

TICKETS TO PRIZES



**PLEASE READ FIRST BEFORE
 PLUGGING IN MACHINE**

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87MAN-01-G

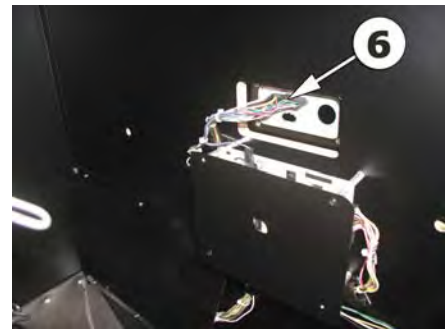
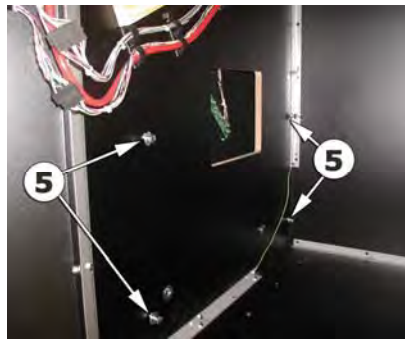
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Setup

Cabinet Preparation

1. Locate center/right cabinet assembly① in the position you will want the machine. Connect power cord, but do not power the machine on.
2. Slide the left side cabinet② together with the center/right cabinet assembly so that locating pins③ engage into locating holes.
3. Loosely thread three 3/8"-16 x 1-1/4" bolts and washers④ from inside of the left side unit.
4. Open center unit door and remove ticket chute and bag from center unit.
5. Loosely thread four 5/16" x 1-1/4" bolts and washers⑤ from inside of center unit.
6. Tighten all 3/8" and 5/16" bolts.
7. Reinstall ticket chute and bag.
8. Plug left side harness⑥ into center unit.
9. Connect power harness⑦ for the upper prize cylinders and secure wires to top of cabinet.
10. Attach marquee⑧ to marquee mount brackets⑨ with supplied screws.



Load Prizes

Prize Trees

Power should be off when loading the prize trees.

Hang merchandise on arms of prize tree. Each prize tree has five levels representing different ticket values. Be sure to load the appropriate value prize to match ticket value level on prize tree.

IMPORTANT:

1. DO NOT HANG A PRIZE ON EVERY TURN OF THE DISPENSE SPRING. TO AVOID A DOUBLE DISPENSE, PRIZES SHOULD BE LOCATED NO CLOSER THAN EVERY SECOND TURN ON THE PRIZE SPRING.

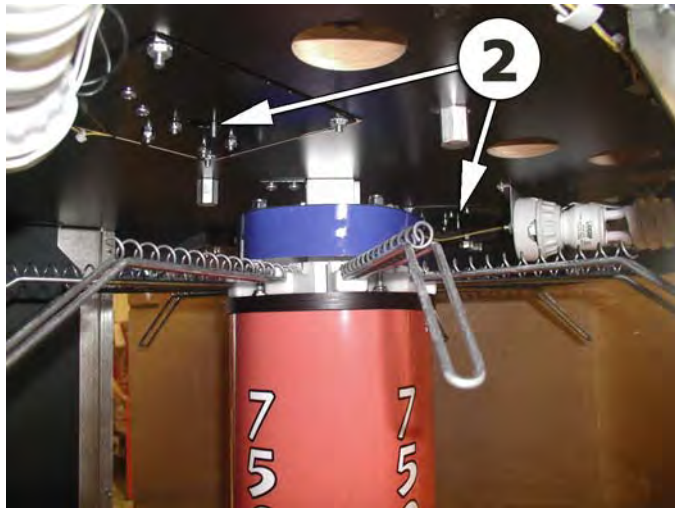
2. PRIZES SHOULD BE HUNG USING PAPER RINGS SUPPLIED BY BENCHMARK OR PUT INTO POLY BAGS WITH A MINIMUM THICKNESS OF 3 MILS TO AVOID VEND ISSUES.
3. PRIZES SHOULD NOT REST ON THE PRIZE SPRING LOCATED ON THE LEVEL BELOW.

Prize Doors

Open Prize Doors 1, 2, & 3 by pushing the release tabs① accessible through the inside of the right side cabinet. Once released, the Prize Doors will slide open using the red handle.

Prize doors 4 & 5 have a release pin② located inside the right cabinet on the top.

Prize doors 6 & 7 have a release pin located inside the left cabinet on the top.



General Operation

The Tickets To Prizes machine was designed to be a standalone enhancement or replacement for a redemption counter.

Players win tickets playing redemption type games and cash them in for prizes.

When a player has enough tickets to redeem for a prize, they run the tickets through either or both of the ticket eaters. The ticket eaters will receive and count tickets when inserted in any of the four possible directions. As the tickets are eaten, the display updates to reflect the number of tickets credited.

When the player is ready to select a prize, (s)he can select from any of the levels valued at or lower than the ticket credits indicated by the illuminated selection buttons. If (s)he wants to select from a prize tree, the player can rotate the tree with the Rotate Prizes Button until the desired prize is in the Selection Window. The player then will press the Vend Button corresponding to that prize window. The prize tree will rotate around until the prize is located above the prize chute where it will vend the prize. The player then

pulls the prize door open in order to remove the prize. If there was no prize on the arm that the player selected from, the player will get another try. The number of tries is a programmable option. If the player makes unsuccessful tries beyond the number set in programming, the credits will be eliminated from the machine.

The player may want to select a prize from a prize door. If so, (s)he must press the illuminated button labeled with the number corresponding to the prize door. The prize door will be immediately unlocked. It will remain unlocked for approximately 30 seconds allowing the player to slide the door open and get the prize.

When a prize is successfully vended, the appropriate number of points will be subtracted from the credit display and the Illuminated Vend Buttons will be updated. If the player has enough points to select another prize, (s)he can. If the player has a lower amount of credit than the lowest priced prize, the ticket dispenser will automatically give change. If the machine is out of tickets to give for change, the remaining credits will remain on the display.

Changing Ticket Bag

1. Open Center Unit Door
2. Remove capture plate① by lifting up and off of locating pins
3. Remove ticket chute② and ticket bag③
4. Reinstall ticket bag by reversing above instructions

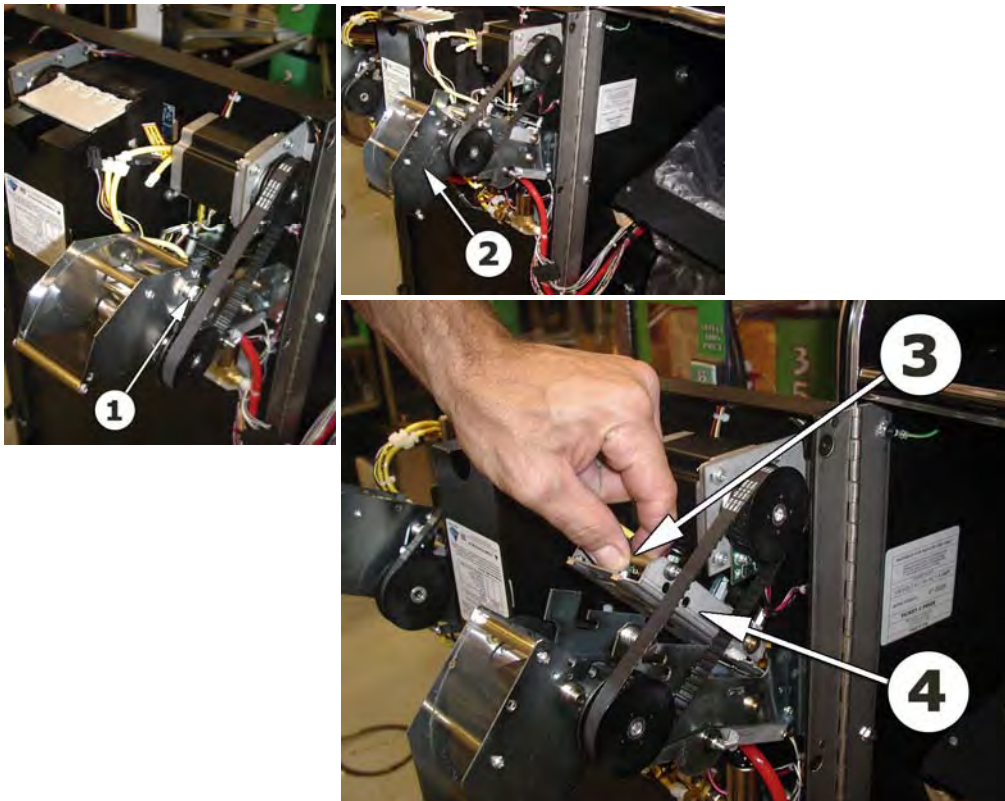


Ticket Eater Service

CAUTION: ALWAYS STAY CLEAR OF THE TICKET CUTTERS.

