

**XL200 Series Standard Closed Loop Inputs & Outputs Version 2.00 & 3.00**

**Revised September 22, 2021**

**ALL MODELS except XL270CL and XL208CL**

| <b>IO#</b> | <b>Inputs</b>   | <b>Outputs</b>   |
|------------|---|--|
| 1          | Jog Forward   Jog Die 1 Fwd                                       | Fast   Uncut Length  |
| 2          | Jog Reverse   Jog Die 1 Rev                                       | Slow   Stopping  |
| 3          | Run   | Reverse   Press Stopped  |
| 4          | Emergency Stop (E-Stop)   | Run  |
| 5          | Setup Lockout   | Item Complete  |
| 6          | Manual Shear  | Drive Enable   |
| 7          | Manual Punch  | Print Flush/Encoder  |
| 8          | Tail Out (Inverted Sheet Detect)                                  | Print Trigger  |
| 9          | Press 0 Complete (Shear)  | Press 0 Down (Shear)   |
| 10         | Press 1 Complete   Press X Up Comp                                | Press 1 Down   Gag 1   |
| 11         | Press 2 Complete   Press X Up Comp                                | Press 2 Down   Gag 2   Press X Up/Boost                                  |
| 12         | Press 3 Complete   Press X Up Comp                                | Press 3 Down   Gag 3   Press X Up/Boost                                  |
| 13         | Press 4 Complete   Press X Up Comp                                | Press 4 Down   Gag 4   Press X Up/Boost                                  |
| 14         | Press 5 Complete   Press X Up Comp                                | Press 5 Down   Gag 5   Press X Up/Boost                                  |
| 15         | Press 6 Complete   Press X Up Comp                                | Press 6 Down   Gag 6   Press X Up/Boost                                  |
| 16         | Press 7 Complete   Press X Up Comp                                | Press 7 Down   Gag 7   Press X Up/Boost                                  |
| 17         | Press 8 Complete   Press X Up Comp                                | Press 8 Down   Gag 8   Press X Up/Boost                                  |
| 18         | Press 9 Complete   Press X Up Comp<br>  Test Part   Jog Die 2 Fwd | Press 9 Down   Gag 9   Press X Up/Boost  <br>Mister   Horn <sup>16</sup> |
| 19         | Press 10 Complete   Scrap   Material<br>Loop Full   Jog Die 2 Rev | Press 10 Down   Gag 10   Press X Up/Boost  <br>Dump Trigger              |
| 20         | Press 11 Complete   Manual Stacker                                | Press 11 Down   Gag 11   Press X Up/Boost  <br>Scrap Dump                |
| 21         | Press 13 Complete   Asynchronous<br>Print Detect                  | Shear Up (CLF Models Only)   Continuous<br>Stroke Mode                   |
| 22         | Feed Ready   Die Home   | Stacker  |
| 23         | Slow Run   Die Home 2   | Short Part   Scanner Verify  |
| 24         | Hole Detect   | Very Short Part   Horn   Drive Enable 2                                  |
| 49         | PLC Remote  | PLC Remote   |
| 50         | Test Part   | Test Part  |

Notes:

1. The maximum number of presses and/or gags allowed for each model is as follows (this includes the shear press):

| <b>Models</b>                       | <b>Max Presses<br/>(Including Shear)</b> |
|-------------------------------------|--|
| <b>XL200CL-SPD</b>                  | 1  |
| <b>XL200HCL</b>                     | 2  |
| <b>XL200CL, XL202CLF, XL202HCLF</b> | 2  |
| <b>XL244CL</b>                      | 5  |
| <b>XL244HCL</b>                     | 5  |
| <b>XL206CL, XL206CLF, XL206HCLF</b> | 6  |
| <b>XL212CL, XL212CLF, XL212HCLF</b> | 12                                       |

