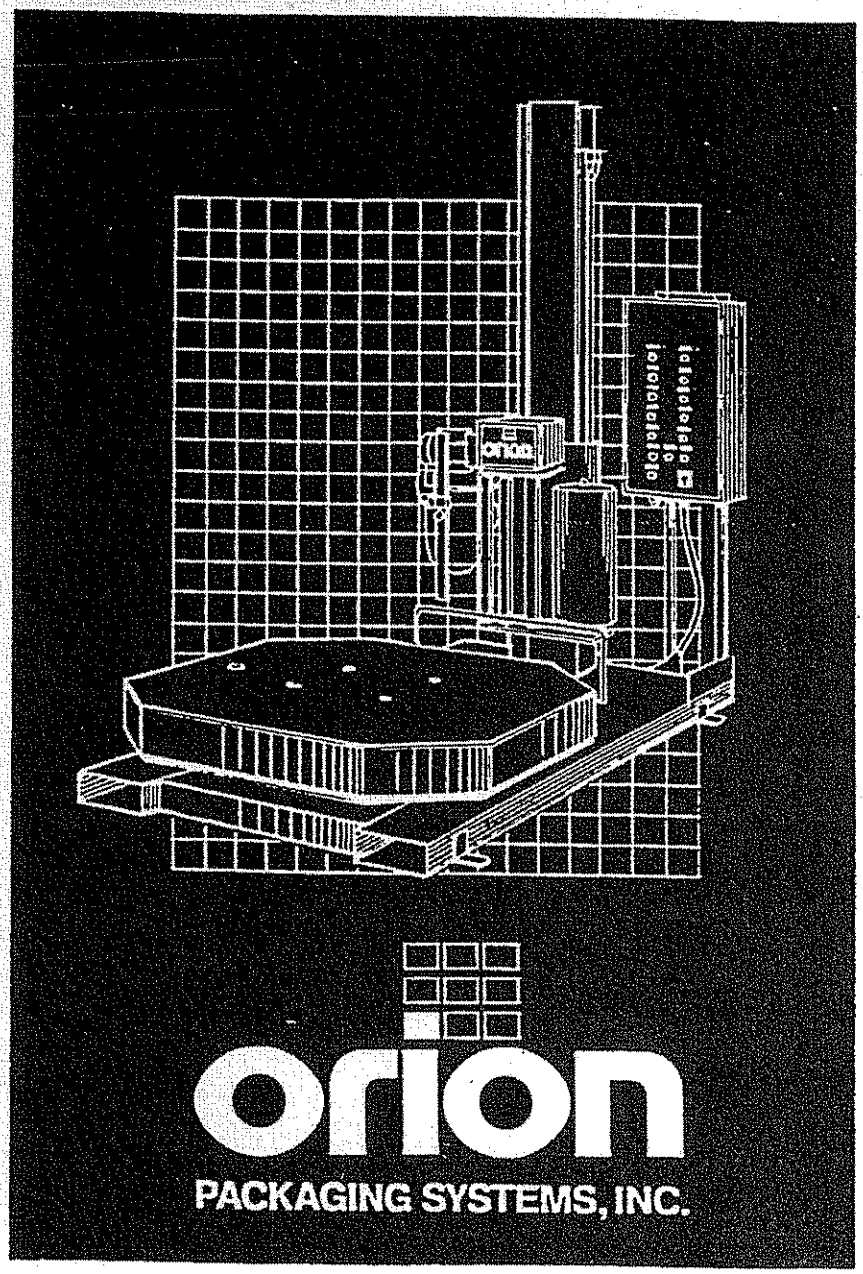


2270 Industriel, Montreal (Laval), Canada, H7S 1P9
Tel.: (450) 667-9769, Fax: (450) 667-6320

orion®
PACKAGING INC.

OPERATION MANUAL

For All Inquiries
Please Contact
Our Local Distributor

FOR U.S.A. (Only)
1-800-333-6556

Thank you for choosing ORION'S 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 and skills.

Please read this manual carefully and keep it handy. Following these simple operating instructions will insure the safe and efficient performance of this machine and simple maintenance procedures will guarantee 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
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 a potential injury and/or electrical shocks, 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 all inspection, maintenance or repair work.

ORION PACKAGING SYSTEMS INC.
SEMI-AUTOMATIC SPECIFICATIONS - EFFECTIVE MARCH 15, 2000

ORION EPIC® SERIES MODEL H-77

Spiral Semi-Automatic Medium Duty High Profile

Maximum Load Size	55"W x 55"L x 82"H
Weight Capacity	4,000 lbs. Dynamic, 8,000 lbs. Static
Utilities	115/1/60 15 Amp Service
Turntable	48"x48" Structural Steel Plate Turntable with Welded Steel Skirt Dura-Glide™ Turntable Support System Quiet in Operation, Maintenance Free
Turntable Drive	0-12 RPM Variable Turntable Speed Variable Speed Drive Motor Electronically Adjustable Acceleration/Deceleration (Soft Start) Direct Heavy Duty Chain & Sprocket Drive Positive Alignment Feature
Control Features	CSA Approved, NEMA 12 Control Panel State-of-the-Art Logic Control User Friendly Microprocessor with Micro-Switch Keypad Revo-Logic™ Exact Wrap Counting Technology Electronic Film Tension Control Adjustment on the Panel Separate Top / Bottom Wrap Count Selectors with LED Count Display Variable Speed Film Carriage Up/Down Control Film Carriage Raise/Lower Switch (Manual) Photocell for Automatic Load Height Detection Turntable Jog Pushbutton
Film Delivery	20" Insta-Thread LT Powered Pre-Stretch Film Delivery System 200% Pre-Stretch Ratio Easy & Safe to Operate Self-Threading Carriage Design Electronic Film Tension Control Adjustment on the Panel Variable Speed Film Output (Non-Wearing Sensor) Heavy Duty Chain & Sprocket Ratio Control Adjustable Film Roping Bar on Chassis for Stronger Interlocking of Load and Pallet
Film Carriage Elevator Drive	Heavy Duty ANSI Chain Carriage Lift Variable Speed Drive Motor Multi-Point UHMW Precision Carriage Guidance System
Structural Features	100% Structural Steel Construction Throughout Easy Access to All Components Open Mechanical Design for Ease of Maintenance Forklift Portable Base Design Structural Steel Tube Mast Hinged Mast for Ease of Shipping, Portability
Estimated Shipping Weight	1,100 lbs.

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 enter the forks under the frame or insert the forks in the tube brackets welded to the top of machine.

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.

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

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/or polyurethane covering on the film carriage 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. Any transport damage cannot be claimed to Orion Packaging Inc.

Items that are vulnerable to damage and must be inspected:

- motors and transmissions (transmissions may require purge plugs which could have been be unplugged for the transport purpose).
- junction boxes
- electrical conduits
- proximity and limit switches
- photocells

3. Check the turntable assembly 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 film carriage to be sure that it is correctly aligned with the tower
- 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 shall be connected as specified on the diagrams supplied with the machine.
An electrical diagram is provided with each machine in the operating manual envelope attached to the panel enclosure.

ASSEMBLY PROCEDURE

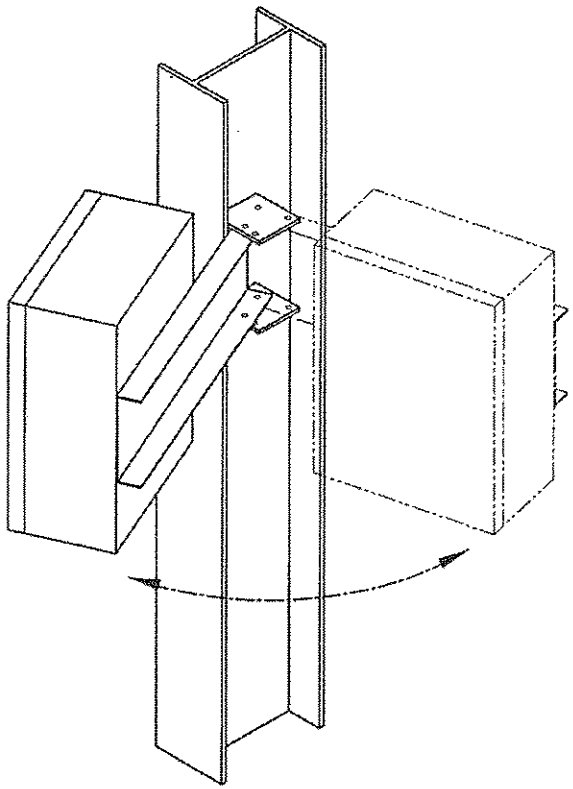
The structural frames of the machine have to be installed on a leveled floor. Locate the main wrapper section into its final position, keeping the tower assembly away from any traffic.
The wrapper mainframe section **must be bolted to the floor by the 1/2"** concrete floor anchors (leg & shield or expandable type).
NOTE: Mongoose M66IS or M67IS the "Z" stand **must be bolted to the floor by the 5/8"** or stronger anchors

- Any wiring that has been disconnected to facilitate transport is marked with a number located on the junction box to which the wiring must be reconnected. 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.
- The tower deviation from vertical must not exceed 1/4" on the distance of 10 feet (angle: 0 degree 6').
- The conveyor roller deviation from horizontal must not exceed 1/16" on the distance of 52" (angle: 0 degree 4').

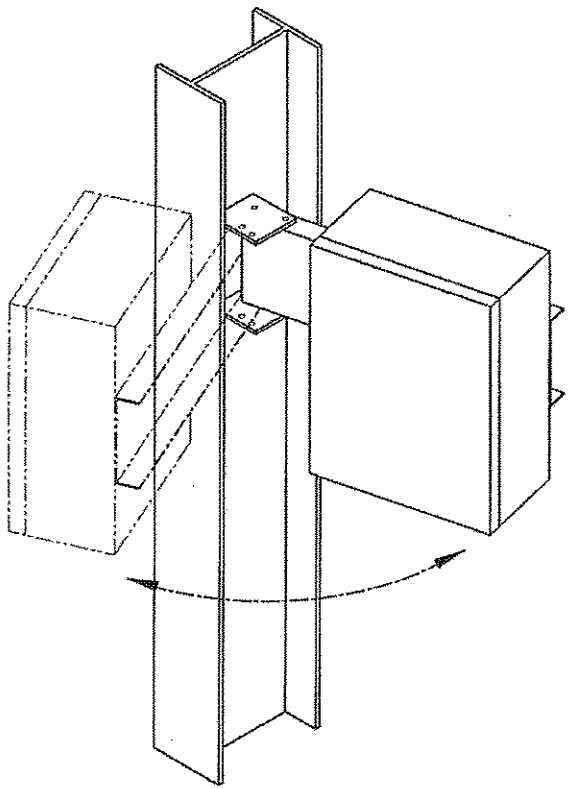
CONTROL PANEL

In the case of the free standing panel (console) place it adjacent to the system and anchor firmly to the floor. Connect the liquid tight (rigid conduit) to the main junction box located on the wrapper main frame next to the tower.

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



Position 1



Position 2

CONTROL PANEL MOUNT
TWO POSTIONS

UPDATED FEB-15-99 DWG #418390

755 Orion Integrated Digital Control Center

OPERATING INSTRUCTIONS

Description

General Description

The system is an integrated control for a Stretch-Wrap machine. It includes three DC motor controls:

- Carriage Control, reversing.
- Turntable control, fully programmable via keyboard interface.
- Multistretch control, fully programmable via keyboard interface.

The 755 Control comprises three principal sub-assemblies:

- Keyboard and display - for setting and viewing the system parameters. (Type 755.1 Fig. 1)
- Microprocessor board - overall system control (Type 755.2 Fig. 2)
- Motor Control and Interface Assembly (MCIA) (Type number 755.3 Fig. 3)

These items are mounted and wired in a Nema 12 enclosure mounted to the machine. The Membrane switch/display operator's interface is on the door of this enclosure.

Reference Drawings:

HL77-16 DWG. # 302 296/1
HL77-16 DWG. # 302 317/1

Description of Sub-Assemblies

- **KEYBOARD AND DISPLAY Type 755.1**

This board contains 12 pushbuttons and three, seven-segment display modules (three digits). It is used to start an automatic wrapping cycle, or to operate the machine manually, and also to set and adjust the control parameters (carriage speed, film tension value, and turntable speed...). It mounts on the enclosure door, behind the Membrane Label.

The keyboard communicates with the microprocessor board through a 28-pin connector (**P1**).

- **MICROPROCESSOR BOARD Type 755.2**

Contains the system microprocessor, E^2PROM memory.
This board generates the reference and control signals for the three machine drives: Carriage, Turntable and Multistretch. It plugs into, and mounts behind the Keyboard/Display above. Connection to the MCIA (below) is by a 20-way ribbon cable.

- **MOTOR CONTROL AND INTERFACE ASSEMBLY (MCIA) Type 755.3**

This assembly comprises a motherboard, power supplies and card rack, into which plug the three Distinct DC Motor controls. These latter regulate the function of the machine (Multistretch, Turntable and Carriage). The Mother Board houses the reversing relays for the Carriage, and connectors to interface with machine. It also includes two regulated DC supplies - +5 VDC for the Microprocessor Board, and +24VDC for the Hall Effect Device (which senses position of Multistretch dancer roller).

