

# Mini-Line®

## GRADE AND SLOPE CONTROL SYSTEM





# MINI-LINE® GRADE AND SLOPE CONTROL SYSTEM

**WHEN** paving a road, material, manpower and mistakes are expensive. Increasing productivity, reducing operating costs and preventing mistakes, while still ensuring a high quality mat is vital for any contractor.

Mini-Line® Grade and Slope Control System does just that.

By controlling and maintaining the grade automatically, Mini-Line® improves smoothness of the road and ensures fewer operator mistakes, which results in a higher quality paved mat.

Automating the positioning and control of the grade and slope, also means less manpower required to operate the screed as only occasional supervision is needed, thereby increasing the productivity of the crew and reducing operating costs. Controlling the grade and slope with millimeter precision also means the operator can pave closer to the minimal required paving thickness and optimize material use.

Mini-Line® is a non-contact system that operates with advanced ultrasound technology, which has several benefits over traditional mechanical systems.

Non-contact ultrasonic sensors entail no wear and tear as compared to traditional mechanical systems. With sonic sensors the operator does not need to worry about the system when lifting or lowering the screed, as opposed to mechanical systems where the ski must be repositioned.

Mini-Line® Grade & Slope Control System can be setup flexibly for any paving job. The system is easily installed, removed or re-configured to the crew and job at hand.

The system is very simple to operate. LED displays on sonic sensors and handset allow the operator to quickly view, understand, and control the settings and measurements of grade and slope.

Mini-Line® sonic sensors are among the most accurate sensors in the field. The rugged transducer technology, specifically developed for harsh environments, has a very high durability and requires next to no maintenance.

### Advantages

- Eliminates manual over-compensation
- Increases mat smoothness
- Simple to operate and easy to install and remove
- Fits all machine types
- Highly durable technology and reliable results
- Non-contact system with no wear and tear



# HS301 GRADE CONTROL KIT

**THIS** HS301 Grade Control Kit is a double grade control kit with HS301 Handsets and G224 Multi-Sonic Grade sensors. The kit is excellent as a basic grade control kit that is reliable, easy to use and gets the job done.

The HS301 Handset automatically maintains the desired grade when paving, and the G224 Multi-Sonic Grade Sensors are highly versatile and can be used both for ground and string-line applications.

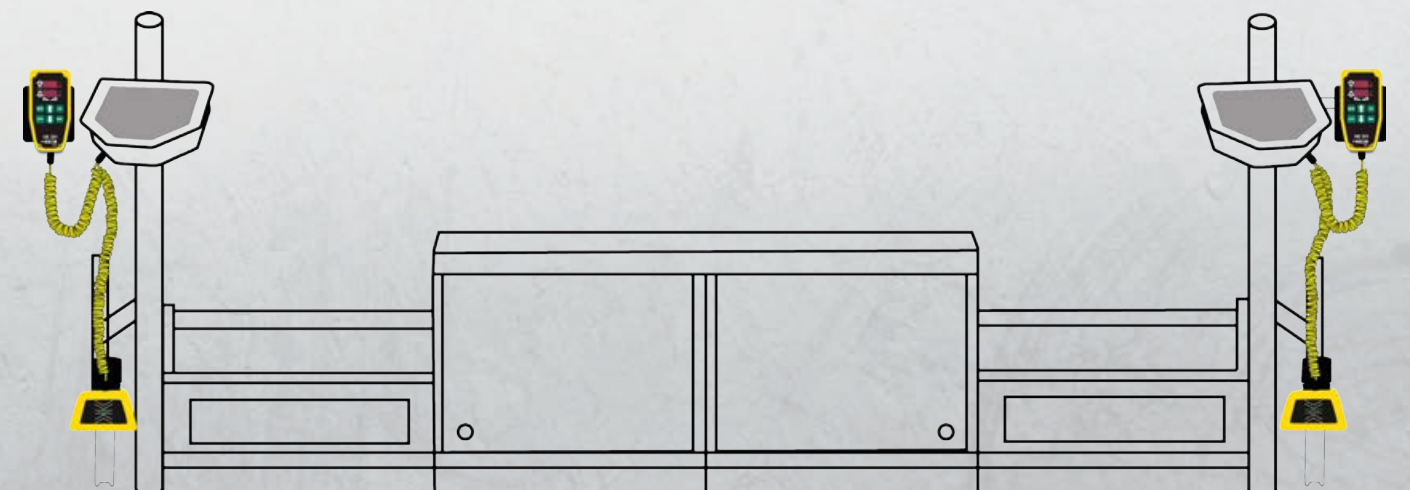
The G224 Multi-Sonic has four sensors for a higher smoothness of the mat, as the averaging technology evens out small irregularities on the surface and faulty measurements are excluded. The large span of the four sensors also ensures excellent abilities for string-line sensing.