2. Gag outputs are only available on models **XL202CL**, **XL206CL**, **XL212CL**, all “**CLF**” models, and all “**HCLF**” models. The number of available gag outputs is equal to the maximum number of presses allowed for that model **minus** the number of active presses configured by the dip-switch. The Exp. Gag Board option is only available on model **XL212CL**.
3. Each model (except those noted below) will provide Press Down and Press Up outputs for the number of presses configured by the dip-switch. For models **XL200CL** and **XL200HCL**, Press Up outputs begin at output #11. For models **XL202CL**, **XL202CLF**, **XL202HCLF**, **XL206CL**, **XL206CLF**, and **XL206HCLF**, the first Press Up output follows the last Gag output. If no gags are configured, the first Press Up output follows the last Press Down output. No Press Up outputs are provided for models **XL244CL**, **XL244HCL**, **XL212CL**, **XL212CLF**, and **XL212HCLF**.
4. The Hole Detect input is only available on models with an “H” suffix in their name.
5. The “Feed Ready” and “Slow Run” inputs are available only in Feed-to-Stop mode. The “Die Home” input is available only in Die Accelerator mode.
6. The “Short Part” and “Very Short Part” outputs are only available on models with “Brake & Hump (U)” option.
7. The Scanner Verify, and Horn outputs are only available when the “Dietrich IO (D)” option is set. The “Dietrich IO” option can not be used at the same time as the “Brake & Hump” option.
8. The following inputs and outputs are available only when the “Tube Mill (T)” is set:
  - Scrap Input
  - Test Part Input
  - Mister Output
  - Dump Trigger Output
  - Scrap Dump Output
9. The Manual Stacker input is not available when the base model is an **XL212CL** and the controller is configured for twelve presses since this input is already defined as the Press 11 Complete input. The Stacker output is still available in this configuration.
10. Material Loop Full input is available only when the “C” continuous press option is enabled.
11. Continuous Stroke Mode output is available only when the “C” continuous press option is enabled
12. The Uncut Length output is available only when the “U”, Brake and Hump, option is enabled and the controller is configured for Feed-to-Stop operation.
13. Die Home 2, Drive Enable 2, Jog Die 2 Fwd and Jog Die 2 Rev inputs are only available on models that support two Die Accelerators and only when both Die Accelerators are configured.
14. Jog Forward and Jog Reverse inputs become Jog Die 1 Fwd and Jog Die 2 Rev when two Die Accelerators are enabled.
15. Press Stopped is available only when the “C” continuous press option is enabled.
16. With Dietrich IO on any of the rotary controller models.

**XL200 Series Standard Closed Loop Switch Settings Version 2.00**

**Models: XL200CL, XL200HCL, XL200CL-SPD**

| <b>Switch #</b> | <b>OFF</b>                         | <b>ON</b>                                      |
|-----------------|------------------------------------|--|
| 1               | CW Encoder 1 Direction             | CCW Encoder 1 Direction                        |
| 2               | CW Encoder 2 Direction             | CCW Encoder 2 Direction                        |
| 3               | Normal Analog Voltage Polarity     | Inverted Analog Voltage Polarity               |
| 4               | Disable Punch                      | Enable Punch <sup>1</sup>                      |
| 5               | See Below                          | See Below                                      |
| 6               | See Below                          | See Below                                      |
| 7               | Punch Material Motion (See Note 5) | Punch Material Motion (See Note 5)             |
| 8               | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF                         |
| 9               | CRT Disabled                       | CRT Enabled                                    |
| 10              | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF                         |
| 11              | Front Shear Blanking Mode Disabled | Front Shear Blanking Mode Enabled <sup>6</sup> |
| 12              | Normal Closed Loop                 | Selective Closed Loop <sup>8</sup>             |
| 13              | Open Loop Shear OFF                | Open Loop Shear Enabled <sup>7</sup>           |
|                 |                                    |  |
| <b>Switch 5</b> | <b>Switch 6</b>                    | <b>Description</b>                             |
| OFF             | OFF                                | Feed-to-Stop, One Encoder <sup>2</sup>         |
| ON              | OFF                                | Feed-to-Stop, Two Encoders <sup>2</sup>        |
| OFF             | ON                                 | Single-Speed Die Accelerator <sup>3</sup>      |
| ON              | ON                                 | Two-Speed Die Accelerator                      |

Notes for Models **XL200CL** and **XL200HCL**:

- For model **XL200CL**, Version 2.02 or earlier, the punch press can only be enabled in the Feed-to-Stop mode. Later versions allow the punch press to be enabled in the Die-Accelerator mode also.
- Feed-to-Stop mode is NOT allowed on the **XL200HCL** model.
- When the Tube Mill (T) option is active, the controller must be configured as a Single-Speed Die-Accelerator.
- Encoder 1 and Encoder 2 are defined as follows:

| <b>Model</b>   | <b>Encoder 1</b>       | <b>Encoder 2</b>                                |
|--|------------------------|---|
| <b>XL200CL</b><br>Feed to Stop                           | Motor Encoder (Feeder) | Line Encoder<br>(when 2-encoder option is used) |
| <b>XL200CL</b><br>Feed to Stop,<br>Selective Closed Loop | Line Encoder           | Not Used  |
| <b>XL200CL, XL200HCL</b><br>Die Accelerator              | Line Encoder           | Motor Encoder<br>(Die Accelerator)              |

- Starting with versions 3.44.00 and 4.07.00, when configured as a Die Accelerator, if switch 4 is on and switch 7 on, the press will be enabled as a two-speed Feed-to-Stop press. If switch 4 and 6 are NOT ON switch 7 should be OFF. If the alternating punch option is Enabled, both alternating presses will be configured for Feed-to-Stop.
- Front Shear Blanking Mode is only possible when the Punch is enabled. For obvious reasons this option is only available on versions 4 and higher.
- Enabling Open Loop Shear is self-descriptive. If Open Loop Shear is ON, the Punch must be enabled and the XL must be configured as a Die Accelerator. Open Loop Shear is not allowed when Front Shear Blanking is enabled

8. Only Valid with Single Encoder Feed to Stop. Selectively, based on the state of the Tail Out input, the controller operates in Open Loop or Closed Loop. Closed Loop operation requires the material to be present based on the state of the Tail Out input.

