



ATTENTION:

VERY IMPORTANT

Before unloading and unpacking the machine, carefully read section 5 of this manual for unpacking instructions.

Failure to do so will result in forfeiture of the warranty.

**ORION PACKAGING INC.**

**M-67**

**OWNER'S MANUAL**

**ORION PACKAGING INC.  
2270 Industrial  
Laval, Quebec  
H7S-1P9**

**Telephone: (514) 667-9769  
Fax: (514) 667-6320**

ORION PACKAGING INC.

NOTICE

In order to acquire more information about custom make features of the machine; and to provide quicker service, the following information is required when making an inquiry for a machine:

- 1) Serial Number
- 2) Model Number
- 3) Subassembly-Part Location

ORION PACKAGING SYSTEMS, INC.  
DISTRIBUTOR PRICE LIST - EFFECTIVE NOVEMBER 1, 1989

113110

ORION MODEL M-67

Spiral Semi-Automatic Medium Duty Wall Mount Rotary Tower

Maximum Load Size 48"W x 48"L x 76"H (Recommended)  
50"W x 50"L x 80"H (Theoretical)\*

Weight Capacity Unlimited (Floor Loaded)

Utilities 115/1/60 20 Amp Electrical Service

Rotary Tower All Structural Steel  
Easy Access to All Components  
Steel Tube Matrix Design

Tower Drive 12" Dia. Ring Gear Tower Drive/Support  
Pinion Gear Drive  
0-12 RPM Variable Tower Speed  
1/2 HP DC/SCR Drive  
Electronic Soft Start

Control Features Safety Stop Photocell  
Electronic Film Force Control  
Separate Top and Bottom Wrap Selectors  
Variable Speed Film Carriage Control  
Auto-Height Photocell w/On/Off Switch  
Film Carriage Raise/Lower Switch  
Tower Jog Pushbutton  
Power On/Off Switch  
Current Overload Protection  
NEMA 12 Electrical Enclosure

Film Delivery 20" MultiStretch Power Prestretch  
Electronic Film Tension Control  
Full Authority Film Dancer Bar  
Chain & Sprocket Stretch Ratio Control  
1/4 HP DC/SCR Film Drive  
Low Wrap Feature (Min. 3")

Film Carriage Drive #50 Roller Chain Carriage Lift  
1/4 HP Elevator Drive Motor  
Variable Speed SCR Control  
Precision Cam Follower Tracking

Structural Features Wall or Beam Mounting Design  
All Structural Steel Construction

Est. Shipping Weight 500 lbs.

\*Theoretical may increase operator difficulty in proper load placement, and reflects maximum film web height attainable

ORION PACKAGING INC.  
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SEMI-AUTOMATIC MACHINE OPTIONS

AUTO-HEIGHT PHOTOCELL

77 series.....

LOADING RAMPs FOR LOW PROFILES

L77/66.....  
L55S/44S.....  
L55/44.....  
L66-72.....

MACHINE BASE EXTENSIONS (MAX. 3 FT)

H77/66 (per foot).....  
L77/66 (per foot).....  
  
H55/44 (per foot).....  
L55/44 (per foot).....  
L55S/44S (per foot).....

MACHINE MAST EXTENSIONS (MAX. 3 FT)

All Series (Except "M") (first foot).....  
  (each additional foot).....

M77/67/66 (per foot).....  
M57/55 (per foot).....  
M44 (per foot).....

HINGED TOWER (FOR TRANSPORT IN LOW TRUCKS)

All Series (Except "M").....

ORION PACKAGING INC.  
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SEMI-AUTOMATIC MACHINE OPTIONS

PNEUMATIC TOP PLATENS

36" circular platen with 24" stroke.....  
36" circular platen with 36" stroke.....  
  
48" x 48" square platen with homing.....  
device, and 36" stroke  
48" x 48" square platen with homing.....  
device, and 48" stroke

TRANSFORMER

To accept 430/60 or 575/60.....  
For each additional conveyor section.....

DUAL TURNTABLE OPTION

L66.....  
H66.....  
L55/44.....  
H55/44.....  
L55S/44S.....

NOTE: Dual Turntable options includes second  
turntable with all drive components &  
controls, second auto-height photocell,  
and table selector switch.

NOTE: When a ring gear/pinion gear turntable  
drive is required, the cost of 2 ring  
gear options must be added to the dual  
turntable option price.

RING GEAR/PINION GEAR TURNTABLE DRIVE

H66....(20" DIA.).....  
H55....(25" DIA.).....  
H44....(33" DIA.).....

Central lubrication point for ring gear.....

ORION PACKAGING INC.  
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SEMI-AUTOMATIC MACHINE OPTIONS

PROGRAMMABLE LOGIC CONTROLLER OPTIONS

66/55 Series - Allen Bradley SLC-100.....

44 Series - Allen Bradley SLC-150.....

EEPROM ordered with machine.....

EEPROM ordered after shipping of the machine.....

CYCLE COUNTER (inside control panel).....

TURNTABLE OPTIONS

0-12 RPM Variable Speed Turntable Drive for.....  
L/H 77 Models

0-12 RPM Variable Speed Turntable Drive with.....  
Positive Alignment Feature for L/H 77 Models

10,000 lb Capacity (H55/44).....

8,000 lb Capacity (L55/44).....

10,000 lb Capacity (L55/44).....

Anti-Skid Surface.....

72" dia. round, 3/8" with 4" skirt (H55/44).....

72" dia. round, 1/2" (L44/44S,L55/55S).....

72" dia. round, 1/2" (L66).....

72" dia. round, 3/8" (L66).....

60" dia. round, 1/2" (L66/55/44).....

Reinforced Concentric Rings.....

Remote Pull Switch.....

Filler Plate (H77/66).....

Filler Plate (H55/44).....

ORION PACKAGING INC.  
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SEMI-AUTOMATIC MACHINE OPTIONS

COLD TEMPERATURE OPTIONS (-20 F)

Heated Control Enclosure, Silicon Rubber Wiring.....  
and Special Lubricant in Reducers

CONVEYOR OPTIONS

IDLER ROLLER (NON-DRIVEN)

72" Dia. idler roller turntable for H66/55/44.....  
(On H-66, requires ring gear option and  
max. wt. 2,500 lbs) Rollers are 3.5" Dia.  
on 4.5" centers, with manual brake.

72" Dia. idler roller turntable for L55S/44S.....  
Rollers are 3.5" Dia. on 4.5" centers, with  
manual brake.

Pneumatic Roller Brake for "L" Series.....

Pneumatic Roller Brake for "H" Series.....

5' Length CONTOURED Idler Roller Conveyor,.....  
3.5" Dia. Rollers on 4.5" Centers, 50" Wide  
Roller Face.

5' Length STRAIGHT Idler Roller Conveyor,.....  
3.5" dia. rollers on 4.5" centers,  
50" wide roller face.

POWERED ROLLER

55 STYLE (Powered Roller Turntable)

76" Dia. powered roller TURNTABLE, Rollers.....  
rollers 3.5" dia. on 4.5" centers, all full  
length driven. Includes 1/2 hp AC drive,  
adjustable speed. Wall tubing 1/8"  
(H55/44 only - requires ring gear option)



ORION PACKAGING INC.  
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SEMI-AUTOMATIC MACHINE OPTIONS

44 STYLE (Powered Roller Turntable)

76" Dia. Powered Roller TURNTABLE, Rollers.....  
3.5" Dia. on 4.5" Centers, All Full Length  
Driven. Includes 1/2 hp DC Drive, Adjust-  
able Speed. Wall Tubing 3/16", Cast Iron  
Pillow Blocks. (NOTE: H55/44 only, requires  
RING GEAR OPTION)

55 STYLE (CONTOURED Powered Roller Conveyor)

5' Length CONTOURED Powered Roller Conveyor,.....  
3.5" Dia. Rollers on 4.5" Centers, 50"  
Effective Width, All Full Length Rollers  
Driven. Includes 1/2 hp AC Drive, Non-  
Reversing. Wall tubing 1/8"

44 STYLE (CONTOURED Powered Roller Conveyor)

5' Length CONTOURED Powered Roller Conveyor,.....  
3.5" Dia. Rollers on 4.5" Centers, 52"  
Effective Width, All Full Length Rollers  
Driven, Cast Iron Pillow Blocks.  
Includes 1/2 hp DC Drive, Variable  
Speed, with Soft Start.

Automatic Sequencing, Logic and Photocell.....  
For Powered Conveyor (Per Section) - Includes  
Photocell PLC Input and Output/Program.

Turntable Mechanical Home Position Lock.....  
(Pneumatic, Positive Lock)

ORION PACKAGING INC.  
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SEMI-AUTOMATIC MACHINE OPTIONS

FILM CARRIAGE OPTIONS

- Double #60 Chain Carriage Lift.....
- 20" Multistretch Retrofit Carriage.....  
(For Installation on Existing Machines)
- 30" Multistretch Retrofit Carriage.....  
(For Installation on Existing Machines)
- 30" Multistretch Carriage Upgrade from 20".....  
on H66/55/44 and L66/55/66.
- 30" Multistretch Carriage Upgrade from 20".....  
on M66/55/44.
- 30" Econostretch Carriage Upgrade on 77 .....  
Series from 20".

ELECTRONIC SCALE PACKAGE OPTION

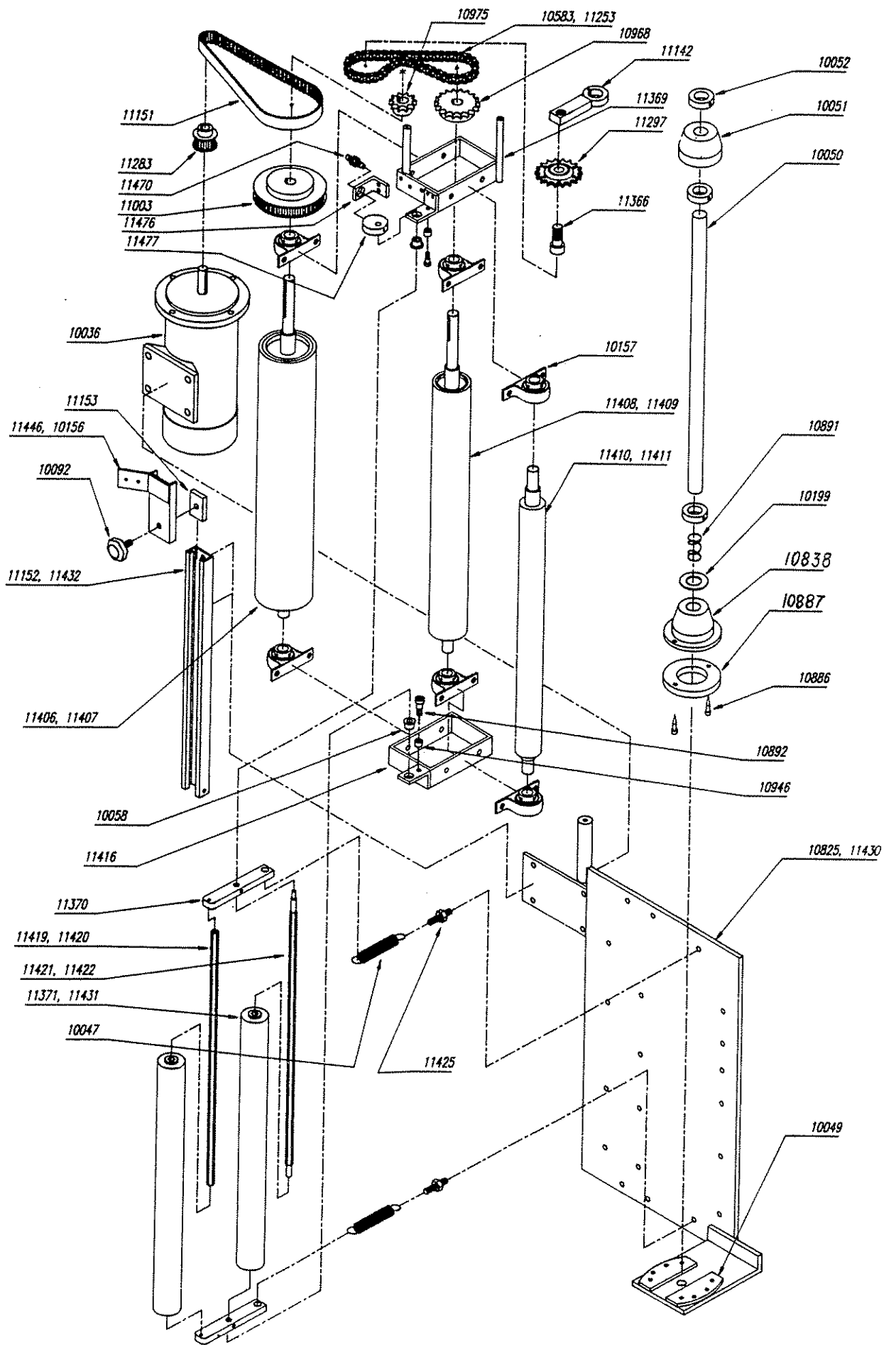
Includes Heavy Duty Load Cells Incorporated.....  
into the Machine or Conveyor Frame, Protected  
from Lateral Shock, and a Digital Display of  
Load Weight, with RS-232C Port, Gross, Net  
Tare, Zero.

NOTE: On L-77 and L-66 models, scale option  
reduces machine capacity to 2500 lbs.,  
unless base reinforcement option is  
ordered.

Base Reinforcement on L-77 or L-66 models,.....  
when 4000 lbs capacity is desired with  
scale package.

