
orion
PACKAGING SYSTEMS, INC.

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INSTRUCTION MANUAL

Thank you for choosing ORION stretch-wrapping equipment. It is a wise choice which will benefit your company now and in the future.

ORION uses a unique combination of functional, rugged steel structure and sophisticated control systems to offer equipment high in durability and low in maintenance requirements. Our advanced control systems mean that ORION equipment can be operated safely and efficiently without the need for special operator expertise.

Please read this manual carefully and keep it handy. Following these simple operating instructions will insure the safe and efficient performance of this machine while simple maintenance procedures will guarantee a long and productive life of the equipment.

NOTICE:

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

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

- 1) **MODEL**
- 2) **SERIAL NUMBER** 013323
- 3) **SUBASSEMBLY (see PART LIST)**

SAFETY:

ORION'S stretch wrappers should be operated with caution and common sense as any other industrial equipment. To prevent injury and / or electrical shock, careful operation of the machine and awareness of its many automatic functions is required.

Note: All electrical power and compressed air must be disconnected prior to performing any inspection, maintenance or repair work.

ORION PACKAGING INC.

013323

ORION MODEL H-55

Spiral Semi-Automatic Heavy Duty High Profile

Maximum Load Size:	54"W x 54"L x 82"H (Recommended) 63"W x 63"L x 85"H (Theoretical)*
Weight Capacity:	6,000 lbs. Dynamic, 20,000 lbs. Static
Utilities:	115/1/60 20 Amp Service
Turntable:	52" x 52" Octagonal Formed 3/8" Steel Plate 4 Support Casters 4 1/2" x 2 1/2" Steel Precision Caster Bearings 12 1/4" Height to Top of Turntable
Turntable Drive:	0 - 12 RPM Variable Turntable Speed 1/2 HP DC Drive Motor #50 Roller Chain Drive with Tensioner Electronic Soft Start Positive Alignment Feature
Control Features:	Electronic Film Force Control Separate Top and Bottom Wrap Selectors Variable Speed Film Carriage Control Auto-Height Photocell with On/Off Switch Film Carriage Raise/Lower Switch Turntable Jog Pushbutton Spiral Up or Up/Down Cycles Current Overload Protection NEMA 12 Electrical Enclosure
Film Delivery:	20" Orion MultiStretch Power Prestrech Electronic Film Tension Control End of Cycle Film Force Release Full Authority Film Dancer Bar #40 Chain/Sprocket Ratio Control 1/2 HP DC/SCR Film Drive
Film Carriage Drive:	#50 Roller Chain Carriage Lift 1/2 HP Elevator Drive Motor Variable Speed CR Control Structural "H" Beam Guidance Precision Cam Follower Tracking
Structural Features:	Heavy Structural Steel Tubing Design Forklift Portable Base Design Film Roping Bar 8" x 18 lb./ft. "H" Beam
Estimated Shipping Weight	1,800 lbs.

*THEORETICAL IS BASED UPON REMOVAL OF THE ROPING BAR, AND REFLECTS MAXIMUM FILM WEB HEIGHT ATTAINABLE.

MACHINE UNLOADING INSPECTION & INSTALLATION

UNLOADING

Machine can be easily unloaded and transported by a forklift with a minimum capacity of 2500 lbs.

1. Carefully insert the forks into the lifting tubes to the maximum possible depth. Depending on the model, a forklift access may be either at the turntable end of the machine frame, the tower end or both. In case of the mongoose machine or the conveyor, enter the forks under the frame.

2. Lift the machine (or other part of system) only to the necessary height to move it with no bouncing or friction on the floor.

2a. On the mongoose machines use the brackets welded on the top part of the machine.

3. Sit the machine down assuring uniform contact with the floor which is necessary to ensure correct and smooth operation.

3a. Mongoose type machines (M66, M67) have to be attached on the bracket or on the stand (collapsible or anchored to the floor). The M55 has it's own supporting frame which allows the machine to stand independently.

INSPECTION

1. Remove all packing and supporting additions - these may include the blocks under the carriage and the restraining bar over the table.

NOTE: when removing the stretchwrap film covering the machine, care must be taken not to cut any of the electrical wires and rubber covering on the multistretch rollers.

2. Perform a visual inspection of the electrical and mechanical parts for loosened joints and / 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 as follows:

- motors and transmissions
- junction boxes
- electrical conduits
- proximity and limit switches
- photocells

3. Check under the turntable (H - series models only) to ensure that there is no crippling of the movable parts i.e. casters, center axle or drive assembly.

4. Verify the following:

- turntable or rotary arm drive system to confirm that the reducer to drive the chain is snug and properly aligned
- verify the wires tight conduits for crushed sections or loose fittings
- verify the carriage to be sure that it is correctly aligned with the tower and verify the tension on the lift chain
- verify all the dials and knobs on the control panel for smooth action.

MACHINE INSTALLATION

After the visual inspection has been completed the electrical power and the compressed air may be connected as specified on the diagrams supplied with the machine.

An electrical diagram is provided with each machine in the envelope attached to the panel box.

ASSEMBLY PROCEDURE

The structural frames of the machine have to be installed on a levelled floor. Locate the main wrapper section into its final position, keeping the tower assembly* away from any traffic.

The wrapper mainframe section must be bolted to the floor by the 1/2" concrete floor anchors (leg & shield or expandable type).

Conveyor sections (where applicable) have to be positioned, levelled** and bolted to the floor. Any wiring which has been disconnected to facilitate transport is marked with a number located on the junction box to which the wiring must be reconnected. It allows identification of the proper position of the infeed and outfeed conveyor sections. Any wire run that appears too short or long may indicate that the position of the mechanical components is incorrect. Verify the status of all assemblies before proceeding.

CAUTION: improper placement and alignment of the conveyor section(s) and/or electric photocells may lead to equipment malfunction and damage.

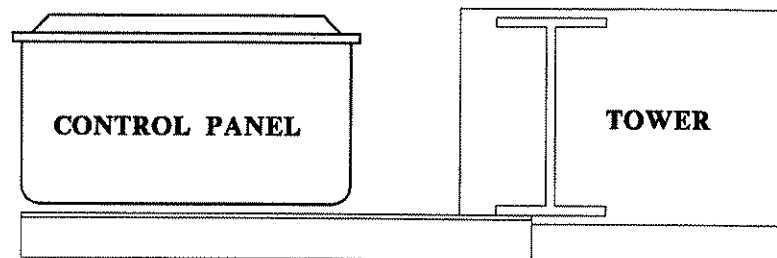
* The tower deviation from vertical must not exceed 1/4" on the distance of 10 feet (angle: 0 degrees 6').

** In the case of the conveyors, the roller deviation from the horizontal must not exceed 1/16 "on the distance 52" (angle: 0 degrees 4').

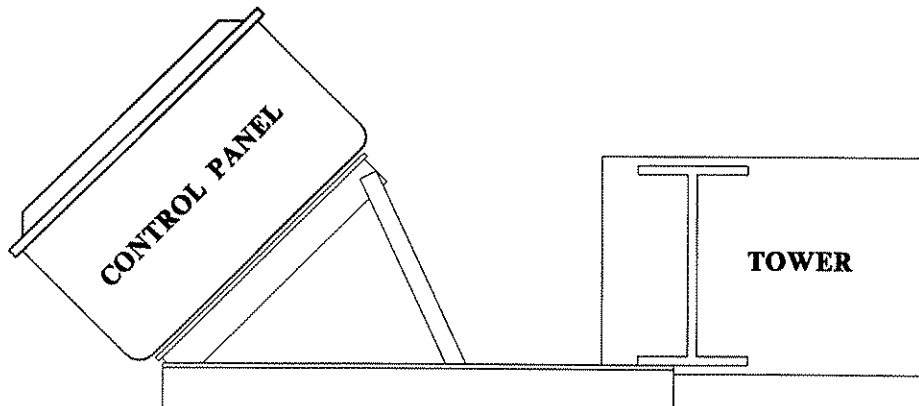
CONTROL PANEL

In the case of the free standing panel (console) place it adjacent to the system and anchor firmly to the floor. Connect the liquid tide (rigid conduit) to the main junction box located on the wrapper main frame next to the tower (or tower home position in case of mongoose). The wires must be matched properly on both sides.

In order to facilitate access and manipulation, the control panel can be mounted in two positions:



- 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 is attached to the tower's foot)**

CONTROL PANEL MOUNT TWO POSITIONS

CYCLE CONTROLS

The control panel layout is custom designed for each particular installation, however, common standard controls have been employed.

CAUTION: before proceeding be familiar with the EMERGENCY button and all functions, switches and pushbuttons.

POWER SWITCH

The Power Switch has two settings:

ON - connects a power source to the machine (voltage depends on the machine type - see electrical diagram provided with the machine).

OFF - disconnects the power source.

START AND STOP SWITCHES (EMERGENCY STOP)

The START switch is used to start the cycle once the load is on the turntable (or under the rotary arm). The cycle may be stopped at anytime by pressing the STOP button.

NOTICE: In case of emergency, use the STOP button which interrupts all the machine electrical circuits (except multistretch drive). If the STOP pushbutton is pressed in the middle of the cycle, the carriage and turntable may be returned to their home position by using the jog buttons before restarting the cycle.

