 75  
E-mail: verkauf@aus.at  
<http://www.aus.at>  
Öffnungszeiten: Mo-Fr. 9-18 Uhr

OFF - Runden-Limit wie folgt:

<u>Spiel</u>	<u>Runden</u>
301	kein Limit
301 Masters	" "
501	" "
501 Masters	" "
301 Dbl	" "
in/out	" "
Shanghai	7
High Score	7
Base Ball	9

Schalter 5 - 7 nicht verwendet

Schalter 8 - Schalter 8 muß sich in ON-Position befinden, damit eine einwandfreie Funktion des Spiels gewährleistet ist.

#### DIP-SCHALTER BANK 2

Schalter 1 - Schalter 1 muß sich in ON-Position befinden, damit eine einwandfreie Funktion des Spiels gewährleistet ist.

Schalter 2 - Bulleye - Funktion

ON - Das Bulleye zählt 50 Punkte.

OFF - Der äußere Ring des Bulleye zählt 25 Punkte.  
Der Mittelpunkt zählt 50 Punkte (nur in Verbindung mit Bulleye-Option für 25/50 Bulleye möglich).

Schalter 4 - Musik in der Werbephase

ON - Keine Musik während der Werbephase

OFF - Werbemusik erklingt einmal pro 1/2 Stunde.

Schalter 5 - Spiel - Preis

ON - Das 301 Double In/Out-Spiel kostet 2 DM.

OFF - Das 301 Double In/Out-Spiel kostet 1 DM.

Schalter 6 - Wurf-Pause

ON - "Remove Dart"-Licht (Pfeile herausnehmen) leuchtet 8 Sekunden bevor "Throw Dart" (Pfeile werfen) eingeschaltet wird.

OFF - "Remove Dart"-Licht leuchtet 4 Sekunden.

Schalter 7 - "Burn in"-Test

ON - Das Spiel startet nach dem Einschalten die "Burn-in"-Routine.

OFF - Normales Spiel.

Schalter 8 - Oberbeleuchtung während der Werbephase

ON - Die Oberbeleuchtung bleibt eingeschaltet, auch wenn ein Pfeil während der Werbephase auf das Bulleye geworfen wurde.

OFF - Die Oberbeleuchtung schaltet für 40 Sekunden ab, wenn während der Werbephase ein Pfeil auf das Bulleye geworfen wird.



BULL BUSTER DARTS:  
 SPARE PARTS LIST FOR GERMANY

PART NO.	DESCRIPTION
SW1878	SWITCH BUTTON RED (START/SPIELER)
SW1836	SWITCH BUTTON RED (WAHLEN)
LB1150	LIGHT BULB #161 FOR SWITCHES
GL4082	DART TARGET LEXAN - CATCH RING
GL4073	LEXAN CONTROL PANEL - GERMAN
GL8025	PANEL PLEXIGLASS SCORING DARTS
DS1011	TARGET SPIDER
DS0915	**DOUBLE BULLSEYE SEGMENT PACK (6 EACH - OUTER RED BULLSEYE) (6 EACH - INNER BLUE BULLSEYE)
DS0911	**BLUE SEGMENT PACK (10 EACH - BLUE INNER SINGLE) (10 EACH - BLUE TRIPLE) (10 EACH - BLUE OUTER DOUBLE) (10 EACH - BLUE DOUBLE)
DS0912	**RED SEGMENT PACK (10 EACH - RED INNER SINGLE) (10 EACH - RED TRIPLE) (10 EACH - RED OUTER DOUBLE) (10 EACH - RED DOUBLE)
DS0913	**CATCH RING SEGMENT KIT (4 EACH - BROWN SEGMENTS) (12 EACH - BROWN SCREW CAPS)
SAB702	MATRIX SWITCH & WOOD ASSEMBLY (DBL. BULLSEYE/TYPE 4)
HWB002	GUM RUBBER SHEET
EC2310	MATRIX SWITCH EXTENSION CABLE

