

# Basic Setup with eDART® Software

This section walks you through the setup for the software for the *eDART*®.

#### In This Chapter

- 2 Start Machine
- 3 Create New Machine
- 4 Placing Sensors
- **5** Configuring Sensors
- **11** Testing Inputs/Outputs
- **19** Modify Existing Machine
- 20 Choose Pre-Existing Mold
- 21 Create New Mold
- 22 Sensor Assignment/ Placement
- 24 Configuring Sensors in the Mold
- 30 Modify Existing Mold
- 31 Setup Process Overview
- 35 Job Overview
- 37 Cycle Graph
- 42 Diagnostics

### **Start Machine**

The *eDART*® allows for many Machine, Mold, and Process setups to be stored in the memory for future runs. It is necessary to set up the Mold or Machine only once, the first time that it is started. Machine input, output configurations and the Machine size information are stored in the Machine file. Mold Sensor locations are stored in the Mold file. Alarm Limits and diverter settings are stored in the Process folder.

Always choose the Machine name from the Drop-down menu if it already exists. Only create a new Machine after checking for an existing Machine setup.

Once a Machine is created there is no need to set it up again. The *eDART*® will remember all of the configurations for the machine. The Sequence Module is a Machine Identifier and will automatically select the Machine from the Machine Drop-down menu when connected to the system.



A: Click on the "Machines" Button on the *eDART*® Home Page.



- **B:** If the Machine is in the list click on it to select.
- **C:** If the Machine is not in the list click on "Create New Machine".
- **D:** The selected Machine will be highlighted and have a check mark beside the name.

If a Machine is selected from the drop-down menu the Machine Name will show on the Machine button.

### **Create New Machine**

When Create New Machine is selected the *eDART*® will step through the Machine Creation Process. The first window will show the "Basic" tab. Do not use the Create new Machine Button if the Machine exists in the drop down menu. Instead, click on it to select.

Machine Setup S	tep 1 of 6				$\otimes$
BASIC	INPUTS	TEST INPUTS	OUTPUTS	TEST OUTPUTS	SUMMARY
		Basic Machin Name Machine and ir	ne Settings nput Screw Diameter		
		Machine Number/Name: Arburg			
		Screw Diameter: 1.	.10 in 🗸		
Васк	OUNDO			CANCEL	NEXT

t€Į	LE-R-50 - Stroke Encoder
$\diamond$	Proximity Switch
(	Hydraulic Sensor
÷Ð	Pressure Sensor
	Analog Input
•1 •1	OR2-D
P	Delta Pressure Sensor
лл	ID-7
D	Mold Deflection
J	Temperature Sensor

Sensor Icon Legend

# **Placing Sensors**

	Machine Setup	Step 2 of 6				
	BASIC	INPUTS	TEST INPUTS	OUTPUTS	TEST OUTPUTS	SUMMARY
			Machine In Assign Machine sensor	put Settings s to their correct locations	i	
A	Available Sensor	Position/	Velocity		Pressure	
$\smile$	SN: 0506000 <b>404:1</b> IA1-D-VI	₿₫			C	
		E Sequence	e Signal (ID7) N: 05040 00550 alue: N/A		Other Sens	ors
	ВАСК	OUNDO			CANCEL	NEXT

- A: Available Sensor List Drag and drop sensors from the Available Sensor list into their correct locations. When a sensor is held over a location the window will open and allow correct placement of sensor within the location.
- **B:** Drag the LE-R-50 or analog input modules connected for screw position into this box. See Position/Velocity section for details.
- **C:** Drag the Hydraulic sensor or the analog input module connected for injection pressure into this box. See Injection Pressure section for details.
- D: Drag any other Machine sensors that are connected to the Machine into this box.



**E:** When you connect the Sequence Module to the *eDART*® it will automatically assign it to the Sequence Signal area. See Sequence Module Config for more information.

All sensors attached to the system will automatically display in one of the Available Sensor lists. Mold sensors will show up in the Mold Available Sensor list and Machine Sensors will show up in the Machine Available Sensor List from the setup portion of the Job creation process.

The Sequence Module is a Machine Identifier for the *eDART*® system. After the initial setup for the Machine the *eDART*® will automatically display the Machine Name on the start page.

## **Configuring Sensors**

#### **Position/Velocity For LER-50**

When the Position/Velocity sensor is placed over the Position/Velocity location on the machine, a window will open up to allow the sensors to be dropped into the correct location.

		Position/Velocity		X
		Position		
	A)	SN: 0460000 <b>136:1</b> Value: 0 in	0	
		Velocity		
(	В	SN: 0460000 <b>136:2</b> Value: 0 in/sec.	0	

- A: Drop the LE-R-50 sensor output 1 from the "Available Sensor" List into the Position location. Select the screw direction. (see Set Screw Direction)
- **B:** The Velocity sensor will automatically assign.

#### **Position/Velocity From Analog Input**

→ SN	: 0460000 <b>136:1</b>	
Va	lue: 0 in	
/elocity		

- A: Drag analog input connected to Position or Velocity into the correct locations.
- **B:** Click on the "i" to get Analog Input scaling window Scale Analog Inputs for Position and Velocity.