SPIRAL WRAP SWITCH

The SPIRAL WRAP switch has two positions:

UP - in this 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 this position the cycle will be completed after the load is wrapped in both the up and down directions.

NOTE: TOP WRAP FIRST (OPTIONAL)

The carriage raises faster at the beginning of the cycle to wrap the top of the load (see electrical diagram provided with the machine).

CARRIAGE CONTROL SWITCH

The CARRIAGE CONTROL switch is a three position switch with the following settings:

RAISE - raises the carriage until the top limit switch on the tower is activated.

LOWER - lowers the carriage until the bottom limit switch on the tower is attained.

The switch is normally positioned in the middle where the carriage remains stationary. Turning the switch to the RAISE or LOWER will activate the carriage to move in its respective direction.

TURNTABLE (ROTARY TOWER) JOG

The turntable (rotary tower) jog switch is a pushbutton which will rotate the turntable (rotary arm) in a clockwise direction (as viewed from the top) when the switch is held depressed. When the switch is released the turntable (rotary tower) will stop. The switch is inoperative during the wrap cycle.

PHOTOCELL SWITCH

The photocell switch has two settings:

ON - when turned ON, the photocell instructs the carriage to 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. The photoswitch position on the track can be adjusted in order to make the carriage pass the top of the load and overlap the top.

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

FILM TENSION

Film tension may be adjusted using the film tension control knob. It has a range of tension from 0 to 10 (0 to 4 the low range, 4 to 8 the most usefull range for most of the films used by our customers, 8 to 10 as a very high range which may break some films).

NOTE: Lighter loads may require lower tension settings then heavier loads.

Film tension is controlled through the dancer bar system. Occasionally the feed back proximity sensor may need some adjustment. Adjustment of feed back is shown on drawing # 001

Adjustment instructions:

- remove the carriage cover
- unbolt the two nuts holding the proximity switch -item # 1
- turn the proximity switch - item # 2 until the moment when the motor starts to turn (or hums)
- tighten on the nuts securing the proximity switch.

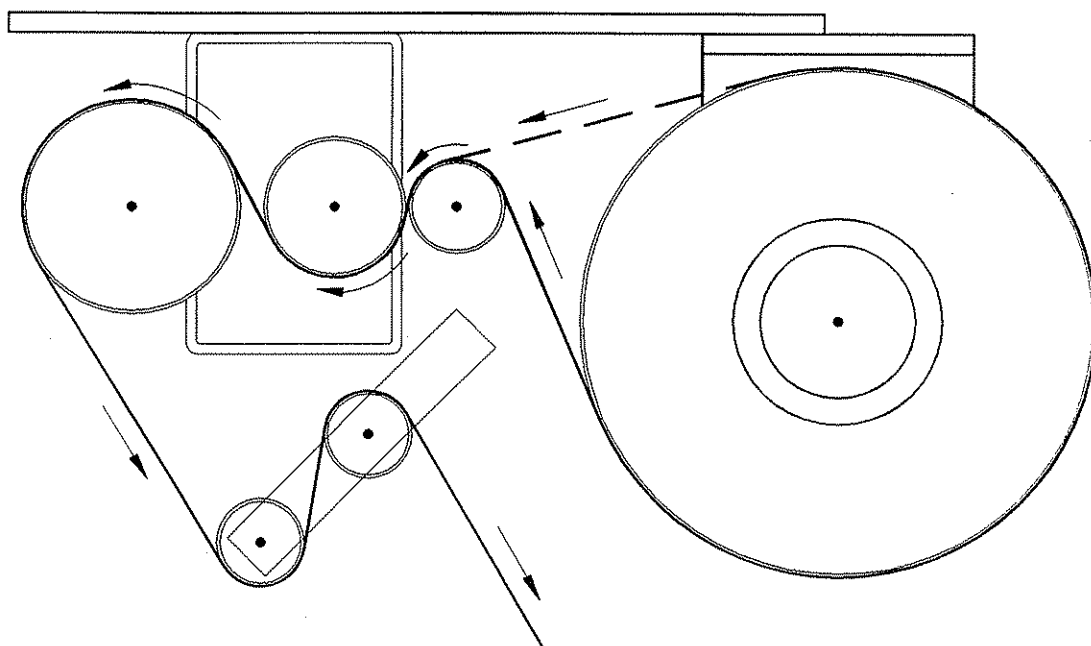
NOTE: The condition in which the motor hums but does not turn must be maintained even after all elements are tightened. If not, the adjustment procedure must be repeated.

TO LOAD THE FILM....

The film roll can be loaded on the mandrel of the carriage from either end of the roll. When using tacky film, please verify that the inward tacky surface of the film is inward on the load.

1. Disconnect power (turn off power switch).
2. Put the roll of film on the mandrel and press down to insure penetration of spikes into the cardboard center of the film roll.
3. In the case of automatic machines, install the film cap on top of the roll to prevent upward movement.
4. Introduce the roping end of the film between the shafts of all rollers (as shown on the dwg.) and pull to pass it around all three rollers (pressure roller and both rubber rollers).
5. Pass the film between the two dancer (aluminium) rollers (in certain applications the film has to be passed around one or two additional position aluminium rollers).
6. When the film feeding is completed - turn the power switch ON
7. Peel off the first few winds of the film (multistretch will run due to displacement of the dancer roller) and fix the film end onto the load or into the clamp mechanism (if machine is fully automatic).

The system is now ready to begin the first wrapping cycle.
Proceed to page titled SYSTEM START UP.



WARNING:

DISCONNECT POWER BEFORE FEEDING FILM

**FILM FEEDING PATTERN
FOR STANDARD CARRIAGE**

SYSTEM START-UP

Notice: It is advisable to test-run the equipment with several pallet loads before make the attempt to wrap with film. Please position a worker at the EMERGENCY STOP push button.

Start up of the machine (system) may determine the need for the adjustment of:

- pallet sensor eyes (automatic systems only)
- load height stop photoswitch (on the carriage)
- conveyor acceleration/deceleration
- turntable speed & jog speed
- turntable speed acceleration/deceleration
- turntable home position (rotary tower home position)
- film tail treatment devices (automatic systems).

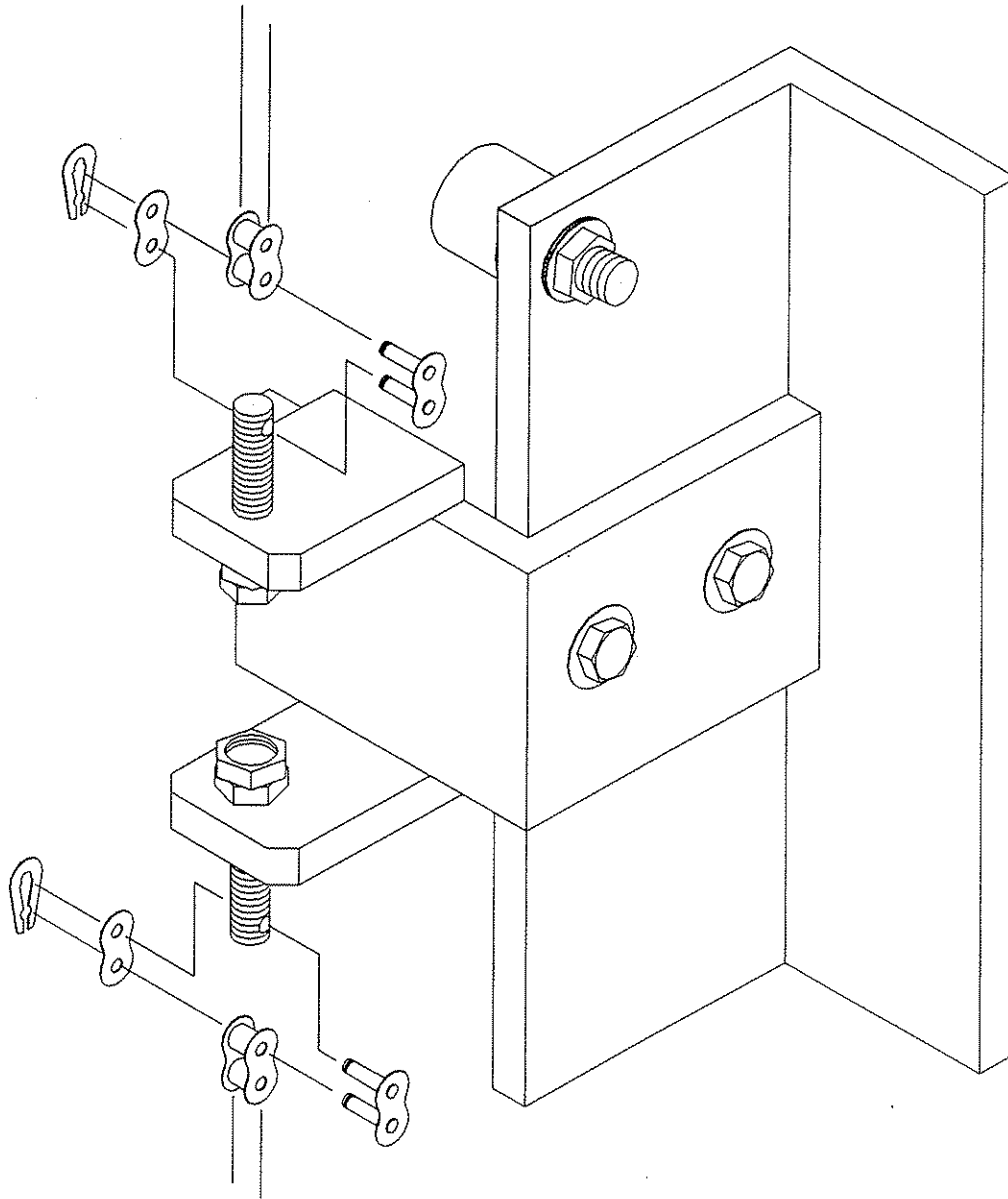
MACHINE WRAPPING TEST

Before the test procedure adjust the wrapping cycle parameters i.e. top wraps, bottom wraps, height photocell on/off, film tension, carriage speed (those two parameters may be adjusted during the wrapping cycle).

