tf TECHNOLOGIES
PAVING INNOVATION

1978 — 2018
CELEBRATING 40 YEARS

Control and monitoring systems for road paving machines

Parts Catalogue 2018

TF-TECHNOLOGIES

– your preferred partner in road paving control

TF Technologies is a leading manufacturer of machine control specifically for the road paving industry. Since the establishment in 1978, our single focus has been to develop and produce high-quality electronic control solutions for road paving machinery. Every day, the people at TF-Technologies are in direct contact with the users of the equipment. The specific needs of road construction players, machine producers and users alike, are at the heart of everything we do.

TF-Technologies aims at offering innovative solutions improving results on any paving or milling job. Our equipment will help you optimise material usage, significantly improve mat quality, ensure optimal working conditions for the crew and increase productivity.

All TF-Technologies machine control products are very user-friendly and highly durable, specifically designed to work in the rugged environment of a road construction worksite.

We believe this is what you need to achieve optimal results on any paving or milling job.

This catalogue will guide you through all the solutions we have available for you to improve your particular road paving job. Rest assured it gets the job done, as all product lines have been thoroughly tested and tried through years of use in the field.

Want more information?
Go to our website www.tf-technologies.com to read more about our products, see our products in action, watch product demonstration videos and more.
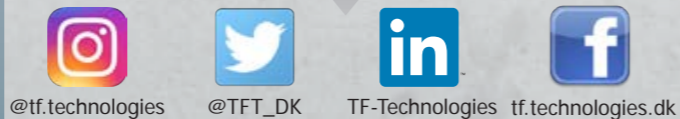
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If you are interested in purchasing any of our products or would like further information call us today! We will be happy to support you, or guide you to a sales representative or distributor covering your area.

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CONTENT

OVERVIEW OF MINI-LINE® GRADE AND SLOPE CONTROL SYSTEM

Mini-Line® Grade and Slope Control System is a versatile system for automatically maintaining grade and slope when paving. The system consists of a range of controllers and sensors, and is available in a wide array of combinations, to be setup flexibly for any paving job. Your preference and paving job determines the best setup, and as a modular system you can easily swap equipment around your entire paver fleet.

Mini-Line® Averaging Beam
An even smoother mat can be achieved by using the averaging capability of the sonic sensors on an averaging beam.
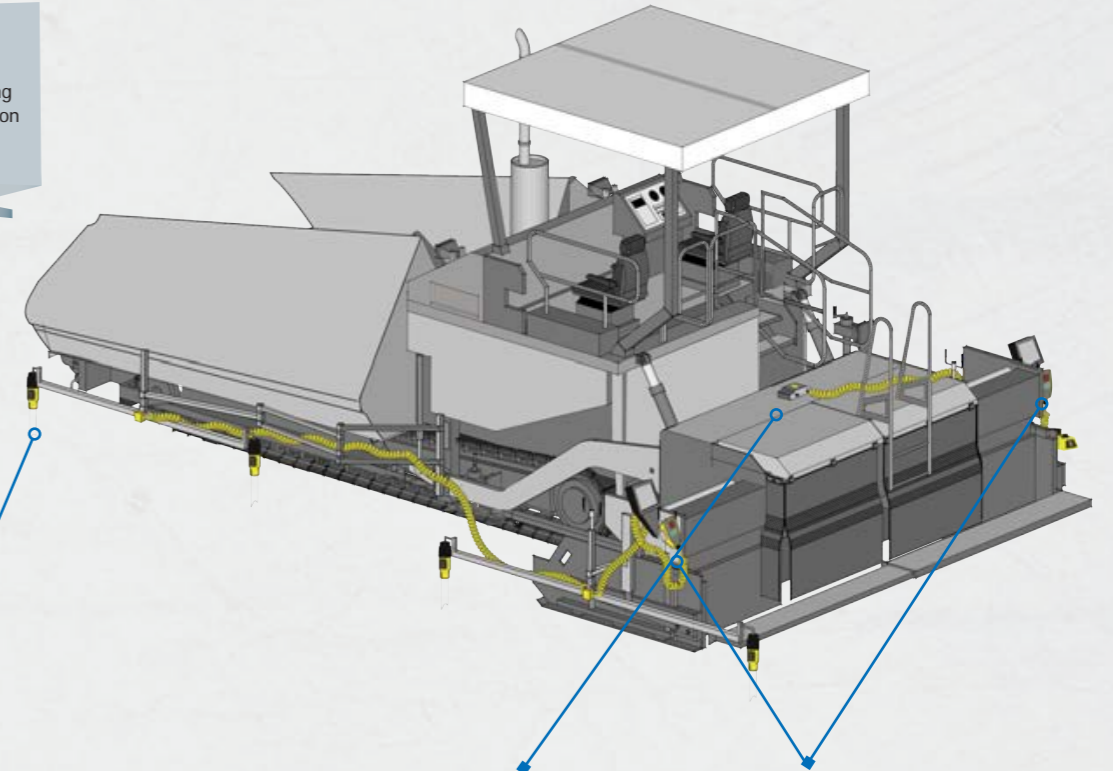
Mini-Line® Sonic Grade Sensors
Measures the distance between the screed and the reference. Choose between G221 Single-Sonic and G224 Multi-Sonic, and add up to four sensors on an Averaging Beam on each side, depending on your paving job.

Mini-Line® Slope Sensors
Measures the cross slope of the screed, when a defined slope of the road is required or a reference is not available in one side. Always used together with grade control in the other side. Use S298 with HS301 Handset and S299 with PL2005 Control Box.

Mini-Line® Handset or Control Box
Controls and adjusts the grade and slope of the road paved, by controlling the tow point. Set to auto mode, and the defined grade and slope are maintained through-out the paving job. Choose between HS301 Handset or PL2005 Control Box depending on your paving job and general preference.
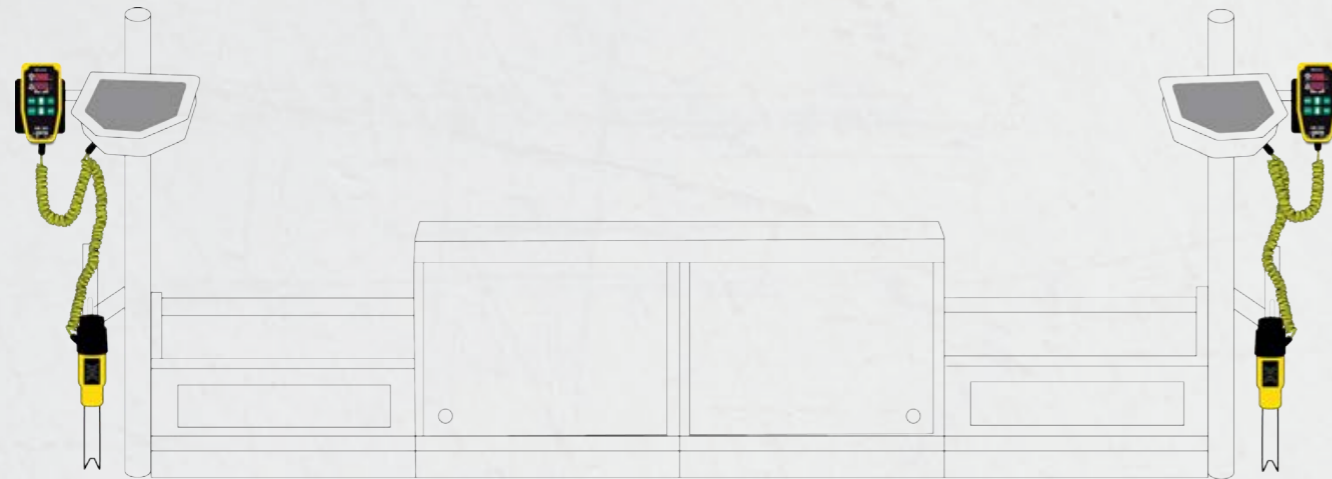
MINI-LINE® PAVING CONTROL

HS301 Grade Control Kit
Double Grade Control Kit with G221 Single-Sonic Sensor

HS301 Double Grade Control Kit with G221 Single-Sonic sensors as set up on the 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.

Kit Overview

This HS301 Grade Control Kit is a double grade control kit with HS301 Handsets and G221 Single-Sonic 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 G221 Single-Sonic sensors are able to copy the reference with millimeter precision.

The kit can be used for joint matching, curb sensing, and ground 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	G221 Single-Sonic Grade Sensor
2	Snap Connector
2	V-Cable, 2.2m + 4m / 7ft + 13ft
1	Carry Case

Sensor mounting is not included, see page 24

S-70001

Kit

Part no.	Kit	Output	Description
S-70001 (mm)	HS301 Grade Control Kit	NPN, PNP, ON/OFF	Double Grade Control Kit with HS301 Handsets and G221 Single-Sonic Sensors

For Grade Control Kit with HS301 Proportional, please contact us

Accessories

S-50170	S298 Slope Sensor for HS301	
S-50429	W-Cable, Coiled	2x4m + 2.2m, 10-Pin Screw, 3x 6-Pin Bayonet

HS301 Grade Control Kit
Double Grade Control Kit with G224 Multi-Sonic Sensor

HS301 Double Grade Control Kit with G224 Multi-Sonic sensors as set up on the 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.

Kit Overview

This HS301 Grade Control Kit is a Double Grade Control Kit with HS301 Handsets and G224 Multi-Sonic sensors.

The kit is excellent as a basic grade control kit that is versatile, reliable, and easy to use.

The HS301 Handset automatically maintains the desired grade when paving. The G224 Multi-Sonic sensors even out minor irregularities of the road across their sensing span, and switched to string-line mode, have excellent abilities for string-line sensing due to their wide sensing span.

The kit can be used for joint matching, curb sensing, ground sensing and string-line 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, 2.2m + 4m / 7ft + 13ft
1	Carry Case

Sensor mounting is not included, see page 24

S-70002

Kit

Part no.	Kit	Output	Description
S-70002 (mm)	HS301 Grade Control Kit	NPN, PNP, ON/OFF	Double Grade Control Kit with HS301 Handsets and G224 Multi-Sonic Sensors

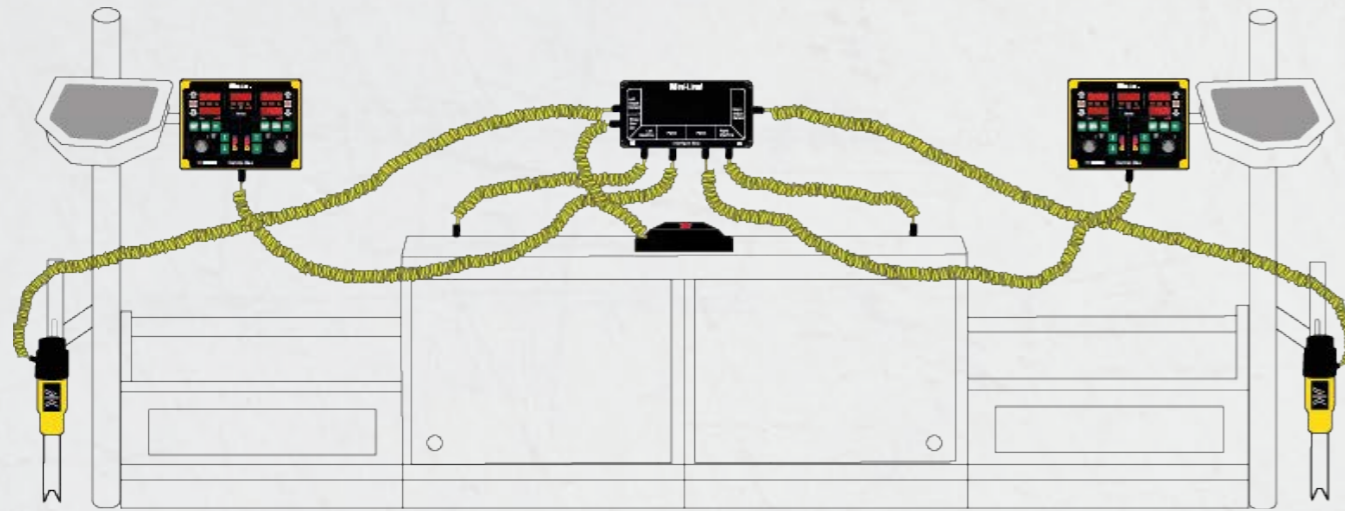For Grade Control Kit with HS301 Proportional, please contact us

Accessories

S-50170	S298 Slope Sensor for HS301	
S-50429	W-Cable, Coiled	2x4m + 2.2m, 10-Pin Screw, 3x 6-Pin Bayonet

PL2005 Grade Control Kit
Double Grade Control Kit with G221 Single-Sonic Sensor

PL2005 Double Grade Control Kit with two G221 Single-Sonic sensors and one S299 Slope Sensor as set up on the asphalt paver. Sensors and controllers connect to a PL2005 Interface Box with I-Cables, and two Coiled Cables connect the PL2005 Interface Box to the 10-pin plugs of the asphalt paver.

This PL2005 Grade Control Kit is a Double Grade Control Kit with PL2005 Control Boxes and G221 Single-Sonic sensors. The kit is excellent as a basic grade control kit that is reliable and easy to use, while offering the flexibility of operating both sides of the screed from the PL2005 Control Box in each side.

The PL2005 automatically maintains the desired grade when paving, and the G221 Single-Sonic sensors are able to copy the reference with millimeter precision. All units in the PL2005 Grade Control Kit are connected with the PL2005 Interface Box.

The kit can be used for joint matching, curb sensing, and ground sensing.