#### **Position/Velocity Analog Configuration**

Enter the Al Position M	odule's Pa	ramete	rs
A Maximum Position:	0	in	
<b>B</b> Voltage at Maximum Position:	10.00	]v	SET
C Voltage at 0 Position:	0	<b>v</b>	SET
Cancel		Sa	ve

- **A:** Enter the maximum shot size on the machine.
- **B:** Run the screw to the maximum shot size, select "Set" to automatically set the maximum position voltage level.
- **C:** Run the screw to bottom (0 cushion), select "Set" to automatically set the 0 position voltage level.

#### **Injection Pressure Hydraulic Sensor Configuration**

Hydraulic Machines require a Hydraulic Pressure sensor.

Injection Pressure	
SN: 0330000 <b>231:1</b> Value: 12.82 p	<b>() (</b>
Braking	
В	
$\bigcirc$	

- A: Drag the Hydraulic sensor from the Available Sensor List to the Injection Pressure Location.
- **B:** If the Machine has the Dynamic Braking option, drag that sensor into the Braking Pressure Location.
- **C:** Click on the "i" to enter the Intensification Ratio window.

	Inter	nsification Ratio	
D	Ratio	13.34	
CANCEL			DONE

#### **Injection Pressure Analog Configuration**

Electric Machines Require an Analog Input Module to be wired to the Output for Injection Pressure from the Machine.

- A: Drag the Analog Input wired to the Injection Pressure Output to the Injection Pressure location.
- **B:** Click on the "i" to get the scaling window.

		Enter the Al Pres Module's Param	ssure leters	
		C Maximum Pressure:	30000	PSI
D	∨oltag	e at maximum pressure:	10	v
	E	Voltage at 0 pressure:	0.0000	v
		Cancel	Save	

#### **Sequence Module Configuration**

Triggers or Machine Sequence signals are 24VDC on/off signals from the machines digital outputs. The *eDART*® uses these signals for timing. The sequence module will automatically assign itself to the Sequence signal box.



A: Click on the "i" to see the trigger lights and assign signals

Triggers tell the *eDART*® when to execute different functions like zeroing sensors, Starting Cycles, and calculating values, therefore, it is important that the triggers are labeled exactly what they are.

The required signals, Injection Forward, Screw Run and Mold Clamped are pre assigned to the sequence module and can't be changed.

ID:	7	First Stage
0	Injection Forward	Injection Forward
0	Not Assigned 1104000501:2	
$oldsymbol{O}$	Screw Run 1104000501:3	
0	Mold Clamped 1104000501:4	
0	Not Assigned 1104000501:5	
0	Not Assigned 1104000501:6	
0	Not Assigned 1104000501:7	

Triggers that are connected but not Pre-Assigned need to be labeled.



- **B:** Click the terminal location to assign the trigger name.
- **C:** Click on the correct label for the trigger connected to the terminal.
- **D:** To unassign a previously selected trigger, click on the terminal and change it to "Not Assigned".

# It is extremely important to label the triggers correctly. Leave them as "Not Assigned" if you are unsure.

# **Testing Inputs/Outputs**

When all sensors have been assigned, and the "Next" Button is clicked, the *eDART*® will automatically take you to the Test Inputs Screen.



A: To verify triggers, watch the lights to make sure that the triggers come on and off at the correct times.

The Picture is an animation of your Machine and should move with the machine as a visual aid in Trigger assignment.

If the trigger light does not light up, label that input terminal not used or correct wiring to module.

If the trigger lights up at the wrong times, label that input terminal not used or correct wiring to module. You must go back to the Inputs page to makes changes.

- **B:** Click on this button to set the direction of the screw. See Set Screw Direction for details.
- **C:** Click this button to zero the injection pressure. See Zero Injection Pressure for details.

#### **Set Screw Direction**

# Choose the direction the cable is moving in by touching a picture



- A: Select option that matches the stroke sensor cable direction.
- B: Bottom the screw and select, to set the screw bottom postition.

#### **Zero Injection Pressure**

This needs to be completed while the machine is not injecting.



A: Select "Set To Zero" to set the Zero (0) while the machine is idle.

#### Automatic Trigger Testing

This window will appear after completing the Test Input page. If the triggers are incorrect during the cycle, an error message will appear once the job has started.

Following errors have been e	encountered:
Not Assigned	$\sim$ $\square$
No signal has been received	A This input is not used
Mold Clamped	
No signal has been received	☐ This input is not used
Screw Run	
No signal has been received	This input is not used
Injection Forward	
CCANCEL	Вок

- A: Click on the "This input is not used" box if the trigger is not working or incorrect.
- **B:** Select "OK" to proceed without correcting the errors.
- **C:** Select "Cancel" to return to the test inputs page to correct the errors.

#### **Configure Outputs**



Use the *eDART*® Outputs page to assign the output modules wired to machine.

