

STRETCHWRAPPERS



INSTRUCTION MANUAL

**FOR ALL INQUIRIES
PLEASE CONTACT
OUR LOCAL DISTRIBUTOR**

**FOR U.S. (ONLY)
1-800-333-6556**

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 6/2274**
- 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.

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').

**SEMI-AUTOMATIC
STANDARD ASSEMBLY
PART LIST**

Note :

- * Quantity listed in order of part number**
- ** The names given to the parts are generic**

4 PARTS LISTS

4.1 Tower Parts List

The exploded assembly drawing of the Standard Tower is shown on drawing number 200 99. Table 1 has the parts listed in order of part number. Note: the names given to the parts are generic.

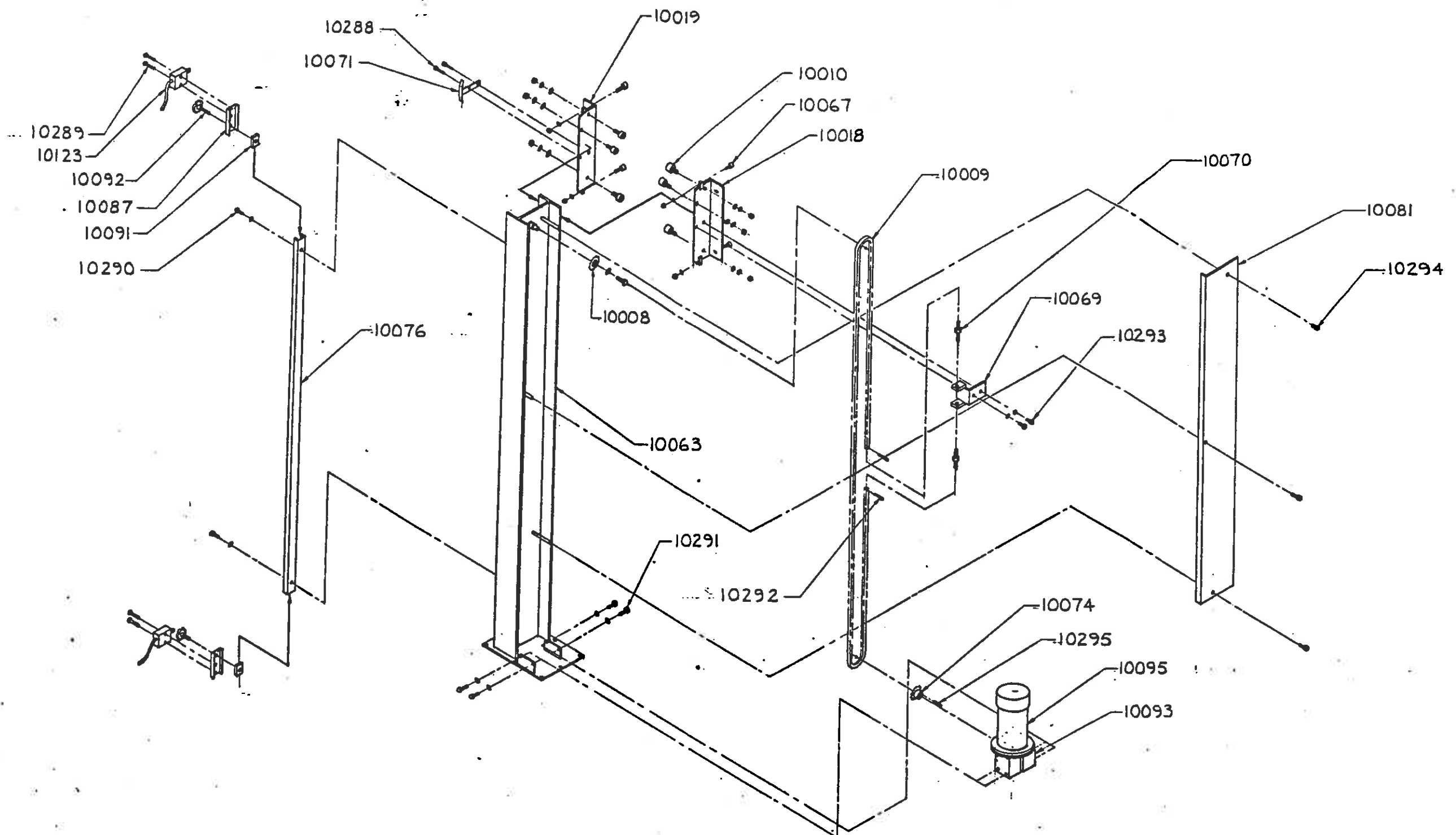
TABLE 1

Tower Parts List

Part Number	Description	Quantity
10008	Idler sprocket	1
10009	#50 chain	1
10010	Cam follower (1 3/8 inch O.D.)	6
10018	Left carriage holder	1
10019	Right carriage holder	1
10063	Tower	1
10067	Cam follower (1/2 inch O.D.)	4
10069	Chain tensioner	1
10070	Chain tensioning screw	2
10071	Limit switch actuator	1
10074	Drive sprocket	1
10076	Limit switch channel	1
10081	Chain cover	1
10087	Limit switch bracket	3
10091	Channel guide	3



10092	Knob	3
10093	Reducer	1
10095	Elevator motor (1/2 hp, 1750 rpm)	1
10123	Limit switch	3
10288	1/4-20 UNC x 1/2 SHCS	2
10289	Limit switch screw	6
10290	Channel screw (1/4-20 UNC x 1/2 SHCS)	2
10291	Transmission screw (3/8-16 UNC x 1 Hex bolt)	4
10292	Chain tensioner pin	2
10293	3/8-16 UNC x 3/4 Hex bolt	2
10294	Cover screw (1/4-20 UNC x 1/2 SHCS)	3
10295	3/16 inch square key	1



ORION PACKAGING MONTREAL		
DESIGN: N.T.S.	APPROVED BY:	DRAWN BY VALENTIN
DATE: 27-6-86		
STD. TOWER ASSY		
L44	H44	L55 M55 PA33
200-99		

4.2 Carriage Parts List

The exploded assembly drawing of the Standard carriage is shown on drawing number 200 100.

Table 2 has the parts listed in order of part number. Note: the names given to the parts are generic.