Notes for Model **XL200CL-SPD**:

- a. Can only be configured as Shear Only Die Accelerator.

**Models: XL202CL, XL206CL, XL212CL,  
 XL202CLF, XL206CLF, XL212CLF,  
 XL202HCLF, XL206HCLF, XL212HCLF,  
 XL202CLF-MHA, XL206CLF-MHA, XL212CLF-MHA,**

| Switch #              | OFF   | ON   |                       |                   |
|-----------------------|---|--|-----------------------|-------------------|
| 1                     | CW Encoder 1 Direction                          | CCW Encoder 1 Direction                        |                       |                   |
| 2                     | CW Encoder 2 Direction                          | CCW Encoder 2 Direction                        |                       |                   |
| 3                     | Normal Analog Voltage Polarity                  | Inverted Analog Voltage Polarity               |                       |                   |
| 4                     | Single Speed   One Encoder <sup>1</sup>         | Two Speed   Two Encoders <sup>1</sup>          |                       |                   |
| 5                     | See Below                                       | See Below                                      |                       |                   |
| 6                     | See Below                                       | See Below                                      |                       |                   |
| 7                     | See Below                                       | See Below                                      |                       |                   |
| 8                     | See Below                                       | See Below                                      |                       |                   |
| 9                     | CRT Disabled                                    | CRT Enabled                                    |                       |                   |
| 10                    | NOT USED – MUST BE OFF                          | NOT USED – MUST BE OFF                         |                       |                   |
| 11                    | Normal Closed Loop                              | Selective Closed Loop <sup>6</sup>             |                       |                   |
| 12                    | Continuous Press Continuous Feed<br>OFF(Note 4) | Continuous Press Continuous Feed<br>ON(Note 4) |                       |                   |
| 14                    | Continuous Press on Press 0 (Note5)             | Continuous Press on Press 1 (Note5)            |                       |                   |
|                       |   |  |                       |                   |
| Switch 5 <sup>2</sup> | Switch 6 <sup>2</sup>                           | Switch 7 <sup>2</sup>                          | Switch 8 <sup>2</sup> | Number of Presses |
| OFF                   | OFF   | OFF  | OFF                   | 1                 |
| ON                    | OFF   | OFF  | OFF                   | 2                 |
| OFF                   | ON  | OFF  | OFF                   | 3                 |
| ON                    | ON  | OFF  | OFF                   | 4                 |
| OFF                   | OFF   | ON   | OFF                   | 5                 |
| ON                    | OFF   | ON   | OFF                   | 6                 |
| OFF                   | ON  | ON   | OFF                   | 7                 |
| ON                    | ON  | ON   | OFF                   | 8                 |
| OFF                   | OFF   | OFF  | ON                    | 9                 |
| ON                    | OFF   | OFF  | ON                    | 10                |
| OFF                   | ON  | OFF  | ON                    | 11                |
| ON                    | ON  | OFF  | ON                    | 12                |

Notes for Models **XL202CL, XL206CL, XL212CL, XL202CLF, XL206CLF, XL212CLF, XL202HCLF, XL206HCLF, XL212HCLF, XL202CLF-MHA, XL206CLF-MHA, XL212CLF-MHA:**

1. Switch 4 configures Single/Two Speed on all “CLF”, “HCLF” and “CLF-MHA” models. Switch 4 configures One/Two Encoders on all “CL” models.
2. “CLF” and “CLF-MHA” models can be configured for a maximum of 6 presses.
3. Encoder 1 and Encoder 2 are defined as follows:

| Model                            | Encoder 1              | Encoder 2                                    |
|----------------------------------|------------------------|--|
| All “CLF”, “HCLF” and “CLF-MHA”  | Line Encoder           | Motor Encoder (Die Accelerator)              |
| <b>XL202CL, XL206CL, XL212CL</b> | Motor Encoder (Feeder) | Line Encoder (when 2-encoder option is used) |

|  |                        |          |
|--|------------------------|----------|
| <b>XL202CL, XL206CL,<br/>XL212CL<br/>(Selective Closed<br/>Loop)</b> | Motor Encoder (Feeder) | Not Used |
|--|------------------------|----------|

4. DIP switch 12 only used when Continuous Press Option is enabled.
5. DIP 14 only used when Continuous Press Option is enabled. Not compatible with DIP 12 ON or only a single press enabled.
6. Only Valid with Single Encoder Feed to Stop. Selectively, based on the state of the Tail Out input, the controller operates in Open Loop or Closed Loop. Closed Loop operation requires the material to be present based on the state of the Tail Out input.

