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User manual

Table of content

1 Operating the machine 2
1.1 Scope of application 2
1.2 Starting up the machine 2
1.3 Changing program/product 3
1.4 Shutting down 9
1.5 Unintended stops 9
1.5.1 Stop due to safety violations 9
2 Cleaning and maintenance 10
2.1 Daily 10
2.2 Monthly 10
3 Maintenance 10
3.1.1 Bearings 10
3.1.2 Tube bearings 10

1 Operating the machine

1.1 Scope of application

The machine system must only be used for stacking and strapping dry ice blocks within the dimensions 210x125x20/25mm, 210x125x50mm and 105x125x20/25mm with maximum stacking height of 260mm.

1.2 Starting up the machine

Notice! The machine must only be operated by trained operators.
Notice! The machine must only be used for one type of dry ice blocks at a time
Notice! Before turning on the machine system, it must be ensured that no personnel are inside the machine, and that the door is closed.

1. Ensure that the main switch on the air supply unit are turned towards “ON”
2. Turn the main switch located on the electrical cabinet towards “ON” to turn on the machine and the control panel with the touch screen. The machine is operated from the touch screen where it is possible to adjust some production parameters and monitor the machine.
3. Ensure that the machine is empty, no products in the machine.
4. Start the Cyklop Strapper by pushing the power button at the control panel of the strapper
5. Now the machine is ready for use

1.3 Changing program/product

As soon as the machine system is reset, the parameters for the ice blocks concerned can be set. On the control panel are six main menus. The machine system will find its references. When this is done, the different parameters can be set, and the machine is ready for operation. For explanation of the menus see pictures below.

F1 - Main

In the main menu the numbers of layers can be set. The display shows the actual number of layers that has gone through the machine. Layer thickness refers to the thickness of each dry ice block in millimetre.
The empty button is used to empty the machine, it tells the stacking unit that the stack is complete, regarding the amount of actual layers, and sends it to the strapper.

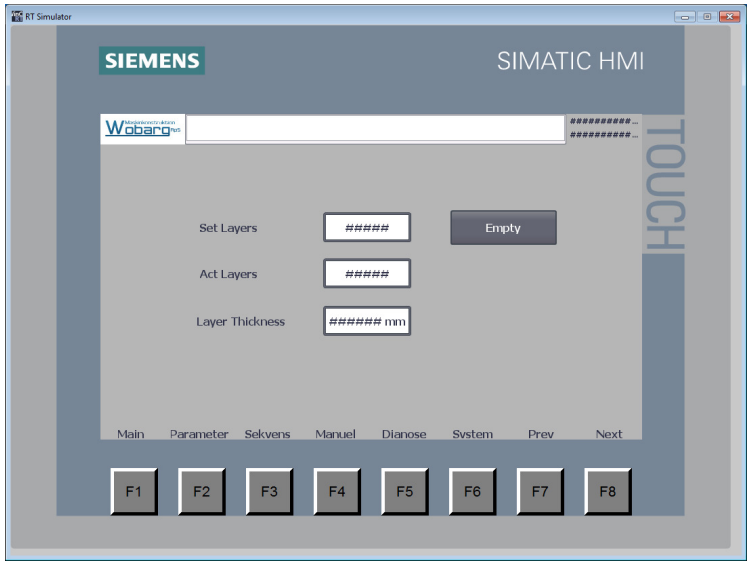


Figure 1 - Main menu

F2 - Parameter

In this menu it is possible to the different parameter of the machine system (see **Figure 2**).
Start Position: the position where the blocks start.
Delivery Position: the position where the blocks are delivered. There must be an offset between the start position and the delivery position.
Stacker Low Speed: in order to make sure the forks do not crush the blocks when stacking, the speed can be set.
Stacker High Speed: operation speed of the stacker unit.
Inlet Belt Slow Speed: when there are no blocks on the conveyor belt, the speed can be reduced.
Inlet Belt High Speed: speed of the belt during operation.
Inlet Belt Delay Start Stacker: if the stacker is not ready, a delay of the conveyor belt can be set.
Inlet Belt Blocked: if the belt gets blocked, this parameter makes sure that there is a delay before entering the staking unit.
Inlet Belt Delay Start To Prev Machine: it is possible to set a delay on the conveyor belt in order for it to fit the previous machine.

Pusher 1 Time Forward After Sensor: Pusher 1 pushes the stack from the stacker to the lift, and this setting sets a delay for the pusher to push longer into the lift, before returning to initial position. This makes it possible for the pusher to align the stack, if shorter ice blocks are used.
Strapper Time: The time the program gives the strapping pulse to the strapper.

