GTV8 Integrated Sequential Control System User Guide

smart hot runner solutions

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Precautions

	WARNING
	Use of this equipment in a manner not specified by the manufacturer may impair protection provided by the equipment.
	In addition to presenting a potential fire hazard, high voltage and high temperature can damage equipment and cause severe injury or death. When installing or using this instrument, follow all instructions carefully and use approved safety controls.
	Hazardous potentials exist on components inside the controller. Always disconnect AC power and AC or DC signal input to the mainframe when servicing the controller.
	Because these controllers or associated equipment may not always be fail safe, an approved safety control should be used for safe operation.
	Turn off power to the controller before cleaning the exterior of the controller.
	Failure to observe these precautions can result in exposure to a potentially lethal shock hazard.
	All wiring should be done by an experienced technician. The controller and wiring should be installed in accordance with national and local electrical codes. To avoid serious personal injury and damage to equipment, follow all warnings and cautions provided in the hardware setup instructions.

	CAUTION
	If a controller shows signs of having been damaged during shipping, do not power up or install the controller. Save all packing materials and report any damage to the carrier immediately.
	Do not locate this instrument where it may be subjected to excessive shock, vibration, dirt, moisture, oil, or other liquids.
	This is a Class A product. In domestic environments this product may cause radio interference in which case the user may be required to take adequate measures.

Table of Contents

1.1 Uses

The Sequential Controller GTV8 provides a means of controlling the mould filling sequence when using Valve Gate Hot Runner Systems.

GTV8 enables the Valve Gates of a Hot Runner System to be individually controlled to provide the following benefits:

1.1.1   Removal or Positioning of Weld Lines

Quality of the moulded part can be improved by removing or repositioning weld lines or visual surfaces or sections where a weld line would cause a weakness.

1.1.2   Regulation of the Injection Quantity by Gate Operation

Flash occurrence or short moulding is improved by the regulation of the Injection Quantity from each individual gate.

1.1.3   Reduction of Clamping Force

Injection is performed with minimum clamping force because all of the gates are not opened simultaneously.
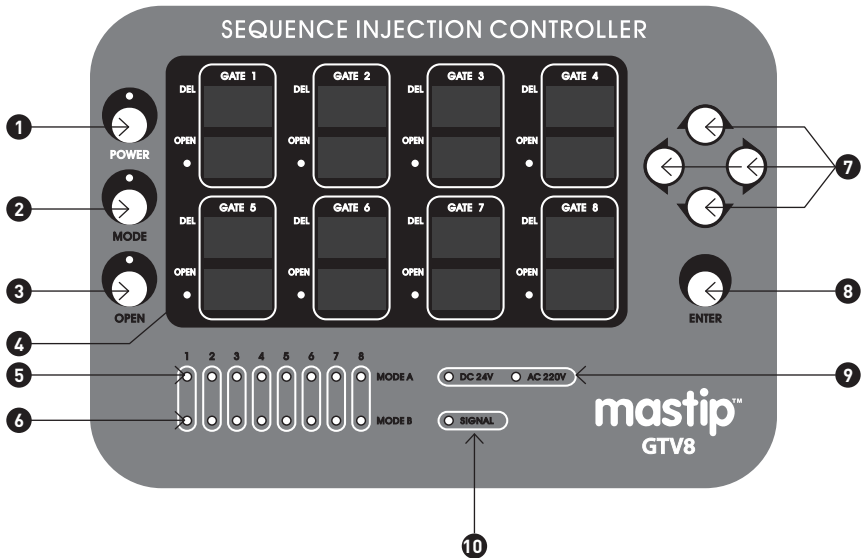
1.1.4   Reduction of Flow Marks

Flow marks are minimised by being able to raise the injection rate of the gate.

2.0 Power Supply

Mains Power Supply (Timer case)	Single Phase AC 220V (50/60 Hz)
Injection Signal Input Power Supply	24VDC, 220VAC
Solenoid Output Power Supply	Signal Voltage, 100mA/Zone
Operating Temperature Range	-10°C to 50°C

3.0 Control Panel Layout

1 POWER Button – Controller Power on / off

2 MODE Button – Mode Setting Adjustment

3 OPEN Button – Manual Gate Actuation

4 Gate Signal - LED

5 MODE A – LED

6 MODE B – LED

7 Arrow Buttons – Moving within menu settings

8 ENTER Button – Setting Confirmation

9 Output Voltage – Signal Voltage to solenoid

10 SIGNAL Input – LED

4.0 Functions

4.1 Setup

1) Mount unit securely and away from heat sources to avoid damage during use.
2) Connect Signal Input wire to injection moulding machine.
3) Connect Signal Output cable wires to solenoid (refer wiring section 6.1).
4) Connect mains power supply, turn on power supply. Power LED ❶ should now flash.