When there is no photocell, verify the top limit switch position.

ATTENTION:

**WHEN MOUNTING THE CARRIAGE LIFT CHAIN,
PLEASE ENSURE, THAT THE CONNECTING
LINK'S PIN IS INSERTED FROM THE TOWER SIDE**



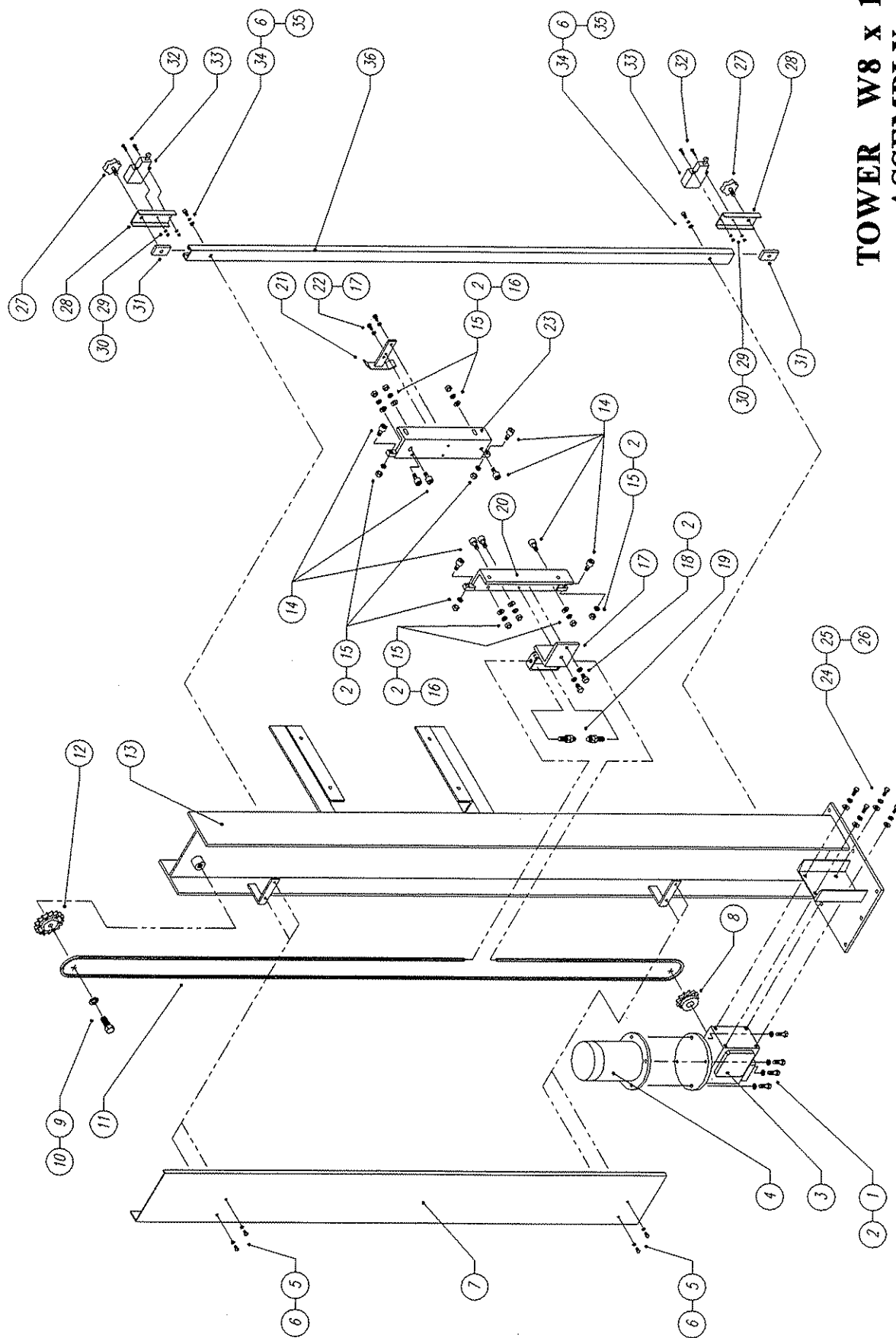
CHAIN TENSIONER ASSEMBLY

**SEMI-AUTOMATIC
STANDARD ASSEMBLY
PART LIST**

Note :