3. MULTISTRETCH CONTROL SECTION

The Multistretch drive is a solid state DC motor control specially designed for use in Constant Tension Mode on stretch-wrap machines. The unit functions as a pay-off drive, unwinding the pre-stretched film as the turntable and pallet rotate, and continuously regulating tension as the diameter of the wrapped load changes. Since the typical pallet load is of square cross section, the effective diameter changes abruptly with rotation; the film tension is monitored by a tension-arm, held in place by spring pressure. As the film tension changes, the arm moves, rotating a cam, and the cam orientation is sensed by a Hall-Effect transducer. The transducer is powered at 24VDC by a regulated supply on the MCIA. The transducer signal varies with the separation between its sensing head and the cam surface – the output range is from about 0.5 to 3.5 volts DC. The amplified transducer signal controls motor torque, increasing or decreasing it so as to restore the tension-arm to its previous position, and to maintain tension at its preset level. The system response is tailored so that these small corrections are smooth, continuous and largely imperceptible. The tension defaults to Minimum when the external Tension Adjustment circuit is opened. The control offers a film-break detection feature to be described later.

ADJUSTMENTS:
The operator, using the digital interface - as described on page 4 - can set the film tension. In addition to the above-mentioned digital tension adjust, there are three trimming potentiometers. These trimmers are accessible through the faceplate of the plug-in control, (See Fig. 3), function as follows:

- ZERO (RV1)

This control injects an offset voltage, which adds or subtracts from the Tension Voltage Reference; this will allow the extremes of adjustment from the digital interface to be set to levels consistent with proper operation. Typically, the "Zero" will be used to centre the operating range in the linear portion of its characteristics. This adjustment is normally made at the factory and should not require field adjustment. For reference, the factory test procedure calls for a voltage setting of 1.15 Volts DC across Zener Z1, achieved by adjusting RV3. The machine should be stopped and the film removed for this adjustment.

- SPAN (RV2)

This controls the system loop gain, and may be adjusted if the motor continues to turn when the dancer arm is unloaded. The potentiometer should be adjusted to ensure that the motor is de-energised in this condition, with the machine stopped, and so that a light pull on the free end of the film causes it to feed freely.

- TRIP

An on-board comparator detects "film break" or "no-film" by monitoring armature voltage. Potentiometer RV3 adjusts the relay trip level. The comparator output is fed back to the Microprocessor Board, and a Film Break Signal will cause the Machine to Pause if an Automatic Cycle is in progress.

CURRENT LIMIT
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 Tension arm. It is set at the factory to suit 1/2 HP motors.

CONNECTION

The Motor Armature attaches to terminals (+) (-) accessible through the faceplate of the plug-in module. The unit is suitable for permanent magnet shunt style DC motors with 90 V armature rating, sized at up to 3/4HP.

TURNTABLE CONTROL SECTION:

The turntable control is a DC Motor control designed for use as a turntable drive of wrapping machines, where long and repeatable acceleration and deceleration times, and remotely selectable pre-set speeds are required. The unit requires a 90 V armature, permanent magnet dc motor as output device.

CURRENT LIMIT
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. The current limit is set at the factory to suit 1/2 HP motors.
The motor Armature attaches to Quick Disconnect Terminals (+), (-)accessible through the faceplate of the plug-in module. The unit is suitable for permanent magnet shunt style DC motors with 90 V armature rating, sized at up to 3/4HP.

CARRIAGE CONTROL SECTION:

The carriage control is a DC Motor control designed to operate in direct or reversing mode at pre-set speeds defined by the user through the keyboard section. The unit requires a 90 V armature, permanent magnet dc motor as output device.

Two Relays and a Dynamic braking Resistor (DBR) are used for motor reversing and braking. The brake resistor is bolted to a card-rack side plate, part of the MBIA. The circuit is equipped with anti-plug protective interlocks.

CURRENT LIMIT

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. The current limit is set at the factory to suit 1/2 HP motors.

CONNECTION

The Motor Armature attaches to quick-disconnect terminals 33(+), 34(-), on the MBIA Mother Board. The unit is suitable for permanent magnet shunt style DC motors with 90 V armature rating, sized at up to 3/4HP.

Operation

Keyboard Description

The keyboard is used to control and monitor all the parameters of a Stretch Wrap Machine. It will also be used for in house calibration. See Fig 1.

Pushbutton Description

- **START**
  The Start pushbutton is used to start or continue a wrapping cycle.
- **E-STOP**
  The Stop pushbutton is used to pause and stop a wrapping cycle before it is completed.
- **TURNTABLE JOG**
  The Jog pushbutton is used to jog the turntable Manually at a preset speed.
- **CARRIAGE RAISE**
  The Carriage Up pushbutton is used to move the carriage up Manually.
- **CARRIAGE LOWER**
  The Carriage Down pushbutton is used to move the carriage down Manually.
- **WRAPS**
  This pushbutton is used to program the number of top and bottom wraps that the turntable will perform during a cycle.
- **TENSION**
  This pushbutton will set the tension of the wrapping film.
- **CARRIAGE SPEED**
  This pushbutton is used to set the carriage up and down speed.
- **FUNCTION**
  This pushbutton is used for in house programming and adjustments. Access is limited to authorized users by a password code.
- **SPIRAL**
  This pushbutton is used to select between "**up/down**" and "**up only**" spiral wrapping patterns
- **PHOTOCELL**
  This pushbutton is used to Enable and Disable the Load Auto-height Photocell.
- **VALUE UP and DOWN Arrows**
  Those pushbuttons are used to change the value of parameters displayed on the SSD.

FEATURES

Change-On-The-Fly

N.B. this feature works only when machine is running ... (During Cycle)

Now operator can adjust machine working parameters (carriage speeds, Photocell On/Off, tension, wraps numbers) during the cycle. Function parameters are allowed only when machine is stopped.
Changes are saved only at the end of the current machine cycle.
While editing, screen displays the parameter being edited. Screen is refreshed 3 seconds later to display the present machine cycle state.

Pause/Stop

***N.B.** this feature works only when machine is running ... (During Cycle)*

Now operator can put the machine in a pause state by pressing the **E-STOP** button **ONCE**. Machine conserves the present machine cycle parameter values. Screen displays **PAU** and Flashes while no edition is performed. Machine will remain in pause state until either:

- Press the **START** button: **Machine** will **continue** its interrupted cycle and **Screen** displays the present Machine **cycle State**.
- Or, press **STOP** button. **Machine** will **stop** completely and **Screen** displays **End**. Machine is ready for a new wrapping cycle.

Auto-Height Photocell

N.B. this feature works only when machine is running ... (During Cycle)

Now it is possible to use either Carriage Up Limit Mechanical Switch or the Photocell to detect that the carriage has reached the top of the load or the upper limit. The **Photocell** is **Enabled or Disabled** by the PHOTOCELL Pushbutton. When enabled, the **Photocell Led** goes **ON**.

Parameter Editing & Saving

***N.B.** The following settings are available to the operator. Edition can be performed on-the-fly.*

Select And Edit The Number Of Wraps

There are two settings for the number of wraps: the number of wraps executed at the bottom and top of the load.

Pressing once on the **Set # Wraps** pushbutton, will turn ON the **LED** located beside the top right corner of the pushbutton. This indicates that the top wrap variable is selected. By using the **Up** or **Down** arrows the value can be changed. The value can be set from 1 to 10.

To select the bottom wrap variable, the **Set # Wraps** must be pressed twice or until the **LED** located beside the bottom right corner is **ON**. By using the **Up** or **Down** arrows the value can be changed. The value can be set from 1 to 10.

For changes "on-the-fly", a delay of 1 (one) second must elapse before New TOP/BOTTOM Wraps Settings will be effective

When the required values for top and bottoms wraps have been selected, press the **Set # Wraps** pushbutton until the 2 **LED**'s are **OFF**.

Select And Edit The Film Tension Value

To select the film tension variable, press the **Set Tension** button. The **Set Tension LED**, located beside the top right corner of the pushbutton, must be **ON**. Once the pushbutton is pressed and the **LED** is **ON**, the **Up** and **Down** arrows can be used to change the value. The value may be set from 0 to 100 (0 -100%).

Select And Edit The Carriage Speeds

There are two settings for the Carriage speed: the **Carriage Up** and the **Carriage Down** speeds.

By pressing once on the Carriage Speed pushbutton, The **LED** located beside the top right corner of the pushbutton will turn **ON**. This means that the Carriage speed up variable is selected. By using the **Up** or **Down** arrows the value can be changed. The value will vary from 0 to 100 (0-100%).

To select the **Carriage Down** variable, the **Carriage Speed** must be pressed twice or until the **LED** located beside the bottom right corner is **ON**. By using the **Up** or **Down** arrows the value can be changed. The value will vary from 0 to 100 (0-100%).

Parameter Saving

The new values are saved when **One** of the following events Occurs:

- Press JOG Pushbutton
- Press START Pushbutton
- 30 Sec. after we enter editing mode (no button pressed).

For changes made on-the-fly, new values will be saved at the end of the current machine cycle.

Select Function

The **Select Function** pushbutton is used to access "in shop" settings - such as Turntable speeds, Acceleration, Deceleration times, Offset and Gain of the Tension Control and the maximum speed of the Carriage Drive. Editing these parameters is permitted only when machine is stopped.

Because those parameters are not available to the operator, they are protected using a 3-digit pass-code (**range from 0 to 250**). (For **Password** contact your local distributor).

When the **Select Function** push button is depressed, the Screen displays **PSU** (**asking the user to enter the password)**. Using the **up** and **down** arrows, the proper 3-digit number code must be entered: when it is entered, the **Select Function** pushbutton must be pressed again and the Function **LED** will start flashing.

The **In-House Setting Menu** has now been accessed. The parameters are identified by a 3-digit code Pxx where xx is a number between 0 -12. Use the **up** and **down** arrows to select a parameter. Once the desired parameter has been selected, press the **select function** button to toggle between the Data and the Parameter mode. The **Up** or **Down** arrows are used to set the desired value (Data) in the Parameter. Once the value is entered, press the **select function** pushbutton again to return to the Select Parameter Mode.

While Function Parameters are being edited, the Function LED continuously flashes.

Get Default Settings

N.B. *this feature works only when machine is stopped ... (Off Cycle)*

The user can now load a specific Default Settings Set by selecting the Function parameter P12. Screen displays **DEF**. The Old Machine Settings are overwritten.

• Default Settings

DESCRIPTION	Default Value	DATA RANGE
Top Wraps	**02**	From 1 to10
Bottom Wraps	**02**	From 1 to 10
Tension	**10**	From 0 to100
Carriage Speed Up	**65**	From 0 to100
Carriage Speed Down	**65**	From 0 to100
SpiralModeSelector	**0**	0 "UP/DOWN" or 1 "UP ONLY"
Table Speed High	**78**	From 0 to 100
Table Speed Low	**06**	From 0 to100
Table Acceleration Time	**10**	From 0 to100
Table Deceleration Time	**10**	From 0 to 100
Table Pulses Per Rotation	**96**	From 0 to 250
TopBottomWrapsFirst	**0**	0 "Top Wraps First" or 1 "Bottom Wraps First"

Exit Function

There are two ways to exit the Function Editing Mode:

- Once the editing is complete, press the **select function** button again and choose parameter P11 to exit Function Editing and return to the operator's menu. New values will be saved at this time.
- If 30 seconds elapse without any editing activity, the program exits the Function editing mode, saves the new values and returns to the operator's menu.

Function parameters

DESCRIPTION	PARAMETER	DATA RANGE
Table Speed High	**P**00	From 0 to 100
Table Speed Low	**P**01	From 0 to100
TopBottom Wraps First	**P**02	0 " Top Wraps First" or 1 "Bottom Wraps First
Not Implemented	**P**03	0
Table Acceleration Time	**P**04	From 0 to100
Table Deceleration Time	**P**05	From 0 to 100
Table Pulses Per Rotation	**P**06	From 0 to 250
Not Implemented	**P**07	0
Not Implemented	**P**08	0
Not Implemented	**P**09	0
Not Implemented	**P**10	0
Exit	**P**11	When selected we **exit** Function
Get Default	**P**12	when Selected we **load** Default settings

Parameter Saving

New Settings are saved if they are changed and when **One** of the following events Occurs:

- Press JOG Pushbutton
- Press START Pushbutton
- 30 Sec. after we enter editing mode (no button pressed)

Moving The Carriage and Table Manually

To move the Carriage Up or Down using the **Carriage up** and **Down** pushbuttons or to **adjust** the **Turntable** using the **JOG** pushbutton, the machine must be stopped. If a cycle is being processed, those two pushbuttons are disabled.

When the **Carriage Up** pushbutton is pressed, the carriage will go up until the pushbutton is released or the Carriage top limit switch is activated. Screen Displays **UP.**

When the **Carriage Down** pushbutton is pressed, the carriage will go down and it will stop only when it has reached the Carriage Down limit switch. Screen Displays **dn.**

A delay of one **(1) second** must elapse before the **carriage** can **reverse** direction.