- A: Available Sensor List Drag Output Modules from the Available sensor list into the location where they are wired.
- **B:** If a module is attached to the Robot or Part Diverter drop it into the Sorting box. See Sorting for details.
- **C:** If a module is wired to V>P transfer of the machine drop it into the Controls box. See Control Velocity to Pressure Transfer for details.

#### Sorting

When a Sensor from the Available Sensor list is held over the Sorting box, the window will open so that the sensors can be dropped into their positions.



A: Click on the "i" to configure the sorting output.



#### Shot Containment:

If the entire shot is to be segregated for inspection you will need one side of an OR2 module wired to Robot or Diverter. There will be only one OR2 module entry in the Sorting box. Click on the "i" and choose "Failsafe Good Part Output".

#### **Individual Cavity Containment:**

If individual cavities are to be segregated you will need one side of an OR2 Module for each cavity. Drag all of the OR2 entries into the Sorting box. Click the "i" and choose "Individual Cavity Sorting" for each module.

The cavity identification for each module will be set in the Mold setup screen.

#### **Control Velocity to Pressure Transfer**

When you hold a sensor over the Control box, the window will open so that all of the control sensors can be added to control list.



- **A:** Drop all of the Modules wired to controls into the Controls box.
- **B:** Click on the "i" button to set up the control output type for each module.
- **C:** Choose the desired setting from the drop down.



#### **Output Testing**

Machine Setup	Step 5 of 6				×
BASIC	INPUTS	TEST INPUTS	OUTPUTS	TEST OUTPUTS	SUMMARY
		Machine Ou Test all Mac	tput Testing hine outputs		
🔷 V->P Trar	nsfer 🙀	Excessive Rejects			
	В	<b>c</b>			
A Test		Test			
ВАСК	OUNDO			CANCEL	NEXT

Use the Test output page to insure that the outputs work as expected.

- A: Click on the Test button to test each output.
- **B:** Check that the light turns green.
- **C:** Check that the LED on the output module turns green. Check that the device alternates correctly on the machine, robot, etc.

#### **Summary Tab**

This tab shows the type, location and serial number of all sensors relating to this machine, whether they are in use or not. Click 'Finish' to continue.

BASIC	INPUTS	TEST INPUTS	OUTPUTS	TEST OUTPUTS	SUMMAR
		Machine Se	nsor Summary sensors are correct		
Туре	Location		Serial Number	Sort By L	ocation 🗸
•	Control Output	Pack->Hold Xfer	0107500 209:2		
nn	Digin Inj.Fwd		0504000 233:1		
лл	DigIn MIdC		0504000 233:4		
лл	Digin ScrewR		0504000 233:3		
лл	Not Used		0504000 233:7		
<b></b>	Not Used		0504000 233:6		
nn.	Not Used		0504000 233:5		
nn	Not Used		0504000 233:2		
<del>0</del> 0	Plastic Pressu	re Injection	0006000 122:1		

# **Modify Existing Machine**

MENU LOGOUT		<b>?</b> HELP	RJG CHAT
A Machine Arburg	Filter AmandaW Arburg Barb test 1		
Mold V10 test mold	Cinci India1		
Setup V10 on Arburg	roboshot Create New Machine		

A: Click on the "Machine" button.

Machine Setup Step	l of 5			$\mathbf{x}$
BASIC	INPUTS	TEST INPUTS	OUTPUTS	TEST OUTPUTS
	Narr	Basic Machine Settings the Machine and input Screw Diar	neter	
	Machin Arbu	e Number/Name: .urg 105		
	Screw	Diameter: 1.100 in 🗸		
	o		CAN	

**B:** Click on the arrow beside the Machine Name to get to the Machine Setup window.

### **Choose Pre-Existing Mold**

When a Mold is created the *eDART*® will remember all of the Sensor Locations and Types. It is not necessary to set the Mold up again. Instead, just select it from the Mold Drop-down menu.

Lynx Mold Pressure Sensors are Mold Identifiers. Once they have been set up in a Mold file the *eDART*® will remember which Mold they are in and automatically select it from the Mold list. If they are moved to a different Mold you will need to choose the correct Mold from the Mold select drop-down menu or create a new mold if it does not yet exist.



- A: Click on the "Mold" Button.
- **B:** Click on the correct Mold to Select.

### **Create New Mold**

Do not use the "Create New Mold" button if the Mold has been set up previously. Instead select it from the drop-down menu.

	MENU LOGOUT		Image: Construction of the co
	Machine Arburg	► )	Filter RING rulers
A	Mold V10 test mold	•	test 1
	Setup V10 on Arburg	×	Create New Mold

- A: Click on the "Mold" Button to get the Mold Menu.
- **B:** Click on the "Create New Mold" Button.

When "Create New Mold" button is selected the Mold Setup window will appear.

