VGC™
Sequential Valve Gate Control

Instruction Manual
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1.0 DESCRIPTION OF THE CABINET

These cabinets are designed for the controlling of 4-8- or 12 valve gates.

1.1 PROGRAMMING

Programming a sequence is accomplished with the integrated multi-lingual user interface. This applies to both types of VGC cabinets (keyboard an blue backlit LCD display), offering the following features:

- Programming the actuation of the valve gates.
- Loading / Saving 8 sequence files.
- Manual actuation of the valve gates.
- Display cycle time.
- Display value of screw position.

Optional Limit Switches: It is possible to use position sensors and display the valve gate pin positions.

1.2 CONTROL

Actuation of 1 or 2 valve gates opening and closing per cycle:

Each movement can be triggered using one of the following signals:

- Timer function from injection start or hold start.
- Screw position in %, cm³ or in mm.

1.3 SIGNALS COMING FROM THE INJECTION MOLDING MACHINE

Injection Start Signal is required.

The others signals recommended listed below are optional:

- Injection Hold signal.
- Screw position signal.

Important Notice: It is required to connect at least the injection start signal to program a sequence based on time.

For connecting these signals, please refer to the wiring diagram on Page 3.
1.4 CONNECTING SIGNALS COMING FROM THE PRESS
1. 5 SECURITY

a) Alarm output on open contact, activated in case of:

- Fault on hydraulic power pack (not used if no external power pack).

- Fault on injection safety: at least one valve gate must be programmed to the open position at injection start and during the hole injection cycle.

- Fault on control card.

- Fault on valve gate pin position during the injection cycle time (optional).

b) Input “from hydraulic power pack in “via isolated dry set of contact:

- Indicates to controller that hydraulic pressure is available for the valve gates.

- If the hydraulic power pack is not functioning the controller will not allow the cycle to run.

c) Alarm input on isolated dry set of contact:

- Indicates to the controller that the injection molding machine is currently under alarm.

- If this alarm is active the controller will not allow the cycle to run.
1.6 CONNECTIONS FOR VGC SEQUENTIAL VALVE GATE CONTROL CABINET

- **A:** Connector for input signals (16 pins 10A female).
- **B:** Connector for alarm inputs and outputs, as well as for security on hydraulic power pack (10 pins 10A female).
- **C:** Connector for commands to valve gates, voltage 24V DC, 1.5 Amps per valve gate (32 pins 10A female).
- **D:** Option: Connector for limit switches on valve gates (32 pins 10A male).
- **E:** Power supply cable inlet 3G2,5mm2 (Supply voltage 230V AC 50/60Hz).
- **F:** Fuse holder with fuse 16A on cabinet.
- **G:** Circuit breaker 16A (switching cabinet on/off).

**IMPORTANT NOTICE:**
When connecting the signals from the press to connector A on cabinet, it is recommended to split 0-10V signals and 0-24V signals. Use a cable with shielded pairs, connect screw position with the first pair and hold signal, injection signal and 0-24V supply with the other pairs.

1.7 DIMENSIONS IN. (MM)

- Cabinet VGC Seq Valve Gate Control for 12 valve gates:
  - 17” (431mm) L x H 8.5” (216mm) H x 18.5” (470mm) D

1.8 FUSES AND CIRCUIT BREAKERS

- Fuse 16A type gl for cabinet (size 10x38 mm).
- Circuit breaker 16A.
- Fuses 6.3A on each control card (size 5x20 mm).

1.9 APPLICABLE STANDARDS

Cabinet VGC Sequential Valve Gate Control is approved for the Specification CE 73/23 “Low voltage” and fulfill the EN 61010-1 standards. They also comply with the following standards:

- Electrical noise industrielle environnement : EN 50081-2
- Electrical Noise Immunity in industrial environment: EN50082-2

There MUST be a plug on connector B. Use either a dummy plug, or a plug that is using the features intended for Connector B.
1.10 WIRING DIAGRAM OF VGC SEQUENTIAL VALVE GATE CONTROL CABINET
1.11 MAN – MACHINE INTERFACE

- LCD screen
- Validate key
- Direction arrows

LED for communication control card - CPU

Key to validate.

Escape key

Key to erase partially or completely an input.

Alpha-numerical keyboard for inputs.

Display of commands to valve gates:
- Command open: green LED on the left is lit.
- Command close: red LED on the right is lit.

OPTION:
Display of position control of limit switches:
- Control open: green LED on the left is lit.
- Control close: red LED on the right is lit.
2.0 STARTING UP

Plant power 230V AC 50/60 Hz Single Phases cable supplied.