When the **JOG** pushbutton is pressed, the **Turntable** turns at a **preset speed (Low)** until the button is released. Screen Displays **JOG.**

Display Screen

Display Contents

Screen	Description
End	Machine is stopped
PAU	Machine in a Pause after pressing STOP Button ONCE (Display will Flash).
UP	Carriage is Moving UP
dn	Carriage is Moving Down
PSU	asks user to enter password code to have access to Function parameters edition.
DEF	While getting default settings and then it displays the present machine state.
eXt	While exiting Function Parameters Edition then it displays present machine state.
Pxx	When selecting function parameter
xxx	When editing machine parameters values
JOG	When jogging the Turn Table Manually

Display Refresh

Display is refreshed every **3 seconds**. When finished editing, it displays the present machine cycle state (PAU for a Pause State, End When Machine stopped, **UP** when Carriage moving UP, **dn** while Carriage moving Down, Wraps # when wrapping).

SELECT A WRAPPING PATTERN

N.B. this feature works only when machine is stopped ... (Off Cycle)

Operator can select up to three (3) wrapping cycles by using the **SPIRAL** pushbutton and the Function parameter **P02**:

- Spiral Up Only
- Up/down with Top Wraps first
- Up/Down with Bottom wraps first.

SPIRAL UP ONLY

Whatever selected "**top wraps first**" or "**bottom wraps first**", the following will happen:

1. Film carriage wraps bottom applying selected number of bottom wraps;
2. Film carriage moves to the top
3. Applies selected number of top wraps;
4. Turntable decelerates and stops in home position;

When the up only mode selected "SPIRAL LED" goes ON.

SPIRAL UP/DOWN

When the Up/Down Mode Selected "SPIRAL LED" goes OFF.

- If "**top wraps first**" selected (**p02=0**), the following will happen:

1. Film carriage moves to the top
2. Applies selected number of top wraps;
3. Film carriage moves to the bottom;
4. Applies selected number of bottom wraps;
5. Turntable decelerates and stops in home position;

- if "**bottom wraps first**" selected (**p02=1**), the following will happen:

1. Applies selected number of bottom wraps;
2. Film carriage moves to the top
3. Applies selected number of top wraps;
4. Film carriage moves to the bottom;
5. Turntable decelerates and stops in home position;

End of Film Broken

N.B. this feature works only when machine is running ... (During Cycle)

If the film ends or is broken during cycle, Machine will be immediately stopped and screen displays **FLM**.
With machine in End or Broken Film state (display will show **FLM**) it is possible to:

- move the carriage UP /DOWN manually
- JOG the Turn Table manually ...
- Re-Start Cycle.

Maintenance

The three principal sub-assemblies cover the operation. To assure continuity of operation, spares should be available of:

- The Keyboard display (type 755.1)
- The Microprocessor Board (type 755.2)
- The Motor Control Interface Assembly which comprises:
  - Mother Board Assembly (type 755.3)
  - Multistretch Drive (type 755.4)
  - Carriage Drive (type 755.5)
  - Turntable Drive (type 755.6)

Replacing Sub Assemblies:
The connections are mostly plug-in, and misconnection is unlikely, but, in any case, takes note of the configuration when removing items.
Repair and Replacement **should only be done by experienced personnel who are aware of the dangers of working on line-operated equipment. Power must be removed when changing sub-assemblies, and the technician should dissipate any static charges before handling parts, by touching the grounded cabinet.**

The MBIA can be removed by undoing four screws securing the chassis to the backplate. Then, unplug the various terminal connectors, and unplug the ribbon connector and the disconnect terminals, and remove the unit. It can be replaced by reversing the procedure.
The three DC Drive controls can be individually replaced, by removing two securing screws and un-plugging. Each control is protected by an on-board AGC-8 fuse, accessible when the control is unplugged.

The Microprocessor board on the inside of the cabinet door connects by ribbon-cable to the MCIA. This should be unplugged before removing the PCB. The Microprocessor Board is held in place by six #6 nylon nuts. When these are removed, the microprocessor board can be unplugged from the keyboard/display by gently rocking and pulling it away. The keyboard display can be removed by releasing the six nylon hex threaded spacers holding it to the studs.

Board-Level Maintenance:
In general, repair is beyond the scope of field service, without special equipment. However, the Mother Board does contain replaceable items – the control fuse (AGC ½ Amp), and the Carriage Reversing Relays.

LOADING THE FILM

The film roll can be loaded on the carriage mandrel 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. Swing up the top mandrel spool

3. Put the roll of film on the bottom mandrel

4. Install the top mandrel on top of the roll to prevent upward movement

5. Pull the handle marked PULL TO OPEN to open film distributor cradle

6. Pass the roped tail of the film through opening (as shown on the film quick threading pattern DWG. # 418180 Fig. 1)

7. Close the film distributor cradle by pushing bar marked PUSH TO CLOSE

8. When the film feeding is completed (Fig. 2) - turn the power switch on

9. 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.

The system is now ready to begin the first wrapping cycle.

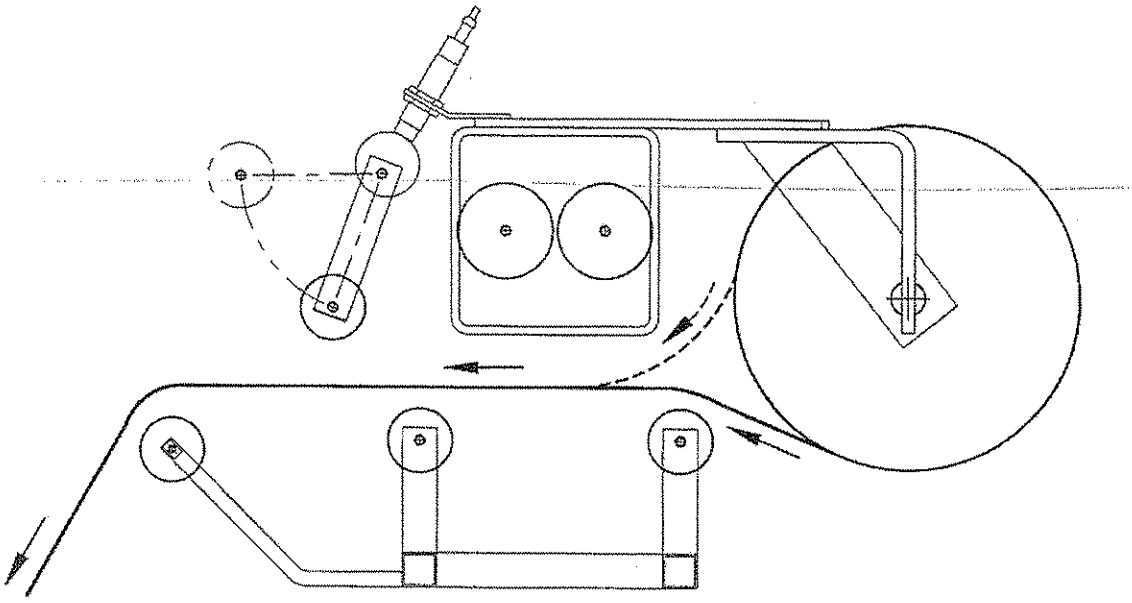


Fig. 1 OPEN CRADLE

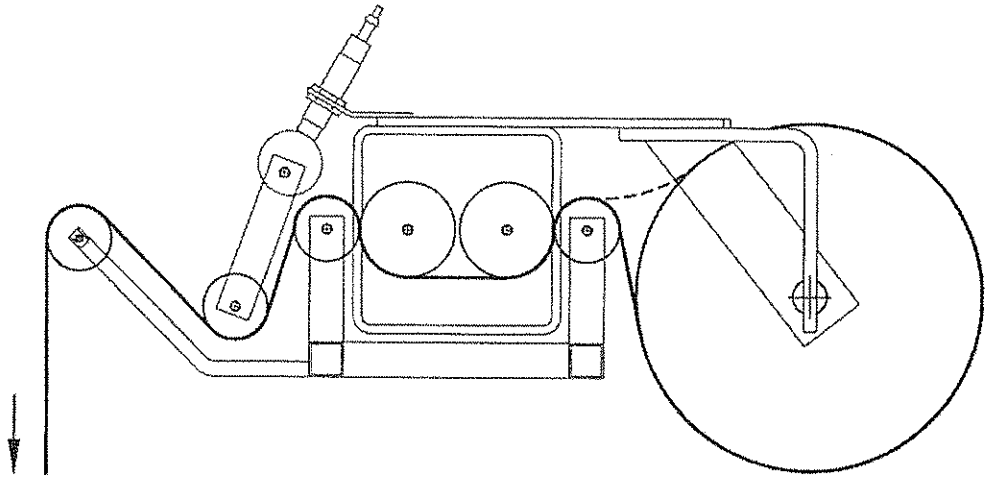


Fig. 2 CLOSED CRADLE

FILM QUICK THREADING

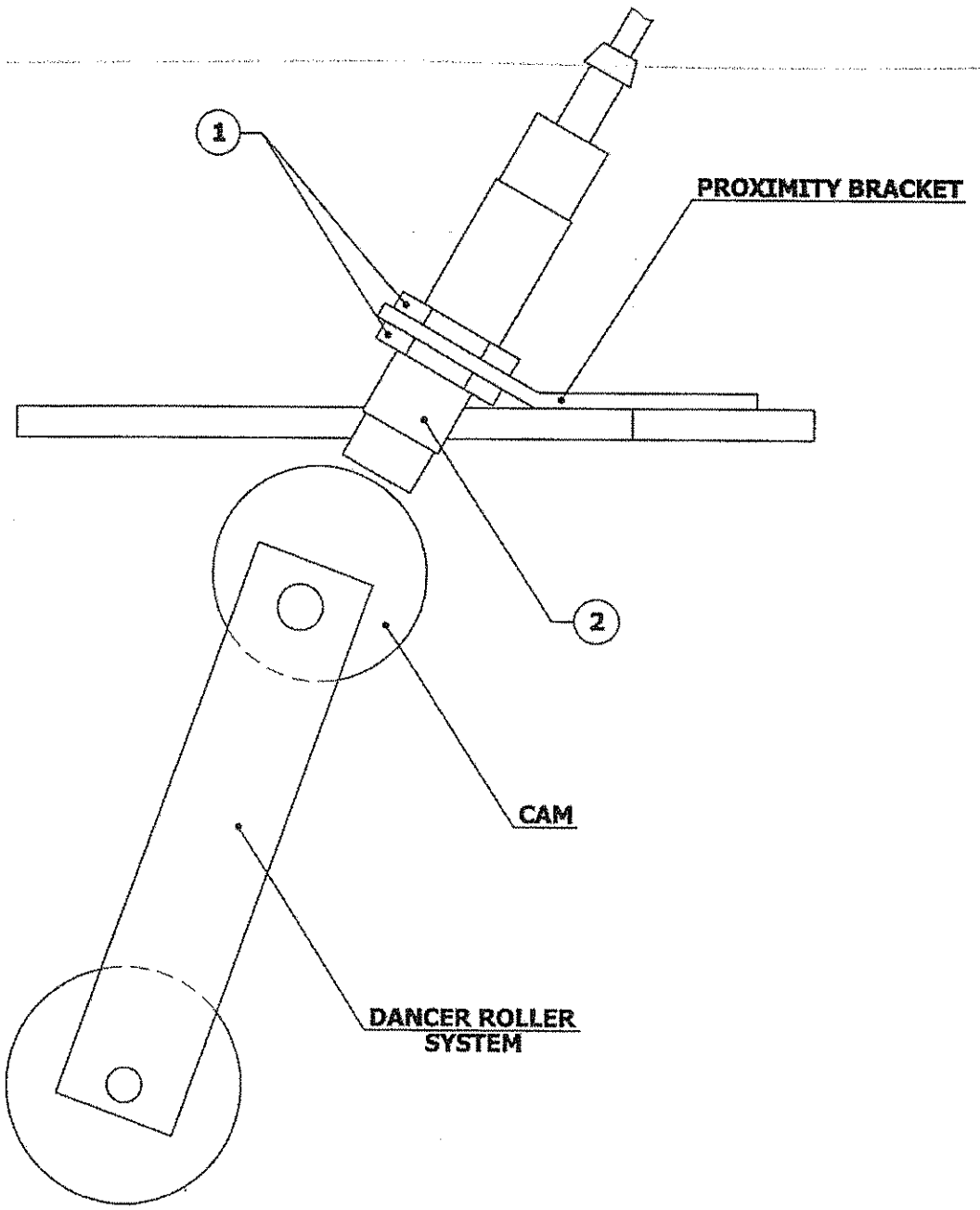
UPDATED FEB-15-99 DWG #418180

PROXIMITY SENSOR ADJUSTMENT

Occasionally the Feed Back Proximity Sensor may need some adjustment. The position of the feed back proximity sensor against the cam is shown on drawing # 419139.

Adjustment instructions:

- remove the carriage cover
- unbolt the two nuts holding the proximity switch - item # 1
- turn the Proximity sensor - (item # 2) to create the gap between the cam and the front side of proximity sensor about 1/8 "
- tighten on the nuts securing the Proximity Sensor
- turn the trim pot SPAN (Board 336-8 or 336-9) adjust the moment when motor starts to turn when dancer roller moved from its home position up to 1 1/2".



PROXIMITY SENSOR
FEED BACK ADJUSTMENT

UPDATED FEB-15-99

DWG #419139

MACHINE MAINTENANCE

All general information about machine maintenance is based on normal machine working conditions: indoors, moderate dust and low moisture environment, and maximum rotation of 32 RPM of turntable/rotary arm.