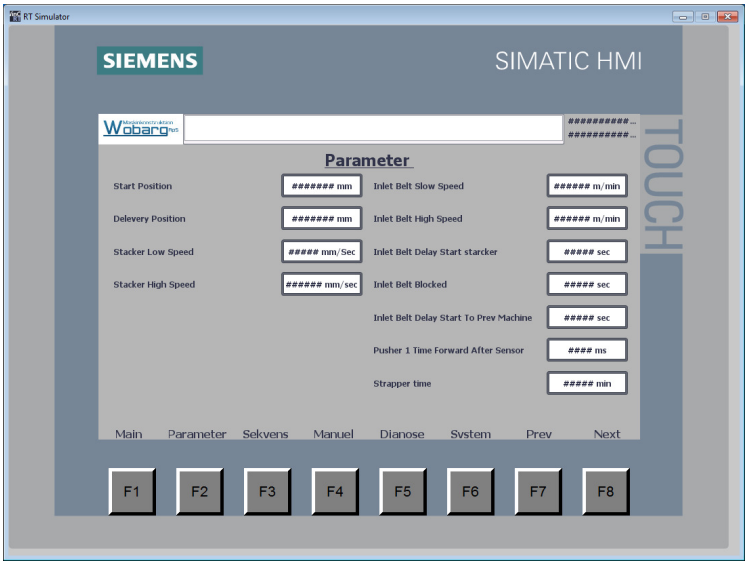


Figure 2 - Parameter menu

F3- Sequence

Sequence shows the positions of the on-going operations (see **Figure 3**).

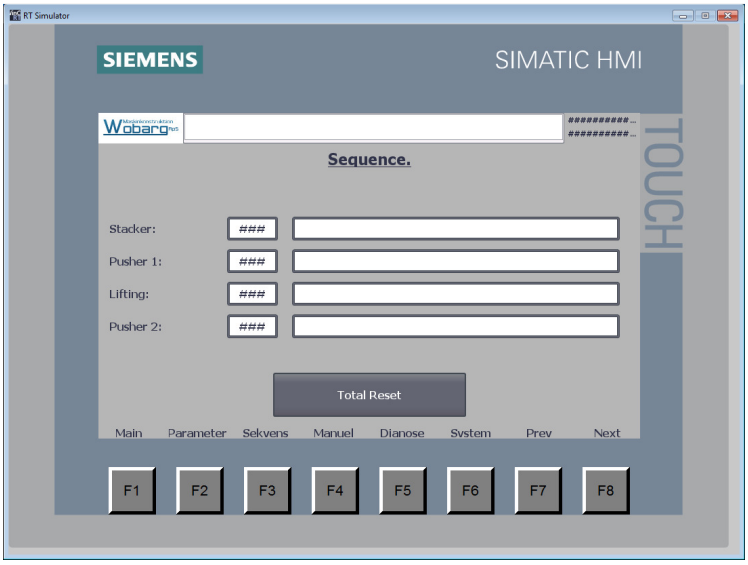


Figure 3 - Sequence menu

F4 - Manual

If it is wished to run the machine system manually, this menu is where to adjust the settings. If the green dots turn red, it means that the machine has detected an error, and this will be shown in F5 - Diagnosis (see **Figure 5**).

Figure 4 shows the manual settings for the inlet belt and **Figure 5** shows the manual settings for the stacker. **Figure 6** shows the manual settings for pusher 1.

NOTE! Only for trained operators and maintenance!

NOTE! When the machine is operated in manual it does NOT prevent collision between components

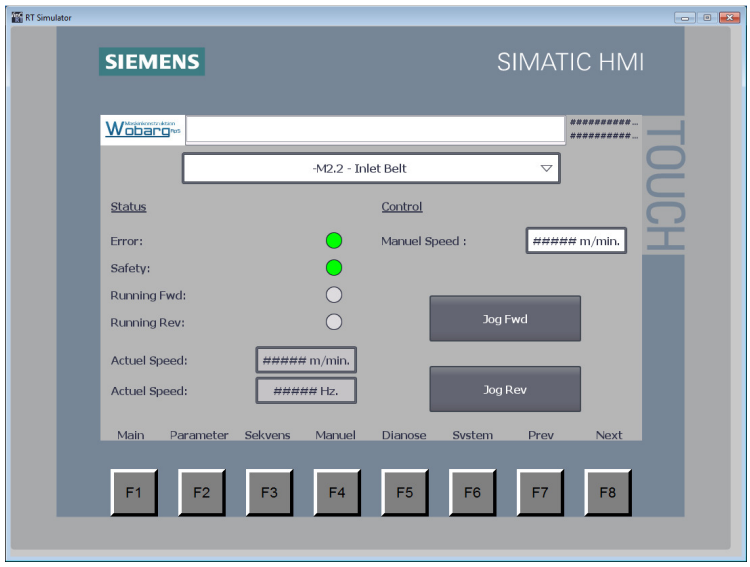


Figure 4 - Manual menu



Figure 5 - Manual menu



Figure 6 - Manual menu

F5 - Diagnoses

If the machine system detects any errors or defaults this screen is where it will be shown.

