# HQ-100
# Reciprocator Controller

Manual P/N 7105200A
- English -
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NORDSON (UK) LIMITED • STOCKPORT • UK
www.nordson.com

CE

**Order number**
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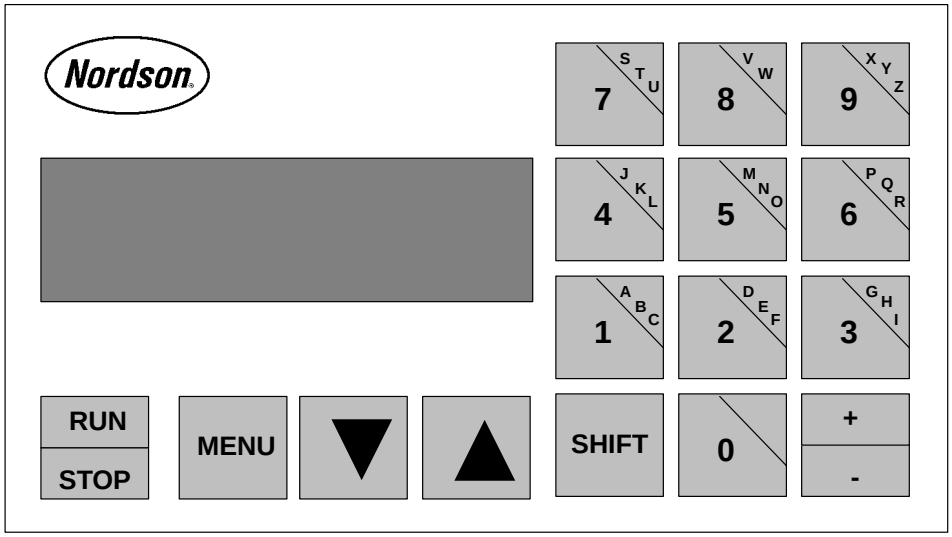
# Description of Keys




**0** .. **9**

Numerical keys.

**+**
**-**

To select the sign + or -.

**MENU**

To select menu or manual mode.

When it is on, an ”m” will appear, in the 1st column of the 1st line.

**SHIFT**

To activate keys sequences for special functions.

When this is activated, an ”s” will appear in the 1st column of the 1st line.

**RUN**
**STOP**

To activate the cycle or the self-learning function in manual mode.

▼ ▲

To shift in the menu or to shift in manual mode, or to change the set up value when the cycle is on.

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# Start Up

The controller starts up automatically as soon as the general control board has been switched on, and the self-learning function has run for a few seconds. Right afterwards the page MENU 1, that allows the zero-setting of the machine, appears on the display.

| |
|---|
| RUN/STOP FOR ZS |
| 01 |

To carry out the machine zero-setting, press the key **RUN/STOP**; when finished, the controller accedes to MENU 4.

| | | |
|---|---|---|
| MINP | SPEED | MAXP |
| 10 | [40] | 200 |

By pressing the key **RUN/STOP** the reciprocator starts moving.

If the conveyor-stop function has been activated, the function of the reciprocator will be conditioned by the conveyor-in-motion signal.

**NOTE:** For information on how to use the conveyor-stop signal, refer to *Menu User Data*.


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# Data Setting

To insert data for the minimum position, the maximum position and speed, proceed as follows:

| MINP | SPEED | MAXP |
|---|---|---|
| 10 | [40] | 200 |

1. Choose the desired field, by shifting with the square brackets ▼ / ▲.

| MINP | SPEED | MAXP |
|---|---|---|
| [10] | 40 | 200 |

2. Set to zero the value which appears on the display, by using **SHIFT** / **0**.

Set up the new value using the numerical keys.

It is necessary to shift to another field to confirm the set up value.

Repeat the operation from point 1 to set up the remaining values.