\*\* INDIVIDUAL PARTS ARE NOT AVAILABLE



BULL BUSTER DARTS:  
 SPARE PARTS FOR GERMANY

PART NO.	DESCRIPTION
SA2476	DRT-201 PC BRD. (TARGET INTERFACE BRD.)
SA2475	DRT-200 CPU BRD.
SA2450	DRT-150 DISPLAY BRD.
LB1125	(a) LIGHT BULB #73
SC4080	(a) 7 SEGMENT L.E.D.
SC3025	(a) DP8311 - DISPLAY DRIVER
SC4005	(b) NSC831
SC4000	(b) NSC810A - RAM I/O
SC3950	(b) NSC800 - PROCESSOR
SC3932	(b) NCR8489 -IC PAL
SAB550	POWER SUPPLY
SW4000	(c) POWER SWITCH
EC3010	(c) FUSE - 1 AMP - SLO BLO
SC5160	(c) +5V REGULATOR LA51905
SC9000	(c) 3A SOLID STATE RELAY
SA4035	COUNTER W/CABLE & CABLE
EC6049	15" LIGHT FIXTURE 50 Hz
LB2100	FLOURESCENT BULB
HW8211	COIN REJECTOR MECH (1 DM)
HW8212	COIN REJECTOR MECH (5 DM)

- (a) - USED ON DRT-150 DISPLAY BRD.
- (b) - USED ON DRT-200 CPU BRD.
- (c) - USED ON POWER SUPPLY



ADDITIONAL PARTS INCLUDED WITH BULL BUSTER DARTS:

The following items are included with your Bull Buster Dart Game:

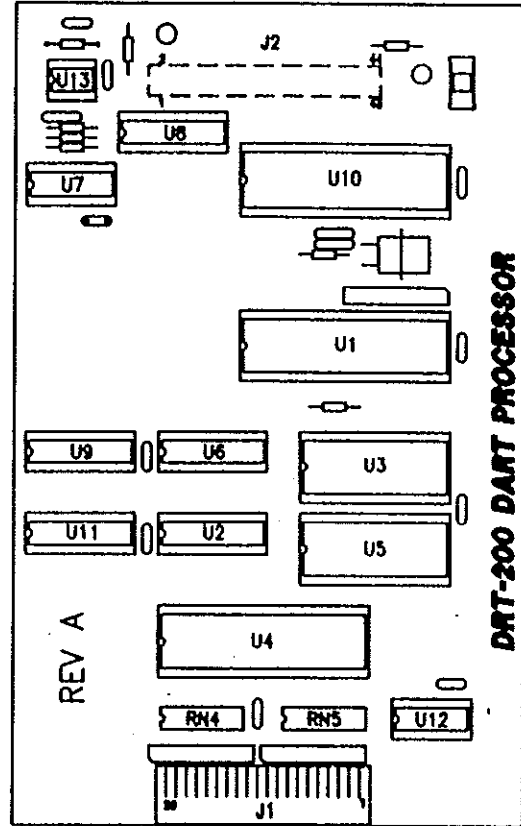
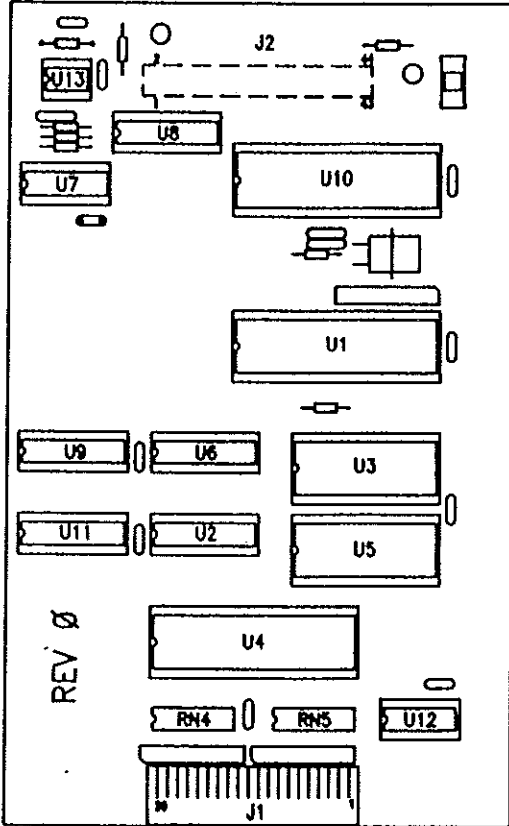
- 1 - Owners Guide and Technical Reference Manual
- 2 - Schematics for Deluxe and Standard Games
- 3 - Foul Line Sticker - "THE BULL STARTS HERE" (part no. PM4075)
- 4 - Window Sticker - "Bull Buster Darts Shot Here" (part no. PM5115)
- 5 - (2) Red Dart Sets
- 6 - (2) Black Dart Sets
- 7 - (500) Dart Tips
- 8 - Dart Segment - Single Bullseye - Red
- 9 - Dart Segment - Outer Bullseye - Red
- 10 - Dart Segment - Inner Bullseye - Blue
- 11 - Dart Segment - Single - Inside Red
- 12 - Dart Segment - Single - Inside Blue
- 13 - Dart Segment - Single - Outside Red
- 14 - Dart Segment - Single - Outside Blue
- 15 - Dart Segment - Double - Red
- 16 - Dart Segment - Double - Blue
- 17 - Dart Segment - Triple - Red
- 18 - Dart Segment - Triple - Blue
- 19 - (2) Light Bulbs for Push Buttons
- 20 - (6) Light Bulbs for Display and Instruction Brds

