



MOTION CONTROL

EVOLUTE

MACHINE CONTROL

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1. PRODUCT DESCRIPTION

1.1. FUNCTION

The Evolute is a powerful and versatile system that has been specially designed to control grading systems in both 2D and 3D. This innovative system allows for both manual and automatic operations, making the accurate leveling of sites and surfaces more efficient and effective than ever before.

1.2. EFFICIENCY The Evolute system allows operators to perform precise adjustments with the grading system. This results in faster and more effective work, allowing projects to be completed within shorter periods.

1.3. ACCURACY

Whether it's 2D or 3D work, the Evolute system offers unparalleled precision when adjusting terrain heights. This leads to smooth and perfectly leveled surfaces.

1.4. INCREASED SAFETY

While the Evolute offers advanced automatic features, we emphasize that it is vital that a trained and skilled operator is present at all times while using it. This not only guarantees the safety of the operator and people in the vicinity, but also the quality of the work.

1.5. IMPORTANT NOTE

While the Evolute is a powerful tool for increasing productivity, it's crucial to emphasize that this is not a fully autonomous system. The presence of a trained operator remains necessary to ensure the correct operation of the Evolute and to ensure that all safety regulations are met. Improper use or untrained use may result in inaccurate results and potential hazards.

2. SAFETY INFORMATION

2.1. READ THE MANUAL IN ADVANCE

Before you start using the Evolute System, it is essential to read the entire manual carefully. It contains important instructions on installation, operation and safety. Understanding the operation of the system is the first step to safe use.

2.2. AUTOMATIC MOVEMENTS ACTIVE MONITORING

The Evolute System uses automated movements and functions. Make sure to actively monitor these movements at all times. Keep an eye out to notice unexpected situations immediately and intervene if necessary.

2.3. TRAINING REQUIRED

Before using the system completely independently, it is recommended that you undergo thorough training. Learn how to start the system, how to manage its movements and functions, and how to act in an emergency. Proper training minimizes the risk of errors and accidents.

2.4. HAZARDS

The Evolute System can be potentially dangerous if not used properly. Some potential dangers include:

2.4.1. HAZARDS - Automatic control

The system can move independently and perform operations based on preset functions. This can be dangerous if the system is not configured correctly or if there are unexpected obstacles.

2.4.2. HAZARDS – Preventing accidents or injuries

To avoid accidents or injuries when using the Evolute System, follow these guidelines:

Actively watch and engage:

Stay involved in the operation of the system while it is in use. Keep your attention focused on the movements and tasks of the system, and always be prepared to intervene if necessary.

2.5. GENERAL

The Evolute System is designed to simplify tasks and increase efficiency, but it is your responsibility to use it in a safe and responsible manner. By reading the manual, actively monitoring automatic movements, and getting appropriate training, you can minimize the risks and take advantage of the benefits that the system has to offer. Safety always comes first.

3. THE TOUCHSCREEN

3.1. HOME SCREEN



Figure 1

1. Next/Previous page
2. Select page using the icons



3.2. CONTROL

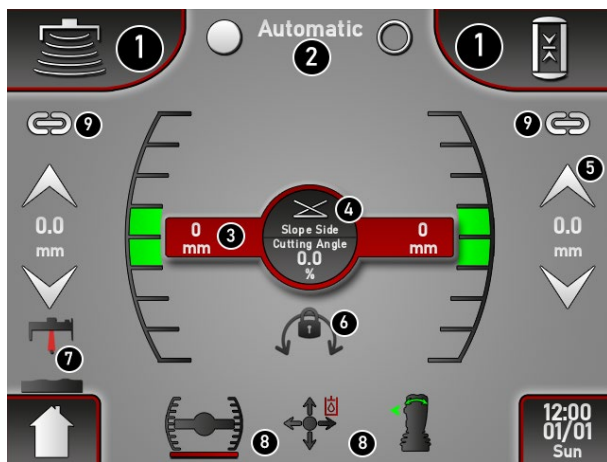
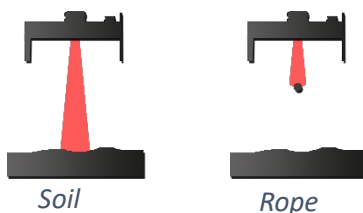