Kit Overview

S-70101

Kit Contains

Pcs.	Description
2	PL2005 Control Box
1	PL2005 Interface Box
2	PL2005 Mounting Bracket
2	G221 Single-Sonic Grade Sensor
1	S299 Slope Sensor
2	Snap Connector
2	Coiled Cable, 4m / 13ft
1	I-Cable, 2.2m / 7ft
4	I-Cable, 4m / 13ft
1	Carry Case

Sensor mounting is not included, see page 24

Kit

Part no.	Kit	Description
S-70101	PL2005 Grade Control Kit	Double Grade Control Kit with PL2005 Control Boxes and G221 Single-Sonic Sensors

PL2005 Grade Control Kit
Double Grade Control Kit with G224 Multi-Sonic Sensor
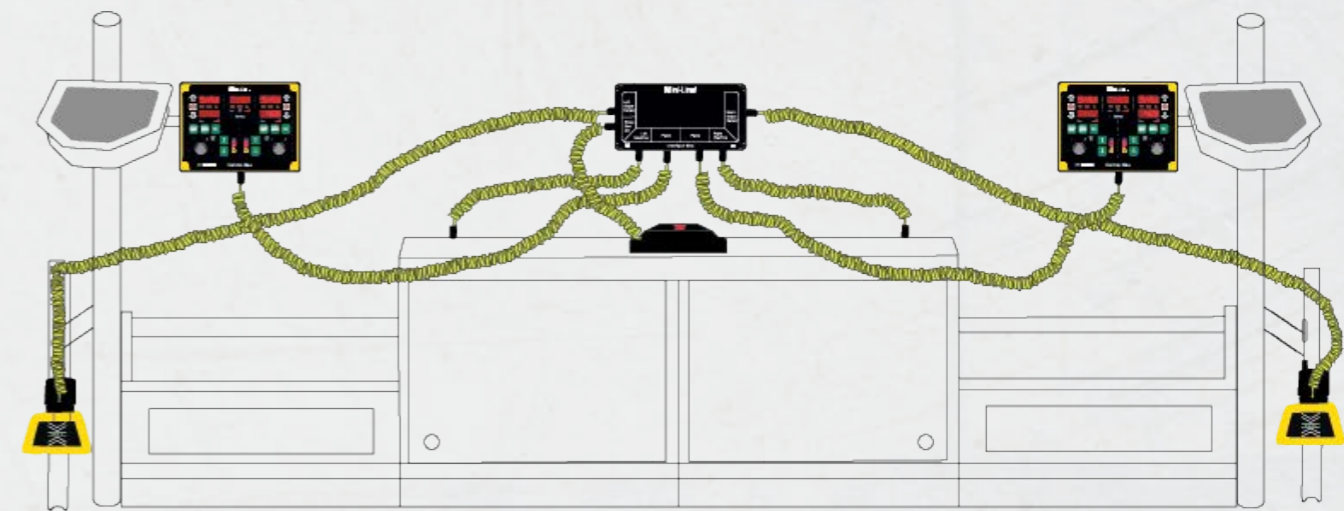
PL2005 Double Grade Control Kit with two G224 Multi-Sonic sensors and one S299 Slope Sensor as set up on the asphalt paver. Sensors and controllers connect to a PL2005 Interface Box with I-Cables, and two Coiled Cables connect the PL2005 Interface Box to the 10-pin plugs of the asphalt paver.

This PL2005 Grade Control Kit is a Double Grade Control Kit with PL2005 Control Boxes and G224 Multi-Sonic sensors. The kit is excellent as a basic grade control kit that is reliable and easy to use, while offering the flexibility of operating both sides of the screed from the PL2005 Control Box in each side.

The PL2005 automatically maintains the desired grade when paving. The G224 Multi-sensors even out minor irregularities of the road across their sensing span, and switched to string-line mode, have excellent abilities for string-line sensing due to their wide sensing span. All units in the PL2005 Grade Control Kit are connected with the PL2005 Interface Box.

The kit can be used for joint matching, curb sensing, ground sensing and string-line sensing.

Kit Overview

S-70102

Kit Contains

Pcs.	Description
2	PL2005 Control Box
1	PL2005 Interface Box
2	PL2005 Mounting Bracket
2	G224 Single-Sonic Grade Sensor
1	S299 Slope Sensor
2	Snap Connector
2	Coiled Cable, 4m / 13ft
1	I-Cable, 2.2m / 7ft
4	I-Cable, 4m / 13ft
1	Carry Case

Sensor mounting is not included, see page 24

Kit

Part no.	Kit	Description
S-70102	PL2005 Grade Control Kit	Double Grade Control Kit with PL2005 Control Boxes and G224 Multi-Sonic Sensors

HS301 Averaging Kit
HS301 Grade Control Kit with G221 Averaging Beam
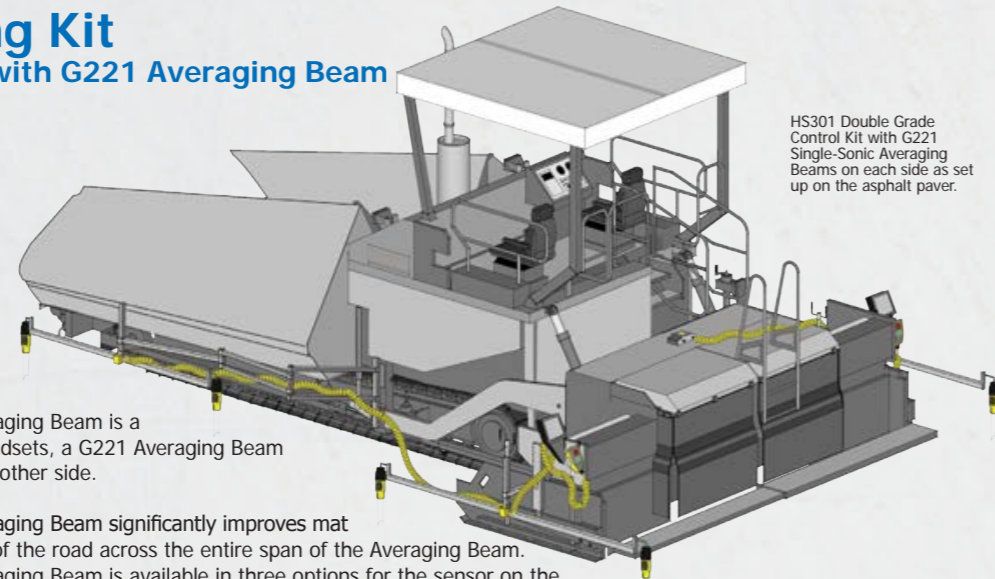
HS301 Double Grade
Control Kit with G221
Single-Sonic Averaging
Beams on each side as set
up on the asphalt paver.

The HS301 Averaging Kit with G221 Averaging Beam is a
Double Grade Control Kit with HS301 Handsets, a G221 Averaging Beam
and an additional sensor or beam for the other side.

The HS301 Averaging Kit with G221 Averaging Beam significantly improves mat
smoothness, averaging out irregularities of the road across the entire span of the Averaging Beam.
The HS301 Averaging Kit with G221 Averaging Beam is available in three options for the sensor on the
other side of the paver: One with a G221 Single-Sonic for the other side (S-70209), one with a G224 Multi-Sonic
for the other side (S-70210), and one with an additional G221 Averaging Beam for the other side (S-70211) for supreme smoothness.

Add a Slope Sensor to any of the kits 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.

The Averaging Kit can be used with both the EASY and SUPER Averaging Beams, see pages 20-23 (Averaging Beams sold separately).

Kit Options

S-70209

Kit Contains

Pcs.	Description
2	HS301 Handset
2	HS301 Mounting Bracket
5	G221 Single-Sonic Grade Sensor
1	Snap Connector
1	V-Cable, 2.2m + 4m / 7ft + 13ft
1	Carry Case

The Averaging Beam with Snap Connectors and Mountings is
not included. Please see page 20-23 for Averaging Beams.

S-70210

Kit Contains

Pcs.	Description
2	HS301 Handset
2	HS301 Mounting Bracket
4	G221 Single-Sonic Grade Sensor
1	G224 Multi-Sonic Grade Sensor
1	Snap Connector
1	V-Cable, 2.2m + 4m / 7ft + 13ft
1	Carry Case

The Averaging Beam with Snap Connectors and Mountings is
not included. Please see page 20-23 for Averaging Beams.

Kit

Part no.	Kit	Description
S-70209 (mm)	HS301 Averaging Kit	Double Grade Control Kit with two HS301 Handsets, one G221 Averaging Beam and one G221 Single-Sonic Sensor
S-70210 (mm)	HS301 Averaging Kit	Double Grade Control Kit with two HS301 Handsets, one G221 Averaging Beam and one G224 Multi-Sonic Sensor

For Averaging Kit with HS301 Proportional, please contact us

Accessories

S-50170	S298 Slope Sensor for HS301	
S-50429	W-Cable	2x4m + 2.2m, 10-Pin Screw, 3x6-Pin Bayonet (For EASY Avg. Beam)
S-51605	W-Cable	2x4m + 2.2m, (For SUPER Avg. Beam)

HS301 Averaging Kit
HS301 Grade Control Kit with G224 Averaging Beam
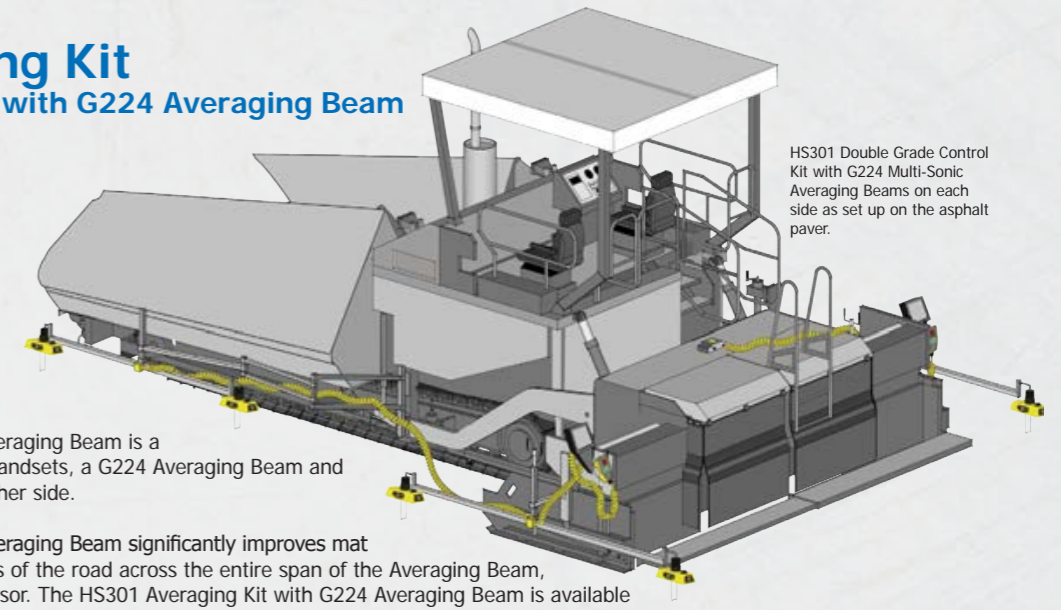
HS301 Double Grade Control
Kit with G224 Multi-Sonic
Averaging Beams on each
side as set up on the asphalt
paver.

The HS301 Averaging Kit with G224 Averaging Beam is a
Double Grade Control Kit with HS301 Handsets, a G224 Averaging Beam and
an additional sensor or beam for the other side.

The HS301 Averaging Kit with G224 Averaging Beam significantly improves mat
smoothness, averaging out irregularities of the road across the entire span of the Averaging Beam,
as well as the sensing span of each sensor. The HS301 Averaging Kit with G224 Averaging Beam is available
in three options for the sensor on the other side of the paver: One with a G221 Single-Sonic for the other side (S-70206), one with a G224
Multi-Sonic for the other side (S-70207), and one with an additional G224 Averaging Beam for the other side (S-70208) for absolute supreme
smoothness.

Add a Slope Sensor to any of the kits 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.

The Averaging Kit can be used with both the EASY and SUPER Averaging Beams, see pages 20-23 (Averaging Beams sold separately).

Kit Options

S-70206

Kit Contains

Pcs.	Description
2	HS301 Handset
2	HS301 Mounting Bracket
1	G221 Single-Sonic Grade Sensor
4	G224 Multi-Sonic Grade Sensor
1	Snap Connector
1	V-Cable, 2.2m + 4m / 7ft + 13ft
1	Carry Case

The Averaging Beam with Snap Connectors and Mountings are
not included. Please see page 20-23 for Averaging Beams.

S-70207

Kit Contains

Pcs.	Description
2	HS301 Handset
2	HS301 Mounting Bracket
5	G224 Multi-Sonic Grade Sensor
1	Snap Connector
1	V-Cable, 2.2m + 4m / 7ft + 13ft
1	Carry Case

The Averaging Beam with Snap Connectors and Mountings are
not included. Please see page 20-23 for Averaging Beams.

Kit

| Part no.	Kit	Description
S-70206 (mm)	HS301 Averaging Kit	Double Grade Control Kit with two HS301 Handsets, one G224 Averaging Beam and one G221 Single-Sonic Sensor
S-70207 (mm)	HS301 Averaging Kit	Double Grade Control Kit with two HS301 Handsets, one G224 Averaging Beam and one G224 Multi-Sonic Sensor

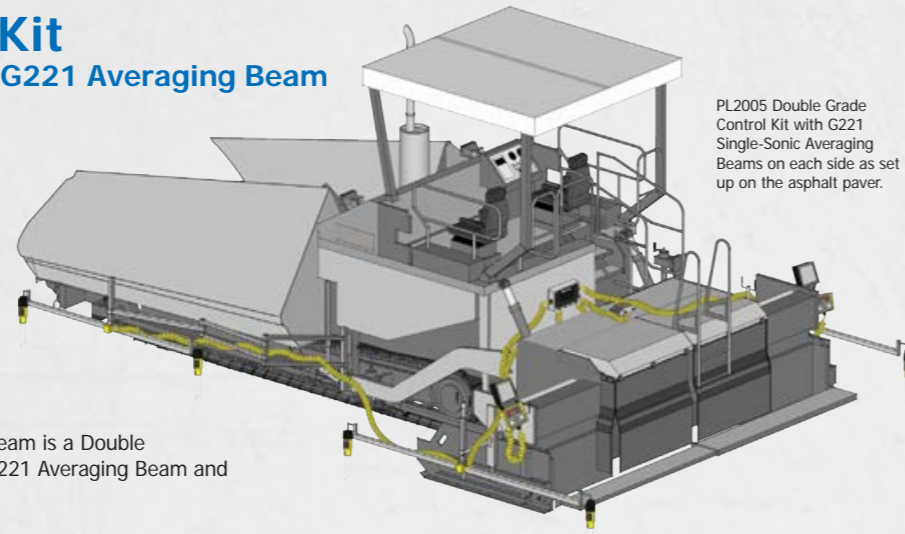For Averaging Kit with HS301 Proportional, please contact us

Accessories

S-50170	S298 Slope Sensor for HS301	
S-50429	W-Cable	2x4m + 2.2m, 10-Pin Screw, 3x 6-Pin Bayonet
S-51605	W-Cable	2x4m + 2.2m (For SUPER Avg. Beam)

PL2005 Averaging Kit
PL2005 Grade Control Kit with G221 Averaging Beam

PL2005 Double Grade Control Kit with G221 Single-Sonic Averaging Beams on each side as set up on the asphalt paver.