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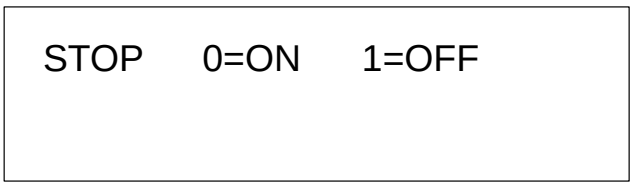
# Menu User Data

From MENU 4 it is possible to enter the ”Menu User Data” by pressing **SHIFT** / ▲:

By pressing **MENU** and **RUN/STOP** alternately it is possible to activate or deactivate, in manual mode, the output for the gun control.

Distance between the upper and lower reversal points for the activation of speed of limit switches.

Programmable speed on stroke limit switches.




Activation of stop-conveyor signal.
0= on
1= off (in this mode the reciprocator can be stopped and started by pressing the key **RUN/STOP**)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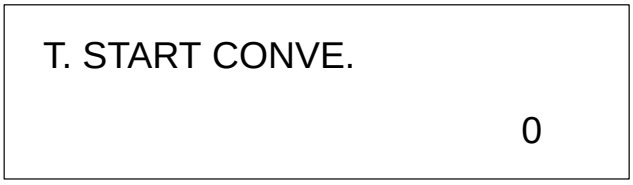
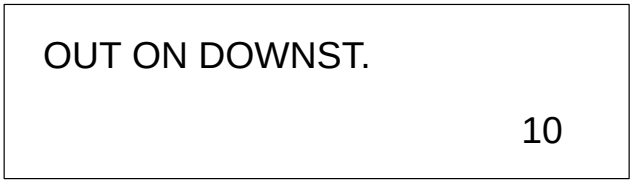
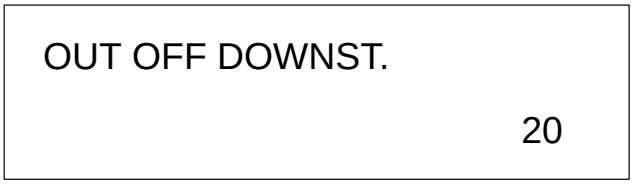
Reversal pause time, in hundredths of a second.



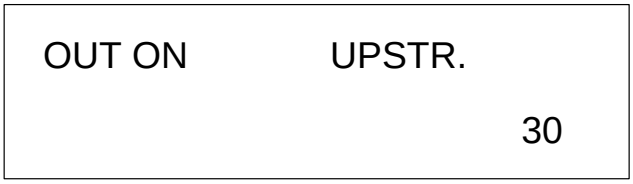

Waiting time before starting, after conveyor-consent, in hundredths of a second.




Distance from the upper reversal point for the activation of the optional output during the downstroke.




Distance from the lower reversal point for the deactivation of the optional output during the downstroke.




Distance from the lower reversal point for the activation of the optional output during the upstroke.

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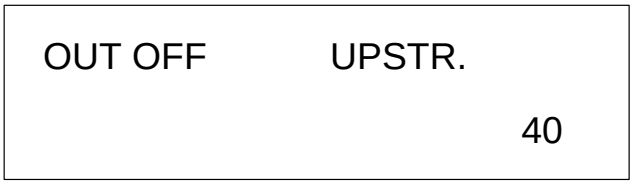
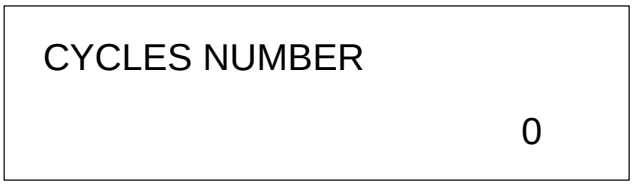
# Menu User Data *(contd)*

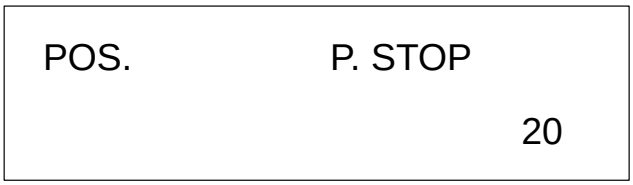



Distance from the upper reversal point for the deactivation of the optional output during the upstroke.