Carriage Parts List  
Series 6

10036	Motor, el. 1/2HP 90VDC 1750RPM	1
10047	Spring, tension	2
10049	Pads, brake 1/4" th.	Set of 2
10050	Spool mandrel (for 20" & 30")	1
10051	Mandrel, top	1
10052	Collar 1" I.D.	3
10058	Bushing bronze	2
12090	Bracket, photoswitch (LH)	1
10157	Bearing, pillow block 3/4"	6
10199	Washer	1
10583	Chain #40	1
10825	Back plate f/20" film	1
10838	Mandrel, bottom spool	1
10886	Spike, spool	2
10891	Spring, compression	1
10892	Screw, shoulder 5/16"dia. x 3/8"lg.	2
10946	Hose, plastic (for P/N 10892)	2
10968	Sprocket, drive	1
10975	Sprocket, drive	1
11003	Pulley	1
11142	Tensionner, chain	1
11151	Belt, timing	1
11152	Channel, photocell (20" film)	1
11153	Guide, channel	1
11253	Link, connecting #40	1
11283	Pulley, timing belt	1
11297	Sprocket	1
11366	Screw, hex head, 5/8"NFx1 1/2"lg.	2
11369	Bracket, top	1
11370	Lever	2
11371	Roller, dancer, 21 1/4" lg.	2
11406	Roller, rubber, 4"dia.x21" lg.	1
11407	Roller, rubber, 4"dia.x31" lg.	1
11408	Roller, rubber 2.66"dia.x21"lg.	1
11409	Roller, rubber, 2.66"diax31" lg.	1
11410	Roller, pressure 1 3/4" dia.x21"lg.	1
11411	Roller, pressure, 1 3/4" dia.x31"lg.	1
11416	Bracket, bottom	1
11419	Shaft, short, f/ P/N 11371	1
11420	Shaft, short, f/ P/N11431	1
11421	Shaft, long, f/ P/N11371	1
11422	Shaft, long, f/ P/N11431	1
11425	Rod, threaded, 2/8"UNCx2"lg.	2
11430	Back plate for 30" film	1
11431	Roller, dancer, 31"lg.	1
11432	Channel, photocell (for 30" film)	1
12091	Bracket, photocell, (RH)	1
11470	Sensor, proximity	1
11476	Bracket, proximity sensor	1
11477	Cam, proximity sensor	1
10887	Disk, mandrel brake	1



## 4.2 Tower And Rotor Parts List

The exploded assembly drawing of the Tower and Rotor is shown on drawing number 200 800. Table 2 has the parts and quantities listed in order of part number. Note: the names given to the parts are generic.

TABLE 2

Tower And Rotor Parts List

Part Number	Description	Quantity
10008	Idler sprocket	1
10009	#50 chain	
10071	Limit switch actuator	1
10288	1/4-20 UNC x 1 long hex bolt	2
10291	5/16-18 UNC x 1 long Hex bolt	4
10294	Cover screw (1/4-20 UNC x 1/2 SHCS)	3
10330	Limit switch screw	4
10331	Knob	2
10332	Limit switch	2
10333	Limit switch bracket	2
10335	Channel	1
10336	1/4-20 UNC x 1 long SHCS	2
10337	Chain cover	1
10340	3/8-16 UNC x 1 long Hex bolt	2
10341	Chain tensioner	1
10343	Drive sprocket	1
10344	Reducer (50:1)	1
10346	Motor (1/2 hp, DC)	2



10348	3/16" square key	4
10349	Chain link pin	2
10368	3/8-16 UNC x 1 long hex bolt	8
10369	5/16-18 UNC x 1 long CHCS	4
10387	Chain tensioning screw	2
10393	5/8-11 UNC x 1 1/2 long hex bolt	12
10460	Ring gear (99 teeth)	1
10461	Mongoose arm	1
10462	Right carriage holder	1
10463	Left carriage holder	1
10464	Tower	1
10465	Reducer (20:1)	1
10466	Idler sprocket bolt	1
10467	3/8-16 UNC x 2 long Hex bolt	8
10468	Pinion (12 teeth)	1
10469	Commutator	1
10470	M12 x 1.75 Metric hex bolt, 40mm long	10
10471	Reducer mounting plate	1
10472	Mongoose perch	1

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MONGOOSE ROTARY TOWER ASS'Y - PART LIST

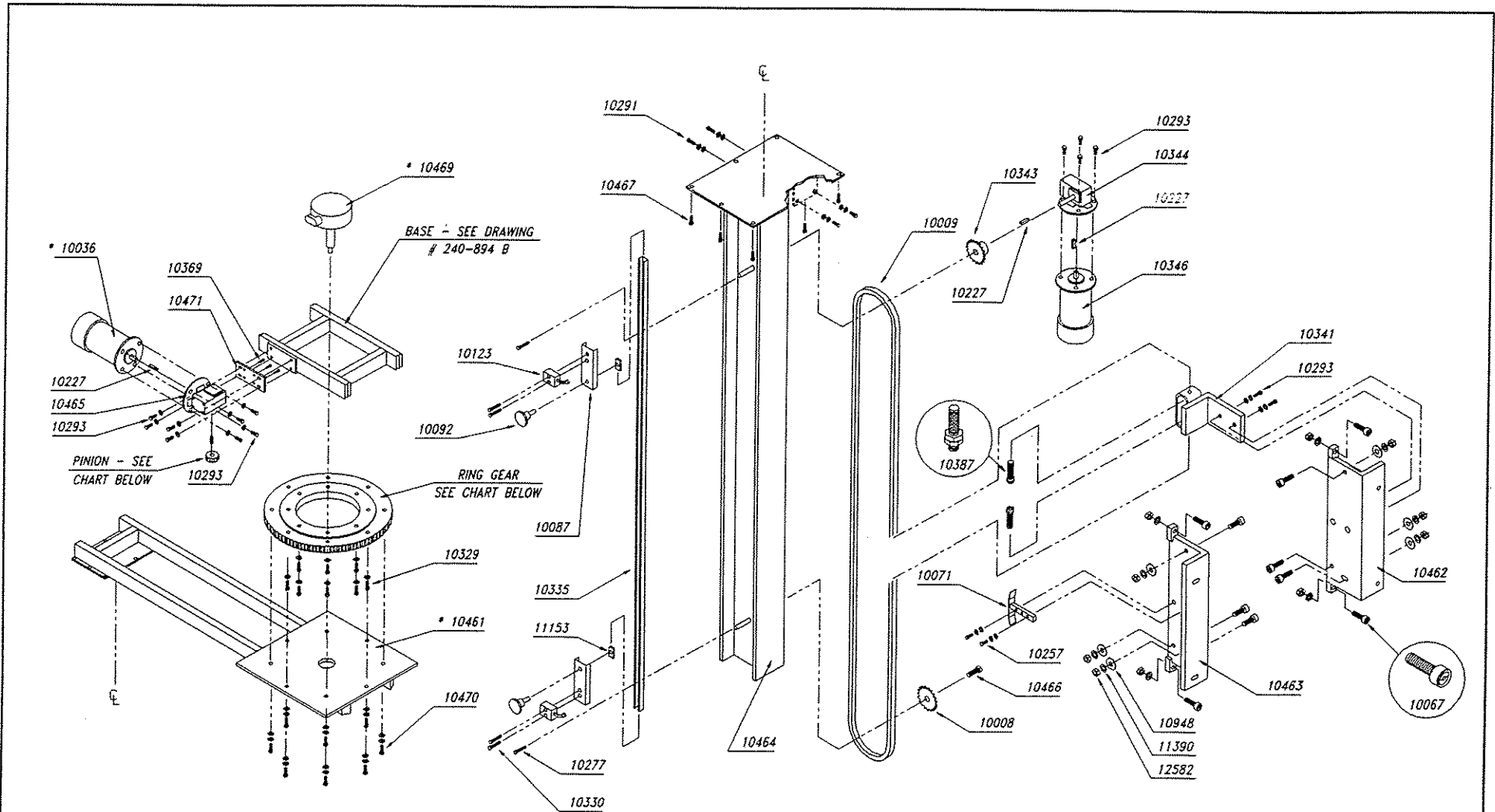
ORION PART NO.	DESCRIPTION	Q-TY
10008	IDLER SPROCKET, 16 TEETH AG2416	1
10009	CHAIN # 50	1
10036	ELECTR. MOTOR, 1/2 HP, 90 VDC, 1750 RPM	1
10067	CAM FOLLOWER 3/4" CF12	10
10071	ACTUATOR, LIMIT SWITCH (STD)	1
10087	LIMIT SWITCH BRACKET	2
10092	KNOB, BLACK # 193	2
10123	LIMIT SWITCH XCK-2115	2
10227	SQUARE KEY, 3/16"	3
10257	1/4-20 x 1/2" LG. S.H.C.S.	2
10277	1/4-20 x 1" LG. S.H.C.S.	2
10291	5/16-18 UNC x 1" LG. BOLT	4
10293	3/8-16 x 1" LG. H.H. BOLT, GR.52C	10
10329	5/8-11 UNC x 1 1/2" LG. H.S.C.S.	8
10330	10-24 UNC x 2" LG. S.H.C.S.	2
10335	CHANNEL, DWG. # 220794 A	1
10341	CHAIN TENSIONER, DWG. # 200-126 A	1
10343	SPROCKET, 50B14 x 7/8" BORE	1
10344	REDUCER BQ 175 50:1 ASS'Y-3	1
10346	ELECTR. MOTOR, 1/3 HP, 90 VDC, 1750 RPM	1
10369	5/16-18 UNC x 1" LG. C.H.C.S.	4
10387	CHAIN TENSION SCREW 1/2-13 x 2 1/2" LG.	2
10460	EXTERNAL RING GEAR, 20" DIA. 99 T.	1

MONGOOSE ROTARY TOWER ASS'Y - PART LIST

CONT.

ORION PART NO.	DESCRIPTION	Q-TY
10461	MONGOOSE ARM - LENGTH VARIES WITH MODEL	1
10462	RIGHT CARRIAGE HOLDER	1
10463	LEFT CARRIAGE HOLDER	1
10464	TOWER, DWG. # 200-829 C	1
10465	REDUCER BQ 175 20:1, ASS'Y-3	1
10466	1/4-28 UNF x 1/2 LG. H.H. BOLT	1
10467	3/8-16 UNC x 1" LG. H.H. BOLT	8
10468	PINION, 12TM5 , 7/8" BORE	1
10469	SLIP RING ASS'Y, 15 WIRE, MAY VARY WITH MODEL	1
10470	M12 x 1.75 METRIC HEX BOLT 40 mm LG.	8
10471	REDUCER MOUNTING PLATE	1
10804	PINION, 12TM6, 7/8" BORE	1
10910	EXTERNAL RING REAR, 25" DIA. 105 T.	1
10948	FLAT WASHER, 3/8"	6
10984	EXTERNAL RING GEAR, 13" DIA. 78 T.	1
11153	CHANNEL GUIDE, DWG. # 220-518 A	2
11390	LOCK WASHER, 3/8" I.D.	10
11886	PINION, 11TM4, 7/8" BORE	1
11887	PINION, 10TM4, 7/7" BORE	1
12582	3/8-20 UNF HEX NUT	10





MACHINE TYPE	RING GEAR		PINION	
	SYMBOLE	PART NO.	SYMBOLE	PART NO.
M-57, M-67, M-77	VLA 160235	10984	10M4/11M4	11887/11886
M-55, MA-55, M-66, MPA-44	VLA 200414	10460	12M5	10468
M-44, MA-44	VLA 200544 N	10910	12M6	10804

\* ITEM MAY VARY DUE TO MACHINE MODIFICATIONS

## MONGOOSE ROTARY TOWER ASSEMBLY

## 5. MACHINE INSPECTION AND INSTALLATION

### 5.1 Inspection Upon Arrival

Before unloading the Mongoose Stretchwrapper the shipping bracket must be unbolted from the trailer bed. The shipping bracket is an angle mounted on the lower mount of the perch.

Before inspection of the machine may begin, all the packaging and restraining blocks must be removed. That is, the mounting bracket, the stretchwrap material, and the restraining block under the end of the tower must be removed.

**CAUTION:** When cutting the stretchwrap material covering the machine, care must be taken not to cut any electrical lines or damage the surface finish of the machine.

A visual inspection of all the electrical connections should be performed after unpacking the machine to check for loosened joints or broken connections. Any suspected shipping damage must be reported immediately to the freight carrier.

Items that are vulnerable to damage and must be inspected are,

- motor and transmission housings and connections on the perch, at the base of the tower, and on the carriage.
- the photoswitch mounted on the rotor and its connections.
- the proximity switch mounted on the perch and its connections.

### 5.2 Machine Installation

After the visual inspection has been performed, the customer is required to provide the electrical power

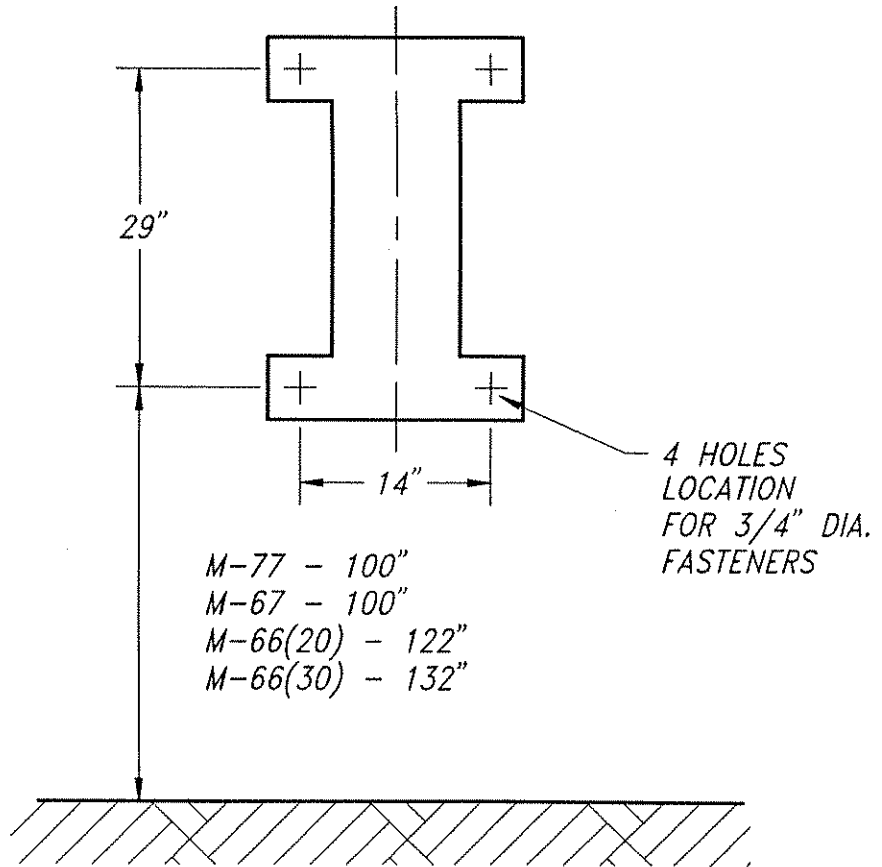


requirements as outlined in the specifications (sections 1, 2, and 3 of this manual).

The mounting position and location of the Mongoose stretchwrapper can be determined by the position of the mounting holes as shown in the appendix. Once the stretchwrapper is mounted, the lower limit switch on the tower must be adjusted so as to have the carriage clear the floor when the carriage is at its lowest position.