The PL2005 Averaging Kit with G221 Averaging Beam is a Double Grade Control Kit with PL2005 Control Boxes, a G221 Averaging Beam and an additional Sensor or Beam for the other side.

The PL2005 Averaging Kit with G221 Averaging Beam significantly improves mat smoothness, averaging out irregularities of the road across the entire span of the Averaging Beam. With the PL2005 Control Boxes, the operator has full flexibility to operate both sides of the screed from each side.

The PL2005 Averaging Kit with G221 Averaging Beam is available in three options for the sensor on the other side of the paver: One with a G221 Single-Sonic for the other side (S-70267), one with a G224 Multi-Sonic for the other side (S-70268), and one with an additional G221 Averaging Beam for the other side (S-70269) for supreme smoothness.

The Averaging Kit can be used with both the EASY and SUPER Averaging Beams, see pages 20-23 (Averaging Beams sold separately).

Kit Options

S-70267

Kit Contains

Pcs.	Description
2	PL2005
1	PL2005 Interface Box
2	PL2005 Mounting Bracket
5	G221 Single-Sonic Grade Sensor
1	S299 Slope Sensor
1	Snap Connector
2	Coiled Cable, 4m / 13ft
3	I-Cable, 4m / 13ft
1	I-Cable, 2.2m / 7ft
1	Carry Case

The Averaging Beam with Snap Connectors and Mountings are not included. Please see page 20-23 for Averaging Beams.

S-70268

Kit Contains

Pcs.	Description
2	PL2005
1	PL2005 Interface Box
2	PL2005 Mounting Bracket
4	G221 Single-Sonic Grade Sensor
1	G224 Multi-Sonic Grade Sensor
1	S299 Slope Sensor
1	Snap Connector
2	Coiled Cable, 4m / 13ft
3	I-Cable, 4m / 13ft
1	I-Cable, 2.2m / 7ft
1	Carry Case

The Averaging Beam with Snap Connectors and Mountings are not included. Please see page 20-23 for Averaging Beams.

Kit

Part no.	Kit	Description
S-70267	PL2005 Averaging Kit	Double Grade Control Kit with two PL2005 Control Boxes, one G221 Averaging Beam and one G221 Single-Sonic Sensor
S-70268	PL2005 Averaging Kit	Double Grade Control Kit with two PL2005 Control Boxes, one G221 Averaging Beam and one G224 Multi-Sonic Sensor

PL2005 Averaging Kit
PL2005 Grade Control Kit with G224 Averaging Beam
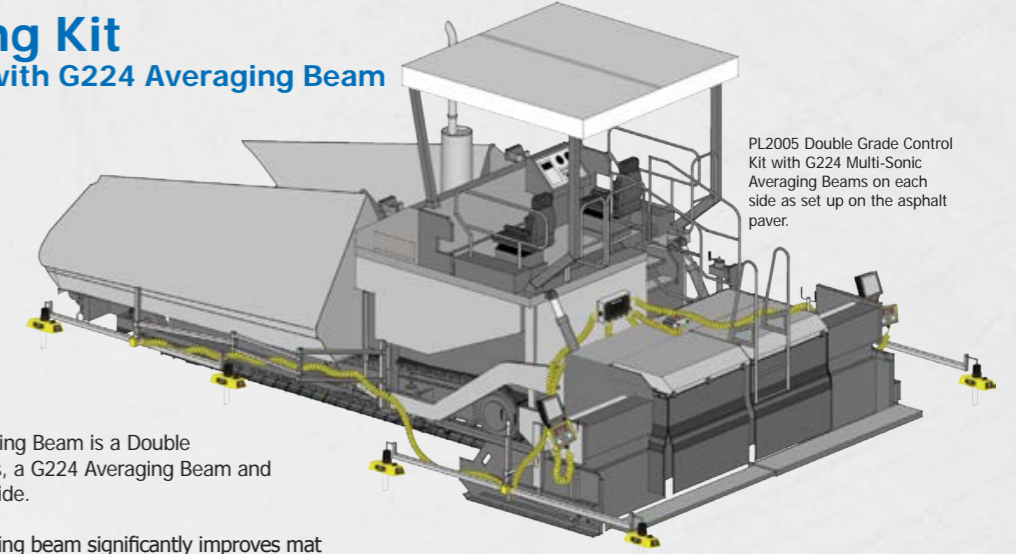
PL2005 Double Grade Control Kit with G224 Multi-Sonic Averaging Beams on each side as set up on the asphalt paver.

The PL2005 Averaging Kit with G224 Averaging Beam is a Double Grade Control Kit with PL2005 Control Boxes, a G224 Averaging Beam and an additional sensor or beam for the other side.

The PL2005 Averaging Kit with G224 averaging beam significantly improves mat smoothness, averaging out irregularities of the road across the entire span of the Averaging Beam as well as the sensing span of each sensor. With the PL2005 Control Boxes, the operator has full flexibility to operate both sides of the screed from each side.

The PL2005 Averaging Kit with G224 Averaging Beam is available in three options for the sensor on the other side of the paver: One with a G221 Single-Sonic for the other side (S-70264), one with a G224 Multi-Sonic for the other side (S-70265), and one with an additional G224 averaging beam for the other side (S-70266) for absolute supreme smoothness.

The Averaging Kit can be used with both the EASY and SUPER Averaging Beams.

Kit Options

S-70264

Kit Contains

Pcs.	Description
2	PL2005
1	PL2005 Interface Box
2	PL2005 Mounting Bracket
1	G221 Single-Sonic Grade Sensor
4	G224 Multi-Sonic Grade Sensor
1	S299 Slope Sensor
1	Snap Connector
2	Coiled Cable, 4m / 13ft
3	I-Cable, 4m / 13ft
1	I-Cable, 2.2m / 7ft
2	Carry Case

The Averaging Beam with Snap Connectors and Mountings are not included. Please see page 20-23 for Averaging Beams.

S-70265

Kit Contains

Pcs.	Description
2	PL2005
1	PL2005 Interface Box
2	PL2005 Mounting Bracket
5	G224 Multi-Sonic Grade Sensor
1	S299 Slope Sensor
1	Snap Connector
2	Coiled Cable, 4m / 13ft
3	I-Cable, 4m / 13ft
1	I-Cable, 2.2m / 7ft
2	Carry Case

The Averaging Beam with Snap Connectors and Mountings are not included. Please see page 20-23 for Averaging Beams.

Kit

Part no.	Kit	Kit Description
S-70264	PL2005 Averaging Kit	Double Grade Control Kit with two PL2005 Control Boxes, one G224 Averaging Beam and one G221 Single-Sonic Sensor
S-70265	PL2005 Averaging Kit	Double Grade Control Kit with two PL2005 Control Boxes, one G224 Averaging Beam and one G224 Multi-Sonic sensor

HS301 Handset
Grade and Slope Control System

The HS301 Handset is the handheld controller for the Mini-Line® Grade and Slope Control System designed to automatically maintain the desired grade or slope when paving.

With a simple user-interface the HS301 can be operated in manual and auto mode, and minimum pulse, working window, sensitivity and dead band can be set up. In manual mode the tow point is adjusted manually, and desired reference level set. In auto mode, the HS301 will take control over the tow point valve and automatically adjust the grade or slope to follow the set reference so that mat thickness is maintained with millimeter precision. Up and down buttons allow the operator to make necessary adjustments to the mat thickness during paving.

The LED panel with high visibility in poor and bright sunlight gives the operator a visual indication of how the current mat thickness is following the set reference. As a handheld device, the handset features a bail and a mounting bracket, allowing the operator to easily grab, operate and re-mount the HS301 handset during operation.

The Mounting Bracket (S-50487) must be bought separately.

The HS301 Handset can adapt both grade and slope sensors, allowing the operator to quickly switch from grade to slope control. In addition to a slope sensor, up to six sonic grade sensors can be supported in an averaging setup.

Mounting Bracket
for HS301

HS301 Handset

Sensor Options

G221   **G224**   **S298**

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 60 mA Max 200 mA
Output (to valves)	On/off, PNP or NPN max 1.2A continuously, 2.0A pulsed
Operating Temperature	-10°C to 70°C / 14°F to 158°F
Display Resolution	Grade 1mm / 0.04in Slope 0.1%
Control Parameters	Sensitivity Working Window Minimum Pulse Dead Band
Connector	Cannon Bayonet Plug, male 6 pin A: Vbat D: Output down B: Gnd E: Com A RS485 C: Output up F: Com B RS485

Product

Part no.	Product
S-50324	HS301, Handset, inch
S-50332	HS301 Handset, mm

For HS301 Handset Proportional, please contact us

Accessories

S-50487	HS301 Mounting Bracket

PL2005 Control Box
Grade and Slope Control System

The PL2005 is the Control Box for the Mini-Line® Grade and Slope Control System designed to automatically maintain the desired grade and slope when paving.

With a simple user-interface the PL2005 can be operated in manual and auto mode, and minimum pulse, working window, sensitivity and dead band can be set up. In auto mode, the PL2005 will take control over the tow point valve and automatically adjust the grade or slope to follow the set reference so that mat thickness is maintained with millimeter precision. Turning knobs allow the operator to make necessary adjustments to the mat thickness during paving.

The LED panel with high visibility in poor and bright sunlight gives the operator a visual indication of how the current mat thickness is following the set reference. The split display panel provides full control of grade and slope for both sides of the machine from one unit.

The PL2005 control box can adapt both grade and slope sensors, allowing the operator to quickly switch from grade to slope control and to monitor the slope when operating grade control in both sides of the machine. In addition to a slope sensor, up to four sonic grade sensors can be supported in an averaging setup on each side.

The PL2005 Interface Box is an integrated part of the PL2005 Grade and Slope Control System, connecting all units in the system.

PL2005 Control Box

PL2005 Interface Box

Sensor Options

G221   **G224**   **S299**

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 75 mA Max 200 mA
Output	On/off PNP or NPN
Operating Temperature	-10°C to 70°C / 14°F to 158°F
Display Resolution	Grade 1mm / 0.04in Slope 0.05%
Control Parameters	Sensitivity Working window Minimum pulse Machine width Dead band Single/averaging modes
Connector	Cannon Bayonet Plug, male 6 pin A: Vbat D: Output down B: Gnd E: Com A RS485 C: Output up F: Com B RS485

Product

Part no.	Product	Address
S-51001	PL2005 Control Box (for one side)	1
S-51002	PL2005 Control Box (for the other side)	2
S-51003	PL2005 Interface Box	-

Accessories

S-50607	PL2005 Mounting Bracket

G221 Sonic Grade Sensor
For Ground Sensing

The G221 Sonic Grade Sensor is a non-contact ultrasonic grade sensor optimized to work in the harsh conditions of the construction industry.

The sensor operates at an optimized frequency for very precise measurements, and it features a highly resilient encapsuled transducer. The sensor is equipped with an LED panel that gives the operator a visual indication of how the current mat thickness is following the set reference. The G221 features a reference bail for optimum temperature and wind compensation. The bail is made of spring steel and is designed to detach from the sensor body if struck by an obstacle to prevent damaging bail or sensor.

The G221 can be used with all controllers in the Mini-Line® series.

The G221 exists in 6 different versions, each with a different label color. The standard version (white label) is used as a single sensor. In an averaging setup, each sensor must have a different label.

The green label and grey label versions can be used for replacement sensors for an averaging system with four sensors or as additional sensors on an averaging beam with six sensors.

G221 Sonic Grade Sensor w/Reference Bail

The snap connector reduces installation time. Must be bought separately

Snap Connector

Controller Options

HS301   PL2005   LRL2000

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 60 mA Max 200 mA
Operating Temperature	-10°C to 70°C / 14°F to 158°F
Temperature Compensation	155mm / 6.1in Detachable Bail
Resolution	1mm / 0.04in
Accuracy - Dynamic	+/- 1mm / 0.04in
Sensor Range	220mm - 900mm / 8.7in - 35.4in
Connector	Cannon Bayonet Plug, male 6 pin A: Vbat D: NC B: Gnd E: Com A RS485 C: NC F: Com B RS485

Product

Part no.	Product	Colour
S-50620	G221 Sonic Grade Sensor w/Reference Bail, Standard	White
S-50621	G221 Sonic Grade Sensor w/Reference Bail, additional for averaging	Red
S-50622	G221 Sonic Grade Sensor w/Reference Bail, additional for averaging	Yellow
S-50623	G221 Sonic Grade Sensor w/Reference Bail, additional for averaging	Blue
S-50624	G221 Sonic Grade Sensor w/Reference Bail, replacement for averaging	Green
S-50625	G221 Sonic Grade Sensor w/Reference Bail, replacement for averaging	Grey

Accessories

S-50531	Snap Connector
S-50778	Snap Connector, for Topcon mounting (single or averaging beam)

Spare Parts

S-50691	Reference Bail for G221

G224 Multi-Sonic Grade Sensor
For Ground and String Line Sensing

The G224 Multi-Sonic Grade Sensor is a versatile, high precision sensor that is designed for use in both ground and string line sensing mode. It is equipped with four ultrasonic sensors operating at an optimized frequency for high precision. The integration of four ultrasonic sensors gives the Multi-Sonic excellent abilities for string line sensing due to the large sensing span, and enable high precision ground sensing by the use of advanced averaging technology.