Number of strokes settable by start/stop functions.
0= stepless function.

Password to enter the configuration MENU 2.




POS.: real position of the axis.
**Q.STOP:** stop position for conveyor-consent input.

It is possible to go back to MENU 4 from ”Menu User Data” by pressing **SHIFT** / ▼.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# Start / Stop Cycle

When the external CONVEYOR-CONSENT signal is activated, the reciprocator will perform the cycle set up in the ”user menu”.

| MINP | SPEED | MAXP |
|---|---|---|
| 10 | [40] | 200 |

To stop the cycle shift up to the field **SPEED** and press the key **RUN/STOP**.

To restart the cycle, after a stop caused by the pressing of the key run-stop, press the key **RUN/STOP** again.

While the cycle is being carried out, an arrow showing the running direction will appear on the screen.

| MINP | SPEED | MAXP |
|---|---|---|
| 10 | [40] | 200 |

The speed and the reversal points can also be modified when the reciprocator is running.

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# Data Modification During the Cycle

To modify data during the cycle, select the desired field by pressing the key **MENU**.
An ”m” is displayed on the screen.

| | | |
|---|---|---|
| mMINP | SPEED | MAXP |
| [10] | 40 | 200 |

Change the set up value by pressing the keys ▼ / ▲.

To return to the normal working mode, press the key **MENU** again.

# Manual Mode

When the machine is not running, it is possible to move the axis manually and self-learn the reversal points.

Shift up to the desired field and press the key **MENU**: an ”m” is displayed.

| | | |
|---|---|---|
| mMINP | SPEED | MAXP |
| [10] | 40 | 200 |

Now it is possible to move the axis, by using the keys ▼ / ▲.

Once the desired position has been reached, it is necessary to press the key **RUN/STOP** in order to self-learn the actual position of the axis.

This operation is also possible both for the minimum and for the maximum position.

To return to the normal working mode, press the key **MENU** again.


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# Setting Machine Constants

Press **SHIFT** / ▲ to access the machine constants.

Avoid pressing several keys at the same time.

The following appears:

Press **SHIFT** / **0** to set the value to zero.

Set the password value by pressing the keys:

To insert the value of the password, contact Nordson.

Select menu 2 by pressing the keys **MENU** / **2**.

The following appears:

With the keys ▼ / ▲ it is possible to shift in the fields, and with the numerical keys it is possible to change the values.

Before inserting the new value the current value nust be cancelled using the keys: **SHIFT** / **0**.

To return to the main page, press the keys **MENU** / **4**.

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# Meaning of Machine Constants

**DIRECTION**

(0..1) positive direction and timing, this data permits you to reverse the reading direction of the encoder.

0= POSITIVE COUNT

1= NEGATIVE COUNT

**N. PULSES**

Encoder pulses number *4 for each movement unit.

**N. MICRON**

Linear movement unit.

Number of micron of axis movement to reach the number of pulses set up in the previous data.

**MAX SPEED**

Maximum axis speed possible in working programs (menu 3).

**MIN SPEED**

Minimum axis speed in working programs (menu 3).

**MAX POS**

This data determines the maximum position for the positioning of the axis with respect to the ZERO MACHINE point (FC software).

**SPEED FC0 ON**

Searching speed of zero end of stroke (ON).

**SPEED FC0 OFF**

Zero setting speed of zero end of stroke (OFF).

**PRESET 0**

Preset position. Once the zero setting has been carried out, if the data is different from 0, the axis positions at the set up position.


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# Meaning of Machine Constants *(contd)*

**DELAY 0**

Delay between each phase of the Z.M.

**MIN STROKE**

Minimum distance between lower and upstroke (minimum value not inferior to 20).

**TOL STOP P**

Positioning tolerance on the stop-conveyor position.

**STOP P SPEED**

Speed to reach the stop-conveyor position.

**K SPEED**

Value to keep the position constant when speed changes.

**NOTE:** The positions are expressed in cm.
The speeds are expressed in m/min.

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