**Models: XL212CLF-MHA2**

| <b>Switch #</b>              | <b>OFF</b>                   |                              | <b>ON</b>                    |  |
|------------------------------|------------------------------|------------------------------|------------------------------|--|
| 1                            | NOT USED – MUST BE OFF       |                              | NOT USED – MUST BE OFF       |  |
| 2                            | NOT USED – MUST BE OFF       |                              | NOT USED – MUST BE OFF       |  |
| 3                            | NOT USED – MUST BE OFF       |                              | NOT USED – MUST BE OFF       |  |
| 4                            | Single Speed                 |                              | Two Speed                    |  |
| 5                            | See Below                    |                              | See Below                    |  |
| 6                            | See Below                    |                              | See Below                    |  |
| 7                            | See Below                    |                              | See Below                    |  |
| 8                            | See Below                    |                              | See Below                    |  |
| 9                            | NOT USED – MUST BE OFF       |                              | NOT USED – MUST BE OFF       |  |
| 10                           | NOT USED – MUST BE OFF       |                              | NOT USED – MUST BE OFF       |  |
| 11                           | NOT USED – MUST BE OFF       |                              | NOT USED – MUST BE OFF       |  |
| 12                           | NOT USED – MUST BE OFF       |                              | NOT USED – MUST BE OFF       |  |
| 13                           | See Below                    |                              | See Below                    |  |
| 14                           | See Below                    |                              | See Below                    |  |
| 15                           | See Below                    |                              | See Below                    |  |
| 16                           | See Below                    |                              | See Below                    |  |
| 17                           | NOT USED – MUST BE OFF       |                              | NOT USED – MUST BE OFF       |  |
| 18                           | Die 1 – MHA                  |                              | Die 1 – CLF                  |  |
| 19                           | Die 2 – MHA                  |                              | Die 2 – CLF                  |  |
| <b>Switch 5<sup>2</sup></b>  | <b>Switch 6<sup>2</sup></b>  | <b>Switch 7<sup>2</sup></b>  | <b>Switch 8<sup>2</sup></b>  | <b>Number of Presses</b>               |
| OFF                          | OFF                          | OFF                          | OFF                          | 1                                      |
| ON                           | OFF                          | OFF                          | OFF                          | 2                                      |
| OFF                          | ON                           | OFF                          | OFF                          | 3                                      |
| ON                           | ON                           | OFF                          | OFF                          | 4                                      |
| OFF                          | OFF                          | ON                           | OFF                          | 5                                      |
| ON                           | OFF                          | ON                           | OFF                          | 6                                      |
| <b>Switch 13<sup>4</sup></b> | <b>Switch 14<sup>4</sup></b> | <b>Switch 15<sup>4</sup></b> | <b>Switch 16<sup>4</sup></b> | <b>Number of Presses on Second Die</b> |
| OFF                          | OFF                          | OFF                          | OFF                          | 0                                      |
| ON                           | OFF                          | OFF                          | OFF                          | 1                                      |
| OFF                          | ON                           | OFF                          | OFF                          | 2                                      |
| ON                           | ON                           | OFF                          | OFF                          | 3                                      |
| OFF                          | OFF                          | ON                           | OFF                          | 4                                      |
| ON                           | OFF                          | ON                           | OFF                          | 5                                      |

Notes for Models **XL212CLF-MHA2**:

- Switch 4 configures Single/Two Speed.
- “CLF-MHA2” models can be configured for a maximum of 6 presses.
- Encoder 1 and Encoder 2 are defined as follows:

| <b>Encoder 1</b>         | <b>Encoder 2</b>         | <b>Encoder 4</b> |
|--------------------------|--------------------------|------------------|
| Motor Encoder<br>(Die 1) | Motor Encoder<br>(Die 2) | Line Encoder     |

- If any of these switches are on, a second DA is enabled. The number of presses must be defined larger than the number of presses on the second die. The presses for the first die

start with the shear press and end at the first press on the second die. The first press for the second die is (Number of Presses – Number of Presses on Second Die + 1)



**Models: XL244CL, XL244HCL**

| <b>Switch #</b>  | <b>OFF</b>                     | <b>ON</b>                                      |
|------------------|--------------------------------|--|
| 1                | CW Encoder 1 Direction         | CCW Encoder 1 Direction                        |
| 2                | CW Encoder 2 Direction         | CCW Encoder 2 Direction                        |
| 3                | Normal Analog Voltage Polarity | Inverted Analog Voltage Polarity               |
| 4                | Disable All Punches            | Enable Punches                                 |
| 5                | See Below                      | See Below                                      |
| 6                | See Below                      | See Below                                      |
| 7                | Single Die Accelerator         | Dual Die Accelerator enabled <sup>4</sup>      |
| 8                | No Gags                        | Gag Outputs Enabled <sup>5</sup>               |
| 9                | CRT Disabled                   | CRT Enabled                                    |
| 10               | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF                         |
| 13               | Closed Loop Shear              | Open Loop Shear <sup>7</sup>                   |
|                  |                                |  |
| <b>Switch 14</b> | <b>Switch 15</b>               | <b>Extra Gags</b>                              |
| OFF              | OFF                            | None   |
| ON               | OFF                            | 2 Extra <sup>6</sup>                           |
| OFF              | ON                             | 4 Extra <sup>8</sup>                           |
| ON               | ON                             | Invalid Configuration                          |
|                  |                                |  |
| <b>Switch 5</b>  | <b>Switch 6</b>                | <b>Number of Open Loop Punches<sup>1</sup></b> |
| OFF              | OFF                            | 1  |
| ON               | OFF                            | 2  |
| OFF              | ON                             | 3  |
| ON               | ON                             | 4  |

