OPERATING INSTRUCTIONS *rev 5-16-06*
AUTOMATIC TRAVELING SERVO
CROSS CUT SAW software ver 5.xx

"IMPORTANT NOTICE"

When installed, or when electric power and compressed air are connected, extreme care must be taken by personnel setting up and operating this saw. The operation of this saw is automatic, there fore, an accidental or intentional signal to cut will cause the saw to go through a complete cutting cycle. Under no conditions should the saw be cycled without the guard and clamp assemblyøs in place. Do not place tools or other objects on the saw table. Keep hands clear of table, guard and clamp assemblyøs and when the saw is in operation.

SET-UP INSTRUCTIONS

Remove crating and shipping skid. Check saw for any damage that may have been incurred in transit. Raise leveling-height adjusting pads so saw can be moved if necessary. Move complete unit into production line. Remove shipping bracket located at extrusion exit end of unit. *This shipping bracket should be saved and put in any time the saw is moved from one location to another.* Align the saw table with the take-off equipment. Move the table to HOME position, for a right to left machine this about 1ö from its extreme right. For a left to right machine about 1ö from its extreme left.

SET-UP INSTRUCTIONS Cont…

Adjust leveling screws so that movable table assembly is approximately 1/8 inch below the bottom of the section being cut. This distance will vary depending upon the rigidity of the section. On some sections it is advisable to elevate or lower the end further from the extrusion machine. When cutting large heavy sections, be certain that they are supported in a satisfactory manner before and after the saw table, thus eliminating binding of blade by the plastic.

Connect compressed air supply to air filters, 3/8 inch pipe. Fill air oiler with MOBIL™ DTE® Light or equivalent. Turn on air. Adjust air pressure to 50 - 60 P.S.I.

CHECK SAW BLADE MOTOR FOR PROPER ROTATION - Connect saw to electric power specified on your purchase order. Before you apply power to the machine you will need to make sure that both Plexiglas doors are closed so that the interlock switches are engaged. Turn on the disconnect switch, mounted on the side of the machine. Press the green START button on the front panel, to start the saw blade, then immediately press the red stop button. Saw blade should rotate, when viewed from pulley end of the saw arbor, for right to left machine counter clockwise, for left to right machine clockwise. If saw does not have correct rotation, switch any two wires in saw plug except green ground wire.

The saw control circuits (solenoids and table movement) are interlocked with the motor starter and will not operate if motor is not running. Air solenoid valves are single solenoid spring return type. In case of electric power failure, springs return valves to produce this condition: saw blade returned (rear of machine) and clamps up. The two clamp bars are pneumatic actuated. There is also a separate filter regulator feeding positive air pressure in the ball screw. This keeps plastic chips and foreign debris out of the ball screw. Keep this turned on bleeding air whenever the saw is used.

GENERAL

Keep saw clear. Do not allow chips to pile up under saw. They could obstruct travel of table or blade assembly. Clean and drain air filter unit as required for proper operation of this saw. Check and adjust as necessary the saw blade drive belt.

Keep saw blade in good condition. A dull blade will not produce a good clean cut, and will cause excess strain on the saw motor and bearings.

TO CHANGE SAW BLADE - Disconnect from electric power and air supplies. Remove saw blade guard. Place wrench on arbor shaft flat, remove nut from saw arbor. Note thread rotation. Remove collar and remove saw blade. Install new or re-sharpened saw blade so it will cut when rotated counter clockwise when viewed from pulley end of arbor. Install collar. Tighten nut to approximately 110 ft/lbs. Replace guard assembly.

SET UP

Before you apply power to the machine you will need to make sure that both Plexiglass doors are closed so that the interlock switches are engaged. You need to have your incoming air pressure attached to the machine and adjust the regulator to 50 - 60 p.s.i.

The saw bed (table) speed is determined by the feed back from the encoder. The encoder should be mounted on the puller so the drive wheel is driven by the puller belt or it can be mounted so that the wheel is driven directly by the extrudate.

THE ENCODER MUST BE MOUNTED SO THAT THE ROTATION IS CLOCK WISE WHEN VIEWING FACE OF WHEEL.