You can easily switch between ground and string line mode with a simple push on the Mode button. The sensor is equipped with LED panels on two sides. The active panel facing the operator gives a visual indication of how the current mat thickness is following the set reference. When in string line sensing mode an LED indicator also shows if the sensor is working within or is about to exceed its operating range. The G224 Multi-Sonic features a reference bail for optimum temperature and wind compensation. The reference bail can easily be removed when the sensor is not in use.

The G224 Multi-Sonic can be used with all controllers in the Mini-Line® series. The standard and additional versions can be used both as a single sensor or as a part of an averaging system.

The green label and grey label versions can be used for replacement sensors for an averaging system with four sensors or as additional sensors on an averaging beam with six sensors.

G224 Multi-Sonic Grade Sensor w/Reference Bail

Controller Options

HS301   PL2005   LRL2000

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 120 mA Max 200 mA
Operating Temperature	-10°C to 70°C / 14°F to 158°F
Temperature Compensation	165mm / 6.5in Detachable Bail
Resolution	1mm / 0.04in
Accuracy - Dynamic	+/- 1mm / 0.04in
Sensor Range	250mm - 900mm / 9.8in - 35.4in Ground Mode 270mm - 650mm / 10.6in - 25.6in String Mode Up to 25cm / 9.8in Sensing width in String-Line Mode
Connector	Cannon Bayonet Plug, male 6 pin A: Vbat D: NC B: Gnd E: Com A RS485 C: NC F: Com B RS485

Product

Part no.	Product	Colour
S-50651	G224 Multi-Sonic Grade Sensor w/reference bail, Standard	White
S-50652	G224 Multi-Sonic Grade Sensor w/Reference Bail, additional for averaging	Red
S-50653	G224 Multi-Sonic Grade Sensor w/Reference Bail, additional for averaging	Yellow
S-50654	G224 Multi-Sonic Grade Sensor w/Reference Bail, additional for averaging	Blue
S-50655	G224 Multi-Sonic Grade Sensor w/Reference Bail, replacement for averaging	Green
S-50656	G224 Multi-Sonic Grade Sensor w/Reference Bail, replacement for averaging	Grey

Accessories

S-50531	Snap Connector
S-50778	Snap Connector, for Topcon mounting (single or averaging beam)

Spare Parts

S-50695	Reference Bail G224

S298 Slope Sensor
For Slope Sensing

The S298 Slope Sensor measures the cross slope of the screed, when a defined slope of the road is required or an appropriate reference is not available in one side of the machine.

The S298 Slope Sensor is operated with a HS301 Handset and is always used together with grade control setting the reference of the grade in one side.

The sensor can be used for controlling slope from either side of the machine, but only one side at a time.

The S298 Slope Sensor has a strong and accurate inclinometer specifically designed to withstand the high vibration levels on high compaction screeds.

S298 Slope Sensor for HS301

Controller Options

HS301

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 30 mA Max 200 mA
Operating Temperature	-10°C to 70°C / 14°F to 158°F
Resolution	0.01%
Accuracy - Dynamic	+/- 0.1%
Sensor Range	-9.99% to +9.99%
Connector	2 x Cannon Bayonet Plug, male 6 pin A: Vbat D: NC B: Gnd E: Com A RS485 C: NC F: Com B RS485

Product

Part no.	Product
S-50170	S298 Slope Sensor for HS301

S299 Slope Sensor
For Slope Sensing

The S299 Slope Sensor measures the cross slope of the screed, when a defined slope of the road is required or an appropriate reference is not available in one side of the machine.

The S299 Slope Sensor is operated with a PL2005 Control Box, and is always used together with grade control setting the reference of the grade in one side. If operating with grade control in both sides of the machine, the slope can be used for monitoring the slope of the road.

The sensor can be used for controlling the slope from either side of the machine, but only one side at a time. It is controllable from the PL2005 Control Box from both sides of the machine.

The S299 Slope Sensor has a strong and accurate inclinometer specifically designed to withstand the high vibration levels on high compaction screeds.

S299 Slope Sensor for PL2005

Controller Options

PL2005

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 30 mA Max 200 mA
Operating Temperature	-10°C to 70°C / 14°F to 158°F
Resolution	0.01%
Accuracy - Dynamic	+/- 0.1%
Sensor Range	-9.99% to +9.99%
Connector	Cannon Bayonet Plug, male 6 pin A: Vbat D: NC B: Gnd E: Com A RS485 C: NC F: Com B RS485

Product

Part no.	Product
S-50220	S299 Slope Sensor for PL2005

EASY Averaging Beam

The EASY Averaging Beam provides the ability to average out the deviations of the existing pavement surface to obtain a smoother mat. EASY Averaging Beam is designed to feature four sensors that take individual measurements across the entire length of the asphalt paver, and the average of these measurements constitutes the base of grade regulation. Rough spots in the existing foundation, which would normally affect the quality of the new road, are effectively smoothed out.

Its main part consists of two horizontal Sensor Beams fully-fitted with snap connectors, connector boxes and cabling integrated into the beams. The two beams are easily mounted with the corresponding Rear Beam and Front Beam mounting.
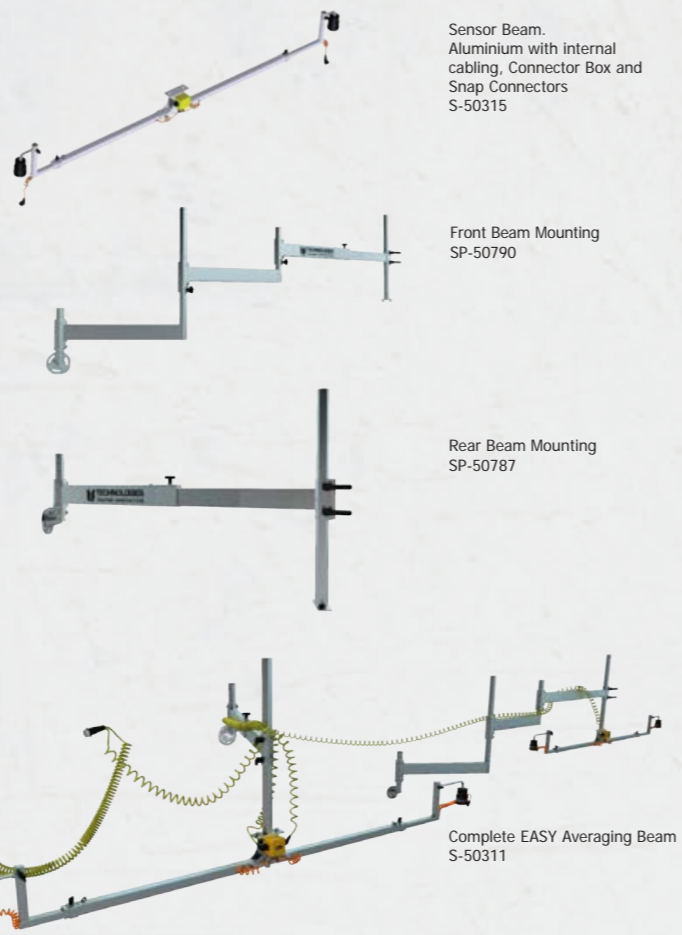
The split beam setup ensures the EASY Averaging Beam fits any paver, and offers free access to the screed while paving.

The EASY Averaging Beam comes complete with internal cabling, Connector Boxes, Cables and Snap Connectors.

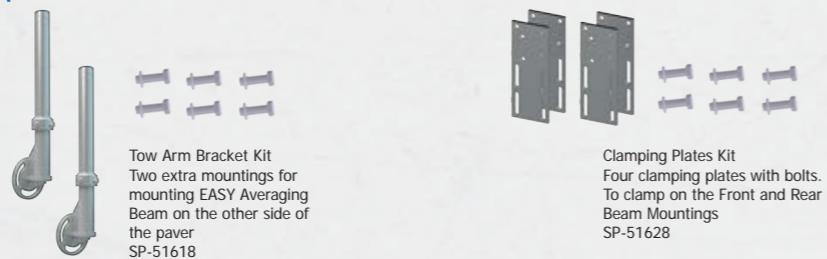Front and Rear Mountings are Bolt-on mountings. Clamping Plates are available and sold separately.

Extra Tow Arm Brackets are available, for mounting on the other side of the paver, enabling use of the Averaging Beam on both sides of the paver.

Sensor Beam.
Aluminium with internal cabling, Connector Box and Snap Connectors
S-50315

Front Beam Mounting
SP-50790

Rear Beam Mounting
SP-50787

Complete EASY Averaging Beam
S-50311

S-50311 - Complete EASY Averaging Beam Setup

P/N	Pcs.	Description
S-50315	2	Sensor Beam with Snap Connectors
S-50790	1	EASY Front Beam Mounting
S-50787	1	EASY Rear Beam Mounting
S-50433	1	V-Cable, 2.2m + 4m / 7ft + 13ft
S-50280/6.0	1	I-Cable, 6m / 20ft

Tow Arm Bracket Kit
Two extra mountings for mounting EASY Averaging Beam on the other side of the paver
SP-51618

Clamping Plates Kit
Four clamping plates with bolts. To clamp on the Front and Rear Beam Mountings
SP-51628

Product

| Part no.	Product
S-50311	EASY Averaging Beam, complete Averaging Beam setup with Bolt Mountings

Accessories

SP-51618	Tow Arm Bracket Kit (for Front and Rear Mounting)
SP-51628	Clamping Plates Kit (4 plates, bolts, locking nuts and spacers for both Front and Rear Mounting)
SP-40125	Clamping Plates, Short (2 plates incl. nuts) For Tow Arm height < 22.6 cm / 8.9"
SP-40126	Clamping Plates, Long (2 plates incl. nuts) For Tow Arm height < 22.6 cm / 8.9"

Spare Parts

S-50315	Sensor Beam, aluminium with internal cabling, Connector Box and Snap Connectors
SP-50790	EASY Front Beam Mounting
SP-50787	EASY Rear Beam Mounting
S-50433	V-Cable, 2.2m + 4m
S-50280/6.0	I-Cable, 6.0m
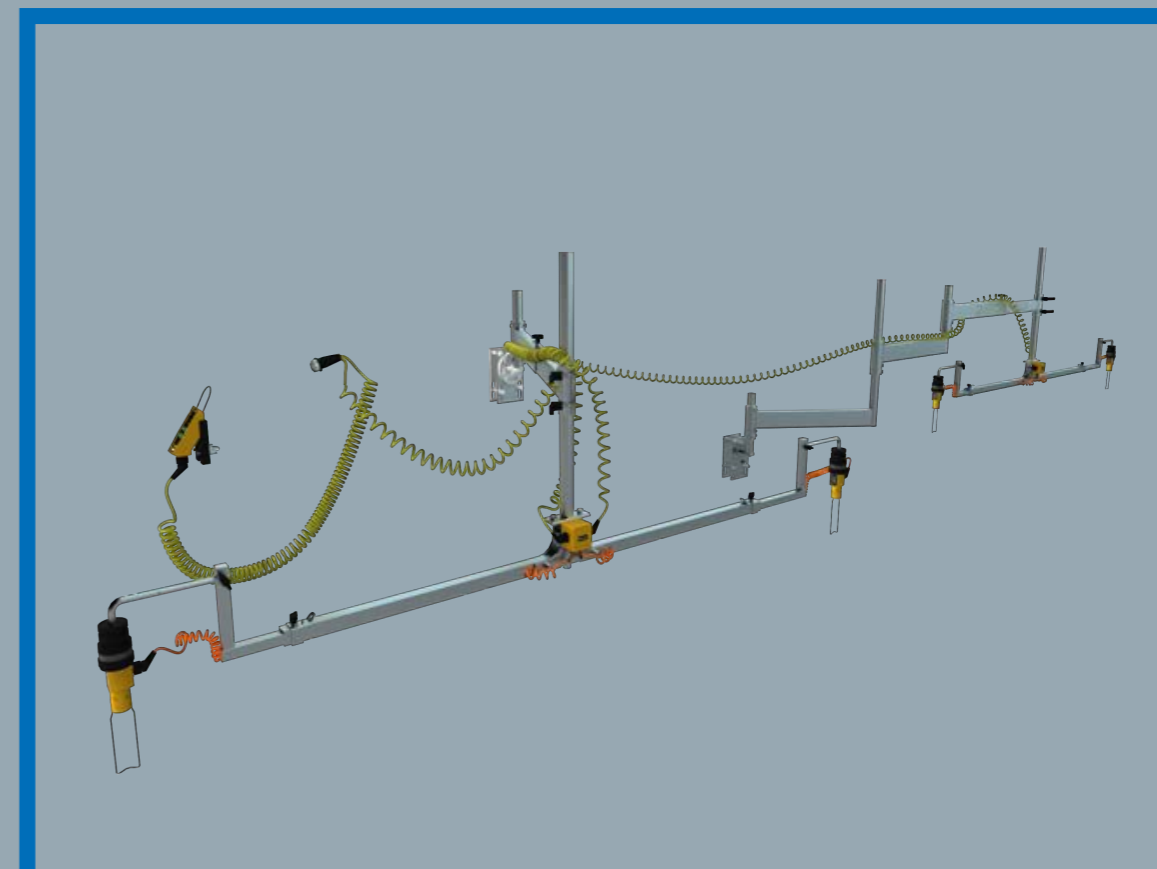
Mini-Line® EASY Averaging Beam setup with Clamp Mounting
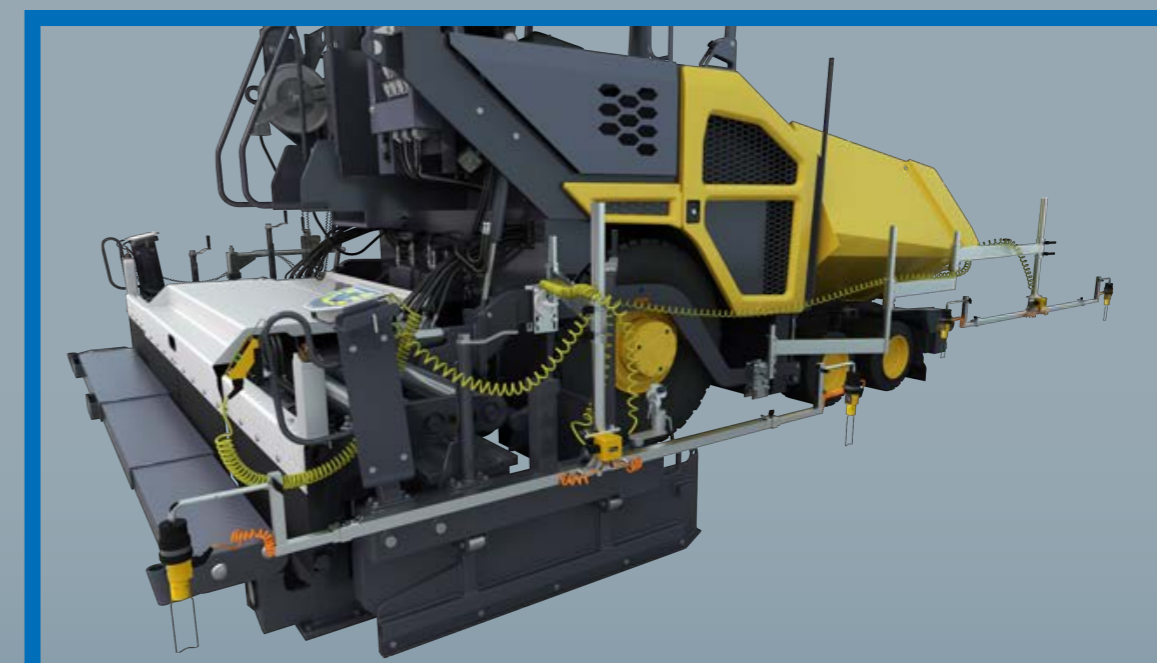
Mini-Line® EASY Averaging Beam setup with Clamp mounting on paver