Ticket Jam

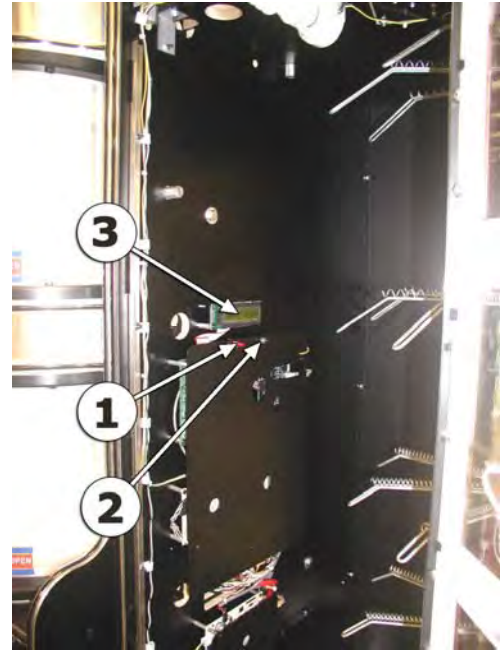
1. Pull captive locking pins① out and turn counterclockwise to secure them in the 'out' position.
2. Tilt cutter assembly② down
3. Use brass handle③ to pull top assembly④ back and up to remove.
4. Remove jammed tickets.
5. Carefully replace top assembly.
6. Tilt cutter assembly up.
7. Turn captive locking pins① clockwise to release.



Programming Tickets To Prizes Software Version: 5.8

1.) Entering Programming Mode

To enter program mode, press and hold the left (Red) button① located in the Right Enclosure, mounted on the electronics cover. After 2 seconds, “TOTALS” will appear on the LCD Display③. At this time, release the button. “TICKETS IN” with the number of tickets inserted will be displayed. The game is now in Program Mode. **PLEASE NOTE** that from this point forward, the left button (**Red, Button 1**) and the right button (**Black, Button 2**)② are the buttons used. Each programming option is displayed on the LCD with the functions shown for Button 1 and Button 2. In general, Button 1 changes a value or setting and Button 2 advances to the next option.



2.) TICKETS IN

If the Input Method is set for Ticket Acceptance (See Programming Option #16) The total tickets received through the ticket takers is displayed.

The total will rollover to zero when it reaches 1,000,000,000. Depressing button 2 will display “DOLLARS IN”.

3.) DOLLARS IN

If there is a Bill Validator, then the Total Bills Inserted will be displayed. The total will rollover to zero when it reaches 1,000,000,000. Depressing button 2 will display “COINS IN”

4.) COINS IN

If there is a Coin Mechanism, then the Total Coins Inserted will be displayed. The total will rollover to zero when it reaches 1,000,000,000. Depressing button 2 will display “TICKETS OUT”

5.) TICKETS OUT

If the Input Method is set for Ticket Acceptance Only (See Programming Option #16), then the Total Tickets Dispensed as change will be displayed. The total will rollover to zero when it reaches 1,000,000,000. Depressing button 2 will display “PRIZES OUT LEVEL 1”

6.) PRIZES OUT

This option displays the total prizes dispensed. Depressing Button 2 will advance to the next Prize Level until the totals have been displayed for all 17 Prize Levels. Depressing button 2 after the last Prize Level will Display one of two options: If the Input Method is set for Ticket Acceptance Only (See Programming Option #16), and there are tickets to be dispensed as change that have not been dispensed, then “CLEAR TICKETS OWED?” will be displayed, otherwise “ENTER PROGRAM MODE?”

7.) “CLEAR TICKETS OWED?”

This option is displayed if there are tickets that are owed that have not been dispensed, and will show the number of tickets. Depressing Button 1 will clear these tickets from the system, and “TICKETS CLEARED” will be displayed. Depressing Button 2 will display “ENTER PROGRAM MODE?”

8.) “ENTER PROGRAM MODE?”

Depressing Button 1 at this time will enter the area of Program Mode where parameters may be changed, and “ENTER PASSCODE” will be displayed. Depressing Button 2 will return the Tickets-To-Prizes to Normal Run Mode.

9.) “ENTER PASSCODE”

To be able to change programming parameters or reset the counters, a 4-digit passcode must be entered. The default passcode is 0000. To enter the passcode, Depress Button 1 to change the digit from 0 to 9, then press Button 2 to move to the next digit. After all digits have been entered correctly, depressing button 2 will Display the first programming option, “CHANGE PASSCODE?”.

10.) “CHANGE PASSCODE?”

Depressing Button 1 will allow for changing the passcode. Depressing Button 2 will move to “DISPLAY CONTRAST”.

IMPORTANT!!! ONCE THE PASSCODE IS CHANGED, THE DEFAULT OF 0000 WILL NO LONGER WORK! BE SURE TO SAVE THE PASSCODE IN A SAFE PLACE!

Entering the new passcode is accomplished in the same way that entering the passcode is done, as explained in 9.) .

8.) DISPLAY CONTRAST

This option sets the contrast for the LCD Display. Depress and hold Button 1 until the desired contrast is reached, then release Button 1. Depressing Button 2 will move to the next option, “VOLUME”.

9.) VOLUME

This option sets the speaker volume for the audio prompts. When this option is entered, the audio voice will play continuously. Depressing Button 1 will increase/decrease the volume. As long as Button 1 is depressed, the volume will increase until the maximum is reached, then decrease until the volume is off. Depress and hold Button 1 until the desired volume is reached. If the volume is increasing and Button 1 is released, then depressing Button 1 again will cause the volume to decrease. The opposite will happen if the volume is decreasing. Depressing Button 2 will display the next option, “ATTRACTION FREQUENCY”.

10.) ATTRACTION FREQUENCY

This option sets the frequency at which the attraction mode occurs. The attraction mode causes the trees to rotate for approximately 1 minute. The settings are from OFF to every 30 minutes. Depressing Button 1 will change the settings in 1-minute increments from OFF to 30 minutes, then back to OFF. Depressing Button 2 displays the next option, “VEND RETRIES”.

13.) VEND RETRIES

This option sets the number of vend attempts allowed. If the number of attempted vends allowed without a successful vend exceeds this setting, then the Ticket Count is set to 0. The

options for number of allowed attempts for a vend are 1 through 5, and “NO LIMIT”. Depressing Button 1 will change the setting. Depressing Button 2 will display the next option, “TICKETS PER 1 BILL”.

14.) TICKETS PER 1 BILL

If the Tickets-To-Prizes has a bill validator, then the number of tickets given for a \$1 Bill can be specified. Depressing Button 1 will set the number of tickets from 1 to 100. If Button 1 is held depressed, the value will continue to change. If Button 1 is released and then depressed again, the value will change from increasing to decreasing or vice versa. Depressing Button 2 will display “TICKETS PER 5 BILL” and the same procedure is used for the \$5 Dollar Bill as well as \$10 and \$20. When Button 2 is depressed after the \$20 Bill setting then “TICKETS PER COIN” will be displayed. If the Tickets-To-Prizes has a coin mechanism, then the same procedure is followed to set the number of tickets awarded per coin. Depressing Button 2 will then display “TICKET MULTIPLIER”

15.) TICKET MULTIPLIER

If the Tickets-To-Prizes has ticket Takers, this option sets the “value” of the accepted ticket. For every valid ticket that is inserted, the total displayed is increased by this value. Also, the change dispensed from the Ticket Dispensers is calculated in the same manner. For example, if the Ticket Multiplier is 5, then for every ticket inserted, 5 is added to the total, and 1 ticket is dispensed for every 5 in change. Depressing Button 1 will change the value from 1 to 10 in increments of 1. Depressing Button 2 will display “INPUT TYPE”.

