



# Catch N Count

A Spiros Industries Company  
7666 Hwy WW  
West Bend WI 53090

(800) 972-8232 Ph  
(262) 629-5048 Fax

## Owners Manual RC 300 and RP 440



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## Warranty

Your Carousel is warranted for a period of 1 year from the purchase date. Package and ship the Carousel to our factory freight prepaid. We will repair or replace (at our option) your Carousel and ship it back to you freight prepaid.

Carousels that have been misused or abused shall be subject to our approval to qualify for warranty.



[www.catchncount.com](http://www.catchncount.com)

8/13/2003

## Quick Start Suggestions

### Learning to set up the Counter

- Assemble the stand and install the Carousel on the stand.
- Put the Carousel next to a running machine.
- Plug the Carousel power cord into a 120 VAC receptacle.
- Hook up the PS-MB (proximity switch-magnetic base) to the Carousel with the HC 12-4 Cable.
- The PS-MB will operate when a metal object passes within 2 mm of the end of the proximity switch. With the machine shut off, place the PS-MB with the magnetic base on the machine so that a cam or metal portion of the machine passes by the proximity switch once for each part produced.
- When you start the machine you should see the LED flashing at the cord end of the proximity switch. Note: The proximity switch must be connected to the count input receptacle of the Carousel.
- You can now practice setting up the Counter and learn how the Carousel operates. For your convenience, simplified counter instructions are provided on a laminated card. More information is available in the Carousel Manual. Now is a good time to practice setting up **Preset 1** and the **Batch Preset** and learn how to reset **Preset 1** and the **Batch Preset**.

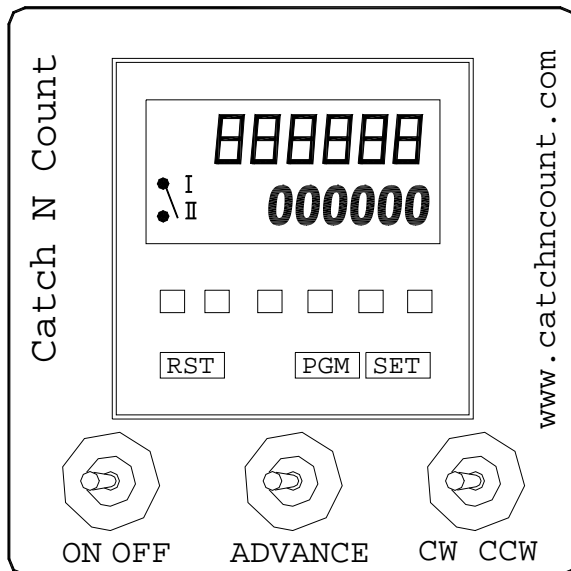
The two Carousel models are the **RP 440** (rotating platter) and the **RC 300** (rotating chute). The RC 300 is shipped with 6 position and 8 position-indexing plates. These indexing plates have 6 or 8 tapped holes with two nylon screws in two of the tapped holes. There are also two micro-switch levers extending out of the top of the Carousel that when actuated by the nylon screws will cause the chute to oscillate. The nylon screws should never be located between the micro-switches.

**The RC 300 will run continuously if it is out of step.** This is corrected by pressing one or the other micro-switch. The distance between the nylon screws determines what portion of 360 degrees the chute will travel. The chute will rotate a full 360 degrees when the screws are removed.