MENU LOGOUT			Image: Constraint of the second se	CHAT
Mold Setup Step 1 of 5				$\bigotimes$
BASIC INFO	INPUTS	OUTPUTS	TEST OUTPUTS	SUMMARY
	Name	Basic Mold Settings Mold and input basic Mold Infor	mation	
	Mold Nan V10 t	ne/Number: est mold of Cavities: 8		
ВАСК ОШ	iDO		CANCEL	NEXT

## **Sensor Assignment/Placement**

BASIC INFO	INPUTS	OUTPUTS	TEST OUTPUTS	SUMMARY
	Assign S	<b>Mold Sensor Setting:</b> ensors to their Locations in	<u>5</u> the Mold	
Available Sensors	D Sort E	y Serial # 🗸	V10 test m	old A
	$\smile$		Mold Sensors	
SN: 0422401 024:1 LS-B-127-500	SN: 0422401 025:1 LS-B-127-500		0 Sensor(s)	
-	-		⊥ 0 Sensor(s)	(C)
SN: 0506000 404:1	SN: 0902100 962:1 PZ/LX4F-S		2	
			0 Sensor(s)	
SN: 0902100 963:1	SN: 0902100 964:1		<u>3</u>	
0 12/2/04/-0	V 12/2/(4) -0		4	
			0 Sensor(s)	

- A: The Mold Name portion of the display will reflect the number of cavities entered for the Mold.
- B: Available Sensor List Drag a sensor from the "Available Sensor" list on the left to the correct cavity in the Mold on the right side of the window.
- **C:** When you place the sensor over the cavity, a window will appear for that Cavity only. Drop the sensor into the correct location within the cavity. See Cavity Location Sensor Placement for details.
- **D:** Sort Sensors by either Serial number or Model number.

ASIC INFO	INPUTS	OUTPUTS	TEST OUTPUTS	SUMMARY
	Assig	Mold Sensor Setting: n Sensors to their Locations in	<u>s</u> the Mold	
able Sensors <u>st</u>	Sc	ort By Serial #	Mold 5	Reset
SN: 0422401 <b>024:1</b> LS-B-127-500	SN: 0506000 404:	a	End of Cavity SN: 0902100 961:1 End of Cavity 5	C
SN: 0902100 <b>963:1</b> PZ/LX4F-S	SN: 0902100 964 PZ/LX4F-S	n	Mid Cavity	
			Post Gate	

#### **Cavity Location Sensor Placement**

The Individual Cavity Window will appear when a sensor is held over a cavity in the mold window.



A: Drop the sensor into the correct Location within the individual cavity window.

Post Gate, End of Cavity, Mid Cavity - There may be several sensors in each Cavity.

- **B:** Click on the "i" to display the "Mold Sensor Config" window. See "Mold Sensor Config" window for more details.
- C: Click the Mold button to go back to all cavities.

#### **Configuring Sensors in the Mold** Mold Sensor Config - Strain Gage

When the "i" is selected next to an indirect sensor a window will appear to allow for entry of pin size.

Mold Sensor Config	
Ejector Pin: A $\longleftrightarrow$ $\checkmark$ Diameter: 0.1250 in $\checkmark$ Use this value as default E	Mold Sensor Config
CANCEL	

- A: Choose to enter the Ejector Pin diameter.
- B: Enter Ejector Pin diameter.
- **C:** Choose to enter pin/blade area.
- D: Enter pin/blade area.
- E: If all pins are the same size, select this option.

#### Mold Sensor Config - Piezo - Indirect

**a:** Choose the piezo style from the drop down menu.

Mold Sensor Config	a Mald Sanaar Carfin
Model #: 9211 🗸	Mold Sensor Coning
	Model #: 9211
Sensor Full Scale: 2500 Newtons	Sensor Full Scale: 2500 Newtons
Sensor Sensitivity: 4.500 pC/Newton	Sensor Sensitivity: 4.500 pC/Newton
$(\mathbf{A}) \bigoplus (\mathbf{X})$	⊖⊠ ⊂
Diameter: 1/8" 🗢 in 🗢	Area: 0.01227 🗢 sq. in 🗢
Use this value as default	Use this value as default
E	

RJG, Inc. eDART® Software

#### Mold Sensor Config - Piezo Flush Mount

Clicking on the "i" button for a sensor will start the sensor identification window. If you are using a sensor adapter instead of a Lynx Sensor you will need to identify what sensor is attached to the adapter.

Mold Sensor Config					
A Model #:	6157B				
CANCEL					

#### **Piezo Sensor Adapter**

A Model #:	6157B	$\bigtriangledown$
Sensor Full Scale:	2000.0000 <b>bar</b>	$\nabla$
Sensor Sensitivity:	9.4000 pC/bar	
Use this valu	e as default	

#### **Locate Sensors**

If placement of sensors within the mold and cavities is unknown, the "Sensor assignment" tab can help locate them. When the mold is initially set up the "Available Sensor" list will have a "Clear List" choice to aid you.

BASIC INFO	INPUTS	OUTPUTS	TEST OUTPUTS	SUMMARY
	Assig	Mold Sensor Setting n Sensors to their Locations in	<u>S</u> the Mold	
Available Sensors Gear List Full List	Sc	ort By Serial #	Mold 3	Rese
			End of Cav	vity
			Mid Cavi	ty
			Post Gat	e
			( <b></b>	

A: Click on "Clear List" to remove all sensors from the "Available Sensor" list.