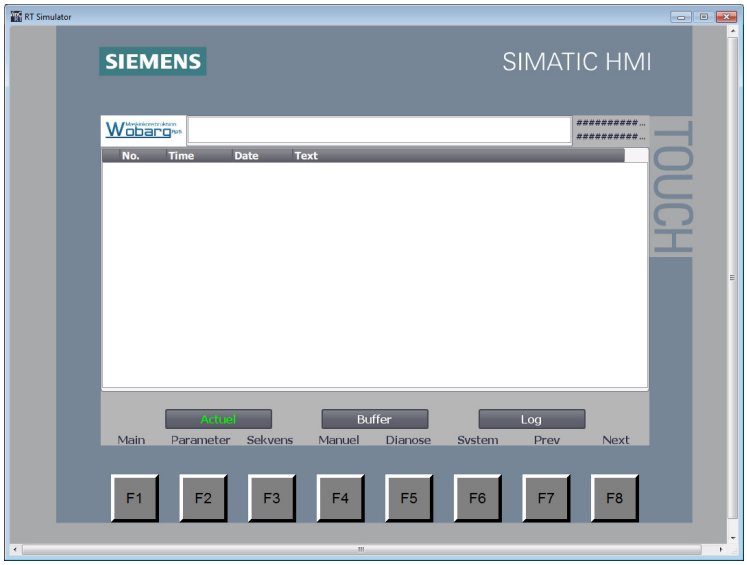


Figure 7 - Diagnosis menu

As an example of an error message see **Figure 8**.

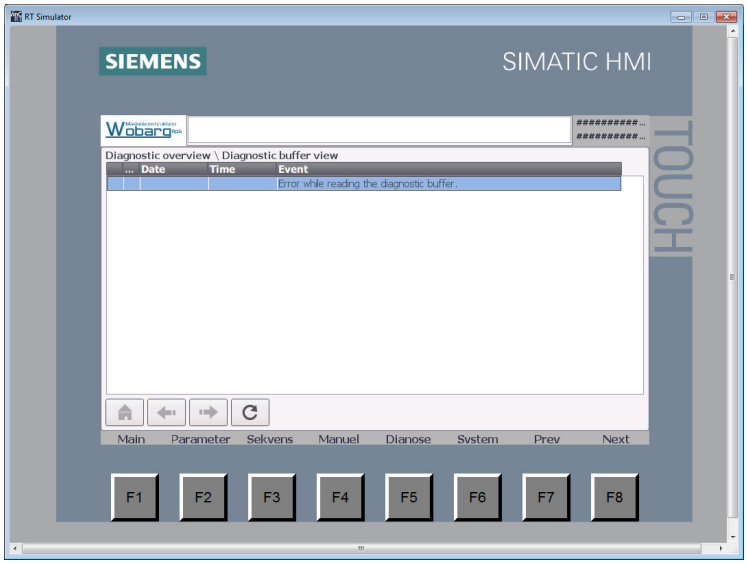


Figure 8 - Diagnosis menu

F6 - System

In the system settings, it is possible to change the user of the machine (see **Figure 9**), the system time (see **Figure 10**), the language (see **Figure 11**).