TABLE 2

Carriage Parts List

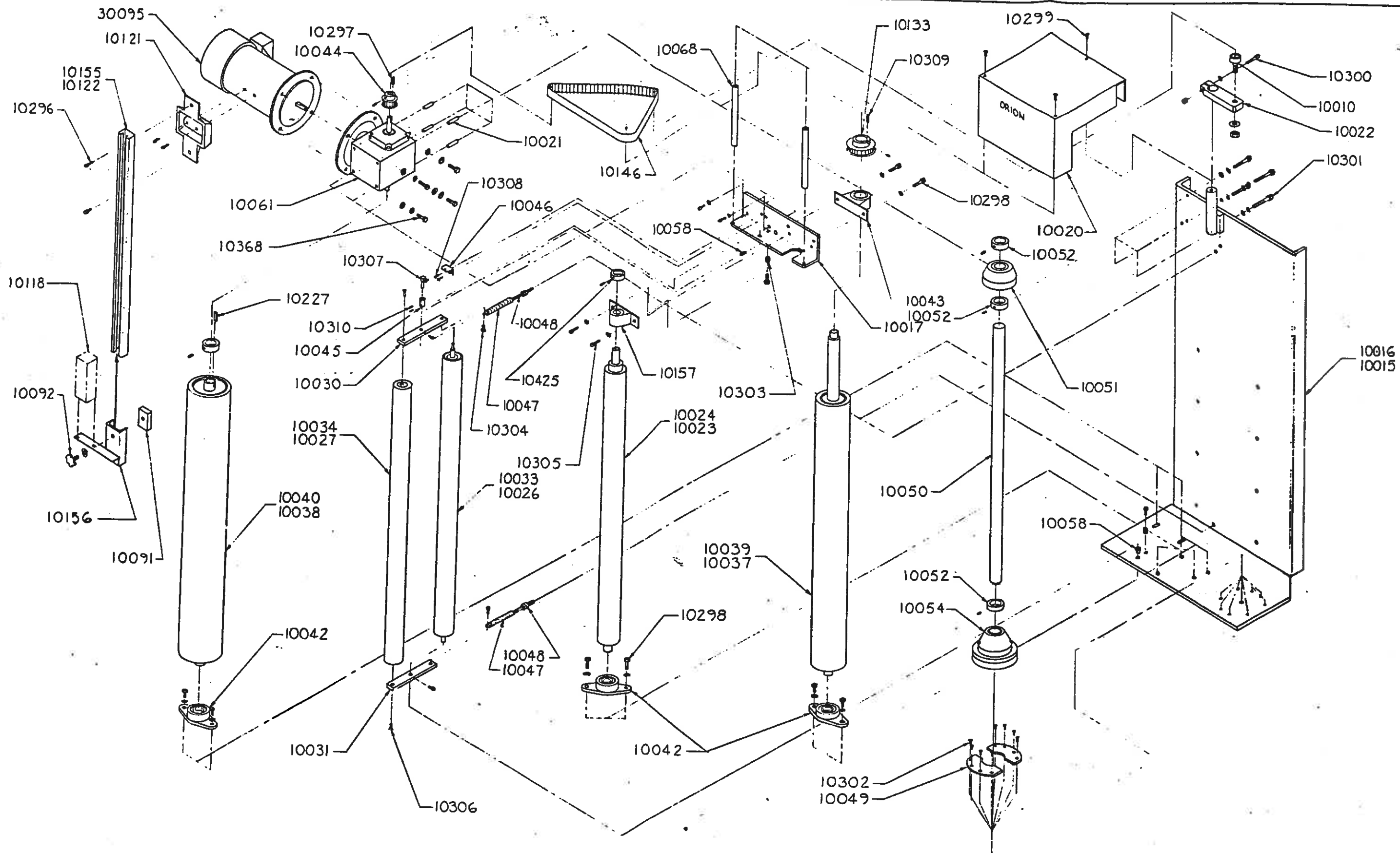
Part Number	Description	Quantity
10010	Cam follower (1 3/8 inch O.D.)	1
10015	20" Carriage frame	1
10016	30" Carriage frame	1
10017	Roller bracket	1
10020	Multistretch mechanism cover	1
10021	Spacer	1
10022	Belt tensioner	1
10023	30" Pressure roller	1
10024	20" Pressure roller	1
10026	30" Center dancer roller	1
10027	30" Roller	1
10030	Top dancer lever	1
10031	Bottom dancer lever	1
10033	20" Center dancer roller	1
10034	20" Roller	1
10037	30" x 3" dia. rubber roller	1
10038	30" x 4" dia. rubber roller	1
10039	20" x 3" dia. rubber roller	1

10040	20" x 4" dia. rubber roller	1
10042	3/4" flanged bearing unit	2
10043	1" Pillow block	1
10044	Prestretch driver pulley	1
10045	Potentiometer coupling	1
10046	Potentiometer bracket	1
10047	Film tension spring	2
10048	Spring adjustment screw	2
10049	Brake pad	2
10050	Film spool mandrel	1
10051	Top mandrel	1
10052	1" Collar	6
10054	Bottom mandrel	1
10058	Bronze bushing	2
10061	Prestretch transmission (5:1 worm & gear)	1
10068	Cover bracket	2
10091	Channel guide	1
10092	Knob	1
10118	Photoswitch	1
10121	Channel bracket	1
10122	30" Channel	1
10133	Prestretch driven pulley	1
10146	Timing belt	1
10155	20" Channel	1
10156	Photoswitch bracket	1
10157	3/4 inch pillow block	1
10227	3/16 inch square key	1



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10296	Channel screw	2
10297	3/16 inch square key	1
10298	3/8-16 UNC x 1 long hex bolt	2
10299	Multistretch cover screw	3
10300	3/8-16 UNC x 2 long SHCS	1
10301	5/16-18 UNC x 2 1/2 long Hex bolt	4
10302	8-32 UNC x 1/2 long BHCS	8
10303	Bumper	2
10304	10-24 UNC x 3/4 long SHCS	2
10305	5/16-18 UNC x 3/4 long SHCS	2
10306	1/4-20 UNC x 3/4 long CHCS	2
10307	Feedback potentiometer	1
10308	10-24 UNC x 1/2 long SHCS	2
10309	1/4" square key	1
10310	10-24 UNC x 1 long SHCS	2
10368	3/8-16 UNC x 1 long hex bolt	4
10425	3/4" collar	1
30095	Prestretch motor (1/2 hp, 1750 rpm)	1



ORION PACKAGING MONTREAL		
SCALE: N.T.S.	APPROVED BY:	DRAWN BY: V. L. GENTILE
DATE: 1-7-66		
STD. CARRIAGE ASS'Y		
44 55 66 FA33 PA33		200 100

4.3 Base And Turntable Parts List

The exploded assembly drawing of the Standard, Low Profile base is shown on drawing number 200

