



ATTENTION:

VERY IMPORTANT

Before unloading and unpacking the machine perform a thorough inspection of the machine and report any suspected shipping damage to the freight carrier. Also, after unwrapping the machine a thorough inspection of the electrical conduits and connections should be made to check for damaged components.

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

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 INC.

M-55

OWNER'S MANUAL

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

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

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

103060

ORION MODEL M-55

Spiral Semi-Automatic Heavy Duty Free Standing Rotary Tower

Maximum Load Size	50"W x 50"L x 90"H (Recommended) 56"W x 56"L x 94"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	20" Dia. Ring Gear Tower Drive/Support 0-12 RPM Variable Tower Speed 1/2 HP DC/SCR Drive Electronic Soft Start Positive Tower Alignment Feature
Control Features	Safety Stop Photocells (2) Electronic Film Force Control on Panel 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" Orion MultiStretch Power Prestretch Electronic Film Tension Control End of Cycle Film Force Release Full Authority Film Dancer Bar Chain & Sprocket Stretch Ratio Control 1/3 HP DC/SCR Film Drive Low Wrap Feature (Min. 3")
Film Carriage Drive	#50 Roller Chain Carriage Lift 1/3 HP Elevator Drive Motor Variable Speed SCR Control Structural "H" Channel Guidance Precision Cam Follower Tracking
Structural Features	Free Standing 2 Leg Design All Structural Steel Construction 6" x 12 lb./ft. "H" Channel Mast Side Safety Fencing
Est. Shipping Weight	1,500 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 PHOTOCCELL

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.
DISTRIBUTOR PRICE LIST - EFFECTIVE NOVEMBER 1, 1989

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.
DISTRIBUTOR PRICE LIST - EFFECTIVE NOVEMBER 1, 1989

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.