Make sure that all connections to the backside of the cabinet are correct (command signal, alarms,...). Switch the cabinet on with the 16A circuit breaker. The following pages appear after 5 seconds:

Important Notice: When the cabinet VGC Seq Valve Gate Control is not in service, the A connector on the backside of the cabinet must be disconnected in order not to interfere with the signals from the injection machine.

2.1 CALIBRATION

For proper use of the controller with the injection molding machine, it is required to calibrate the screw travel first.

To access the calibration page, simply select the SYST function on white background, validate and then select the SCRCAL function.

Select SCRCAL to calibrate the screw travel.

The following page is displayed.

Validate the function CALIBR to enter the calibration process from this page and enter the calibration values one after the other by moving the screw on the injection machine. From this point, the process must be brought to the end.

Guiding messages for the operator

Notice: The machine number is important information to enter and to confirm which machine the calibration process has been done on the controller.

Please note that if this controller is moved to another machine, it must be recalibrated if you wish to use the screw position signal for programming.

All words preceded by “MES.” are values read from the injection machine.

All words preceded by “VAL. “ are inputs made by the operator.
2.2 CONFIGURATION OF THE SYSTEM

The system configuration pages are to set up control parameters (date, time, language, etc.) as well as to set up injection related parameters such as closing duration after injection signal, prolonging of the injection signal, etc.

To access the configuration page, select the SYST function shown on white background.
Press the Validate key.

The following is displayed: these are the machine parameters.

Default Factory Settings

Command for closing is held to all valve gates after the injection signal has dropped
This is the time between the command and the moment position control of the pin is made (valid if option is purchased)
Prolonging the duration of the injection signal

2.2.1 DURATION OF THE CLOSING SIGNAL AT THE END OF THE INJECTION CYCLE

This is the time the closing command is sent to all valve gates when the control cabinet is switched on or when the injection signal drops. The default value is set at 1 second. Set 0 to disable this function.

2.2.2 DELAY BEFORE POSITION CONTROL (OPTIONAL)

This is to set a response time between the electrical command sent to the solenoid valve and the confirmation of the pin position by the limit switch.

2.2.3 PROLONGING OF INJECTION SIGNAL

This function extends the injection signal by a certain time (t1) in order to command the valve gates for a longer period of time. When set at 0, and as soon as the injection signal drops, a command for closing is sent to all valve gates. Using this function can delay the command for closing by a certain time when the injection signal drops. The delay is adjustable in 1/100 sec (see graph 3.1). Valve gate commands can be programmed during this time.
2.2.3 PROLONGING OF INJECTION SIGNAL (CONT’D)

Press NEXT for accessing further system parameters to select the unit for screw position, date, time, language, etc.

Display and set system date and time
Select language
Modify keyboard password
Selection of Unit for Screw travel

Select MODIF to modify one of these 5 parameters and validate. Possible choices are displayed above the arrows as far as the language and the unit for screw position. Enter the required value with the keyboard for time, date and password.

CAUTION: The programmed sequence is lost if the unit for screw position is changed.

CAUTION: Check the programmed sequence after changing the unit.

2.2.4 SELECTION OF UNIT MEASURE FOR SCREW TRAVEL

1. Unit in (%):
This unit is related to the injected volume of material. 0% is set at injection start and 100% is reached when the screw is empty. This unit is directly linked to the injection shot size of the machine. If a sequence programmed on a machine with an injection unit A is loaded on the controller used on a machine with a different injection unit B, the new shot size must be set so that the values programmed in % remain valid.

2. Unit in (mm):
Values programmed using this unit depend on the screw position not on the volume of injected material. This unit does not rely on the shot size but on the calibration of the screw position signal received by the controller. A programmed sequence using this unit relates to the machine and any file using this unit should be modified to be used on a different machine.

This unit depends on the calibration of the screw position and on the injected volume of material. It is independent from the shot size. A programmed sequence using this unit can be used on a different machine if the controller has been recalibrated for the new machine.

Advantages and disadvantages are on the compatibility of saved sequence files loaded on different injection units:

- Programs in %: Re-calibration is not required.
- Programs in mm: Re-calibration is required. New calculation of command values.
- Programs in cm³: Re-calibration is required.
2.3 MANUAL MODE

The manual mode is to open or close the valve gates manually in order to make sure that everything is functioning before production.

* The shadowed icon means that the valve gate output is disabled (not used).
* This valve gate output receives a command for closing during the injection cycle.
* The white icon means that the valve gate output is enabled.
* A valve gate output under alarm is displayed in this way:

![Warning icon]

**Important notice:** Select a valve gate output using the arrows for moving up and down. Select a command using the arrows for moving left or right for opening (OPEN), for closing (CLOSE), or for stopping the preceding command (STOP), for selecting a single valve gate output (SELECT) or all channels (ALL).