Figure 1.1

1. Selecting Sensor Selection
2. Selecting automatic mode*
3. Sensor value
4. Slope direction and cutting angle
5. Setting jog value**
6. Turning Twist On and Off
7. Probe Measurement Mode Selection***
8. Keyboard shortcuts to pages

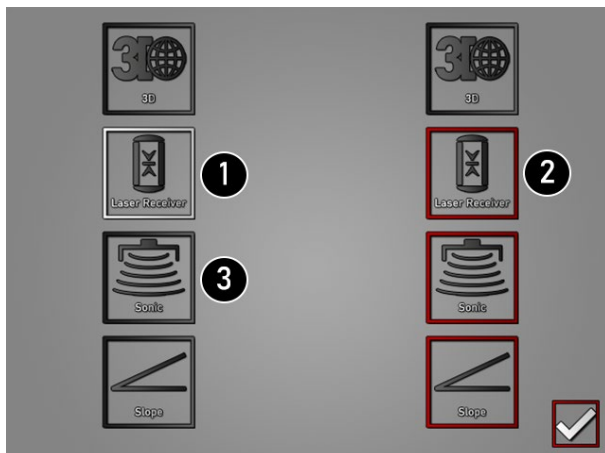
Further information:

- * ● → Automatic mode activated
- → Automatic transmission is switched on
- → Automatic transmission is off
- ** Change value by using the arrows or by tapping on the value
- *** Setting the probe position



- **** → Height jog left and right side linked
- **** → Height jog left and right side not linked

3.2.1. CONTROL – Sensor selection

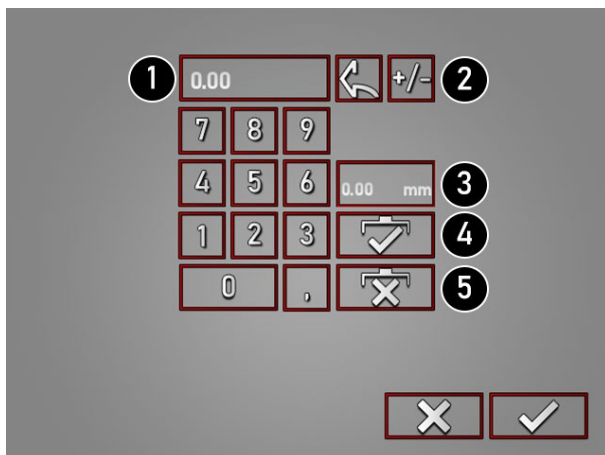


1. White Border → Selected
2. Red Trim → Selection possible
3. Gray border → Selection not possible

CAUTION! First deselect the sensor before a new sensor can be selected.

Figure 1.1.1

3.2.2. STEERING – Jog menu

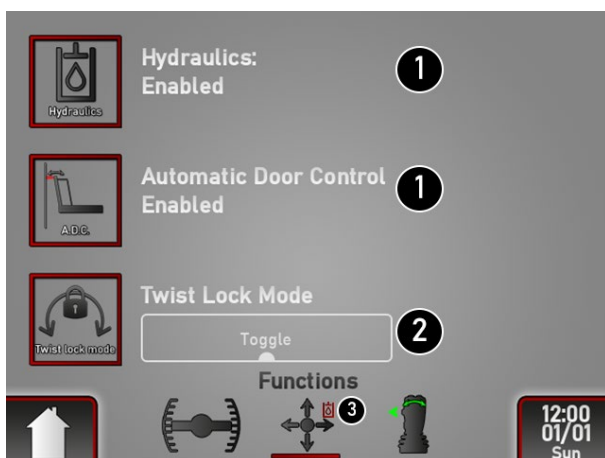


1. Current jog value
2. Change Character from Jog Value
3. Probe zero-set value
4. Probe Zero Set Set
5. Reset probe zero-set