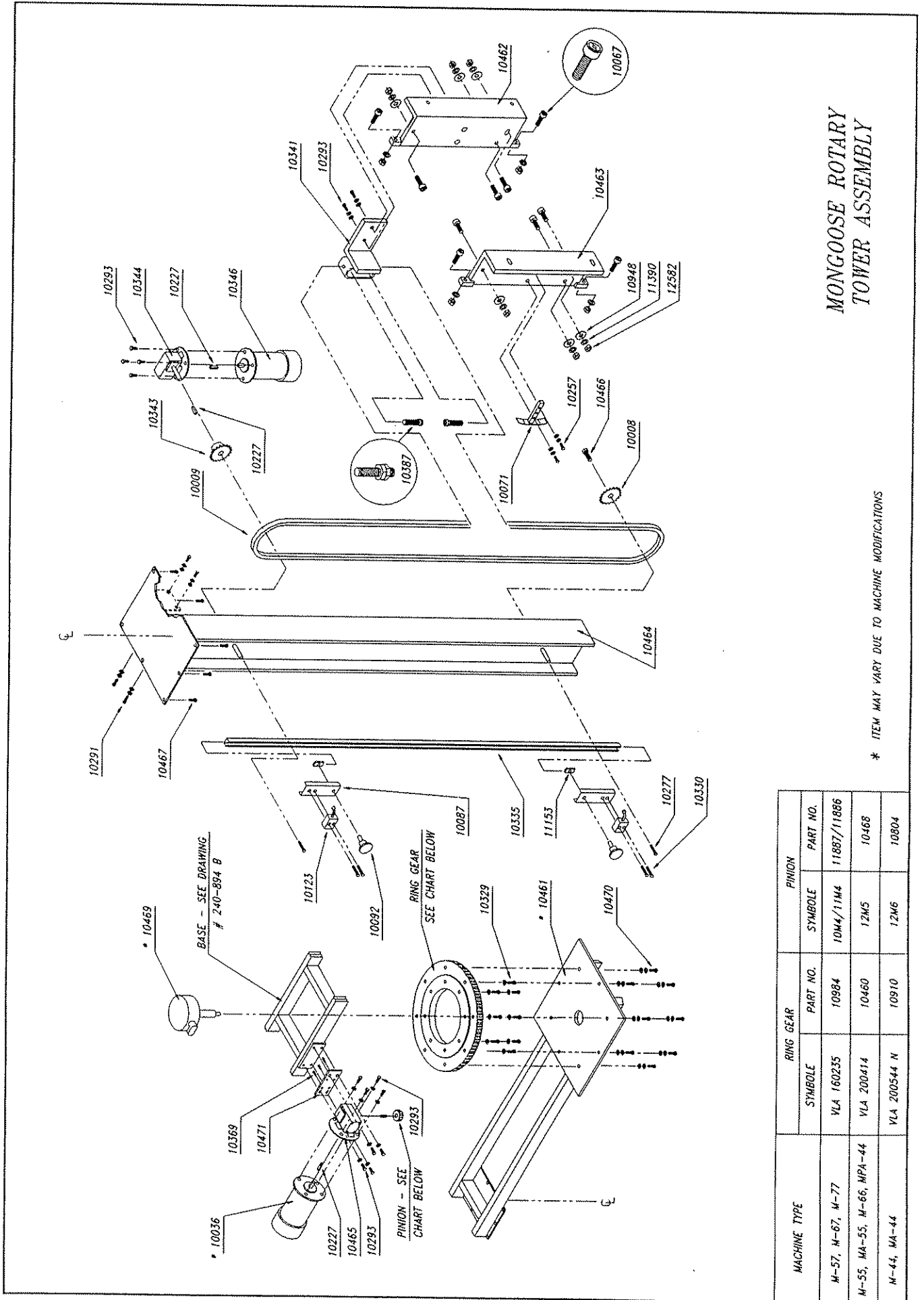
MONGOOSE ROTARY TOWER ASS'Y - PART LIST

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



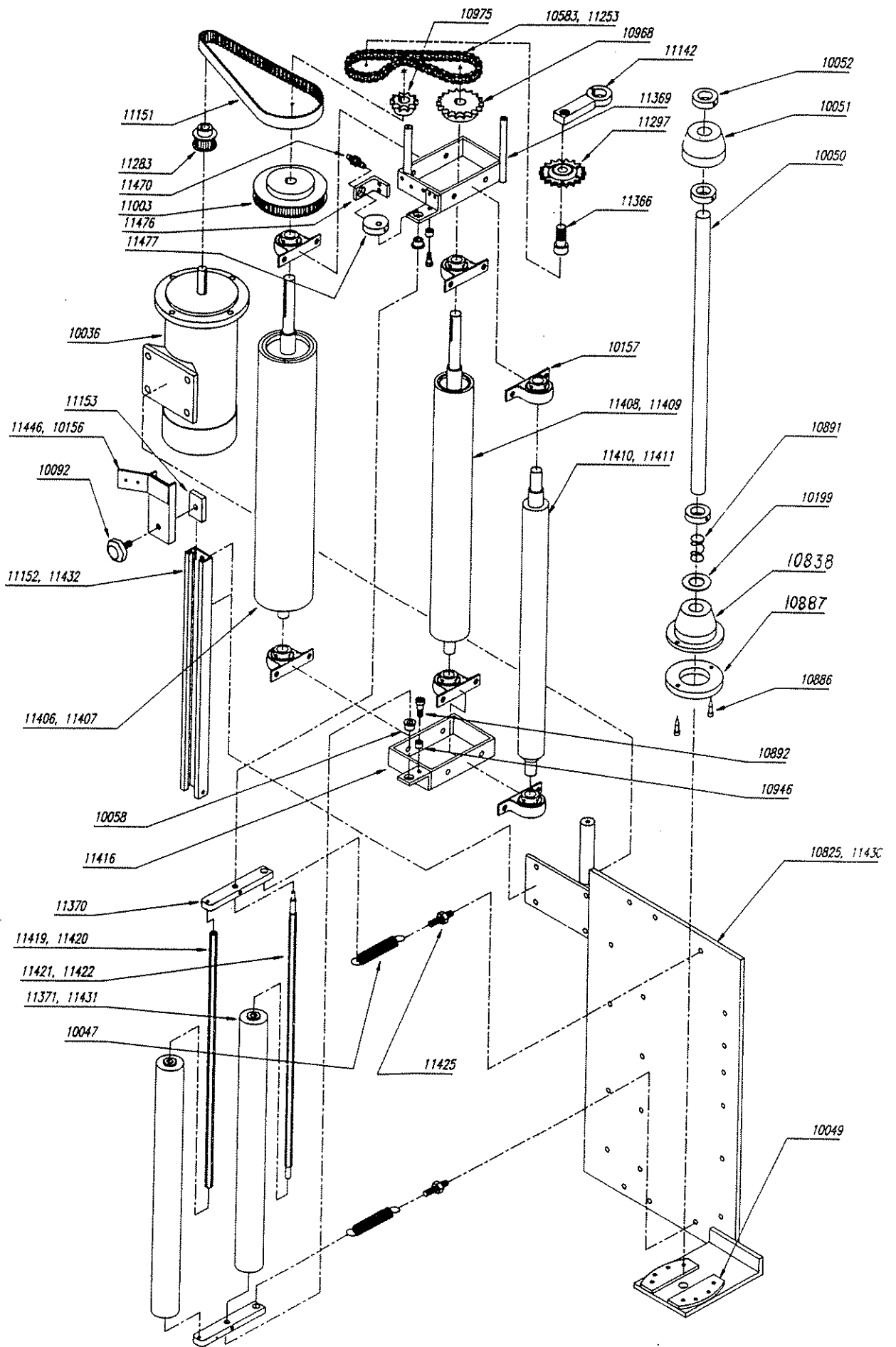
**MONGOOSE ROTARY
TOWER ASSEMBLY**

* ITEM MAY VARY DUE TO MACHINE MODIFICATIONS

MACHINE TYPE	RING GEAR		PINION	
	SYMBOL	PART NO.	SYMBOL	PART NO.
M-57, M-67, M-77	YLA 160235	10984	10M44/11M4	11887/11886
M-55, MA-55, M-66, MPA-44	YLA 200414	10460	12M5	10468
M-44, MA-44	YLA 200544 N	10910	12M6	10804

Carriage Parts List
Series 6

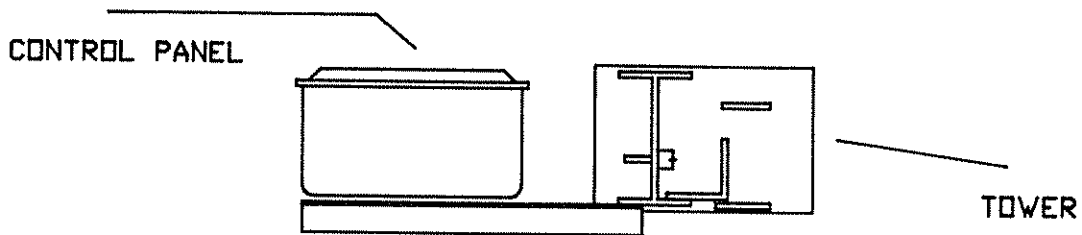
10036	Motor, el. 1/2HP 90VDC 1750RPM	1
10047	Spring, tension	2
10049	Pads, brake 1/4" th.	2
10050	Spool mandrel (for 20" & 30")	Set of 2
10051	Mandrel, top	1
10052	Collar 1" I.D.	1
10058	Bushing bronze	3
12090	Bracket, photoswitch (LH)	2
10157	Bearing, pillow block 3/4"	1
10199	Washer	6
10583	Chain #40	1
10825	Back plate f/20" film	1
10838	Mandrel, bottom spool	1
10886	Spike, spool	1
10891	Spring, compression	2
10892	Screw, shoulder 5/16"dia. x 3/8"lg.	1
10946	Hose, plastic (for P/N 10892)	2
10968	Sprocket, drive	2
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.	1
11369	Bracket, top	2
11370	Lever	1
11371	Roller, dancer, 21 1/4" lg.	2
11406	Roller, rubber, 4"dia.x21" lg.	2
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.	1
11430	Back plate for 30" film	2
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



NEW, TWO POSITION CONTROL PANEL MOUNT

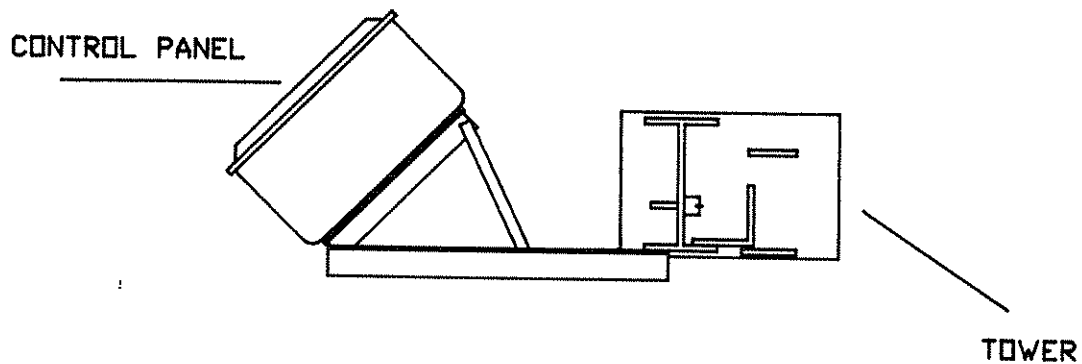
In order to facilitate access and manipulation, the Control Panel can be mounted in two position:

1.- On the angle brackets aligned to the Tower.

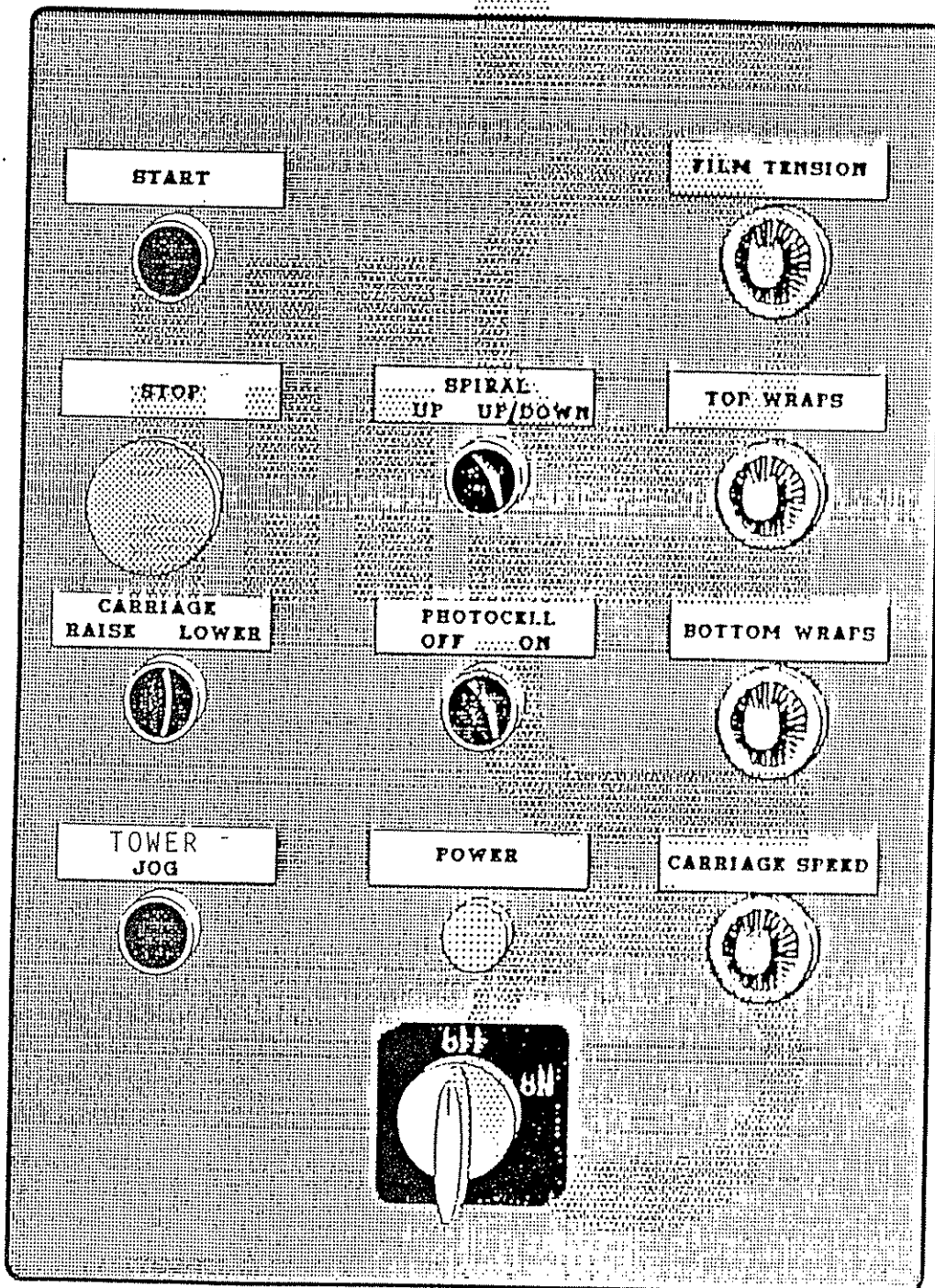


2.- with the position bar (installed between upper angles), Control Panel can be rotated forward/ to the side.

(Additional screw attached to the tower's foot).



