TOPCON Control Box

TOPCON Sonic Tracker

TOPCON Slope Sensor
Topcon Slope Sensor

Topcon New Sonic Tracker

Topcon 9259 Control Box
GC35 Control Box

- Light Sensor for LED
- Auto / Manual Button
- LCD
- Survey Button
- Menu / Set Button
- Slope / Elevation Button
- Cross Communication Button
- Jog Button
- Grade Adjustment Knob
- Grade Adjustment LED
- Power Button
MOBA-MATIC II Controller
The Sonic Tracker™ sends sound pulses 39 times per second
The Sonic-Ski™ has a sensing range from about 9” to 40” above the reference. It will work at any height between these two limits. However, the optimum working height is 13.75”. At this height above the reference the sensor is at the best height for accurate control. 13.75 ± 1.5” is the where the LCD display stops flashing on the controller. Use the controller LCD display to help set the height of the Sonic-Ski™.
Working Height

Total Tracker Range

55" (140cm)

14" (35.5cm)

14"

Recommended Height for Paving

24"
Temperature Bail Operation

On Grade Target Reference

Temperature Bail Target Reference

On Grade Heat Induced Target Error

Temperature Bail Heat Induced Target Error

Wind Blown Heat Off of Freshly Paved mat
“Getting Started”

Set up the paver just as you would for manual paving
Getting Ready to Pave

• Set the thickness adjustment screws

• Load the screed with asphalt
Say When !!

What’s happening to this screed?

And what if we were going to bring our end-gate in, what would happen?
Elevation Control

Sonic Tracker Control Selected

System Five
Getting Ready to Pave

• Center the tow cylinders
  Use the paver’s jog switch
  Or,
Getting Ready to Pave

To pave under automatic control:

• Place the Tracker over the grade reference
Tracker Placement

Tracker *Farther Forward*, Screed is *Less Reactive*

- Mainline Paving
- Smoothness

3/8"

“Net Tow Arm Length”
Getting Ready to Pave

Survey Says!

• Press SURVEY to set the Tracker to on-grade
• SET the display to read the mat thickness
• Set both sides to automatic control and begin paving!
Each Sonic Tracker™ measures and averages individually ...

...and System Five averages all of the Sonic Trackers™
Floating, Self-Leveling Screed

- The screed floats on the asphalt as it passes under the screed plate.
- The screed will "self-level" and maintain a thickness based on the forces acting on the screed.
Angle of attack...

increased, Mat thickness increases

decreased, Mat thickness decreases
Screed Reaction

Elevation Change to Tow Point Path

- 2 Tow Arm Lengths Travel: 87%
- 1 Tow Arm Length Travel: 63%

- 6 Tow Arm Lengths Travel: 100%
- 5 Tow Arm Lengths Travel: 99%
- 4 Tow Arm Lengths Travel: 98%
- 3 Tow Arm Lengths Travel: 95%

Tow Point Path

It's time.
Screed Reaction

Change in Screed Angle of Attack from Crank

Tow Point Path

87%  63%
2 Tow Arm Length Travel  1 Tow Arm Length Travel

100%  99%  98%  95%
6 Tow Arm Length Travel  5 Tow Arm Length Travel  4 Tow Arm Length Travel  3 Tow Arm Length Travel

It's time.
Head of Material

Indicates Centerline of Auger

Correct Depth of Mat Maintained

Correct Head of Material

Screed Rises Due To Increased Resistance

Head of Material Too High

Screed Settles Due To Decreased Resistance

Head of Material Too Low
Segregation

Run augers continuously.

Augers that run at high speeds are cycling on and off continuously and contribute significantly to segregation at the paver.

If augers are running too fast, the center of the mat will be deficient of material and this will generally result in a coarse strip.
Checking Mat Depth
Maintain smooth truck exchange

↑ Bump in mat at every truck exchange
(probably "caused by faulty grade control!")
Weight of the Screed

Screed extension changes lbs/square inch
Compaction

Mat Before Rolling

Mat After Rolling
Check Mat Slope

After paving a short distance, check the mat slope.
Compaction Assistant Pass-Counting System

MCA-2000
System Components

- Operand (Mobile Computer)
- Temperature Sensor
- GNSS Antenna
Screen View

Number of passes and position of the machine clearly indicated

Surface temperature of the material and position of the machine
Assuming that they know is setting yourself up for failure.

Think training is hard? Try failure.
• http://www.youtube.com/watch?v=DnSqDNeAgDQ