98. Table 3 has the parts listed in order of part number. Note the names given to the parts are generic.

TABLE 3

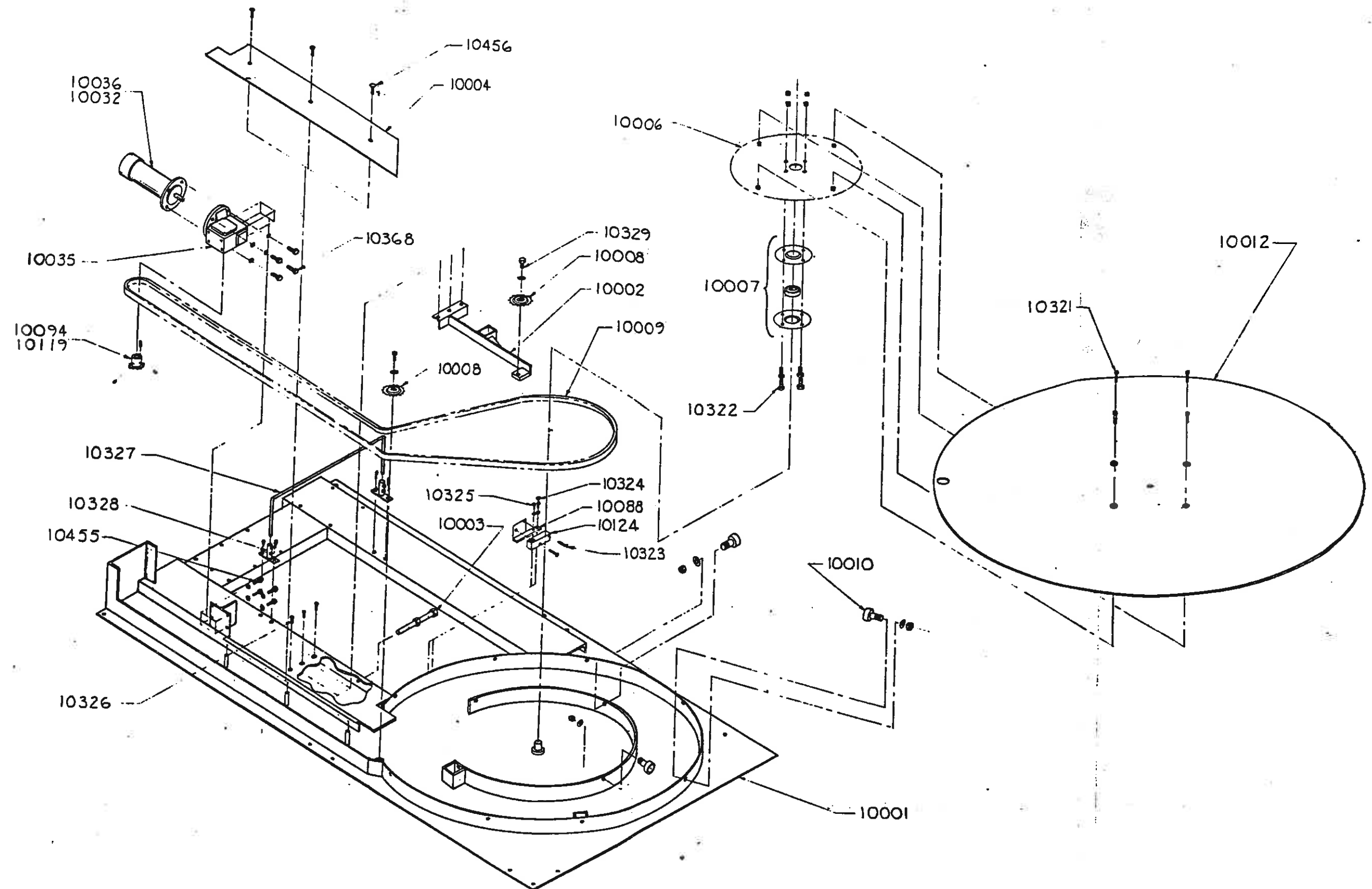
Base And Turntable Parts List

Part Number	Description	Quantity
10001	Base	1
10002	Chain tensioner	1
10003	Tensioning screw	1
10004	Chain cover	1
10006	Turntable sprocket	1
10007	Center bearing unit	1
10008	Idler sprocket	2
10009	#50 chain	1
10010	Cam follower	12
10012	Turntable	1
10032	3/4 hp motor (44)	1
10035	Reducer	1
10036	1/2 hp motor (55)	1
10088	Proximity switch bracket	1
10124	Proximity switch	1
10094	Driver sprocket (44)	1
10119	Driver sprocket (55)	1
10321	3/8-16 UNC x 1 1/2 long SHCS	4



10

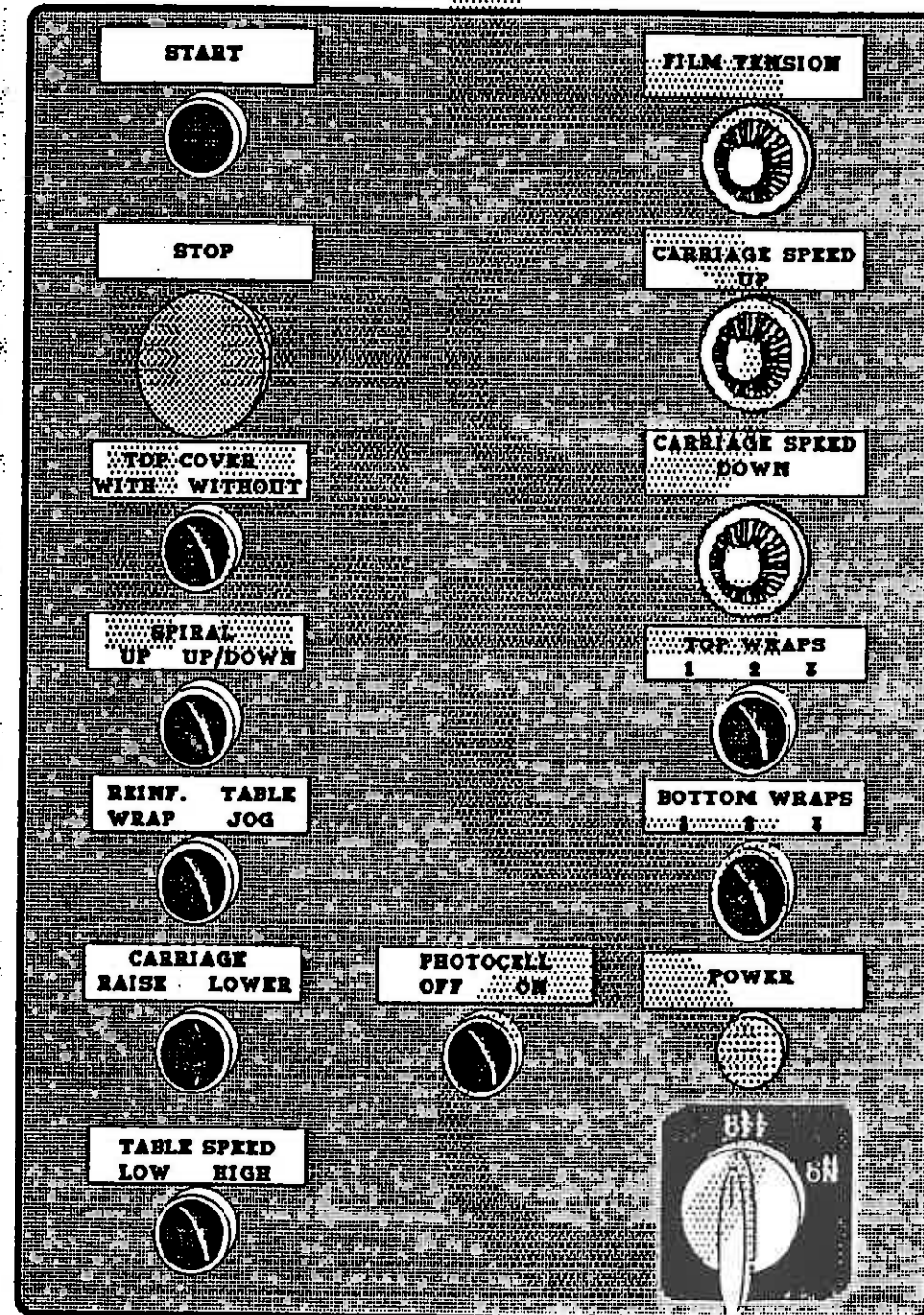
10322	3/8-16 UNC x 1 1/2 long hex bolts	4
10323	Proximity switch screw	2
10324	3/8-16 UNC x 1 1/2 long hex bolt	1
10325	3/8-16 UNC x 1 1/2 long hex bolt	1
10326	3/8-16 UNC x 1 long CHCS	3
10327	Roping bar	1
10328	Roping bar stand	2
10329	5/8-11 UNC x 1 1/2 long hex bolt	2
10368	3/8-16 UNC x 1 long hex bolt	4
10455	5/16-18 UNC x 1 long hex bolt	4
10456	10-24 UNC x 1 long CHCS	3