MANUAL CONTROLS



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 photocell 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

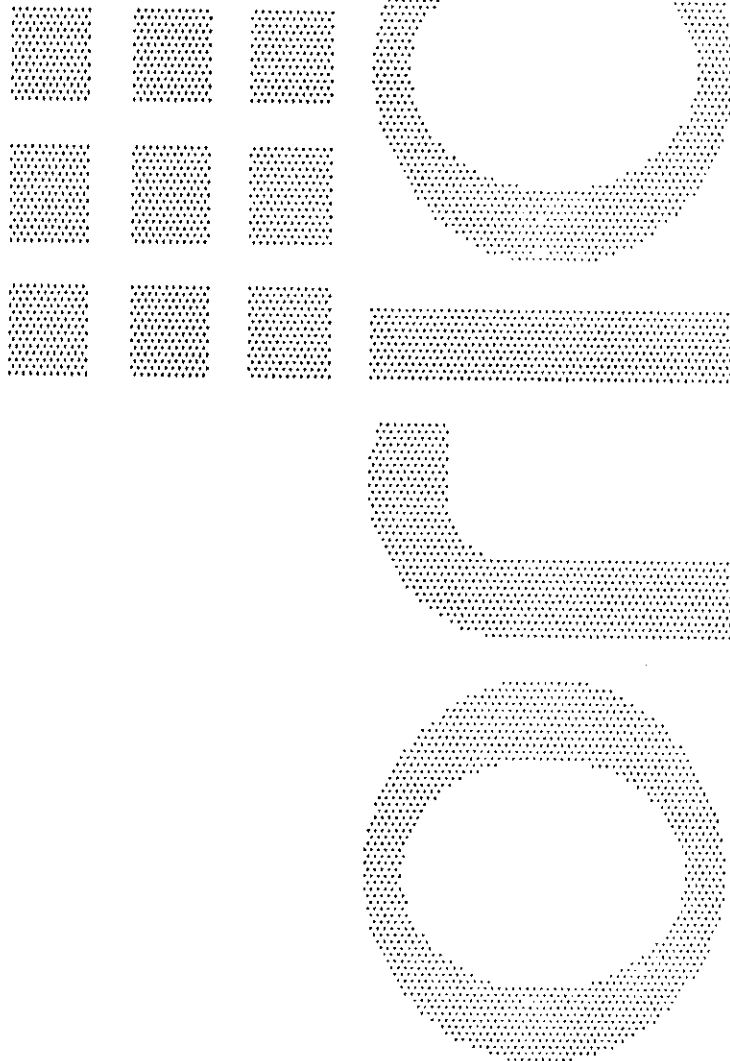
The Photocell switch has two settings,

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.



6. CYCLE ADJUSTMENT CONTROLS

6.1 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 during the automatic cycle or when the Operation Selector switch is set to AUTO.

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

The film tension is controlled through the dancer bar system. Occasionally the feedback potentiometer may need some adjustment. The adjustment of the feedback potentiometer can be performed while there is no film on the carriage. The bottom screw on the potentiometer coupling must first be loosened. Once the screw is loosened the potentiometer shaft must be turned until the prestretch motor just begins to hum but does not rotate, at which point the screw can be tightened. **NOTE:** the condition in which the motor hums but doesn't turn must be maintained even after the screw is tightened, if not, the adjustment procedure must be repeated.

6.2 Carriage Speed

There are two carriage speed controls on the panel.

CARRIAGE SPEED UP,
CARRIAGE SPEED DOWN.

The carriage speed controls can be used to control the amount of overlap the film will have on itself during a wrap. It is recommended to start with a RAPID upward wrap in order to stabilize the load early in



the cycle.

The control potentiometers have 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.

6.3 Top And Bottom Wraps

There are two bistable, three position, switches which control the number of wraps that may be put at the top and bottom of the load,

TOP WRAPS - 1, 2, 3

BOTTOM WRAPS - 1, 2, 3

These switches may be set before the cycle begins, and in their different positions will wrap respectively 1, 2, or 3 turns of film on the top or bottom of the load.

7. MACHINE MONITORING SWITCHES

7.1 Photoswitches

A photoswitch is used to sense whether the top of the load has been reached by the carriage. This switch is located on the carriage and stops the carriage from moving higher than the highest point on the load. The photoswitch's position on the track can be adjusted in order to make the carriage pass the top of the load by up to 12 inches.

7.2 Limit Switches

There are two limit switches located on the tower. These switches limit the motion of the carriage to that determined by the location of the elevator's drive and idler sprockets. The limit switches may be readjusted if necessary to limit the carriage to a shorter length of travel but never to one that will make the carriage collide with the floor of the elevator sprockets.

CAUTION: These limit switches are factory adjusted and, unless they have been disturbed, should not need any further adjustment.

7.3 Proximity Switch

The only proximity switch is located on the overhead beam, above the rotor. Its purpose is to monitor the rotor's position and the number of turns it does. The proximity switch's proper adjustment ensures that the rotor will stop in the correct position after every cycle.

NOTE: The proximity switch is factory adjusted and should not need any further adjustment unless it has been disturbed.

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.	Citge Cyl. Oil 180-5
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.	Valvata Oil J82
Union Oil Of Cal.	Red Line Worm Gear Lube 140

Reducing transmissions are found over the rotor's ring gear, on the carriage, and at the base of the tower.

8.2 Ring Gear Maintenance

The ring gear is located on the overhead beam and should be lubricated at fixed intervals. This should be carried out by injecting grease into all the lubrication nipples in succession until a collar of fresh grease appears around the perimeter of both sealing rings. The bearing could be rotated slowly during lubrication.

The relubrication interval depends on the operating conditions. For bearings exposed to an aggressive environment, relubrication should occur every 50 operating hours. Normally, relubrication should occur every 100 to 200 hours of operation. The gear teeth should also be relubricated. Lubricants of different manufacture recommended for the ring gear are shown below.

Manufacturer	Faceway Grease	Gearteeth Oil
BP	Energrease LS 2	Energel WRL
Castrol	Spherol AF 2	Grippa 33 S
ESSO	Beacon 2	Surret Fluid 30
Gulf	Crown Grease No.2	Lubecote No.2
Mobil	Mobilux 2	Mobiltae E
SHELL	Alvania Grease B-2	Cardium Compound C/Fluid C
Texaco	Glissando FT 2	Crater 2 X Fluid
Valvoline	LB-2	FGC

8.3 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.

8.4 Chain Maintenance

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

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

8.5 Cam Follower Maintenance

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

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

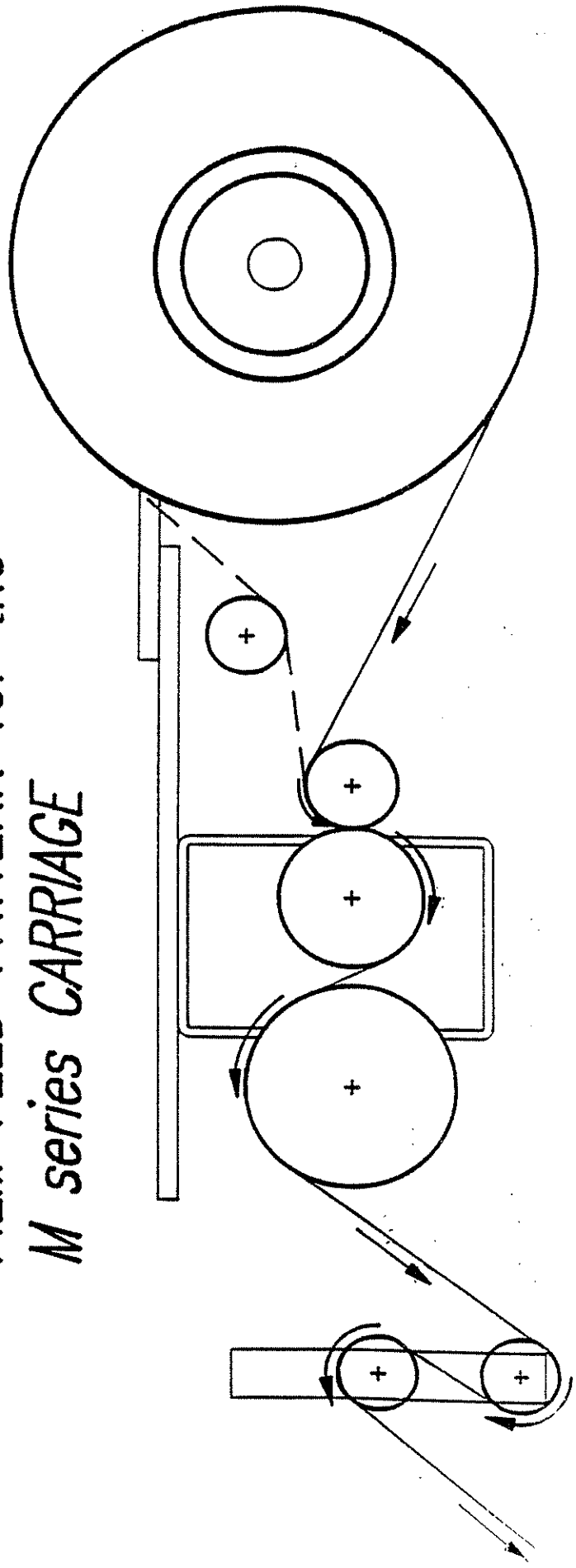
ISO
APPENDIX
ISO

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

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 speed¹.