The kit can be used for joint matching, curb sensing, ground sensing and stringline sensing. Add a slope sensor to the kit for the additional advantages of slope control. To use the slope sensor for monitoring purposes, add a W-Cable and connect both grade and slope sensor to a HS301 Handset.



## Kit Contains

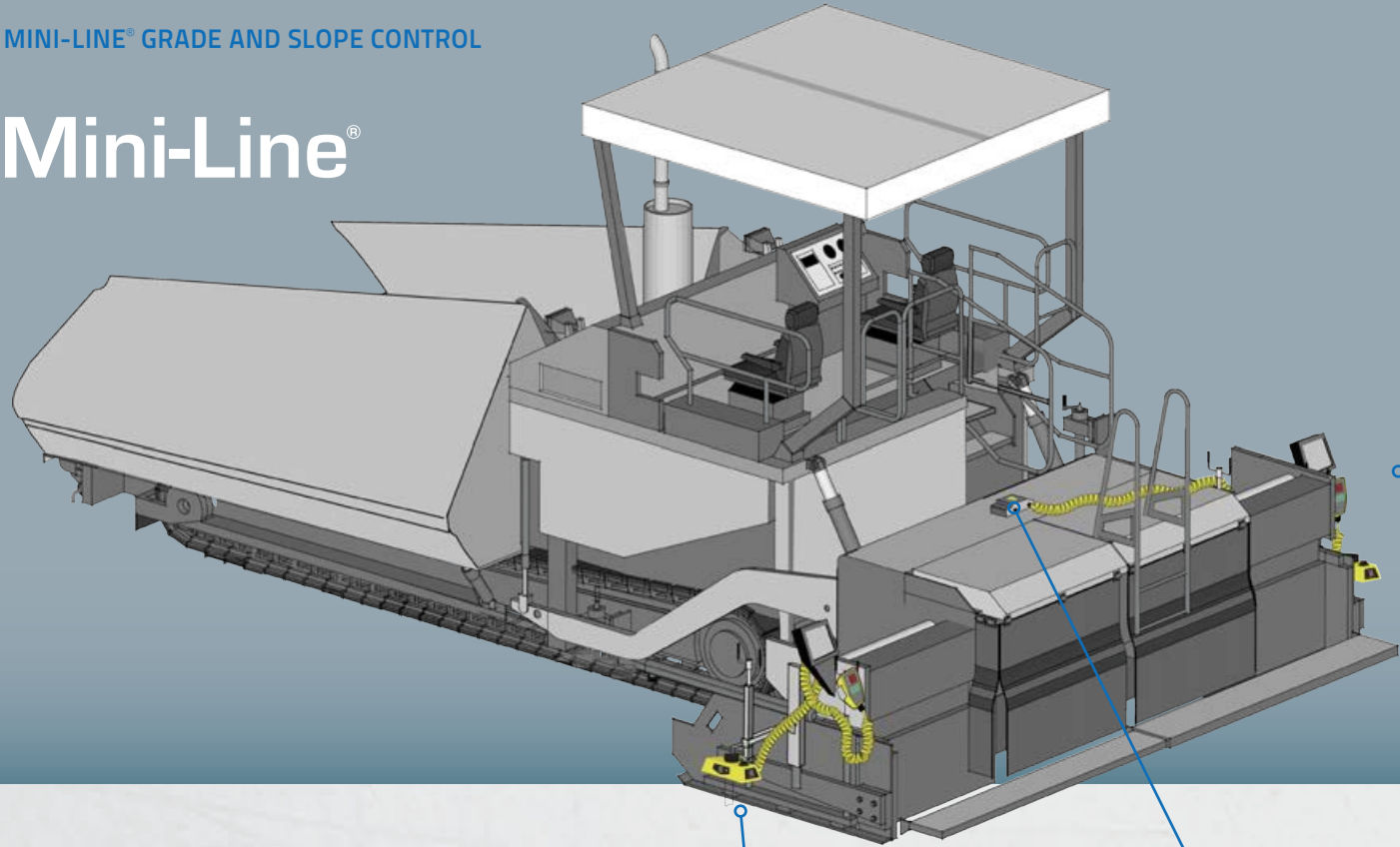
Pcs.	Description
2	HS301 Handset
2	HS301 Mounting Bracket
2	G224 Multi-Sonic Grade Sensor
2	Snap Connector
2	V-Cable, 2.2 + 4m
1	Carry Case



HS301 Double Grade Control Kit with G224 Multi-Sonic Grade sensors as set up on asphalt paver. Sensor and controller connect to the 10-pin plug of the asphalt paver with a V-Cable in each side of the screed.