Apply Pressure to each sensor; or pin.

#### Indirect Sensors:

- 1. Open mold
- 2. Extend ejector pins
- 3. Push on pins one at a time
- 4. Note the order that pins were pushed

#### **Direct Sensors**

- 1. Apply pressure to sensors
- 2. Note the order that sensors were loaded

Available Senso	rs	Sor
<u>Clear List</u> Full List		
SN: 0902100 96	1:1 2	
PZ/LX4F-S	U	

#### Locate Sensors cont.

Sensors will appear in the "Available Sensor" list when pressure is applied to them.

BASIC INFO	INPUTS	OUTPUTS	TEST OUTPUTS	SUMMARY
	Assi	Mold Sensor Setting gn Sensors to their Locations ir	<b>S</b> the Mold	
vailable Sensors		Sort By Serial # 🗸	V10 test me	old
SN: 0422401 <b>024:1</b> LS-B-127-500	2 SN: 0422401 02 LS-B-127-500	5:1 1	Mold Sensors 1 Sensor(s) 1	
SN: 0506000 <b>404:1</b> IA1-D-VI			1 Sensor(s)     2     0 Sensor(s)	
			<u>3</u> O Sensor(s)	
			4 O Sensor(s) 5	

- **C:** Watch "Available Sensor" list for sensors to appear.
- **D:** Sensors will highlight and be numbered in the order in which they were pressed.
- **E:** Drag sensors into their correct cavity and location.

#### **Configuration for Individual Cavity Part Containment**

Individual cavity containment requires one relay from an OR2-D module to be assigned to each cavity. In the Machine setup, each relay should have been labeled as "Individual Cavity Good Part Sorting". Any relay labeled as such will appear in the "Available Sensor" list.

BASIC INFO	INPUTS	OUTPUTS	TEST OUTPUTS	SUMMARY
	Mole Assign S	d Output Sensor Sett Sensors to their Locations in	the Mold	
Available Sensors	D Sort E	ay Serial # ♥	V10 test m	old A
● SN: 0607500 <b>092:1</b>	•_ SN: 0607500 092:2		<u>1</u> O Sensor(s)	
●T OK2-D	●T OK2-D		2 O Sensor(s)	
SN: 0607500 093:1	SN: 0607500 093:2 OR2-D		<u>3</u> (Sancar(c)	
			<u>4</u>	
			0 Sensor(s)	
			5	
			0 Sensor(s)	
			6	

It is helpful if maintenance notes the serial numbers wired to the robot for each cavity.

- A: The Mold Name portion of the display will reflect the number of cavities entered for the mold.
- **B:** Available Sensor List Drag a sensor from the "Available Sensor" list on the left to the correct cavity in the Mold on the right side of the window.
- **C:** When you place the sensor over the cavity a window will appear for that Cavity only. Drop the sensor into the correct location within the cavity. See Cavity Location Sensor Placement for details.

iort By Serial # ▽	Mold	2	Reset
8:1	•1 S	Cavity Sorting N: 0607500 092:2	C
	• • •	avity Sorting Valve Gate	

**D:** Sort Sensors by either Serial number or Model number.

#### Mold Setup - Test Outputs

Mold Setup Step 4	of 5			×
BASIC INFO	INPUTS	OUTPUTS	TEST OUTPUTS	SUMMARY
	Clir	Test Mold Outputs sk on sensors to test Mold Outp	uts	
Open Gate #8	Cavity So	rting #6;6 Oper	Gate #4	Cavity Sorting #2
•		B		
Test	A Tes		Test	Test
ВАСК	Dundo		CANCEL	NEXT

- A: Click on the Test button to test each output.
- **B:** If the test is successful the light associated with that output turns green.

#### **Mold Setup - Summary**

At a glance view of all sensors, their placement in the mold and their serial numbers.

A: Sort by Cavity, Type, Location or Serial Number.

BASIC INFO	INPU	ITS	OUTPUTS	TEST OUTPUTS		SUMMARY
		<mark>Mol</mark> ∀erify S	Id Sensor Summary iensor Locations are Corre	ect		
Cavity	Туре	Location		Serial Number	Sort By	Cavity
Mold	$\langle \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \!$	Runner		0902100 962:1		Cavity Type
2	ė	End of Cavity		0422401 025:1		Location Serial #
2	•1	Unknown		0607500 092:2		
4	•1 •7	Valve Gate		0607500 093:2		
6	•1 •1	Unknown		0607500 092:1		
7	\$	Post Gate		0902100 964:1		
8	• <u>-</u> -	Valve Gate		0607500 093:1		
Unassigned	<b>\$</b>	Unassigned		0902100 963:1		
Unassigned	<b>\$</b>	Unassigned		0902100 961:1		7

# **Modify Existing Mold**

	MENU LOGOUT	HELP RJG CHAT
	Machine Arburg	Filter RING rulers
A	Mold V10 test mold	test 1
	Setup V10 on Arburg	V10 test mold  Create New Mold
	Setup V10 on Arburg	Two Rulers

- **A:** To modify an existing mold, click on the "Mold" button.
- **B:** Click on the arrow next to the Mold that needs to be edited.
- **C:** Go to the appropriate tab or field to make the required edits. Click "Next" until the last screen is reached. Click 'Finish' to continue.