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 speed² 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.

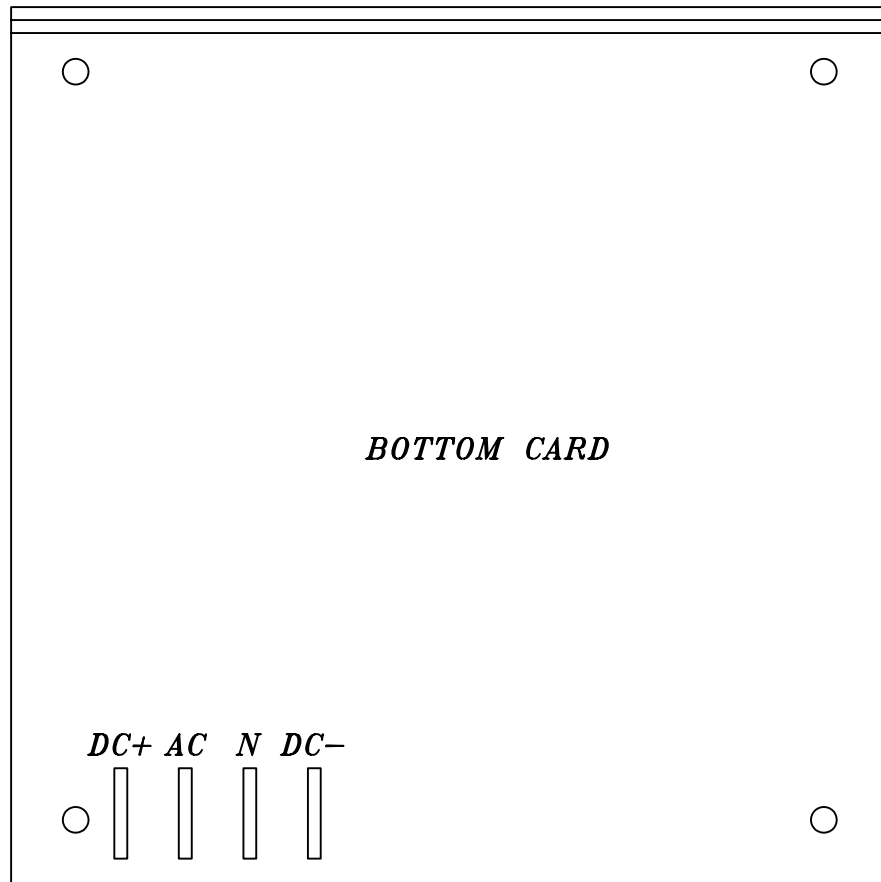
Conversely, if the deceleration time is set too long, the turntable/tower will not settle to the jog speed and thus will be going too fast to align properly and the momentum will take the turntable/tower beyond the start position. As you can imagine, any time the wrap speed is changed, you will need 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

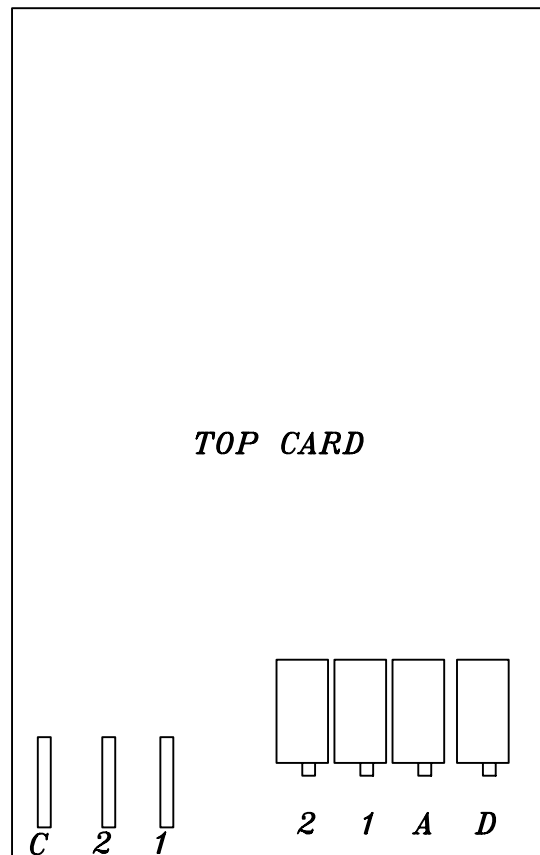
In most cases, repair will require parts replacement. If user intends to, and is equipped to perform repairs, spare parts are available from Orion Parts & Service.

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*

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.

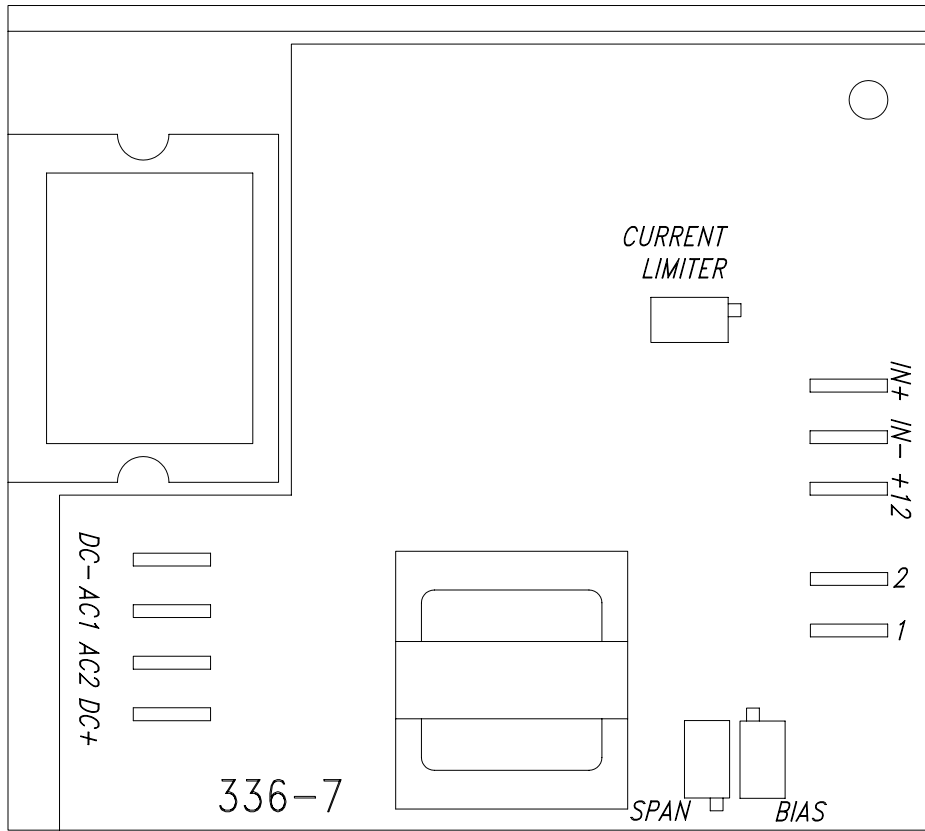
Span: (RV1) The **RV1** pot controls the systems loop gain.