*** Quantity listed in order of part number**

**** The names given to the parts are generic**



TOWER W8 x 18 ASSEMBLY

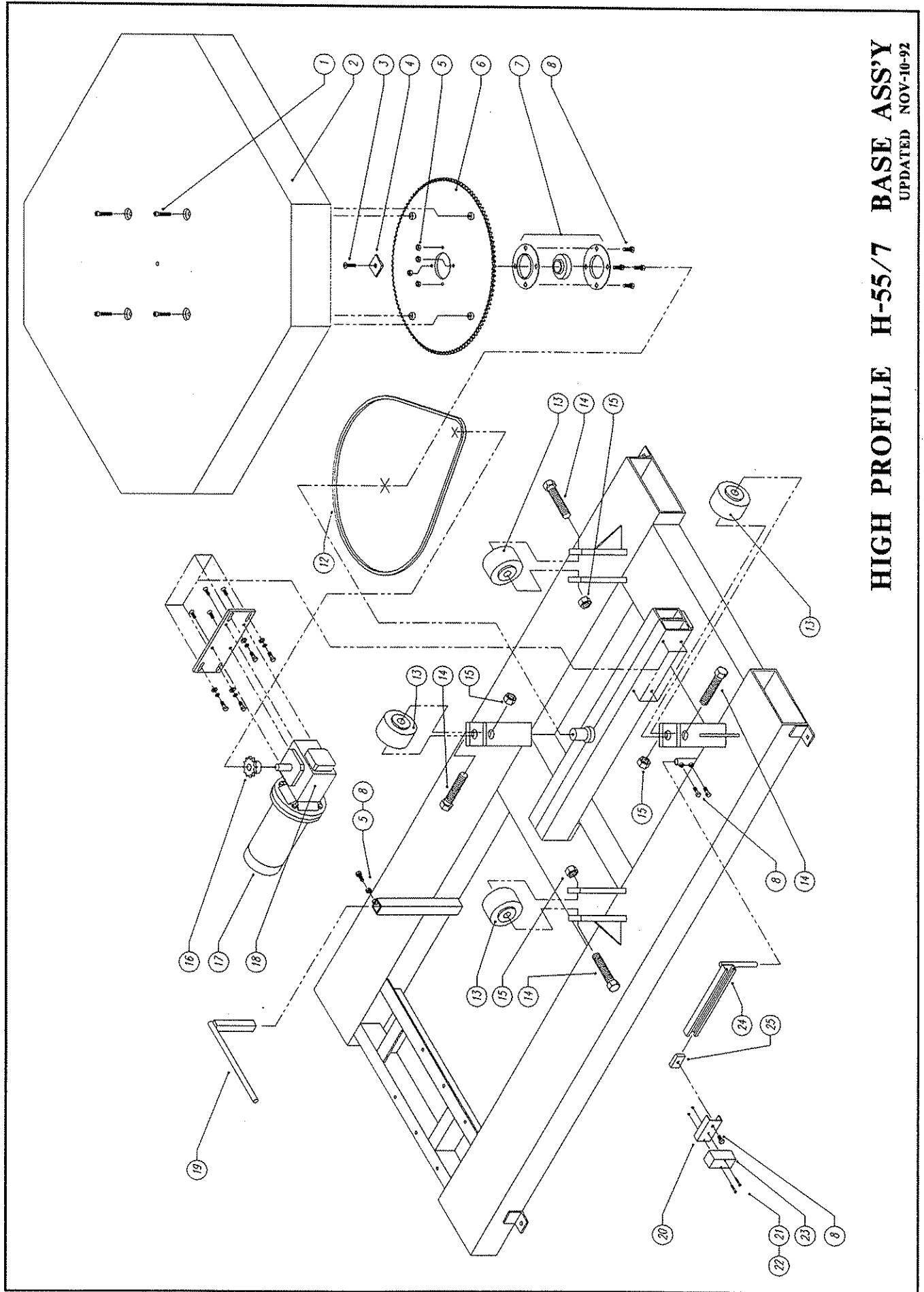
UPDATED APR-08-92

PART LIST

FOR TOWER W8 x 18 ASSEMBLY

updated April-07-92

ORION			
NO.	PART NO.	DESCRIPTION	Q-TY
1.	010293	HEX HEAD SCREW	4
2.	011390	SPRING WASHER	16
3.	010344	REDUCER	1
4.	010059	ELECTR. MOTOR f/ L-66 & H-66	1
	010036	ELECTR. MOTOR f/ L-55/7s, H-55 & FA-55	1
5.	012049	PAN PHILL	3
6.	011393	SPRING WASHER	7
7.	012734	TOWER CHAIN COVER	1
8.	010343	SPROCKET	1
9.	010329	HEX HEAD SCREW	1
10.	012721	SPRING WASHER	1
11.	010009	CHAIN	1
12.	010008	IDLER SPROCKET	1
13.	012738	TOWER	1
14.	010067	CAM FOLLOWER	10
15.	012582	HEX NUT	10
16.	010948	FLAT WASHER	6
17.	011142	CHAIN TENSIONER	1
18.	012274	HEX HEAD SCREW	2
19.	010387	CHAIN TENSION SCREW	2
20.	010386	LEFT CARRIAGE HOLDER	1
21.	012739	LIMIT SWITCH ACTUATOR	1
22.	012722	HEX HEAD SCREW	2
23.	010339	RIGHT CARRIAGE HOLDER	1
24.	012723	HEX HEAD SCREW	4
25.	012724	SPRING WASHER	4
26.	012725	FLAT WASHER	4
27.	010092	KNOB	2
28.	010087	LIMIT SWITCH HOLDER	2
29.	012726	HEX NUT	2
30.	012743	SPRING WASHER	4
31.	011153	CHANNEL GUIDE	2
32.	012690	PAN PHILL	4
33.	010123	LIMIT SWITCH	2
34.	010257	SOCKET HEAD CAP SCREW	4
35.	012221	FLAT WASHER	2
36.	010335	LIMIT SWITCH CHANNEL	1



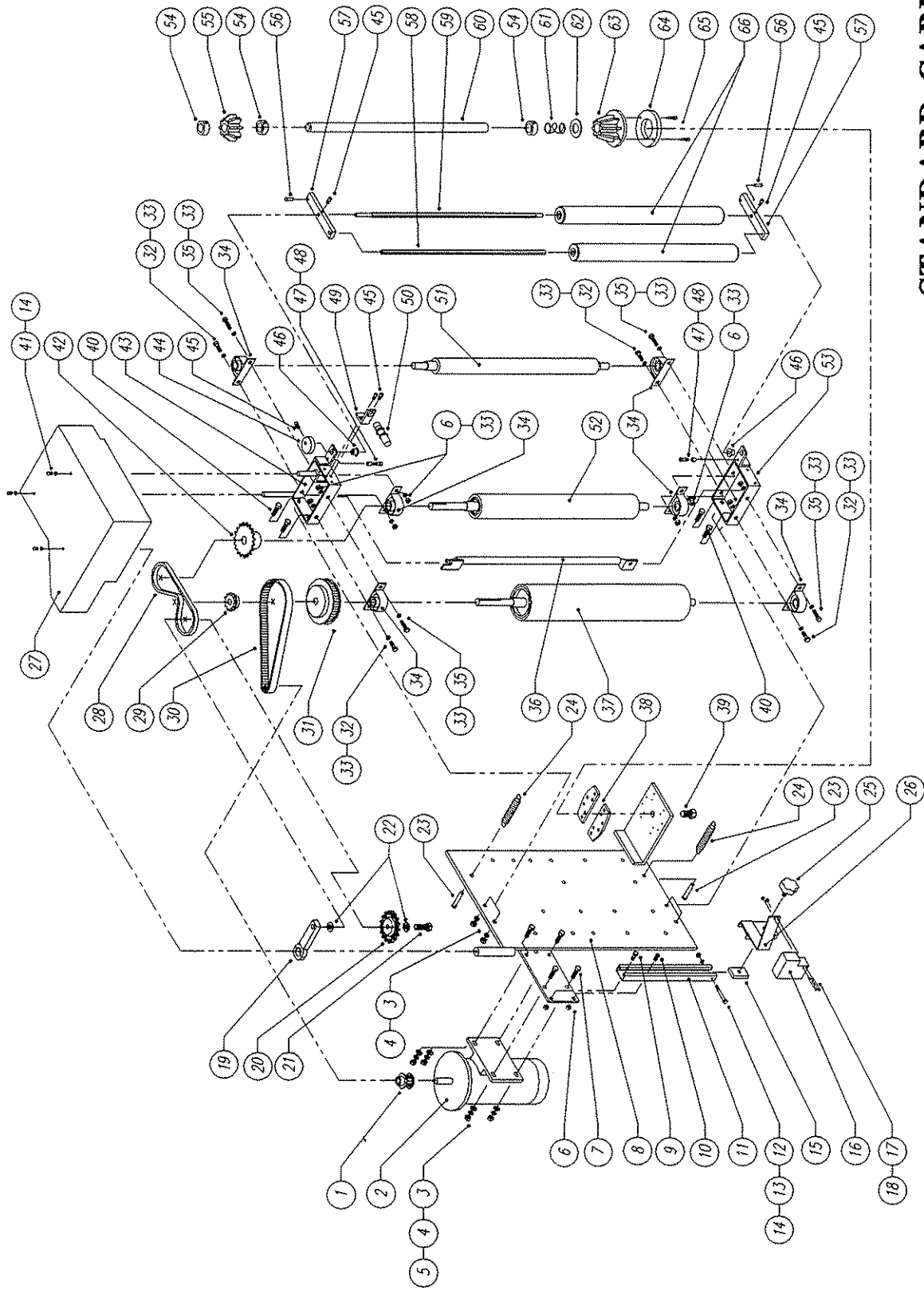
HIGH PROFILE H-55/7 BASE ASS'Y
UPDATED NOV-10-92

PART LIST

FOR HIGH PROFILE H-55/7 BASE ASS'Y

updated Nov-10-92

ORION			
NO.	PART NO.	DESCRIPTION	Q-TY
1.	012686	SOCKET HEAD CAP SCREW	4
2.	010220	TURNTABLE	1
3.	012591	FLAT SOCKET CAP SCREW	1
4.	010898	PLATE	1
5.	012477	HEX NUT	4
6.	010006	SPROCKET	1
7.	010007	CENTRAL BEARING UNIT	1
8.	010293	HEX HEAD SCREW	12
9.	012473	FLAT SOCKET CAP SCREW	4
10.	011390	SPRING WASHER	4
11.	012672	FLAT WASHER	4
12.	010009	CHAIN	1
13.	012560	STEEL CASTER	4
14.	012687	HEX HEAD SCREW	4
15.	012688	HEX NUT	4
16.	010435	SPROCKET FOR 12 RPM	1
	012818	SPROCKET FOR 16 RPM	1
17.	010036	ELECTR. MOTOR FOR 12 RPM	1
	010032	ELECTR. MOTOR FOR 16 RPM	1
18.	010035	REDUCER	1
19.	012689	HEX NUT	4
20.	010389	ROPING BAR STAND	2
21.	010367	ROPING BAR	1
22.	010739	PROXIMITY SWITCH	1
23.	010092	KNOB	1
24.	012690	PAN PHILL & NUT	2
25.	012691	PROXIMITY SWITCH CHANNEL	1
26.	010091	CHANNEL GUIDE	1
27.	010203	PROXIMITY SWITCH HOLDER	1



STANDARD CARRIAGE ASSEMBLY

UPDATED MAY-29-92

STANDARD CARRIAGE ASS'Y - PART LIST

updated May-28-92

ORION		DESCRIPTION	Q-TY
NO.	PART NO.		
1.	011283	TIMING BELT PULLEY	1
2.	010059	ELECTR. MOTOR, FOR H,L-66	1
	010036	ELECTR. MOTOR, FOR H,L-55,44	1
3.	011128	HEX NUT	8
4.	011390	SPRING WASHER	8
5.	010948	FLAT WASHER	4
6.	012751	HEX NUT	10
7.	012752	HEX HEAD SCREW	4
8.	010825	BACK PLATE F/20" FILM	1
	011430	BACK PLATE F/30" FILM	1
9.	010382	HEX HEAD SCREW	1
10.	012693	FLAT SOCKET CAP SCREW	1
11.	011152	PHOTOCELL CHANNEL F/20" FILM	1
	011432	PHOTOCELL CHANNEL F/30" FILM	1
12.	012753	HEX HEAD SHOULDER SCREW	1
13.	012689	HEX NUT	1
14.	011393	SPRING WASHER	4
15.	011153	CHANNEL GUIDE	1
16.	011495	PHOTOCELL	1
17.	012754	PAN PHILL SCREW	2
18.	012726	HEX NUT	2
19.	011142	CHAIN TENSIONER	1
20.	011297	IDLER SPROCKET	1
21.	012482	HEX HEAD SCREW	1
22.	012584	FLAT WASHER	2
23.	012755	CLEVIS PIN	2
24.	010047	TENSION SPRING	2
25.	010092	KNOB	1
26.	012090	PHOTOCELL BRACKET	1
	012091	PHOTOCELL BRACKET F/R.H. ASS'Y	1
27.	011755	CARRIAGE COVER	1
28.	010583	CHAIN	1
29.	010975	DRIVE SPROCKET	1
30.	011151	TIMING BELT	1
31.	011003	PULLEY	1
32.	012723	HEX HEAD SCREW	4
33.	012725	FLAT WASHER	16
34.	010157	PILLOW BLOCK BEARING	6
35.	012757	HEX HEAD SCREW	4
36.	011412	SAFETY BAR F/20" FILM	1
	011413	SAFETY BAR F/30" FILM	1
37.	011406	RUBBER ROLLER 4" DIA. F/20" FILM	1
	011407	RUBBER ROLLER 4" DIA. F/30" FILM	1
38.	010049	BRAKE PADS	2
39.	012758	HEX HEAD SCREW	1
40.	010293	HEX HEAD SCREW	4