OPEN: Permanent command for opening a valve gate.
CLOSE: Permanent command for closing a valve gate.
STOP: For stopping previous commands for opening or closing.
SELECT: To select or unselect a valve gate output.
ALL: To select or unselect all valve gate outputs in the configuration.

**Important Notice:** No valve gate can be opened or closed if the hydraulic power pack is switched off and/or if the alarm contact is validated.
2.4.1 MODIFY A PROGRAM

This mode is to program the movements required for each valve gate during the injection cycle (injection signal, screw position, etc.)

Select and validate PROG for accessing the page for programming from the main menu:
The page below is displayed:

To program another valve gate, enter the required valve gate number on the alpha-numerical keyboard and validate.

To switch a valve gate on or off, move the cursor accordingly to ON or OFF.
Then validate the function MODIF to select from ON or OFF with the arrows.
Then validate again to move to the next field.

Example of a program:
Validate MODIF when it appears to select another signal. Then select the required signal with the arrows by moving left or right.
Move the cursor on the field to modify values for triggering moments and enter the required value on the alpha-numerical keyboard and validate.

One can select among 3 triggering signals for programming.

The values for programming are:

1) Injection start: the value to enter is the delay between the injection start signal and the required triggering moment.

2) Hold start: the value to enter is the delay between the hold start signal and the required triggering moment.

3) Screw position: The value to enter depends on the selected unit:
• Unit in %: The value is the percentage of injected volume of material before actuating the valve gate.

• Unit in mm: The value to enter is the stroke of the injection screw before actuating the valve gate (and not the position of the injection screw).

• Unit in cm³: The value to enter is the injected volume of material before actuating the valve gate.

**Important Notice:** Select NONE with the left and right arrows to erase a signal. This action will automatically erase the selected step and the following if relevant.

Please note that the sequence programmed for a channel is carried out until the injection signal drops. Therefore, it is recommended to erase all lines that are not required.
2.5 FILE MANAGEMENT

Select and validate the FILE function from the main page.

The page below is displayed:

NEW: to create a new sequence file.
SAVE: to save or modify the selected file.
The current program is saved as the selected file.
LOAD: to load the sequence saved in the selected file.
DELETE: to cancel the selected file.

Important Notice:
- The file name on a white background is the current sequence file and is always displayed in the top right section of all pages in the program.
- Maximum 8 files can be saved in this menu FILE. You must delete unused files for saving a new file.

This floppy icon is shown when the current sequence has been modified but has not been saved as a file.
The name of the current file is displayed in all pages.

The arrow shows the file selected in the list
File on a white background: the current sequence originates from this file
Various info about the selected file

This page is for the management of sequence files. Some information like date and time of creation and comments can be saved as well.
2.6 MANAGEMENT OF ALARMS

Select and validate the function ALARM from the main page.

The page hereunder is displayed:

**Alarm hydraulic power pack**: shows the absence of the external power pack or of the shunt between pins 1 and 6 inside the B connector on the backside of the controller.

**Alarm external system**: alarm contact coming from whatever device around the sequential control cabinet.

**Faulty control card**: shows that a control card for actuating outputs is faulty.

**Fault position control open (valid if option position control is present)**: shows that the limit switch did not confirm the actual pin on opening.

**Fault position control close** (valid if option position control is present): shows that the limit switch did not confirm the actual pin on closing.

**No opening command**: shows that no valve gate was programmed to open in the injection cycle. If so the injection cycle is stopped.

**Program not valid**: shows an error in programming (not corresponding to screw calibration for instance, etc...).

This page shows the current alarms.

RESET: to reset both alarm contacts for injection safety.

Press ESC to go back to main page.

The LED shows that the corresponding alarm is active.
2.7 MAIN SYSTEM PARAMETERS VALUES

Select and validate the function MSPV from the main page.

The page below is displayed:

The cycle time and the actual screw position in the selected unit are displayed on this page.

Notice: the percentage shown on this page is expressed for the total screw stroke and 0% means an empty screw.

The status of input signals (injection start, hold start, hydraulic power pack and alarm input) are displayed above.
Press ESC to go back to main page.

2.8 SYSTEM LOCKING

Select and validate the function CODE from the main page.

The page below is displayed:

It is possible to lock or unlock the system from this page by entering a password with the alphanumeric keyboard.

A message confirming the current status is displayed in the top left section of the page once the password has been entered.