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

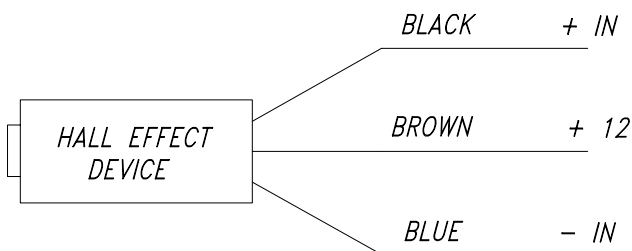
POTENTIOMETER

SPAN: HALL EFFECT SENSITIVITY CONTROL

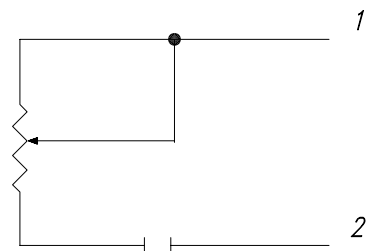
BIAS: SYSTEM BIAS (FACTORY SET)

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

CURRENT LIMITER: (FACTORY SET)



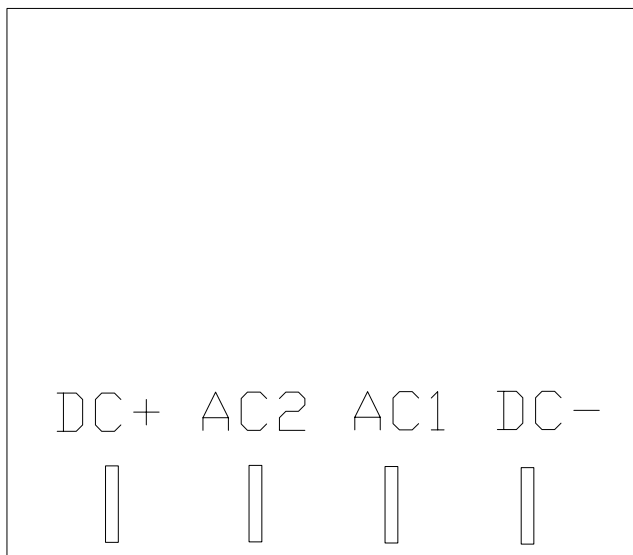
*FILM TENSION ADJUSTMENT
REMOTE POTENTIOMETER*



*tension on/off
relay*

336-7

MULTISTRETCH BOARD



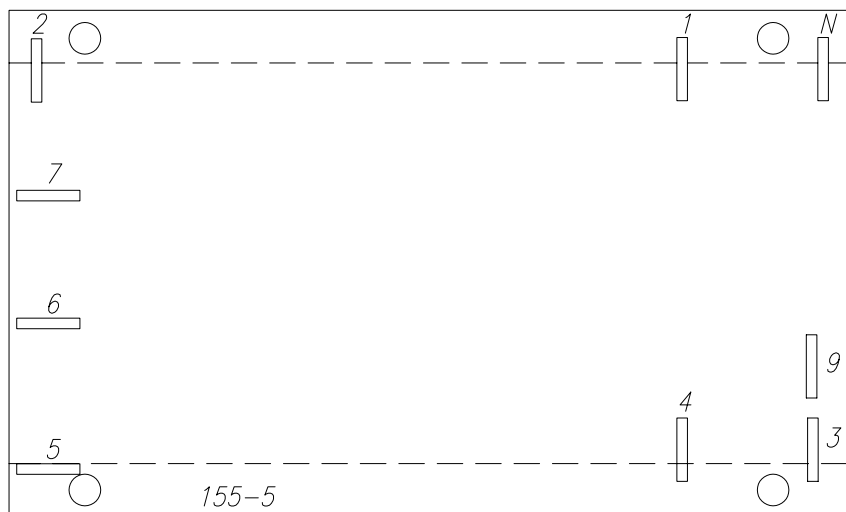
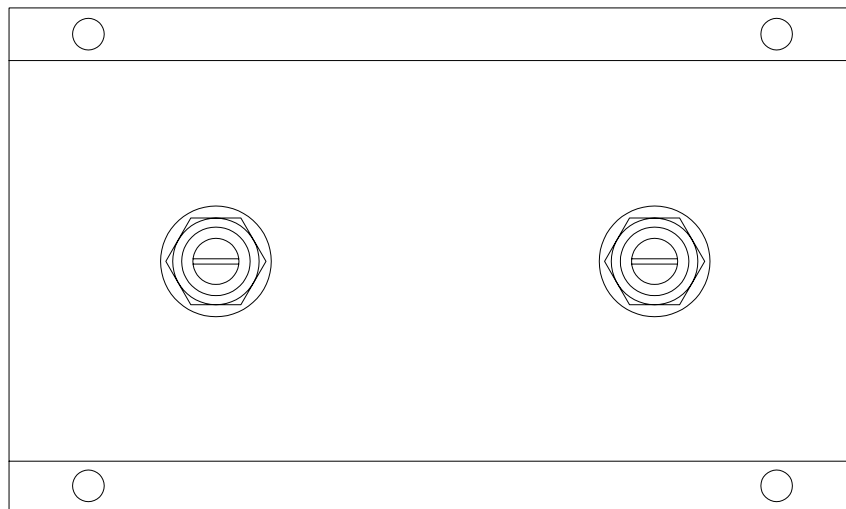
DC - OUT

DC + OUT

AC2 IN

AC1 IN (NEUTRAL)