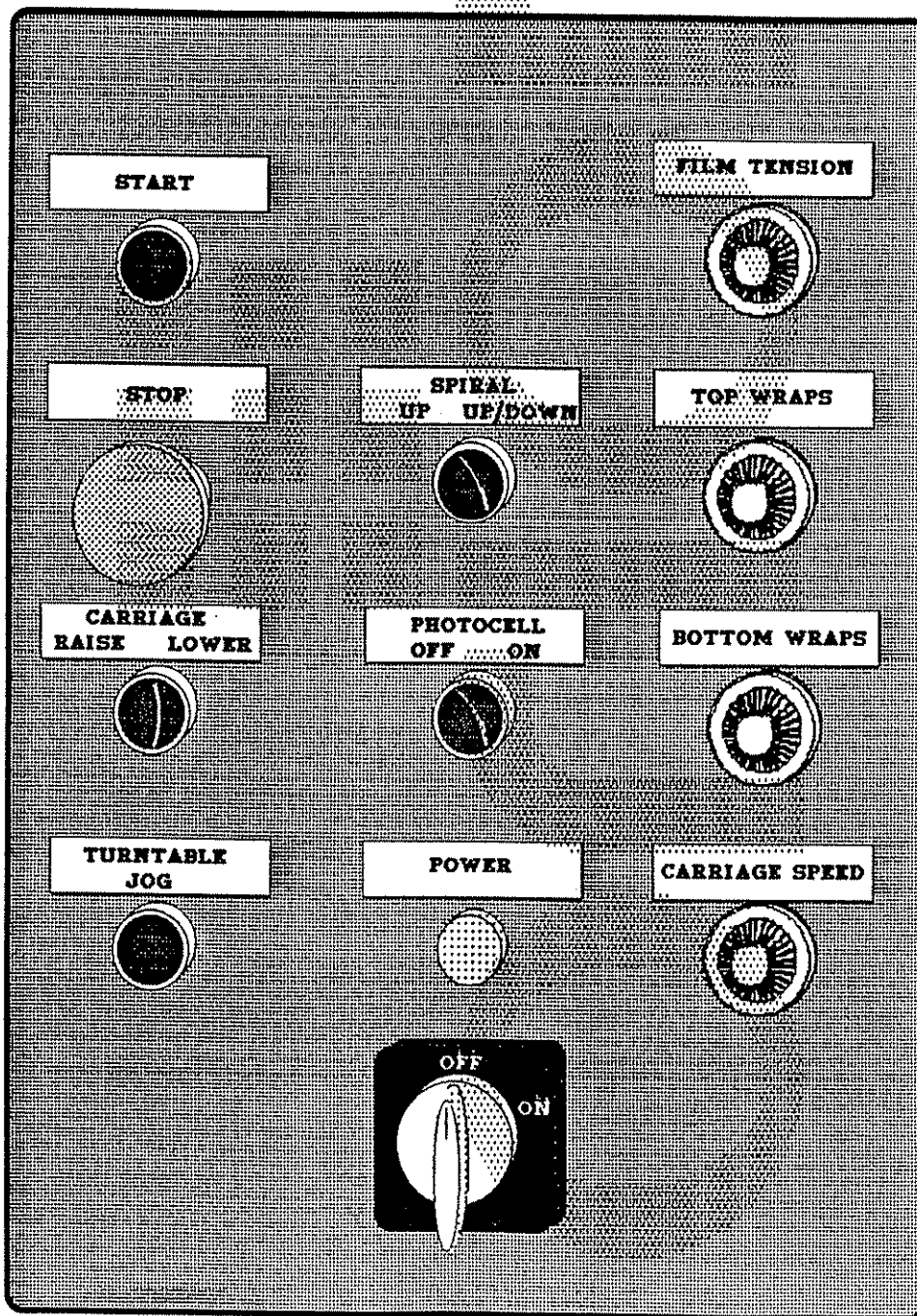
For the electrical connections, an electrical diagram is provided in the panel box and in the appendix of this manual. Also, a copy of the FLC's instruction manual is included in the appendix for PLC controlled stretchwrappers. Only a qualified electrical technician or an Orion representative should make the connections or effect any repairs on the machines.





MODEL		ASSUMED FIXING MOMENT	ASSUMED FIXING FORCES
MONGOOSE	CARRIAGE		
M-67 M-77	20"	6 000 LBS/FT 72 000 LBS/IN 830 KG/M	2 483 LBS 1 130 KG
M-67 W/3" EXT. ARM	20"	6 500 LBS/FT 78 000 LBS/IN 900 KG/M	2 690 LBS 1 223 KG
M-66	20"	7 500 LBS/FT 90 000 LBS/IN 1 040 KG/M	3 100 LBS 1 410 KG
M-66	30"	8 300 LBS/FT 99 600 LBS/IN 1 150 KG/M	3 435 LBS 1 560 KG

## BOLTS PLACEMENT FOR MONGOOSE INSTALLATION



## 6.1 Power Switch

The Power Switch has two settings,

ON - Connects a 110 VAC power source to the machine.

OFF - Disconnects the power source.

When turned ON, the POWER light will also turn on.

## 6.2 Start And Stop Switches

The Start switch is used to start the cycle once the load is positioned under the mongoose. The cycle may be stopped at any time by pressing the Stop button.

NOTE: If the Stop button is pressed or if the safety photoswitch is tripped in the middle of the cycle, the carriage and rotor may be returned to their home positions by using the jog buttons before restarting the cycle.

## 6.3 Spiral Wrap Switch

The Spiral Wrap switch has two positions,

UP - In the UP position the cycle will end after completing the specified number of top wraps. therefore, the machine will only wrap the load once, going up.



UP/DOWN - In the UP/DOWN position the cycle is complete after the load is wrapped in both the up and down directions.

#### 6.4 Carriage Control Switch

The Carriage Control switch is a monostable three position switch with the following settings.

RAISE - Raises the carriage until the top limit switch on the tower is activated or, if the photocell switch is on, until the photo switch senses that the top of the load has been reached.

LOWER - Lowers the carriage until the bottom limit switch on the tower is activated.

The switch is normally in the middle position where the carriage remains stationary. Turning the switch to the RAISE or LOWER position will activate the carriage to move in these respective directions.

#### 6.5 Photocell Switch

The Photocell switch has two settings,

ON - When turned ON, the photocell senses whether or not the carriage has reached the top of the load. The carriage will stop and begin the top wraps sequence once the top of the load is reached. The carriage will always stop at the top of the load regardless of its height.

OFF - When turned OFF, the photocell is inoperative and the carriage will stop only once the top limit switch has been activated.

## 6.6 Rotor Jog Switch

The Rotor Jog switch is a monostable pushbutton switch that turns the mongoose arm clockwise (as viewed from below) when held depressed. The rotor jog switch is inoperative during the cycle.





## 7.1 Film Tension

The film tension may be adjusted through the film tension control potentiometer. The pot has a range of tension from 0 to 10, 10 being the highest tension rating. This pot may be adjusted at any time.

CAUTION: Light loads may require lower tension settings than heavier loads.

## 7.2 Carriage Speed

The carriage speed control can be used to control the amount of overlap the film will have on itself during a wrap.

The control potentiometer has settings from 0 to 10, the higher settings being the fastest. High settings will mean LESS film overlap because of faster carriage speed, and low settings will mean MORE film overlap because of lower carriage speeds.

## 7.3 Top And Bottom Wraps

There are two multi-position switches which control the number of wraps that may be put at the top and bottom of the load. Each switch has positions going from 1 to 5, corresponding to the number of wraps which may be applied at the top or bottom of the load.

The top and bottom wrap switches may be set before the cycle begins.

### 8.1 Speed Reducer Maintenance

On the reducing transmission, after the first week all external cap screws and plugs should be checked for tightness. It is recommended to change the oil every six months or every 2500 hours of operation, whichever comes first. When adding oil the transmission should never be filled above the oil level mark indicated because leakage and overheating may occur. Below is a list of the type of lubricant that should be used.

Manufacturer	Lubricant
American Oil Co.	American Cyl. Oil No. 196-L
Cities Service Oil Co.	Citgo Cyl. Oil 160-5
Gulf Oil Corp.	Gulf Senate 155
Mobile Oil Corp.	Mobil 600 W Super Cyl. Oil
Phillips Oil Co.	Andes S 180
Texaco Inc.	624-650T Cyl. Oil
Shell Oil Co.	Velvata Oil J82
Union Oil Of Cal.	Red Line Worm Gear Lube 140

Reducing transmissions are found on the carriage, and on the perch next to the ring gear.

### 8.2 Motor Maintenance

An occasional inspection of the brushes should be made in order to establish a wear rate. Replace-



ment brushes should be installed before old brushes wear to 9/16" long, measured on the long side. After replacing brushes run the motor near rated speed for at least 1/2 hour with no load to seat the new brushes. Failure to properly seat the new brushes may cause commutator damage and rapid wear of the new brushes. If the commutator becomes rough, scored, or out of round, a competent motor shop should disassemble the motor and resurface the commutator. With every third brush change, have a competent motor shop resurface the commutator and blow the carbon dust out of the motor.

### 8.3 Chain Maintenance

To clean and relubricate the chain, wipe it with an oily cloth every month. If the environment is very dusty or damp, it may be necessary to clean and relubricate the chain more often.

With time the chain will tend to stretch. A loose elevator chain should be tightened at the chain tensioner as shown on drawing number 200-192.

### 8.4 Cam Follower Maintenance

The cam followers behind the carriage have deep grease pockets and need not frequent relubrication.

The portion of the tower on which the cam followers roll should be cleaned and regreased every 300 hours of operation. If the machine operates in a dusty or corrosive environment the tower should be relubricated more often.

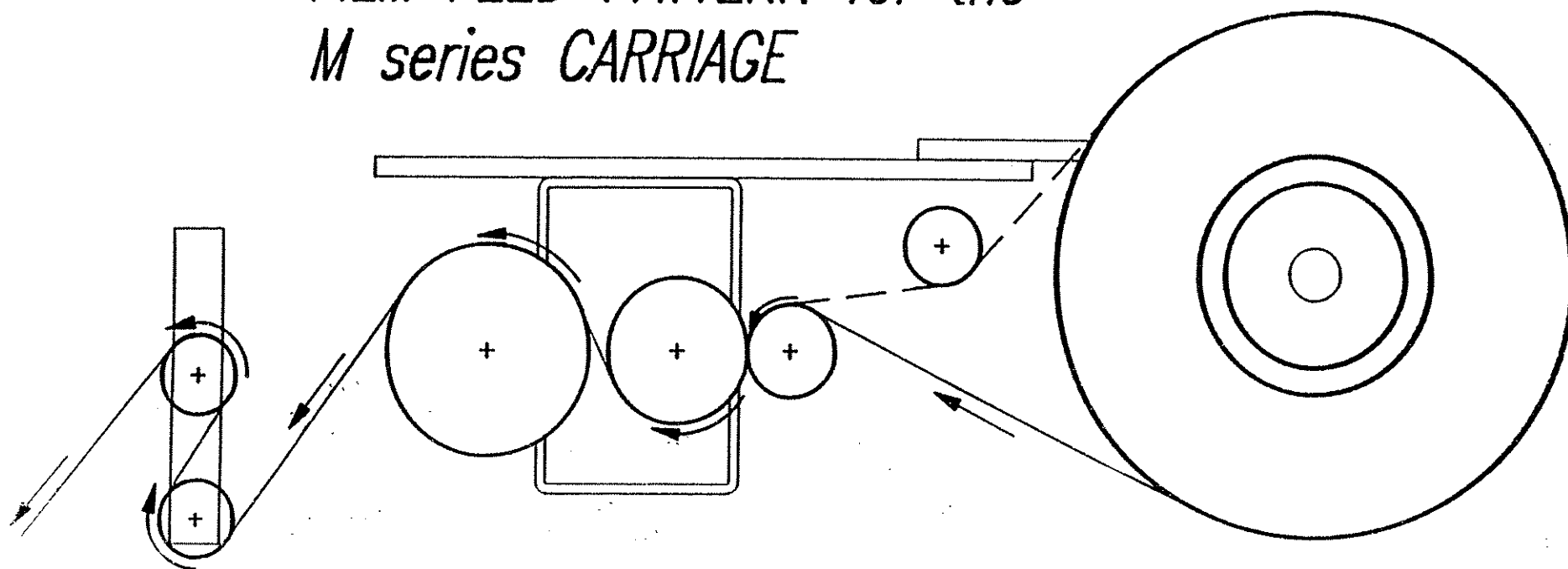
APPENDIX

ORION PACKAGING INC.

NOTICE

The manual covers standard features of the machine. Certain machine options may not be covered fully by this manual due to their unique application.