The default password factory set is 123456.
Use the function SYST and validate with NEXT to modify the password in page 2 of system parameters.
Then select the line “MODIF PASSWORD” and validate when MODIF is on a white background.
The page below is displayed.
Follow the procedure as explained.

Press validate.
The page below is displayed:

This arrow confirms the pin is controlled on opening

This arrow confirms the pin is controlled on closing

Important Notice: Use up an down arrows like in manual mode to select a valve gate output. Left and right arrows enable control ON / OFF, on opening (CTLOPN), on closing (CTLCLO), select a single valve gate (SELECT) or select all valve gate(ALL).

ON/OFF: To switch on or off the corresponding valve gate.

CTLOPN: To enable or disable position control on opening. Control open

CTLCLO: To enable or disable position control on closing. Control closing

SELECT: To select or unselect a valve gate output.

ALL: To select or unselect all valve gate outputs in the CONFIG page.

2.9 OPTION POSITION CONTROL OF PINS

The option position control can be fitted on VGC Sequential Valve Gate Control cabinet to show the actual pin position of each valve gate (open or closed).

An extra function called CONFIG is shown if the option is used. This function enables the position control of the pins.

Select and validate CONFIG on a white background from the main page shown below.

Important Notice: Please use the contact information if the password has been forgotten. A new procedure will be provided to go back to the factory setting.

Enter old password.
Enter new password.
Confirm new password.
## 2.10 List of Recommended Spare Parts

<table>
<thead>
<tr>
<th>Item</th>
<th>Description – Part number</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3042</td>
<td>Control card VGC Sequential Valve Gate Control</td>
<td>1</td>
</tr>
<tr>
<td>6438</td>
<td>Supply 230V/12-5V – MEAN WELL PD-45A</td>
<td>1</td>
</tr>
<tr>
<td>6271</td>
<td>Screen LCD 128x64 – LWM12864D-EW-WCB</td>
<td>1</td>
</tr>
<tr>
<td>5455</td>
<td>Fuse type GI 16A - 10x38 mm</td>
<td>1</td>
</tr>
<tr>
<td>6272</td>
<td>Supply 230V/24V – 12,5A – SP320-24</td>
<td>1</td>
</tr>
</tbody>
</table>
3.1 TROUBLESHOOTING

IMPORTANT NOTICE

• Any repair on the controller should be carried out by qualified personal.

• Any component being replaced must have the same specification.

<table>
<thead>
<tr>
<th>Failure</th>
<th>Display</th>
<th>Causes</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No hydraulic pressure</td>
<td>“Alarm hydraulic pressure”</td>
<td>• No hydraulic pressure connected.</td>
<td>• Check connection and if the signal “Hydraulic on” is properly wired to</td>
</tr>
<tr>
<td></td>
<td>(Displayed in alarm page).</td>
<td></td>
<td>cabinet (plug B).</td>
</tr>
<tr>
<td>• No command to valve gate(s)</td>
<td>“Failure control card” (displayed in alarm page) and no blinking yellow LED for communication on control card.</td>
<td>• Control card not connected or out of order.</td>
<td>• Check supply to control card and the link to motherboard. Test outputs on control card.</td>
</tr>
<tr>
<td>• Cycle does not start</td>
<td>No action and the cause are displayed in the alarm page.</td>
<td>• The press does not deliver the analog signal required.</td>
<td>• Replace control card.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The wiring of signals from the press is not correct.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Other alarms prevent cycle start (eg.: no hydraulic pressure...)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The programmed sequence is not correct.</td>
<td></td>
</tr>
<tr>
<td>• No command to valve gates/ cycle does not start</td>
<td>The blinking yellow communication lights are functioning.</td>
<td>• Do have a 24v injection start signal</td>
<td>• Make sure the dummy plug is installed in connector “B” on the back of the VGC unit.</td>
</tr>
</tbody>
</table>

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## TROUBLESHOOTING

<table>
<thead>
<tr>
<th>Default</th>
<th>Signal</th>
<th>Causes</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green LED for opening or red LED for closing does not light</td>
<td>Go to alarm page where the alarm is described (for instance: Alarm on hydraulic power pack, etc....)</td>
<td>• No hydraulic pressure supplied</td>
<td>• Check wiring and if the contact &quot;hydraulic power on&quot; is connected properly.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Alarm switch activated.</td>
<td>• Check if no alarm is currently activated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fuse 6.3A on control card blown</td>
<td>• Replace fuse on control card 6,3 A.</td>
</tr>
<tr>
<td>2 gates are controlled simultaneously when only one should be controlled</td>
<td>The 2 LED's for commands to open or close are lighted simultaneously when only one should be lighted.</td>
<td>• Check wiring of the command wires connector to the solenoids.</td>
<td>• Wire properly.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if fault on control card.</td>
<td>• Replace control card.</td>
</tr>
<tr>
<td>Machine alarm when cabinet is switched off</td>
<td>Reading wrong value for screw position by the press.</td>
<td>• Plug A connected to VGC Sequential Valve Gate Control cabinet.</td>
<td>• Disconnect “A” connector at backside of VGC Sequential Valve Gate Control cabinet.</td>
</tr>
</tbody>
</table>
4.1 General Terms & Conditions of Sale