	DUT	$\sim$	() HELP	RJG CHAT
Mold Setup Step 1 o	f5	c		$\odot$
BASIC INFO	INPUTS	OUTPUTS	TEST OUTPUTS	SUMMARY
	Name N	Basic Mold Settings Nold and input basic Mold Info	rmation	
	Mold Name V10 te Number of	e/Humber: st mold (Cavities: 8		
ВАСК	Dundo		C	

## **Setup Process Overview**

#### Setup

Use this to create a new setup or if something has changed in a saved process that will affect alarm settings or the timing of the part segregation device. Saving a setup for the new process allows you to get back to the old process at a later time if necessary. (Refer to the Process Setup Manual for more details)



- A: Click on the "Setup" button from the Home Page of the eDART®.
- B: Click on the "Create New Process Button".

#### **Basic Setup**

	<b>P</b> HELP	RJG CHAT	MENU LOGOUT
Process Setup Step 1 of 4		8	Process Setup Step 1 of 4
BASIC ALARM LIMITS	SORTING ACTIONS	CONTROL SETTINGS	BASIC ALARM LIMITS SORTING ACTIONS CONTROL SETTINGS
Basic Proc Name your Process and	ess Settings Input notes about Process		Basic Process Settings Name your Process and input notes about Process
A Setup Hane: Standard Cycle Time: 30.00 standard Cycle Time:	econds		Setup Hano:           Arburg V10           Standard Cycle Time:           Standard Cycle Time:           Total:           Total:           T         8         Bitspin           T         S         Entry

When "Create New Process" is selected, the "Basic" process setup screen will appear.

- A: Enter the Process Name.
- B: Enter the Standard Cycle Time for this process
- RJG, Inc. eDART® Software

#### Alarm Limits

Click on the "Next" button to go to the "Alarm Limits" tab. (Refer to the Process Setup Manual for more details)

This configuration will include the addition of Process Alarms/Warnings and Part Diverter/Robot Signal Controls.

When a process alarm or warning is added, the *eDART*® will display both a low and high alarm. These alarm levels can be set either automatically or manually based on actual part characteristics.



- A: Click on the "Add Alarm" Button. When "Add Alarm" Button is selected the *eDART*® will display the list of available alarms.
- **B:** Choose the positions you wish to monitor or alarm
- C: Click "Done" to apply Warnings and Alarms when complete

#### **Sorting Actions**

Click the "Next" button to display the "Sorting Actions" Window. This window will allow for input on how to treat the sorting output signal to insure the parts reach their proper destination. (Refer to the Process Setup Manual for more details)

MENU		HELP	RJG CHAT	NGS
Process Setup Step 3 of 4				8
BASIC	ALARM LIMITS	SORTING ACTIONS	CONTROL SETTING	s
	Sort Set timing and options	ettings s for part segregation		
	Diverter Timi bid diverter position until alarm changes bid diverter position 2.00 se class diverter outputs for clear Delay diverter outputs for clear Delayed	ng Controls conds after end of mold clamped ot(s) after machine has been down 1 cycle(s) IVERTER OUTPUTS		
	0			

- A: Check this box to hold the part diverter in one position until there is a change in the alarm state.
- **B:** Check this box and enter the amount of time for the contact to be held closed when a good part signal is generated.
- **C:** To use the "Reject After Down" feature, check this box and enter number of parts to be rejected after the Machine has been down.
- **D:** To use the "Diverter Delay" feature, check this box and enter the number of cycles that you would like to delay the output. Use this feature for conveyers that have many parts on it before the diverter device or over-mold processes that have alarms set on the 1st shot.

#### **Control Settings**

This page allows the user to configure how alarms are calculated. It also contains the settings for additional control output configurations. This page allows for the modification of Integration limits and for configuration so that you can see a temperature drop instead of temperature rise in LSR or other thermo-set materials. (Refer to the Process Setup Manual for more details)

MENU LOGIN	)	HELP	RJG CHAT
Process Setup Step 4 of 4	i		8
BASIC	ALARM LIMITS	SORTING ACTIONS	CONTROL SETTINGS
	Image: Control Settings     ALARM LIMITS   Soft ING ACTIONS     CONTROL SETTINGS     Control Settings     Set Integration limits and additional sorting tools     Consider cavity full when or psi at End of Cavity at End of Cavity pressure integrals and compute alarm outputs at:   Integration Limit Ene:   Screw Run End     Image:		
Computations	Consider cavity full when 10 plastic pressure reaches 10 End of cavity pressure integrals a Integration Limit End:	Image: state stat	avity 🗢

**A:** Click here for more control options.

MENU LOGIN	]	() HELP	RJG CHAT
Process Setup Step 4 of	4		$\otimes$
BASIC	ALARM LIMITS	SORTING ACTIONS	CONTROL SETTINGS
	Control S Set integration limits and	additional sorting tools	
Computations	Consider cavity full when 100 plastic pressure reaches 100 End of cavity pressure integrals an	0 psi at End of Car d compute alarm outputs at:	vity 🔽
	Integration Limit End: Peak Computation Option:	Screw Run End	
	Start of Injection + x seconds	10.00	
	Injection Forward delay after Mold Clamped:	0.00	
(	B		
Васк Эил	DO		

- **B:** Click on "Less" to hide them.
- **C:** Click on "Finish" to complete the process setup and go back to the main window.