*FILM FEED PATTERN for the  
M series CARRIAGE*



*WARNING: DISCONNECT POWER BEFORE FEEDING FILM*

	168-4	168-A	336-6	750 MX	850 M	850 C	155-3	850 D
L-77, H-77		X					X	X
M-77		X				X	X	
M-67		X	X				X	X
M-67 PA		X	X		X		X	
M-67 DEMO		X	X		X		X	
M-66, L-66, H-66		X	X		X		X	
M-57		X	X				X	X
M-55, L-55, H-55		X	X		X		X	
M-44, L-44, H-44	X		X	X			X	
*M-44, *L-44, *H-44	X		X	X				

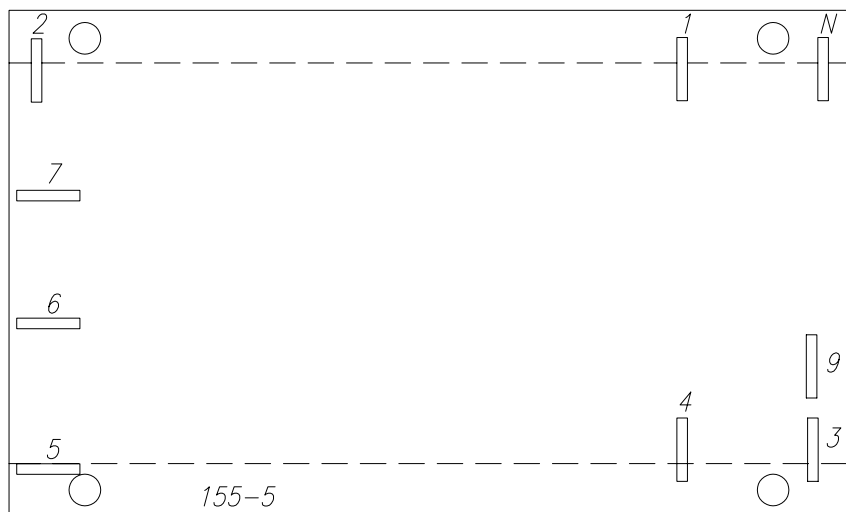
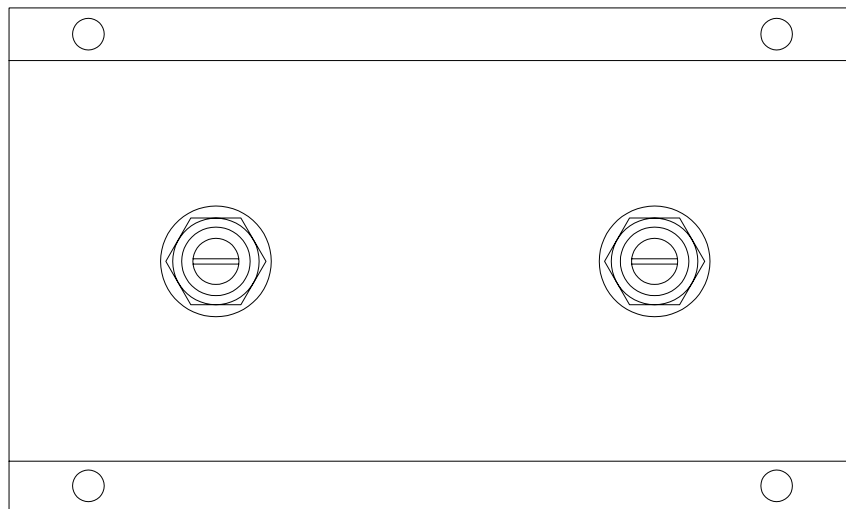
\* - PROCESSOR

PA - POSITIVE ALIGNMENT

DEMO - DEMO PACKAGE

336-6 - REPLACES 336-4

ELECTRICAL BOARDS' CHART  
FOR ORION STRETCHWRAPPERS



- 1: AC INPUT
- 2: AC INPUT
- 3: COUNT
- 4: RESET
- 5: OUTPUT PULSE AFTER 1-ST COUNT
- 6: OUTPUT T/W
- 7: OUTPUT B/W
- 8: N/A
- 9: COMMON
- N: NEUTRAL

155-5  
COUNTER BOARD





DC - OUT

DC + OUT

AC2 IN

AC1 IN ( NEUTRAL )

168-A CARRIAGE UP/DN  
SINGLE SPEED BOARD

## MULTISTRETCH 336-6/7/9 MOTOR CONTROL BOARD CALIBRATION INSTRUCTIONS

**Bias:** (RV3) The **RV3** pot controls the system bias.

This control injects an offset voltage that adds or subtracts from the voltage reference defined by the external tension adjustment (film tension potentiometer); this will allow extremes of adjustment to be set to levels consistent with proper operation. Typically, the bias will be used to center the operation range in the linear portion of its characteristics.

**Note:** This adjustment is normally factory pre-set and should not require field adjustment. For reference, the factory test procedure calls for a setting of 1.3 volts DC at the cathode of Z1 (Zener Diode) achieved by adjusting the **RV3** pot. Check for voltage between the (-IN) and the pin located next to the bias trim-pot.

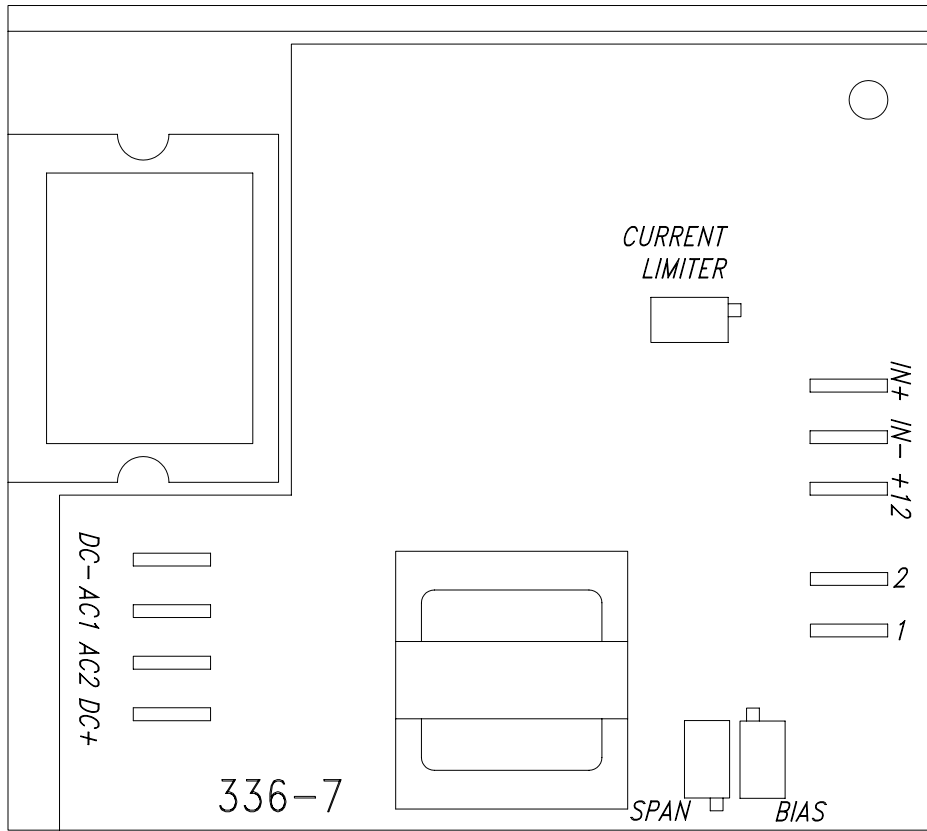
**Span:** (RV1) The **RV1** pot controls the systems loop gain.

The system loop gain may be adjusted if the motor continues to be energized when the dancer roller is unloaded and at rest. With the machine stopped, the pot should be adjusted to ensure that the motor is de-energized in this condition, and so that a light pull on the free end of the film causes the film to feed freely. Counter clockwise (CCW) adjustment of this pot will increase the response time, in effect softening the motor tension response plus decreasing the maximum motor speed attainable. Clockwise (CW) adjustment will decrease the response time, in effect sharpening the motor response time plus increasing the maximum motor speed attainable.

**Current Limit:** (RV4) The **RV4** pot controls the torque (amperage) that the 336 board will allow to the motor.

To protect the unit against damage should the motor stall, jam, or current demands exceed its rating, a current limiting circuit is included which keeps motor current at a safe level regardless of motor load or input from the Hall effect proximity switch.

This pot is factory pre-set to suit ½ HP motors. Should changes be required in the field, proceed as follows: Monitor the motor current. Turn the current limit **RV4** to minimum (full CCW). Stall the motor. Advance the pot slowly until the desired current is achieved. This should not exceed 125% of the motor nameplate rating. Do not stall the motor for more than a few seconds, or damage may occur.



*DC+:* ARMATURE CONTROL

*AC1:* AC INPUT

*AC2:* AC INPUT

*DC-:* ARMATURE CONTROL

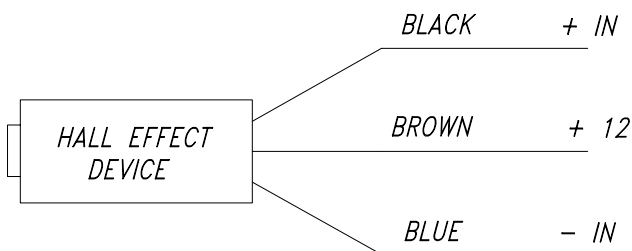
*POTENTIOMETER*

*SPAN:* HALL EFFECT SENSITIVITY CONTROL

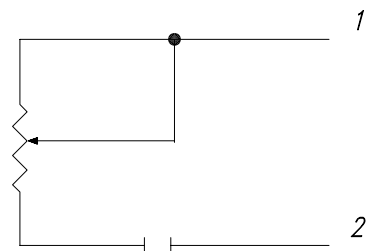
*BIAS:* SYSTEM BIAS (FACTORY SET)

*TRIP:* END OR BROKEN FILM SENSING CIRCUITRY.  
TRIP LEVEL (FACTORY SET)

*CURRENT LIMITER:* (FACTORY SET)



*FILM TENSION ADJUSTMENT  
REMOTE POTENTIOMETER*



*tension on/off  
relay*

**336-7**

**MULTISTRETCH BOARD**

# TURNTABLE & TOWER MOTOR CONTROL BOARD ADJUSTMENTS

66 & 55 SERIES EQUIPMENT (850M & 850DM Board)

## INTRODUCTION

The 850M and 850 DM Motor Control Boards are DC/SCR drives that are used in 66 & 55 series Orion stretch wrapping equipment. The following calibration instructions apply to all 66 & 55 series turntable and rotary tower type machinery, but it will be important to note specific reference to your particular Orion model for best calibration results.

The 850M and 850DM boards feature two selectable pre-set speeds (1 & 2), and four potentiometers (marked 1,2,A and D).

The instructions are in the suggested order of adjustment, and intended to be made after installation of the board in the control enclosure. Please refer to the attached sketch of the board for identification of the adjustment points.

## INSTALLATION

This unit is equipped with an aluminum chassis, which serves as a heatsink. This should be oriented with the printed circuit board in a vertical plane for optimum convection cooling.

Connectors are to .250" quick-disconnect terminals. Standard units require 120 VAC supply. AC line attaches to terminals **AC1**, **AC2**. Motor Armature attaches to terminals **DC+**, **DC-**. The standard unit is suitable for permanent magnet shunt style DC motors with 90 V armature rating.

## ADJUSTMENTS

**Acceleration:** (RV3) The pot marked **A** is the control for the acceleration or electronic soft start feature.

For an initial setting, turn the **A** pot fully counter-clockwise (CCW) until a faint “clicking” sound is heard, then approximately 2 turns (or revolutions) clockwise (CW). CW adjustment of this potentiometer softens the start and lengthens the time required for the turntable/tower to reach its preset speed.

**Speed Control:** (RV1) The pot marked **1** controls the turntable/tower jog speed<sub>1</sub>.

Simply activate the turntable/tower jog function, adjusting the jog speed (pot 1) as the turntable/tower rotates. This should be set for approximately 2 to 3 RPM. Please note that this setting should be made with a load on the turntable (turntable type models only). A CW turn increases the jog speed, while CCW decreases jog speed.

**Speed Control:** (RV2) The pot marked **2** is the control for the high speed<sub>2</sub> for the turntable/tower during the wrap cycle once acceleration is complete.

This speed can be as high as 12 RPM. However, you should note that if it is set too high, you may see chopping of the current to the turntable/tower drive motor which will cause pulsating, half-speed operation of the turntable/tower drive itself. If this is seen, please decrease the setting of pot **2**, until it is no longer in effect.

For best calibration results, it is recommended that you make this adjustment while the machine is in cycle. After starting a wrap cycle, set the film carriage speed control to the “0” (minimum) position. This will prevent the film carriage from rising and completing its cycle. Then simply adjust the high speed (pot **2**) as the turntable/tower rotates. A CW turn increases speed, a CCW turn decreases speed.

---

**1** Speed Control 1 = Turntable/Tower Jog Speed  
Selected by a 120 VAC signal applied from terminal (1) to (C)

**2** Speed Control 2 = Turntable/Tower High Speed  
Selected by a 120 VAC signal applied from terminal (2) to (C)

**Deceleration:** (RV4) The pot marked **D** is the deceleration control. Functionally, it is the opposite of acceleration, except that it is a more critical setting, in that our machine logic requires that we decelerate from speed 2 to speed 1 during the course of the final revolution of the turntable/tower before shutoff.

For an initial setting, start with the **D** pot set fully CCW. Then, cycling the machine; observe the transition to jog speed at the end of the cycle, prior to the stop of the turntable/tower at the home position. Gradually increase the **D** pot setting (CW) until the turntable/tower only jogs approximately 1/8 to 1/4 revolution before reaching home position. CW adjustment of this potentiometer quickens the stop and shortens the deceleration time required for the turntable/tower to settle to its preset jog speed. CCW softens the stop and lengthens the time required for the turntable/tower to settle to its preset jog speed.

Thus, the deceleration control is important in that if the deceleration time is too short, we will prematurely reach jog speed and jog an excessive amount of time to the home position before shutoff.

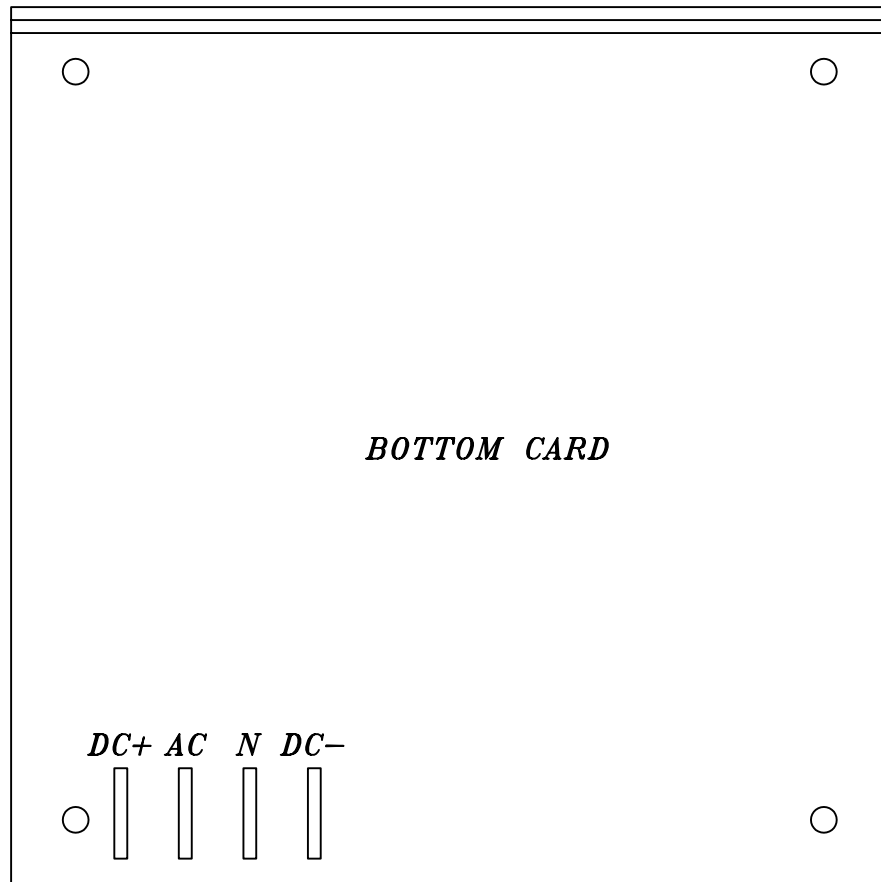
Conversely, if the deceleration time is set too long, the turntable/tower will not settle to the jog speed and thus will be going too fast to align properly and the momentum will take the turntable/tower beyond the start position. As you can imagine, any time the wrap speed is changed, you will need to make a corresponding change in the setting of the pot marked **D** (for deceleration).