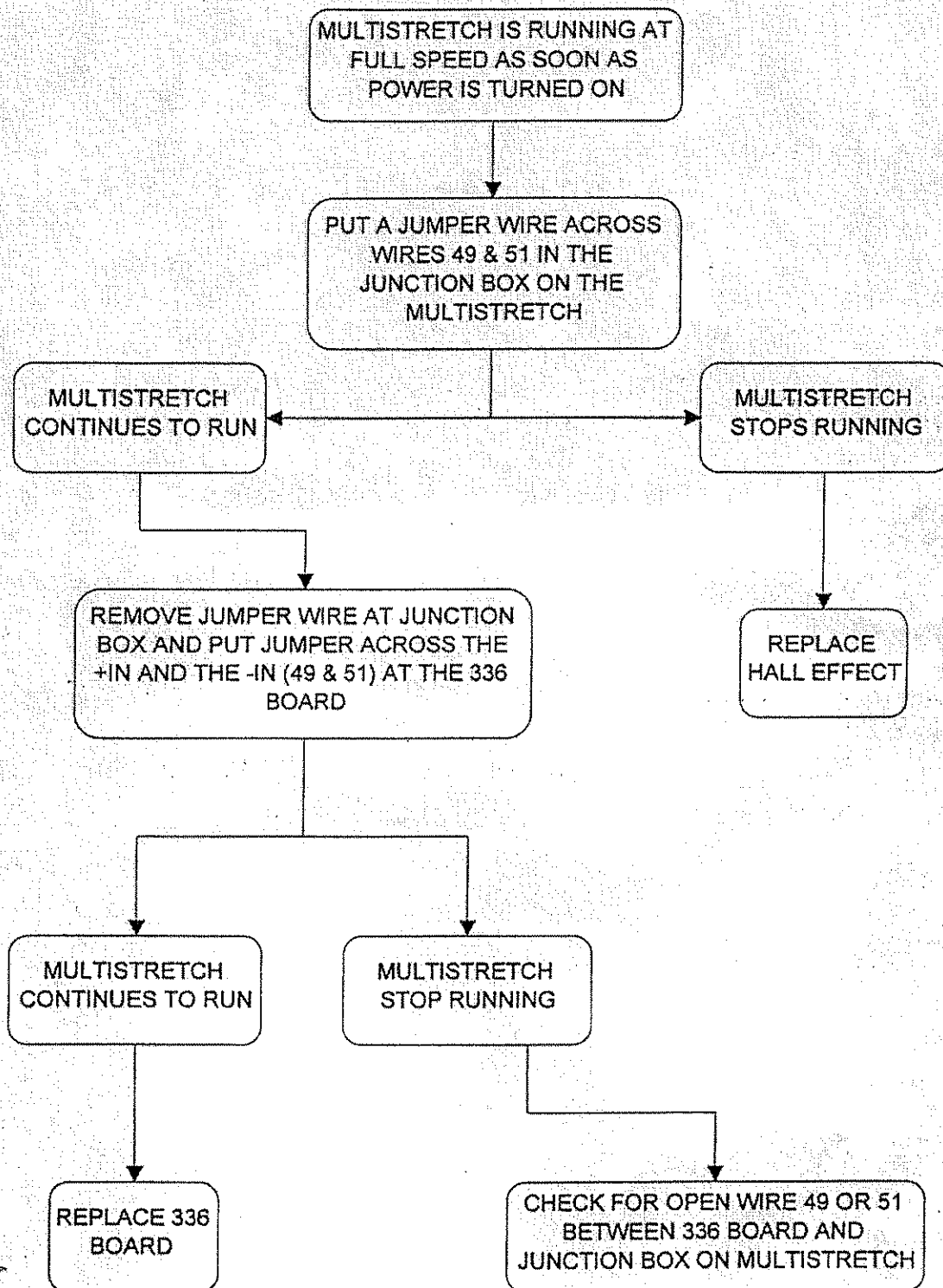
168-A CARRIAGE UP/DN
SINGLE SPEED BOARD



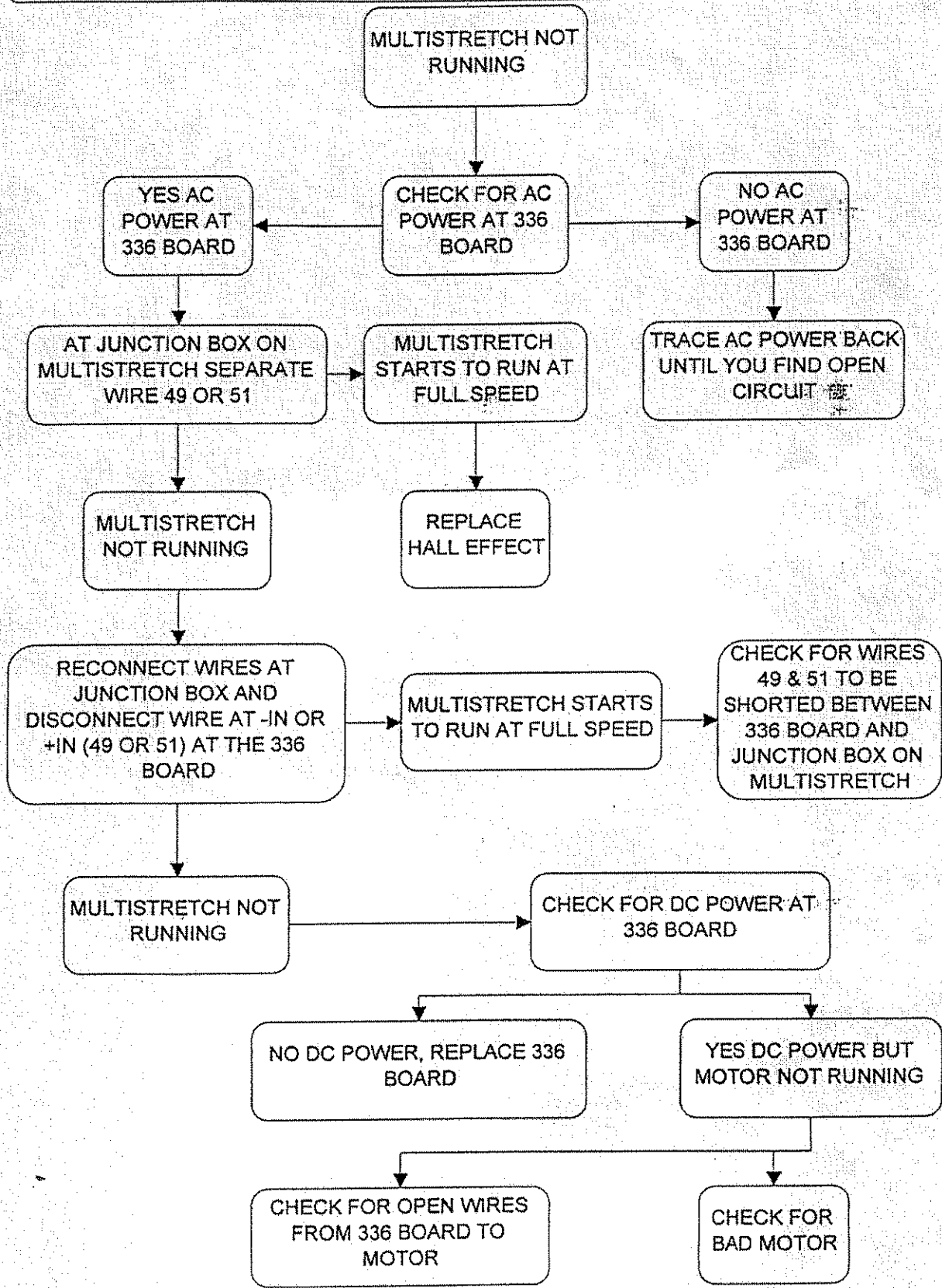
- 1: AC INPUT
- 2: AC INPUT
- 3: COUNT
- 4: RESET
- 5: OUTPUT PULSE AFTER 1-ST COUNT
- 6: OUTPUT T/W
- 7: OUTPUT B/W
- 8: N/A
- 9: COMMON
- N: NEUTRAL