Notes for Models **XL244CL, XL244HCL**:

- Each Open Loop Punch will have a corresponding boost output.
- Models **XL244CL** and **XL244HCL** are defined to function only as a single-speed die-accelerator.
- Encoder 1, 2 and 3 are defined as follows:

| <b>Model</b>   | <b>Encoder 1</b>         | <b>Encoder 2</b>                   | <b>Encoder 4 ( Ver. 4 )</b> |
|--|--------------------------|------------------------------------|-----------------------------|
| <b>XL244CL, XL244HCL</b><br>(Single) Die Accelerator | Line Encoder             | Motor Encoder<br>(Die Accelerator) | Not Used                    |
| <b>XL244CL, XL244HCL</b><br>(Dual) Die Accelerator   | Motor Encoder<br>(Die 1) | Motor Encoder<br>(Die 2)           | Line Encoder                |

- Version 4 only. Punches must be enabled. Disables DIP switches 1,2 and 3. Changes Encoder definitions.
- Punches must be enabled. A minimum of two gags will be available. Unused press outputs convert to gag outputs.
- Two extra gags are enabled if switch 14 is ON. Gag 8 will be the highest Gag possible. It may be replaced with a Press output if enough presses are configured.
- Convert the shear press to a Non-Stop Open Loop Shear with a Boost output. This requires the Enable Punches DIP Switch 4. It shifts Press 1 to be on the first Die Accelerator and, if enabled, Press 2 to be on the second Die Accelerator.
- Four extra gags are enabled if switch 15 is ON. Gag 10 Gag 8 will be the highest Gag possible. It and other gags may be replaced with a Press output if enough presses are configured.

**Model: XL200CL-MDA2**

| <b>Switch #</b> | <b>OFF</b>                         | <b>ON</b>                         |
|-----------------|------------------------------------|-----------------------------------|
| 1               | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF            |
| 2               | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF            |
| 3               | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF            |
| 4               | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF            |
| 5               | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF            |
| 6               | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF            |
| 7               | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF            |
| 8               | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF            |
| 9               | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF            |
| 10              | NOT USED – MUST BE OFF             | NOT USED – MUST BE OFF            |
| 11              | Front Shear Blanking Mode Disabled | Front Shear Blanking Mode Enabled |

Notes for Model **XL200CL-MDA2**:

1. Models **XL200CL-MDA2** is defined to function only as a single-speed dual die-accelerator, one press per die.
2. Encoder 1, 2 and 3 are defined as follows:

| <b>Encoder 1</b>         | <b>Encoder 2</b>         | <b>Encoder 4 ( Ver. 4 )</b> |
|--------------------------|--------------------------|-----------------------------|
| Motor Encoder<br>(Die 1) | Motor Encoder<br>(Die 2) | Line Encoder                |

3. Version 4 only

**Model XL270CL (Tile Machine Controller)**  
**I/O Definitions**

| <b>IO#</b> | <b>Inputs</b>   | <b>Outputs</b>                    |
|------------|---|-----------------------------------|
| 1          | Jog Forward   | Fast                              |
| 2          | Jog Reverse   | Slow                              |
| 3          | Run   | Reverse                           |
| 4          | E-Stop  | Run                               |
| 5          | Setup Lockout   | Item Complete                     |
| 6          | Manual Shear  | Drive Enable                      |
| 7          | Manual Punch 1  | <i>(Future Print Flush)</i>       |
| 8          | Tail Out  | <i>(Future Print Trigger)</i>     |
| 9          | Press 0 Complete, Shear   | Press 0 Down (Shear)              |
| 10         | Press 1 Complete  | Forming Press 1 Down              |
| 11         | Press 2 Complete <sup>1</sup>   | Forming Press 2 Down <sup>1</sup> |
| 12         | Press 3 Complete, Entry Shear   | Press 3 Down (Entry Shear)        |
| 13         | Press 1 Forming Tool Complete <sup>2</sup>  <br>Press 4 Complete (KMF) <sup>3</sup> | Press 4 Down (KMF) <sup>3</sup>   |
| 14         | Manual Punch 2 <sup>1</sup>   | Press 5 Down (KMF) <sup>3</sup>   |
| 15         | Press 0 Up Complete   | Press 0 Up (Shear)                |
| 16         | Press 1 Up Complete   | Forming Press 1 Up                |
| 17         | Press 2 Up Complete <sup>1</sup>  | Forming Press 2 Up <sup>1</sup>   |
| 18         | Press 3 Up Complete   | Press 3 Up (Entry Shear)          |
| 19         | Stacker Complete  | Not Used                          |
| 20         | Manual Stacker  | Press 1 Forming Tool              |
| 21         | <i>(Future Asynchronous Print Detect)</i>   | Press 2 Forming Tool <sup>1</sup> |
| 22         | Feed OK   | Stacker                           |
| 23         | Slow Run  | Not Used                          |
| 24         | Press 5 Complete (KMF) <sup>3</sup>   | Not Used                          |