Keep in mind that when the encoder wheel stops rotating the saw bed will stop moving in a outward direction.

START UP

Once you applied the proper air pressure, the proper voltage and verified the proper rotation of the saw blade. Turn on the disconnect switch, mounted on the side of the machine. On power up you will see the **RDN INTELLICUT**™ logo.

BOOT UP SCREEN

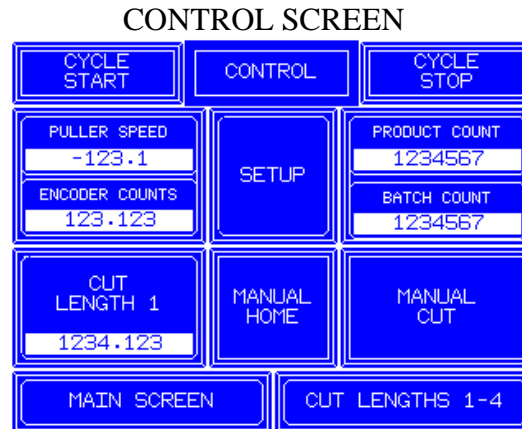When controller is finished booting the main screen will appear.

MAIN SCREEN

All screens can be navigated, values checked and changed with out the saw blade running. **The saw blade must be running in order for the table to home or perform a cut cycle.** Press the green START button on the front panel, to start the saw blade.

MAIN SCREEN Cont…

From the main screen you can select:

Control - From the Main Screen press the CONTROL button. The Cutter Control screen will appear.

CONTROL SCREEN

CYCLE START	CONTROL	CYCLE STOP
PULLER SPEED -123.1	SETUP	PRODUCT COUNT 1234567
ENCODER COUNTS 123.123		BATCH COUNT 1234567
CUT LENGTH 1 1234.123	MANUAL HOME	MANUAL CUT
MAIN SCREEN		CUT LENGTHS 1-4

CYCLE START - *NOTE: The saw blade must be running in order for the table to mov*e. After pressing CYCLE START button the table will home (if not already homed) **then it will immediately make a cut**, then the machine will start to operate automatically. It will make a cut cycle each time the encoder value equals the CUT LENGTH.

CYCLE STOP - One of two things will occur when the CYCLE STOP is activated:
a.)   If the saw table is at home the encoder input will be ignored and the saw table will
          be in a "cycle hold", the unit will not cycle until the CYCLE START button is pressed.
b.)   If the cycle stop button is pressed during the middle of a cut cycle, the machine
          will finish it's present cycle then when the saw head returns home the table will
          return home. It will then be in a "cycle hold".

CUT LENGTH - press CUT LENGTH and a number pad will appear. Enter desired value, anywhere from 0.100 to 9999.999, press **Enter**. The value is now set. Press **Done** to return to the last screen.

- **(OPTIONAL) PARTS 1 – 4 (1-8) or (1-12)** - From the Cutter Control screen press PARTS 1 - 4. The cut length 1 - 4 screen will appear. Up to eight (optional) different part lengths can be set in series. To select the length of the product to be cut press the corresponding PART number. A number pad will appear. Enter the desired value, anywhere from 0.10 to 9999.99, press ENTER. The value is now set. Press DONE to return to last screen. *NOTE*: If you put a õ0ö in any part length - all part lengths after that will be shut off.

Use **Part Count** to set the amount of parts per cut length. Press **PART (press the corresponding part count button 1 -12) COUNT**. A number pad will appear. Enter the desired value, press **ENTER**. The value is now set. Press **DONE** to return to last screen.