They should be regarded as guidelines, reviewed and corrected according to requirements of actual use and conditions.

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 it 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.

REDUCER OIL CHANGE

All external cap screws and plugs on the reducing transmission should be checked for tightness after the first week. It is recommended to change the oil every six months or at least 1800 hours of operation, whichever comes first. When adding or changing oil, the transmission should never be filled above the oil level mark indicated, because leakage and overheating may occur.

List of recommended lubricants for the ring bearing lubrication

Manufacturer	Lubricant
BP	Energrease LS2
Castrol	Speeroll AP2
Esso	Beacon 2
Gulf	Crown Grease 2
Mobil	Mobilus 2
Shell	Avania Grease R2
Texaco	Glissando FT 2
Valvoline	LB - 2

TOWER RACEWAYS MAINTENANCE

The film distributor (carriage) is sliding on the plastic guides attached behind its back plate. The section of the tower on which the plastic guides move (raceways) should be cleaned and re-greased approximately every 600 hours of machine operation.

NOTICE: If the machine works in a dusty and corrosive environment, the raceways should be re-greased more often (at least every 100 hours).

CHAIN MAINTENANCE

To clean the chain, wipe it with an oily cloth every month. When machine is working in a dusty and damp environment, it may be necessary to repeat the cleaning operation more often.
As the chain lubricants please use the most common chain lubricants on the market.
With time, the chain will tend to stretch. A loose chain should be tightened at the chain tensioner, or by moving the reducer on its mounting plate.

NOTICE: Chain tension first adjustment must be done after the first two weeks of machine usage.

PNEUMATIC SYSTEM MAINTENANCE (when applicable)

The air supply system must be checked weekly and must be free from the moisture. In cold environments, it may be necessary to drain the air supply system daily and lubricate using SAE #10 oil.
The air lubricator should be filled to approximately 3/4" of its full capacity.

Below is the list of the type of lubricant that should be used.

List of recommended reducer oils

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 Corp.	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

RING BEARING MAINTENANCE (when applicable)

The ring bearing (located under the turntable) should be re-lubricated internally and externally.

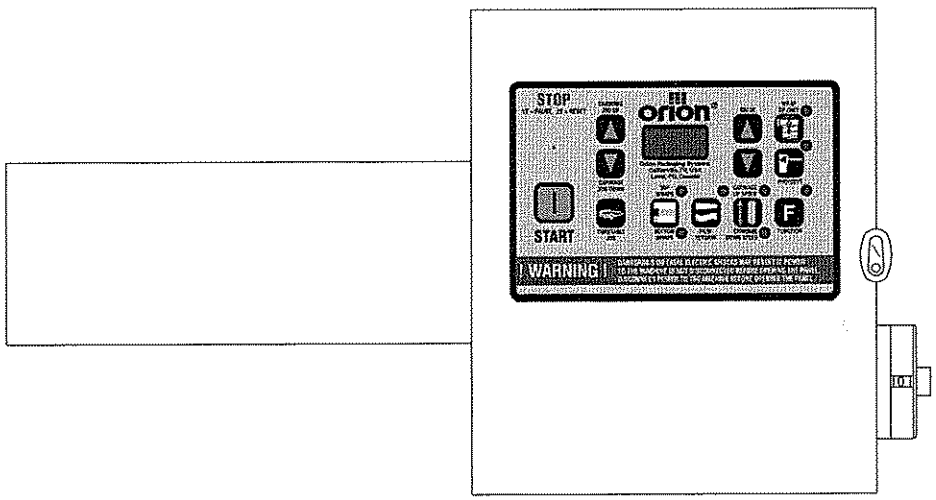
Internally: by injecting grease into all the lubrication nipples in succession until a collar of fresh grease appears around the perimeter of the ring. The re-lubrication interval suggested for these bearings, used in Stretch Wrapping Machinery is 750 hours, with a maximum period of 6 months. The lubricant should be fresh and applied in sufficient quantities to make sure all surfaces are lubricated.

Externally: by lubricating and wiping the chain drive with oily cloth.
The frequency of lubrication depends on entirely upon the usage of the machine and environment in which the machine is placed (dust, moisture etc.).
Machines working under extremely dirty conditions should be lubricated every 400 operating hours but at minimum, every 2 months. Longer lubrication intervals may occur only when machine is working under very clean and dry conditions but should be not be longer than 6 months.

SEMI-AUTOMATIC
STANDARD ASSEMBLY
PART LIST

NOTE:

- Quantities listed in order of part number.
- The names given to the parts are generic.



5412 ESCH121006

PANEL SIZE 12 X 10 X 06

Modified A.S.D. 03-07-06
To Reflect Proper Panel Size

orion
2270 INDUSTRIEL BOUL., LAVAL
QUEBEC, CANADA, H7S 1P9
TEL:(450) 667-9769

ORION PACKAGING INC.

2270 INDUSTRIEL BLVD LAVAL, QUE., CANADA H7S 1P9
TEL: (450) 667-9769 FAX: (450) 667-5329
APPR. BY: J.B.S. DRAWN BY: J. ALEXANDER

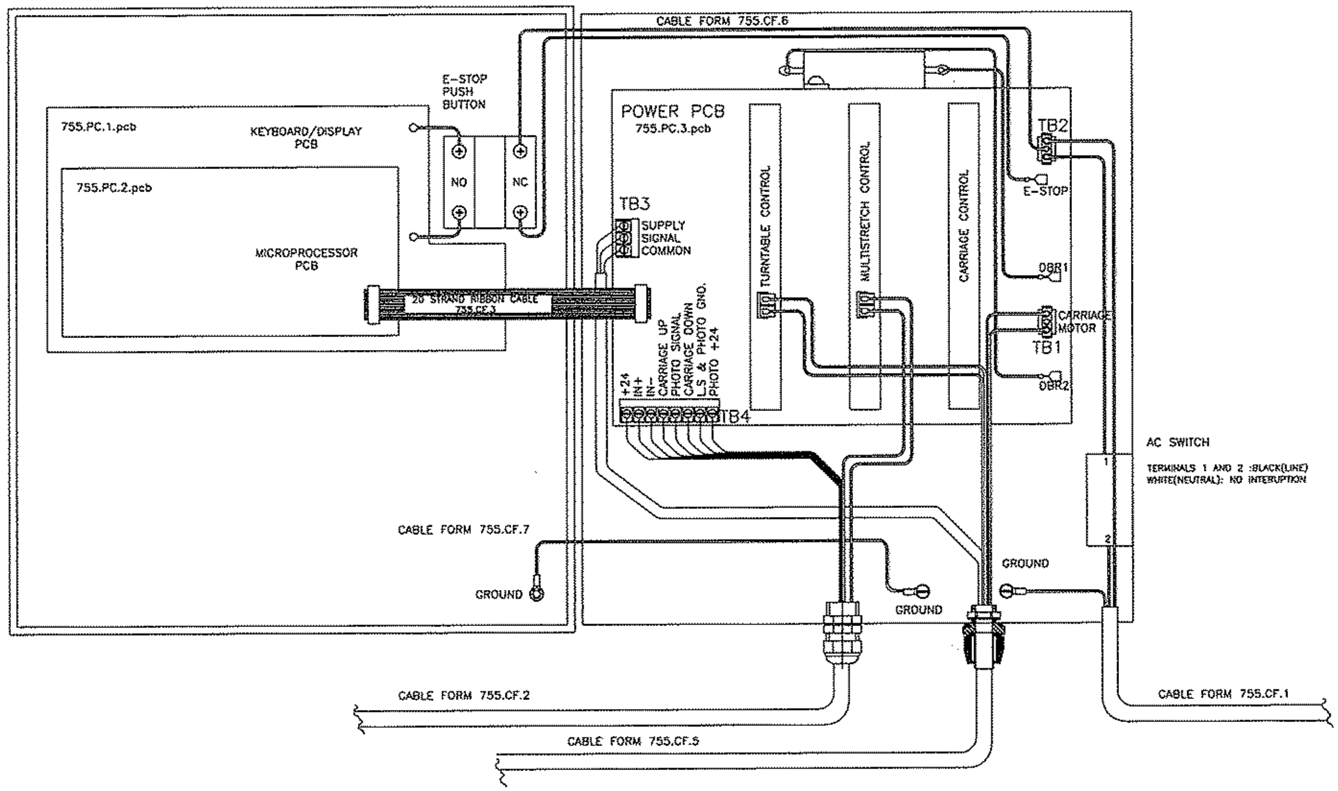
SCALE: 1:2

TITLE: HL77-16 "STANDARD"

SIZE: C | DOCUMENT NO: JOB # STD MOD 302 321/L | REV: 1

DATE: MAY-22-2002 | SHEET: 1 OF 1

FILENAME: HL77-16L.DWG | BASE:



ORION PACKAGING INC.