16.) INPUT TYPE

There are three types of input that the Tickets-To-Prizes will accept: Tickets, Receipts, and Cardswipe Input. Depressing Button 1 will change the Input Type between Tickets, Tickets and Receipt, Receipt Only, or Cardswipe. The Tickets Only option is the default, and allows for Ticket Insertion and payment of change in Tickets. The Tickets and Receipt Option allows for Ticket insertion OR Barcoded receipt, and gives change by printing a barcoded receipt. Receipt Only allows for acceptance of barcoded receipt only. The cardswipe option is selected if the Tickets-To-Prizes is to be interfaced with a cardswipe system. Depressing Button 1 changes the Input Type. Depressing Button 2 will display the next option. If the Input Type includes Tickets, then go to the next option, else skip to Option #20.

17.) ENTER BARCODE?

If the Input Type includes Tickets, then the option to enter the 4-Digit barcode for the tickets to be used can be entered. Depressing Button 1 will display “ENTER BARCODE” and the current setting. Depressing Button 2 will display “TICKET SECURITY”. Depressing Button 1 again will change the first digit from 0 to 9, then back to 0. Depressing Button 2 will advance to the next digit. After the last digit, Depressing Button 2 will display “TICKET SECURITY”.

18.) TICKET SECURITY

If the Input Type includes Tickets, then this option sets the security level for Ticket acceptance. A setting of 0 is for Notch Only Required, and the barcode is not checked. A setting of 1 is the default setting and requires at least 80% barcode validation for ticket acceptance. A setting of 2 is the most stringent setting, but be advised that the barcode printed on the ticket must be absolutely perfect for it to be accepted with this setting. Depressing Button 1 changes the Security Level, and depressing Button 2 will display “EATER SAFE MODE”.

19.) “EATER SAFE MODE”

This option increases the Ticket Taker’s sensitivity to motor slow down. Benchmark’s Ticket Taker technology intelligently monitors the load on the motor and will momentarily slow down and increase power if a jam is detected in an effort to clear it. If Safe Mode is turned on, the eater will immediately shut down if a jam is detected. The default setting is OFF. Depressing Button 2 advances to the next Option. If the Input Type includes “RECEIPT”, go to the next option, else go to Option #25.

20.) “SET DATE/TIME”

If the Input Type includes “RECEIPT”, then the date and time(in 24 Hour format) will be displayed, along with the question “CHANGE?”. If Button 1 is depressed, then the Date and Time can be changed, otherwise depressing Button 2 will advance to the next option. Depressing Button 1 again will change each setting for Month, Date, Year, Hours (in 24 Hour format), and Minutes. Depressing Button 2 will advance to the next setting. Depressing Button 2 after the Minutes setting will display “PRINTER MACH. NUMBER”.

21.) “PRINTER MACH. NUMBER”

If the Input type includes “RECEIPT”, then the Machine number for the receipt from the printer on the Tickets-To-Prizes can be selected. Depressing Button 1 changes the selection from 0 to 99, then back to 0. Depressing Button 2 will display “RESET RECEIPT DATABASE?”.

22.) “RESET RECEIPT DATABASE?”

If the Input type includes “RECEIPT”, then this option will be displayed. If YES (Button 1) is selected, the display will prompt with “ARE YOU SURE?”. If YES (Button 1) is selected again, then the Receipt Database will be completely cleared, and the Receipt Serial Number generated by the printer will be reset to zero. **Please note that this will allow for all previously printed receipts to be accepted again.** Depressing Button 2 will display “QTY. VALID MACHINES”.

23.) “QTY VALID MACHINES”

If the Input type includes “RECEIPT”, then a number of different Machine Numbers can be accepted. This option sets how many machine numbers are allowed. The setting is from 1 Machine (usually the Printer mounted to the Tickets-To-Prizes), to up to 20 different Machine Numbers so that receipts may be accepted from Benchmark’s Ticket Stations as well. Depressing Button 1 changes this setting. Depressing Button 2 will display “ENTER MACHINE NUMBER”.

24.) “ENTER MACHINE NUMBER”

If the Input type includes “RECEIPT”, then this option will be displayed. Depressing Button 1 will change the setting from 0 to 99, then back to 0. Depressing Button 2 will advance to the next machine number, until all of the machine numbers (how many there are is determined by Option #23) have been entered. Depressing Button 2 again will display “PRICE LEVEL 1”

25.) “PRICE LEVEL 1”

This option displays the price setting for Level 1. Depressing Button 1 will allow for the price to be changed. Depressing Button 1 again will change the first of 5 digits from 0 to 9, then back to 0. Depressing Button 2 will advance to the next digit. The Price can be set in this manner from 0 to 99,999. If Button 2 is Depressed after a Price for a given Level is first displayed, then the next Level’s Price is displayed. Levels 1 through 17 are set in this manner.

The Levels are as follows: Levels 1 through 5 are the 5 levels on the right tree, starting at the bottom. Levels 6 through 10 are on the left tree, starting at the bottom, and levels 11 through 17 are Doors 1 through 7, respectively. Depressing Button 2 after the last level will display "TICKETS IN"(See Option #25 – Resetting Totals).

25.) RESETTING TOTALS

At this point the same totals that were displayed at the beginning of the Program Mode are displayed again, but the option is given to clear the Totals. The Totals displayed are TICKETS IN, BILLS IN, COINS IN, TICKETS OUT, and PRIZES DISPENSED for each Level. Depressing Button 1 clears the Total, and depressing button 2 moves to the next Total. Depressing Button 2 after the last Level of Prizes Dispensed is displayed will display "ENTER PROGRAM MODE?", which allows for the option of re-entering Program Mode at the beginning again. Depressing Button 1 will re-enter Program Mode, and Depressing Button 2 will go to Normal Run Mode.

DEFAULT SETTINGS

PASSCODE	0000
AUDIO VOLUME	36
ATTRACTION FREQUENCY	OFF
VEND RETRIES	3
TICKETS FOR \$1	15
TICKETS FOR \$5	75
TICKETS FOR \$10	150
TICKETS FOR \$20	300
TICKETS FOR COIN	3
TICKET MULTIPLIER	1
INPUT TYPE	TICKETS ONLY
TICKET SECURITY	0
EATER SAFE MODE	OFF
PRINTER MACHINE NUMBER	49
QTY. VALID MACHINES	1
ACCEPTED MACHINE NUMBER	49
PRICE-LEVEL 1	25
PRICE-LEVEL 2	50
PRICE-LEVEL 3	100
PRICE-LEVEL 4	350
PRICE-LEVEL 5	750
PRICE-LEVEL 6	25
PRICE-LEVEL 7	35
PRICE-LEVEL 8	75
PRICE-LEVEL 9	200
PRICE-LEVEL 10	500
PRICE-LEVEL 11	1000
PRICE-LEVEL 12	1000
PRICE-LEVEL 13	1500
PRICE-LEVEL 14	1500
PRICE-LEVEL 15	2000
PRICE-LEVEL 16	2000
PRICE-LEVEL 17	2500

Refer to picture below for prize level locations:



Troubleshooting Guide

Ticket Eaters

Understanding General Operation

The ticket eaters consist of 4 major assemblies:

1. Main Frame-Components of Interest:
 - a. Ticket Opto Transmitter pcb
 - b. Lower ticket roller
2. Upper Assembly-Components of Interest:
 - a. Ticket Opto Receiver
 - b. Upper ticket roller
 - c. Upper barcode scanner pcb
 - d. Ticket notch opto receiver pcb
 - e. Ticket contact springs
3. Belt Assembly-Components of Interest
 - a. Ticket belts
 - b. Ticket notch opto transmitter pcb
 - c. Lower barcode scanner pcb
4. Cutter Assembly-Components of Interest
 - a. Ticket cutter blades

General Features:

1. **Independent ticket eater operation** allows simultaneous ticket count and the reliability of redundancy.
2. **Opto sensors** are used to sense ticket entry and initiate startup
3. **Second opto sensors** are used to count ticket notches (center notch, not edge notch) and verify correct ticket length
4. **Upper and lower barcode scanners** are used to verify barcode whether tickets are inserted with barcode up or barcode down. Tickets with barcode on both sides can also be used.
5. **Self cleaning** is provided for all opto sensor transmitter and receivers, and barcode scanners by air jet. A compressor activates automatically after a predetermined number of tickets have been run. A solenoid operated air valve opens to release compressed air through air jets and over sensors, keeping them clean and virtually eliminating any dust related maintenance.
6. **Rolling cutters** make scissor like cut to control dust and pull ticket out of mechanism.
7. **Stepper Motor Drive** provides reliability, accuracy, and torque limit.