CUT LENGTH 1-4 SCREEN

CYCLE START	CUT LENGTH 1 THRU 4	CYCLE STOP
CURRENT PART	CUT LENGTHS 5 THRU 8	
PART 1 COUNT 123456	PART 2 COUNT 123456	PART 3 COUNT 123456	PART 4 COUNT 123456
PART 1 LENGTH 1234.123	PART 2 LENGTH 1234.123	PART 3 LENGTH 1234.123	PART 4 LENGTH 1234.123
MAIN SCREEN	PREVIOUS SCREEN	

- **CURRENT PART** - From the cut length 1-4 screen press, **CURRENT PART** the correct part screen will appear. This screen is used when making multiple cuts.
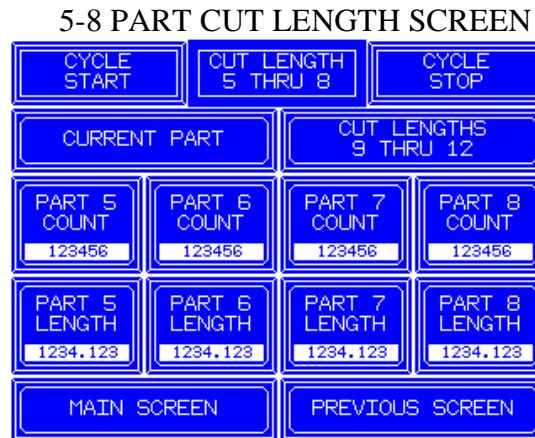
CURRENT PART SCREEN

CYCLE START	CURRENT PART	CYCLE STOP
	RESET PART/ COUNTER	
CURRENT PART # 12	CURRENT PART LENGTH 1234.123	CURRENT PART COUNT 123456	SET CURRENT COUNT 123456
CUT LENGTHS 1 THRU 4	CUT LENGTHS 5 THRU 8	CUT LENGTHS 9 THRU 12
MAIN SCREEN	CONTROL SCREEN	

- **RESET PART/COUNTER** - This button sets the multiple cuts back to part 1 with a count of ‑0ø

- **SET CURRENT COUNT** - this button sets the product counter for the current part to any given #.
  Example: You are on part # 2, set to 12ö with Part 2 Count set to 500pc, you took 20pc for samples and need 20 more, the current count is on 100pc you can set it to 80 to reach the 500 that you need.

- **CURRENT PART #** - Displays the part # that is currently being cut.

- **CURRENT PART LENGTH** - Displays the set length of the part that is currently being cut.

- **CURRENT PART COUNTER** - Displays the count up to preset of the part that is currently being cut.

PARTS 5 - 8 (Optional) Press the PARTS 5-8 button and the Parts 5-8 screen will appear.

5-8 PART CUT LENGTH SCREEN

CYCLE START	CUT LENGTH 5 THRU 8	CYCLE STOP
CURRENT PART		CUT LENGTHS 9 THRU 12
PART 5 COUNT 123456	PART 6 COUNT 123456	PART 7 COUNT 123456	PART 8 COUNT 123456
PART 5 LENGTH 1234.123	PART 6 LENGTH 1234.123	PART 7 LENGTH 1234.123	PART 8 LENGTH 1234.123
MAIN SCREEN		PREVIOUS SCREEN

MANUAL CUT - If the table is not home the table will home then the machine will perform a cut cycle. When the saw is in cycle start and manual cut is pressed, the value that has been entered in the CUT LENGTH will be correct at the next normal CUT CYCLE.

Example: If you are cutting an 96ö part and a 12ö sample is needed, you can press the MANUAL CUT button after about a foot of product has passed the saw blade, the next length that will be cut will be the 96ö piece that is required.

MANUAL HOME - This is useful for lining up the saw to the other equipment. Press MANUAL HOME and the table will move to its home position. For a right to left machine this is to the right. For a left to right machine this is to the left. If the table is at the HOME position you will see the table move off the home switch then move back home and stop.

PULLER SPEED - Averages the encoder input and displays it as Feet Per Minute.
     (display only not a button)

ENCODER COUNT - Shows the encoder counting up to the next CUT LENGTH.
     (display only not a button)