**Keep the nylon screws in a safe place for future use if you are not using them.**

## RP 440 Control Panel

### Rotating platter with stainless cups



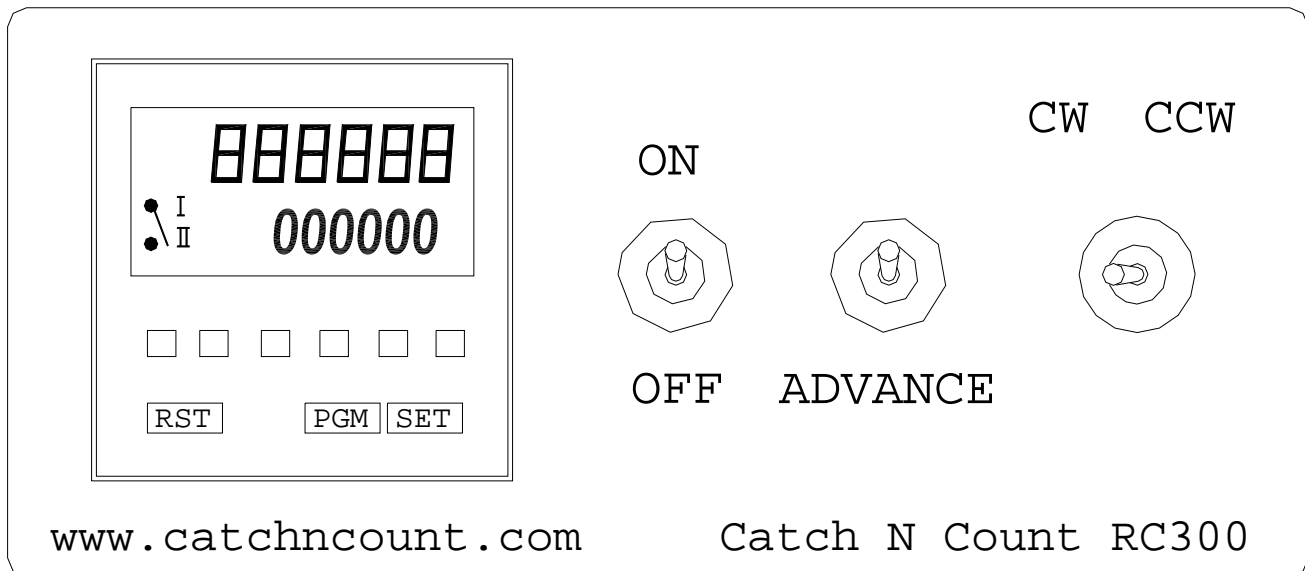
The Control Panel is located to the side above the platter holding the stainless cups. Snap the **ON OFF** toggle switch to the left to turn the Carousel on.

Press the momentary **Advance** toggle switch for a short time to the right or left to have the Carousel advance to the next cup.

The momentary **CW CCW** (clockwise / counter clockwise) toggle switch determines which direction the platter will turn to go to the next cup.

## RC 300 Control Panel

### Rotating chute carousel



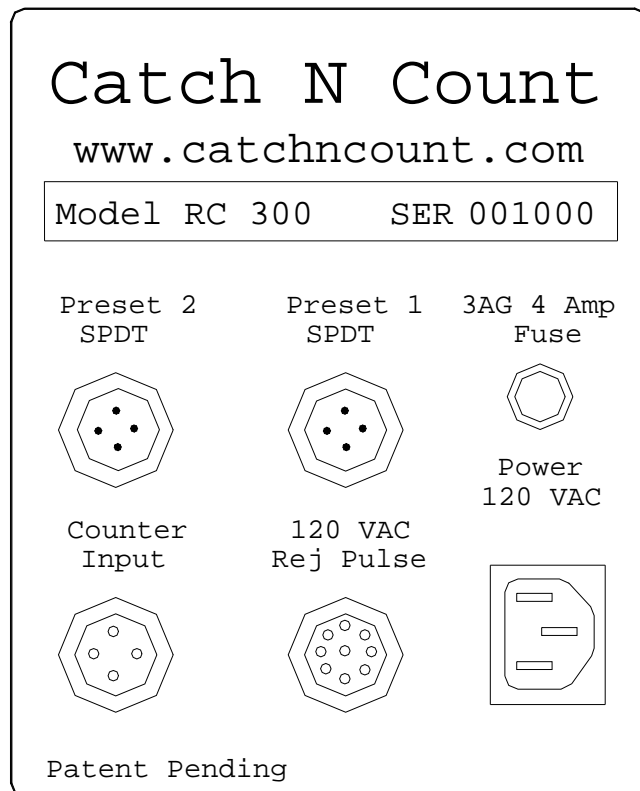
The Control Panel is located under the stainless chute. Snap the **ON OFF** toggle switch up to turn the Carousel on.