SCALE: NTS

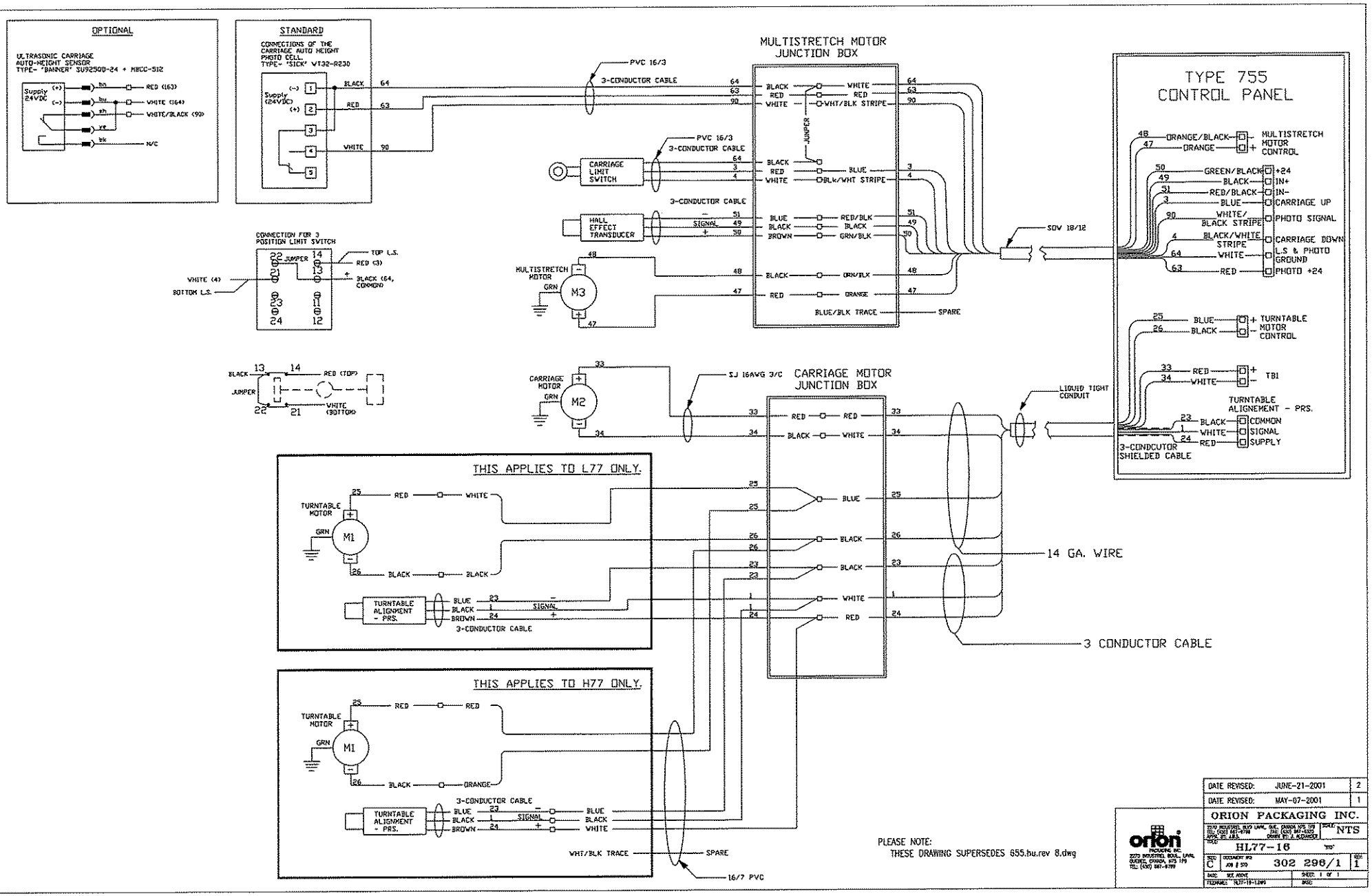
TITLE: HL77-16

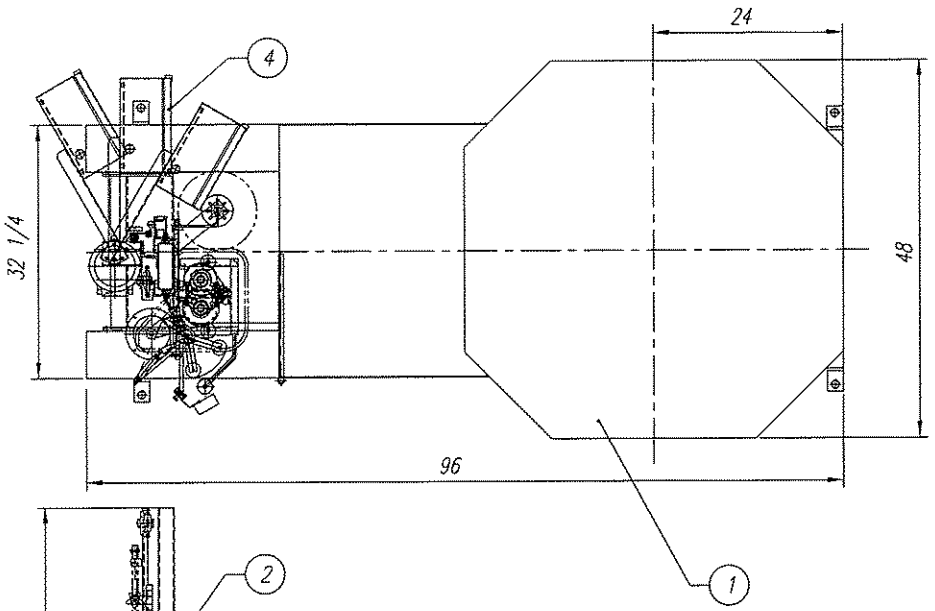
SIZE: D

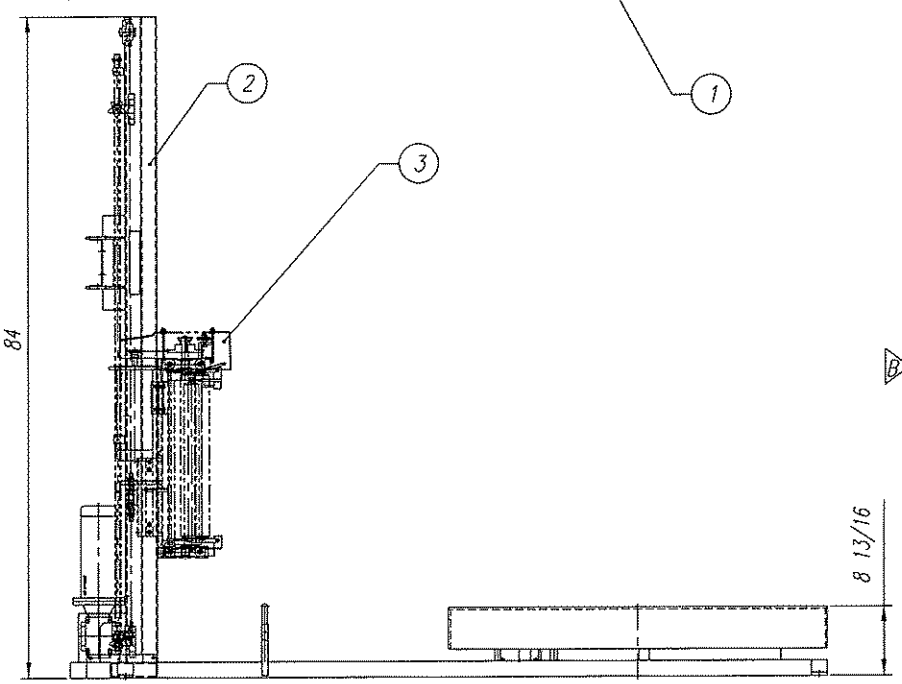
DOCUMENT NO.: 302 317/1

REV: 1

SHEET: 1 OF 1


OPTIONAL
ULTRASONIC CARRIAGE AUTO-HEIGHT SENSOR
TYPE- "BANNER" SU92500-24 + MBCC-512
Supply 24VDC
RED (63)
WHITE (64)
WHITE/BLACK (90)
N/C
STANDARD
CONNECTIONS OF THE CARRIAGE AUTO HEIGHT PHOTO CELL.
TYPE- "SICK" WT32-R230
Supply (24VDC)
BLACK 64
RED 63
WHITE 90
MULTISTRETCH MOTOR JUNCTION BOX
PVC 16/3
3-CONDUCTOR CABLE
JUMPER
CARRIAGE LIMIT SWITCH
BLK/WHT STRIPE
HALL EFFECT TRANSDUCER
SIGNAL
BLUE/BLK TRACE
SPARE
SOV 18/12
MULTISTRETCH MOTOR
M3
GRN
CONNECTION FOR 3 POSITION LIMIT SWITCH
JUMPER
TOP L.S.
RED (3)
BLACK (64, COMMON)
WHITE (4)
BOTTOM L.S.
TYPE 755 CONTROL PANEL
ORANGE/BLACK
ORANGE
MULTISTRETCH MOTOR CONTROL
GREEN/BLACK
+24
BLACK
IN+
RED/BLACK
IN-
BLUE
CARRIAGE UP
WHITE/ BLACK STRIPE
PHOTO SIGNAL
BLACK/WHITE STRIPE
CARRIAGE DOWN L.S & PHOTO GROUND
WHITE
RED
PHOTO +24
BLUE
TURNTABLE MOTOR CONTROL
TBI
TURNTABLE ALIGNEMENT - PRS.
COMMON
SIGNAL
SUPPLY
3-CONDCUTOR SHIELDED CABLE
CARRIAGE MOTOR JUNCTION BOX
CARRIAGE MOTOR
M2
SJ 16AWG 3/C
LIQUID TIGHT CONDUIT
14 GA. WIRE
3 CONDUCTOR CABLE
THIS APPLIES TO L77 ONLY.
TURNTABLE MOTOR
M1
TURNTABLE ALIGNMENT - PRS.
3-CONDUCTOR CABLE
THIS APPLIES TO H77 ONLY.
WHT/BLK TRACE
SPARE
16/7 PVC
PLEASE NOTE:
THESE DRAWING SUPERSEDES 655.bu.rev 8.dwg
DATE REVISED: JUNE-21-2001 2
DATE REVISED: MAY-07-2001 1
ORION PACKAGING INC.
SCALE: NTS
HL77-16
SIZE C
DOCUMENT NO 302 296/1
REV 1
SHEET 1 OF 1





REQ'D - 1 PCE

REPLACES 426296 B

REVISION "B" NOV-29-2000 S.K.
REVISION "A" SEP-01-2000 S.K.

TOTAL WEIGHT : 795.5 Lbs

No.	DESCRIPTION	DWG. SIZE	PART No.	Q'ty	WEIGHT
4	CONTROL PANEL 5412 ESCH 12 10 06	--	--	1	--
3	INSTA-THREAD LT	C	425219	1	96.2
2	HINGE TOWER 6 x 2 x .150 ASSEMBLY	C	428978	1	183.8
1	H-77/13B H BASE ASSEMBLY	C	425343	1	515.5

REMARKS: --

REMARKS: -

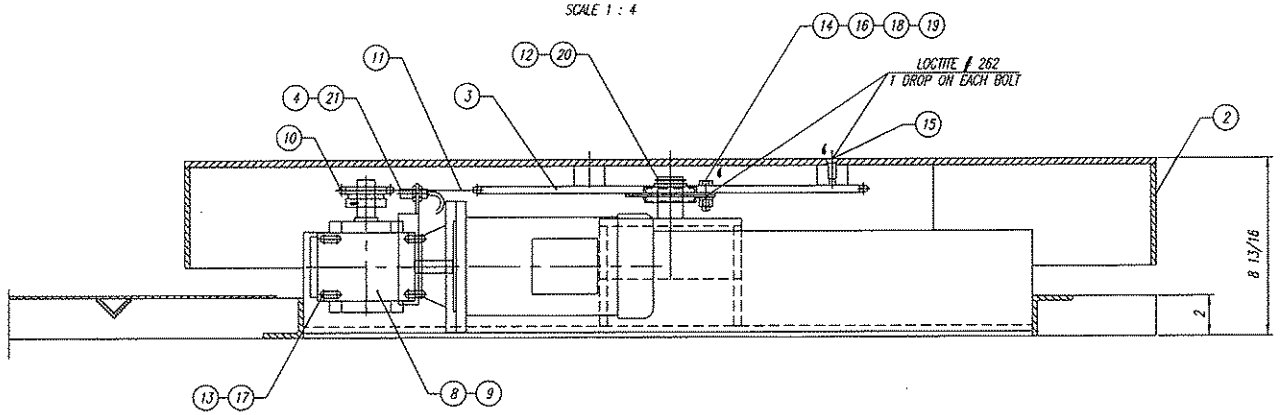
H77/14 H WRAPPER

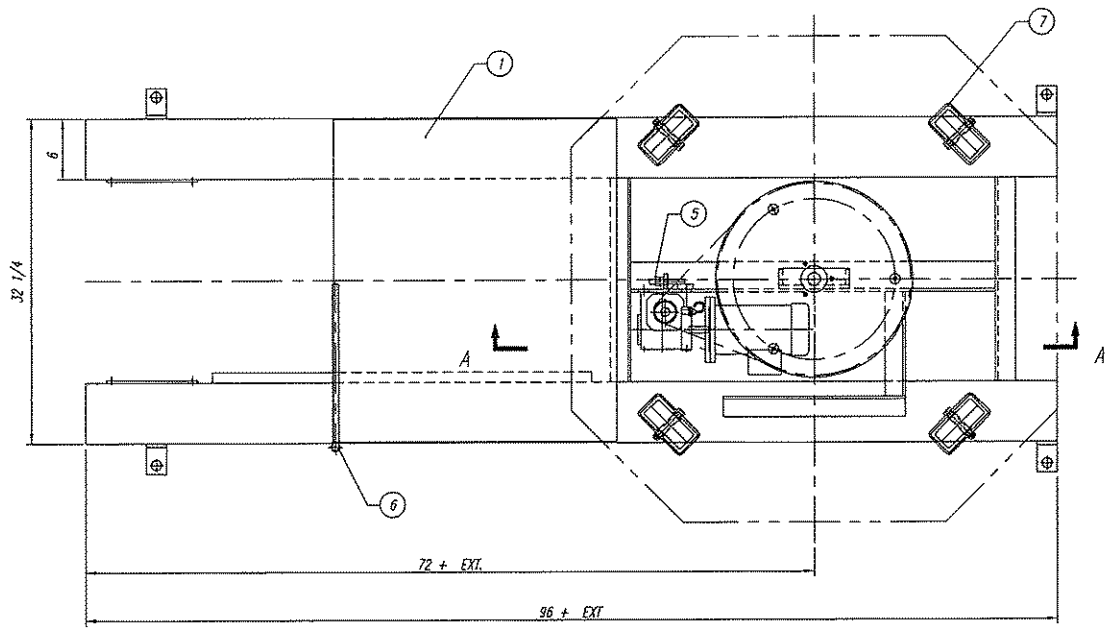
orion
PACKAGING INC.
2270 INDUSTRIEL, LAVAL
QUEBEC, CANADA, H7S 1P9
TEL.: (514) 667-9759

DATE: MAY-09-2000		SCALE: 1 : 16
DRAWN BY: S. KUBICKA		MACHINE TYPE: H77/14
CHECKED BY:		DRAWING SIZE: B
ASSEMBLY DWG.: LAYOUT	JOB No.: STD	DRAWING No.: 427950

SECTION A–A

SCALE 1 : 4





REQ'D – 1 pc.

⚠ REV. A , JUL–3–2003 , JNB

TOTAL WEIGHT: 535.7 Lbs

No.	DESCRIPTION	DWG. SIZE	PART No.	Q'ty	WEIGHT
21	PROXIMITY SWITCH		–	1	–
20	SNAP RING 1 1/4 SHAFT DIA		013655	1	–
19	HEX NUT 3/8–16 UNC		011128	3	–
18	SPRING WASHER 3/8" SIZE		011390	3	–
17	SPRING WASHER 5/16" SIZE		012724	4	–
16	FLAT WASHER 3/8" SIZE		010948	6	–
15	FLAT SOCKET CAP SCREW 3/8–24 UNF 3/4 LG		013363	3	–
14	HEX HEAD SCREW 3/8–16 UNC 1 1/4 LG		012406	3	–
13	HEX HEAD SCREW 5/16–18 UNC 1 LG		010291	4	–
12	STAMP HOUSING FLANGE BEARING SAPF 206–20		013654	1	1.4
11	CHAIN #50 68 1/8 LG (109 LINKS & 1 C/L)		010009	1	4.0
10	SPROCKET 50B10 x 7/8" BORE		010074	1	.4
⚠ 9	EL. MOTOR 1/2 HP, 90 VDC, 1750 RPM Lesson		017851	1	25.0
8	REDUCER CFC–175, 15:1, ASSY–3		015191	1	25.0
7	SINGLE CASTER ASS'Y	B	425390	4	26.4
6	ROPING BAR	A	413868	1	2.1
5	CHAIN TIGHTENER (BQ–175)	A	412261	1	1.0
4	PROXIMITY SWITCH BRACKET	A	412316	1	.5
3	SPROCKET 50A96	A	406338	1	24.5
2	TURNTABLE – 48" OCTAGONAL	A	422298	1	206.1
1	H–77/13B H BASE (WELDING)	C	425344	1	219.3