PRODUCT / BATCH COUNT - Shows the Product and Batch counters current value. They will increase in count each time the saw completes a cut cycle. To turn either on/off, reset the counters or set the batch output value press this button. The reset counters screen will appear.
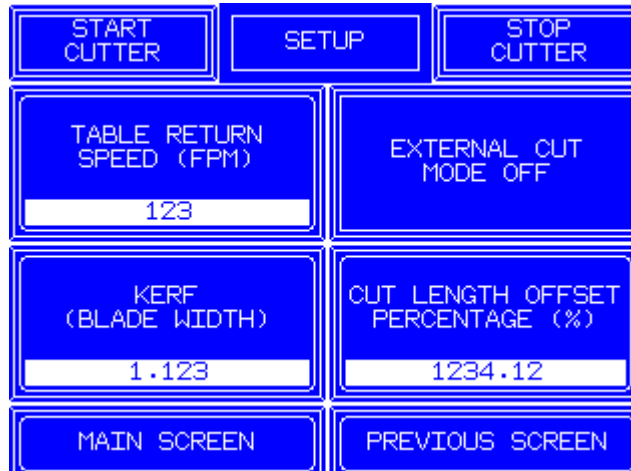
RESET COUNTERS SCREEN

START CUTTER	START CUTTER	STOP CUTTER

BATCH COUNT	PRODUCT COUNT
1234567	1234567

RESET BATCH COUNT	RESET BATCH & PRODUCT	RESET BATCH COUNT

BATCH COUNT OFF	SET BATCH SIZE	BATCH COUNT OFF
	12345	

MAIN SCREEN	MAIN SCREEN

The Counters can be turned on/off by pressing the toggle buttons.

Example: To turn on product counter press the PRODUCT COUNTER OFF button its state will then change to read PRODUCT COUNT NO, to turn off touch again.

To reset the counters, pick which reset button you need and simply press it. The batch counter has a set point value, when reached, it will turn on the batch output (dry contact relay). To set the batch size press SET BATCH SIZE button and a number pad will appear. Enter desired value, anywhere from 1 to 99999, press **Enter**. The value is now set. Press **Done** to return to the last screen.

SETUP - From the CONTROL Screen press the SETUP button. The SETUP screen will appear.

SETUP SCREEN

START CUTTER	SETUP	STOP CUTTER

TABLE RETURN SPEED (FPM)	EXTERNAL CUT MODE OFF
123	

KERF (BLADE WIDTH)	CUT LENGTH OFFSET PERCENTAGE (%)
1.123	1234.12

MAIN SCREEN	PREVIOUS SCREEN

SETUP Cont…

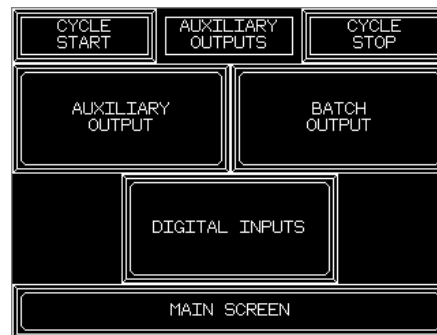From the SETUP screen you can select:

TABLE RETURN SPEED - This will set how fast the table returns back to home when a cut cycle is complete. It is recommended that the number be as small as possible while still allowing the table to get home in time for the next cut.

To set the TABLE RETURN SPEED press TABLE RETURN SPEED button and a number pad will appear. Enter desired value, anywhere from 10 to 100, press **Enter**. The value is now set. Press **Done** to return to the last screen.

KERF - KERF (blade width) this will automatically add the blade thickness into the controller. The operator will not have to take into account the amount of material removed by the blade when entering in a CUT LENGTH. To set the KERF press KERF button and a number pad will appear. Enter desired value, anywhere from 0.000 to 0.600, press **Enter**. The value is now set. Press **Done** to return to the last screen.

CUT LENGTH PERCENT - This function is used to adjust the actual cut length by a percentage factor from 80% to 120%.

AUXILIARY OUTPUT - From the Main Screen press AUXILIARY OUTPUT. The auxiliary output screen will appear.

AUXILIARY OUTPUTS SCREEN

The auxiliary output goes on when the clamps are activated. The batch output goes on when the batch set-point value is reached. From the AUXILIARY OUTPUT screen you can select which output, AUXILIARY or BATCH to configure, or view DIGITAL INPUTS. The selected screen appears.