Press the momentary **Advance** switch up or down to advance the chute to the next box.

The momentary **CW CCW** (clockwise / counter clockwise) toggle switch determines which direction the chute will turn to go to the next box.

## RC 300 and RP 440 Input/Output Panels

The interfacing techniques are the same for both Carousels. Reading this manual from front to back at least once will help you understand how the Carousels function and how they can be interfaced easily with your machine. This will save you time and will help you get the most out of your Carousels.



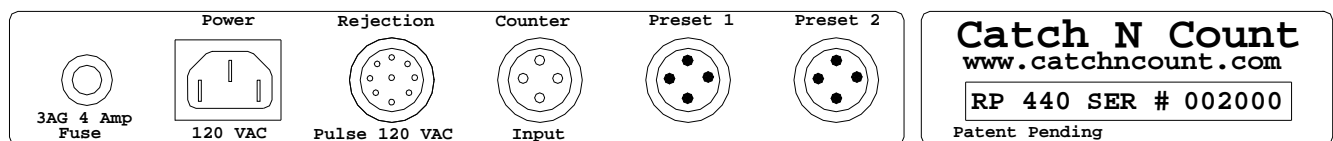
A power cord is shipped with each Carousel. The fuse should always be a 3AG 4-Amp.

The **Counter Input** is used to receive a pulse from the machine for each part manufactured.

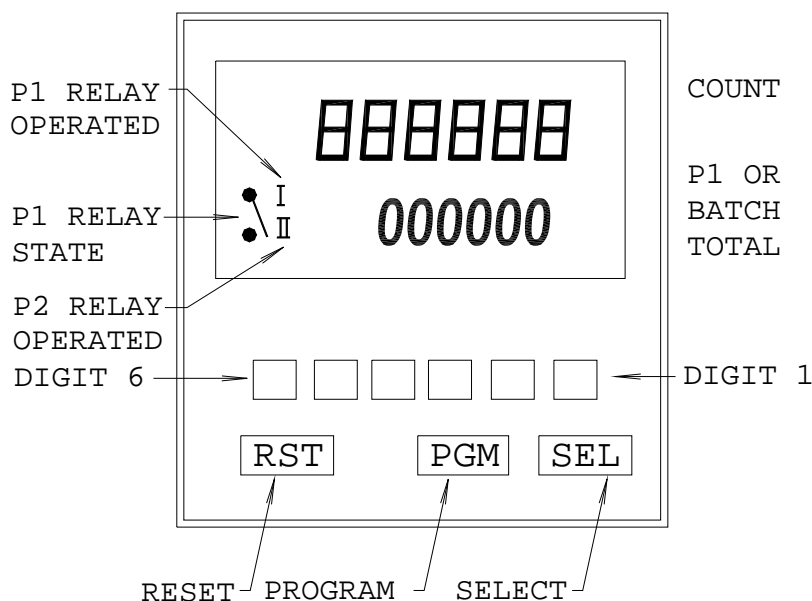
The **120 VAC Rejection Pulse Input** is used when a good / bad sort device is used. This will block the count pulse from reaching the Counter when bad parts are rejected.

**Preset 1 Output** is a SPDT switch that operates while the carousel is rotating to the next cup or box.

**Preset 2 Output** is a SPST relay and operates and latches when the P2 count is reached. This relay can be set to NO or NC by programming the counter.