# Mini-Line®



## HS301 HANDSET



- Handheld controller
- Easy setup and operation
- High durability
- Option for slope control/monitoring

## G224 SONIC SENSOR



Add a slope sensor if you need to pave at specific slope or lack a suitable reference in one side.



**Optimised transducers**  
Four ultrasonic transducers operating at an optimized frequency to precisely measure the distance from the sensors to the reference.



**Reference bail**  
Snap-on reference bail for optimum temperature compensation, designed to prevent damaging bail or sensor if struck by an obstacle.



**LED panels**  
High visibility LED panels for instant visual indication of how the current mat thickness is following the set reference.



**Indicators**  
Clear LED indicators displaying whether the sensor is on string or moving too far away from the target in string-line mode.



**Rugged housing**  
Strong aluminium casting resistant to corrosion and a tough environment.

## SNAP CONNECTOR

The snap connector reduces installation time and makes the system even more user friendly.



## S298 SLOPE SENSOR



- High measuring accuracy of +/- 0.1%
- Strong and accurate inclinometer specifically designed to withstand high vibration levels on high compaction screeds
- Measures slope from either right or left side of the paver



**Handheld controller**  
Rests comfortably in one hand, enabling the operator to walk around the screed during operation. Quickly mounted or dismounted in the mounting bracket or with the bail.



**Simple buttons**  
Extremely user-friendly interface for simple operation, reduced training time and operator mistakes.



**LED panel**  
LED panel with high visibility in both bright and poor sunlight gives the operator and crew a visual indication of how the current mat thickness is following the set reference.



**Indicators**  
Clear LED status indicators for millimetre precision grade and slope control.



**Rugged housing**  
Electronics well protected against external environmental factors in the strong aluminium housing.





# EASY SETUP AND DAILY USE

**WITH** Mini-Line® you'll be ready to pave in no time. Connect one cable and you are ready to go!

To commence paving set the reference and enter auto, and this system keeps it there. While paving, the operator can easily make any necessary adjustments of the mat thickness with the touch of a button. At any time, the operator can monitor how the current mat thickness is following the set reference by looking at the LED indicators of the handset.

All this to ensure a perfect result - every time!

Used for

- Joint matching
- Curb sensing
- Ground sensing
- Slope sensing
- Stringline sensing



## Manual Mode

- Adjust the tow point manually
- Set the reference level (setpoint)
- Switch between sensors if more than one is connected
- Set the control parameters
- Switch to auto mode

## Auto Mode

- Adjust the grade or slope relative to the set point
- Calibrate sensor value
- Adjust the control parameter sensitivity
- Switch to manual mode



## 1. Step-by-step instructions for daily operation

- Manual Mode**
  - 1 Lower the screed to the desired material thickness and make the machine ready for paving
  - 2 Adjust sensor height to the recommended working height over the reference. Check the value in the display of the handset.
  - 3 Commence paving using the arrows of the handset to toggle the tow point to the right level. When mat thickness/slope is correct, press **CAL** to set the reference level (setpoint)
- Auto Mode**
  - 4 Press **AUTO** to enter auto mode. The system will now maintain the level of the tow point constant relative to the setpoint
  - 5 To increase mat thickness while paving in auto mode, press the **arrows** on the handset up or down. The change in mat thickness is displayed in the top display of the handset (only in auto mode)
  - 6 When paving is completed, press **MAN** to return to manual mode, and the handset will stop controlling the tow point

## Mini-Line® Grade and Slope Control System in Action



Mini-Line® HS301 Grade Control Kit with G224 on a stringline



Mini-Line® HS301 Handset



Mini-Line® HS301 Grade Control Kit with G224



Mini-Line® HS301 Grade Control Kit with G224



# PAVING ACADEMY

Insecure of how it all works?  
Don't worry. Our systems are  
super easy to use, and our  
Paving Academy shows you  
how

- ✓ How-to videos
- ✓ Case stories
- ✓ Manuals
- ✓ Paving tips
- ✓ ... and more



[WWW.TF-TECHNOLOGIES.COM/PAVING-ACADEMY](http://WWW.TF-TECHNOLOGIES.COM/PAVING-ACADEMY)

**tf TECHNOLOGIES**  
PAVING INNOVATION