Description of Operation

A ticket or string of tickets is pushed into the ticket eater until the ticket opto sensor is triggered. The ticket eater starts, pulling the ticket(s) through a set of rollers and a second opto sensor which measures the ticket length. The ticket(s) are carried past the barcode scanners on a pair of belts, into the cutters, and out the back of the mechanism in neatly cut fragments.

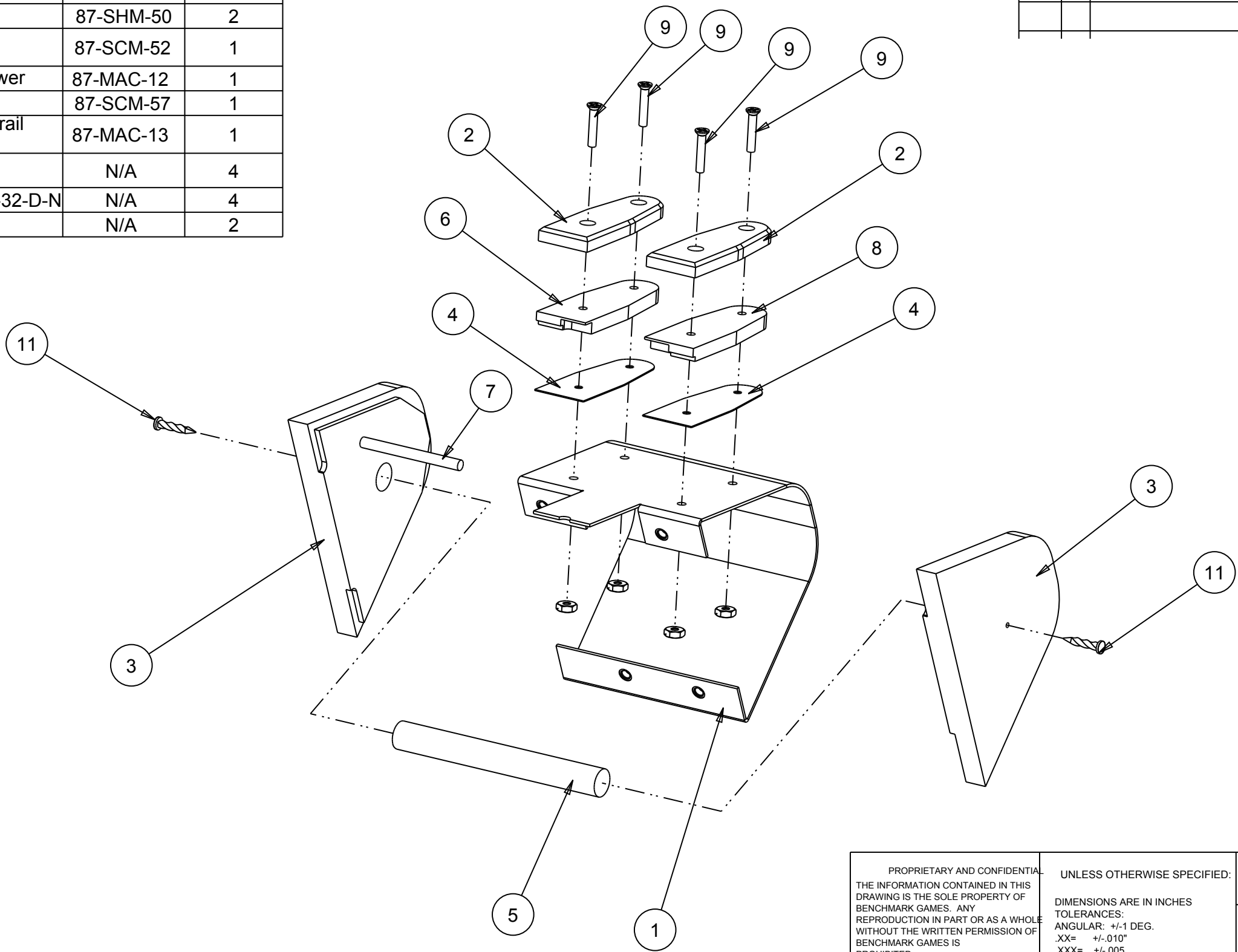
Troubleshooting

Ticket eater will not start	<ol style="list-style-type: none">1. Check ticket sense opto. LED should come on and power output should pull to ground when opto is blocked by ticket. Check for good power and ground to transmitter and receiver.2. Check for good signal to ticket eater pcb input from ticket sensor opto3. Check all ticket eater motor connections
Ticket eater runs slowly	<p>Hall effect sensor output not getting to the ticket eater board.</p> <ol style="list-style-type: none">1. Check that when the motor is running, the red LED on the hall effect pcb is flashing at least one time per motor revolution. If the LED does not flash:<ol style="list-style-type: none">a. Check to see if the motor pulley is tight on the motor shaft.b. Check the distance of the pulley from the hall effect sensor pcb. There is a magnet on the inside of the motor pulley that activates the sensor every

	<p>revolution. If the pulley is located too far from the sensor pcb, the magnetic strength will be too weak to activate the sensor.</p> <p>c. Check voltage to the sensor board</p> <p>2. If the LED does flash, check the output of the hall effect sensor pcb all the way to the ticket eater pcb.</p>
Ticket eater will not count with ticket inserted in any direction	<p>1. Check notch count opto. LED on receiver should flash as tickets are fed into ticket eater.</p> <p>a. If LED does not flash, check power to the opto transmitter and receiver.</p> <p>b. If LED is always on, something is blocking the opto path or the opto is dirty.</p> <p>2. If LED does flash, check output of notch count opto all the way to the ticket eater pcb.</p> <p>3. Check power to barcode pcb's and output all the way back to ticket eater pcb.</p>
Ticket eater counts accurately with barcode only up or only down	<p>1. Check power to and output from barcode scanner pcb corresponding to the side that does not work.</p>
Ticket count is intermittent	<p>To help diagnose the problem, you can, through programming options, change the ticket verification to notch from barcode. If the ticket count becomes accurate, the problem is related to the barcode. If the count is still intermittent, the problem is probably related to the notch opto sensors.</p> <p>1. Bad tickets with poor printing or out of spec barcode.</p> <p>2. Clean barcode scanner pcb's and opto notch transmitter and receivers (if this works check pump operation and pneumatic cleaning system for leaks).</p> <p>3. Check for loose wire connections to barcode scanners or opto notch optos</p>
Single tickets do not count accurately	<p>Check that tickets travel through the ticket eater at a consistent rate without stopping or slowing dramatically.</p> <p>1. Check for debris in ticket eater</p> <p>2. Check belts for tracking, breakage, stretch or extreme wear</p>

ITEM NO.	Description	Part Number	QTY.
1	ticket guide bracket	87-SHM-25	1
2	ticket guide rail	87-MAC-04	2
3	ticket guide end plate	87-MAC-03	2
4	ticket guide shim	87-SHM-50	2
5	ticket guide attach rod	87-SCM-52	1
6	ticket guide rail lower	87-MAC-12	1
7	ticket guide rod	87-SCM-57	1
8	Mirrorticket guide rail lower	87-MAC-13	1
9	CR-FHMS 0.138-32x0.75x0.75-N	N/A	4
10	MSHXNUT 0.138-32-D-N	N/A	4
11	screwnail 13x750	N/A	2