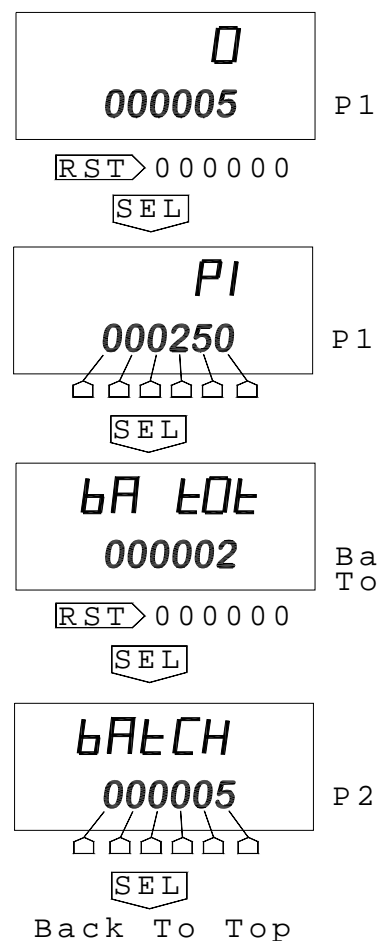


Catch N Count Carousels can be interfaced with a wide variety of machines. Knowledgeable service personnel or an electrician should do interfacing.



### Caution:

The counter is preset at the factory and should not require programming. Only **qualified persons** should do any programming if necessary. Refer to the TRUMETER Manual for more information.



## Programming

- Press and hold PGM for 3 seconds to enter Programming mode.
- Press Digit 1 to cycle through the menus, or PGM to exit Programming mode.
- Press SEL to select a menu, then Digit 1 to cycle through the options.
- Press SEL to select an option, or PGM to exit the menu without change.
- Press the Digit buttons to adjust a numerical setting, eg. pulse time.
- Press SEL to accept the setting, or PGM to exit the setting without change.
- Press PGM once or twice to exit Programming mode.

Main menu	
DEC Pt	Decimal Point menu
PSCALE	Prescaling menu
INPUT	Input Mode menu
BATCH	Batch Mode menu
RESET	Reset Mode menu
INHIBIT	Inhibit menu
AUTO	Auto Reset menu
P1 COND	P1 Relay Condition menu
P1 TYPE	P1 Relay Type menu
P1 SAFE	P1 Relay Safe State menu
P2 COND	P2 Relay Condition menu
P2 TYPE	P2 Relay Type menu
P2 SAFE	P2 Relay Safe State menu
LCD BL	LCD Backlight menu
PGM	Exit Programming mode

The TRUMETER Counter is factory set and should not need programming. The dots in each group of settings below show the proper setting. The P1 Relay is set to Pulsed with a time delay of .5 second.

**Decimal Point**

0	SEL	No Decimal point	•
0.0	SEL	1 Decimal place	
0.00	SEL	2 Decimal places	
0.000	SEL	3 Decimal places	
1	PGM	Main menu	

**Prescaling**

NONE	SEL	No prescaling	•
MULTI	SEL	Multiply	SEL
DIVIDE	SEL	Divide	SEL
1	PGM	Main menu	

**Multiply**

0.00250 - 9.99999

□ □ □ □ □ □ □ □

**Divide**

00001 - 99999

□ □ □ □ □ □ □ □

**Input Mode**

UNI HI	SEL	Unidirectional high speed	
QUAD HI	SEL	Quadrature high speed	
UNI LO	SEL	Unidirectional low speed	•
1	PGM	Main menu	

**Batch Mode**

OFF	SEL	Batch Mode off	
ON	SEL	Batch Mode on	•
1	PGM	Main menu	

**Reset Mode**

rst 0	SEL	Reset to Zero	•
rst P1	SEL	Reset to P1	
1	PGM	Main menu	

**Inhibit**

Pr09	SEL	Programming	•
P9 PSt	SEL	Programming and Presets	
ALL	SEL	All buttons	
1	PGM	Main menu	