**AUXILIARY OUTPUT Cont…**

AUXILIARY & BATCH OUTPUT SCREENS
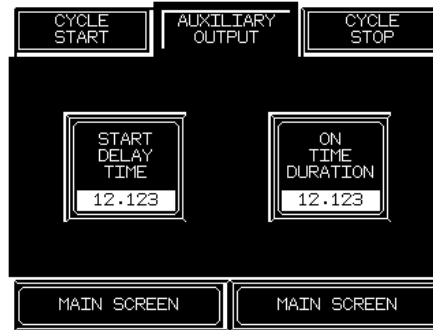
START DELAY TIME - This is the amount of time in seconds, after the cut, that the output will wait till it turns on.

ON TIME DURATION - This is the amount of time, in seconds, that the output will stay on once turned on.

MONITOR DIGITAL INPUTS - From this screen you can view digital inputs. If they are highlighted they are on. If not highlighted they are off.
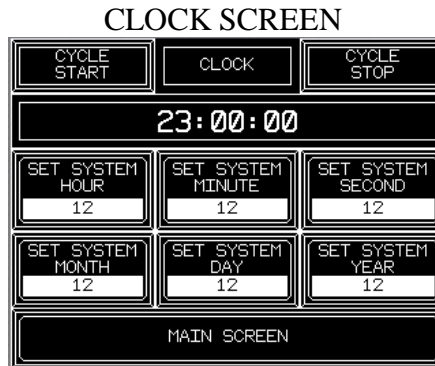
DIGITAL INPUT SCREEN
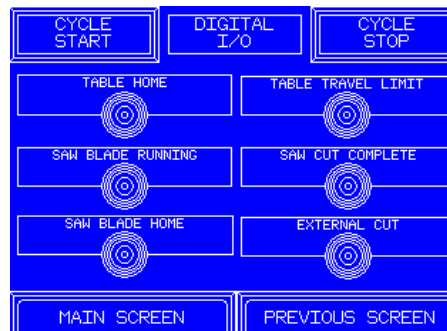
TOTAL PRODUCT - This button displays the actual count of total feet of product since the last reset. From the Main Screen press the TOTAL PRODUCT button. The TOTAL PRODUCT screen will appear.

TOTAL PRODUCT SCREEN
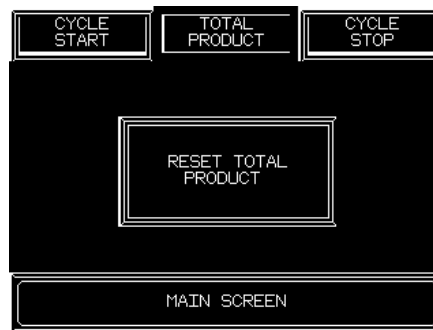
To reset the TOTAL PRODUCT simply press reset button.

CLOCK - From the Main Screen push on the button displaying the time. The CLOCK SCREEN will appear. *NOTE:* Time must be entered in MILITARY TIME fashion, 0900, 1300, 2300, etc. The clock will then display the correct AM or PM in standard time fashion.

CLOCK SCREEN

CYCLE START	CLOCK	CYCLE STOP
23:00:00	
SET SYSTEM HOUR 12	SET SYSTEM MINUTE 12	SET SYSTEM SECOND 12
SET SYSTEM MONTH 12	SET SYSTEM DAY 12	SET SYSTEM YEAR 12
MAIN SCREEN	

NOTE: To adjust the contrast of the screen, simultaneously touch both upper screen corners. A contrast bar will appear on the bottom of the screen. Press the desired setting then press anywhere on the screen to remove the contrast bar.

ALARMS - From the Main Screen press ALARMS. The alarm screen will appear. The alarm screen is for viewing alarms sent by the cutter controller. To view, press ALARMS button.

ALARM SCREEN

CYCLE START	ALARM SCREEN	CYCLE STOP

ALARM WINDOW
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-TRIGGERED ALARM-    12345676901234567
-ACKNOWLEDGED ALARM- 12345678901234567
-CLEARED ALARM-      12345678901234567
-TRIGGERED ALARM-    12345678901234567
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MAIN SCREEN	MAIN SCREEN

To delete an alarm, press in the middle of the screen. A menu will appear at the bottom of the screen. Press MODE. Press DELETE. Press DONE. Exit Alarms. *NOTE:* When machine is powered down all ALARMS are lost. There is no memory for past alarms.