Paving Control   Mini-Line®

SUPER Averaging Beam

Achieve ultimate smoothness with the SUPER Averaging Beam and a Mini-Line® averaging system. By averaging out the measurements of up to six individual sensors across the full length of the averaging beam, the SUPER Averaging Beam is able to deliver a very smooth road surface, even without the presence of a good reference.

With this non-contact system, you eliminate the hassle of setup, cleaning and repair of traditional drag skis and get the freedom to back up, turn around or pave around curves without having to remove the ski.

The SUPER Averaging Beam is available in a 9 meter (25ft) and a 13 meter (40ft) configuration. It comes with 36 hidden, protected plugs to be used for lights, and offering full flexibility for controller and power supply connection.

You can use the SUPER Averaging Beam with any type of controller or sensor from the Mini-Line® series.

The Averaging Beam comes complete with internal cabling, extension sections, Sensor Mounting Rods with Snap Connectors, machine connection cables and Front and Rear Bolt Mountings.

Clamping Plates are available for a clamp-on solution, instead of bolting it. Clamping Plates Kit is sold separately.

Extra Tow Arm Brackets are available, for mounting on the other side of the paver, enabling use of the Averaging Beam on both sides of the paver.

Please see pages 10 to 13 for sensor kit options for the Averaging Beam.

Complete Averaging Beam 9m/13m (25ft/40ft) with internal cabling, Sensor Mounting Rods, Snap Connectors, Bolt Mountings and hinge
S-51650 - 9m/25ft
S-51651 - 13m/40ft

Bolt Mountings SP-51607

SUPER Avg. Beam Lights SP-51612

Hinge SP-51608

Tow Arm Bracket Kit
Two extra mountings for mounting SUPER Averaging Beam on the other side of the paver
SP-51618

Clamping Plates, Long
To clamp on the Front and Rear Beam Mountings
SP-40126

S-51650 Complete SUPER Averaging Beam Setup, 9 m / 25ft

	Pcs.	Description
S-51609	1	Main Section
S-51610	3	Extension Section
S-51600/1.5	3	Connection Cable for Beam
S-51607	1	Bolt Mountings for Tow Arm (2 pcs)
S-51626	4	Sensor Mounting Rod w/Snap Connector
S-51601/1,5	4	Cable, Beam to Sensor
S-51604	1	V-Cable for SUPER Averaging Beam 2.2 + 4m / 7ft + 13ft

S-51651 Complete SUPER Averaging Beam Setup, 13 m / 40ft

|	Pcs.	Description
S-51609	1	Main section
S-51610	5	Extension section
S-51600/1.5	5	Connection Cable for Beam
S-51607	1	Bolt Mountings for Tow Arm (two pcs)
S-51626	4	Sensor Mounting Rod w/Snap Connector
S-51601/1,5	4	Cable, Beam to Sensor
S-51604	1	V-Cable for SUPER Averaging Beam 2.2 + 4m / 7ft + 13ft

Product

| Part no.	Product
S-51650	SUPER Averaging Beam, complete Averaging Beam setup with Bolt Mountings, 9m / 25ft
S-51651	SUPER Averaging Beam, complete Averaging Beam setup, with Bolt Mountings, 13m / 40ft

Accessories

SP-51608	Hinge
SP-51612	Light set for SUPER Averaging Beam (4 pcs)
SP-51618	Tow Arm Bracket Kit (for Front and Rear Mounting)
SP-51628	Clamping Plates Kit (4 plates, bolts, locking nuts and spacers for both Front and Rear Mounting)
SP-40125	Clamping Plates, Short (2 plates incl. nuts) For Tow Arm height < 22.6 cm / 8.9"
SP-40126	Clamping Plates, Long (2 plates incl. nuts) For Tow Arm height < 22.6 cm / 8.9"

Spare Parts

S-51600/1.5	Connection cable for Beam, 1.5m, 2x6-Pin Deutch
S-51601/1.5	Cable, Beam to Sensor, 1.5m, 6-Pin Bayonet, 6-Pin Deutch
S-51604	V-Cable for SUPER Avg. Beam (w. Deutch)
S-51605	W-Cable for SUPER Avg. Beam
SP-51607	Bolt Mountings
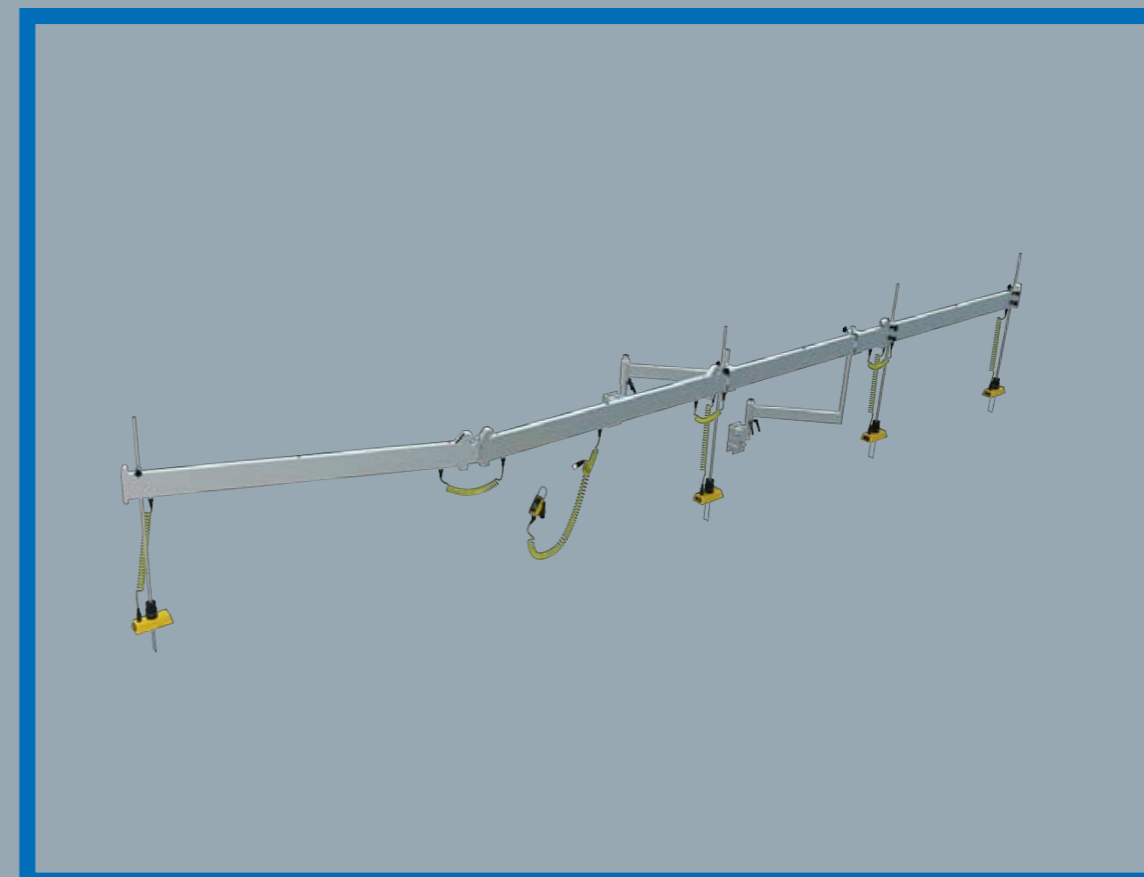
Mini-Line® SUPER Averaging Beam with Hinge, HS301 and G224 Multi-Sonic Sensors, 9m / 25ft
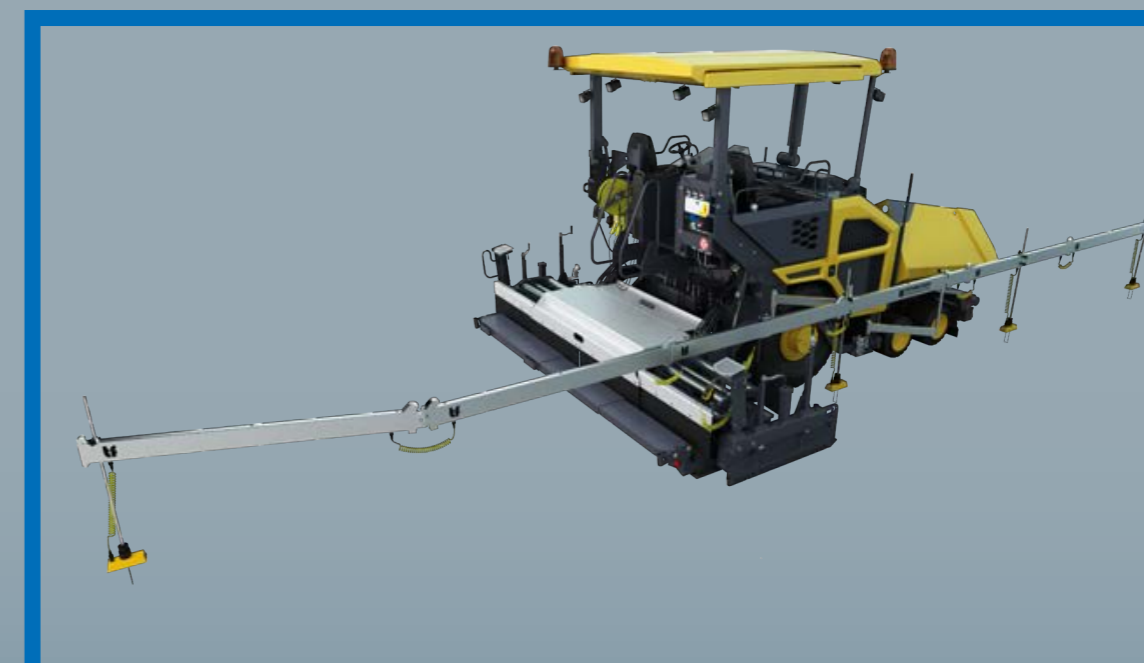
Mini-Line® SUPER Averaging Beam with Hinge, 13m / 40 ft on paver

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Grade Support Arm

The Grade Support Arm is a mounting arm for any type of grade sensor.

The height of the grade sensor can be regulated by turning the arm up or down.

The Snap Connector (S-50531) makes it easy to connect a grade sensor to the Grade Support Arm. The Snap Connector must be bought separately.

Grade Support Arm

Product

Part no.	Product
S-50513	Grade Support Arm

Accessories

S-50531	Snap Connector

MINI-LINE® CABLES, CON-VERTERS & CARRY CASES

Cables
For Mini-Line® Grade and Slope Control System

Mini-Line® Grade and Slope Control System is designed to easily connect to the machine via the 10-Pin Plug standard on many machine types. All units in the Mini-Line® Grade and Slope Control System interconnect with a 6-Pin Bayonet plug.
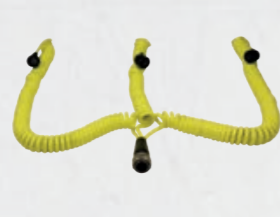
The specified cable lengths are the maximum recommended length used.

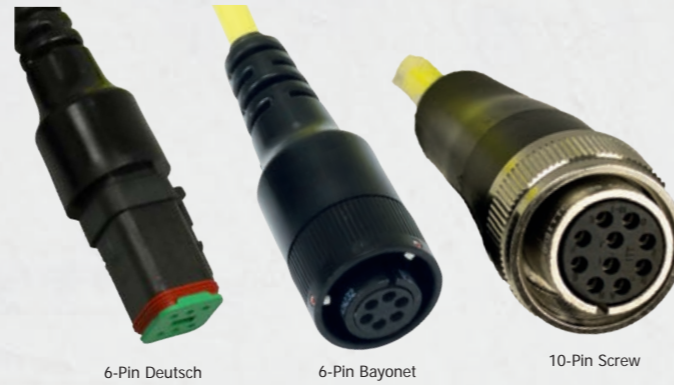The Mini-Line® Grade and Slope Control System features several Coiled Cable types:

6-Pin Deutsch   6-Pin Bayonet   10-Pin Screw

Cable Options:

V-Cable
V-Cable with one 10-Pin Screw, and two 6-Pin Bayonet. Used for connecting the machine to HS301 Handset and Grade Sensor or Slope Sensor.