**Note:** The 850DM requires a jumper from the **W** pin to the **CW** pin for speed 2 to operate.

## **TROUBLE SHOOTING & REPAIR**

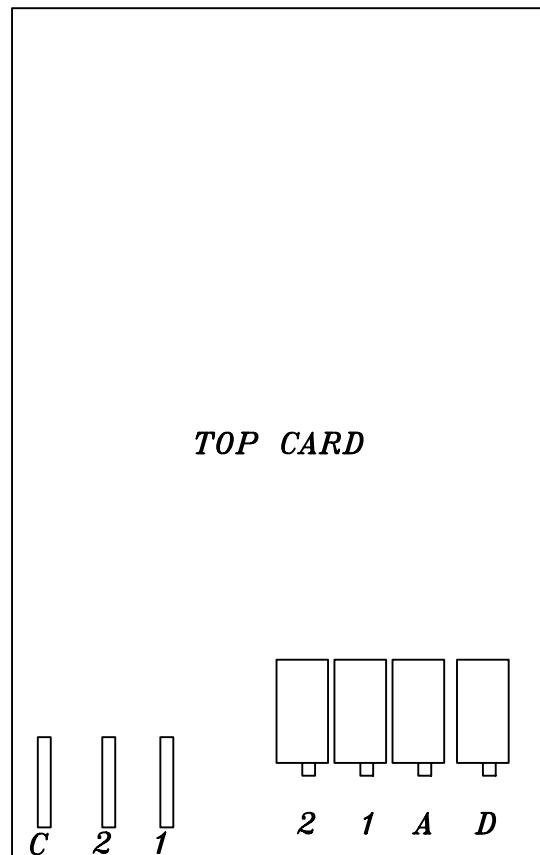
In most cases, repair will require parts replacement. If user intends to, and is equipped to perform repairs, spare parts are available from Orion Parts & Service.

Damage is usually visually evident on the 850M board. Replacing the obviously damaged board frequently restores operation. However, if damage is not evidently visible, swapping boards will determine if the board is at fault.



*DC+ : ARMATURE CONTROL.*  
*AC : AC INPUT - LINE.*  
*N : AC INPUT - NEUTRAL.*  
*DC- : ARMATURE CONTROL.*

*1 : CONTROL - LINE. LOW SPEED*  
*1 : LOW SPEED ADJ.*  
*2 : CONTROL - LINE. HIGH SPEED*  
*2 : HIGH SPEED ADJ.*  
*C : CONTROL - COMMON.*  
*(REQUIRES A JUMPER TO "N")*



*850M TWO SPEED 120VAC/90VDC  
 MOTOR CONTROL BOARD*



1. Adjust dancer cam approx. 30 deg. from center in the direction that the dancer rotates.
2. Adjust the Hall Effect Sensor so there is an approx.. gap of 1/8" between the sensor and the cam.
3. With no film in the Multistretch and power to the Multistretch, adjust the Span pot. clockwise until the motor starts to run.
4. Adjust the Span pot. counterclockwise until the motor stops and then 1/2 to 1 turn more until you have 1/2" to 1" dancer movement before the motor starts to run.

NOTE: See drawing to the right.

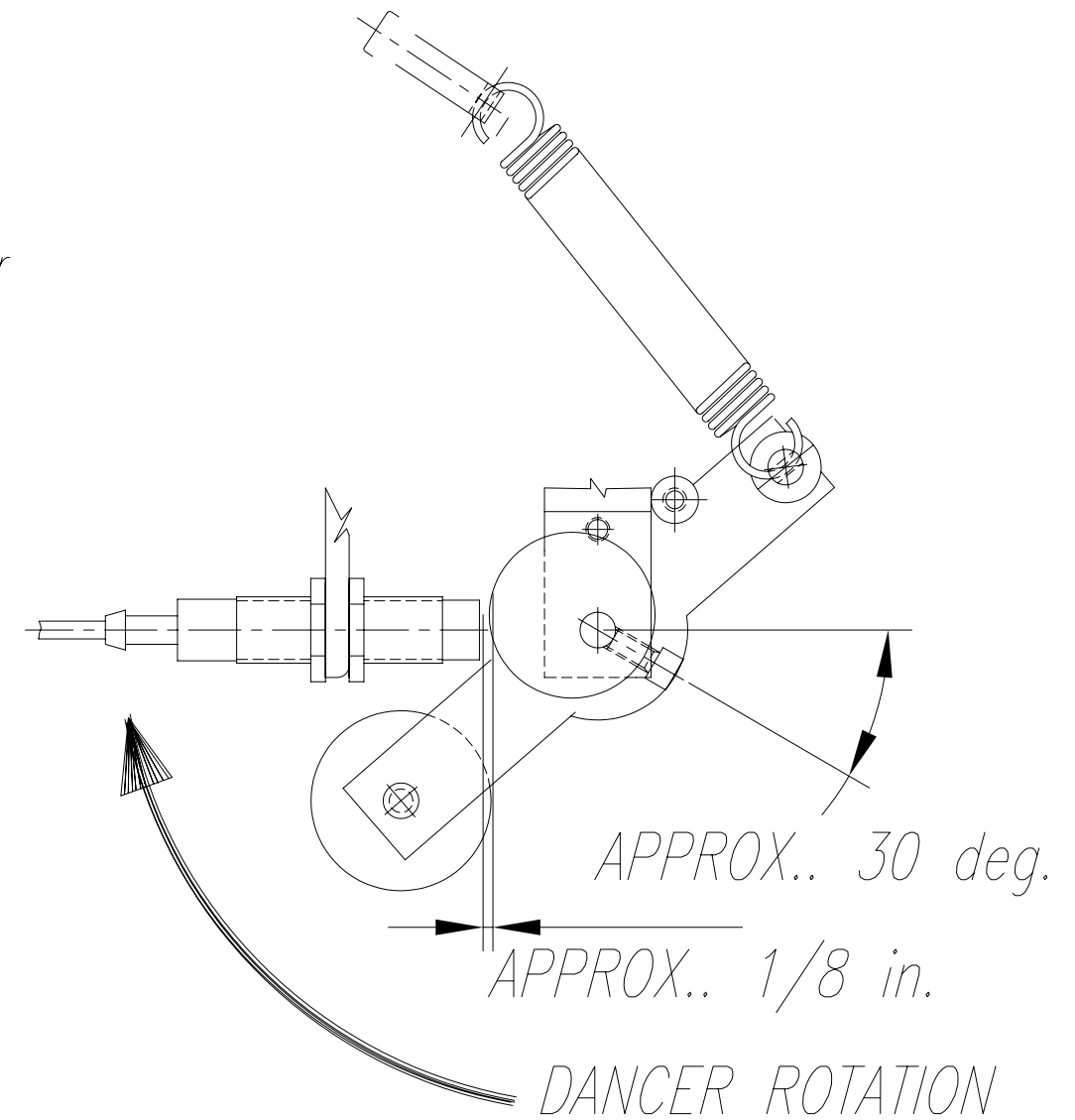
Dancer rotation may be opposite depending on machine model.  
to obtain softer or harder tension it may be necessary to change dancer springs.

Span: Fine tuning adjustment for Hall Effect Sensor.  
May also affect the maximum DC voltage output.

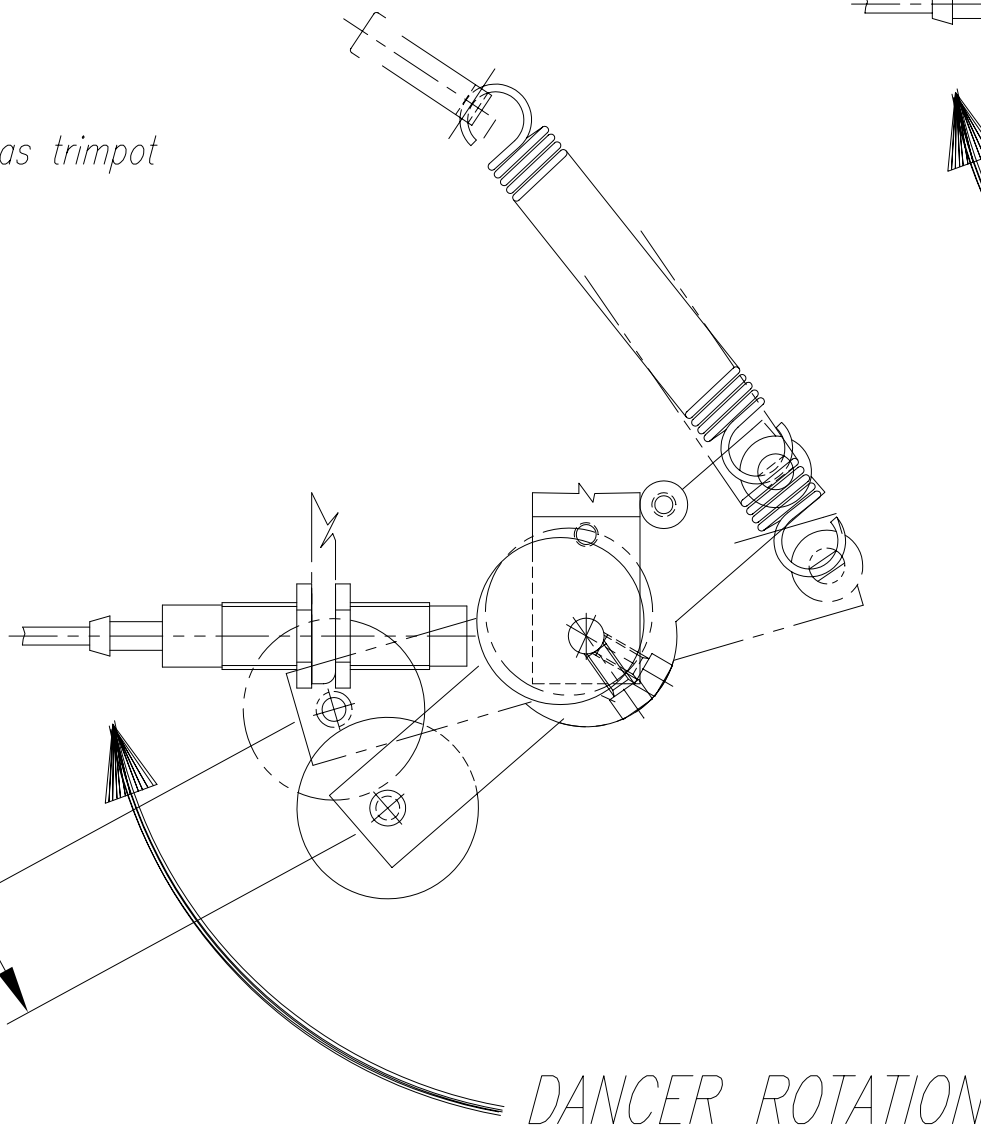
Bias: Fine tuning for voltage reference defined by the tension pot.  
Factory set at 1.3vdc between -IN and the pin located next to the bias trimpot


Current Limit: Adjustment for maximum allowed motor current.  
Factory set, motor may stall under heavy stretch load.

Trip: Adjustment for sensitivity of film break signal.  
( Only on the 336-8 multistretch board )