ORION PACKAGING MONTREAL		
FORM: N.T.S.	APPROVED BY:	DESIGNED BY VALENTIN
DATE: 26-6-86		
STD. LOW PROFILE BASE ASS'Y		
L44	L55	700-1-78

6

MACHINE 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.

Turning the power switch ON causes the POWER light to turn on.

6.2 Start And Stop Switches

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

NOTE: if the Stop button is pressed in the middle of the cycle, the carriage and turntable must be returned back to their home positions by using the jog buttons before restarting the cycle.

6.3 Top Cover Switch

The Top Cover switch has two positions,

WITH - In the WITH position the cycle will stop after one top wrap is completed, allowing the placement of a top sheet on the load, afterwhich the start button may be pressed to resume wrapping.

WITHOUT - In the WITHOUT position the cycle will not pause for the placement of a top cover.

6.4 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.

6.5 Reinf. Wrap/Table Jog Switch

This switch has three positions,

middle position - in this position the switch is inactive and the machine will operate normally.

Reinf. Wrap - when the switch is held in this position during operation the carriage will stop rising or descending in order to increase the number of wraps around the chosen section.

Table Jog - when the switch is held in this position the turntable will turn in a clockwise direction as viewed from the top. The table jog is inoperative during the wrap cycle.

6.6 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 until the photoswitch

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 its respective direction.

6.7 Table Speed Control Switch

The Table Speed Control switch has two settings,

LOW - The LOW setting may be used for wrapping unstable or very heavy loads that tend to fall apart when wrapped at higher speeds.

HIGH - The HIGH setting may be used for wrapping more stable loads. Once the up wrap has been wrapped on the low speed setting, unstable loads may also be wrapped on the high speed setting by switching from LOW to HIGH after the top wraps are done.

6.8 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 wrap 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 photocell's 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 only once the top limit switch has been activated.

7. CYCLE CONTROLS

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 during the cycle.

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.

7.2 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.

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 10 corresponding to the number of wraps which may be applied at the top or bottom of the load.

These switches may be set before the cycle begins.

7.4 Turntable Speed Adjustments

The turntable speed may be changed by adjusting the controls on the 750+233 board inside the panel. The controls on the board regulate the steady-state speed, the jog speed, and the acceleration and deceleration of the turntable. The controls are labeled on the board and listed below:

ZERO - The zero adjustment controls the deadband voltage for the turntable motor; it should be adjusted so that the motor just begins to hum but does not turn.

PRESET 1 - The preset 1 controls the HIGH speed of the turntable.

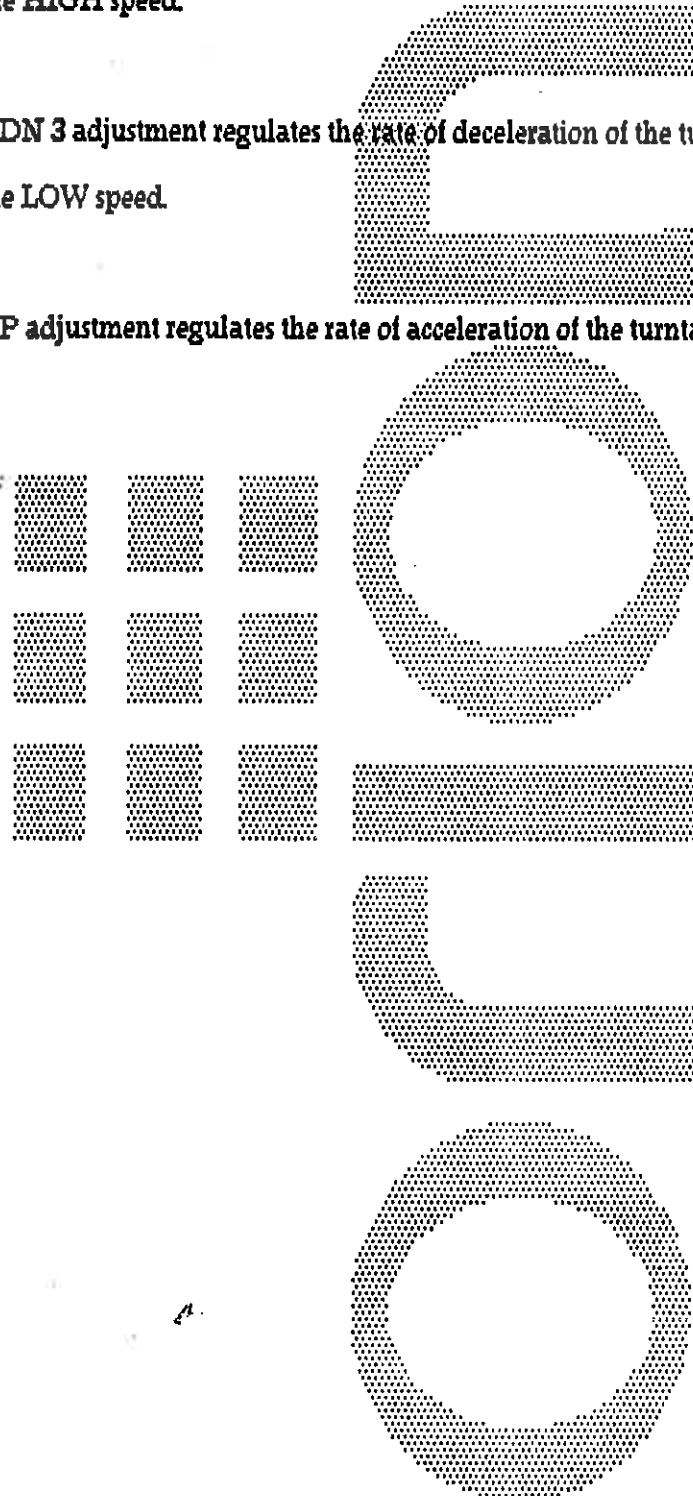
PRESET 2 - The preset 2 controls the jog speed of the turntable.