REVISIONS			
ZONE	REV	DESCRIPTION	DATE
	A	Release to Production	07/28/07

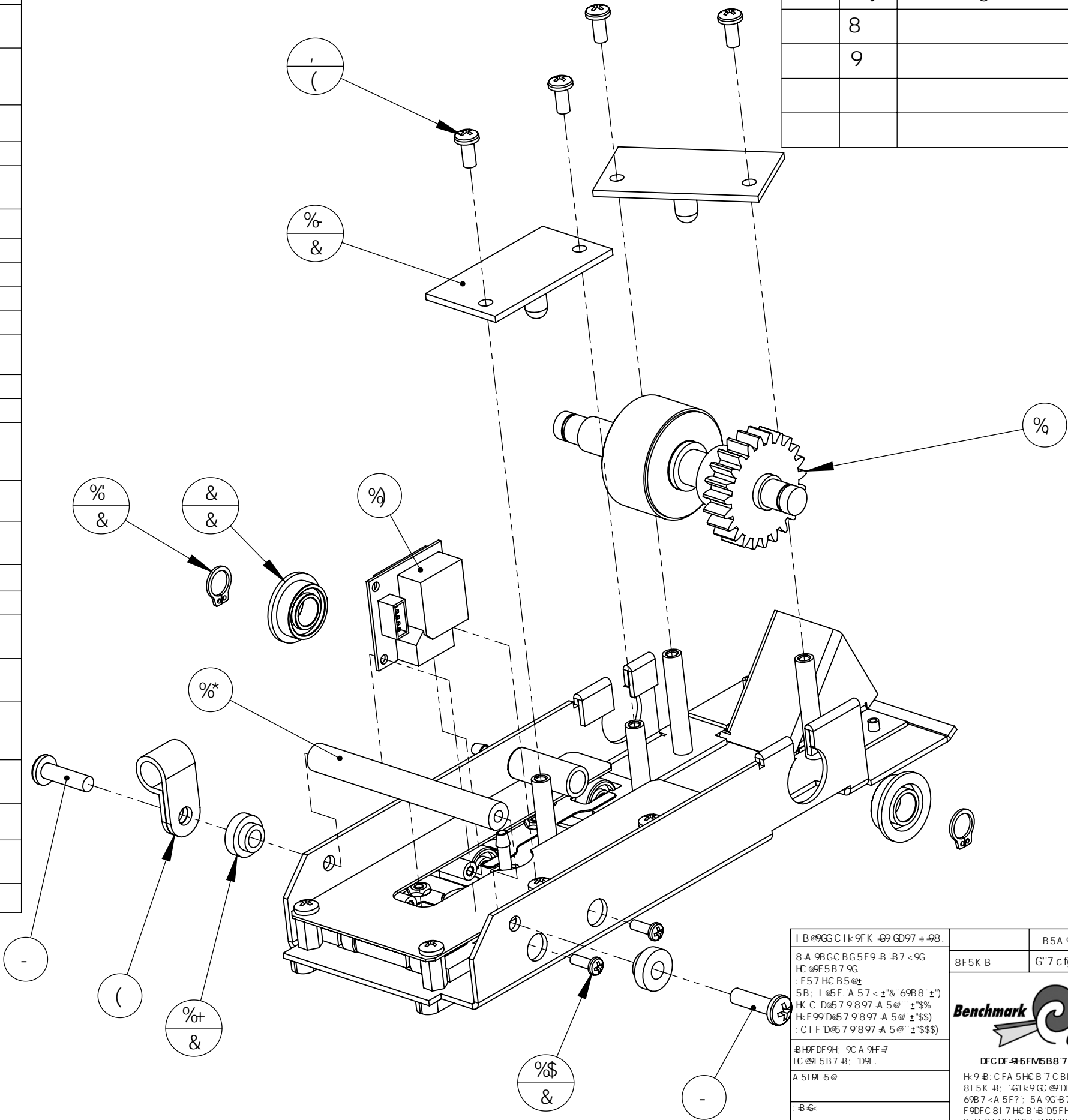


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		TITLE: ticket guide assembly			
DRAWN BY: S. Corso	COMMENTS:	SIZE	DWG. NO.		REV
MATERIAL		B	54-ASM-04		
FINISH					
		SCALE: 1:2		WEIGHT:	SHEET 1 OF 1

8

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5



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8-A 9B GC BG5F9`B`B7 <9G HC @F5B7 9G : F57HC B5@± 5B; I @5F. A 57<±"&`69B8`±) HK C`D@57 9897`A 5@`"±"\$% H:F99D@57 9897`A 5@`±"\$%) : C I F D@57 9897`A 5@`±"\$\$\$)	8F5K B	G`7`c`fgc`	' #, #&\$%%	Hh@. hW_YhYUHYf hcd`hcd`Wcj Yf fc`Yf		
8H9F D9H: 9CA 9F`7 HC @F5B7`B: D9F. A 5Hf`5@	Benchmark Games, Inc.					
: B`G<	DFC D F`9`5FM5B8`7CB: -89BH5@ H: 9`B: CFA 5HC B`7CBH5`B98`B`H: G 8F5K`B: `G`H: 9GC @DFC D9F HMC: `' 69B7`<A 5F?:`5A 9G`B7`"5BM F9DFC 8I`7HC B`B`D5FHC F5G5`K`<C @ K`H: C I H H: 9K`F`H9B`D9FA`GGC`B`C: `' 69B7`<A 5F?:`5A 9G`B7`"G DFC`<6498"			G`A9	8K ;`"``BC`"	
8C B`CHG7 5@8F5K`B:				6	\$, +5GA \$&)	
	G7 5@9.`%`%`%		K 9÷`<H`	G<99H&`C` :`&		