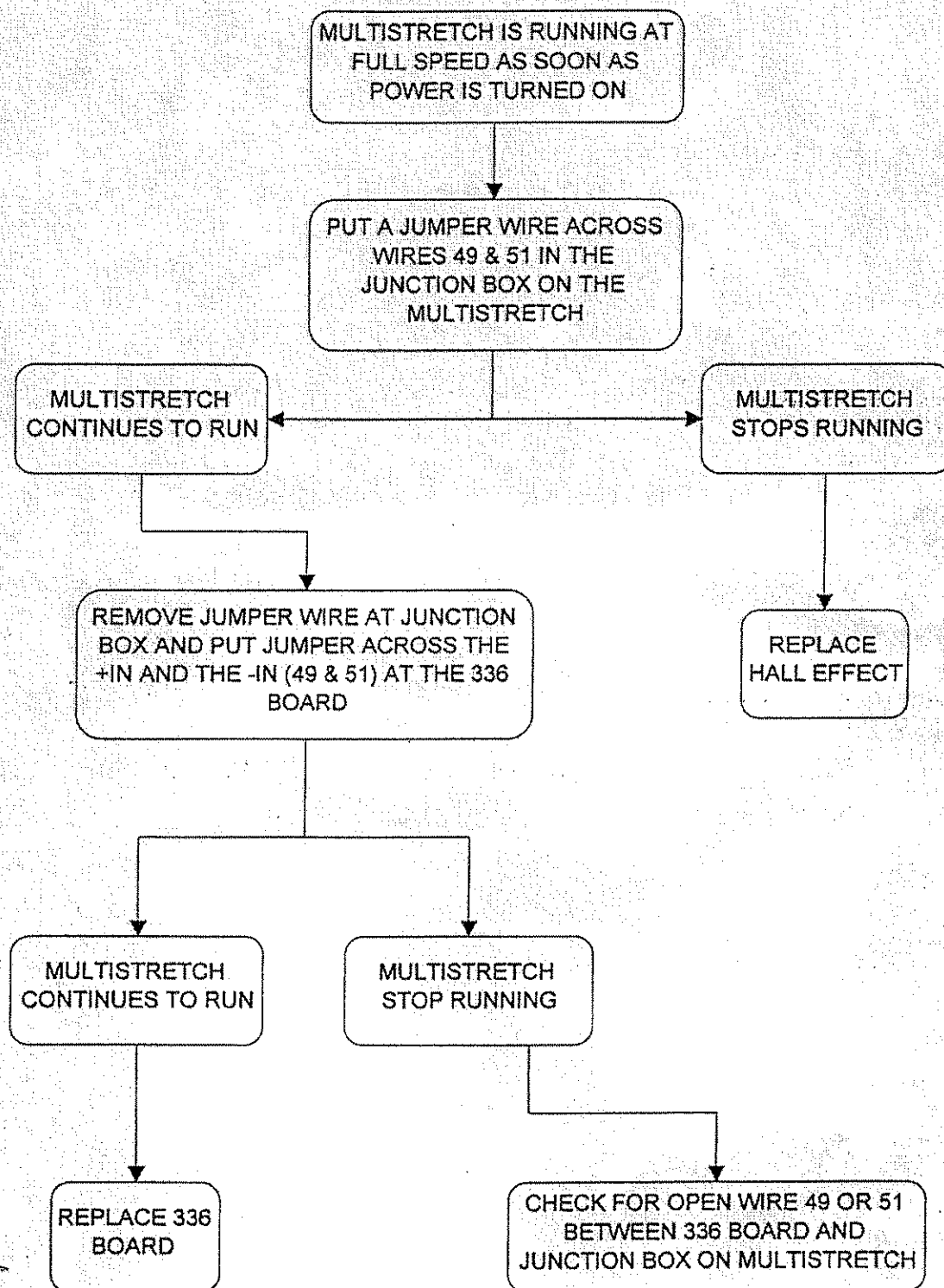


1/2" to 1" rotation  
Motor starts to run

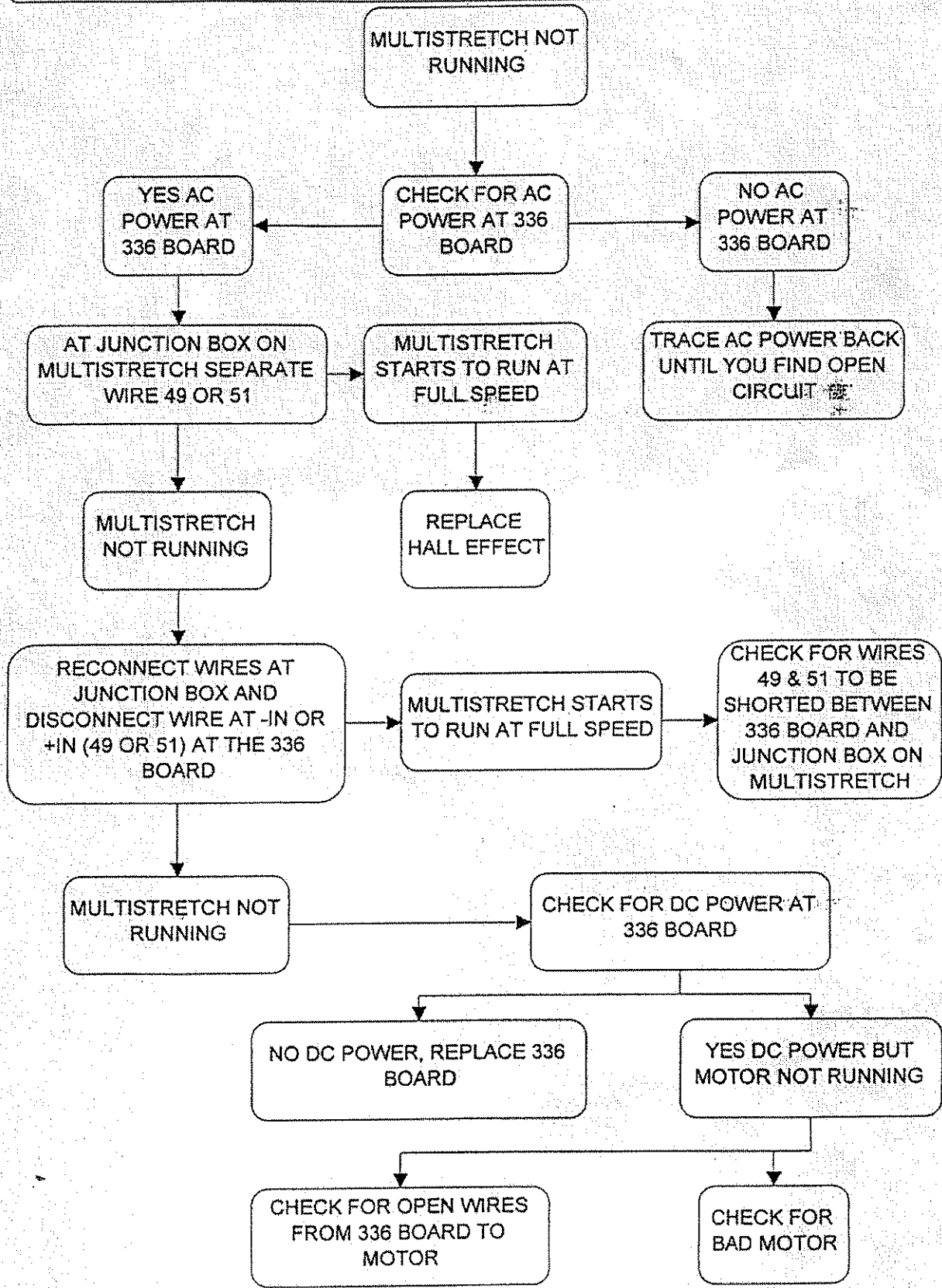


 <b>orion</b> PACKAGING INC. 2270 INDUSTRIEL, LAVAL QUEBEC, CANADA, H7S 1P9 TEL.: (514) 667-9769	DATE:	SCALE:
	DRAWN BY:	MACHINE TYPE:
	CHECKED BY:	DRAWING SIZE:
	ASSEMBLY DWG:	JOB No.:

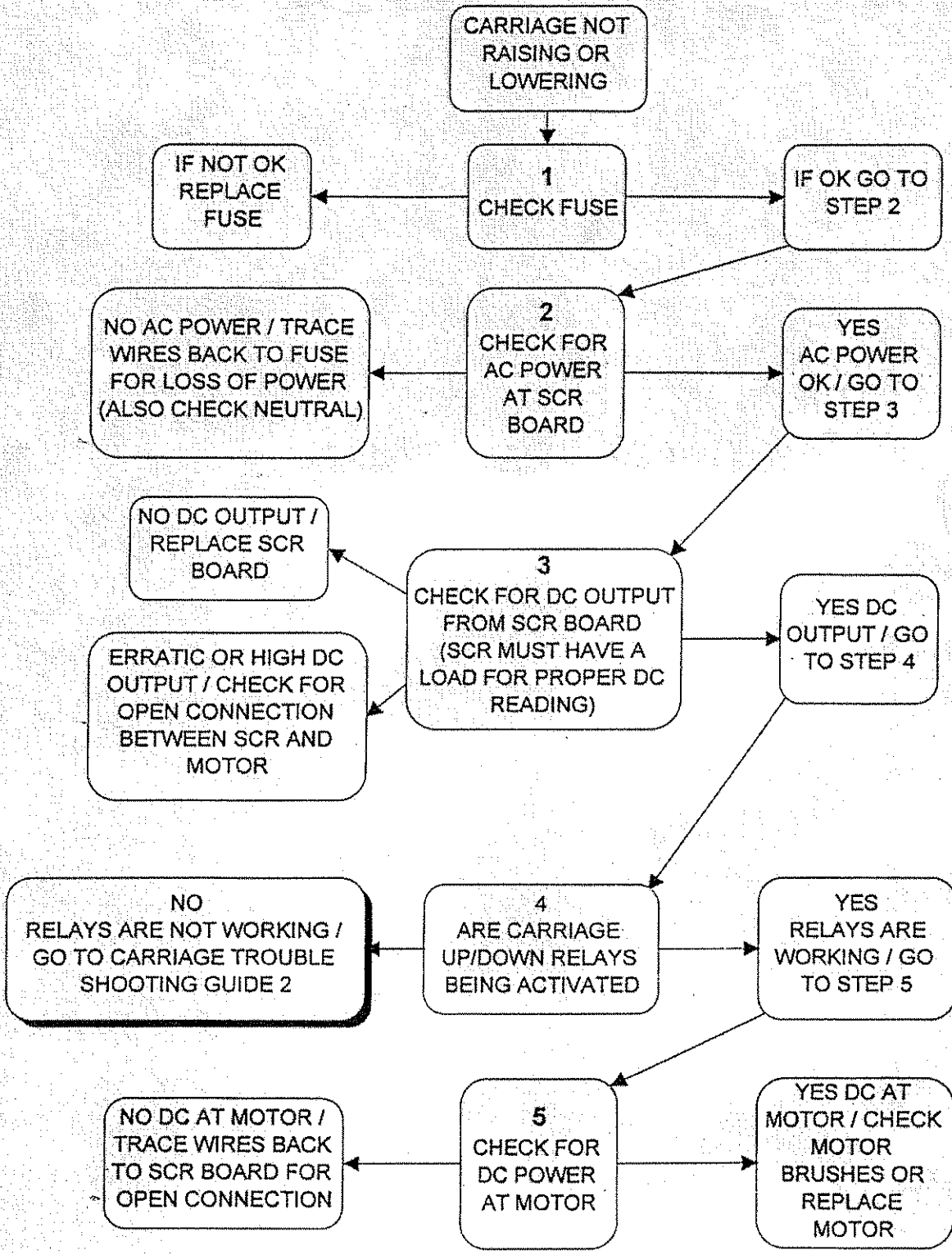
## MULTISTRETCH TROUBLE SHOOTING GUIDE 1