**Auto Reset**

ON	SEL	Auto Reset on	•
OFF	SEL	Auto Reset off	
1	PGM	Main menu	

**P1 Relay Condition**

N. OPEN	SEL	Normally open	•
N. CLS	SEL	Normally closed	
1	PGM	Main menu	

**P1 Relay Type**

PULSE	SEL	Pulsed	•
LATCH	SEL	Latched	
1	PGM	Main menu	

**Pulsed** ★

00.01 - 99.99 s

□ □ □ □ □

**P1 Relay Safe State**

Cur	SEL	Current state	•
rESEt	SEL	Normal state	
SEt	SEL	Operated state	
1	PGM	Main menu	

**P2 Relay Condition**

N. OPEN	SEL	Normally open	
N. CLS	SEL	Normally closed	•
1	PGM	Main menu	

**P2 Relay Type**

PULSE	SEL	Pulsed	
LATCH	SEL	Latched	•
1	PGM	Main menu	

**Pulsed**

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**P2 Relay Safe State**

Cur	SEL	Current state	•
rESEt	SEL	Normal state	
SEt	SEL	Operated state	
1	PGM	Main menu	

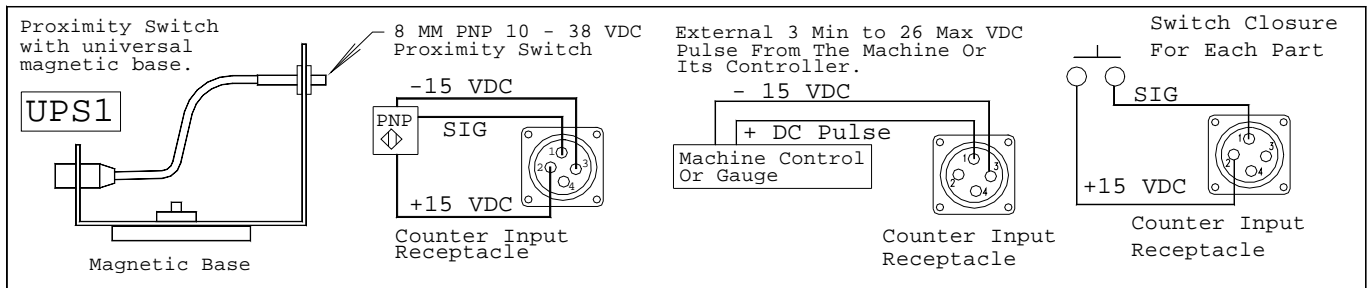
**LCD Backlight**

ON	SEL	On	•
OFF	SEL	Off	
DELAY	SEL	Delay	
1	PGM	Main menu	

# Counting Considerations

You have initiated a count pulse per part from the machine by using the magnetic base to locate the proximity switch where it will have a metallic cam pass by its end every time a part is produced.

## Counter Pulse Input Systems



The **HC 12-4** (hookup cable 12 foot) has a female connector on one end and a male connector on the other end.

A **HC 12-4** hookup Cable is used to connect the **PS-MB** (proximity switch-magnetic base) to the **Counter Input** on the back of the Carousel. This is the simplest and most often used way to achieve a pulse for each part that the machine puts out.

**Qualified persons** should perform the other methods of interfacing a machine to the **Counter Input**. This person should have knowledge of electricity and interfacing with machines.

## The 120 VAC (Volts AC) Rejection Pulse (Spring Machines)



Some spring machines may have a bad part rejection system. For example, a spring machine may have a gauge (such as a Moyer or Lion), which operates a rejection or sorting chute. A 120 VAC pulse from the gauge drives these sorting devices.

Our **M-L Adapter** is a small box that can be fastened to the back of the gauge. It has a short cord with a 3 Pin Plug that will plug into the 3-way sort receptacle of the gauge. Then the cord and plug from the sorter plugs into the side receptacle of the M-L Adapter. This restores the sorter operation. Next plug the 12' cord into 120 VAC rejection pulse receptacle of the Carousel. When the gauge operates the rejection system, it also operates the rejection relays in the Carousel. There is a separate rejection relay for both long and short, which will reject all bad parts from the Carousel count.