1 Applicable Law and Jurisdiction

These general terms and conditions apply to all proposals and quotations submitted by Seller, to all orders or purchase orders received by Seller, and to all goods and services sold by Seller, except as otherwise specifically provided in a document signed by Seller. This sale or any sale resulting herefrom consists only of these terms and conditions and those in other documents which are attached hereto or in a document subsequently signed by Seller and referencing this transaction (all of which constitute the “Agreement”). The AGREEMENT SHALL BE CONSTRUED AND ENFORCED UNDER THE LAW OF THE STATE OF MICHIGAN INCLUDING THE UNIFORM COMMERCIAL CODE IN FORCE ON THE INITIAL DATE OF THE AGREEMENT (“UCC”), EXCEPT AS PROVIDED HEREIN. The U.N. Convention on the International Sales of Goods shall not apply. Any services to be provided hereunder, whether or not they are otherwise ancillary to and part of a sale of goods (as separate units), shall be considered ancillary to a sale of goods and the UCC shall apply to all goods and services to be furnished hereunder (the “Goods”).

2 Formation, Integration and Modification

A. The Agreement supersedes all previous quotations and agreements pertaining to the Goods. Delivery to Seller of the Buyer’s acceptance of a Seller’s quotation (according to its terms), Seller’s actions in reliance on Buyer’s oral acceptance of a written or oral quotation, or Buyer’s receipt of the Goods, will constitute a binding contract under the terms of the Agreement. The Agreement will be subject to Seller’s price list, quotations, offer, or acceptance, and any such terms or conditions in Buyer’s purchase order or other writing. Seller shall not be bound by, and will not be deemed to have agreed to, any modifications, limitations, waivers, or disclaimers unless otherwise specifically provided in a document signed by Seller. These general terms and conditions apply to all proposals and quotations submitted by Seller, for backup purposes. When making a copy, the Buyer shall reproduce all Seller’s materials contained herein for backup purposes. When making a copy, the Buyer shall reproduce all Seller’s materials contained herein for backup purposes. The Seller grants the Buyer, for its internal use only, a non-exclusive perpetual license (“License”) of all user manuals, software programs, firmware, and storage media (“Software”) provided by the Seller in conjunction with the Goods with which the Software is provided, for the sole purpose of the operation of the Goods. This License terminates automatically if Buyer is in default of its obligations. The Software may be provided in machine readable object code only. Licensee may make and keep one copy of the object code, if provided by Seller, for backup purposes. When making a copy, the Buyer shall reproduce all Seller’s materials contained herein for backup purposes. When making a copy, the Buyer shall reproduce all Seller’s materials contained herein for backup purposes. The Seller grants the Buyer a non-exclusive, irrevocable, non-transferable, non-assignable license to use the Software, provided that Buyer shall not make any effort to obtain or reproduce the Software’s source code. Title and all ownership rights to the Software remain with Seller, its licensors, or its suppliers. The Software is licensed for Buyer’s internal use only and the Buyer shall maintain the confidentiality of the Software and related materials and protect them against disclosure or improper use. Buyer shall pay all taxes based on the Software or use of the Software, however designated or levied, except those based on Seller’s net income. All disclaimers and limitations applicable to the Goods apply to the License.

5 Delay of Shipment or Performance Excused for Various Reasons

A. If shipment of any item or other performance by Seller is delayed at the request of or due to the fault of Buyer, Seller may at its option hold the item or place of manufacture at the risk and expense of the Buyer from the time it is ready for shipment. In the event of any such delay, the Buyer shall pay Seller any additional charges of the additional storage and handling costs at the rate of twenty-five dollars ($25.00) per week for each full or partial week after thirty (30) days after the Buyer is notified that the item is ready for shipment. If the Seller is unwilling to accommodate the Buyer by holding such item, the Buyer shall accept shipment immediately.