155-5
COUNTER BOARD

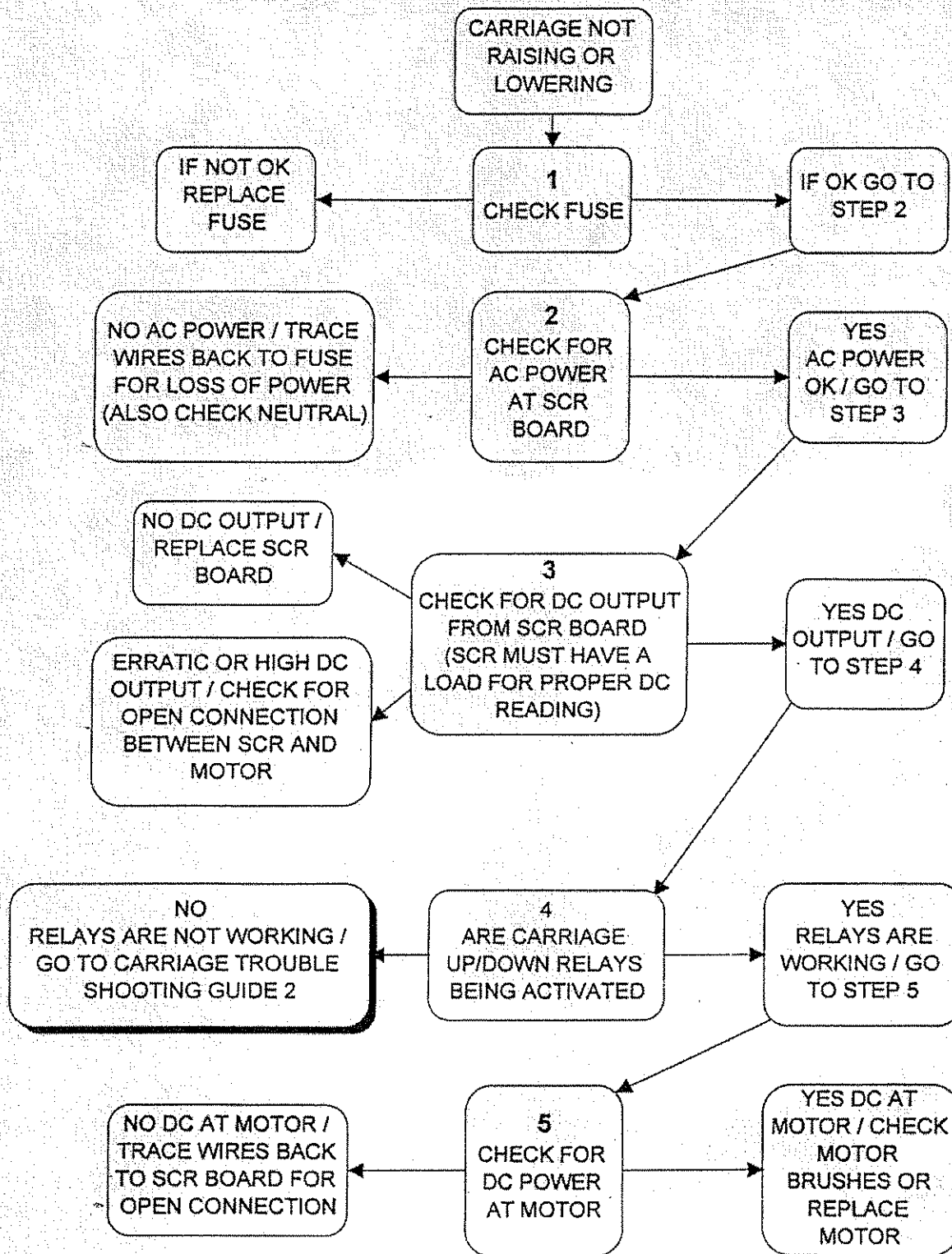
MULTISTRETCH TROUBLE SHOOTING GUIDE 1



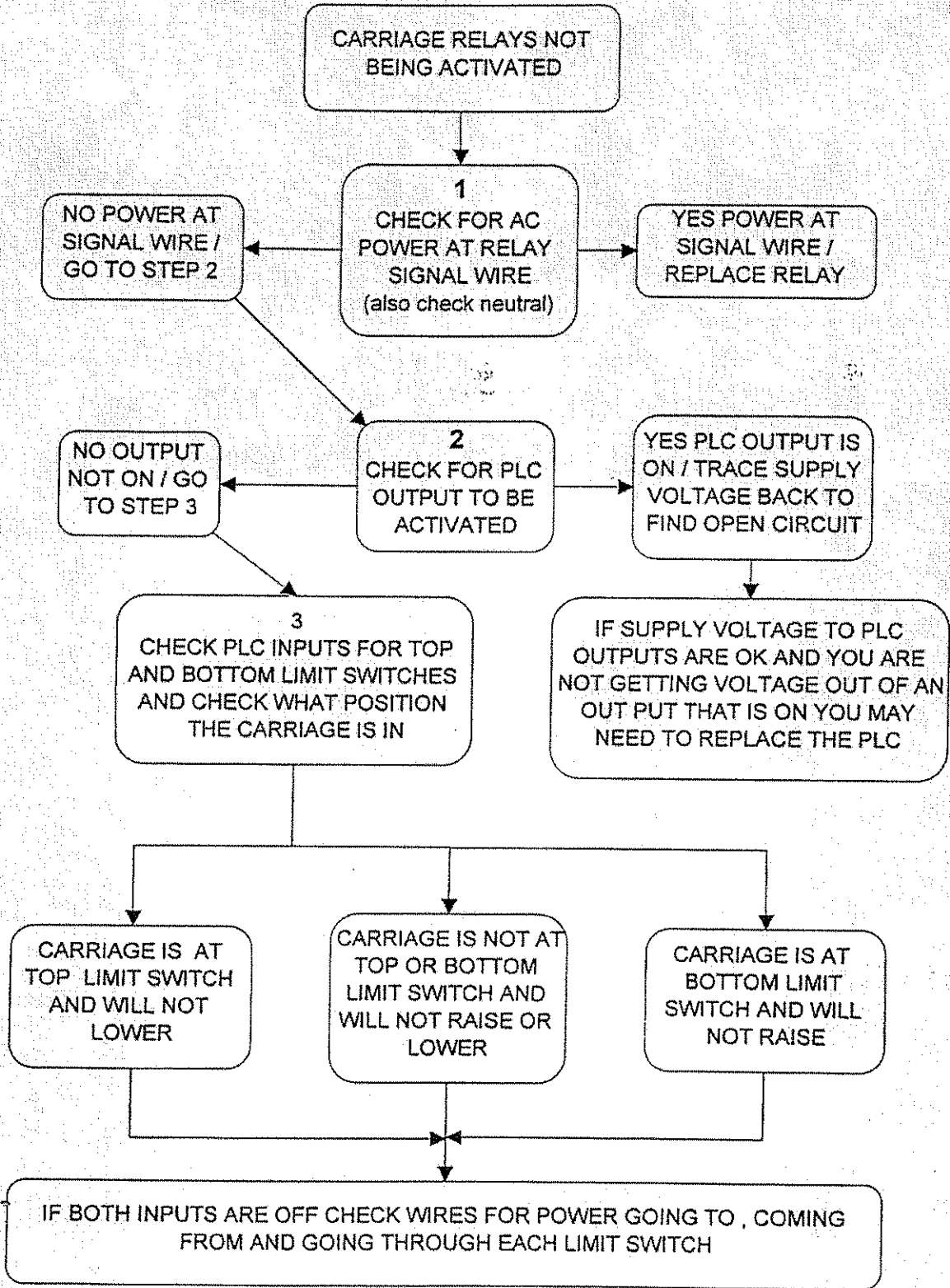
MULTISTRETCH TROUBLE SHOOTING GUIDE 2



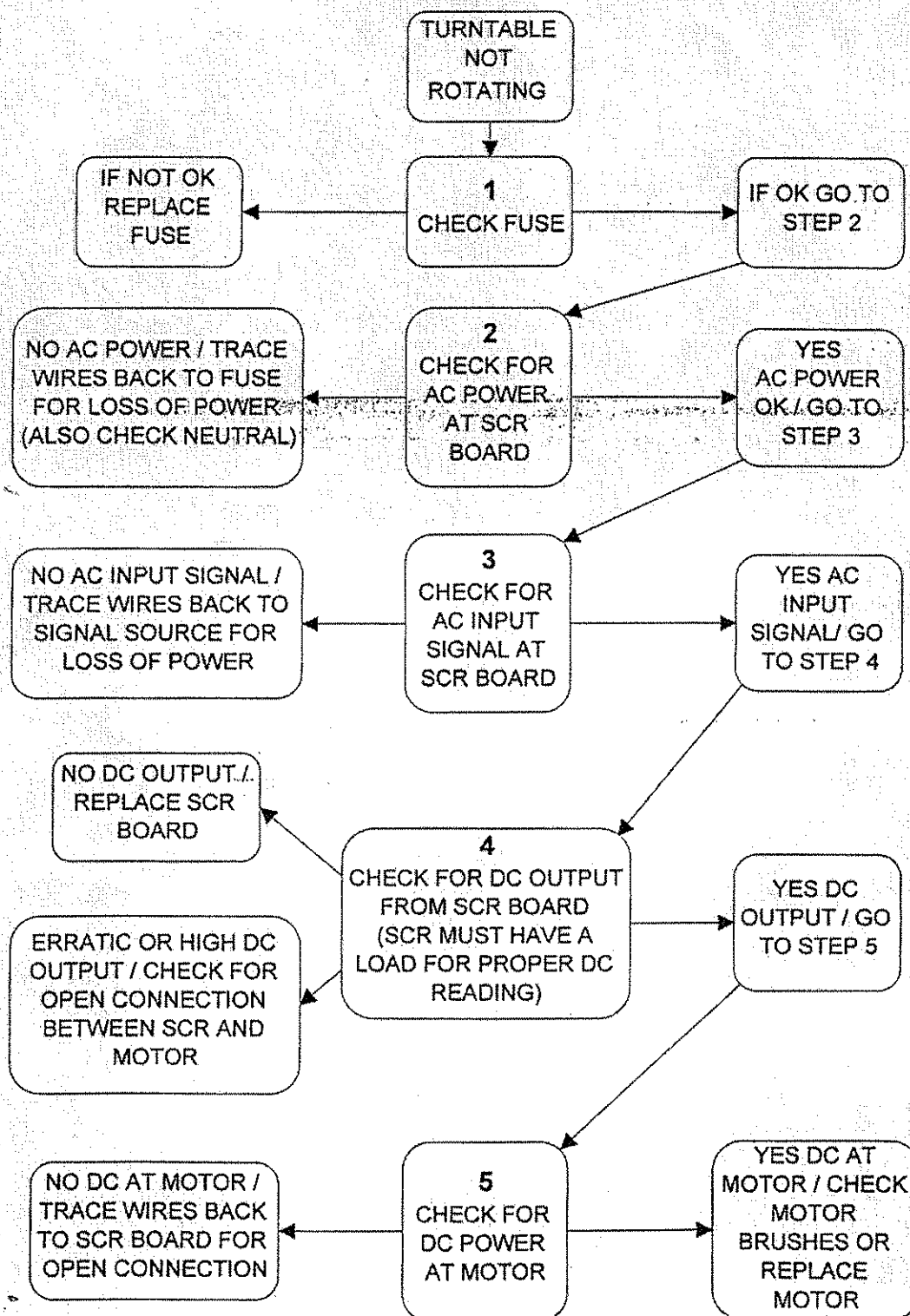
1 BASIC CARRIAGE RAISE / LOWER TROUBLE SHOOTING GUIDE



