

# Maintenance and Inspections

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# Preventative Maintenance Schedule

## General Schedule for the D-2000 Family

Checks	Time Period
Oil level in cam Box View Port	Once per Shift!
General Inspection of Traverse	Weekly
Norgren Filter	Change when Dirty
Norgren Coalescent Filter	Change Element When Indicator Shows
Belts	Check tension Biweekly, replace as needed
All shafts and rails	Light Machine Oil Biweekly
Turret mandrel/endform assemblies	Check for excess movement on rails

**NOTE:** Refer to [Adjustment of Turret Carriages](#) maintenance procedure.

Component	Tasks
Turret mandrel/endform wiring and hoses	Check for loose wires.
All Pillow Blocks	Multi-Grease once per Month
Recirculating ball bearing blocks	Check function monthly, replace as needed
Chucks	Multi-Grease once per Month
Glue Nozzles	Clean off dried Glue and Dirt Daily
Wire guide roller on spindle mandrel	Keep clean and rotating freely daily
Low tube, Low box, & Light Curtains	Wipe Clean Biweekly
Gear Motors (90 weight gear oil)	Check for Leaks, Change oil every 6 Months (see below for type)
Winsmith Speed reducer	Check for Leaks, Change oil every 6 Months (see below for type)
Cutter Assembly	Check alignment weekly clean as needed
Glue system filters	Replace every 9 months see Dynatec manual

**NOTE:** Use Mobil Extra Hecla Super (ISO vis 680) or 600W Super Cylinder (ISO vis 460) Oils

Cam box oil level view port (a glass front view port) is located in the front of the cam box to indicate the proper oil level. The cam box is filled with the proper lubricant at the factory. The machine operator should check the oil level daily or at the beginning of every shift. The proper oil level should fill half the view port. DO NOT OVERFILL!

## Additional Maintenance Notes

- A general inspection of the Traverse (cam) assembly should be performed weekly. Check for signs of unusual wear. Check all securing devices, i.e. nuts, bolts, set screws and pneumatic fittings and tighten as necessary.

### References

For traverse maintenance, please see: [REELEX Traverse System Maintenance](#)

- A general inspection of the Turret assembly should be performed weekly. Check for signs of unusual wear (see following page).
- If wire does not fully engage in spring-loaded notch during transfer, check transfer wire roller for free rotation. Clean and replace bearings if necessary.

# Lubrication Checks

## Lubricants List

- TRAVERSE, CAM BOX MODEL # 387P1H32-360 APPROVED LUBRICANT
- MOBILUBE 46 SAE90 (MOBIL OIL)
- MOBILUBE 630 (MOBIL OIL)
- OMALA 220 (SHELL OIL)
- SCL LUBRICANT SAE90 (AMERICAN OIL)

## Cam Box Level

1. Top off with approved oil if level is below midpoint in sight glass.
2. Use MOBILUBE 46 SAE90 (MOBIL OIL) or equivalent. Do not overfill.

## Shafts and Rails

1. Clean any contamination off rails.
2. Lubricate with lightweight machine oil.
3. Check bearing function.
  - a. *Replace as required with high load upgrade available from REELEX Packaging Solutions*
  - b. *Inspect shafts for damage*
  - c. *Replace as needed*

## Traverse Oil Delivery System

1. Add oil to the reservoir as required.
2. Check for lubrication function.
  - a. *Dry rails indicate broken supply or inadequate timer setting.*
  - b. *Oil dripping off rails indicates excess timer setting.*
  - c. *Adjust the timer setting in the program if required.*

## Bearings and Pillow Blocks

1. Grease fittings are located on all pillow block bearings.
2. Use standard wheel bearing grease.

## Chucks

1. Grease fittings are located on all chucks.
2. Use standard wheel bearing grease.
3. Apply grease until seen at the jaws.

## Gear Reducer Reservoirs

1. Check level in (3) chuck gearmotors.
2. Check level in table ball screw gear reducer.
3. Add standard oil as required.

# Inspections

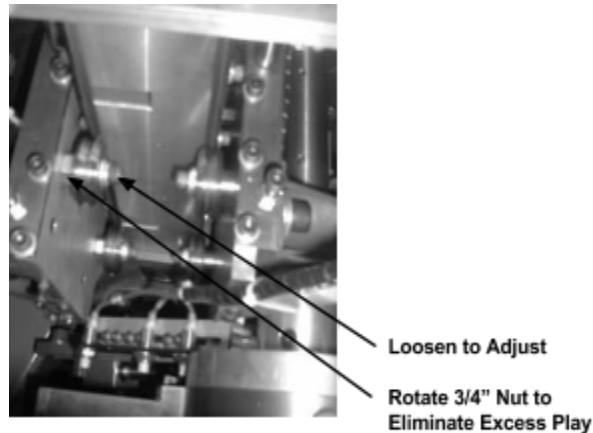
## Machine in E-Stopped Condition

### Turret Bearing Adjustment

1. Lower mandrel/endform assembly with maintenance program.
2. Check for slight contact between all guide roller bearings and their shafts.
3. Correct by adjusting eccentric bolts (2 adjustment points per side).
4. Additional support plates can be retrofitted to older machines. Plates are available from REELEX Packaging Solutions Inc.