W-Cable
W-Cable with one 10-Pin Screw, and three 6-Pin Bayonet. Used for connecting the machine to HS301 Handset, Grade Sensor and Slope Sensor, when slope monitoring is required.

I-Cable
I-Cables with two 6-Pin Bayonet. Used for interconnecting units in the PL2005 kits or LRL2000 kits.

Coiled Cable
Coiled Cable with one 10-Pin Screw and one 6-Pin Bayonet. Used for connecting PL2005 kits or LRL2000 kits to the machine.

Connector Box Options:
Operators that do not wish to connect the HS301 Handset with a V-cable or W-cable, can use a Connector Box with standard I-Cables instead, as an alternative cabling setup.

S-50198
Connector Boxes with one 10-Pin Screw, and three 6-Pin Bayonet connectors, male.

S-50198/0,3

S-50779
Connector box for connecting HS301 or PL2005 with up to 4 sensors, when using Mini-Line® on a Moba/Vögele or TopCon averaging beam.

Cables

Part no.	Product
S-50433	V-Cable, Coiled, 2.2+4m, 10-Pin Screw+2x6-Pin Bayonet
S-51604	V-Cable, Coiled, 2.2+4m, 10-Pin Screw+6-Pin Bayonet+6-Pin Deutch (For SUPER Averaging Beam)
S-50429	W-Cable, Coiled, 2.2+2x4m, 10-Pin Screw+3x6-Pin Bayonet
S-51605	W-Cable, Coiled, 2.2+2x4m, 10-Pin Screw+2x6-Pin Bayonet+6-Pin Deutch (For SUPER Averaging Beam)
S-50280/1,5	I-Cable, Coiled, 1.5m, 2x6-Pin Bayonet
S-50280/2,2	I-Cable, Coiled, 2.2m, 2x6-Pin Bayonet
S-50280/3,3	I-Cable, Coiled, 3.3m, 2x6-Pin Bayonet
S-50280/4,0	I-Cable, Coiled, 4m, 2x6-Pin Bayonet
S-50280/6,0	I-Cable, Coiled, 6m, 2x6-Pin Bayonet
S-50280/12,0	I-Cable, Coiled, 12m, 2x6-Pin Bayonet
S-51603/4,0	I-Cable, Coiled, 4m, 2x6-Pin Deutch (For SUPER Averaging Beam)
S-50101/2,2	Coiled Cable, 2.2m, 10-Pin Screw+1x6-Pin Bayonet
S-50101/4,0	Coiled Cable, 4m, 10-Pin Screw+1x6-Pin Bayonet
S-51601/1.5	Cable, Beam to Sensor, Coiled, 1.5m, 6-Pin Bayonet + 6-Pin Deutch - (For SUPER Averaging Beam)
S-51600/1,5	Connetion Cable for Beam, Coiled, 1.5m, 2x6-Pin Deutch (For SUPER Averaging Beam)

Connector Boxes

Part no.	Product
S-50198	Connector Box with 2.2m Cable, 10-Pin, Coiled Cable
S-50198/0,3	Connector Box with 0.3m Cable, 10-Pin, Straight Cable
S-50779	Connector Box for averaging beam

Converters
For Mini-Line® Grade and Slope Control System   Vögele Converter Kit

Mini-Line® Grade and Slope Control System is designed to easily connect to the machine via the 10-Pin Plug standard on many machine types.

Machine types without a standard 10-Pin Plug on the machine require a converter or adaptor cable to operate the Mini-Line® Grade and Slope Control System on the machine.

Additional converters and adaptor cables are available on request.

Facilitates conection of Mini-Line® Grade and Slope Control System on any Vögele paver with Harting Connector for leveling systems

S-50264
Adaptor cable for use of Mini-Line® Grade and Slope Control System on Roadtec pavers with Guardian Telematics System. Replaces standard V-cable.

HPD100 Leeboy Converter Kit

Facilitates connection of Mini-Line® Grade and Slope Control System on any Leeboy paver with electric powered screed actuators

S-50430
Adaptor cable for 7-Pin Screw

S-50497
Adaptor Cable for 11-KPT.

Converters

Part no.	Product
S-50288	Vögele Converter Kit
S-50577	HPD100 Leeboy Converter Kit

Adaptors

Part no.	Product
S-50430	Adaptor cable, 30 cm, 10-Pin Screw+1x7-Pin Screw
S-50497	Adaptor cable, 30 cm, 10-Pin+1x11KPT
S-50264	V-cable, for Roadtec Prop.
S-51602	Adaptor cable, 6-Pin deutch + 6-Pin Male Bayonet
S-50778	Snap Connector, for TopCon mounting (single or averaging beam)

Carry Cases
For Mini-Line® Grade and Slope Control System

Mini-Line® Grade and Slope Control System is designed to be easily disconnected and dismantled from the machine, and is most conveniently transported and stored in a Mini-Line® Carry Case, when not in use.

The Mini-Line® Carry Case is available in several versions, based on the available kit configurations.

All Mini-Line® Carry Cases are high impact, heavy duty suitcases featuring highly durable custom-cut foam for optimal protection during transport. Mini-Line® Carry Cases are watertight and corrosion proof.

All Mini-Line® Carry Cases feature highly durable custom-cut foam

Carry Cases

Part no.	Product	Can contain	Used for
S-50901	Carry Case	2xHS301, 2xG221, 1xS298, 2xSnap Connector and cables	Kit S-70001
S-50902	Carry Case	2xHS301, 2xG224, 1xS298, 2xSnap Connector and cables	Kit S-70002
S-50903	Carry Case	2xHS301, 1xG224, 1xG221, 1xS298, 2xSnap Connector and cables	Kit S-70003
S-50904	Carry Case	2xHS301, 4xG224, 1xG221, 1xS298, 1xSnap Connector and cables	Kit S-70206 and S-70208
S-50905	Carry Case	2xHS301, 5xG224, 1xS298, 1xSnap Connector and cables	Kit S-70207
S-50906	Carry Case	2xHS301, 5xG221, 1xS298, 1xSnap Connector and cables	Kit S-70209 and S-70211
S-50907	Carry Case	2xHS301, 4xG221, 1xG224, 1xS298, 1xSnap Connector and cables	Kit S-70210
S-50908	Carry Case	2xPL2005, 2xG221, 1xS299, 2xSnap Connector and cables	Kit S-70101
S-50909	Carry Case	2xPL2005, 2xG224, 1xS299, 2xSnap Connector and cables	Kit S-70102 to S-70103 and S-70264 to S-70266
S-50910	Carry Case	2xPL2005, 1xG221, 4xG224, 1xS299, 2xSnap Connector and cables	Kit S-70264 to S-70266
S-50911	Carry Case	2xPL2005, 8xG221, 1xS298, 1xSnap Connector and cables	Kit S-70267 and S-70269
S-50912	Carry Case	2xPL2005, 1xG224, 4xG221, 1xS298, 1xSnap Connector and cables	Kit S-70268
S-50960	Carry Case	2xLRL2000, 2xY398, 1xS297 and cables	Kit S-50800

MATMANAGER™

MatManager™
Paving Quality System

The MatManager™ is a paving quality system for asphalt pavers that enables the operator to monitor key quality parameters of the paving job.

The MatManager™ tracks material consumption, paved distance, speed, screed width, material temperatures, air temperatures and other key paving events of the job with real-time measurements.

The MatManager™ uses a range of different input sensors mounted on the asphalt paver to measure and calculate the key paving parameters. The data is collected from the sensors via the MatManager™ Interface Box. A GPS tracks and logs all the data with exact location coordinates.

While paving, the parameters can be viewed in the graphical display, a large 7″ screen with capacitive touch and ten soft keys for easy function changes and entry of data. At the end of the paving job all logged data can be exported for data processing and analysis, and the system can deliver a report of key data.

The MatManager™ System can be upgraded with new features as they are released.

There are two available configurations of the system:
- With optical width sensors
- With wirepull width sensor

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 200mA
Operating Temperature	-10°C to 70°C / 14°F to 158°F
Communication Bus	2xCAN, USB
Connector	1 Cannon Bayonet Plug, male 6 pin 1 Bayonet USB

The MatManager™ System requires installation by a Service Specialist (not included in pricing).

Kit Options

MatManager™ is available in two versions: MatManager™ and MatManager™ Light. MatManager Light comes with limited features, and do not include IR temperature sensor, Weather Station and GPS. MatManager™ Light Kits must be upgraded to MatManager™ Standard, before upgrading with any additional features.

MatManager™

S-60802 MatManager™ Kit with optical screed width sensors

Pcs.	Description
1	MatManager™
1	MatManager™ Carry Case
1	MatManager™ Interface Box
1	Mounting Bracket for MatManager™
1	Coiled I-Cable
1	Weather Station with GPS
1	Cable for Weater Station
1	Mount for Weather Station
2	Optical Screed Width Sensor
2	Rail for Optical Width Sensor
2	Rail Protecting Tube
2	Cable for Width Sensor
1	IR Temperature Sensor
1	Distance Sensor
2	Cable for Distance Sensor
1	Distance Wheel Assembly
1	Tamper/Vibrator Sensor
6	M12 Male connector, 4 pin
1	MatManager™ USB Stick

S-60803 MatManager™ Kit with wirepull screed width sensors

Pcs.	Description
1	MatManager™
1	MatManager™ Carry Case
1	MatManager™ Interface Box
1	Mounting Bracket for MatManager™
1	Coiled I-Cable
1	Weather Station with GPS
1	Cable for Weather Station
1	Mount for Weather Station
2	Wirepull Screed Width Sensor
2	Cable for Width Sensor
1	IR Temperature Sensor
1	Distance Sensor
2	Cable for Distance Sensor
1	Distance Wheel Assembly
1	Tamper/Vibrator Sensor
6	M12 Male connector, 4 pin
1	MatManager™ USB Stick

MatManager™ Light

S-60804 MatManager™ Light Kit with optical screed width sensors

Pcs.	Description
1	MatManager™ Light version software
1	MatManager™ Carry Case
1	MatManager™ Interface Box
1	Mounting Bracket for MatManager™
1	Coiled I-Cable
2	Optical Screed Width Sensor
2	Rail for Optical Width Sensor
2	Rail Protecting Tube
2	Cable for Width Sensor
1	Distance Sensor
2	Cable for Distance Sensor
1	Distance Wheel Assembly
1	Tamper/Vibrator Sensor
4	M12 Male connector, 4 pin
1	MatManager™ USB Stick

S-60805 MatManager™ Light Kit with wirepull screed width sensors

Pcs.	Description
1	MatManager™ Light version software
1	MatManager™ Carry Case
1	MatManager™ Interface Box
1	Mounting Bracket for MatManager™
1	Coiled I-Cable
2	Wirepull Screed Width Sensor
2	Cable for Width Sensor
1	Distance Sensor
2	Cable for Distance Sensor
1	Distance Wheel Assembly
1	Tamper/Vibrator Sensor
4	M12 Male connector, 4 pin
1	MatManager™ USB Stick

Kit

Part no.	Product
S-60802	MatManager™ Standard Kit with optical screed width sensors
S-60803	MatManager™ Standard Kit with wirepull screed width sensors
S-60804	MatManager™ Light Kit with optical screed width sensors
S-60805	MatManager™ Light Kit with wirepull screed width sensors
S-60806	MatManager™ Upgrade Kit, from Light to Standard

MatManager™
Paving Quality System

The MatManager™ Paving Quality System for use on asphalt pavers.

The main parts in the system are
- MatManager™ Control Unit
- MatManager™ Interface Box

S-50721 MatManager™ Interface Box

S-51713 MatManager™ in Carry Case

Product

Part no.	Product
S-51713	MatManager™ Control Unit in Carry Case
S-51715	MatManager™ Light Control Unit in Carry Case
S-50721	MatManager™ Interface Box

Spare Parts

| Part no.	Product
S-10106	Mount Arm 4.5
S-10114	Ball base w. strap
S-10116	Mount for Weather Station 4way
S-10110	Weather Station Cable
S-10100	MatManager™ Carry Case
S-10104	MatManager™ USB Stick
S-50280/2.2	I-Cable, Coiled, 2,2m, 2x6-Pin Bayonet
S-50299/6.0	Bus cable, 6,0m, 2x6-Pin Bayonet