2 BASIC CARRIAGE RAISE / LOWER TROUBLE SHOOTING GUIDE



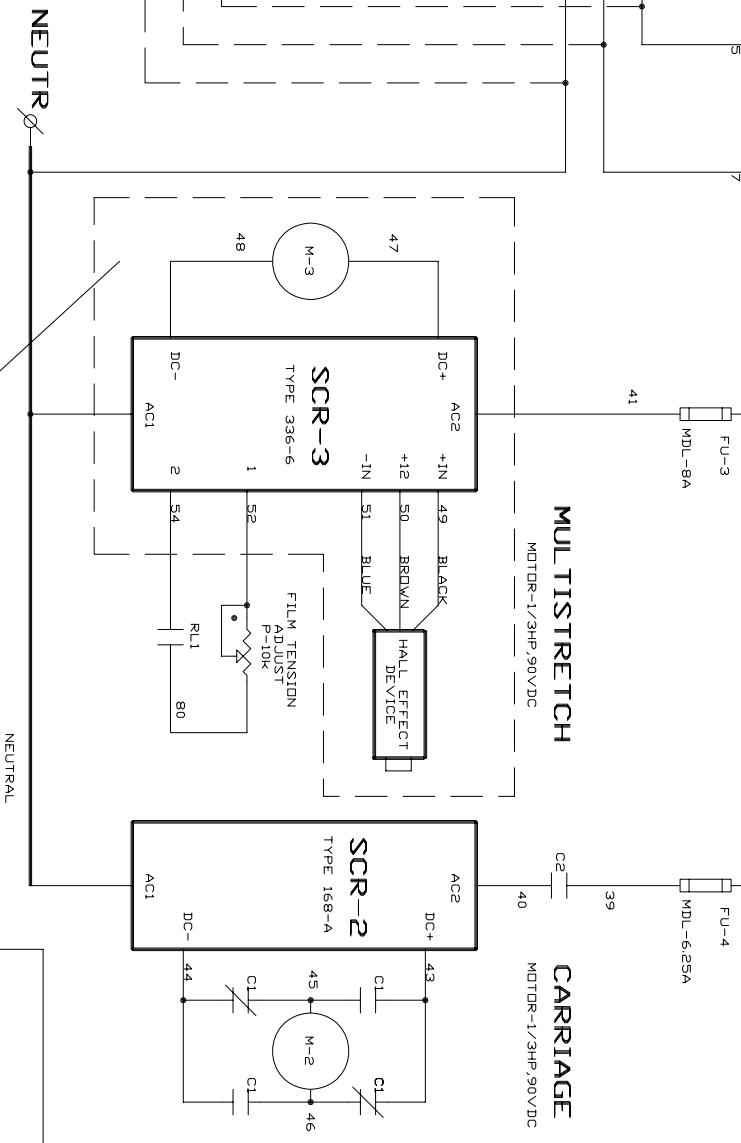
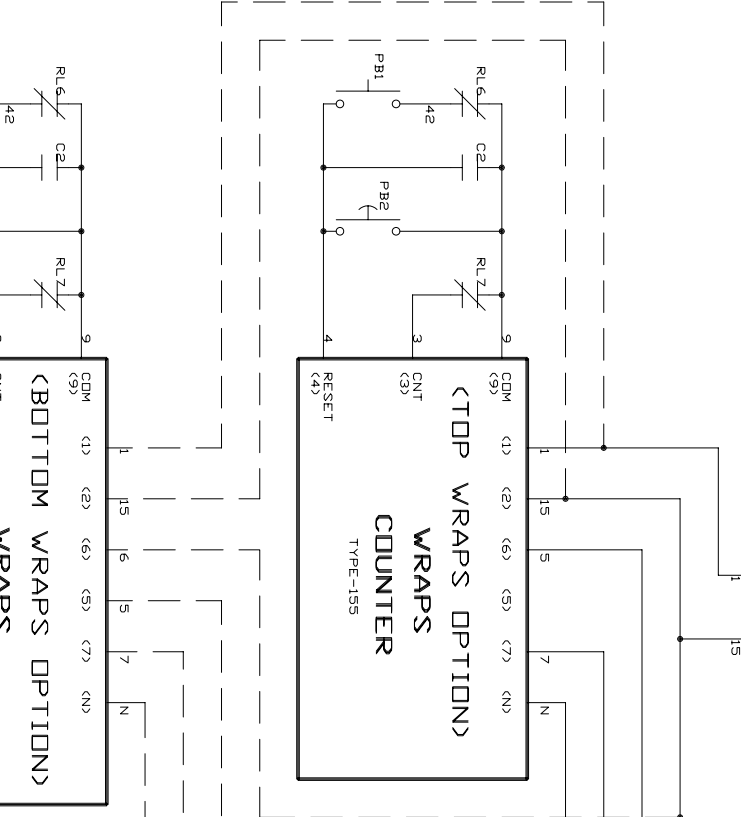
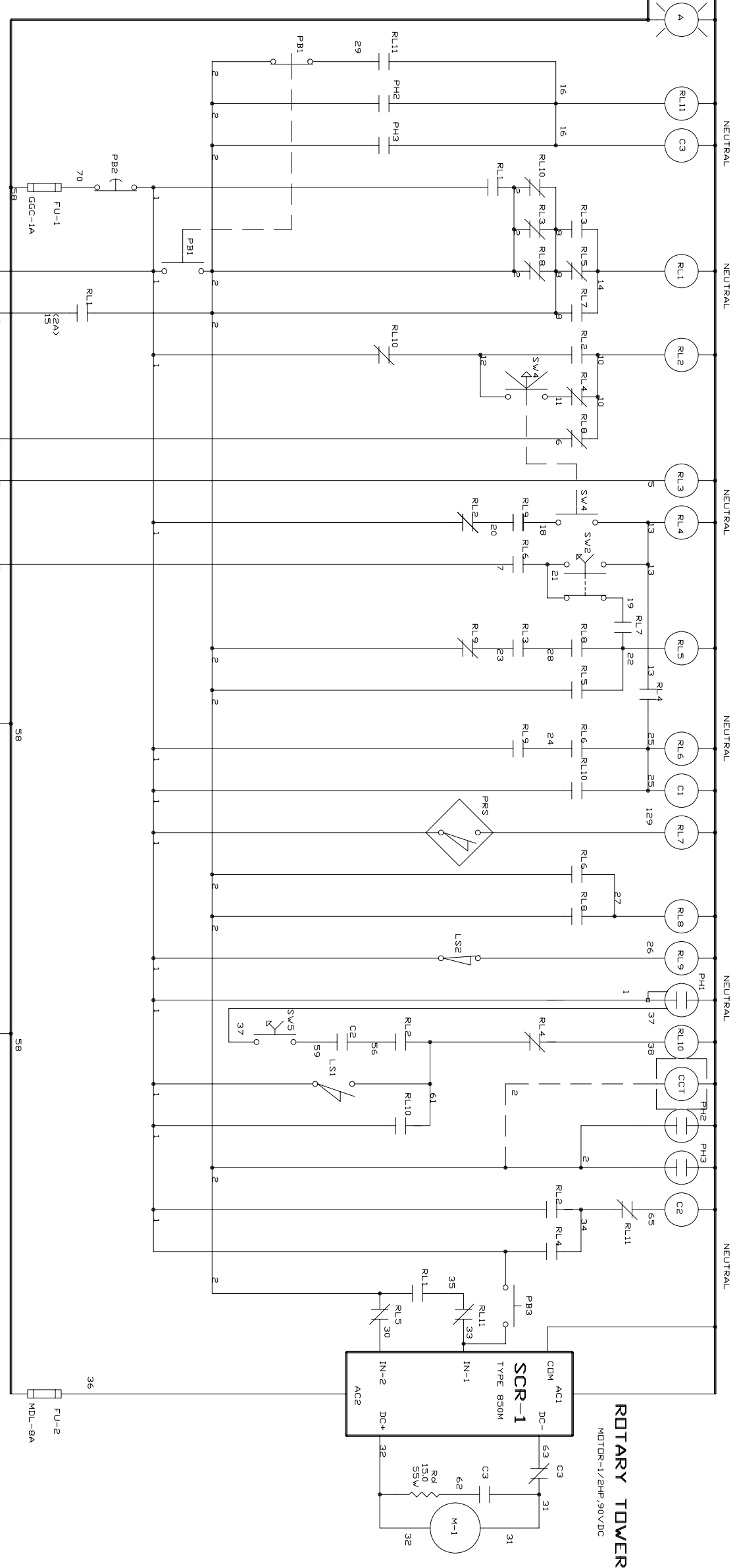
BASIC TURNTABLE TROUBLE SHOOTING GUIDE



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

NEUTR \emptyset LINE \emptyset 127 SW 58

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



LEGEND

- RL1 AUTOCYCLE START
- RL2 CARRIAGE UP FROM COUNTER
- RL3 CARRIAGE UP
- RL4 CARRIAGE DOWN
- RL5 END OF CYCLE, BEGIN ROTOR DECELERATION
- RL6 CARRIAGE DOWN
- RL7 CARRIAGE DOWN SWITCH
- RL8 END OF CYCLE RECORDED
- RL9 BOTTOM OF CARRIAGE TRAVEL LIMIT SWITCH
- RL10 TOP OF CARRIAGE TRAVEL LIMIT SWITCH
- RL11 SAFETY PHOTOCELL - RELAY
- PH1 AUTOHEIGHT PHOTOCELL
- PH2 SAFETY PHOTOCELL - 2
- PH3 SAFETY PHOTOCELL - 2
- CE2 CARRIAGE DRIVER POWER
- C3 REVERSE CONTACTOR BRAKING OF ROTARY ARM
- SV1 MAIN POWER
- SV2 MAIN POWER UP/DOWN
- SV3 CARRIAGE UP/DOWN
- SV4 PHOTOCELL OFF/DN
- SV5 PHOTOCELL OFF/DN
- LS1 TOP LIMIT SWITCH
- LS2 BOTTOM LIMIT SWITCH
- PRS PROXIMITY SWITCH
- CCT CYCLE COUNTER (OPTIONAL)

DRIDON PACKAGING INC.

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 TEL: (514) 667-9769 FAX: (514) 667-6380
 1000 BILLY BLISS, IRRAWAN BLDG, CANADA - SUITE 100
 TEL: (514) 667-9769 FAX: (514) 667-6380

M55-7C WITH OPTION TO WRAP
 TOP OF LOAD FIRST

SIZE DOCUMENT NO. **300 361**

DATE: DECEMBER-10-1991 SHEET 1 OF 1
 FILENAME: M55-7C.SCH