#### Start Job

Once you have set up the machine, the mold, and the process as seen in the previous pages, you are ready to start your job.

MENU LOGOUT	HELP RJG CHAT	
Machine Arburg Mold V10 test mold		
Setup V10 on Arburg		
Setup Notes	BEGIN	A

A: To Start the process, click on the "Begin" button at the bottom of the screen.

### **Job Overview**

At the top of the Overview page are four 'buttons'. These allow you to navigate between the screens. You can click on each button or use the arrows to go back and forth as well.



- A: Job Overview: At a glance basic information
- B: Cycle and Summary Graphs
- C: Job Audit page
- D: Diagnostics page

RJG, Inc. eDART® Software

#### Job Overview, continued

On this screen you will see:



- A: Machine Status
- B: Machine, Material and Mold Match status indicator
- C: Software Tools and Options
- D: Good / Bad Part Counts and 100 shot history

#### **Cycle and Summary Graph View**

- A: Cycle Graph
- **B:** Summary Graph

	MENU LOGIN Job Summ	ary	IAT SETTINGS
	Graph Controls Template Controls	Cverlays	\ominus zoom 🛨 💋
	PP, Injection		
A	PP, End of Cavity #2 PP, End of Cavity #3		
	PP. End of Cavity #11	61)	
	PP, End of Cavity #10	-0.190)- )) -0.181)	Options
	None		
	0.00 sec. Jul 14, 10 : 58 : 19		0.106
	Graph Controls Add Note	(	∋ zoom 🕂 💋
B	Sequence Time Fill Time		
$\bigcirc$	Injection Integral Injection Pressure	alantaka mulakahantaka mulakahakaka mula	hereby
	Peak End or cavity #8 WAA Ampt You Wy And Ampt You My And Ampt You?	hand-upptheorhand-upptheorhand-uppthe	Myters Anophy whyte
	Peak cavity 27 While the While the way have the second of	helmentheological helmentheological helmethy helmethy helmethy	Muchup Augustant
	Notes-> Scrollbar->		
	Cycle Total 5118 Thu Jul 14 09:54:34		Thu Jul 14 10:58:14

# **Cycle Graph**

The Cycle Graph is where the real time data is displayed visually. All active sensors will be available to view in the graphical real time form.



- **A:** Main Graph Area. All real time graphs will be displayed in this area.
- **B:** Curve Help Screen. This screen shows sample curves and gives descriptions of important features of each curve.
- **C:** Time span visible on the graph. These values can be changed to show any portion of the graph in detail.
- **D:** Digital input-output graph area. Any on/off signals can be displayed in this portion of the graph. These signals would include triggers, control outputs, and sorting outputs.
- E: Click this button to maximize or minimize the graph.
- F: Use the plus and minus signs to zoom in and out. The graph will always start from 0 seconds as you zoom.

### Cycle Graph cont.

	<u>G</u> raph Controls	Template Controls					G	🗖 Overlays	Θ	Zoom	<b>①</b> (	2
(V	PP, Injection	1.4										
ľ	Ve, Injection						······					
			Н									
			343 (T=342) 2749 (T=2836)	•••••••••••••••••••••••••••••••••••••••						· · ·	*****	· · · ·
		1 7			<u> 1</u>		1. 	· ·				_
	Good					· · · ·						
		0.00 sec. Jan	04, 21 : 57 : 28								10	.0
			J									

- **G:** Click this button to overlay all future cycles on the display.
- **H:** Cursor. The cursor can be placed on the graph to view values for curves at specific times.
- I: Time into the cycle will be displayed at the top of the cursor.
- J: Time Date Stamp for the present shot is displayed here. All shots are differentiated with a time date stamp.
- **K:** Each Curve displayed on the Cycle Graph will have a Curve Identification button. The Curve name will be displayed on the button and will be the color of the curve.

#### **Graph Control Menu Auto Scale Curves**

Δ	<u>G</u> raph Controls	Template Controls	_			🗏 Overlays	Θ	Zoom	Ð	
$\mathcal{I}$	Grap	oh Controls					_			
Ŭ	Auto Scale	(B)	537 (T=0.532)	 						
	Set Fill Volume a	at Cursor								
	Add a Curve						and the second second			
		1	<mark>343 (T=342)</mark> 2749 (T=2836)	 				***********		
	-	<u> </u>		 	 					
	Good									
		0.00 sec. Jan	04, 21 : 57 : 28						1	0.0

- **A:** Click on the "Graph Controls" Menu.
- **B:** Click on "Auto Scale" from the menu. The curves will automatically scale fit the screen.