4.2 Mode Setting

1) Press the POWER button ❶ to activate the unit. The OPEN, DEL and Mode LED should now be displayed.
2) Press and hold the MODE button ❷ for 4 seconds to activate the Timer Mode settings, the LED Mode light ❺ / ❻ on Gate 1 should now flash.
3) Use the up and down Arrow Buttons ❼ to move between MODE A, MODE B or turn off the Gate when both Mode LED ❺ and ❻ flash.
4) Use the left and right arrow buttons ❼ to move between the Gate numbers, and set all the Gate modes required.

4.3 Units Setting (999 / 99.9 / 9.99)

1) Use the up and down Arrow Buttons ❼ to move to the required Gate. The DEL or OPEN display for the selected Gate will flash ❺ / ❻ .
2) Press and hold the MODE button ❷ for 4 seconds. The DEL display on the Gate selected will now display "Unl", and the OPEN display will now display the Units (999 / 99.9 / 9.99).
3) Use the up and down Arrow Buttons ❼ to select the units required for that Gate.
4) Use the left and right Arrow Buttons ❼ to move to other Gates if you wish to change the units.
5) Press Enter Button ❽ to save setting, or keep idle for 4 seconds to auto save.

4.4 Manual Gate Actuation

1) Without selecting a Gate, press the OPEN Button ❸ to open all gates.
2) Use the Arrow Buttons ❼ to select a specific Gate, and press the OPEN Button ❸ to open only the selected Gate.

4.5 Set the Start Signal Delay Time (DEL)

1) Use the Arrow Buttons ❼ to select the required Gate DEL panel required, press the ENTER Button ❽ to confirm. The right side digit in the DEL panel should now flash.
2) Use the Up and Down Arrow ❼ buttons to increase or decrease the digit value, or use the left and right Arrow Buttons ❼ to move to the digit to change.
3) Press the ENTER Button ❽ to save setting, or keep idle for 4 seconds to auto save.

4.6 Set the Solenoid Open Time (OPEN)

1) Use the Arrow Buttons ❼ to select the required Gate OPEN panel required, press the ENTER Button ❽ to confirm. The right side digit in the OPEN panel should now flash.
2) Use the Up and Down Arrow buttons ❼ to increase or decrease the digit value, or use the left and right Arrow Buttons ❼ to move to the digit to change.
3) Press the ENTER Button ❽ to save setting, or keep idle for 4 seconds to auto save.

5.1 Mode Specification

The GTV8 has 2 mode specifications.

5.2 MODE A (Continuous Sequence)

Selecting Mode A - After the injection signal has been received, the gate remains closed during the DEL time. After the DEL time has elapsed, the gate opens and remains open until the end of the injection signal.

Example: Injection time 10 seconds/DEL time: 3 seconds. Gate opens 3 seconds after receiving the injection signal and remains open for 7 seconds and then closes.
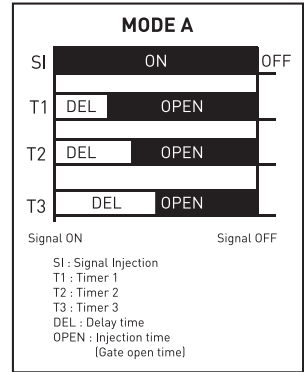
5.3 MODE B (Intermittent Sequence)

Selecting Mode B - After injection signal has been received, the gate remains closed during the DEL time. After the DEL time has elapsed, the gate opens for the OPEN time setting. After the OPEN time has elapsed, the gate closes and remains closed.