PRESET 3 - The preset 3 controls the LOW speed of the turntable.

DN 1 - The DN 1 adjustment regulates the rate of deceleration of the turntable for when it reaches the end of the cycle at the **HIGH** speed.

DN 3 - The DN 3 adjustment regulates the rate of deceleration of the turntable for when it reaches the end of the cycle at the **LOW** speed.

UP - The UP adjustment regulates the rate of acceleration of the turntable for the beginning of the cycle.



MACHINE MAINTENANCE

REDUCER OIL CHANGE

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, which ever 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+650T 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

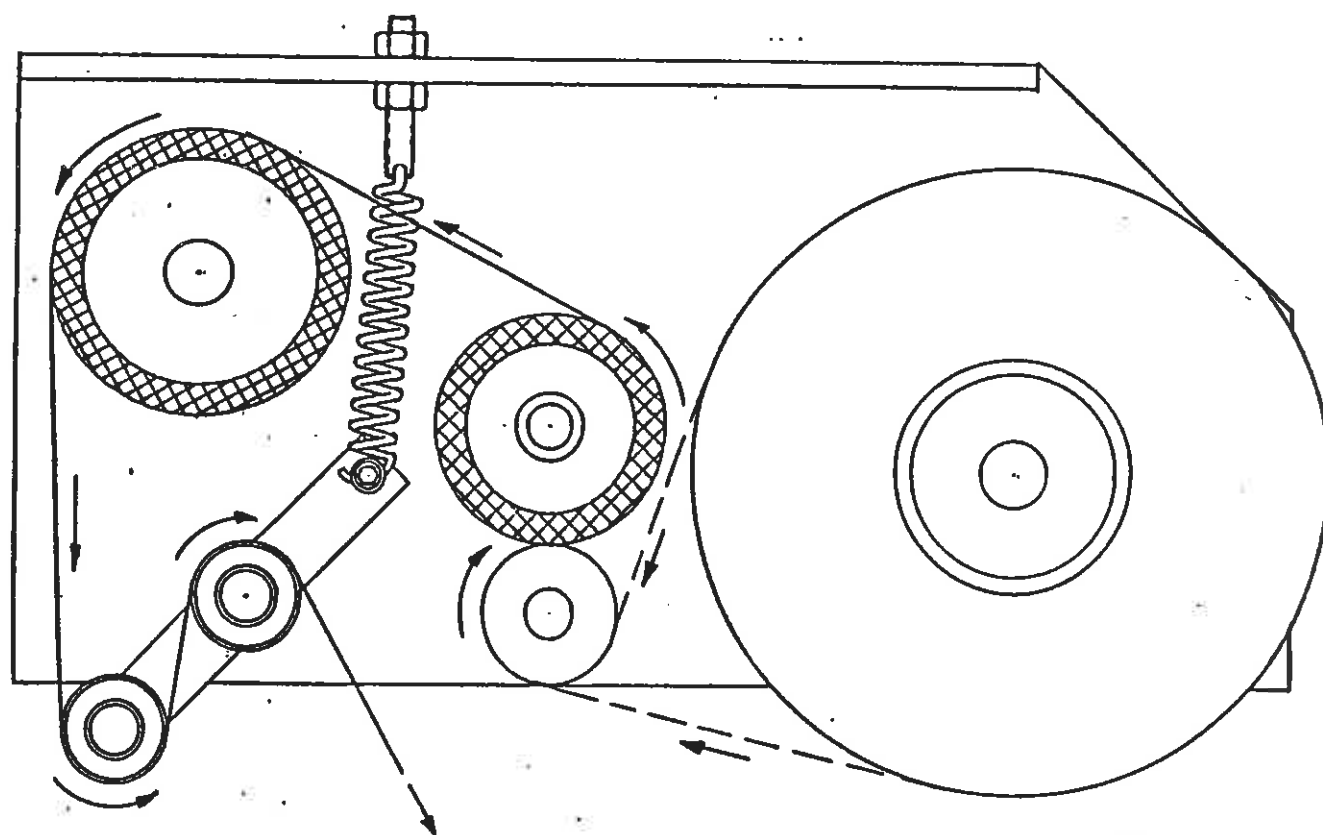
The cam followers behind the carriage have deep grease pockets and do not need frequent relubrication. The portion of the tower on which the cam followers run, should be cleaned and regreased every 300 hours of operation. If the machine operates in a dusty or corrosive environment the tower should be relubricated more often.

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.

ORION MULTISTRETCH



DISCONNECT POWER BEFORE FEEDING

This diagram shows the pattern the film must take around the rollers for the proper operation of the stretchwrapper.

WARNING: The machine must be disconnected from the power source before the film is fed through the rollers. Failure to do this may result in serious injury to the operator and damage to the machine.

Electrical Boards' Chart for ORION Stretchwrappers

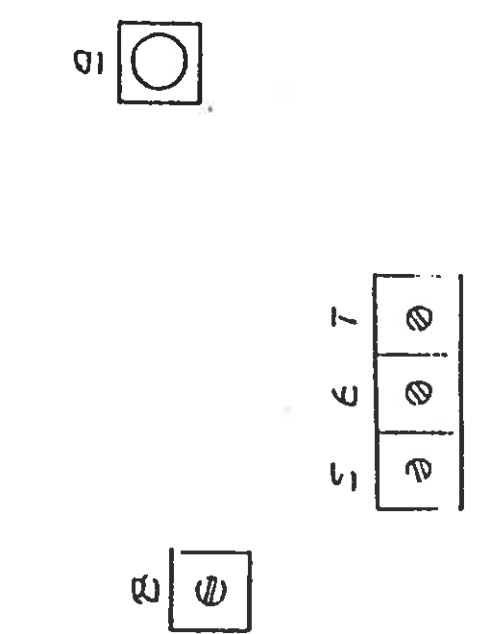
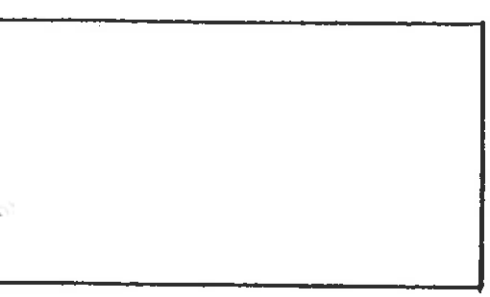
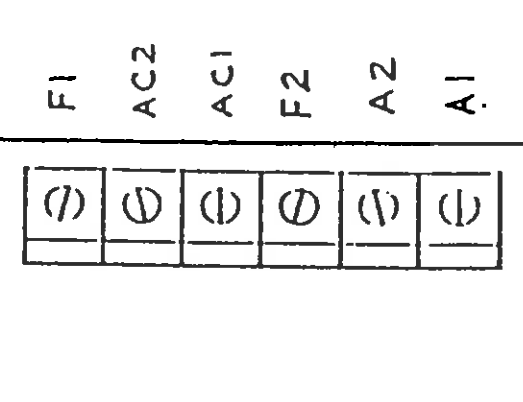
	16B-4	16B-A	236	336	750+	750M-24W	850M	850C	155-3A
MLH 44 Processor	X		X		X				
MLH 44	X		X		X				X
MLH 55		X		X			X		X
MLH 66		X		X			X		X
MLH 77		X							X
PA 33	X			X	X				
FA 33	X			X		X		X	
MA 33	X			X		X		X	
MA 44	X			X	X			X	
MA 55	X			X			X	X	