TROUBLESHOOTING GUIDE

CUTTER PROBLEM	POSSIBLE CAUSES	SOLUTION
SAW (BLADE) MOTOR WILL NOT START (GREEN PUSH BUTTON)	• Plexiglas guard switches not made. • Motor starter overload tripped.	• Check that both guard switches are made. • Check motor starter overload, if tripped press reset button. If trips again check motor amp draw per motor nameplate rating. If too high check motor and arbor shafts for restrictions.
WILL NOT GO INTO CYCLE START MODE OR DO A MANUAL CUT.	• Encoder not spinning or not hooked up.	• Check alarms for: ðEncoder running backwardsö ðEncoder not runningö • Inspect encoder cable and connector for a short or open wire(s).
PART LENGTH NOT CORRECT TO SET VALUE	• Cut length offset percentage incorrect. Kerf not set correctly.	• Set to 100% • Check set value to actual blade width.
PART LENGTH NOT CONSISTENT.	• Encoder not on flat of belt. • Incorrect encoder. Bad spot on encoder.	• Check for a slipping encoder wheel, wheel to moving surface or inspect set-screw from wheel to encoder shaft. • Check the Speed Display versus Actual Speed of puller.
DISPLAY BLANK. TOUCH SCREEN DOES NOT POWER UP.	• Incorrect power supply. • Fuse blown. • Loose wiring.	• Check for proper voltage and phasing from your source, check serial tag on machine for power information. • Check Fuse #3 • Take a voltage reading on the back of the touch screen controller. It should be 24VDC across (+) & (-).

TROUBLE SHOOTING CONTINUED...

SAW PROBLEM	POSSIBLE CAUSES	SOLUTION
DISPLAY LOCKS UP OR FREEZES PERIODICALLY	• Noise on power on ground lines.	• Check for a good earth ground to the saw, use wire for the grounding and not the electrical conduit pipe. • Check that the saw is on a clean power line. A power line that has welding equipment or equipment that needs a lot of power requirements is a poor choice. • Make sure that there is no electrical noise producing equipment in the area, RF or Sonic welders.
ERROR MESSAGE AT BOTTOM OF SCREEN : ðPLC COM. (02:F7)ö	• Communication lost with controller.	• No reaction when any button is pressed. Check communication cable from Touch Screen to controller.
A DIAGNOSTIC SCREEN APPEARS (UPON POWERUP)	Upper left hand corner of Touch- Screen was pressed within 15 seconds after power up.	• Press RUN to return to Program Screens.

ALARM GUIDE

PROBLEM	POSSIBLE CAUSES	SOLUTION
ALARM- SAW BLADE NOT RUNNING	• Pressed CYCLE START, MANUAL CUT or MANUAL HOME without blade running.	• The saw blade must be running for table to move.
ALARM - CUT LENGTH TOO SHORT	• Cut length entered is too short • Puller speed too fast • Not cutting and returning blade fast enough	• Change cut length • Slow down puller • Speed up saw travel valves *NOTE*: Table could not get home before it received its next cut signal. The controller waits till the table is home then uses the next available cut signal. The cut length is usually a multiple of the set cut length.
ALARM - CUT DURATION TOO LONG	• Table ran out of travel before the saw home switch was activated.	• Adjust saw cut control valve.
ALARM - TABLE TRAVEL LIMITS *(You must push the table off of the switch to reset the alarm. About 1-2" is sufficient.)*	• One of the table travel switches are tripped. • Puller speed too fast. • Air not hooked up or too low.	• Push table back toward middle and press cycle start. • Slow down puller. • Check regulator for setting of 50-60 PSI. *NOTE*: If the table travel goes out too far the saw will return, clamps will retract and table will stop.
ALARM - TABLE SERVO ERROR	• table actual position not equal to commanded position . • Servo error excess.	• Puller speed too fast. • Restriction in table movement.
ALARM - ENCODER RUNNING BACKWARDS	• Encoder rotation incorrect.	• Mount encoder for clockwise rotation when viewing wheel.