41.	012049	PAN PHILL SCREW	3
42.	011454	DRIVE SPROCKET	1
43.	011369	TOP BRACKET	1
44.	011477	PROXIMITY SENSOR CAM	1
45.	010257	SOCKET HEAD CAP SCREW	5
46.	010058	BRONZE BUSHING	2
47.	010286	SOCKET HEAD SHOULDER CAP SCREW	2
48.	010946	PLASTIC HOSE	2
49.	011476	PROXIMITY SENSOR BRACKET	1
50.	011470	PROXIMITY SENSOR	1
51.	011410	PRESSURE ROLLER F/20" FILM	1
	011411	PRESSURE ROLLER F/30" FILM	1
52.	011408	RUBBER ROLLER 2.66"DIA. F/20" FILM	1
	011409	RUBBER ROLLER 2.66"DIA. F/30" FILM	1
53.	011416	BOTTOM BRACKET	1
54.	010052	COLLAR	3
55.	010051	TOP SPOOL	1
56.	012756	CLEVIS PIN	2
57.	011370	LEVER	2
58.	011419	SHORT SHAFT F/20" FILM	1
	011420	SHORT SHAFT F/30" FILM	1
59.	011421	LONG SHAFT F/20" FILM	1
	011422	LONG SHAFT F/30" FILM	1
60.	010050	MANDREL SHAFT F/20" FILM	1
	011436	MANDREL SHAFT F/30" FILM	1
61.	010891	COMPRESSION SPRING	1
62.	010199	FLAT WASHER	1
63.	010838	BOTTOM SPOOL	1
64.	010887	MANDREL BRAKE DISK	1
65.	010886	SPIKE	2
66.	011371	DANCER ROLLER F/20" FILM	2
	011431	DANCER ROLLER F/30" FILM	2

MACHINE 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 25000 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 100-5
Gulf Oil Corp.	Gulf Senate 155
Mobil Oil Corp.	Mobil 600 W Suerr Cyl.Oil
Philips Oil Co.	Andes S 180
Texaco Inc.	624+850T Cyl.Oil
Shell Oil Co.	Velvata Oil J82
Union Oil Of Cal.	Red Line Worm Gear Lube 140

MOTOR MAINTENANCE

An occasional inspection of the brushes should be made in order to establish a wear rate. Replacement 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 shape, 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.

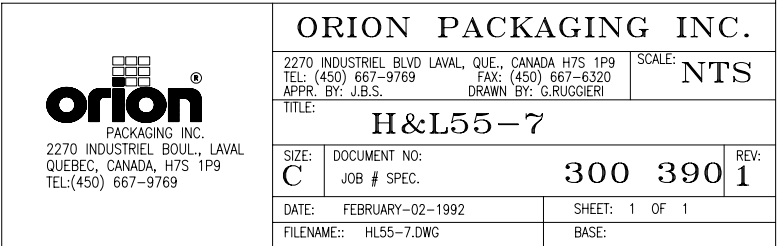
CHAIN MAINTENANCE

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

With time the chain will tend to stretch. A loose elevator and turntable (rotary arm) chain should be tightened at the chain tensioner, or by moving the reducer on the mounting plate.

CAM FOLLOWER MAINTENANCE

The cam followers behind the carriage have deep grease pockets and do not need frequent relubrication. The portion of the tower on which the cam followers run, 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.



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.

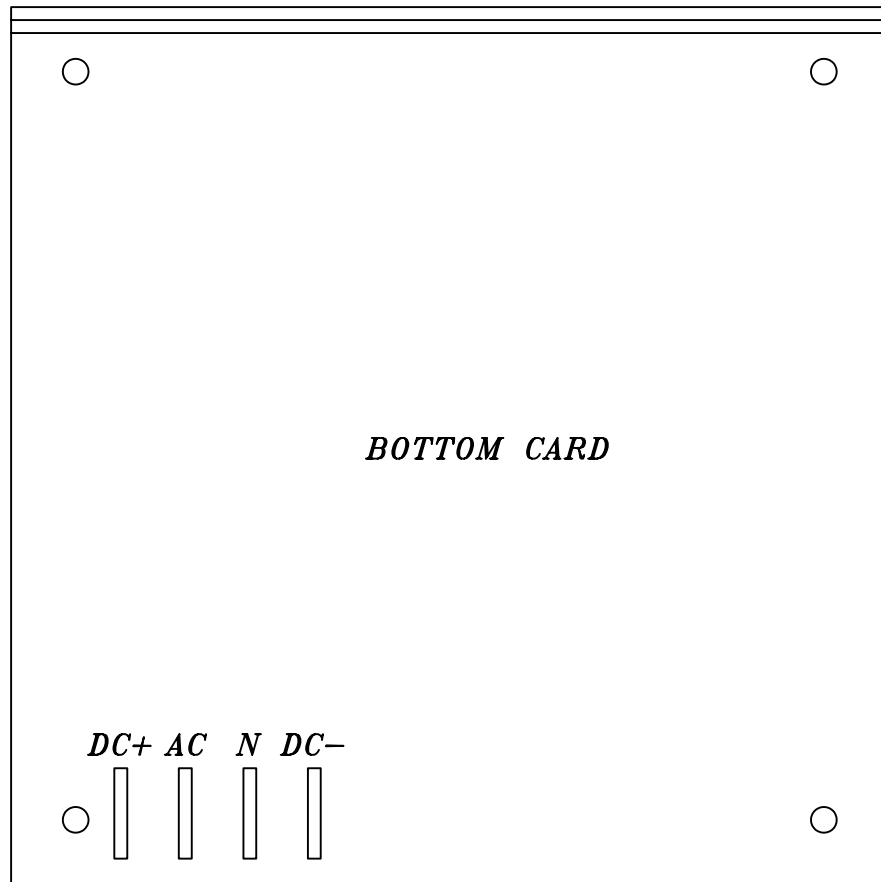
Conversely, if the deceleration time is set too long, the turntable/tower will not settle to the jog speed and thus will be going too fast to align properly and the momentum will take the turntable/tower beyond the start position. As you can imagine, any time the wrap speed is changed, you will need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

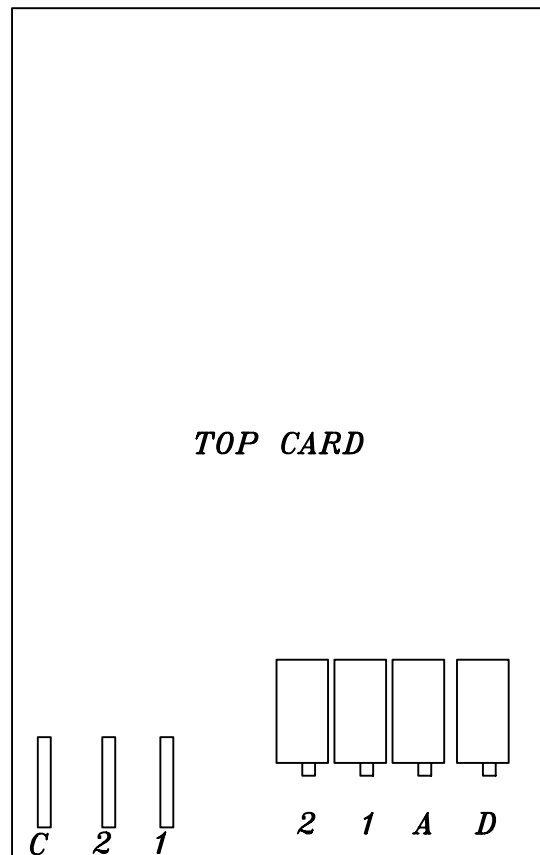
1: LOW SPEED ADJ.

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.