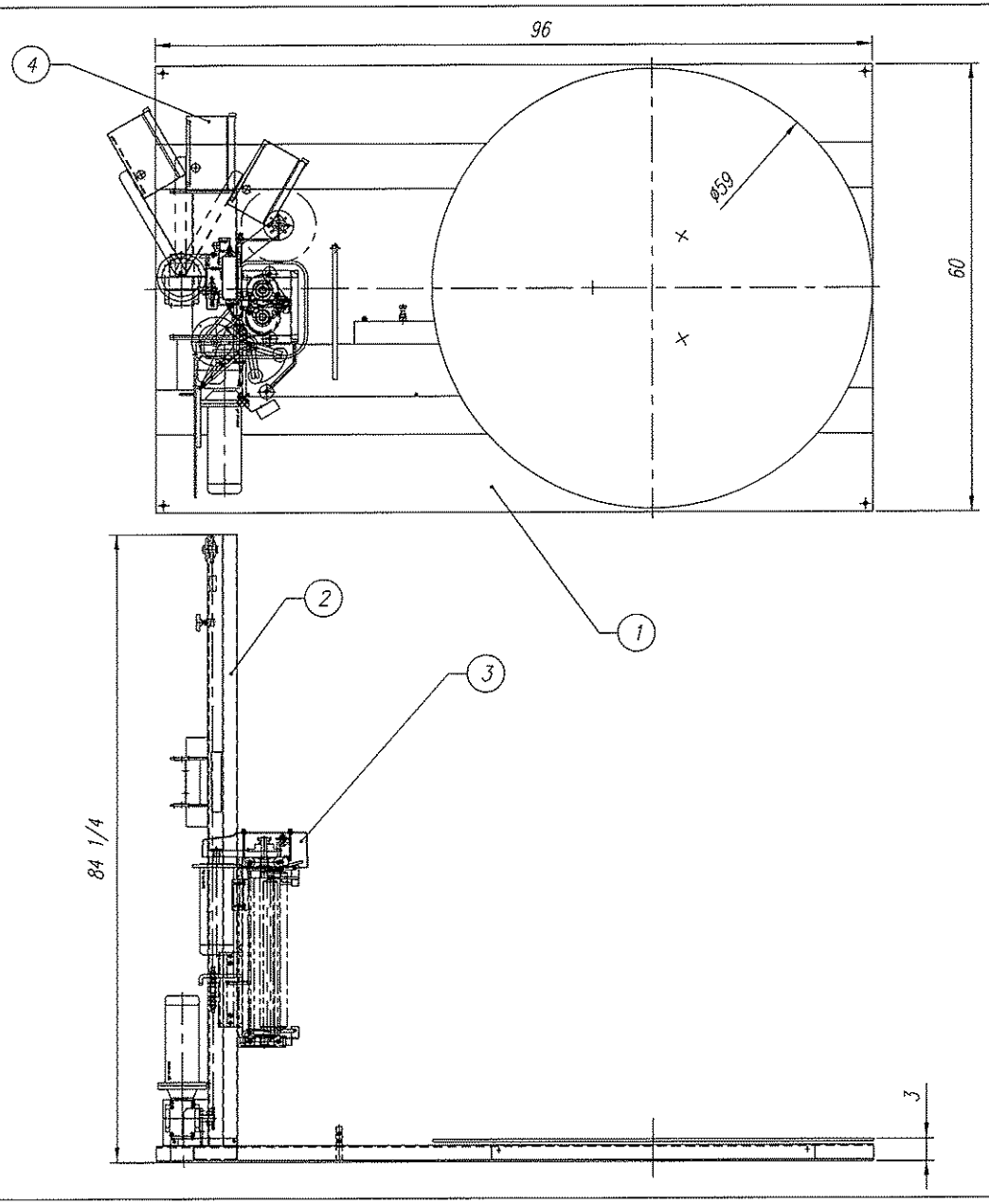
REMARKS: 12 RPM TURNTABLE SPEED , 8 13/16" TURNTABLE HEIGHT

REMARKS: –

H–77/13B H BASE ASSEMBLY

orion
PACKAGING INC.
2270 INDUSTRIEL, LAVAL
QUEBEC, CANADA, H7S 1P9
TEL: (514) 667–9769

ASSEMBLY DWG.: 425340 B	JOB No.: STD	DRAWN BY: M. G. GOLA	DATE: OCT–04–1999
		CHECKED BY:	SCALE: 1 : 8
			MACHINE TYPE: H77/13B
			DRAWING SIZE: C
			DRAWING No.: 425343



REPLACES 426735 B

No.	DESCRIPTION	DWG. SIZE	PART No.	Q'ty	WEIGHT
4	CONTROL PANEL 5412 ESCH 12 10 06 –	–	–	1	–
3	INSTA-THREAD LT CARRIAGE –	C	425219	1	96.2
2	HINGE TOWER 6 x 2 ASSEMBLY –	C	427953	1	183.8
1	L77-13C BASE ASSEMBLY –	C	426921	1	990.3

REMARKS: –

REMARKS: –

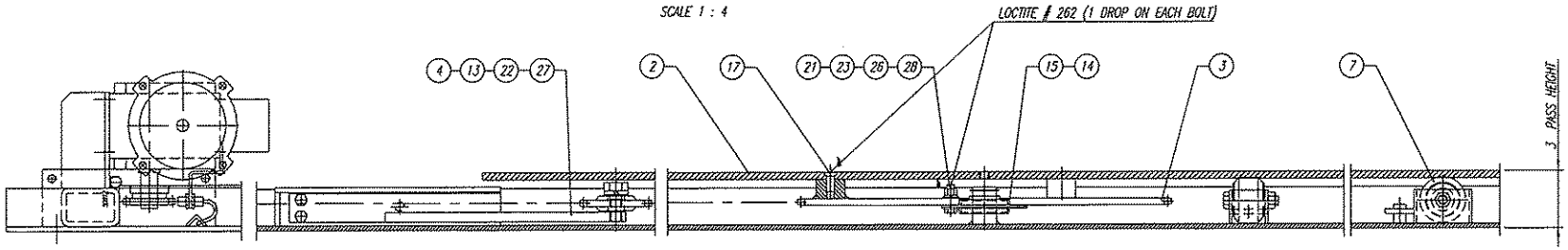
L77/14 WRAPPER LAYOUT

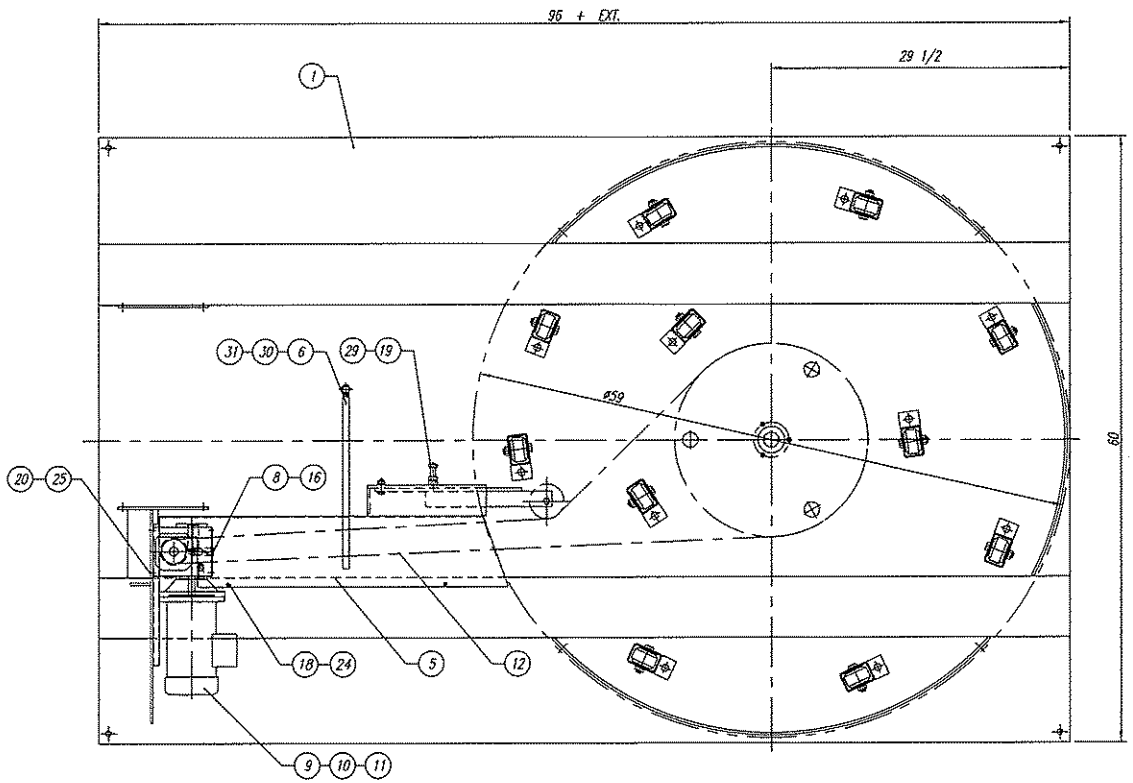
orion
PACKAGING INC.
2270 INDUSTRIEL, LAVAL
QUEBEC, CANADA, H7S 1P9
TEL.: (450) 667-9769

DATE: MAY-09-2000		SCALE: 1 : 16
DRAWN BY: S. KUBICKA		MACHINE TYPE: L77/14
CHECKED BY:		DRAWING SIZE: B
ASSEMBLY DWG.: –	JOB No.: STD	DRAWING No.: 427955

SELECTIVE SIDE VIEW

SCALE 1 : 4





REQ'D – 1 pc.

REV. B, JUL-2-2003 , JNB
REV. A, FEB-17-2000, TW

TOTAL WEIGHT: 990.3 LBS

No.	DESCRIPTION		DWG SIZE	PART No.	Q'ty	WEIGHT
31	HEX. NUT 5/16-24 UNF			013407	2	
30	HEX. HEAD SCREW 5/16-24 UNF 1" LG			014157	2	
29	HEX NUT 1/2-13 UNC			011266	1	
28	HEX NUT 3/8-16 UNC			011128	3	
27	SPRING WASHER 5/8" SIZE			012721	1	
26	SPRING WASHER 3/8" SIZE			011390	3	
25	SPRING WASHER 5/16" SIZE			012724	4	
24	SPRING WASHER 1/4" SIZE			011393	2	
23	FLAT WASHER 3/8" SIZE			010948	3	
22	HEX HEAD SCREW 5/8-11 UNC 1 1/2" LG			010329	1	
21	HEX HEAD SCREW 3/8-16 UNC 1 1/4" LG			012406	3	
20	HEX HEAD SCREW 5/16 UNC 1" LG			010291	4	
19	HEX. HEAD SCREW 1/2-13 UNC (FULLY THREADED) 3" LG			013989	1	
18	PAN PHILL 1/4-20 UNC 1/2" LG			012049	2	
17	FLAT SOCKET SCREW 3/8-24 UNF 1" LG			013842	3	
16	PROXIMITY SWITCH			013848	1	
15	STAMP HOUSING FLANGE BEARING SAPF 206-20			013654	1	1.4
14	EXTERNAL RETAINING RING 1 1/4 SHAFT DIA			013655	1	–
13	IDLER SPROCKET AG 2416			010008	1	.7
12	CHAIN # 50, 156 5/8" LG (249 LINKS+C/L)			010009	1	8.6
11	SPROCKET 50B10, 7/8" BORE			010074	1	.8
10	REDUCER CFC-175, 15:1, ASS'Y-3			015191	1	25.0
9	EL. MOTOR 1/2 HP, 90 VDC,1750 RPM "LEESON"			017651	1	25.0
8	PROXIMITY SWITCH BRACKET	A		423499	1	.2
7	"DURA-GLIDE" CASTER 2.33" DIA. – ASSEMBLY	A		416055	11	19.0
6	ROPING BAR	A		413868	1	2.1
5	CHAIN GUARD	A		421338	1	5.0
4	CHAIN TIGHTENER ARM	A		411592	1	3.4
3	SPROCKET 50A96	A		406338	1	27.2
2	59" DIA. TURNTABLE DISK (REVOLOGIC)	B		414904	1	293.5
1	L66/14 H BASE- WELDING	C		422398	1	578.4