#### Set Fill Volume at Cursor

The *eDART*® uses the area under the fill portion of the Injection Curve as an Effective Viscosity Measurement as the area varies directly with variation in viscosity. This value is correct only when calculated during the dynamic fill portion of the cycle. To insure that this is calculated at an appropriate place, the volume at transfer needs to be entered into the *eDART*®.



- A: Place the Cursor at transfer on the Cycle Graph.
- **B:** Click on the "Graph Controls" Menu.
- **C:** Click on "Set Fill Volume at Cursor". The *eDART*® will use the volume measurement at that point as an ending point for the Effective Viscosity Measurements.

#### **Cycle Graph Values**

**A:** To see numerical values for curves on the Cycle Graph, click your curser on Summary Data Table, select the settings gear, and check the boxes for the values you wish to see, and click Apply.

MENU	LOGIN	4 (	Job Su	() () Immary	/		<b>P</b> HELP	RJG CHAT				
Graph Controls	Template Cont	trols						Overlays 🤆	$   \begin{array}{c}     0.380 (T=0.376) \\     0.404 (T=0.397) \\     0.384 (T=0.378)   \end{array} $			
PP, Injection			Ad	ld Sumn	1ary Dat	a			0.3(3690 (T=3630) 3450 (T=3410) 3400 (T=3280)			
PP, End of Cavity #2 PP, End of Cavity #3			Machine	8-8	Mold		Material		3230 (T=3310) 3230 (T=3210) 3220 (T=3170) 3160 (T=3110) 3120 (T=3120)			
PP, End of Cavity #11		Average Value					Z	η				
Summary Data Table	e Val	A Pressure						ue Tpl	% Tpl Unit	ptions		
Sequence Time:Fill Time	0.00 sec.	Cycle Time					-			431		
Graph Controls	Add Not	Decompression Fill Speed	1					Θ	Zoom 🕀 [	2		
Sequence Time		Fill Time		•			~		נהארשור בתר			
Injection Integral Injection Pressure	hunderfor guberth	Fill & Pack Inte	gral					mlohngantu	halandettahanneliek			
Peak End of Cavity #8	hadres Annortha	CANC			APPLY		DONE	. And Annothing	Mushing Musing March			
Peak End of Cavity #7	Summary Data Name		Value	Tpl	% Tpl	Unit		Name	Value	Tpl	% Tpl	Option: Unit
Notes Scrollba	uence Time:Fill Tim	e	0.0100	0.0100	0.0%	SEC.						$\left  \right\rangle$
Cycle Total 51	18 Thu Jul 14	11:13:21							Thu Jul 14 12:16:5	57		

**B:** When 4 or more sensors are present, a bar graph can been also be obtained by clicking Summary Bar Chart to veiw the desired curve.



MENU	LOGIN	Audit Log	Image: Constraint of the sector of the se
Date/Time	Activity	User	Detail
2014/05/08 07:08:28	Sensor 09 021 00963:1: piezo_type	Admin	Piezo Adapter
2014/05/08 07:08:28	Sensor 09 021 00961:1: piezo_type	Admin	Piezo Adapter
2014/05/08 07:08:18	Job Started	Admin	Arburg
2014/05/08 07:06:03	Saved Mold Setup	Admin	V10 test mold
2014/05/01 14:15:04	Job Stopped.	Admin	
2014/05/01 14:14:55	Sensor 09 021 00961:1: piezo_type	Admin	Piezo Adapter
2014/05/01 14:14:44	Job Started	Admin	Arburg
2014/05/01 14:14:39	Saved Mold Setup	Admin	V10 test mold
2014/05/01 14:11:38	Job Stopped.	Admin	

A: Sort by Date, Activity or User to see what changes have been made over a period of time, and who made them.

# Diagnostics

М	ENU LOGIN	Diagnosti		A HELP RJG CHAT	SETTINGS
	Serial # 🔺	Attached to	Sensor Type	Location	Status
			Diagnostic Info	Port 1	Ok
			Diagnostic Info	Port 2	Ok
Δ	0123600123:1	Mold	Ejector Pin Force	End of Cavity #1;A	Valid
Δ	0407500037:1	Machine	Control Output	V->P Transfer	Valid
	0407500037:2	Machine	Sorting Output	Reject Control	Valid
	0460000136:1	Machine	Stroke	Injection	Valid
	0460000136:2	Machine	Velocity	Injection	Valid
Δ	0504000261:1	Machine	Seq. Module Input	Injection Forward	Valid
	0504000261:3	Machine	Seq. Module Input	Screw Run	Valid
Δ	0504000261:4	Machine	Seq. Module Input	Mold Clamped	Valid

- A: Click on the arrow or the fourth dot to get to the diagnostic page.
- **B:** Click on the triangle to display information about sensor status.



**C:** Click on the "View Raw Data" button to display more detailed information about the sensor.