**Model XL270CL (Tile Machine Controller)  
Switch Settings**

| <b>Switch #</b> | <b>OFF</b>                          | <b>ON</b>                       |
|-----------------|-------------------------------------|---------------------------------|
| 1               | CW Encoder 1                        | CCW Encoder 1                   |
| 2               | CW Encoder 2                        | CCW Encoder 2                   |
| 3               | Normal Analog Polarity              | Inverted Analog Polarity        |
| 4               | Disable Twin Press Option           | Enable Twin Press Option        |
| 5               | See Below                           | See Below                       |
| 6               | See Below                           | See Below                       |
| 7               | See Below                           | See Below                       |
| 8               | See Below                           | See Below                       |
| 9               | CRT Disabled                        | CRT Enabled                     |
| 10              | NOT USED – MUST BE OFF              | NOT USED – MUST BE OFF          |
| 11              | NOT USED – MUST BE OFF              | NOT USED – MUST BE OFF          |
| 12              | KMF presses FTS <sup>4</sup>        | KMF Presses NS <sup>4</sup>     |
| 13              | NOT USED – MUST BE OFF              | NOT USED – MUST BE OFF          |
| 14              | Normal Shear Operation <sup>5</sup> | 3D Shear Operation <sup>5</sup> |
|                 |                                     |                                 |
| <b>Switch 5</b> | <b>Switch 6</b>                     | <b>Motor Type</b>               |
| OFF             | OFF                                 | Feed-to-Stop, One Encoder       |
| ON              | OFF                                 | Feed-to-Stop, Two Encoder       |
| OFF             | ON                                  | Reserved                        |
| ON              | ON                                  | Reserved                        |
|                 |                                     |                                 |
| <b>Switch 7</b> | <b>Switch 8</b>                     | <b>Machine Type</b>             |
| OFF             | OFF                                 | Formia                          |
| ON              | OFF                                 | Sen Fung                        |
| OFF             | ON                                  | Reserved                        |
| ON              | ON                                  | Reserved                        |

Notes for Model XL270CL (Tile Machine Controller):

1. Inputs/Outputs only available when Twin Press Option is selected via dipswitch configuration.
2. Press 1 Forming Tool Only available when configured as a Sen Fung Machine.
3. The Press 4 and 5 inputs and outputs were added to support the KMF Felt applicator module. They are only added when the Machine is configured for a Formia tile machine. The KMF module only requires Down outputs so, to preserve the remaining outputs for other unforeseen uses, no down outputs are provided.
4. DIP switch 12 is only available for the Formia model and configures the KMF press outputs to NON-Stop operation.
5. 3D Shear operation. Enable this option if a shear operation must be performed prior to the first forming operation to prevent the shear from crushing it.

**Model XL208CL I/O Definitions (Version 3 and Higher)**

| <b>IO#</b> | <b>Inputs</b>                    | <b>Outputs</b>      |
|------------|----------------------------------|---------------------|
| 1          | Jog Forward                      | Fast   Forward      |
| 2          | Jog Reverse                      | Slow                |
| 3          | Run                              | Reverse             |
| 4          | Emergency Stop (E-Stop)          | Run                 |
| 5          | Setup Lockout                    | Item Complete       |
| 6          | Manual Shear                     | Drive Enable        |
| 7          | Manual Punch                     | Print Flush/Encoder |
| 8          | Tail Out (Inverted Sheet Detect) | Print Trigger       |
| 9          | Not Used                         | Not Used            |
| 10         | Not Used                         | Not Used            |
| 11         | Not Used                         | Not Used            |
| 12         | Not Used                         | Not Used            |
| 13         | Not Used                         | Not Used            |
| 14         | Not Used                         | Not Used            |
| 15         | Not Used                         | Not Used            |
| 16         | Not Used                         | Not Used            |
| 17         | Not Used                         | Not Used            |
| 18         | Not Used                         | Not Used            |
| 19         | Not Used                         | Not Used            |
| 20         | Manual Stacker                   | Not Used            |
| 21         | Asynchronous Print Detect        | Not Used            |
| 22         | Die Home                         | Stacker             |
| 23         | Not Used                         | Not Used            |
| 24         | Not Used                         | Not Used            |

**Model XL208CL Switch Settings (Version 3 and Higher)**

| <b>Switch #</b> | <b>OFF</b>                     | <b>ON</b>                        |
|-----------------|--------------------------------|----------------------------------|
| 1               | CW Encoder 1 Direction         | CCW Encoder 1 Direction          |
| 2               | CW Encoder 2 Direction         | CCW Encoder 2 Direction          |
| 3               | Normal Analog Voltage Polarity | Inverted Analog Voltage Polarity |
| 4               | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 5               | See Below                      | See Below                        |
| 6               | See Below                      | See Below                        |
| 7               | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 8               | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 9               | CRT Disabled                   | CRT Enabled                      |
| 10              | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
|                 |                                |                                  |
| <b>Switch 5</b> | <b>Switch 6</b>                | <b>Description</b>               |
| OFF             | OFF                            | Invalid                          |
| ON              | OFF                            | Invalid                          |
| OFF             | ON                             | Single-Speed BOSS                |
| ON              | ON                             | Two-Speed BOSS                   |