Figure 1.1.2






3.3. FUNCTIONS



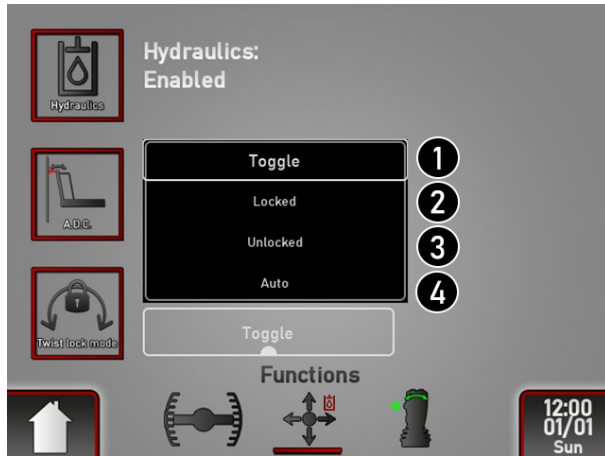
1. Activating and deactivating functions
2. Only visible when using Kilver
3. Hydraulic pressure status*

Figure 1.2

For more information:

- *  → Glows red: no hydraulic pressure present
-  → Flashes red: no hydraulic pressure, but automatic transmission function active
-  → Lights up green: hydraulic pressure available

3.3.1 FUNCTIONS – "Twist lock mode" settings

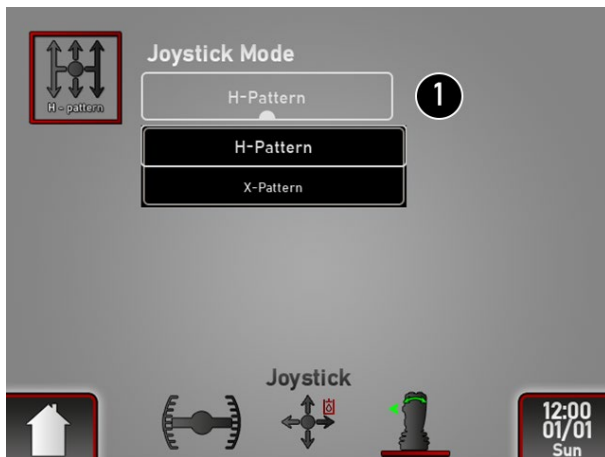


1. Set the rotation settings yourself
(see Figure 1.2 no. 6)
2. Twist locked
3. Twist unlocked
4. Rotation controlled by automatic function

Figure 1.2.1



3.4. JOYSTICK



1. Joystick pattern
(See "5. The joystick" page 11 for explanation)

Figure 1.3



3.5. MEASUREMENTS

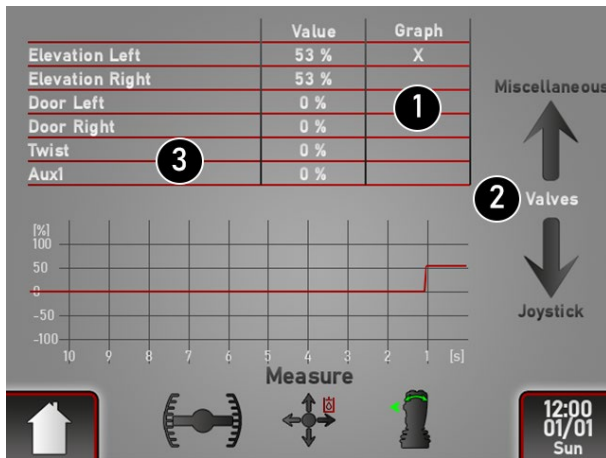


Figure 1.4

1. Select chart information
2. Next/Previous Page
3. "Twist" and "Aux1" only at kilver



3.6 SETTINGS



Figure 1.5

Select an icon for the settings



3.6.1. SETTINGS – Links



Figure 1.5.1

1. Value idem to court institutions
2. Dead band*
3. Control range
4. "Smart-Motion" mode**

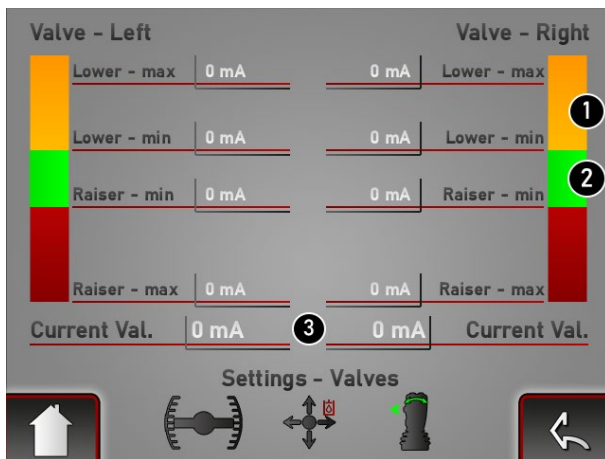
For more information:

* The Tolerance of "Automatic Door Control"

Enabled - Center	Activated-Middle	→ Tilt and height sensor on 2 sides
Enabled - Side	Activated-Side	→ Tilt sensor 1 side, height sensor 2 sides
Disabled	Deactivated	→ Tilt sensor 1 side, height sensor 1 side



3.6.2. SETTINGS – Valves



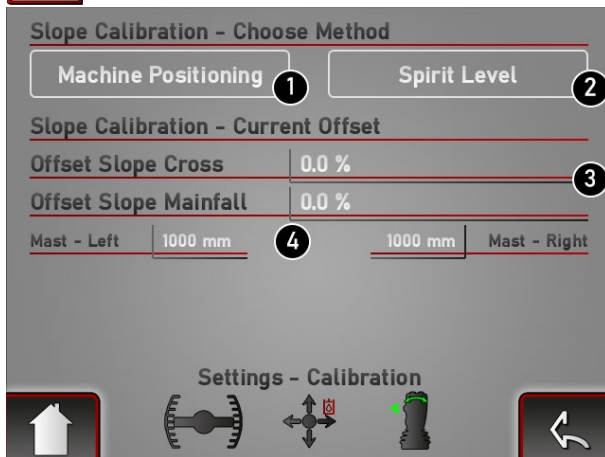
1. Maximum value
2. Valve Cutpoint Value
3. Current valve value (valves move at minimum speed)

CAUTION! Tap the values to set

Figure 1.5.2



3.6.3. SETTINGS – Calibration



1. Calibrate with the machine
2. Calibrate with a spirit level
3. Current offset values

Figure 1.5.3.



3.6.4. SETTINGS – Joystick

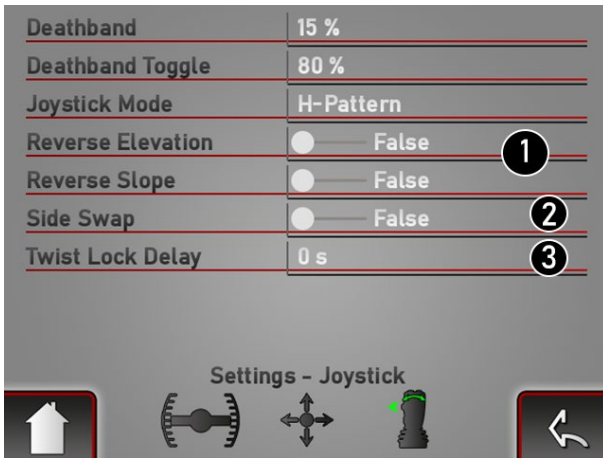


Figure 1.5.4.

1. Reversing Directions
2. Switch right and left joystick functions
3. Set Twist Lock Delay*

For more information:

- * The delay time of locking the twist function after turning off the machine. (only when auto lock mode is enabled).



3.6.5. SETTINGS – Display



Figure 1.5.5.

1. Size of the total area
2. Size of the "near-green area"
3. Size of the green area

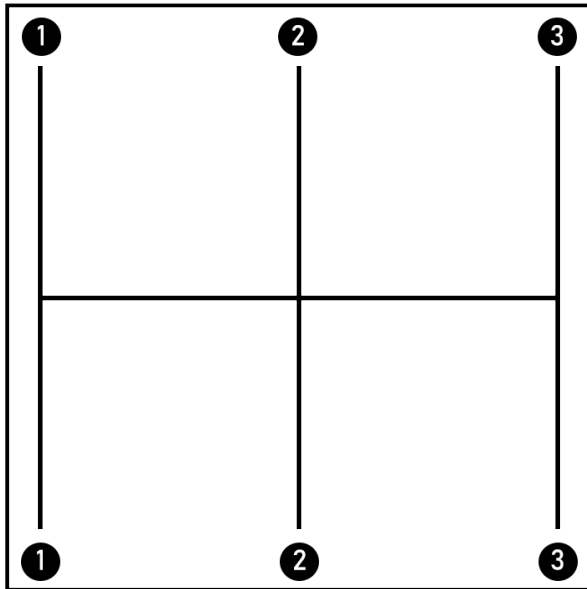
CAUTION! Everything is viewed from scratch