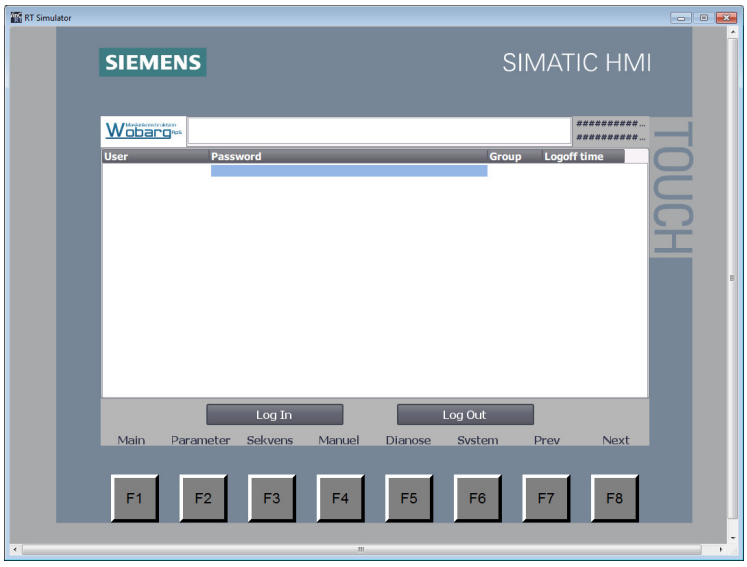


Figure 9 - System menu

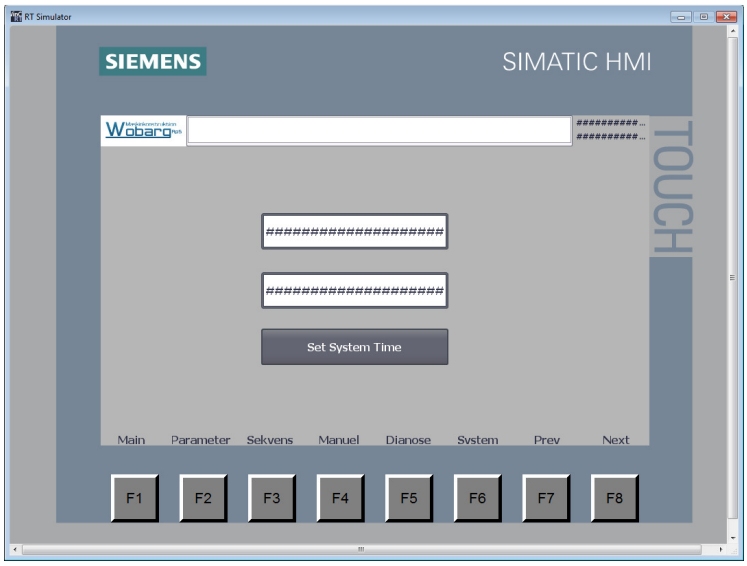


Figure 10 - System menu

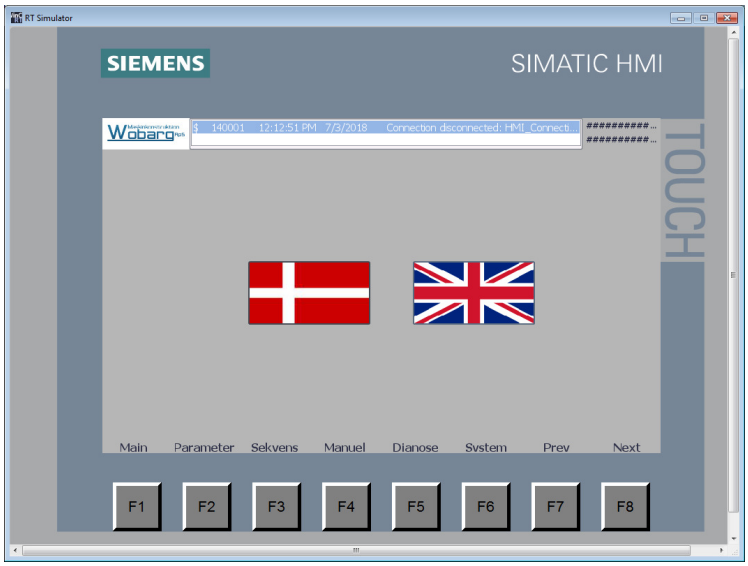


Figure 11 - System menu

If it is desired to clean the screen, it is possible by pushing the 'Clean Screen'. This gives you 30 seconds to wipe of the screen. On this screen it is also possible to calibrate the screen and change the settings of the control panel (see **Figure 12**).



Figure 12 - System menu

1.4 Shutting down

All processes/cycles must be completed when shutting down the machine system. This means that all sequence related functions must be completed before attempting to shut down.

1. Press the red “STOP”-button on the control panel at the inlet.
2. Wait until all movements in the system has stopped.
3. Empty the machine of products

1.5 Unintended stops

1.5.1 Stop due to safety violations

The system will stop if an emergency stop function is activated, ex opening the door or disconnection of air-supply. In order to resume production, the error (open door or emergency stop) has to be corrected, and the system must be reset by pressing the blue button

2 Cleaning and maintenance

Notice! All cleaning and maintenance must only be carried out, when the machine is properly turned off and the main switch is locked in “OFF”-position.

Trained operators are allowed to perform cleaning tasks, while maintenance is only to be executed by trained and authorized personnel

2.1 Daily

If it is difficult to see through the shielding of the machine due to dirt, please wipe off with a cloth.

2.2 Monthly

Once a month it is important to clean the photocells in order for them not to make wrong readings. Clean them carefully with a cloth that does not make scratches.

3 Maintenance

3.1.1 Bearings

All bearings have nipples and should be checked annually. It may not be necessary to lubricate the bearings since they in principle are lubrication free..



3.1.2 Tube bearings

Some have nipples and should be checked every 3 month, and only greased if needed.

Notice! The amount of grease should be adjusted to the need and generally, one push with a standard lubrication gun is sufficient.

The ones without nipples should also be checked every 3 month, and if needed be greased. It has to be done with a clean, lint-free cloth to apply a thin even layer of grease to the shafts.