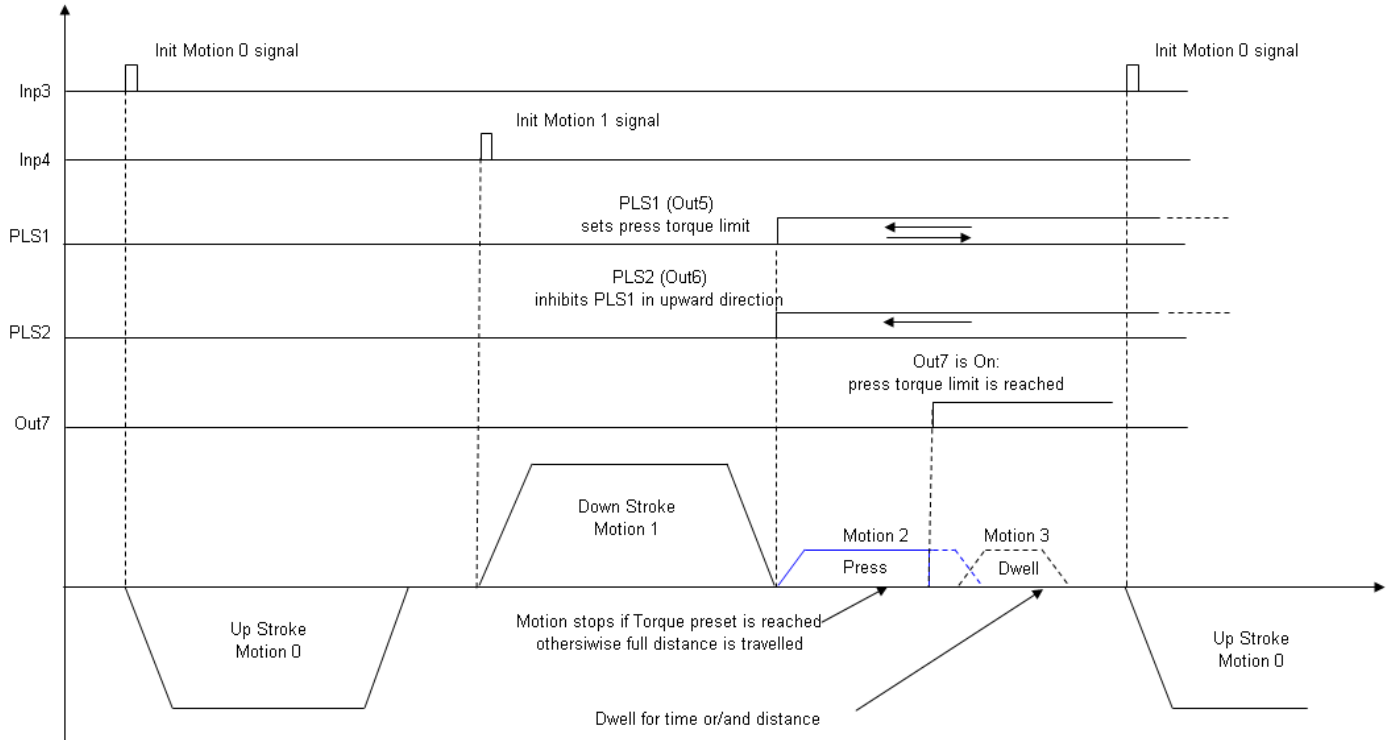


Hot Stamp Press—Indexer Configuration



Motion Profile and timing diagram for Hot Stamp Press application specific configuration.

Description of Application

This pre-engineered Indexer configuration is designed for a Hot Stamp Press application.

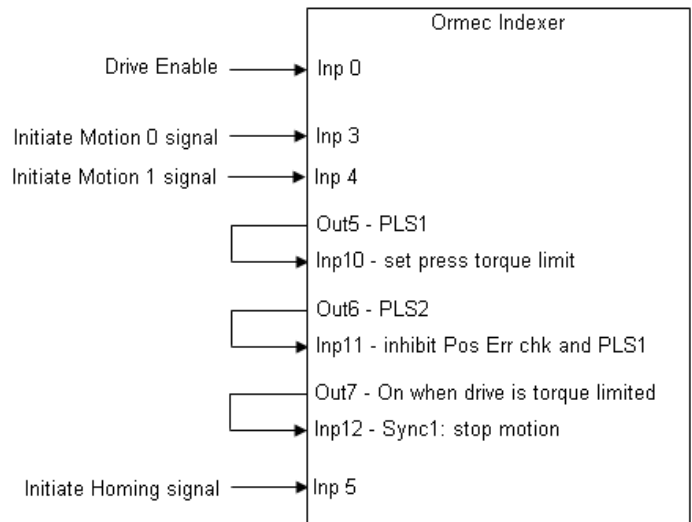
In stamping applications a (heated) die is forced into a material to form an impression. In a typical cycle, the stamp moves rapidly and slows down just before it reaches the material. It continues to move at a slower speed until a required pressure is reached. It then dwells for a fixed period of time. The stamp may be moved down a small amount during the dwell to compensate for the deformation of the material. The final step moves the die rapidly to the start position.

ORMEC Indexer Implementation

On power up, the die is homed. Input 5 is used to trigger a built-in homing sequence using a rising edge. Homing to vertical (upper) hard-stop motion is used.

Input 3 is triggered by an external signal (PLC, push-button, etc). Input 3 initiates Motion 0 which is an absolute move to Start position. No motion occurs if the die is already at the Start position. When Input 4 is triggered (from an external signal), Motion 1 (down

Indexer wiring



stroke) is executed. Motion 1 is an absolute move to a position directly above the point of contact with the work piece. After Motion 1 completes, it chains to Motion 2 (Press) which is a relative move for distance. At the start of this motion, PLS1 on Output 6 becomes True and Input 5 will be on. Input 5 is configured as a 'Torque limit 2' function with the Torque Limit 2 set to a drive

output level that produces the maximum desired motor torque for the press action.

Motion 2 will stop early if the drive detects that its output is at the press level limit. This turns on Output 7 configured as 'Drive Torque Limited'. Output 7 will assert Input 12 configured as 'Sync Condition 1'. It is used as a 'Stop Condition' for Motion 2. This causes Motion 2 (Press) to chain to Motion 3 (Dwell). Motion 3 is a relative move for distance in time and has an optional 'Dwell Time' parameter. If the 'Distance' is set to zero and 'Dwell' is non-zero it will simply dwell for time. If 'Distance' is non-zero and 'Dwell' is set to zero, the die will move for a set distance in a set time. This lets you configure a desired die behavior after the pressing motion is complete.

When Motion 3 is finished, the cycle is complete. A new cycle will begin when Input 3 is triggered again. This triggers Motion 0 (Up Stroke). At the start of Motion 0 PLS2 becomes True and Input 11 is on. Input 11 is configured as an 'Inhibit PLS' function. This in turn forces PLS1 to False causing Input 10 to turn off. This sets the drive torque limit back to 100% for upward motion to the Start position. PLS2 is only active in the upward direction so inhibiting the PLS1 responsible for torque limiting action is only done for upward motion. This provides full drive torque when the die is moving up.

Notes:

- The 'Following Error Fault' is disabled when the press torque limit is set.
- Indexer software and/or hardware travel limits should be used.
- The Indexer brake (digital output function) functionality should be used for vertical load applications.

Download Configurations

The configurations for this application may be downloaded from the XD-Series Software area of the ORMEC website. For addition information, consult ORMEC sales support at (585) 385-3520 or email sales@ormec.com