Example: Injection time 10 seconds/DEL time 3 seconds/ OPEN time 4 seconds. Gate opens 3 seconds after receiving the injection signal and remains in the open condition for 4 seconds and then closes.
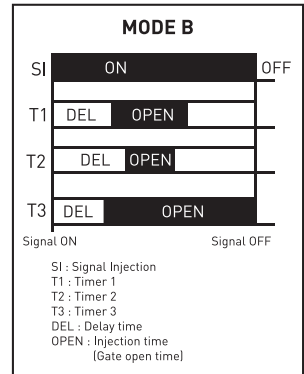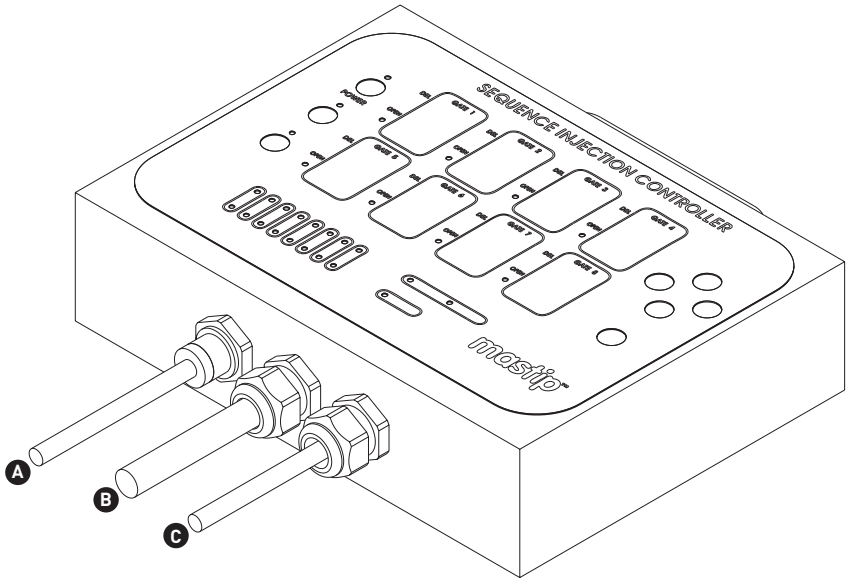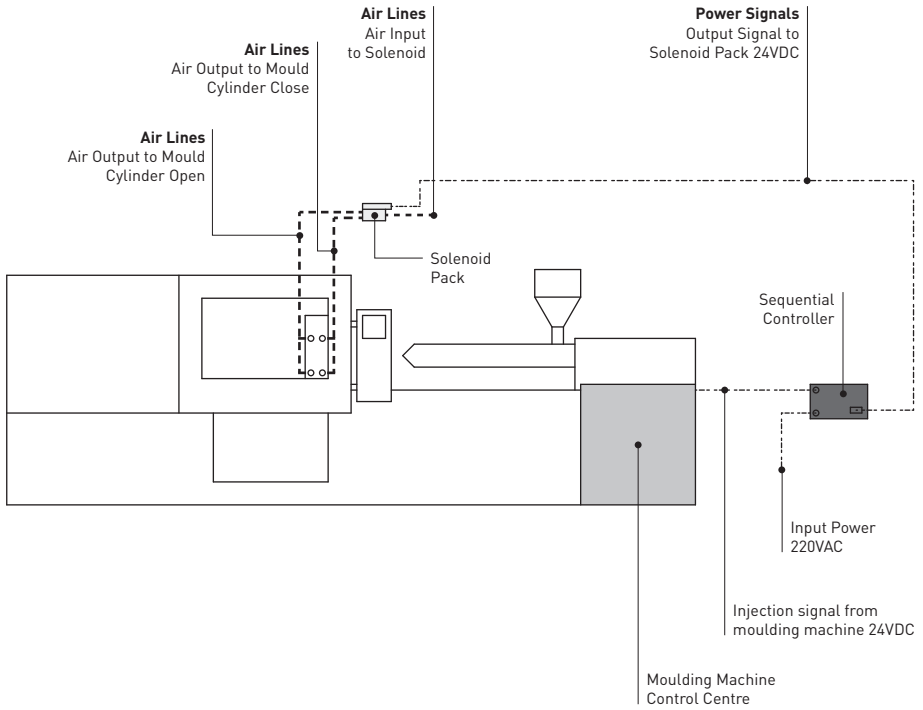
6.1 Wiring Solenoid Output Connectors

Connector Pin No.		Solenoid Valve No.	Gate Output Connection
+	-		
1 (Black)	2 (Black+Stripe)	No. 1 Solenoid	HAN 16A (250V 16A) MALE P/N:09 20 016 2612 FEMALE P/N:09 20 016 2812
3 (Brown)	4 (Brown+Stripe)	No. 2 Solenoid	
5 (Red)	6 (Red+Stripe)	No. 3 Solenoid	
7 (Orange)	8 (Orange+Stripe)	No. 4 Solenoid	
9 (Yellow)	10 (Yellow+Stripe)	No. 5 Solenoid	
11 (Green)	12 (Green+Stripe)	No. 6 Solenoid	
13 (Blue)	14 (Blue+Stripe)	No. 7 Solenoid	
15 (Purple)	16 (Purple+Stripe)	No. 8 Solenoid	

7.0 Composition

A Signal Input from Injection Moulding Machine

B Signal Output to soleniod

C 220VAC Power Supply

8.0 General Schematic

Air Lines
Air Input
to Solenoid

Power Signals
Output Signal to
Solenoid Pack 24VDC

Air Lines
Air Output to Mould
Cylinder Close

Air Lines
Air Output to Mould
Cylinder Open

Solenoid
Pack

Sequential
Controller

Input Power
220VAC

Injection signal from
moulding machine 24VDC

Moulding Machine
Control Centre

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