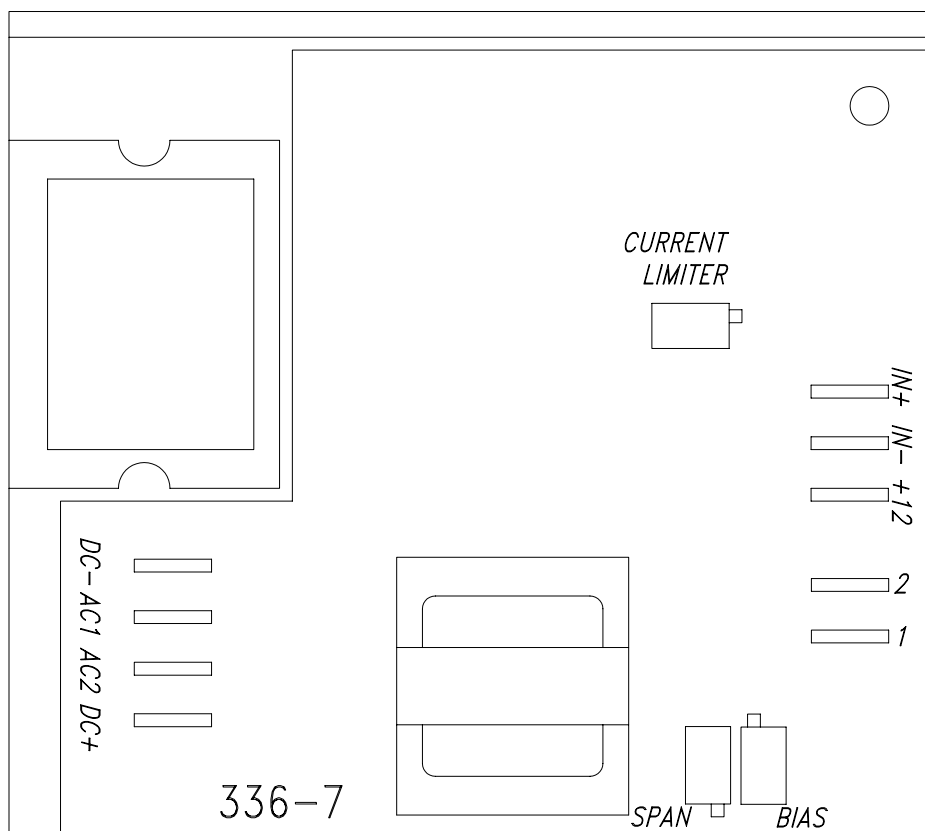
Span: (RV1) The **RV1** pot controls the systems loop gain.

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

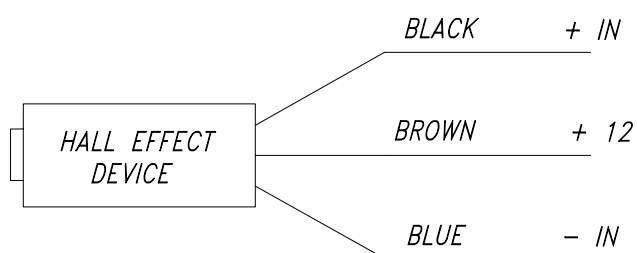
POTENTIOMETER

SPAN: HALL EFFECT SENSITIVITY CONTROL

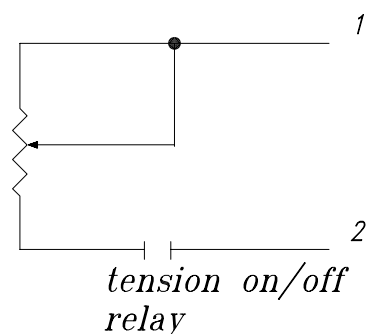
BIAS: SYSTEM BIAS (FACTORY SET)

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

CURRENT LIMITER: (FACTORY SET)

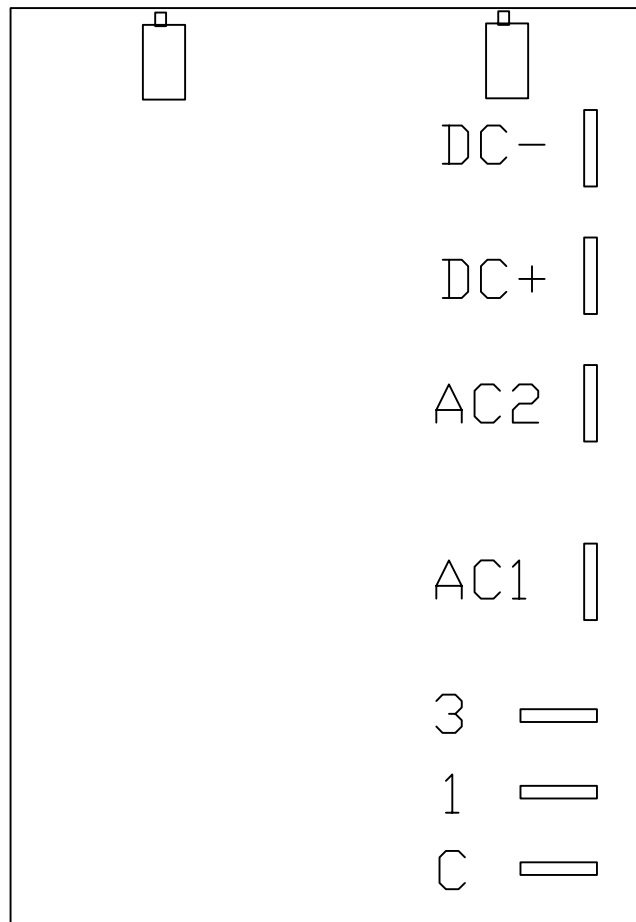


*FILM TENSION ADJUSTMENT
REMOTE POTENTIOMETER*



336-7

MULTISTRETCH BOARD



DC - OUT

DC + OUT

AC2 IN

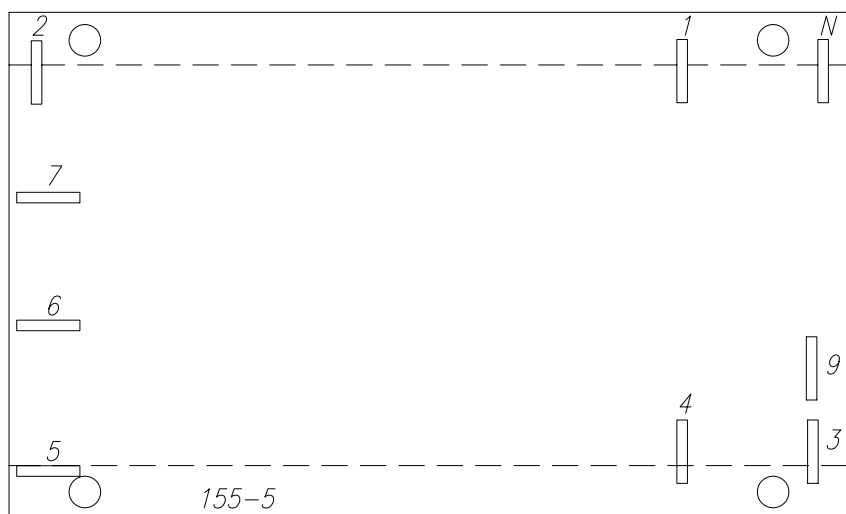
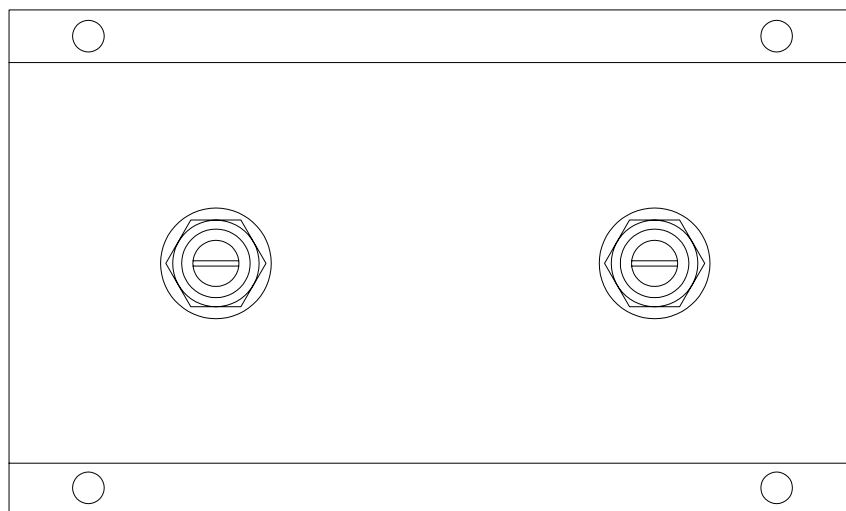
AC1 IN (NEUTRAL)

1 CARRIAGE UP SPEED SIGNAL

C COMMON (NEUTRAL)