2 to 4
2 to 3

230 VAC
1 to 5
2 to 6

JOG
1 2
3 4
ZERO

JOG
FAST
COM
SLOW



F1
AC2
AC1
F2
AZ
AI

FO4: TURNABLE SERVO AND ACC.
1. JOG SPEED ACC.
2. LOW SPEED ACC.
3. HIGH SPEED ACC.
4. LOW SPEED DECELERATION ACC.
5. HIGH SPEED DECELERATION ACC.
6. ACCELERATION ACC.
7. LOAD RANGE ACC.
8. ...

ORION PACKAGING INC.

DESIGNED BY: J. J. J.	APPROVED BY: J. J. J.
DRAWN BY: J. J. J.	REVIEWED BY: J. J. J.
DATE: 9-09-97	
750 MX	
NUMBER OF DESIGNS DRAWING NUMBER	

7.6 Electronic Adjustment of the 750M Circuit Board.

STEP 1 - Turn potentiometers #1, 2, 3, 4, 5, 6, and 7 counter-clockwise to their furthest off position.

STEP 2 - Potentiometer ZERO regulates the constant voltage to the turntable at the start of the beginning cycle. To adjust turn #4 in a clockwise direction until the table begins to turn very slowly. Wait a few seconds, then turn it in the other direction until it stops. You may hear a constant hum coming from the motor, this is OK as long as the table does not turn.

STEP 3 - Potentiometer #2 regulates the jog and soft end speed of the turntable. Activate the Jog control and at the same time turn potentiometer #2 in a clockwise direction until the turntable begins to rotate at the rate of speed you desire for your jog and soft end speed.

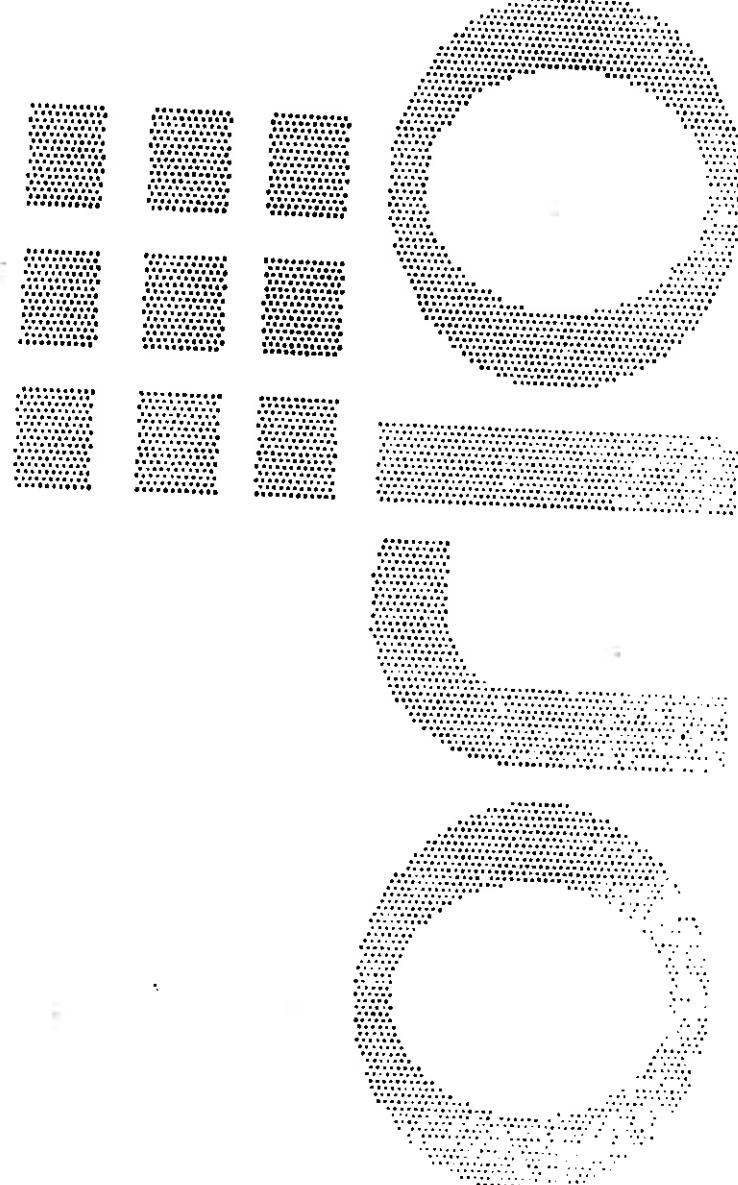
STEP 4 - Potentiometer #3 regulates the high speed of the turntable when in full motion and #1 the low speed. Adjust these two potentiometers until the turntable rotates at the desired speed. These two adjustments can be made at any time without affecting the other adjustments.

STEP 5 - To properly adjust Potentiometer #6 the machine must be started into a complete cycle. Turn #6 to approximately its halfway position and start the machine by pushing the START button. Observe how the turntable goes from its soft-start motion to its full operation motion. If you wish to increase the time in the soft-start mode turn #6 clockwise; to slow it

down, turn #6 counter-clockwise.