Notes for Models **XL208CL**:

1. Encoder 1 and Encoder 2 are defined as follows:

| <b>Model</b>   | <b>Encoder 1</b> | <b>Encoder 2</b>    |
|----------------|------------------|---------------------|
| <b>XL208CL</b> | Line Encoder     | Motor Encoder (Die) |

### XL212CL-SGF Switch Settings

| Switch # | OFF                      |          | ON                        |                   |
|----------|--------------------------|----------|---------------------------|-------------------|
| 1        | Feeder                   |          | End Gripper Functionality |                   |
| 2        | NOT USED – MUST BE OFF   |          | NOT USED – MUST BE OFF    |                   |
| 3        | NOT USED – MUST BE OFF   |          | NOT USED – MUST BE OFF    |                   |
| 4        | One Encoder <sup>1</sup> |          | Two Encoders <sup>1</sup> |                   |
| 5        | See Below                |          | See Below                 |                   |
| 6        | See Below                |          | See Below                 |                   |
| 7        | See Below                |          | See Below                 |                   |
| 8        | See Below                |          | See Below                 |                   |
| 9        | CRT Disabled             |          | CRT Enabled               |                   |
| 10       | NOT USED – MUST BE OFF   |          | NOT USED – MUST BE OFF    |                   |
|          |                          |          |                           |                   |
| Switch 5 | Switch 6                 | Switch 7 | Switch 8                  | Number of Presses |
| OFF      | OFF                      | OFF      | OFF                       | 1                 |
| ON       | OFF                      | OFF      | OFF                       | 2                 |
| OFF      | ON                       | OFF      | OFF                       | 3                 |
| ON       | ON                       | OFF      | OFF                       | 4                 |
| OFF      | OFF                      | ON       | OFF                       | 5                 |
| ON       | OFF                      | ON       | OFF                       | 6                 |
| OFF      | ON                       | ON       | OFF                       | 7                 |
| ON       | ON                       | ON       | OFF                       | 8                 |
| OFF      | OFF                      | OFF      | ON                        | 9                 |
| ON       | OFF                      | OFF      | ON                        | 10                |
| OFF      | ON                       | OFF      | ON                        | 11                |
| ON       | ON                       | OFF      | ON                        | 12                |

**Notes:**

- Encoder 1 and Encoder 2 are defined in the Table below:

| Model                             | Encoder 1               | Encoder 2                                       |
|-----------------------------------|-------------------------|---|
| <b>XL212CL-SGF</b><br>Feeder      | Motor Encoder (Feeder)  | Line Encoder<br>(when 2-encoder option is used) |
| <b>XL212CL-SGF</b><br>End Gripper | Motor Encoder (Gripper) | <b>Invalid.</b> Single Encoder must be used.    |

**XL212CL-SGF IO**

| <b>IO#</b> | <b>Inputs</b>   | <b>Outputs</b>                   |
|------------|---|----------------------------------|
| 1          | Feed Ready  | Output 1                         |
| 2          | Slow Run  | Stopping                         |
| 3          | Run   | Output 3                         |
| 4          | Emergency Stop (E-Stop)   | Run                              |
| 5          | Setup Lockout   | Item Complete                    |
| 6          | Input 6   | Drive Enable                     |
| 7          | Buggy Home  | Print Flush                      |
| 8          | Input 8   Tail Out <sup>1</sup>                                 | Print Trigger                    |
| 9          | Press 0 Complete (Shear)  | Press 0 Down (Shear)             |
| 10         | Press 1 Complete  | Press 1 Down   Gag 1             |
| 11         | Press 2 Complete  | Press 2 Down   Gag 2             |
| 12         | Press 3 Complete  | Press 3 Down   Gag 3             |
| 13         | Press 4 Complete  | Press 4 Down   Gag 4             |
| 14         | Press 5 Complete  | Press 5 Down   Gag 5             |
| 15         | Press 6 Complete  | Press 6 Down   Gag 6             |
| 16         | Press 7 Complete  | Press 7 Down   Gag 7             |
| 17         | Press 8 Complete  | Press 8 Down   Gag 8             |
| 18         | Press 9 Complete  | Press 9 Down   Gag 9             |
| 19         | Press 10 Complete   | Press 10 Down   Gag 10           |
| 20         | Press 11 Complete   | Press 11 Down   Gag 11           |
| 21         | Asynchronous Print Detect                                       | Gripper Clamp <sup>2</sup>       |
| 22         | Future Hole Detect Functionality                                | Output 22                        |
| 23         | Weld Detect <sup>1</sup>   Gripper Material Sensor <sup>2</sup> | Output 23                        |
| 24         | Part Detect   | Output 24                        |
| 33         | Jog Forward   | Output 33                        |
| 34         | Fog Reverse   | Output 34                        |
| 35         | Manual Part Reference   | Part Referencing                 |
| 36         | Manual Shear  | Output 36                        |
| 37         | Manual Punch  | Output 37                        |
| 38         | Manual Buggy Reference <sup>2</sup>                             | Buggy Referencing <sup>2</sup>   |
| 39         | Manual Part Grip <sup>2</sup>                                   | Part Grip Function <sup>2</sup>  |
| 40         | Manual Part Drop <sup>2</sup>                                   | Dropping Part <sup>2</sup>       |
| 41         | Stationary Part Grip <sup>2</sup>                               | Part Drop Completed <sup>2</sup> |
| 42         | Punch Verify Mode   | Part Flip <sup>2</sup>           |
| 43         | Punch Skip  | Stopped                          |
| 44         | Punch Allow   | Uncut Length                     |
| 45         | Input 45  | Entry Guides Closed <sup>2</sup> |
| 46         | Input 46  | Exit Guides Closed <sup>2</sup>  |
| 47         | Input 47  | Punch Verify Mode                |
| 48         | Input 48  | Output 48                        |