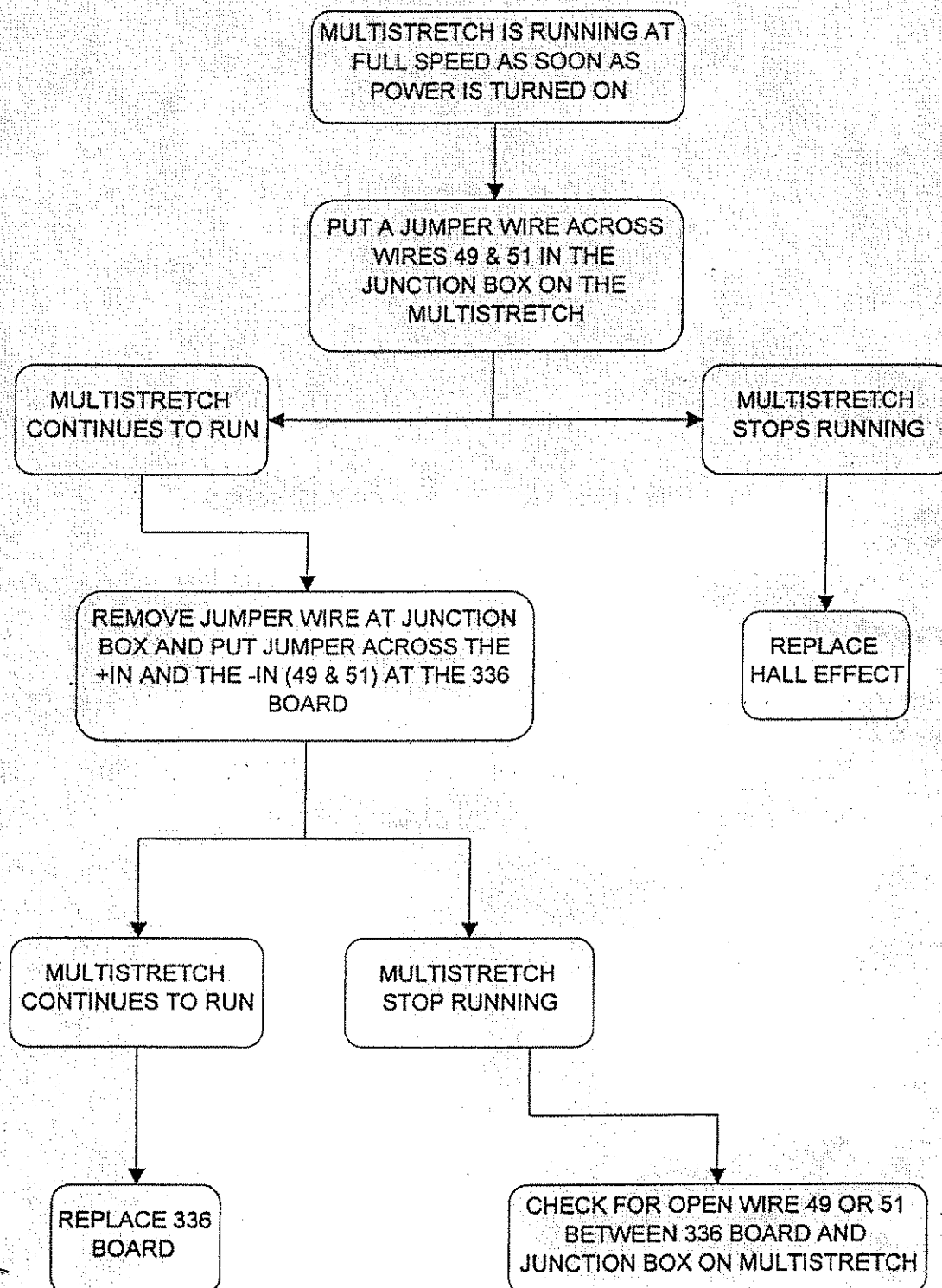
3 3rd TECH. SPEED IN SIGNAL

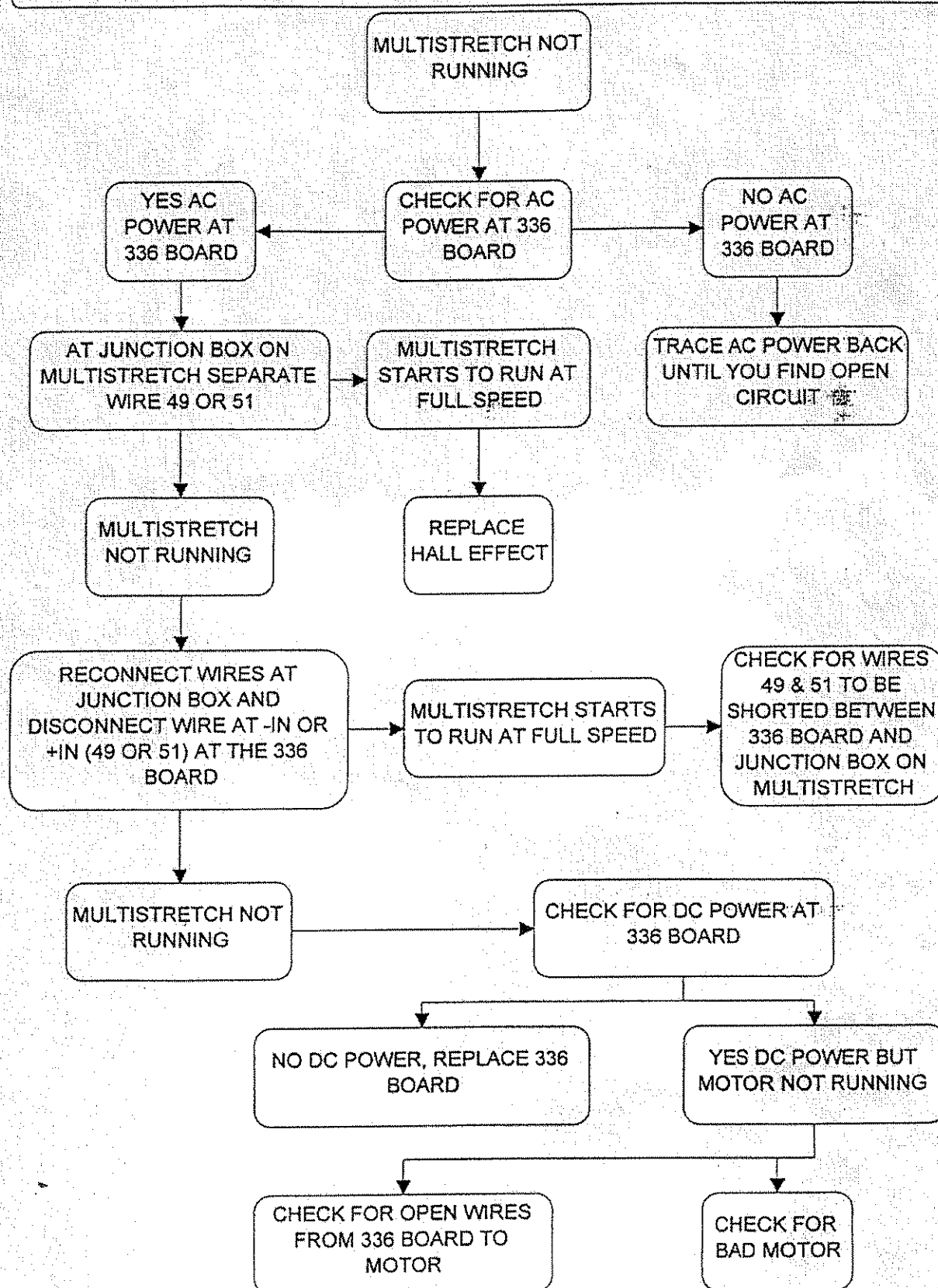
168-5 CARRIAGE UP/DN
3 SPEED BOARD



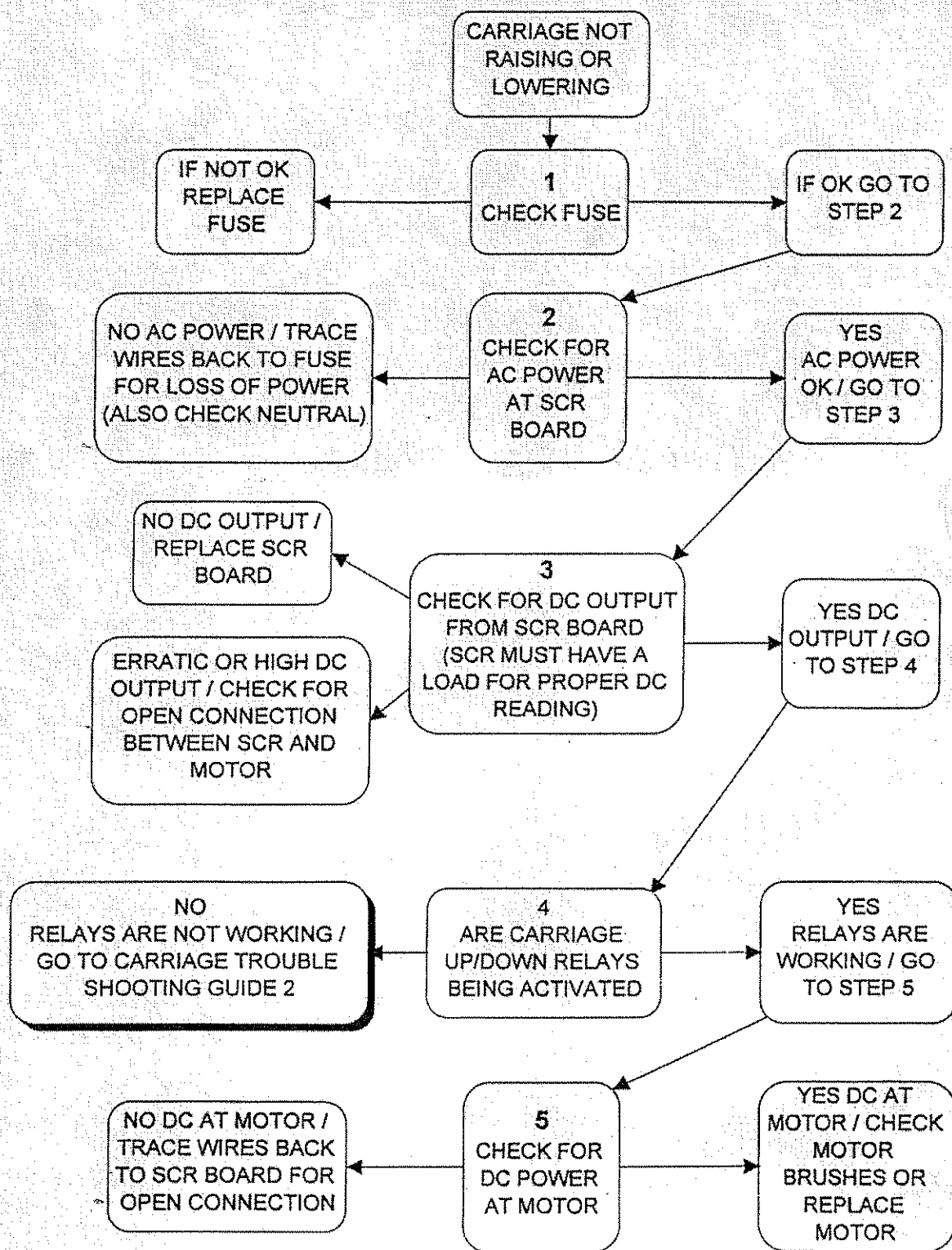
- 1: AC INPUT
- 2: AC INPUT
- 3: COUNT
- 4: RESET
- 5: OUTPUT PULSE AFTER 1-ST COUNT
- 6: OUTPUT T/W
- 7: OUTPUT B/W
- 8: N/A
- 9: COMMON
- N: NEUTRAL