B. Dates for Seller’s performance are estimates only. In addition, the Seller shall not be in default because of its delay or failure to deliver or perform resulting, in whole or in part, from: (a) any foreign or domestic embargoes, seizures, acts of God, insurrections, war, or the adoption or enactment of any law, ordinance, regulation, ruling or order, or (b) the lack of usual means or transportation, fires, floods, explosions, strikes or any other accidents, contingencies, or events, at the Seller’s or its supplier’s plant or elsewhere (whether or not beyond the Seller’s control) which directly or indirectly interfere with, or render substantially more burdensome, Seller’s production, delivery, or performance.

6 Inspection, Testing and Rejection

A. If the Agreement expressly provides for Buyer’s inspection and/or acceptance of the Goods, standards and tests specified by Seller shall be the criteria for inspection and/or acceptance, unless other specific procedures have been specified in the Agreement.

B. All drawings, specifications, technical documentation, samples, prototypes and Goods shall be deemed approved and/or accepted by Buyer if Buyer does not provide a written objection and/or rejection within seven (7) days of receipt or other reasonable time established by Seller. Any objection and/or rejection by the Buyer must be in writing and state with specificity defects and non-conformities which Buyer intends to support its rejection. ALL DEFECTS AND NON-COMFORMITIES WHICH ARE NOT SO SPECIFIED ARE WAIVED.

7 Installation and Start Up

All Goods shall be assembled and installed by and at the expense of the Buyer. Seller may furnish, upon request and without additional cost or liability to Seller, written instructions for installing, maintaining, and operating the Goods. At Buyer’s request and cost, Seller may furnish personnel and equipment to assist in the installation and/or start up of the Goods. Buyer shall pay Seller its prevailing per diem rates for such personnel and equipment plus reasonable transportation, freight, and insurance charges. Seller shall have the right to send such personnel for consultation and to support its rejection.

8 Software License

The Seller grants the Buyer, for its internal use only, a non-exclusive perpetual license (“License”) of all user manuals, software programs, firmware, and storage media (“Software”) provided by the Seller in conjunction with the Goods with which the Software is provided, for the sole purpose of the operation of the Goods. This License terminates automatically if Buyer is in default of its obligations. The Software may be provided in machine readable object code only. Licensee may make and keep one copy of the object code, if provided by Seller, for backup purposes. When making a copy, the Buyer shall reproduce all Seller’s materials contained herein for backup purposes. When making a copy, the Buyer shall reproduce all Seller’s materials contained herein for backup purposes. The Seller grants the Buyer a non-exclusive, irrevocable, non-transferable, non-assignable license to use the Software, provided that Buyer shall not make any effort to obtain or reproduce the Software’s source code. Title and all ownership rights to the Software remain with Seller, its licensors, or its suppliers. The Software is licensed for Buyer’s internal use only and the Buyer shall maintain the confidentiality of the Software and related materials and protect them against disclosure or improper use. Buyer shall pay all taxes based on the Software or use of the Software, however designated or levied, except those based on Seller’s net income. All disclaimers and limitations applicable to the Goods apply to the License.

9 General Express Warranties

A. Seller warrants to Buyer only, that Goods or portions thereof manufactured by Seller shall be free from manufacturing defects in materials and workmanship which are discovered within the warranty period, subject to the disclaimers and limitations of the Agreement. This is not a warranty of performance, but a limited warranty as to the condition of the Goods at the beginning of the warranty period. The warranty period, measured from date of shipment by Seller, shall be: one year for hot runner systems and components (other than heaters and thermocouples); three years for defects causing leakage for DFQ bushings; three years for cast (pro-rated) and KX heaters; six months for thermocouples; two years for temperature and valve gate controllers (reduced to six months for electronic components); one year for quick mold change products; and thirty (30) days for all other Goods. The percentage of the replacement cost shall be reduced by three percent for each full month from 90 days after the date of shipment for the cast heater warranty and by 50% and 75% at the end of six and nine months, respectively, after shipment for the screen pack, fast cycle pack, and KX heaters. Because the Goods may be subject to the same variety of use, installation, maintenance and clearing, the warranty is only against such defects and not against any other failures such as, but not limited to, those due to wear and tear, and normal maintenance and performance expected from this workhorse product. The change is non-renewable. Seller may, in its discretion, also rely on any generally accepted industry standards.
C. Seller’s warranties shall apply only if the Goods: (i) have been installed, maintained, and used in conformity with instructions furnished by Seller from time to time, if any; (ii) have been subjected to normal use for the purpose for which Goods were designed; (iii) have not been subjected to misuse, negligence, or accident; and, (iv) have not been altered or repaired by persons other than Seller in any respect which, in the judgment of Seller, adversely affects the condition or operation of the Goods.