**The timing of the Count Input and the Reject Pulse has to be correct.** For example, the count has to be generated during the reject pulse system operation for the count to be blocked from reaching the Carousel. The count pulse should be generated and sent to the Carousel just before the spring is cut off. If you are operating a very fast spring machine, the rejection system may reject several springs. Our reject system is also electro-mechanical and will also reject several springs.

## Preset 1 and Preset 2 Output Connections

The Preset 1 (**P1**) of the counter should be set to the number of parts you wish in each cup or box. When the **P1** count is reached the platter or chute will move to the next cup or box. The Preset 2 (**Batch Preset**) should be set to the number of cups or boxes the job requires. The Batch Preset requires a manual reset after each job. The **P2** (Batch) output receptacle must be interfaced to the machine in order to shut the machine off at the end of the job.

**P1** output is a male 4-pin receptacle that contains the **SPDT** relay output. **Pin # 3 (Black) is Common. Pin # 4 (Green) is Normally Closed. Pin # 2 (Red) is Normally Open.** This relay operates while the Carousel is turning. The output of this relay can be used to shut off a conveyor or some other device while the Carousel moves to the next cup or box.

**P2** output is a male 4-pin receptacle that contains the **SPST** relay output to **Pin # 1 (White) and Pin # 2 (Red)**. The **P2** relay of the counter can be programmed to be normally open or normally closed (factory setting).

The **HC 12-4** (12 foot long hookup cable) can be used on the **P1** and **P2** receptacle. The color code for the hookup cable is (Pin 1 is White), (Pin 2 is Red), (Pin 3 is Black) and (Pin 4 is Green). The pin numbers are also shown on the Amp connectors.



To utilize the batch preset, the **P2** (batch) output relay of the Carousel must be interfaced with the machine. The hookup socket pigtail **HSP-1** is a flange mount Amp connector with a 12-inch cable to facilitate interfacing with a machine. This hookup socket pigtail can be flange mounted or be free hanging. It can be used with the **HC 12-4** hookup cable to interface a machine to the P2 output relay. (# 3 is Black), (# 4 is Green), (# 2 is Red) and (#1 is White). The relay contacts should be wired into the machine control contactor so the machine stops when the P2 (batch) count is reached.

**In order to fully utilize the Carousel, someone should read the manual and become knowledgeable about interfacing, counting parts, counter setup procedures, etc. It is cost effective to have one qualified person work out your systems, establish policies and then teach other persons how to use the Carousel**

# Trouble Shooting the Catch N Count Carousels

**Danger:** Unplug the power cord before servicing or repairing a Carousel. There is a **SHOCK HAZARD** when the rear cover of the RC 300 Carousel is removed or when the bottom cover of the RP 440 Carousel is removed.

Always make sure the green ground wire is pushed on the grounding quick-connect connector before reinstalling the rear cover of the RC 300. Do Not Operate the Carousel on ungrounded electrical outlets. Do Not Defeat the ground pin of the power cord.

**Before replacing the cover**, check to see that the wire harnesses are dressed away from the moving parts. There is a round black surge resistor on the PC Board that gets hot when the motor operates. Care should be taken to keep the wire harnesses away from this surge resistor.

**Do not force the platter to turn.** Forcing the platter to turn will result in breaking the gear train of the gear motor.

## Operation Overview

**Always have a qualified person trouble shoot or repair the Catch N Count**

The Carousel is an electrical / mechanical machine. When the power switch is turned on the counter screen background lights up green and displays numerical information. Toggling the advance switch causes the carousel platter or chute to rotate. When the advance switch is let go the platter or chute rotates to the next hole or slot in the index ring. The proximity switch recognizes the hole or slot and stops the motor and applies electronic breaking. You will notice that you must press and hold the momentary advance switch for a short time to allow the index ring hole or slot to advance enough for the proximity switch to operate as it senses the metal of the index plate and then keep the motor running until the next index plate hole or slot shuts the proximity switch and motor off.