TECHNOLOGIES
PAVING INNOVATION

Sensors and Accessories
For MatManager™

Product

Part no.	Product	
S-10109		Weather Station with GPS for MatManager™
S-10082		Distance Sensor
S-10083/10,0		Cable for Distance Sensor and Tamper
S-10085		Distance Wheel Assembly
S-10112		Tamper/Vibrator Sensor
S-10094		IR Temperature Sensor
S-10096		Wirepull Screed Width Sensor
S-10076		Optical Screed Width Sensor
S-10077		Rail for Optical Width Sensor
S-10079		Rail Protecting Tube
S-10083L/5,0		Cable for Width Sensor
S-10105		M12 Male Conncector, 4-Pin
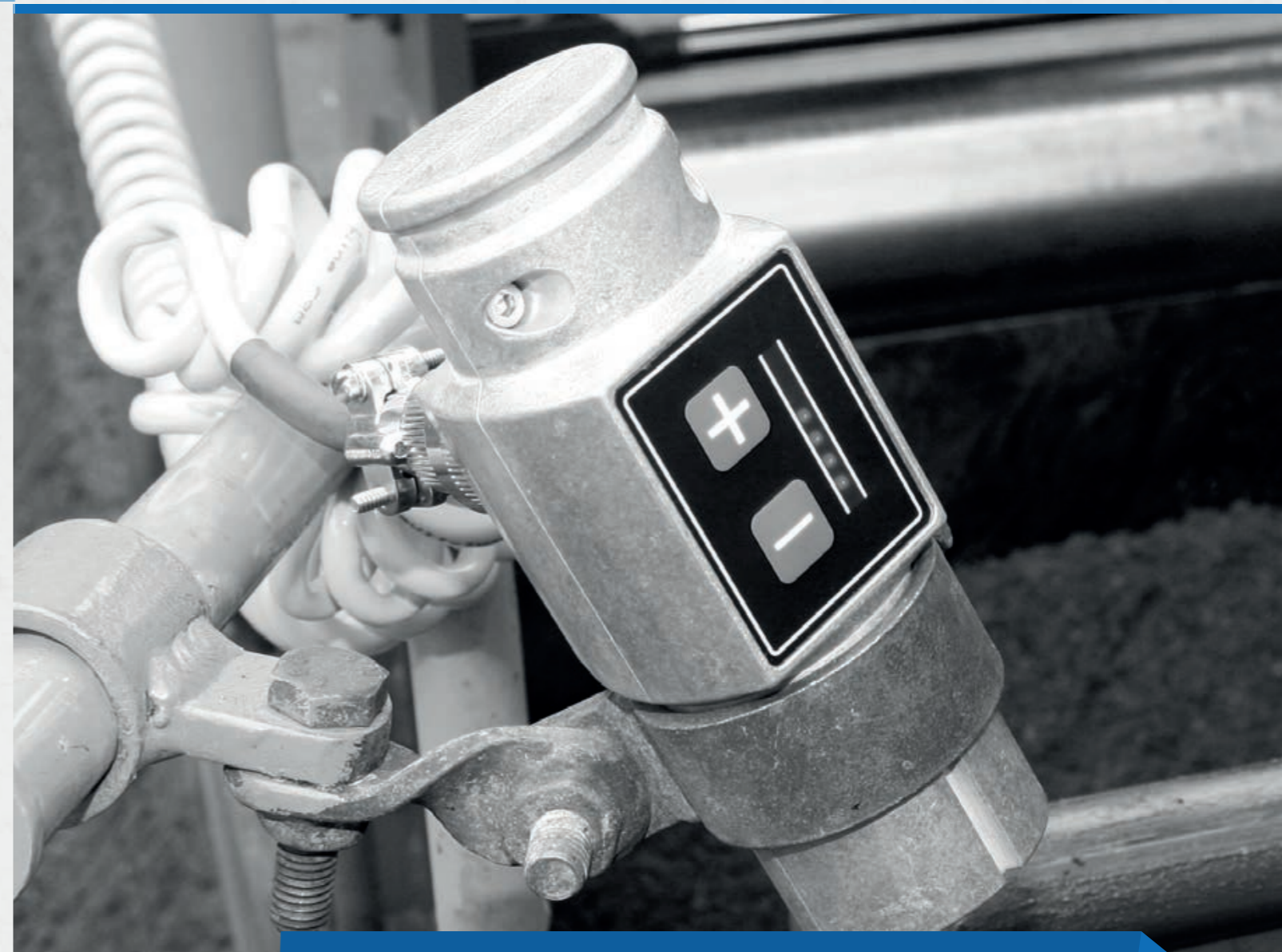
AC700 MATERIAL CONTROL

AC700 Controller
For Auger or Conveyer Control

A key precondition to laying a smooth pavement is using a material control system to maintain a constant head of material in front of the screed.

The AC700 Controller monitors and regulates the level of material, ensuring a constant material flow to the level set by the operator. The AC700 Controller is an ultrasonic non-contact sensor, which eliminates the problem of clogging material on mechanical sensors and removes the need for supervision and maintenance in use.

It can operate on both augers and conveyors and is easily operated with push buttons on an integrated keypad with an LED level indicator.

Controller and sensor is built into the same unit and is very easy to install.

The AC700 Controller is produced in several hardware versions to match the right output for different types of pavers.

Contact your sales representative for guidance on which AC700 Controller to order for your specific machine.

Mounting Bracket for material sensor

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 70 mA Max 200 mA
Operating Temperature	-10°C to 85°C / 14°F to 185°F
Resolution	1mm / 0.04in
Sensor Range	200mm - 1000mm / 7.9in - 39.4in
Adjustment Steps	21mm / 0.8in

Product

Part no.	Product	Version	Connector	Output
S-50631	AC700 Material Control	T1	6-Pin Bayonet, male	PNP - ON/OFF NPN - ON/OFF
S-50632	AC700 Material Control	T2	6-Pin Bayonet, male	PNP PVM Proportional NPN PVM Proportional
S-50633	AC700 Material Control	T3	6-Pin Bayonet, male	PNP PVM Proportional
S-50634	AC700 Material Control	T4	5-Pin Screw, male	PNP - ON/OFF
S-50635	AC700 Material Control	T5	6-Pin Screw, male	NPN - ON/OFF Voltage Output Proportional
S-50636	AC700 Material Control	T6	5-Pin Screw, male	PNP PVM Proportional
S-50638	AC700 Material Control	T8	6-Pin Screw, male	Voltage Output Proportional
S-50644	AC700 Material Control	T14	6-Pin Screw, male	PNP PVM Proportional
S-50645	AC700 Material Control	T15	6-Pin Screw, male	Voltage output Proportional PNP PWM Proportional
S-50646	AC700 Material Control	T16	6-Pin Bayonet, male	PNP Current Controlled Proportional
S-50648	AC700 Material Control	T18	8-Pin PT02E168P	Voltage Output

Accessories

S-50521	Mounting Bracket for Material Sensor

AC700 Sensor
For Auger or Conveyer

The key to placement of a smooth pavement layer is using a material feed system to maintain a constant head of material in front of the screed.

The AC700 Material Sensor will monitor the level of hot mix at the augers or conveyors of a paver.

The AC700 Material Sensor signals the level of material to a controller built into the asphalt paver.

The AC700 Controller is produced in several hardware versions to match the different types of pavers.

Contact your sales representative for guidance on which AC700 Sensor to order for your specific machine.

Mounting Bracket for material sensor

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 40 mA Max 200 mA
Operating Temperature	-10°C to 85°C / 14°F to 185°F
Resolution	1mm / 0.04in
Sensor Range	200mm - 1000mm / 7.9in - 39.4in

Product

Part no.	Product	Version	Connector	Output
S-50637	AC700 Material Sensor	T7	5-Pin Screw, male	Voltage Output
S-50639	AC700 Material Sensor	T9	6-Pin Screw, male	NPN PWM
S-50642	AC700 Material Sensor	T12	6-Pin Screw, male	Voltage Output (for Volvo pavers with EPM system)
S-50643	AC700 Material Sensor	T13	4-Pin Valve, male	Voltage Output (for Volvo pavers with EPM system)
S-50649	AC700 Material Sensor	T19	6-Pin Screw, male	Voltage Output

Accessories

S-50521	Mounting Bracket for Material Sensor

Cables
For Material Control

The cables connecting the AC700 to the asphalt paver are produced in several versions in order to match the various wiring and plug types of different asphalt paver types.

All AC700 cables are therefore specified to one or more AC700 types (T1-T16), with an open-end for the machine plug. Upon ordering your cable, please inform your sales representative of the paver type and plug required for your machine.

Pricing specified below includes the mounting of an optional machine plug on the AC700 cable, with two different price categories depending on the cost of the machine plug required.

The EPM Material Control Sensors (T12 and T13) are only for use on Volvo machines with an EPM Control System, and the cables are therefore limited to two available types – one for each type of EPM Material Control Sensor.

Cable for AC700 with 6-Pin Screw/open end

Product

Part no.	Product
S-50268	Cable for EPM 4-Pin Valve, 4m, 6-Pin Screw/4-Pin Valve
S-50287/4,0	Cable for EPM 6-Pin Screw, 4m, 6-Pin Screw/6-Pin Screw
S-50664	Cable for AC700, T1 & T2, 4m, 6-Pin Bayonet/open-end
S-50665	Cable for AC700, T3 & T14, 4m, 6-Pin Screw/open-end
S-50666	Cable for AC700, T4 & T6, 4m, 5-Pin Screw/open-end
S-50667	Cable for AC700, T5, 4m, 6-Pin Screw/open-end
S-50668	Cable for AC700, T8, 4m, 6-Pin Screw/open-end
S-50669	Cable for AC700, T16, 4m, 6-Pin Bayonet/open-end
S-50670	Cable for AC700, T7, 4m, 5-Pin Screw/open-end
S-50672	Cable for AC700, T19, 7.2ft, 6-Pin Screw/open-end

TEMPERATURE CONTROL

STC1600 Temperature Controller
For STC1600 Temperature Control System

The STC1600 Temperature Controller is developed for gas-heated screeds. It is designed to automatically maintain the optimum operating temperature across the full length of the screed, without overheating the screed plates while paving.

The STC1600 Temperature Controller is a temperature control module with four channels that can control the temperature of all four sections of the screed individually. The temperature is monitored via four connected Pt-100 Temperature Sensors located on the right and left side of the screed, as well as one on each of the extensions. The STC1600 Temperature Controller regulates the temperature to the level set by the operator by turning the connected FCB24/FCE24 Ignition Boxes controlling the gas valves of the burners on/off. The desired temperature can be set and regulated individually for each of the four sections of the screed on the up and down buttons on the LED panel. In case of a defective Pt-100 Temperature Sensor, the STC1600 Temperature Controller automatically uses the next sensor input, to maintain system functionality.

The STC1600 Temperature Controller can also control the fan after-run on burners with fans.

The STC1600 Temperature Controller has two outputs for each of the four channels.

STC1600 Temperature Controller for gas heated screeds

STC1600 Electric Temperature Controller
For STC1600 Temperature Control System

The STC1600 Electric Temperature Controller is developed for electrically heated screeds. It is designed to automatically maintain the optimum operating temperature across the full length of the screed, without overheating the screed plates while paving.

The STC1600 Electric Temperature Controller is a temperature control module with four channels that can control the temperature of all four sections of the screed individually. The temperature is monitored via four connected Pt-100 Temperature Sensors located on the right and left side of the screed, as well as one on each of the extensions.

The STC1600 Electric Temperature Controller regulates the temperature to the level set by the operator by turning the relevant connected heating element on/off. The desired temperature can be set and regulated individually for each of the four sections of the screed on the up and down buttons on the LED panel. In case of a defective Pt-100 Temperature Sensor, the STC1600 Electric Temperature Controller automatically uses the next sensor input, to maintain system functionality.

In order to limit the load on the pavers generator there is a delay between activation of sections and further more the unit can be set to not activate more than three sections at the same time.

STC1600 Temperature Controller for electric screeds

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 150 mA Max. 200 mA
Operating temperature	-10°C to 70°C / 14°F to 158°F
Output	8 channels, each consisting of 4 pcs. fan and 4 pcs. burner output Max 0.5A continuously pr. channel
Input	4 x Pt-100 sensors

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 150 mA Max. 200 mA
Operating temperature	-10°C to 70°C / 14°F to 158°F
Output	4 channels Max 0,5A continuously pr. channel.
Input	4 x Pt-100 Sensors
Temperature Control Range	30°C to 180°C / 86°F to 356°F
Heating Section Delay - on to on	2 sec.
Regulator Hysteresis	2°C / 35.6°F

Product

Part no.	Product	Temperature Control Range	Fan Afterrun	Regulator Hysteresis
S-50038/T8	STC1600 Temperature Controller	30°C to 180°C	60 sec.	2°C
S-50038/T5	STC1600 Temperature Controller	30°C to 180°C	5 min.	5°C
S-50038/T3	STC1600 Temperature Controller	30°C to 140°C	15 min.	2°C
S-50749	STC1600 Temperature Controller	30°C to 140°C	∞	2°C

Product

Part no.	Product
S-50552	STC1600 Electric Temperature Controller

SC5-96 Temperature Controller
For SC5-96 Temperature Control System

The SC5-96 Temperature Controller is developed for gas-heated screeds. It is designed to automatically maintain the optimum operating temperature of the screed without overheating the screed plates while paving.

The SC5-96 Temperature Controller provides the ability to both monitor and adjust the temperature. The desired temperature is adjusted on the turning knob, and the operator can switch between automatic and manual temperature regulation on the switch. The SC5-95 Temperature Controller is a single channel system monitoring the temperature via one connected Pt-100 Temperature Sensor. It regulates the temperature to the level set by the operator by turning the connected FCB24/FCE24 Ignition Boxes controlling the gas valves of the burners on/off. The SC5-96 Temperature Controller can also control the fan after-run to the desired setting on burners with fans. The fan after-run setting is set by the operator with the turning knob.

SC5-96 Temperature Controller

TC30 Temperature Controller
For TC30 Temperature Control System

The TC30 Temperature Controller is designed to automatically maintain the optimum operating temperature of the screed without overheating the screed plates while paving.

The TC30 Temperature Controller provides the ability to adjust the temperature to the desired level on the turning knob, and the operator can switch between automatic and manual temperature regulation on the switch. The unit does not feature a display to monitor the current temperature, but features status indicators showing whether the temperature is above or below the set point.

The TC30 Temperature Controller is a single channel system monitoring the temperature via one connected Pt-100 Temperature Sensor. It regulates the temperature to the level set by the operator by turning the connected FCB24/FCE24 Ignition Boxes controlling the gas valves of the burners on/off. The TC30 Temperature Controller also controls the fan after-run.

The TC30 Temperature Controller has two outputs, one for up to four Ignition Boxes (burners) and one for up to four fans.

TC30 Temperature Controller

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 80 mA Max. 200 mA
Input	Pt-100 Temperature Sensor
Temperature Control Range	50°C to 160°C / 122°F to 320°F

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 130 mA Max. 200 mA
Input	Pt-100 Temperature Sensor
Burner output	1x temperature controlled output (max 5A)
Fan Output	1

Product

Part no.	Product	Temperature Control Range	Burner Output	Fan Output	For Number of Burners
S-50000	SC5-96 Temperature Controller	50°C to 160°C	1x temperature controlled output (max 5A)	1	4
S-50073	SC5-96 Temperature Controller	50°C to 140°C	2x temperature controlled output (max 5A)	0	8

Product

Part no.	Product	Temperature Control Range	Connector
S-50092	TC30 Temperature Controller	100°C to 130°C	AMP
S-50140	TC30 Temperature Controller	100°C to 130°C	Deutsch
S-50251	TC30 Temperature Controller	100°C to 150°C	None

Ignition Box
FCE60 for Temperature Control Systems

With a FCE60 Ignition Box you have both ignition and flame control, all in one box using only one electrode.