10 Patent Express Warranties

Seller shall defend and indemnify Buyer from any claim which asserts that the Goods or their inherent methods of operation, intrinsically, infringe any United States patent, except as to a claim based on Buyer’s use of the Goods as a step in an overall process or as an element in an overall construction. Seller’s obligations shall not apply to a claim based on Goods or portions thereof specified, designed, or manufactured by Buyer. Buyer shall notify Seller promptly of any assertions of patent infringement and provide Seller with assistance and information requested by Seller, or Seller shall have no further obligation to defend or indemnify. Seller shall defend with its counsel or other counsel of its choice and shall have the sole right, without consultation with Buyer, to take all action Seller deems appropriate to prosecute or settle such claims. Seller’s exclusive obligation to indemnify as to Goods declared to infringe is limited to the acquisition of a license, the replacement of Goods with non-infringing goods, the modification of the Goods so that they are non-infringing, the return of the purchase price and shipping costs in exchange for the Goods, as Seller may elect. This section states the Seller’s entire and exclusive obligation regarding patent infringement.

11 Disclaimer and Limitation of Express Warranties

There are no express warranties other than those contained in the Agreement. Any representations as to efficiency and other matters, except as contained in the Agreement, were for illustrative purposes only and do not constitute a warranty. Whether or not the Goods are to be used exclusively by Buyer, there shall be no third party beneficiaries to the express warranties contained herein. Seller does not warrant any portion of the Goods not manufactured by or not furnished by Seller (whether or not specified by Buyer), but Seller shall assign to Buyer upon request all assignable warranties of Seller’s suppliers related to such Goods. All descriptions, shipping specifications and illustrations of the Goods or the Seller and its quality and other systems and capabilities in catalogues, brochures and price lists or otherwise provided by the Seller are intended for general guidance only and the Seller is not responsible for subject to Buyer’s claims. Seller’s exclusive obligation to indemnify as to Goods declared to infringe is limited to the acquisition of a license, the replacement of Goods with non-infringing goods, the modification of the Goods so that they are non-infringing, the return of the purchase price and shipping costs in exchange for the Goods, as Seller may elect. This section states the Seller’s entire and exclusive obligation regarding patent infringement.

12 Remedy and Limitation of Seller’s Liability

A. Defective or non-conforming Goods discovered and returned during the warranty period shall be repaired, or replaced by Seller without any additional charge and shipped to Buyer, FOB Seller’s plant, for reinstallation by Buyer at its cost, subject to the terms hereof. The warranty obligation of Seller is limited to the repair or replacement at Seller’s plant of any part of the Goods which Buyer shall, within the warranty period, return to Seller, with transportation charges prepaid by Buyer, and which Seller shall determine upon examination to be defective or not in conformity with the express warranty contained herein. In lieu of repair or replacement, if Seller elects, Seller may, upon return of such Goods and making a determination of non conformity or defect, keep the Goods and refund the purchase price. Buyer’s remedies shall be limited (even in the event of Seller’s default of its warranty obligations) exclusively to those provided in this section. UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES. Buyer waives any causes of action or theories of liability including, but not limited to, those arising under contract, tort, strict liability, product liability, statutes, or otherwise, except as specifically provided by the UCC as modified and limited herein. The replacement or repair of Goods by the Seller does not give rise to any new warranty except the warranty period provided for herein shall be extended by the length of any period from the date the defective or non conforming Goods are received by Seller or the interval between the date repaired or replacement Goods are delivered to Buyer.

B. Buyer must contact Seller requesting warranty coverage plus a return authorization number and other instructions for the return of Goods to Seller or other instructions. If requested by Seller, Buyer shall issue a new purchase order or amendment to Seller for replacement parts, subject to Seller issuing a credit memo if Buyer’s claim for warranty coverage is approved. Buyer must comply with Seller’s return instructions (including return of the Goods) within 60 days or the claim shall be deemed conclusively to have been abandoned. Buyer is responsible for properly tagging, identifying, and packing returned Goods. Goods returned without compliance with the above procedures shall be returned to the sender at sender’s cost.

13 Disclaimer of Implied Warranties

THE SELLER DISCLAIMS ALL IMPLIED WARRANTIES (OTHER THAN GOOD TITLE) INCLUDING BUT NOT LIMITED TO THOSE OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, AND NON-INFRINGEMENT. Seller does not warrant the Goods will comply with the requirements of any safety or environmental code or regulation of any federal, state, municipality or other jurisdiction beyond the specific express warranties in this Agreement.