The most important part of learning to operating the carousel is to learn how to setup it's controlling counter. The P1 relay of the counter is of a pulse type with a half second duration. When the P1 count is reached, the P1 relay operates for half a second which allows the motor to start and advance the platter or chute index ring enough to turn on the proximity sensor which then keeps the motor running until reaching the next cup or box.

The RC 300 (rotating chute) is a bit more complicated. In addition to the index ring, it has two micro switches that are actuated by two nylon screws that extend down from the index ring. When the first micro switch is activated, it reverses the motor and keeps the motor running until the second micro switch is activated. The second micro switch then reverses the motor and restores control to the proximity switch. If the nylon screws are removed, the RC 300 operates just like the platter RP 440. Therefore you can oscillate back and forth for less than 360 degrees or do a full circle.

Nether nylon screw should ever be between the micro switches. This can happen if someone switches the leads of the motor around throwing the reversing action of the micro switches out of step.

The information on how to program the counter is quite challenging at first. You might waste an hour or two before you understand the programming procedure. Once you know how it's easy. Only one or two persons need to know how to program the counter. The carousels are factory programmed and should not need programming. None the less if not programmed properly, the Carousel will not operate properly.

## Trouble Shooting Suggestions

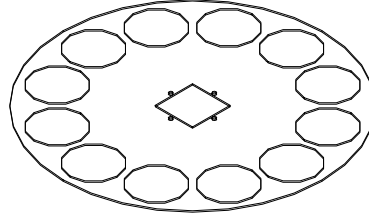
1. **The Carousel Appears To Be Dead.** Check the Power Cord and confirm that there is 120 VAC at the outlet that the Carousel is plugged into. Check the Carousels fuses. It has a **3AG 4 Amp** fuse on the rear cover. It has a **5mm X 20mm .25 Amp** fuse on the PC Board inside. **Danger:** Disconnect the Power before removing the rear cover. Failure of either fuse will cause the Carousel to be dead. **Replace defective fuses with only the same amperage fuse!**
2. **The Screen of the Counter is Green but the motor advance switch will not make the motor run.** Check that the Wire Harness Plugs are plugged into the PC Board Properly. Loose plugs will make the Carousel operate incorrectly or not at all.
3. **The motor runs but** stops when the **Advance Switch** is released. The platter or chute should advance to the next stop. This indicates a defective Proximity Switch or its wire harness. There may also be improper spacing between the Proximity Switch and the index plate of the platter. If the platter is off, this is normal. When the platter is not on the Carousel, bringing a metal object close to the Proximity Switch that protrudes from the top of the Carousel unit should make the motor run. So if the motor runs when you press the Advance Switch and doesn't run when you bring a metal object near the end of the Proximity Switch, then the Proximity Switch or its wire harness is defective.

4. **Improper Setting of the P1 (Preset 1) Output Relay** will cause the Carousel to not advance properly with each P1 count. This relay must be set to **Pulse with a .5 second delay**. Someone may have programmed the counter wrong or the counter may have been replaced and not programmed properly. See the portion of this manual that explains how to program the counter.
5. **Defective Hookup Cords.** Cords may have been crushed or damaged. Always inspect all cords for wear or abuse. Repair or replace defective cords.
6. **The RC 300 runs continuously.** This can happen when the micro-switches on the top of the unit are out of step. Press one of the micro-switches. If this doesn't fix it, press the other micro-switch. The nylon screws should never be installed between the 2 micro switches.