### Adjustment of Turret Carriages

1. E-STOP machine with spindle mandrel disengaged from turret.
2. Bleed off residual air from turret carriage cylinder with relief valve.
3. Clamp or strap stop lever on base of turret to prevent rotation.
4. Check for excess play on rails by lifting and rocking mandrel and endform.
5. If excess motion is present, adjust with eccentrics located in wheel assembly with  $\frac{3}{4}$  inch adjustment nut.



### Shock Absorbers / Linear Motion Stops

1. Turret rotation stops and mandrel/endform carriage up stops (right and left sides, 2 shocks total).
  - a. Check action with the maintenance program.
  - b. Replace as necessary.
  - c. Be sure to maintain a stop position.
  - d. Check consistency between shock and bolt stop.

- e. *Shock is fully compressed at end of travel.*
  - f. *Use flow controls to adjust speed.*
  - g. *Use high load replacement shocks available from REELEX Packaging Solutions.*
2. Box load horizontal shocks (2 shocks total).
    - a. *Shock is **not fully compressed** when carriage is at the end of travel, allowing shock to have 1/16" unused stroke remaining. Re-adjust shock accordingly when carriage bolt stop is changed.*
    - b. *Adjust bolt stop to center box on table. Observe function during regular cycle. Shock action is individually adjusted on shock.*
    - c. *Replace as necessary.*
    - d. *Use flow controls to adjust speed.*
3. Guided cylinders; tube loader, spindle table and cutter grabber horizontal tables shocks and stops.
    - a. *Observe function during regular cycle with wire to check position and shock action (see following **Inspections while running**).*
    - b. *Rod-less cylinders use high load stock shocks and stops as well as spindle table.*
    - c. *Rod-less cylinder stops that no longer hold their position can be fixed by adding a cardboard shim under the clamping assembly.*
    - d. *Replace as necessary.*
    - e. *Use flow controls to adjust speed.*
    - f. *Adjustment of cut position mid stroke stop is located on spindle table and has a switch to confirm contact.*
    - g. *Shock is fully compressible and serves as a stop.*
    - h. *Switch must be moved when the shock is adjusted.*

## **Spindle Alignment Parts and Function**

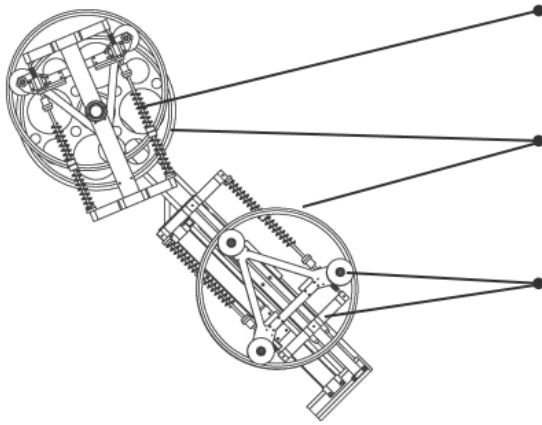
1. Check and replace wearing parts (as needed):
  - a. *Drive spline*
  - b. *Anti rotation nylon disks*
  - c. *Bevel gears*
  - d. *Chucks, especially jaw that supports mandrel with knurled roller.*
  - e. *Gear alignment/index parts (bolt and pins)*
  - f. *Gear Motor bevel gear housing bearings*



- g. Rubber latch*
2. Check spindle engagements:
    - a. Insert gear motor bevel gears pins into respective housings, adjust as required to correct binding. REELEX Packaging Solutions can supply a fixture for correcting major misalignment. Pins will show wear from misalignment.*
    - b. Insert main index pin into index plate with spindle gear motor engaged. Adjust as required.*
    - c. Open all mandrels using maintenance program.*
    - d. Raise both turret mandrels to up position.*
    - e. Lock turret rotation for right side winding. Use maintenance program or clamp stop position member against shock.*
    - f. Manually slide spindle table to insert spindle mandrel into right turret mandrel. Observe nylon spline during engagement. Adjust if misaligned. Set-up fixture is available from REELEX Packaging Solutions.*
    - g. Fix position of spindle and turret mandrel to simulate winding position. Use maintenance program, or block spindle table.*
    - h. Check knurled roller for free rotation, adjust spindle mandrel open switch if roller binds.*
    - i. Withdraw spindle and close and open mandrel in maintenance program to test adjusted position.*
    - j. Repeat steps “e” through “h” for left side.*

## **Buffer Assemblies**

1. Check bearings for wear and damage. Revised parts are available to eliminate bearing damage from springs
2. Check aluminum sliders for elongated bores. Bronze lined replacements are available.
3. Sliding parts should freely move on shafts.
4. Check adjustment of multi roller bearing support wheels. Rim sheave should turn freely, making partial contact with all support components.