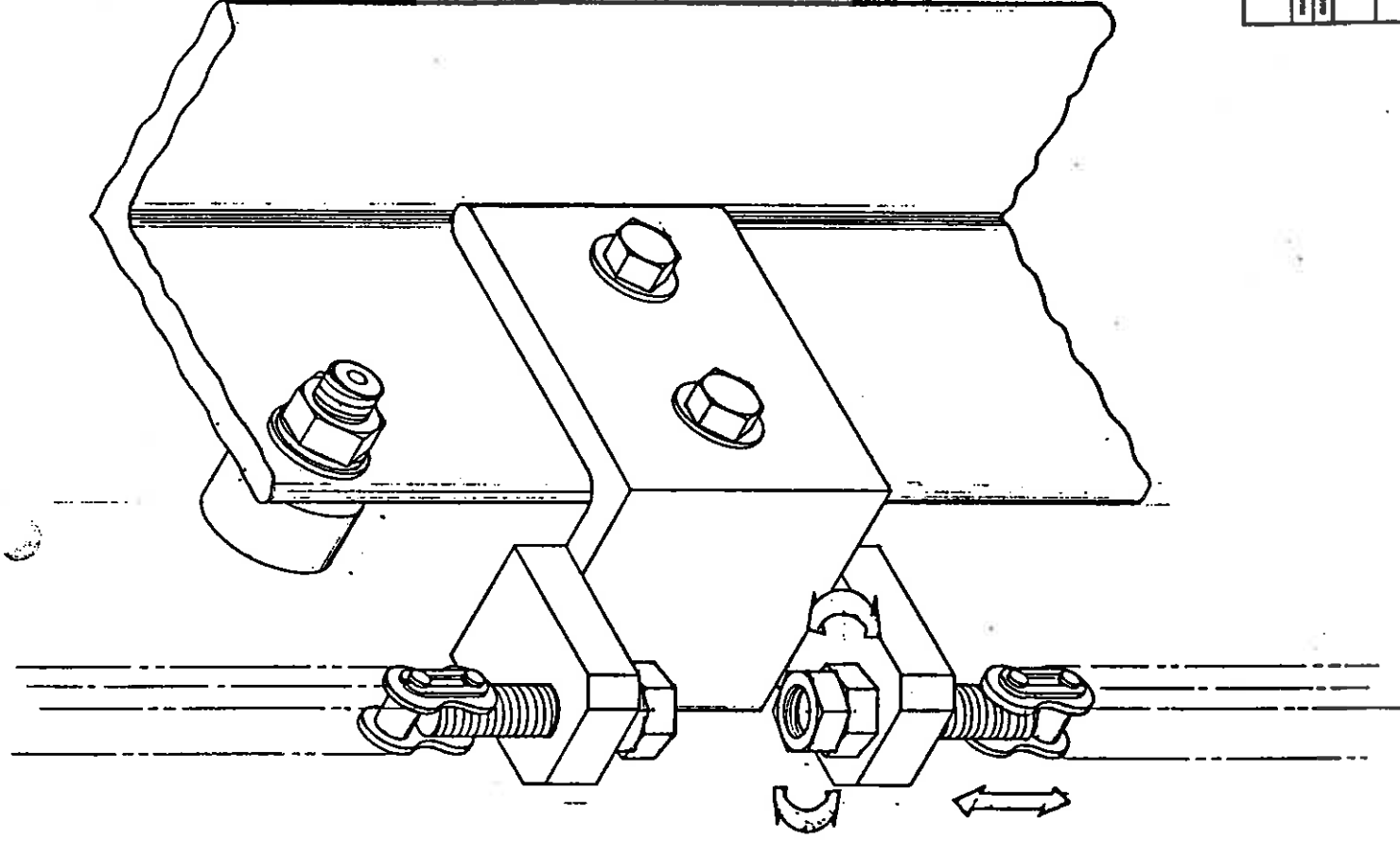
STEP 6 - To adjust the positive alignment feature, each speed must be adjusted independently; #5 is for the high speed and #4 is for the low speed. If the proximity switch is not working, the high speed will not work.

If the proximity switch port goes beyond the bullseye turn the proper potentiometer in a counter-clockwise direction only a few turns and try the wrapping cycle again until proper alignment has been obtained. Conversely, if the table stops prior to reaching the bullseye, turn the proper potentiometer in a clockwise direction. This adjustment can be done independently without affecting any other adjustments.



168-4	DC
DC	
AC2	
AC	
L	

ORION PACKAGING INC.			
ECHELLE: SCALE:	N.T.S.	APPROUVE PAR: APPROVED BY:	DESSINE PAR: VALENTINI DRAWN BY:
DATE:	16-9-87		REVISE PAR: REVISED BY:
168-4			
			NUMERO DE DESSIN DRAWING NUMBER
			200 892



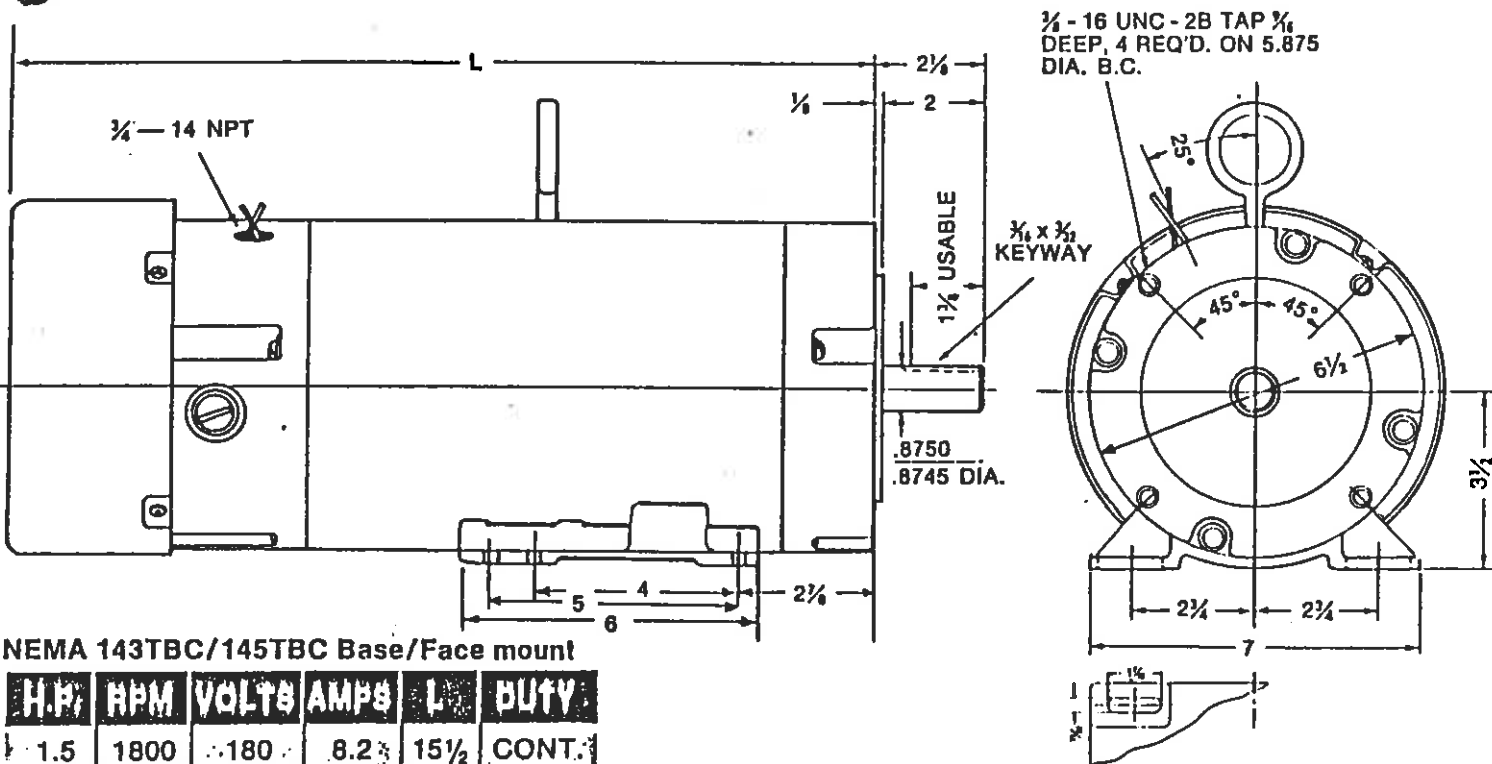
CHAIN TENSION
ADJUSTMENT

ORION PACKAGING

part no. N.T.S.	approved by	inspected by P.A.C./P.H.
date 10-7-86		
CHAIN TENSIONER ASS'Y		
200-192		