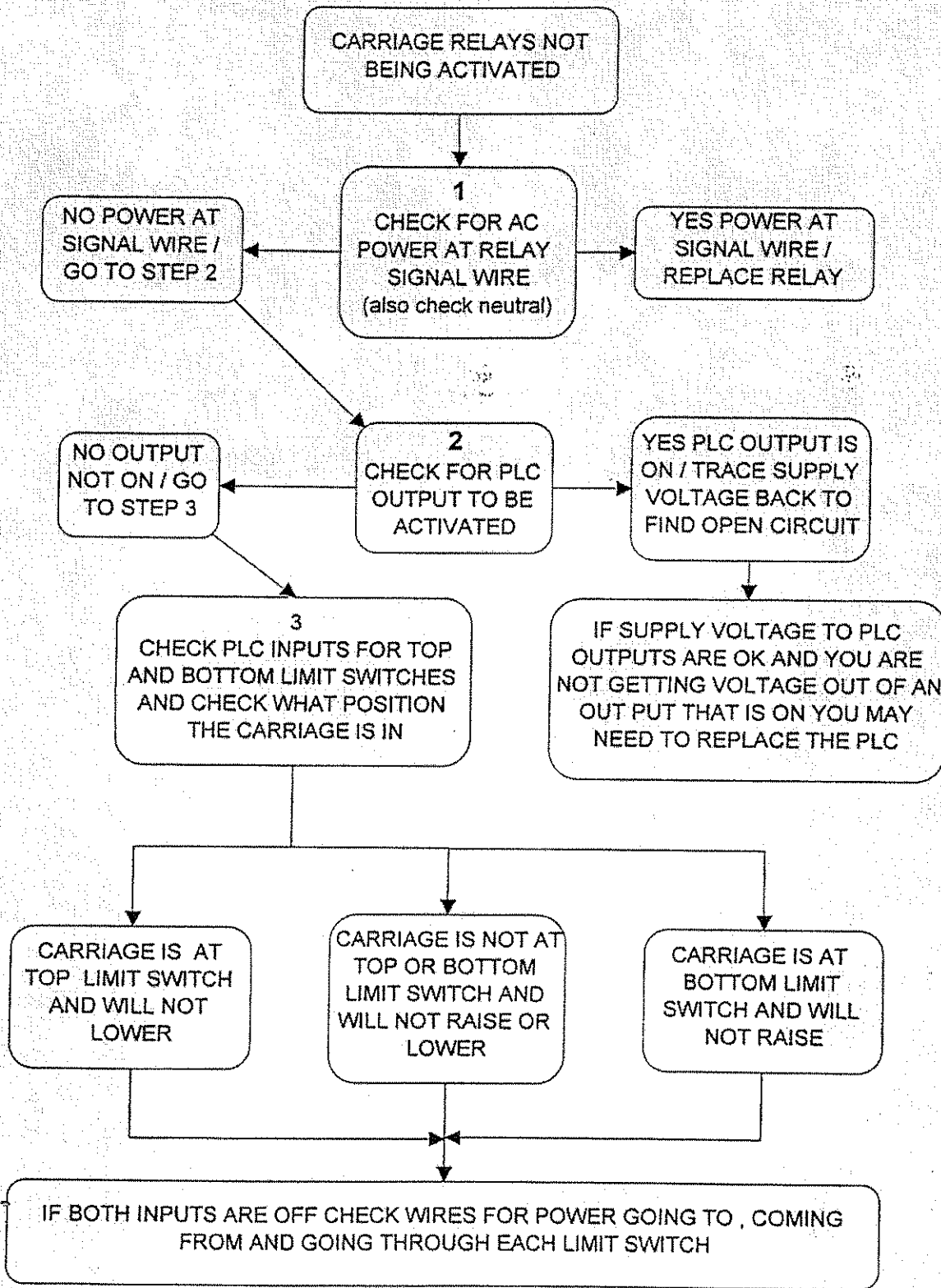
# MULTISTRETCH TROUBLE SHOOTING GUIDE 2



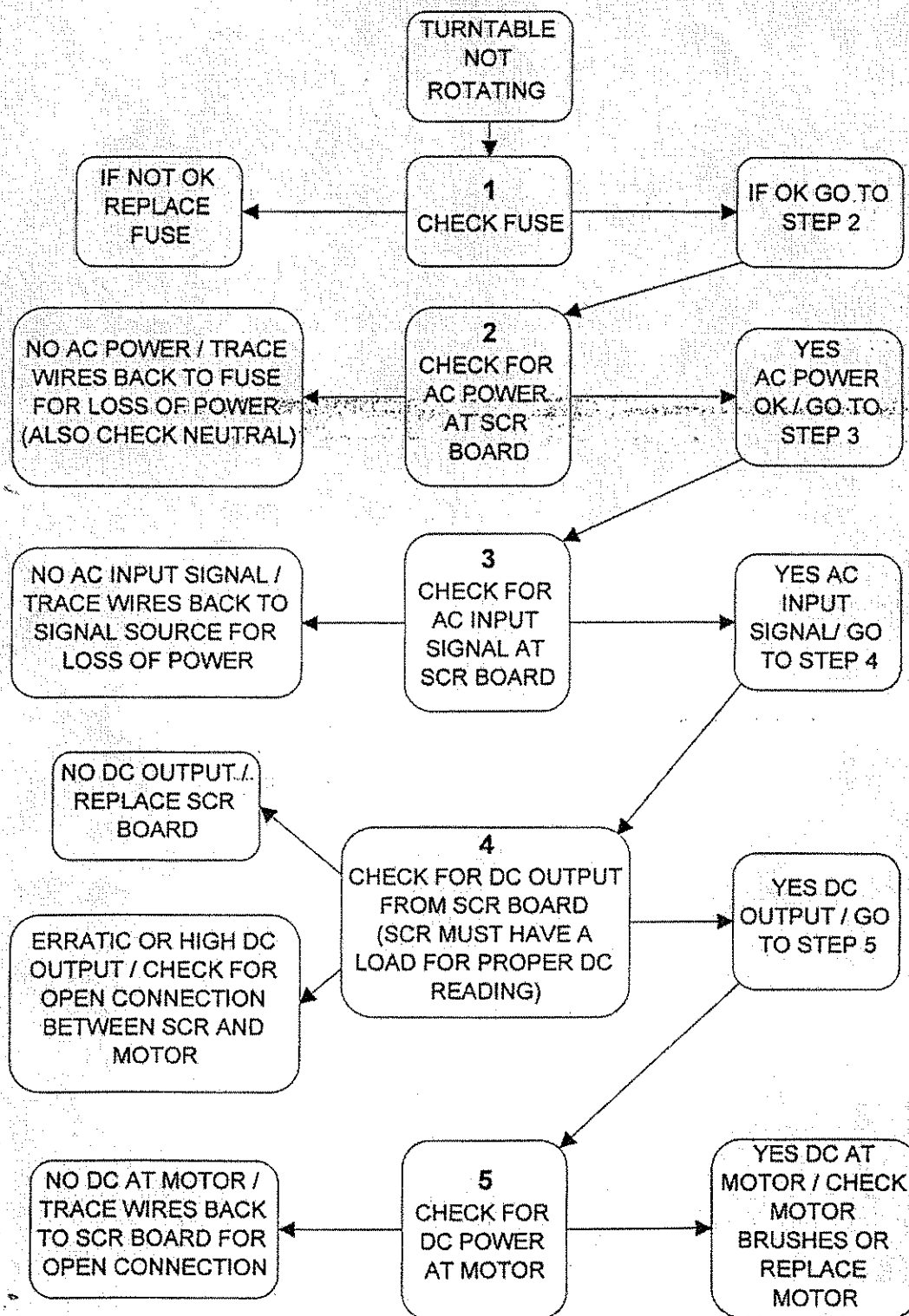
1  
**BASIC CARRIAGE RAISE / LOWER TROUBLE SHOOTING GUIDE**



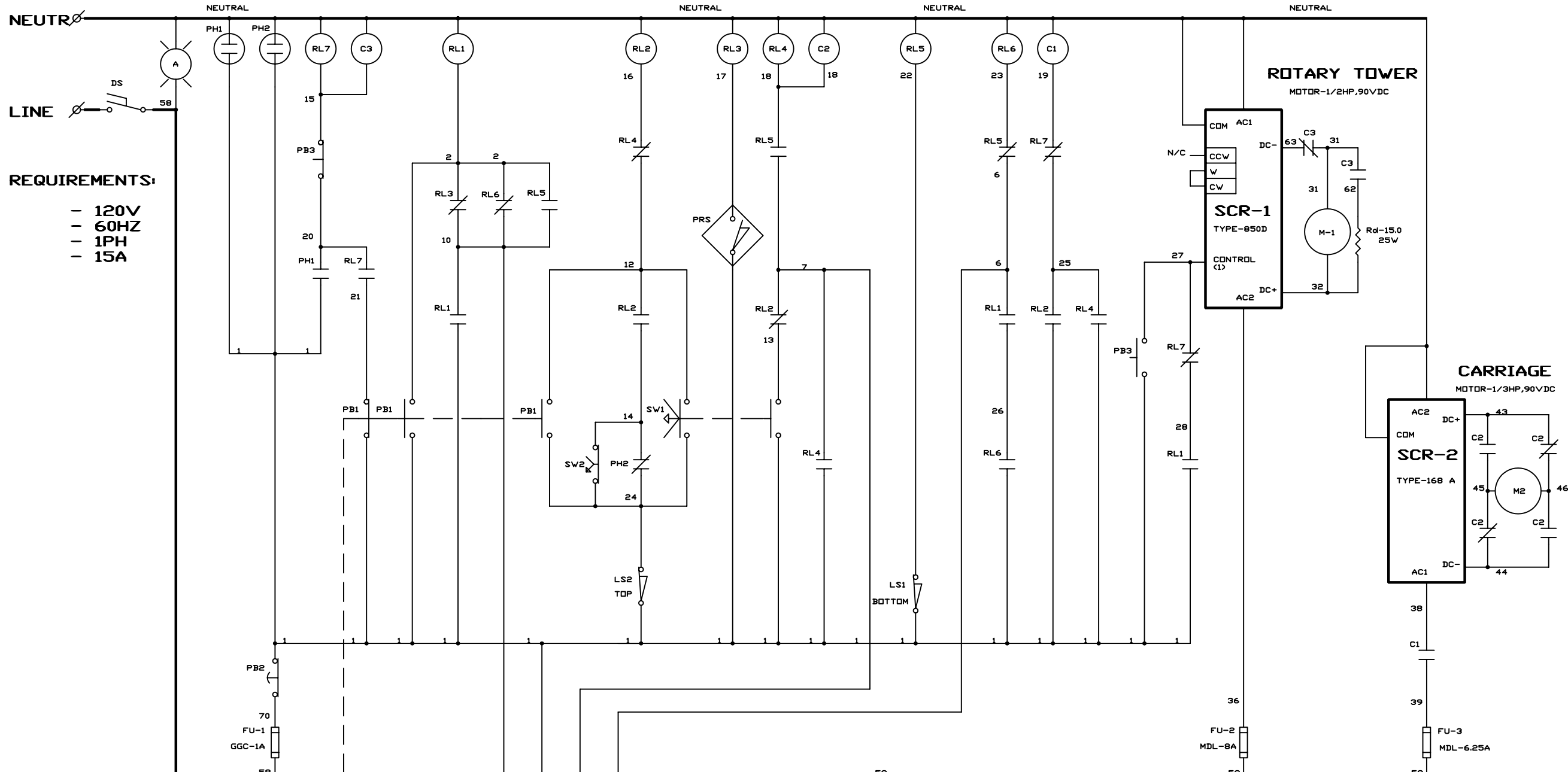
## 2 BASIC CARRIAGE RAISE / LOWER TROUBLE SHOOTING GUIDE



## BASIC TURNTABLE TROUBLE SHOOTING GUIDE



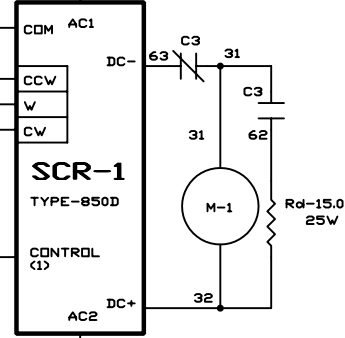
- IF TURNTABLE RUNS AS SOON AS POWER IS TURNED ON THE MOTOR MAY HAVE AN INTERNAL SHORT TO GROUND.



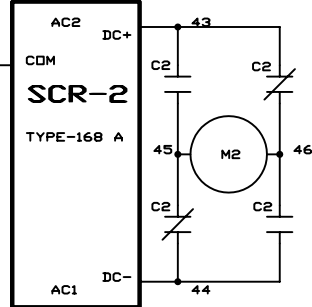
**REQUIREMENTS:**

- 120V
- 60HZ
- 1PH
- 15A

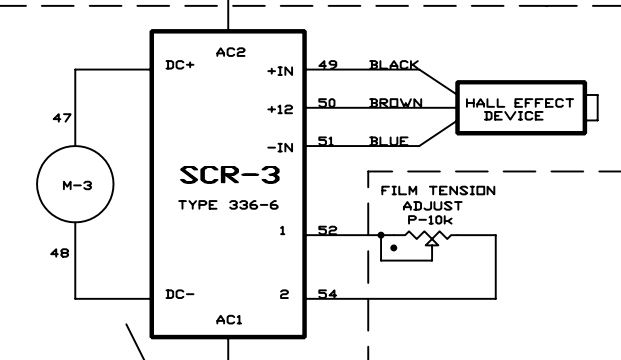
**ROTARY TOWER**  
MOTOR-1/2HP,90VDC



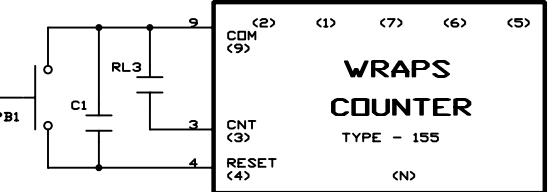
**CARRIAGE**  
MOTOR-1/3HP,90VDC



**MULTISTRETCH**  
MOTOR-1/3HP,90VDC



**WRAPS COUNTER**  
TYPE - 155



**LEGEND**

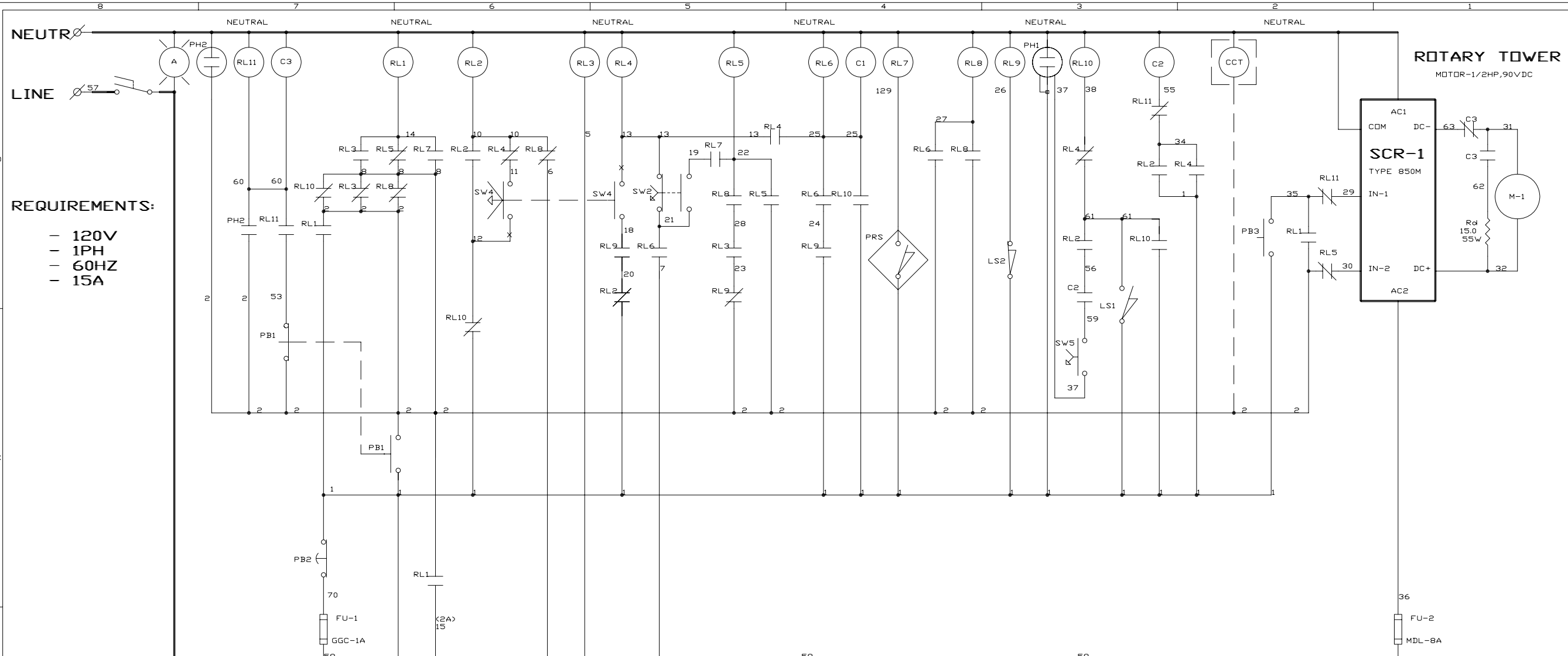
- DS - MAIN POWER OFF/ON
- SW1 - CARRIAGE UP/DOWN JOG
- SW2 - CARRIAGE AUTOHEIGHT PH2 OFF/ON - SS.
- LS1 - CARRIAGE BOTTOM LIMIT SWITCH
- LS2 - CARRIAGE TOP LIMIT SWITCH
- PB1 - START PB
- PB2 - EMERGENCY STOP PB
- PB3 - TOWER JOG PB
- PRS - TOWER ALIGNMENT PROXIMITY SWITCH
- PH1 - TOWER SAFETY PHOTOCELL
- PH2 - CARRIAGE AUTOHEIGHT PHOTOCELL
- C1 - CARRIAGE DRIVER POWER CONTACTOR
- C2 - CARRIAGE REVERSE CONTACTOR
- C3 - TOWER DRIVE DYN.BRAKE CONTACTOR

**ORION PACKAGING INC.**

2270 INDUSTRIEL RD LAVAL, QUE., CANADA H7S 1P9  
 TEL: (514)-667-9769 FAX: (514)-667-6320  
 CK'D BY: J.B.S. DRAWN BY: G. RUGGIERI

TITLE: **M67-7A-B** (V/FILM TENS.POT IN PANEL)

SIZE	DOCUMENT NO.	REV
C	JOB # STANDARD	300 484 0
DATE: NOV-29-1992	SHEET 1 OF 1	
FILENAME: M67-7A-B.SCH	BASE:	