8

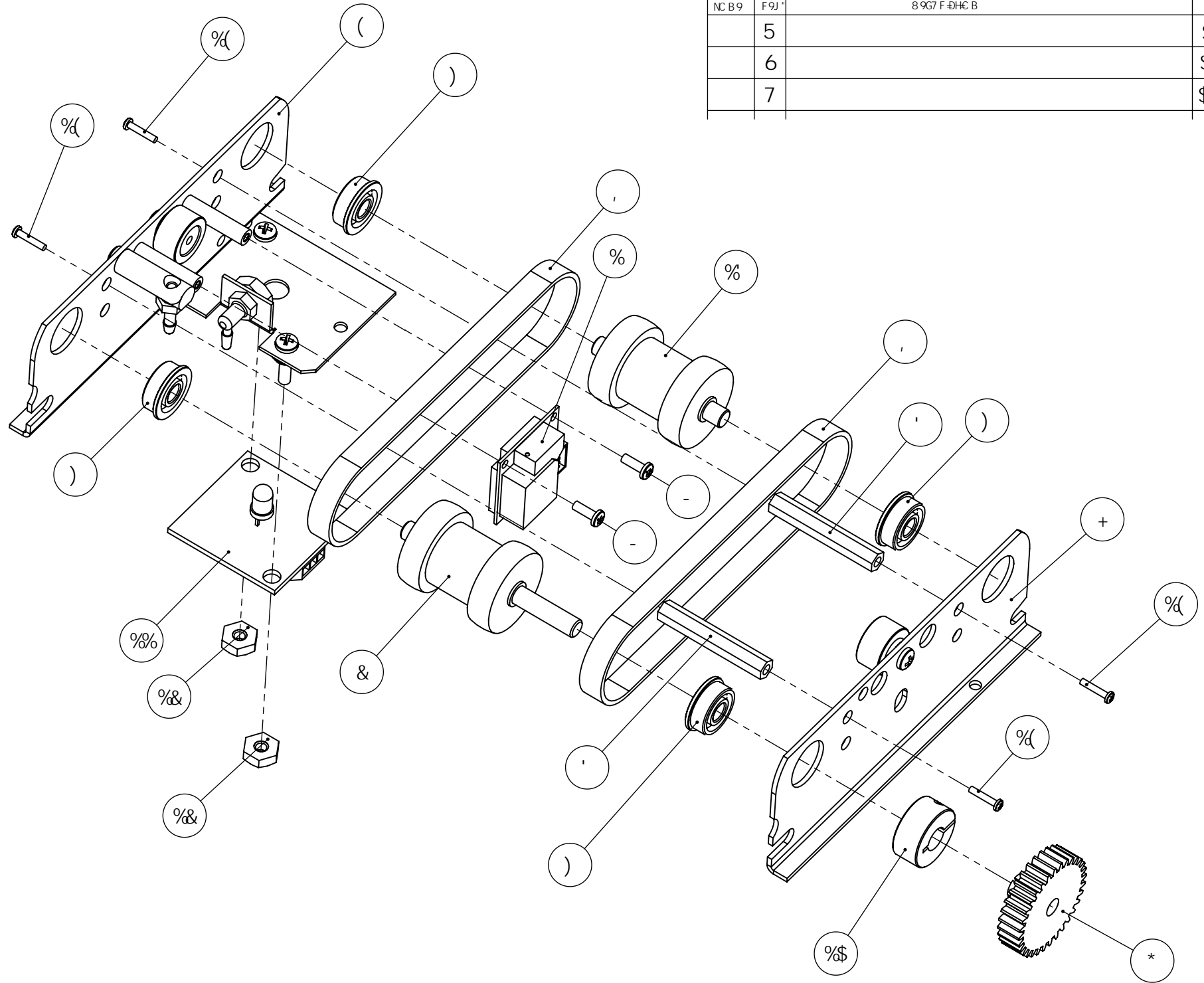
7

6

5

#9A `BC "	8YgWfjhc b	DUfhBi a VYf	E HM
%	D7 6\$&&	D7 6!\$&&	%
&	VY`hdi `YmUggm`cb[	, +!5 GA !(+	%
'	gdUWf`hW_YhVY`h UggYa V`m	, +!G7 A !&)	&
(	VY`hUggYa V`mWcj Yf` Yzh	, +!G<A !\$&	%
)	6F; \$\$%	6F; !\$\$%	(
*	hW`!`Gdi f[YUf" &8D` ' &H%(") D5 `"% +): K `!!! G &B"+) <"+) @ \$"% +) B	, +!; 9F!\$&	%
+	VY`hUggYa V`mWcj Yf	, +!5 GA !*%	%
,	\$, +64\$ \$%	i fyhU b VY`h	&
-	7 FID<A G \$"\$ , *! ) *! \$"&) | \$"&) !B	B #5	&
%\$	Wc `UfgU Zh&) \$	<5 F!\$" (%
%%	D7 6\$&\$	c dhc hU bga jhyf ge i Ufy	%
%&	A G<LBI H \$"% , !' &G7	B #5	&
%	VY`hdi `YmUggm`g`c fh	, +!5 GA !((%
% (	7 FID<A G \$"\$ *! , \$! \$" " %&) | \$" " %&) !B		(

F9J -GCBG			
NCB9	F9J *	89G7 F-DHC B	85H9
	5		\$+ #&* # \$+
	6		\$+ #&+ # \$+
	7		\$&#&) # %&



DFCDF45F5M5B87CB: 89BH5@ Hk9B:CFA 5HC B 7 CBH5B98-BHkG 8F5K B: 6Hk9GC@DFC D9FMC: 69B7<A5F?: 5A 9G*5BMB F9DFC8I 7HC B-B D5FHC F 5G5 K <C @ K #KCI HHK9K F#H8 D9FA GGC B C: 69B7<A5F?: 5A 9G G DFC<6H8*	I B@9GC Hk9Fk G9D97 ÷ 9B. 8A 9BGC BG5F9B-B7<9G HC@9F5B7 9G 5B: I 6F:Z#%89; "..... "LL1""Z#"\$%" "LLL1""Z#"\$%) "LLLL1""Z#"\$%	6YbW\ a Uf_ ; Ua Yg
8F5K B 6M G"7 c fgc	7CA A 9BHG	H#H9. hW_YhYUHYfVYh 6Yh5ggYa V`mfj +!5GA !&*L
A 5HF5@		GA9 8K ; ""BC" 6 , +!5GA !& F9J
: B6<		G7 5@.%%"& K 9÷ <H G<99H' 'C: '*

8

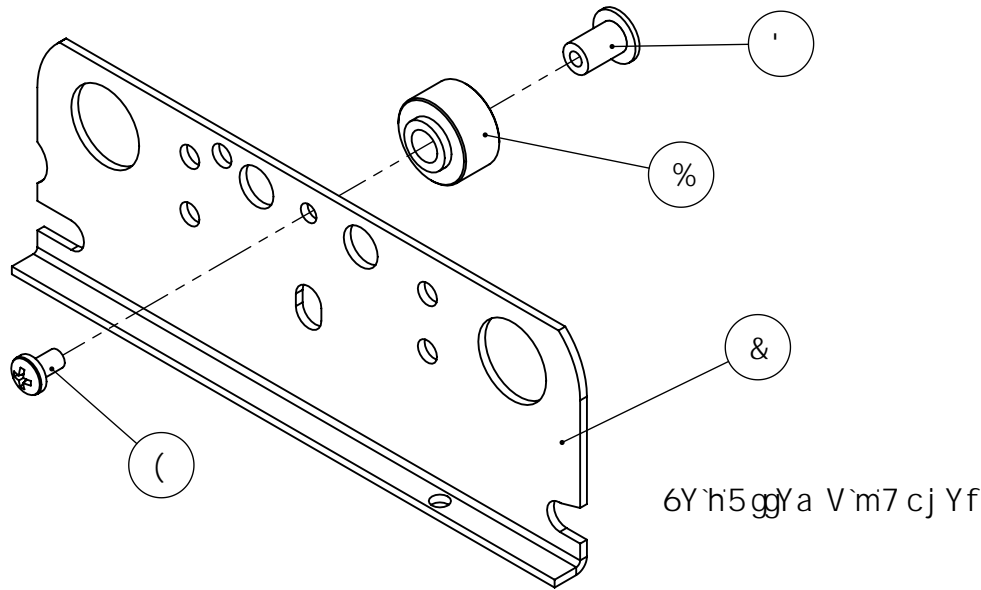
#9A`BC`"	D5FHBI`A`69F	8`9G7`F`ÐHC`B	E`HM
%	[X`Yf`di`~`Ymd]b	,`+!G7`A`!\$&	%
&	[X`Yf`di`~`Ymk`c`ZUb[`Yg	,`+!G7`A`!\$%	%
,	Wci`bhcdhc`a`ci`bh`d`UhY	,`+!G<`A`!%-	%
(	`9B`\$`\$`\$	`9B!`\$`\$`\$	%
)	\$,`+G7`A`\$&(`	gdUWfVY`h`UggYa`V`m`Y`h	%
*	bi`hZ[VYfcW`((`(\$	B`#5	&
+	7`F!D<`A`G`\$`"%`%&!` (\$!`\$`")`I`\$`")`!B`	B`#5	&
,	7`F!D<`A`G`\$`"%`%&!` (\$!`\$`"%` ,`I`\$`"%` ,`!B`	B`#5	&
-	-`\$`XY[`Z]h[b[`'\$`*&	`;`9B!`\$`%(`	%
\$\$	A`G<`L`B!`H`\$`"%`\$!&(`!G!7`	B`#5	%
%%	gdUWf`,`(`I`%`,`c`X`I` %&)`@`	B`#5	&
%&	VY`h`UggYa`V`m`Wcj`Yf`f][`\\hgYa	,`+!G<`A`!\$%	%