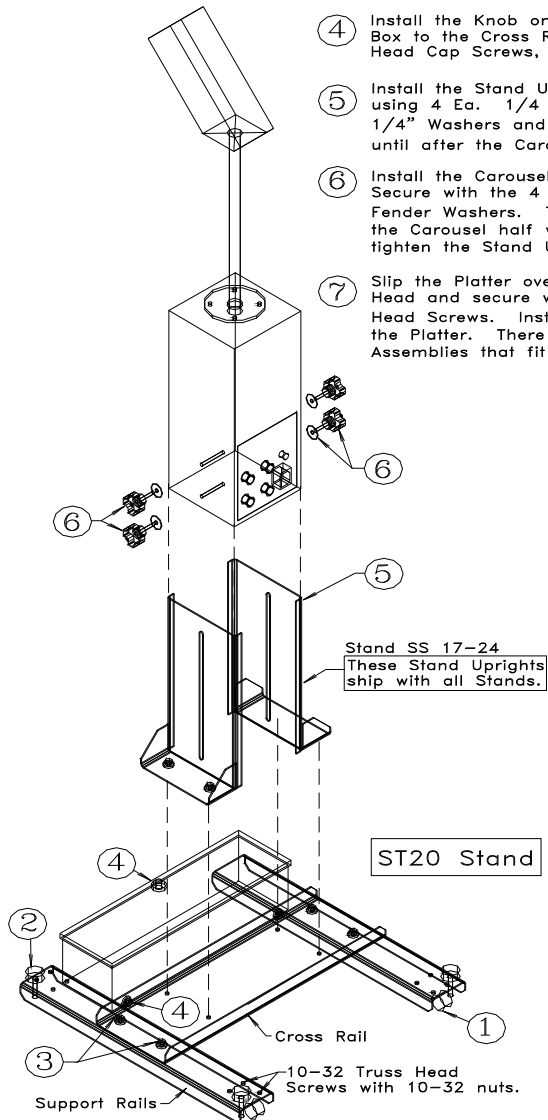
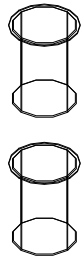
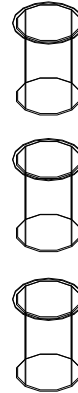
# Catch N Count Assembly Instructions

RC 300 Carousel with ST20 Stand and PL24-12 Platter Assembly  
Typical Assembly Instructions

- ① Bolt the 4 Ea. Casters to the support rails with 16 Ea. 10-32 Truss Head screws and 16 Ea. 10-32 nuts. If there are # 10 washers included, use them under the heads of these screws or the screws will hit the casters.
- ② Screw the 4 Ea. 3/8" X 16 threaded Floor Jacks through the Support Rails. Screw the Foot Pads on the Floor Jacks (Left Hand Threads).
- ③ Bolt the Cross Rail to the two Support Rails with 4 Ea. 1/4" X 20 Hex Head Cap Screws, 1/4 Inch Washers and 1/4 inch nuts.



- ④ Install the Knob on the Cord Box. Bolt the Cord Box to the Cross Rail with 2 Ea. 1/4" X 20 Hex Head Cap Screws, Washers and 1/4" Nuts.
- ⑤ Install the Stand Uprights to the Cross Rail using 4 Ea. 1/4 X 20 Hex Head Cap Screws with 1/4" Washers and 1/4" Nuts. Do not tighten until after the Carousel Unit is installed.
- ⑥ Install the Carousel into the Stand Uprights. Secure with the 4 Ea. Hand Screws with 1/4" Fender Washers. Tighten Hand Screws with the Carousel half way into the Uprights. Now tighten the Stand Uprights to the Cross Rail.
- ⑦ Slip the Platter over the RP 300 Carousel's Head and secure with 4 Ea. 1/4" X 20 Truss Head Screws. Install the Stainless Cups into the Platter. There are 5 different Platter - Cup Assemblies that fit the RC 300 Carousel.



## ASSEMBLY INSTRUCTIONS STAND ST440

TO INSTALL THE OPTIONAL MAST EXTENSION AND MAST COUPLING, INSERT THE MAST COUPLING INTO THE MAST SO THE HOLES LINE UP. THEN TIGHTEN THE INTERNAL SET SCREWS WITH AN ALLEN WRENCH.

OPTIONAL MAST EXTENSION  
AND MAST COUPLING ROUND

PURCHASE SEPARATELY.