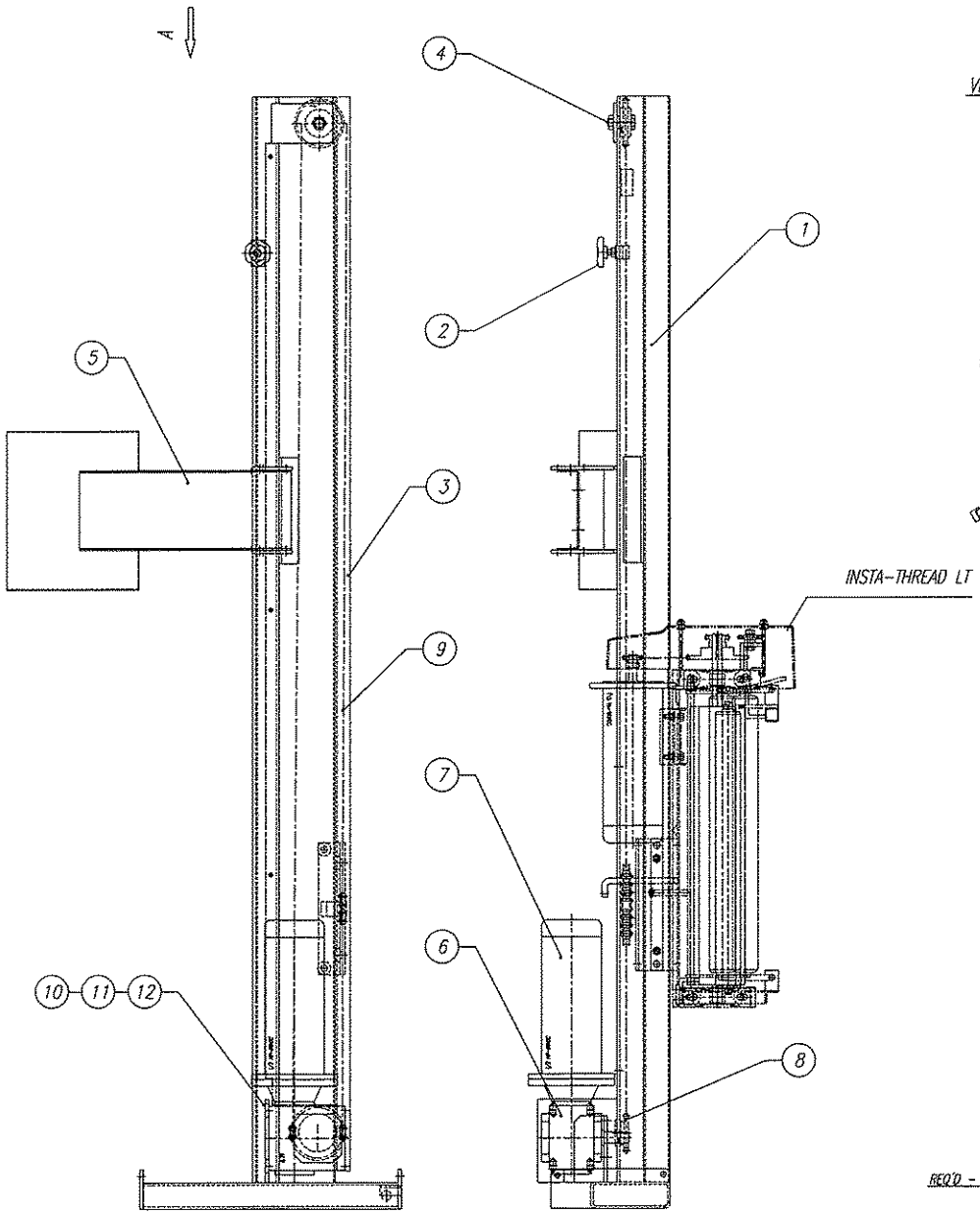
REMARKS: 12 RPM

REMARKS: –

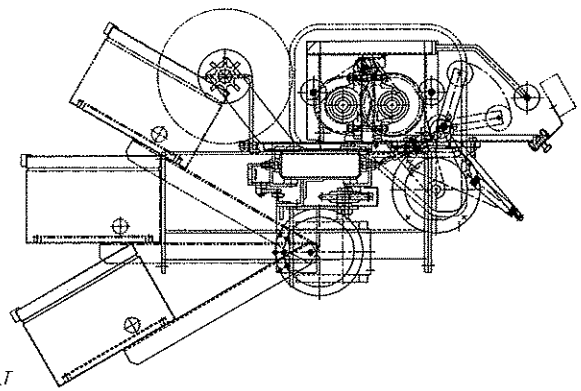
L77/13C H BASE ASSEMBLY

orion
PACKAGING INC.
2270 INDUSTRIEL, LAVAL,
QUEBEC, CANADA, H7S 1P9
TEL.: (514) 667-9783

ASSEMBLY DWG: 426735	JOB No.: STD	CHECKED BY:	DRAWN BY: G. STACHURA
DATE: FEB. 16/2000	SCALE: 1 : 8	MACHINE TYPE: L77/13C	DRAWING SIZE: C
DRAWING No.: 426921			



VIEW - A



REPLACES 426297 C

TOTAL WEIGHT : 183.8 LBS

No.	DESCRIPTION	DWG SIZE	PART No.	Q'ty	WEIGHT
12	WASHER 5/16 SIZE	-	012725	4	-
11	LOCK WASHER 5/16 SIZE	-	012724	4	-
10	HEX SCREW 5/16-18UNC 1 LG	-	010291	4	-
9	CHAIN #50 159 3/8 LG (253 LINKS+2 C/L)	-	010009	1	8.8
8	SPROCKET 50B19 7/8 BORE	-	010235	1	1.0
7	EL.MOTOR 1/2 HP, 90 VDC, 1750 RPM "LESSON"	-	015240	1	25.0
6	REDUCER CFC-175, 50:1, ASS'Y-3	-	015200	1	25.0
5	CONTROL PANEL 5412 ESCH 12 10 06	-	-	1	10.5
4	IDLER SPROCKET ASSEMBLY	A	420809	1	.7
3	CHAIN GUARD	A	421023	1	14.3
2	LIMIT SWITCH STRIKER - A	A	423349	1	-
1	HINGE TOWER 6 x 2 x .150 - WELDING	C	426298	1	98.5

REMARKS: -

REMARKS: -

REQ'D - 1 PCE

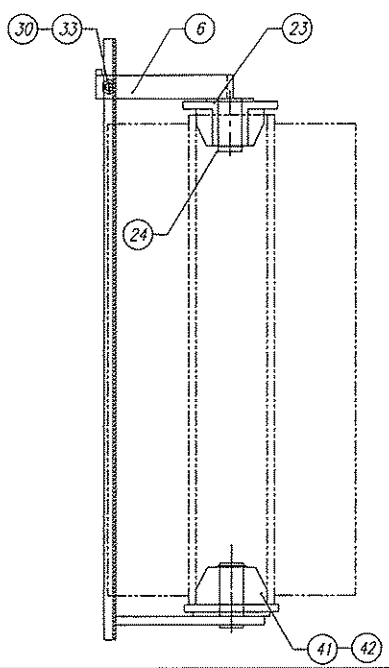
HINGE TOWER 6 x 2 x .150 - ASSEMBLY

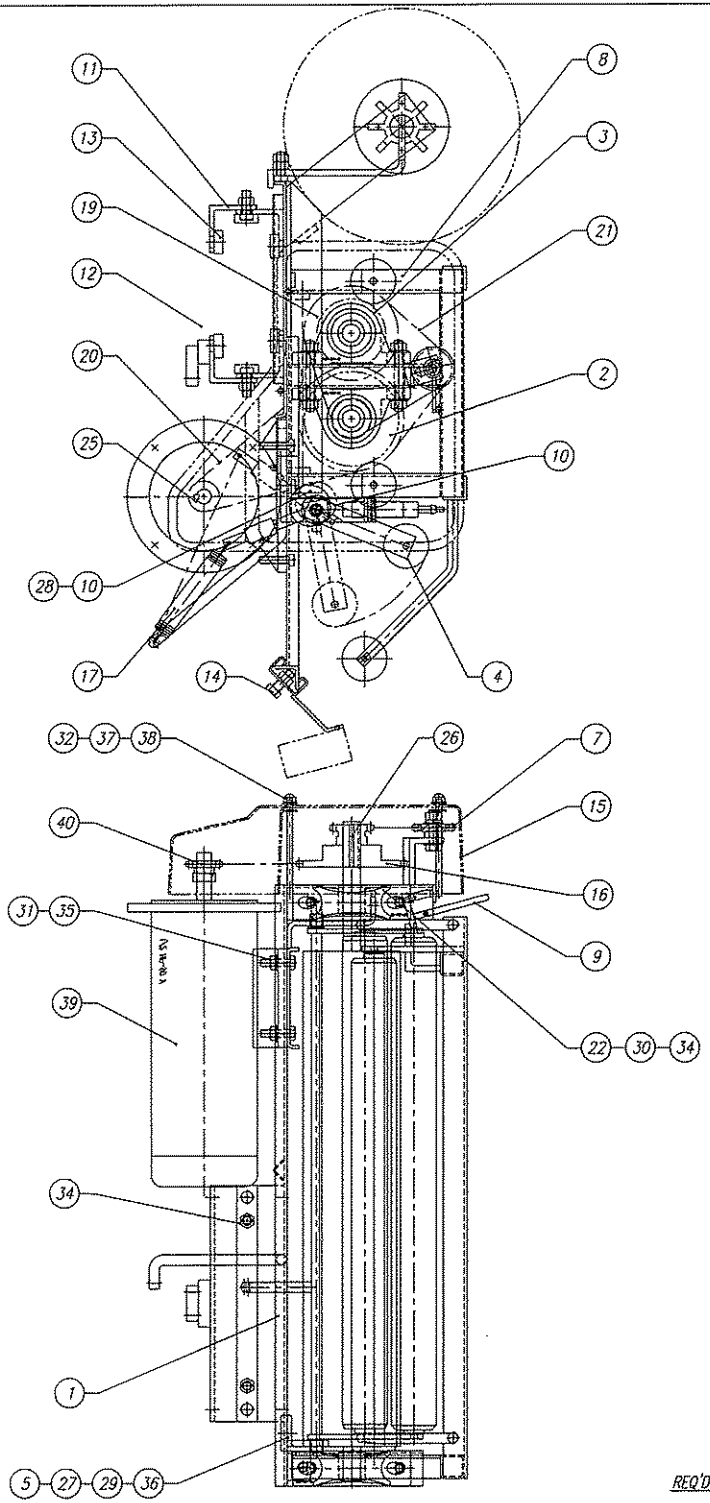
orion PACKAGING INC.
2270 INDUSTRIEL, LAVAL
QUEBEC, CANADA, H7S 1P9
TEL: (514) 667-9759

DATE: MAY-09-2000		SCALE: 1 : 6
DRAWN BY: S. KUBICKA		MACHINE TYPE: H,L77/14
CHECKED BY:		DRAWING SIZE: C
ASSEMBLY DWG.: 427950 B	JOB No.: STD	DRAWING No.: 427953

PRESTRETCH CHANGE AVAILABILITY

No.	DESCRIPTION	PART No.	WEIGHT	PRESTRETCH %%	
19	DRIVE SPROCKET - 3/4 BORE	40B26	011460	2.5	290 %	
		40B25	011459	2.5	275 %	
		40B24	011458	2.4	260 %	
		40B23	011457	2.1	245 %	
		40B22	011456	1.9	230 %	
		40B21	011455	1.7	215 %	
		40B20	011454	1.6	200 %	STD
		40B19	011453	1.4	185 %	
		40B18	010968	1.1	170 %	
		40B17	011452	.9	155 %	
		40B16	011451	.8	140 %	
		40B15	013134	.7	125 %	
		40B14	012403	.6	110 %	
		40B13	012402	.5	95 %	
		40B12	010748	.4	80 %	
		40B11	013157	.3	65 %	
		40B10	010975	.3	50 %	





REQ'D - 1 PCE

REVISION "D" AUG-29-2001 S.K.
REVISION "C" NOV-10-2000 S.K.
REVISION "B" MAY-04-2000 S.K.
REVISION MAR-09-2000

TOTAL WEIGHT : 98.6 LBS

	No.	DESCRIPTION	DWG. SIZE	PART No.	Q'ty	WEIGHT
D A	42	BOTTOM SPOOL WASHER	A	432322	1	--
D A	41	BOTTOM SPOOL	A	432323	2	.4
	40	SPROCKET 40B8 x 5/8 BORE	A	415109	1	--
	39	EL. MOTOR 1/2 HP, 90 VDC, 1750 RPM "LESSON"	--	015240	1	25
	38	RUBBER GROMMET 1/4 I.D.	--	--	3	--
	37	DOMED NUT 1/4-20UNC	--	014195	3	--
	36	HEX NUT 1/4-20UNC	--	012689	5	--
	35	HEX NUT 5/16-24UNF	--	013407	4	--
	34	HEX NUT 3/8-24UNF	--	012582	12	--
	33	HEX NUT 3/8-16UNC	--	011128	2	--
	32	FLAT WASHER 1/4 SIZE	--	012221	3	--
	31	FLAT WASHER 5/16 SIZE	--	012725	4	--
	30	FLAT WASHER 3/8 SIZE	--	014481	9	--
	29	LOCK WASHER 1/4 SIZE	--	011393	2	--
	28	SOCKET HEAD CAP SCREW 1/4-20UNC 3/4 LG	--	010259	3	--
	27	HEX HEAD SCREW 1/4-20UNC 1 LG	--	011382	2	--
	26	SQ. KEY 3/16 2 LG	--	010295	1	--
	25	SQ. KEY 3/16 1 1/4 LG		010295	2	
	24	SELF SEATING EXT. RETAINING RING 1" SHAFT SIZE	--	013860	2	--
	23	FLAT WASHER 1" SIZE x 1/8 TH'K	--	012323	1	--
	22	PILLOW BLOCK UCP 204-12 (3/4 BORE)	--	011192	4	--
	21	CHAIN #40 MADE IN JAPAN	--	013397	1	--
	20	CHAIN #40 MADE IN JAPAN 55 LINKS + C/L	--	013397	1	.1
	19	DRIVE SPROCKET 40B20 - 3/4 BORE	--	011454	1	--
	18					
	17	EXTENSION SPRING	B	403118	1	.1
	16	DUAL SPROCKET 40B10/40B28	A	419649	1	2.5
	15	FIBERGLASS COVER	B	422323	1	2.0
	14	PHOTOCELL BRACKET	B	422594	1	.4
	13	SLIDE BUTTON	A	420001	12	--
	12	CARRIAGE CHAIN ATTACHMENT ANGLE	A	420000	1	2.2
	11	CARRIAGE ATTACHMENT ANGLE (2"-TH'K TOWER)	A	419999	1	2.0
	10	PROXIMITY SENSOR CAM	A	413744	1	.3
	9	CRADLE LOCK	A	421524	2	--
	8	CRADLE ROLLER ASSEMBLY	A	423088	1	10.7
	7	CHAIN TENSIONER	A	421547	1	--
	6	FILM TOP MANDREL	A	423087	1	1.1
	5	DANCER BOTTOM BRACKET	A	422182	1	--
	4	DANCER ROLLERS ASSEMBLY - 20 (FRL)	A	414194	1	2.2
	3	OMNISTRETCH RUBBER ROLLER 2 3/4 - 20	B	423086	1	10.0
	2	OMNISTRETCH RUBBER ROLLER 4 1/8 - 20	B	423085	1	14.0
C	1	INSTA-THREAD LT BACK (6 x 2 -20 - FRL)	C	425218	1	28.2