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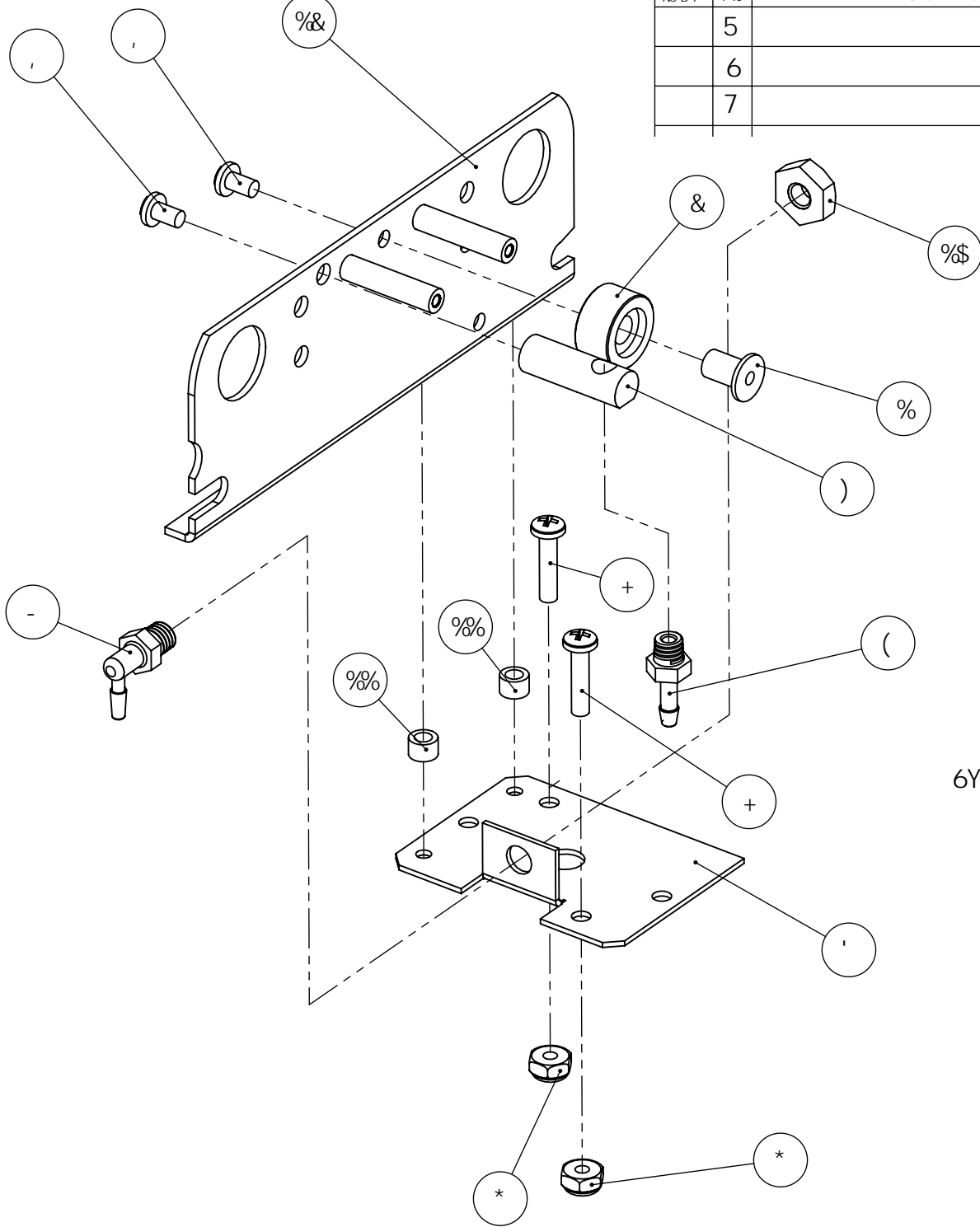
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#9A`BC`"	D5FHBI`A`69F	8`9G7`F`ÐHC`B	E`HM
%	[X`Yf`di`~`Ynk`c`ZUb[`Yg	,`+!G7`A`!\$%	%
&	VY`h`UggYa`V`m`Wcj`Yf`	,`+!G<`A`!\$%	%
,	[X`Yf`di`~`Ymd]b	,`+!G7`A`!\$&	%
(	7`F!D<`A`G`\$`"%`%&!` (\$!`\$`"%` ,`I`\$`"%` ,`!B`	B`#5	%

5



6Y`h5ggYa`V`m7`cj`Yf`



6Y`h5ggYa`V`m7`cj`Yf`@Y`Zh

DFC DF 45FM5B87CB: 89B H5@ Hk9B: CFA`5HC`B`7`CBH5`B`98`B`H`G` 8F5K`B`:`6H`9`GC`@9`DFC`D9F`HMC`: 69B7`<A`5F?`:`5A`9G`5BM` F9DFC`B!`7`HC`B`B`D5FHCF`5G5`K`<C`@` K`4k`C!`Hk`9`K`F`H9B`D9FA`GGC`B`C`: 69B7`<A`5F?`:`5A`9G`G` DFC`<6498`		I`B`@9GC`H`9F`K`G9`GD97`≠`98`. 8`A`9B`GC`BG5F9`B`B7`<9G` HC`@9F5B7`9G` 5B`:`I`@5F`"Z`#`%89`:"`" "LL1`""Z`#`"\$`\$`" "LLL1`""Z`#`"\$`\$`" "LLLL1`""Z`#`"\$`\$`"		6YbW`a`Uf`_`:`Ua`Yg`	
8F5K`B`6M`G`"7`c`fgc`		7`C`A`A`9B`HG`		H`H`@9` hW`Y`h`YU`h`f`VY`h` 6Y`h5ggYa`V`m7`cj`Yf`f][`+!5GA`!`*`%&` 6Y`h5ggYa`V`m7`cj`Yf`@Y`Zh`f][`+!5GA`!`*`&`	
A`5H9F`5`@`				G`A`9` 6`	
:`B`G<`				8`K`:`""`BC`"	
				F9J`	
G7`5`@9`.%`%		K`9`≠`<`H`		G<`99H(`C`:`*`	