(18)

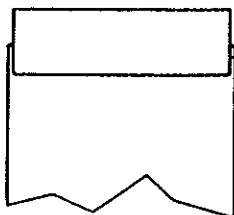
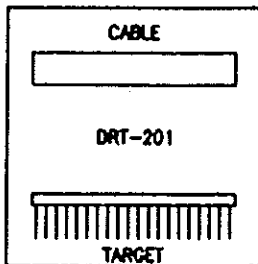
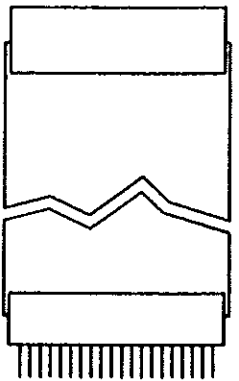


A.U.S. Spielgeräte GmbH  
Scheydgasse 4B A-1210 Wien  
Tel. +43-1-271 66 00 Fax. +43-1-271 66 00 75  
E-mail: [verkauf@aus.at](mailto:verkauf@aus.at)  
<http://www.aus.at>  
Öffnungszeiten: Mo-Fr. 9-18 Uhr

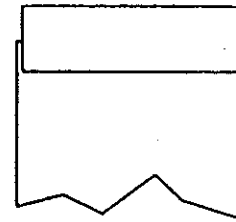
# SWITCH MATRIX CONNECTIONS TO DRT-200



DRT-200 DART PROCESSOR



TO MATRIX SWITCH



TO MATRIX SWITCH



THIS STICKER  
WILL APPEAR  
ON REV 0  
BOARDS THAT  
HAVE BEEN  
MODIFIED TO  
REV A

A DRT-201 IS REQUIRED IF:

- 1) A TYPE 3 OR TYPE 4 TARGET ASSEMBLY IS IN THE GAME.  
— AND —
- 2) THE DRT-200 IS A REV 0 OR EARLIER.  
— AND —
- 3) PRESSING THE SINGLE 12, 5, 20, 1, 18, 4, 13, 6, 10, AND 15 DO NOT SCORE AT ALL, AND ALL OTHER SINGLE NUMBERS SCORE CORRECTLY.



A.U.S. Spielgeräte GesmbH  
Scheydgasse 48 A-1210 Wien  
Tel. +43-1-271 66 00 Fax. +43-1-271 66 00 75  
E-mail: verkauf@aus.at  
http://www.aus.at  
Öffnungszeiten: Mo-Fr. 9-18 Uhr