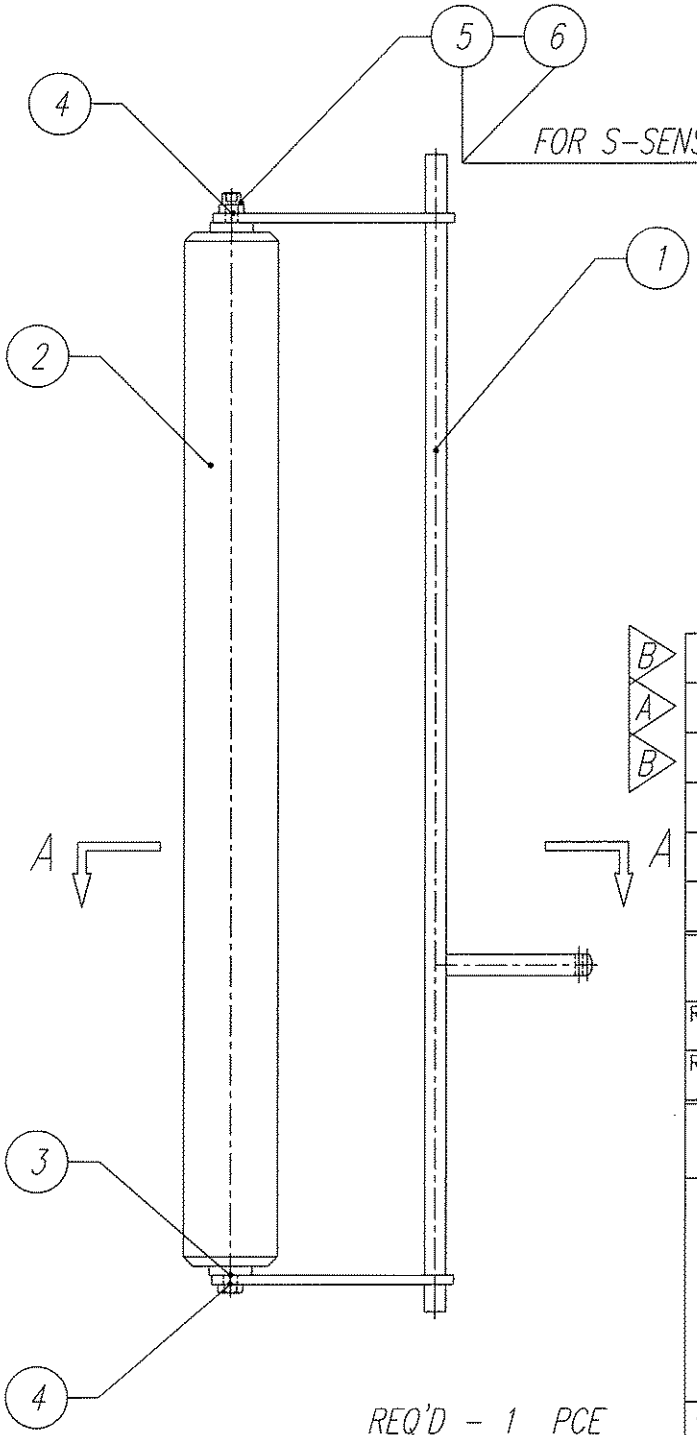
REMARKS: -

REMARKS: -

INSTA-THREAD LT - 20" (6x2-FRL)

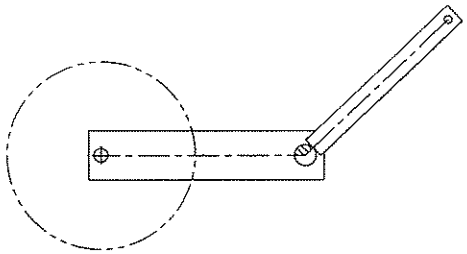
orion PACKAGING INC.
2270 INDUSTRIEL, LAVAL
QUEBEC, CANADA, H7S 1P9
TEL.: (514) 657-9769

DATE: SEP-20-1999		SCALE: 1 : 4
DRAWN BY: M. G. GOLA		MACHINE TYPE: H,L/14
CHECKED BY:		DRAWING SIZE: C
ASSEMBLY DWG.: LAYOUT	JOB No.: STD	DRAWING No.: 425219



REQ'D - 1 PCE

A - A



REVISION "B" APR-12-2004 S.K. (AS PER M.S.)
REVISION "A" NOV-21-2000 S.K.

	No.	DESCRIPTION	DWG. SIZE	PART No.	Q'ty	WEIGHT
B	6	HEX. NUT 1/4-20UNC		012689	1 (0)	-
A	5	SOCKET HEAD SCREW 1/4 x 20UNC 3/4 LG		010259	1 (0)	-
B	4	HEX HEAD SCREW 1/4-20UNC 1/2 LG		012722	1 (2)	-
	3	FLANGE NUT 1/4-20UNC	-	014164	2	-
	2	ALUMINIUM ROLLER 1.9 DIA - 20	A	402789	1	.4
	1	DANCER ROLLER CRADLE - 20 (FRL)	A	414195	1	1.8

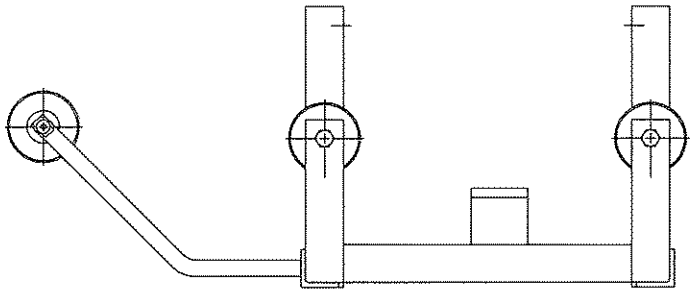
REMARKS: -

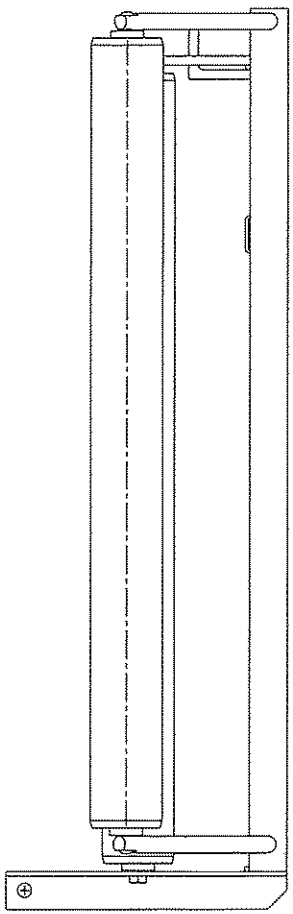
REMARKS: - -

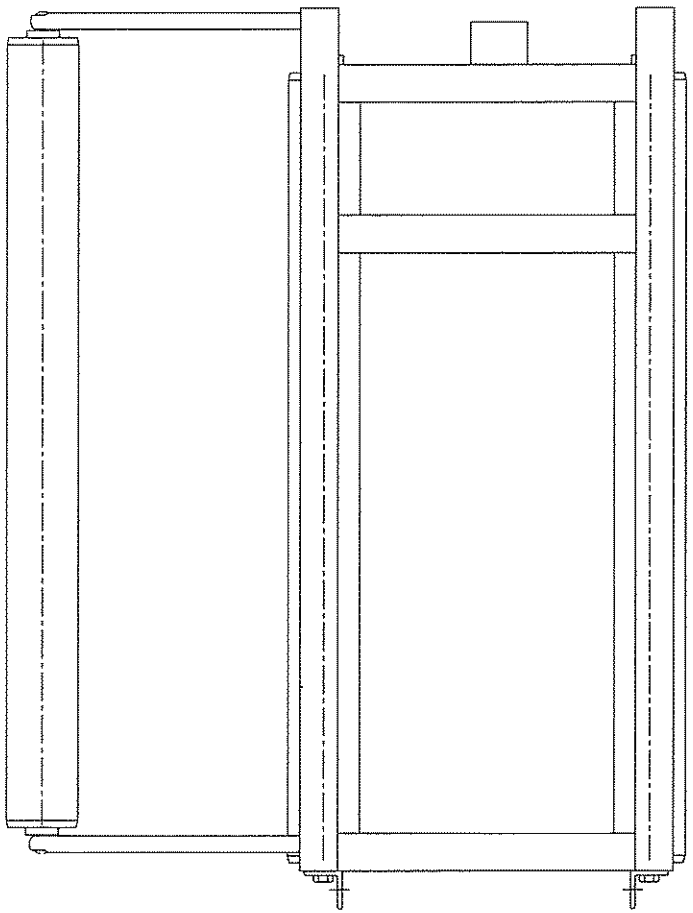
DANCER ROLLER ASSEMBLY - 20 (FRL)

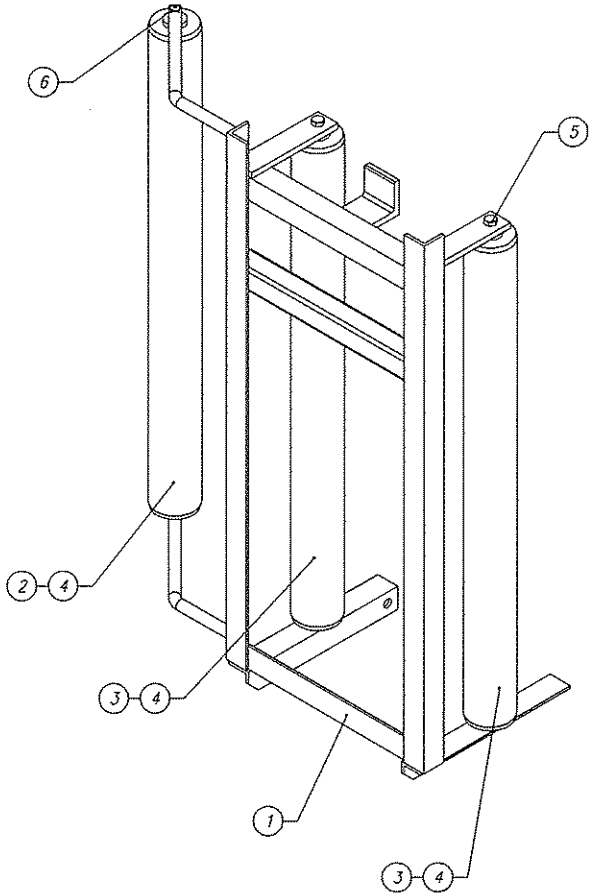
orion
PACKAGING INC.
2270 INDUSTRIEL, LAVAL
QUEBEC, CANADA, H7S 1P9
TEL.: (514) 667-9769

DATE: SEP-17-99		SCALE: 1 : 4
DRAWN BY: ROGER F.		MACHINE TYPE: ALL/12
CHECKED BY:		DRAWING SIZE: A
ASSEMBLY DWG.: 414189	JOB No.: STD - 12.1	DRAWING No.: 414194









REVISION "A" NOV-17-00 S.K.

No.	DESCRIPTION	DWG SIZE	PART No.	Q'ty	WEIGHT
6	HEX SOCK BUTT.HEAD SCREW #10-32UNF 1 LG	--	--	2	--
5	HEX HEAD SCREW 1/4-28UNF 3/4 LG	--	--	4	--
4	ALU.ROLLER (ECONOMY) 1.9 - 20	--	--	3	--
3	IDLE ROLLER SHAFT - 21 5/16 LG (1/4-28UNF)	A	423966	2	--
2	IDLE ROLLER SHAFT - 21 5/16 LG	A	413249	1	--
1	CRADLE ROLLER FRAME (20-FRL)	C	423089	1	--

REMARKS: -

REMARKS: -

CRADLE ROLLER ASSEMBLY (20-FRL)

REQ'D - 1 PCE

orion
PACKAGING INC.
2270 INDUSTRIEL, LAVAL
QUEBEC, CANADA, H7S 1P9
TEL.: (514) 667-9769

DATE: MAR-10-1999		SCALE: 1 : 2.5
DRAWN BY: ROGER F.		MACHINE TYPE: H,L/14
CHECKED BY:		DRAWING SIZE: C
ASSEMBLY DWG.: 423081	JOB No.: STD	DRAWING No.: 423088

APPENDIX