#### **Buffer Springs**

One very common reason for LAN cable issues is worn or broken buffer springs. Non-functioning springs drastically increase stress on the cable. Inspect springs carefully and replace if worn or broken.

#### **15" Lightweight Sheaves**

Buffer should be equipped with lightweight 15" (38cm) diameter plastic sheaves. These sheaves reduce rotational inertia and increase the bending radius placed on the cable.

#### **Bearing and Wheel Lubrication**

Spray roller block bearings and wheels with SILICONE SPRAY. Do not use grease or oil! Check function of bearings to ensure smooth movement. Make sure rim itself rolls smoothly.

## **Vacuum Components**

1. Check suction cups for wear.
2. Clean or replace lines especially the line that is attached to the vacuum switch on the back of the table

## **Spindle and Traverse Belts**

1. Check for wear.
2. Replace as required.
3. Tension should allow approximately .25 inch of deflection when depressed.

## **Traverse Assembly**

1. Check the fit of the slider block in guides.
2. Removing shim can tighten guide rails.
3. Replace as required.

# Inspections While Running

## Transfer

1. Observe component positions for cut and hand off of wire to start new coil.
2. Adjust traverse position on screen and/or mid switch on mandrel/endform up cylinder as required.
3. Cutter in toward coil motion (before cut) can be adjusted with stop and switch mounted on front of spindle table.
4. Cutter in toward empty mandrel (after cut) can be adjusted with stop and switch mounted on rodless cylinder below table.

## Reflective Sensor

1. Tube insertion into coil and box closer assembly:
2. Observe function as tube is inserted into coil.
3. LED should light when reflective surface on mandrel/endform flag is seen.
4. On tube inserter, program will override failed sensor, but tube will be forced into coil to maximum depth resulting in packaging problems.
5. Sensor will not work if:
  - a. *Lens is dirty*
  - b. *Reflector is dirty*
  - c. *Reflector is misaligned*

## Box Folding

1. Observe the position of the box as it is delivered to the table.
2. Adjust stops and switches to restore centering.

# Glue System

## References

### D-2000

**Glue Manuals:** [Dynatech Glue Machine Manuals](#)

**Maintenance:** Glue system service (filter replacement) should be done at 9 month to 1 year intervals

### D-2050

**Glue Manuals:** [Nordson ProBlue Manuals](#)

- See Dynatech Manual For Specific Service Instructions
- **USE EXTREME CAUTION** - Glue is under high pressure and can cause severe burns.
- Service can be arranged through Dynatec or Nordson.
- Keep glue reservoirs and supply boxes closed to prevent contamination and prolong filter life.

# High Speed Traverse (Cam)

## References

For traverse maintenance, please see: [REELEX Traverse System Maintenance](#)

# D-20XX Maintenance Reference

## Glue Specifications

### References:

Type: [Techbond™ Adhesives](#)

Phone: 1 (704) 334 2425

Product Type:	Suggested Uses:
TECBOND 7731F/BK Hot Melt Adhesive	All purpose formulation
Other formulations available	Contact Techbond for specific requirements

## Operating Conditions

- Suitable for all gear and piston pumps
- Suitable for all standard electronic and pneumatic nozzles including zero cavity and reduced cavity. Suitable for wheel applicators and foamed hot melt systems.
- Operating Temperature: 325F to 350F.

**NOTE: In areas with high heat and humidity, a lower glue temperature may be used for optimal boxing.**

## Precautions

- Material is applied hot - appropriate clothing and eye protection should be used.
- Use with adequate ventilation to remove any hot melt fumes or vapors that are generated. Keep containers and premelters covered to avoid contamination.
- Do not mix with other adhesives.

## Recommended Air Regulator Settings (Input)

Equipment	Air Pressure
Dancer	10 PSI
Main Air on Winding Side	70 PSI
Main Air on Boxing Side	70 PSI

Glue Unit	70 PSI
Compression Cylinder down on boxing side	10 PSI
Box Load down cylinder (On top of D-20XX)	5 PSI

## Wiring Colors

Most of the I/O on the D-20XX is color coded with 8 Conductor shielded cable as follows:

Color	Code
Black	XX01
Brown	XX02
Red	XX04
Orange	XX08
Yellow	XX10
Green	XX20
Blue	XX40
White	XX80

The rest of the wires are as follows:

Type	Color
Earth Ground	Green w/Yellow Stripe
Neutral	Light Blue
Phase R of Three Phase Power Supply	Brown
Phase Y of Three Phase Power Supply	Violet
Phase B of Three Phase Power Supply	Orange
Motor + DC	Red
Motor – DC	Black
DC Common	Blue
DC Signal	Pink
DC Power	Red

110 Volt Power (Hot)	Grey
110 Volt Neutral	White
Interlock Control Circuits	Orange

## Spare Parts Lists

### References:

**D-2000 See:** [20048 - D-2000 Replacement Parts List](#)

**D-2050 See:** [50048 - D-2050 Replacement Parts List](#)