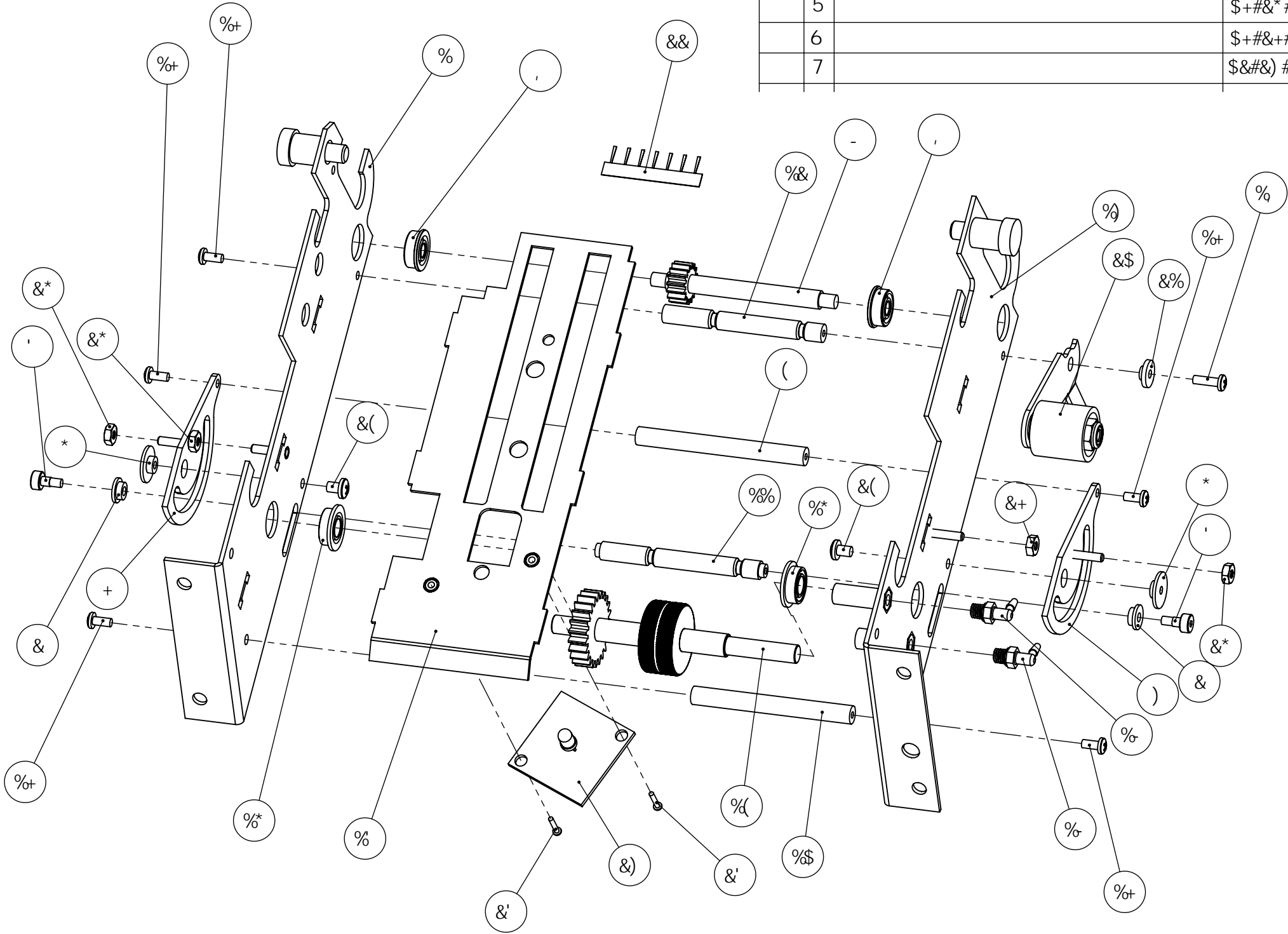
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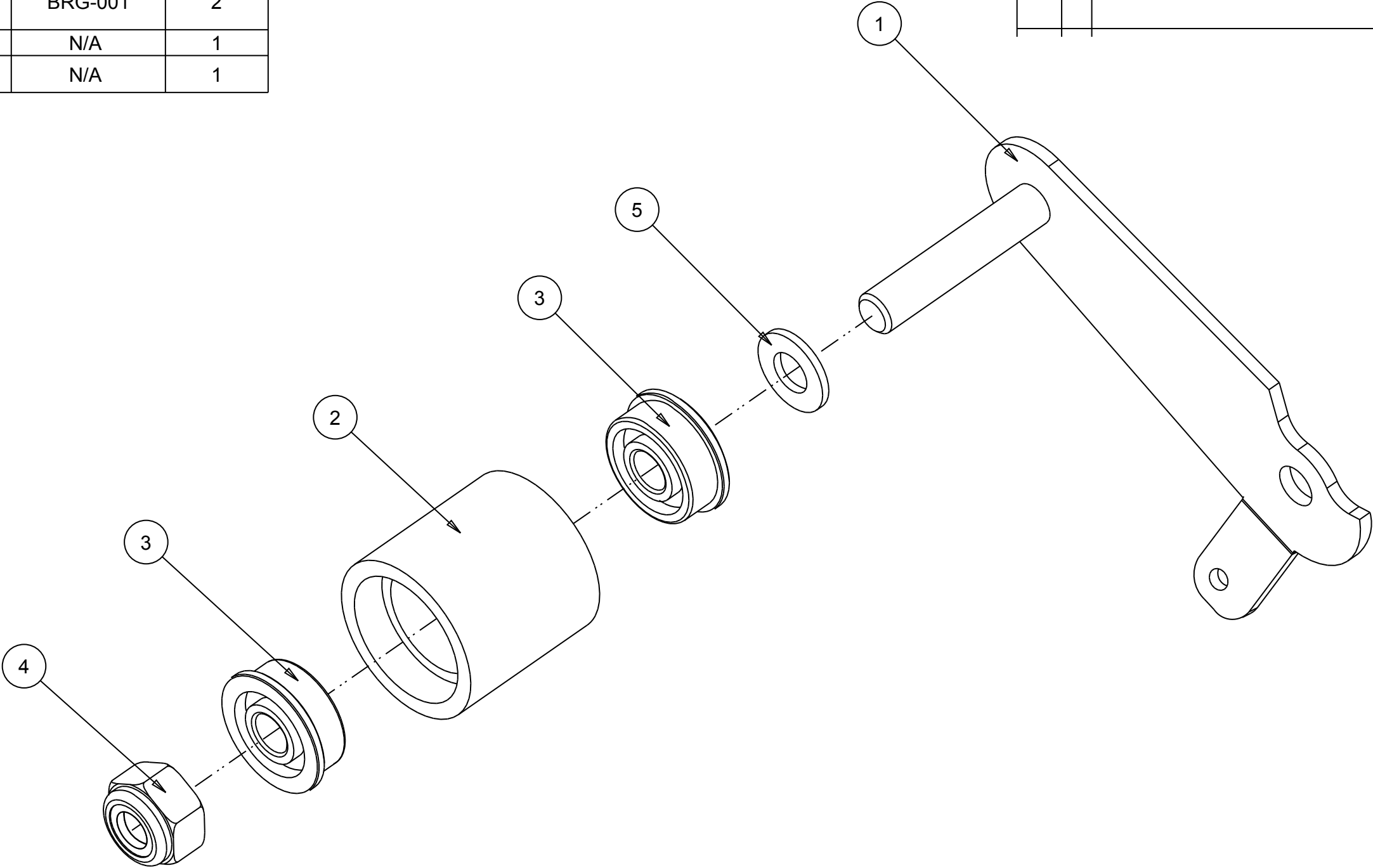
8	±DA BC "	8YgWfjdhcb	DUfhBi a VYf	E HM
	%	hW_YhYUHyfhd'gXY' g'a	, +!G<A !%&	%
	&	VY'hUggYa V'mfY'YUgy' WUa'fc`Yf	, +!G7 A !) %	&
7	,	g\ci`XYfVc'h%&)'I`%&)'(((\$	B #5	&
	(	VY'hUggYa V'mfY'YUgy' \UbXY	, +!G7 A !' \$	%
	)	VY'hUggYa V'mfY'YUgy' WUa'g'a	, +!G<A ! ()	%
6	*	g\ci`XYfk Ug\Yf` *I &) \$I * &)	, +!G7 A !) \$	&
	+	VY'hUggYa V'mfY'YUgy' WUa'f[\h	, +!G<A ! +,	%
	,	6F; \$\$\$%	B #5	&
5	-	IX'Yfg\UZhUggn	, +!5 GA !' &	%
	\$\$	gdUWf'hcd`UggYa V'm	, +!G7 A ! \$,	%
	%%	gdUWfVY'hUggYa V'm UHx	, +!G7 A ! \$*	%
4	%&	gdUWfVY'hUggYa V'm a ci bh	, +!G7 A ! \$+	%
	%	hW_YhYUHyfVchca` Mcj`Yf	, +!G<A ! \$+	%
	%(&	fc`Yfg\UZh`ck YfUggn	, +!5 GA !' %	%
3	%&	hW_YhYUHyfhd'gXY` YZh	, +!G<A ! %\$	%
	%*	5: 6A 5`%&'&!`\$"%&) \$\$\$!`\$") \$\$\$!`\$"%&) \$!`%&'&G`B 7`Z%&	B #5	&
	%+	7 F!D<A G`\$"%&!(\$!\$&)I`\$"%&)!B	B #5)
2	%	7 F!D<A G`\$"%&!(\$!\$"" +)I`\$"" +)!B		%
	%-	<5F\$\$\$- +	-`\$XY[fYY` Zjh[b[`'\$!`' &hc`\$-(`\cgY	% \$
	&\$	\$, +5GA \$(-	IX'YfUfa` gXY VY'h	%
1	&%	g\ci`XYfk Ug\Yf` (X!%)I' +)		%
	&&	gUhWVfi g\		%
	&'	7 F!D<A G`\$"\$*!`\$!\$"" +)I`\$"" +)!7		&
0	&(	7 F!D<A G`\$"\$,`!' &\$"% , I`\$"% , !B		&
	&)	D7 6\$&\$	cdhc` hfUbga`Jhyf` gei UfY	%
	&*	A G<LBI H\$"%&!(\$!8!G		'
9	&+	A G<LBI H\$"%&!(\$!G!7		%



DFC<45FM5B87CB: 89B H5@ Hk9B: CFA 5HC B 7 CBH5 B 98`B`H: G 8F5K`B: `6H: 9GC @9DFC D9fHMC: 69B7<A 5F?:`5A 9G`5BM F9DFC B1 7 HC B`B`D5FHCF`5G5 K<C @ K`H: C1 Hh: 9K F H#B`D9FA`GGC B C: 69B7<A 5F?:`5A 9G`G DFC<464B8`		I B @9GC H: 9F K`G9 GD97`± 98. 8 A 9B GC BG5F9`B`B7<9G HC @9F5B7 9G 5B; I @5F.`Z#%89: "..... "LLL1""Z#"\$S\$" "LLLL1""Z#"\$S\$" "LLLL1""Z#"\$S\$"		6YbW\ a Uf_ ; Ua Yg	
8F5K B`6M`G`7 c fgc		7 C A A 9B HG		H#H@. hW_YhYUHyfVY'h 6cXm5ggYa V`mf] +!5GA !&+L	
A 5Hf-5@				G A 9	8 K ; ""BC "
: B G<				F 9J	
				G7 5 @. %%"*) K 9≠ <H	
				G<99H) `C :`*	

ITEM NO.	Description	Part Number	QTY.
1	idler arm side belt shm	87-SHM-85	1
2	idler arm roller	87-SCM-60	1
3	AFBMA 12.2 - 0.1875 - 0.5000 - 0.1960 - 8,SI,NC,8	BRG-001	2
4	nut fiberlock 1032	N/A	1
5	washer 10IDx375ODx036Thick	N/A	1

REVISIONS			
ZONE	REV	DESCRIPTION	DATE
	A	Release to Production	07/31/07



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	COMMENTS:	TITLE: idler arm side belt			
DRAWN BY: S. Corso		SIZE B	DWG. NO. 87-ASM-49		REV
MATERIAL					
FINISH					
		SCALE: 2:1		WEIGHT:	SHEET 1 OF 1