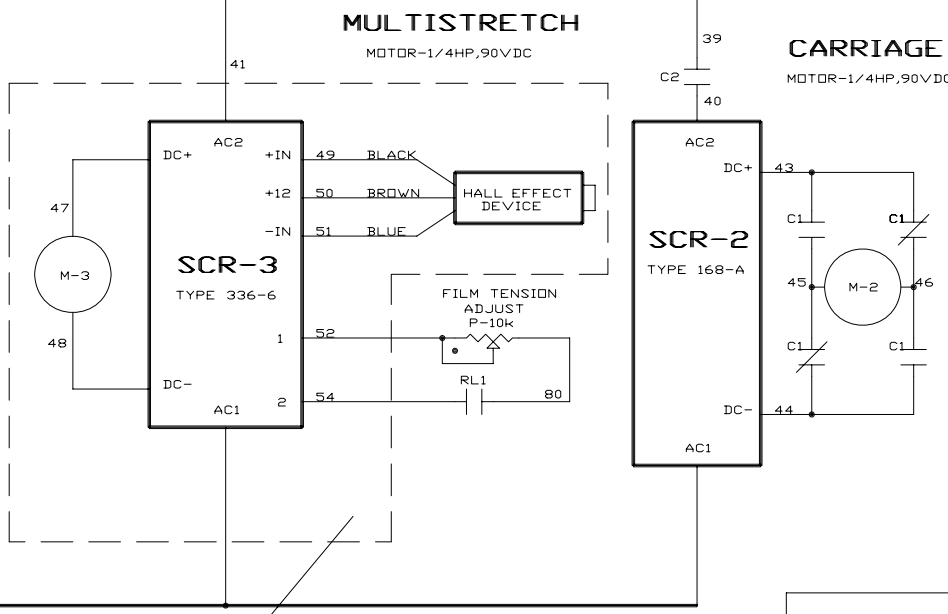
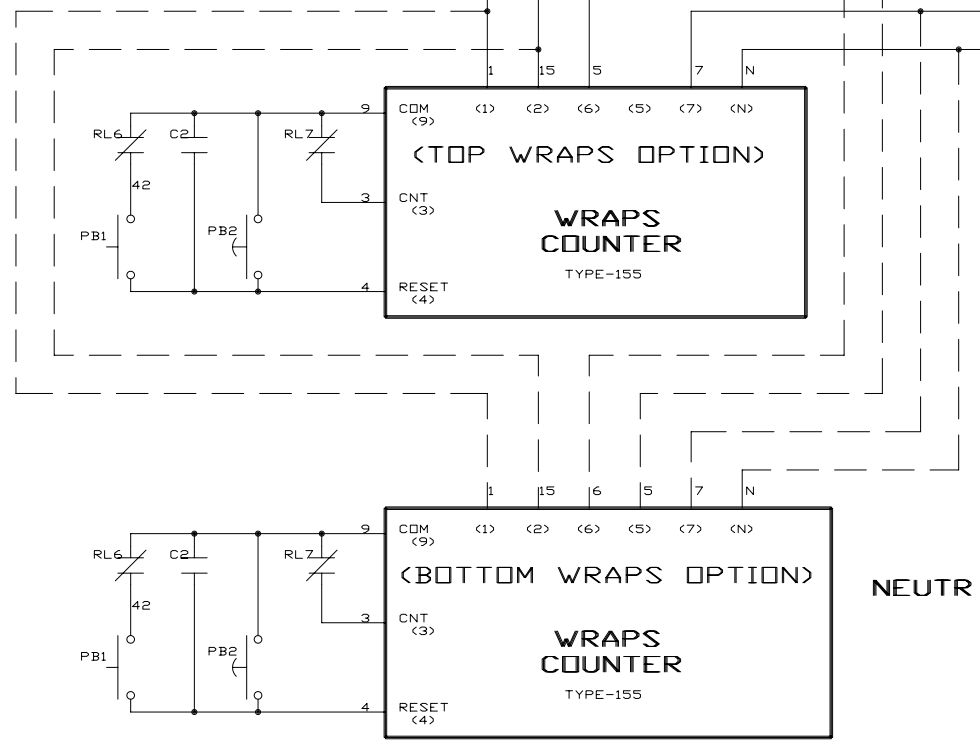
**REQUIREMENTS:**

- 120V
- 1PH
- 60HZ
- 15A

**ROTARY TOWER**  
MOTOR-1/2HP,90VDC

**LEGEND**

- RL1 AUTOCYCLE START
- RL2 CARRIAGE UP
- RL3 FIRST COUNT FROM COUNTER
- RL4 CARRIAGE DOWN
- RL5 END OF CYCLE, BEGIN ROTOR DECELERATION
- RL6 CARRIAGE DOWN
- RL7 ROTOR PROXIMITY SWITCH
- RL8 END OF CYCLE RECORDED
- RL9 BOTTOM OF CARRIAGE TRAVEL LIMIT SWITCH
- RL10 TOP OF CARRIAGE TRAVEL LIMIT SWITCH OR AUTO-HEIGHT PHOTOCELL
- RL11 SAFETY PHOTOCELL LOCK RELAY
- PH1 FILM CARRIAGE AUTOHEIGHT PHOTOCELL
- PH2 SAFETY PHOTOCELL (TYPE 6205)
- C1 REVERSE CONTACTOR
- C2 CARRIAGE DRIVER POWER
- C3 SAFETY DYNAMIC BRAKING OF ROTARY ARM
- PB1 START PUSH BUTTON
- PB2 STOP PUSH BUTTON
- PB3 ROTARY ARM JOG
- SW MAIN POWER
- SW2 WRAP UP OR UP/DOWN
- SW4 CARRIAGE UP/DOWN
- SW5 PHOTOCELL OFF/ON
- LS1 FILM CARRIAGE TOP LIMIT SWITCH
- LS2 FILM CARRIAGE BOTTOM LIMIT SWITCH
- PRS ROTARY TOWER HOME POSITION PRS.
- CCT CYCLE COUNTER (OPTIONAL)



ORION  
PACKAGING INC. MONTREAL

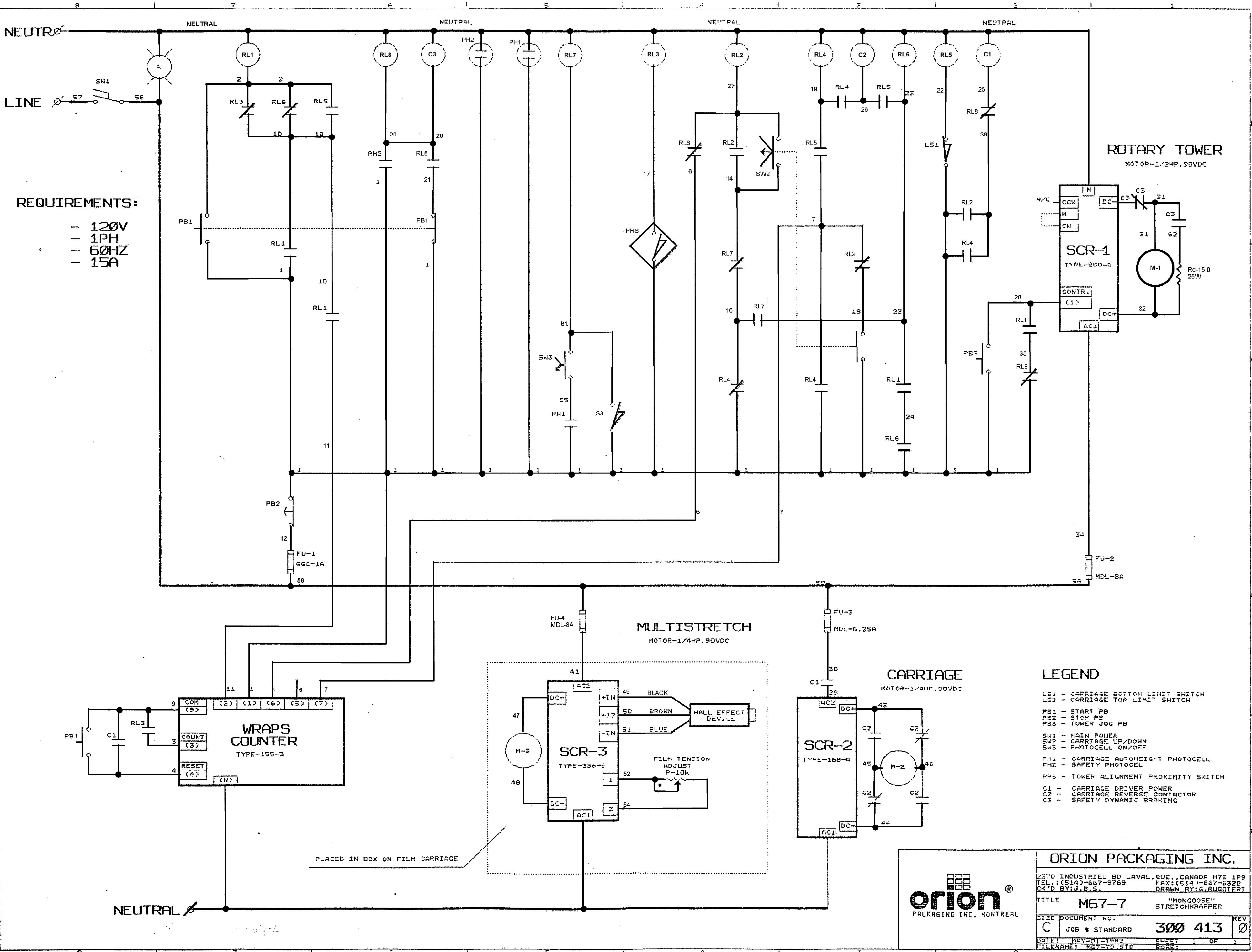
**ORION PACKAGING INC.**

2270 INDUSTRIEL BD LAVAL, QUE., CANADA H7S 1P9  
 TEL: (514)-667-9769 FAX: (514)-667-6320  
 CK'D BY: J.B.S. DRAWN BY: DCAD - SOFTWARE

TITLE: **M66-7C** AND M67-7 DEMO SPECIAL

SIZE	DOCUMENT NO.	REV
C	JOB # STANDARD	300 352 0
DATE:	NOV-29-1991	SHEET 1 OF 1
FILENAME:	M66-7C.SCH	BASE:

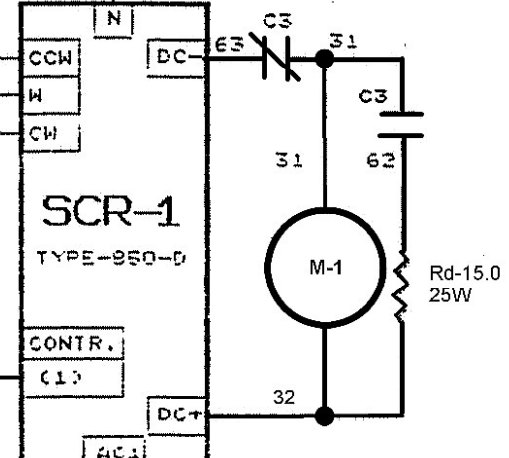




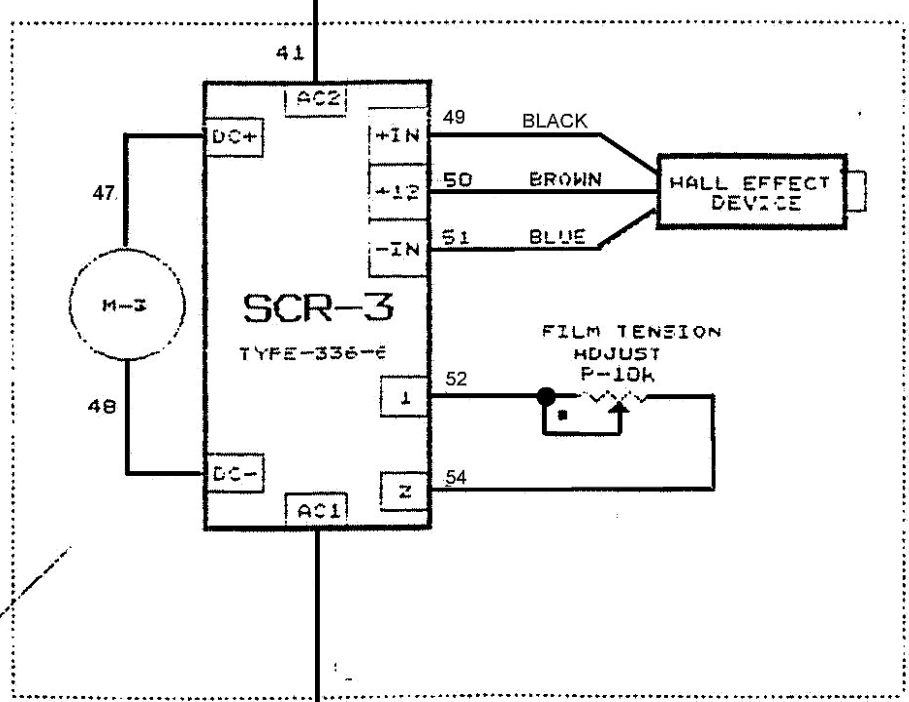
**REQUIREMENTS:**

- 120V
- 1PH
- 60HZ
- 15A

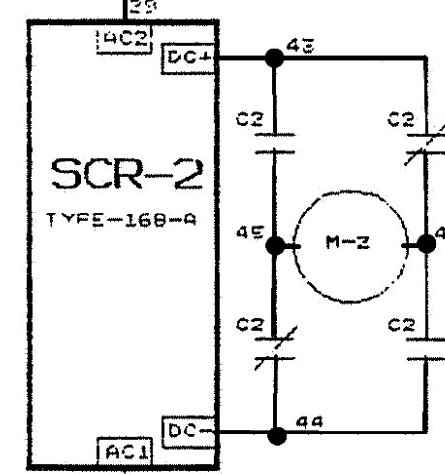
**ROTARY TOWER**  
MOTOR-1/2HP, 90VDC



**MULTISTRETCH**  
MOTOR-1/4HP, 90VDC



**CARRIAGE**  
MOTOR-1/4HP, 90VDC



**LEGEND**

- L51 - CARRIAGE BOTTOM LIMIT SWITCH
- L52 - CARRIAGE TOP LIMIT SWITCH
- PB1 - START PB
- PB2 - STOP PB
- PB3 - TOWER JOG PB
- SW1 - MAIN POWER
- SW2 - CARRIAGE UP/DOWN
- SW3 - PHOTOCELL ON/OFF
- PH1 - CARRIAGE AUTOHEIGHT PHOTOCELL
- PH2 - SAFETY PHOTOCELL
- PRS - TOWER ALIGNMENT PROXIMITY SWITCH
- C1 - CARRIAGE DRIVER POWER
- C2 - CARRIAGE REVERSE CONTACTOR
- C3 - SAFETY DYNAMIC BRAKING

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 CK'D BY: J.B.S. DRAWN BY: G.RUGGIERT

TITLE: **M67-7** "MONGOOSE" STRETCHWRAPPER

SIZE DOCUMENT NO. **C** JOB # STANDARD **300 413** REV **0**

DATE: MAY-01-1993 SHEET 1 OF 1  
 FILENAME: M67-70 STD 8887