**Notes:**

- 1) Not with End Gripper DIP switch.
- 2) With End Gripper DIP switch only





the die is in the metal or they have used a sensor that has inverted operation. This setting causes the controller to look for the ON to OFF transition instead.

**Models: XL200CL-MRE2**

| <b>Switch #</b>   | <b>OFF</b>   | <b>ON</b>   |
|-------------------|--|---|
| 1                 | See Below  | See Below   |
| 2                 | See Below  | See Below   |
| 3                 | See Below  | See Below   |
| 4                 | See Below  | See Below   |
| 5                 | Disable OL Punch                                       | Enable OL Punch <sup>2</sup>                            |
| 6                 | NOT USED – MUST BE OFF                                 | NOT USED – MUST BE OFF                                  |
| 7                 | NOT USED – MUST BE OFF                                 | NOT USED – MUST BE OFF                                  |
| 8                 | NOT USED – MUST BE OFF                                 | NOT USED – MUST BE OFF                                  |
| 9                 | CRT Disabled   | CRT Enabled   |
| 10                | NOT USED – MUST BE OFF                                 | NOT USED – MUST BE OFF                                  |
| 11                | Die 1 Default Reference Switch Transition <sup>4</sup> | Die 1 Reversed Reference Switch Transition <sup>4</sup> |
| 12                | Die 2 Default Reference Switch Transition <sup>4</sup> | Die 2 Reversed Reference Switch Transition <sup>4</sup> |
| 14                | Reference Switch Bug <sup>3</sup>                      | Reference Switch Bug <sup>3</sup>                       |
| <b>Die 1 Type</b> | <b>Switch 2</b>  | <b>Switch 1</b>   |
| Crank(BOSS)       | OFF  | OFF   |
| Rotary            | OFF  | ON  |
| Linear            | ON   | OFF   |
| Eccentric (Viper) | ON   | ON  |
| <b>Die 2 Type</b> | <b>Switch 4</b>  | <b>Switch 3</b>   |
| Crank(BOSS)       | OFF  | OFF   |
| Rotary            | OFF  | ON  |
| Linear            | ON   | OFF   |
| Eccentric (Viper) | ON   | ON  |

Notes for Model **XL200CL-MRE2**:

- Encoder 1, 2 and 3 are defined as follows:

| <b>Encoder 1</b>      | <b>Encoder 2</b>      | <b>Encoder 4 ( Ver. 4 )</b> |
|-----------------------|-----------------------|-----------------------------|
| Motor Encoder (Die 1) | Motor Encoder (Die 2) | Line Encoder                |

- Enables an OL press, press Id 2.
- Software versions 4.48.00 and higher, configured with Eccentric accelerators must have this switch set or an error pops up to inform the user about a bug with referencing that requires their attention to fully fix. They must re-verify their home switch position. SCN 3518 describes the bug fully.
- For default operation, the controller searches for a Reference Switch OFF to ON transition while the die MOTOR (not the die) is moving in the forward direction. Some machines have been designed such that that transition of the sensor would occur while the die is in the metal or they have used a sensor that has inverted operation. This setting causes the controller to look for the ON to OFF transition instead. There is one setting defined for each die.

**Models: XL204HCLF-SP023-MHA**

| <b>Switch #</b> | <b>OFF</b>                     | <b>ON</b>                        |
|-----------------|--------------------------------|----------------------------------|
| 1               | CW Encoder 1 Direction         | CCW Encoder 1 Direction          |
| 2               | CW Encoder 2 Direction         | CCW Encoder 2 Direction          |
| 3               | Normal Analog Voltage Polarity | Inverted Analog Voltage Polarity |
| 4               | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 5               | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 6               | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 7               | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 8               | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 9               | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 10              | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 11              | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 12              | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |
| 14              | NOT USED – MUST BE OFF         | NOT USED – MUST BE OFF           |

Notes:

1. Encoder 1 and Encoder 2 are defined as follows:

| <b>Encoder 1</b> | <b>Encoder 2</b>                |
|------------------|---------------------------------|
| Line Encoder     | Motor Encoder (Die Accelerator) |