155-5
COUNTER BOARD

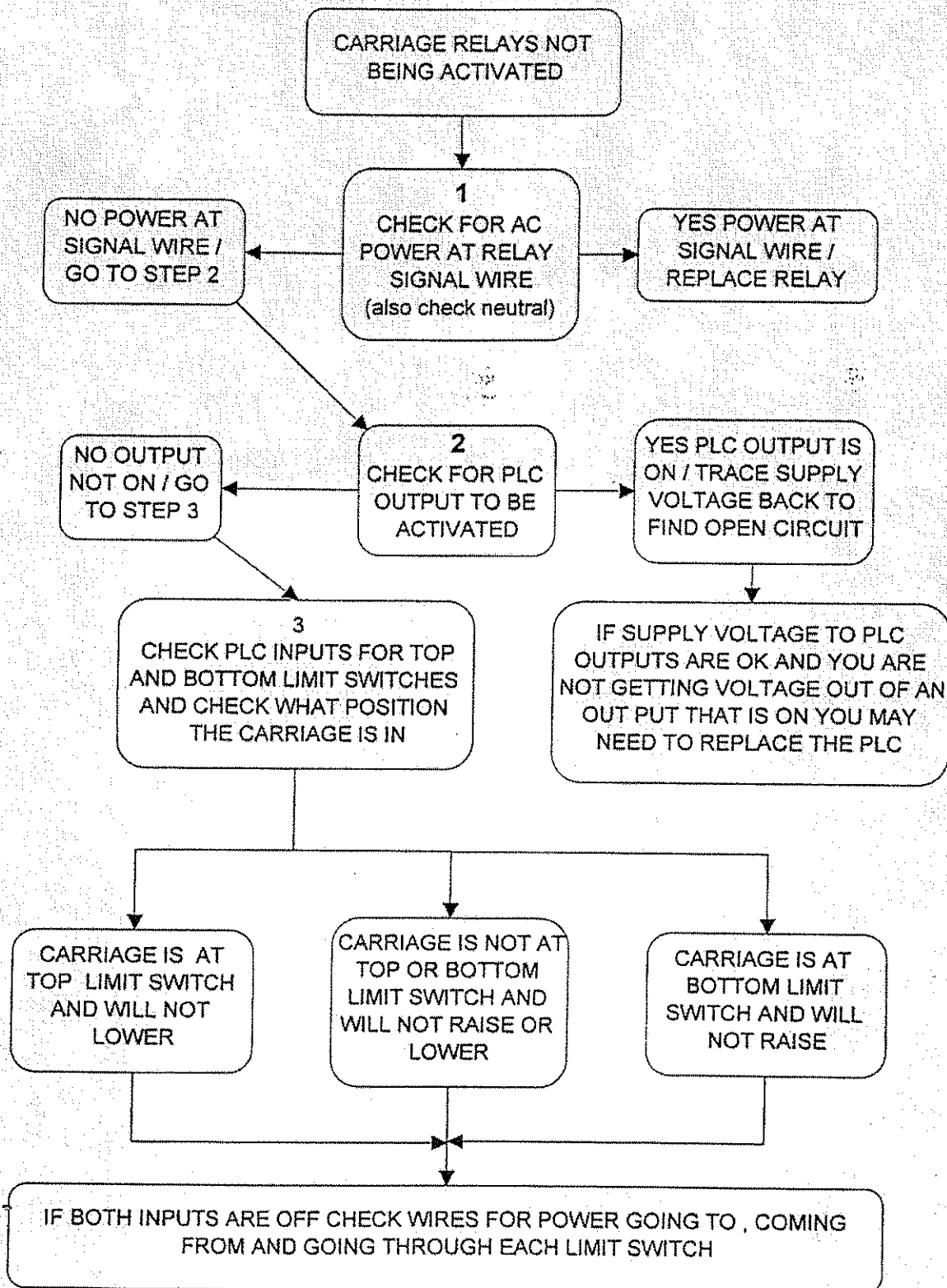
MULTISTRETCH TROUBLE SHOOTING GUIDE 1

MULTISTRETCH TROUBLE SHOOTING GUIDE 2

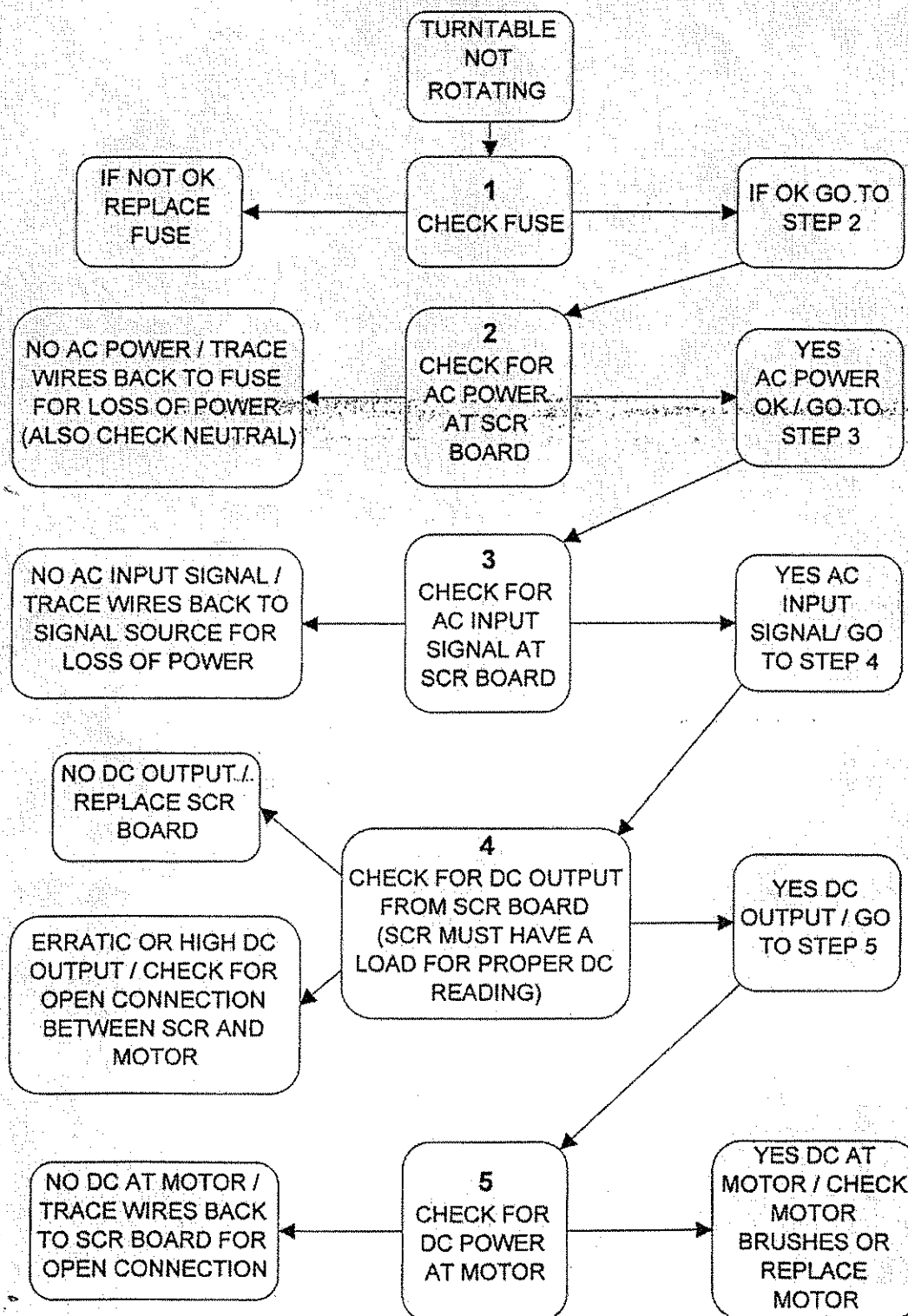
1 BASIC CARRIAGE RAISE / LOWER TROUBLE SHOOTING GUIDE



2 BASIC CARRIAGE RAISE / LOWER TROUBLE SHOOTING GUIDE



BASIC TURNTABLE TROUBLE SHOOTING GUIDE



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