14 Parts, Service and Training Performed by Seller

All warranty and non-warranty parts, inspection, labor, service, software, and training, if any, provided by the Seller or its agents and contractors (including those provided under purchase orders subsequent to the Agreement) related to Goods are subject to all limitations and disclaimers of warranties and remedies provided in the Agreement. The Seller may have access to the Goods during or after installation of the Goods. The Seller is not under any duty to inspect the Goods for any defects or any improper use or modification of the Goods nor to correct or advise the Buyer of any such condition, use or modification, which is observed. Any notification which may be given is voluntary and subject to limitations and disclaimers in the Agreement.

15 User’s Responsibility for Safety

It is Buyer’s or other user’s responsibility to provide all proper dies, devices, tools, training, and other means that may be necessary to effectively protect all personnel from serious bodily injury which otherwise may result from the method of particular installation, use, operation, or service of the Goods. Manuals furnished by Seller; ANSI Safety Standards; EPA, OSHA and similar state regulations; and other sources should be used by Buyer to ensure the safe use of the Goods. If Buyer fails to comply with the obligations set forth in this section, Buyer shall indemnify and save Seller harmless from any liability or obligation incurred by Seller to persons injured directly or indirectly in connection with the operation of the Goods and all warranties of Seller shall become automatically void.

16 Indemnification

Buyer shall indemnify the Seller from any and all third party claims, damages, and expenses (including reasonable attorney fees) under theories of tort, product liability, negligence (ordinary or gross), warranty, contract, statute, or otherwise arising out of the use, storage, sale, processing or other disposition of the Goods, supplies or materials used in connection with the Goods, or parts manufactured with the Goods, if the action or inaction of the Buyer or its employees, customers or agents, or the Buyer’s design specifications, were a material or proximate cause of injuries or damages giving rise to claims against the Seller.

17 Consequential, Incidental, and Other Damages

BUYER AND THIRD PARTIES SHALL NOT BE ENTITLED TO ANY CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR INCIDENTAL DAMAGES, AS DEFINED IN THE UCC OR OTHERWISE. This limitation shall be enforced regardless of whether Seller has defaulted in its warranty or other obligations. Any legal liability to limit or restrict the right of the Buyer or a third party to such damages shall not affect the right of Seller to indemnification hereunder, and under no circumstance shall Buyer recover more than the purchase price.

18 Security Interest, Power of Attorney

In addition to any security interest granted by the UCC, the Buyer hereby grants a security interest to the Seller in all Goods and documents related thereto and proceeds and products therefrom to secure all obligations of the Buyer to the Seller, whether or not arising under the Agreement. Buyer shall sign financing statements evidencing the security interest as reasonably requested by Seller, or Seller may file a copy of the Agreement or portion thereof as a financing statement. Buyer grants Seller an irrevocable power of attorney to sign Buyer’s name to a financing statement if necessary or convenient to perfect Seller’s security interest. In case of a default by Buyer, Seller may peaceably enter the premises of the Buyer and others to repossess or render inoperable all Goods in which it has a security interest.

19 Proprietary Information

A. Buyer acknowledges that any information disclosed to Seller has not and will not be considered a trade secret unless clearly and conspicuously noted on the disclosure, or in some other writing delivered to Seller at or prior to the time of the disclosure. Otherwise, Seller shall be under no obligation to refrain from using in its business any information, manufacturing processes or unpatented disclosures which may pass to it from Buyer in the performance of the Agreement. C. Any invention or other information developed by Seller in the performance of the Agreement shall remain the property of Seller.

20 United States Government Regulations

The Buyer shall not engage in any transaction with respect to the Goods which violates any statute or regulation of the United States of America.

21 Certifications

Seller certifies that any Goods produced in the United States shall be produced in compliance with all applicable requirements of Sections 6, 7 and 12 of the U.S. Fair Labor Standards Act, and of the regulations and orders of the U.S. Department of Labor issued under Section 14 thereof. No other certifications or waivers regarding payments to Seller’s suppliers or laborers are required.

22 Time for Bringing Action

Any proceeding by the Buyer for breach of the Agreement or any other right against Seller arising from or in connection with the payment cannot be filed or maintained unless: (i) it is commenced within one (1) year after the cause for action has accrued; (ii) Buyer has given to Seller written notice of such claim as provided hereunder; and (iii) Buyer deposits the unpaid portion of the purchase price with the tribunal pending final adjudication. An action shall accrue no later than shipment of the Goods.

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5 CONTACT

In case of problem or for any further information, please use the contact information below, or visit www.incoe.com. PDF copies of this manual are available for download on our website.

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