For more information:

- * Only applies to the indicators on the laser receiver

4. THE JOYSTICK

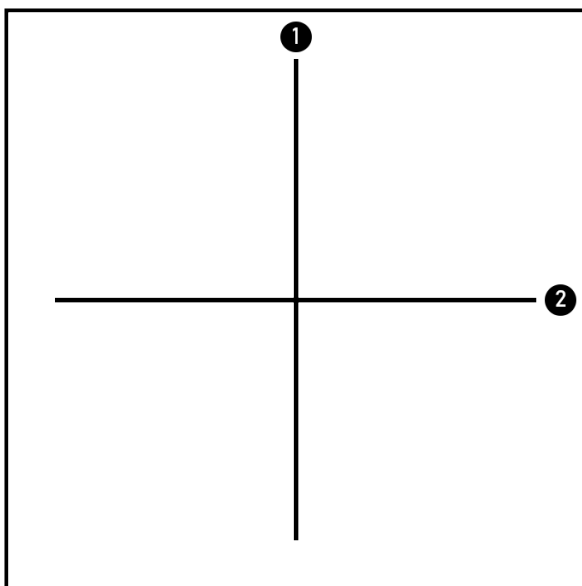
4.1. H PATTERN



1. Up/down left
2. Up/Down Total
3. Up/down right side

Figure 2.1

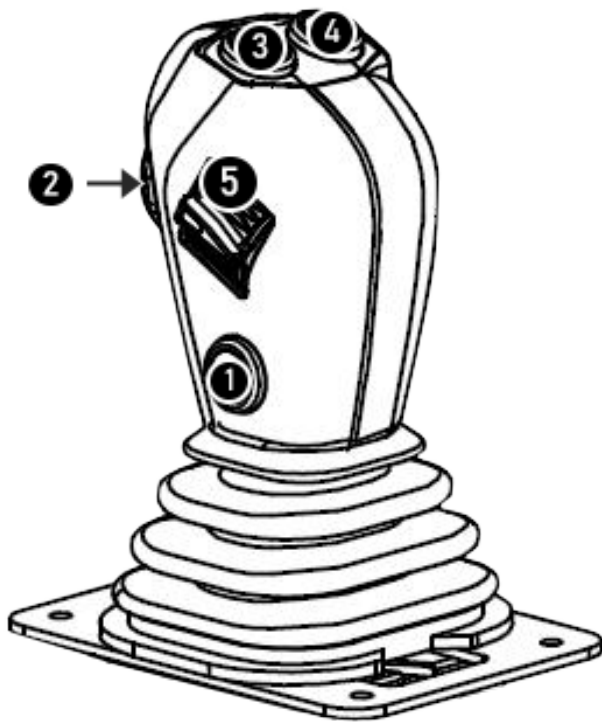
4.2. X PATTERN



1. Up/Down Total
2. Tilt left/right

Figure 2.2

4.3. JOYSTICK FUNCTIONS



1. Switch button*
2. Automatic button**
3. Function left***
4. Function Right***
5. Rocker Switch****

Figure 22.3

For more information:

- * Press button for 1 second to switch between function, tap button 1 time to switch between door side
- **Switching the automatic function on or off
- *** Controlling the Twist Function or the aux1 (active function is indicated on the joystick)
- **** Open and close activated door side (door side is indicated by arrow next to joystick)

The joystick at the bottom of the screen indicates the activated functions



Door left and rotation function



Door right and rotation function



Door left and Aux1

5. PROBLEMS AND SOLUTIONS

PROBLEM		POSSIBLE CAUSE
1.	Laser receiver does not work:	-No voltage present -Cable/plug damaged -Receiver defective
2.	Valve does not control correctly or not at all	-Coil defective -Cable/plug damaged -No voltage present -Faulty joystick
3.	System does not boot or does not work as needed	-No/low voltage -Faulty fuse -Insufficient/no mass -Display defective
4.	Valve controls slowly	Valve speed incorrectly adjusted

6. CE Declaration of Conformity

6.1. Location of the CE marking

The CE marking, which is affixed to the product, indicates that the product complies with all applicable European directives. More information on compliance is available in the EU Declaration of Conformity, which can be obtained from the manufacturer.

Location of the CE marking:

The CE marking is located on the back of the display box.