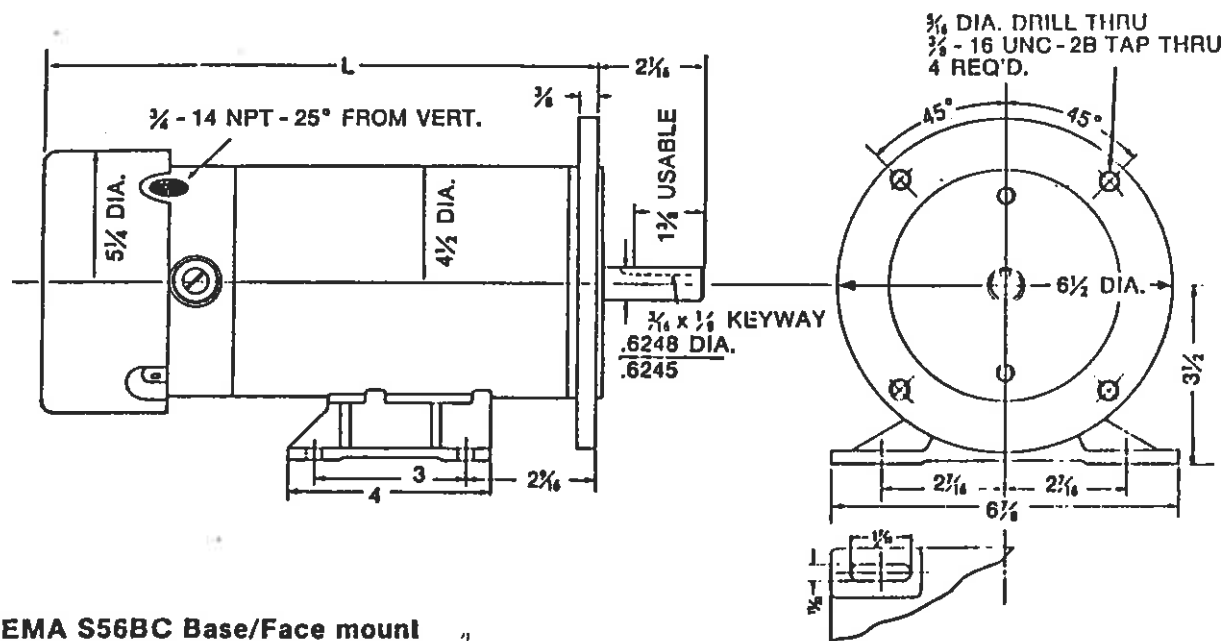
Motor dimensions

TEFC P/M motor



NEMA 143TBC/145TBC Base/Face mount

H.P.	HPM	VOLTS	AMPS	L	DUTY
1.5	1800	180	8.2	15½	CONT.
2	1800	180	11.6	16½	CONT.



NEMA S56BC Base/Face mount

180 V.

H.P.	RPM	VOLTS	AMPS	LV	DUTY
1/2	1725	180	2.8	10%	CONT.
3/4	1725	180	3.5	12%	CONT.
1	1725	180	5.35	14%	CONT.

90 V.

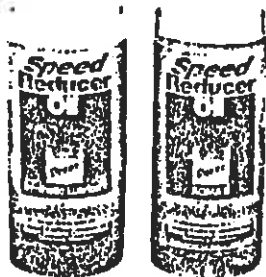
H.P.	HPM	VOLTS	AMPS	L	BUTY
1/2	1725	90	5.35	10%	CONT.
3/4	1725	90	8.1	12%	CONT.
1	1725	90	10.6	14%	CONT.

Lubrication

REDUCERS MAY BE FILLED TO THE PROPER LEVEL AT THE FACTORY WITH AGMA No. 8 compounded oil. AFTER INSTALLATION OF THE BREATHER PLUG, UNIT IS READY FOR USE. Before installing breather plug, refer to instruction tag and determine proper position according to reducer mounting.

We recommend an initial oil change after 250 hours of operation, then every six months or every 2500 hours of service under Class I Service. If fluctuating temperatures, humid, dirty or corrosive environment, oil changes should be made more frequently. Frequency can be established by oil sample analysis.

KEEP YOUR OIL CLEAN



Doerr Electric replacement oil

To order oil, request:

Doerr part no. 00019001 — synthetic AGMA #7EP
(- 40°F to 150°F)

Doerr part no. 00019101 — AGMA #8 (50°F to 125°F)

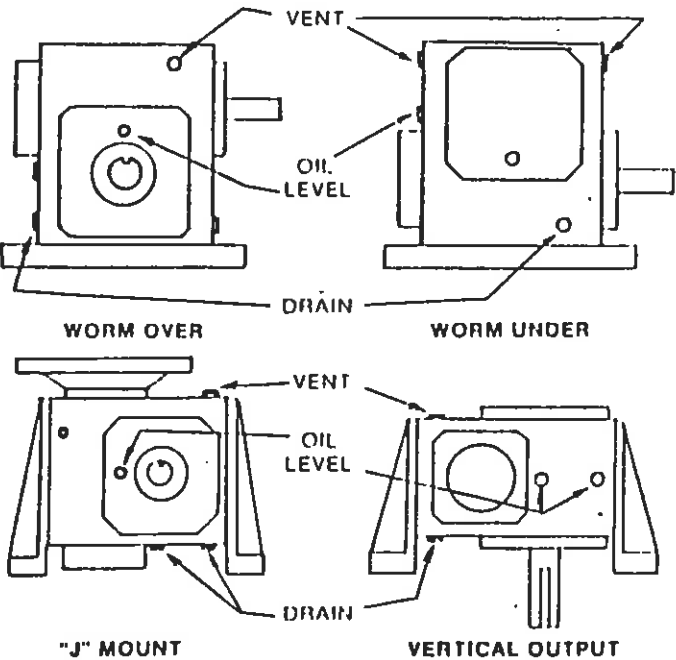
Oil is packed 12 one quart bottles per carton, minimum ship one carton.
Contact DEC Service Dept. for order information.

OIL CAPACITIES*

UNIT TYPE	UNIT SERIES				
	143	175	200	202	323
Worm Over	14	20	27	49	84
Worm Under	17	22	28	49	73
Vertical Output	10	15	20	37	63
"J" Mount	13	18	23	38	63

*Capacities in approximate ounces. On double reduction units determine capacity of both primary and secondary reducers.

OIL LEVELS*



*On double reduction units fill and vent each unit to levels shown.