The FCE60 Ignition Box controls the gas supply and ignites the gas, and monitors the flame throughout operation. Any accidental blow-out of the flame is immediately detected by the Ignition Box and will trigger re-ignition. In case of re-ignition failure, the FCE60 will shut off the gas supply to prevent accidents caused by gas seepage, and send out an error signal.

The FCE60 Ignition Box is compact in size, and very easy to install. As a simple, plug'n'play solution, it has no settings or required software setup. It is extremely robust, designed for use in the roughest environmental conditions.

The FCE60 Ignition Box is certified to EN 298:2012 and ensures compliance to all gas safety requirements as specified by EU law for gas burner systems on road machinery in Machinery Directive 2006/42/EC and Gas Appliances Regulation 2016/426 (GAR).

Tested to EN 13309 it is CE marked and in full compliance of EMC Directive 2014/30/EU.

The FCE60 Ignition Box is backwards compatible with the former non-certfied FCE24 Ignition Box, for systems with up to 4 Ignition Boxes.

EN 298:2012 Certified

FCE60 Ignition box with High Tension Cord and Spark Plug

Product Specifications

Power Supply	12/24 Volt DC System
Power Consumption	Typical at 24 VDC 120 mA Max. 400 mA
Operating Temperature	-10°C to 70°C / 14°F to 158°F
Flame Failure Response Time	<10 Sec.

Product

Part no.	Product	Dimension
S-51590	FCE60 Ignition Box	105x70x40 mm

Ignition Box
FCB24 and FCE24 for Temperature Control Systems

With a FCB24/FCE24 Ignition Box you have both ignition and flame control, all in one box using only one electrode.

The FCE60 Ignition Box controls the gas supply and ignites the gas, and monitors the flame throughout operation. Any accidental blow-out of the flame is immediately detected by the Ignition Box and will trigger re-ignition. In case of re-ignition failure, the FCE60 will shut off the gas supply to prevent accidents caused by gas seepage, and send out an error signal.

The status of the burner is easily viewed with red and yellow indicator lamps, and the print on the front makes it easy to install the FCB24/FCE24 Ignition Box correctly.

The FCB24 and FCE24 Ignition Boxes are identical with regards to electrical specifications, function and connectivity, but differ by their physical dimensions to suit different preferences for installation.

The FCB24 and FCE24 Ignition Boxes are fully backwards compatible with older model series FCA12V, FCA24V and FCA30V.

NB! The FCE24 and FCB24 are CE marked based on compliance with EMC Directive 2014/30/EU, but DO NOT comply with the gas safety requirements specified by EU law for gas burner systems on road machinery in Machinery Directive 2006/42/EC, and/or Gas Appliances Regulation 2016/426 (GAR)

S-50540 FCB24 and S-50590 FCE24 Ignition Boxes

FCE24 Ignition box with High Tension Cord and Spark Plug

Product Specifications

Power Supply	12/24 Volt System (10-30 VDC)
Power Consumption	Typical at 24 VDC 100 mA Max. 200 mA
Int. Power Consumption	145 mA @ 12V 100 mA @ 24V
Operating Temperature	-10°C to 85°C / 14°F to 185°F
Flame Error Timeout	7 sec.

Product

Part no.	Product	Dimension
S-50540	FCB24 Ignition Box	105x35x70 mm
S-50590	FCE24 Ignition Box	105x70x40 mm

Pt-100 Temperature Sensor
For Temperature Control Systems

The Pt-100 Sensor is a temperature input sensor for the SC5-96, STC1600, TC30b and Temperature Controllers.

The sensor is a platinum RTD (resistance temperature detector) sensor, which measures temperature by correlating the resistance of the RTD element with temperature.

The advantages of platinum resistance temperature sensors include:
• High accuracy
• Low drift
• Wide operating range
• Suitability for precision applications

The unit is specifically designed to withstand the tough working conditions of the construction industry.

Pt-100 Temperature Sensor

Product Specifications

Application	Temperature sensor for paving screeds
Operating Temperature	-25°C to 200°C / -13°F to 392°F
Storage Temperature	-40°C to 200°C / -40°F to 392°F
Maximum Deviation	+/- 1°C / 33.8°F
Sensor Type	Pt-100 DIN B

Product

Part no.	Product	Connector
S-50015/1,2	Pt-100 Temperature Sensor, 1,2 m	T-plug
S-50015/1,5	Pt-100 Temperature Sensor, 1,5 m	T-plug
S-50015/2,1	Pt-100 Temperature Sensor, 2,1 m	T-plug
S-50015/2,5	Pt-100 Temperature Sensor, 2,5 m	T-plug
S-50015/3,0	Pt-100 Temperature Sensor, 3,0 m	T-plug
S-50015/5,0	Pt-100 Temperature Sensor, 5,0 m	T-plug
S-50019/0,7	Pt-100 Temperature Sensor, 0,7 m	No Plug
S-50019/3,0	Pt-100 Temperature Sensor, 3,0 m	No Plug
S-50019/5,0	Pt-100 Temperature Sensor, 5,0 m	No Plug
S-50019/6,5	Pt-100 Temperature Sensor, 6,5 m	No Plug
S-50124/0,6	Pt-100 Temperature Sensor, 0,6 m	AMP plug
S-50124/1,2	Pt-100 Temperature Sensor, 1,2 m	AMP plug
S-50124/1,5	Pt-100 Temperature Sensor, 1,5 m	AMP plug

Gas Solenoid Valves and Spark Plugs
For Temperature Control Systems

S-50053, S-50054

Spark plugs and electromagnetic valves for controlling gas flow with the FCE60, FCE24 and FCB24 Ignition Boxes in gas burner systems.

Only the CE marked Gas Solenoid Valves S-50042, S-50043, S-50044 and S-50045 can be used with the FCE60 Ignition Box for a system compliant with EU legislation - Machinery Directive (MD) and Gas Appliances Directive (GAD) compliant systems. Two gas valves per burner are required for MD and GAD compliance.

Thread type of all Gas Solenoid Valves is G1/4i.

Gas Solenoid Valve, 0-4 Bar, 12/24V

S-50042, S-50043   **S-50044, S-50045**

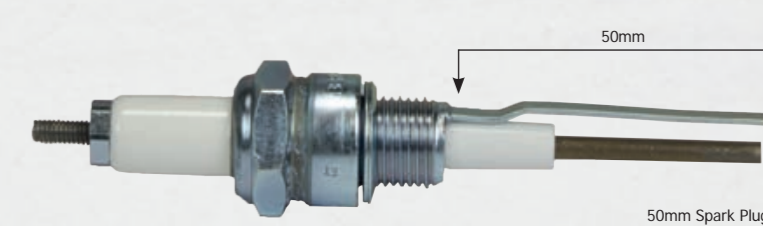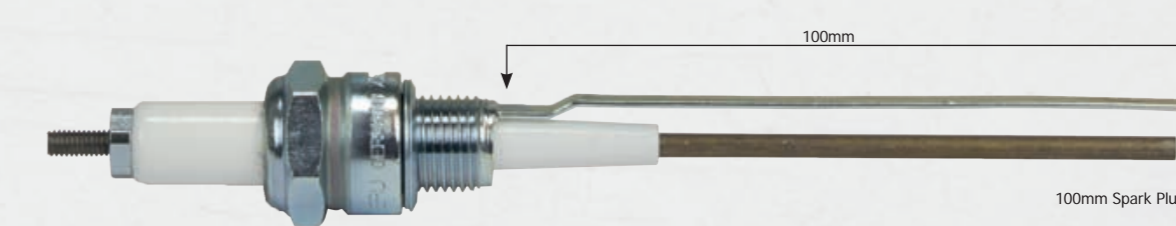Gas Solenoid Valve, 0-5 Bar, 12/24V   Gas Solenoid Valve, 0-3 Bar, 12/24V

35mm

35mm Spark Plug

50mm

50mm Spark Plug

100mm

100mm Spark Plug

Product

Part no.	Product	Installation Position	Power Consumption
S-50042	Gas Solenoid Valve, 0-5 bar, 12V	Arbitrary, but preferably upright	8 W
S-50043	Gas Solenoid Valve, 0-5 bar, 24V	Arbitrary, but preferably upright	8 W
S-50044	Gas Solenoid Valve, 0-5 bar, 12V	Arbitrary, but preferably upright	8 W
S-50045	Gas Solenoid Valve, 0-5 bar, 24V	Arbitrary, but preferably upright	8 W
S-50053	Gas Solenoid Valve, 0-4 bar, 12V	Arbitrary	5 W
S-50054	Gas Solenoid Valve, 0-4 bar, 24V	Arbitrary	5 W
S-50008	Gas spark plug TF-35	35mm	
S-50008/N	Gas spark plug TF-35 w/ nut	35mm	
S-50133	Gas spark plug TF-50	50mm	
S-50133/N	Gas spark plug TF-50 w/ nut	50mm	
S-50009	Gas spark plug TF-100	100mm	
S-50009/N	Gas spark plug TF-100 w/ nut	100mm	

High Tension Cord
For Temperature Control Systems

High Tension Cords to be used with FCB24, FCE24 and FCE60 Ignition Boxes in temperature control systems.

High Tension Cord with ceramic cap, noise resistor and BMW Connector with rubber cap

High Tension Cord with angle cap with built-in noise resistor and BMW Connector with rubber cap

Product

Part no.	Product
S-50007/0,4	High tension cord, 40 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/0,5	High tension cord, 50 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/0,8	High tension cord, 80 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/1,1	High tension cord, 110 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/1,2	High tension cord, 120 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/1,4	High tension cord, 140 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/1,5	High tension cord, 150 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/1,6	High tension cord, 160 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/1,7	High tension cord, 170 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/1,8	High tension cord, 180 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/2,0	High tension cord, 200 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/2,1	High tension cord, 210 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/2,2	High tension cord, 220 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/2,5	High tension cord, 250 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/2,6	High tension cord, 260 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/2,65	High tension cord, 265 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/2,8	High tension cord, 280 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/2,9	High tension cord, 290 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/3,0	High tension cord, 300 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/3,1	High tension cord, 310 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/3,4	High tension cord, 340 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/3,5	High tension cord, 350 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/4,0	High tension cord, 400 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/4,4	High tension cord, 440 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/4,5	High tension cord, 450 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/4,7	High tension cord, 470 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/5,0	High tension cord, 500 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/5,3	High tension cord, 530 cm, w/ ceramic cap, noise resistor and BMW connector
S-50007/5,85	High tension cord, 585 cm, w/ ceramic cap, noise resistor and BMW connector
S-50041/0,45	High tension cord, 45 cm, w/ angle cap and BMW connector
S-50041/0,9	High tension cord, 90 cm, w/ angle cap and BMW connector
S-50041/2,0	High tension cord, 200 cm, w/ angle cap and BMW connector
S-50041/3,0	High tension cord, 300 cm, w/ angle cap and BMW connector

Accessories
For Temperature Control Systems

Product

Part no.		Product
S-50070		**Connector with Gasket for Ignition Box** 4-Pin Connector with gasket for FCB24/FCE24 Ignition Boxes
S-50060		**BMW Connector** M4-thread connector for connection of High Tension Cable to FCE24/FCB24 Ignition Boxes. The BMW connector requires a specially made Crimping Tool for correct mounting on High Tension Cable. Please see S-50234
S-50113		**Rubber Cap** Rubber Cap for insulation of BMW Connector
S-50026		**Noise Resistor** 1kΩ noise resistor for use on High Tension Cable
S-50059/25		**High Tension Cable** High tension silicone cable. Coil of 25m
S-50234		**Crimping Tool for BMW Connector** Crimping Tool especially made for mounting BMW connector on High Tension Cable
S-50150		**Angle Cap** Spark Plug Cap angled at 90º with built-in 1kΩ noise resistor
S-50023		**Ceramic Cap** Woodscrew wire connection, 50mm long
S-50067		**Thread Mount** Thread Mount, Ø18mm

Joint Heater
For Heating of Longitudinal Joints

The Joint Heater is an infrared propane/butane gas burner used on asphalt pavers, assisting in the construction of longitudinal joints.

The Joint Heater will preheat the edge of the previously laid cold lane just prior to placing the new hot mix lane next to it. This approach ensures optimal conditions for a consistent continuous weld of the fresh and previously laid mats, preventing premature cracking of the joint.

The Joint Heater comprises an aluminium frame with four or six burner heads, and an electrical circuit that will open the gas flow and ignite the gas in the burners, when power is applied to the circuit.

The built-in Constant Spark Box will produce sparks continuously during operation to re-ignite the gas on flame blow out.
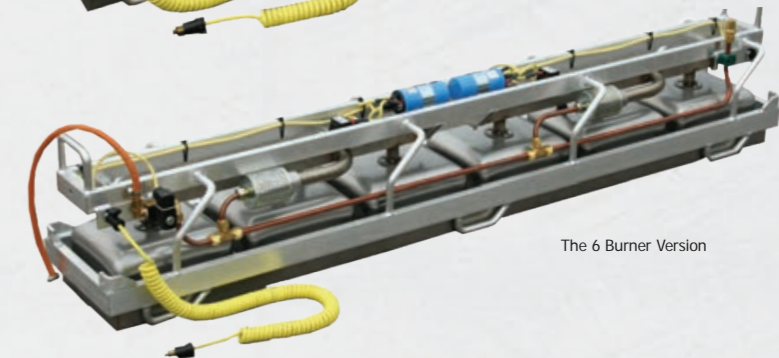
The Joint Heater includes power lead and gas hose.

A Joint Heater Extension Kit is available to connect the 6 burner and 4 burner version for a 10 burner Joint Heater.

The Joint Heater has a DG-3990 Gas Approval Examination Certificate from the Danish Institute of Fire and Security Technology.
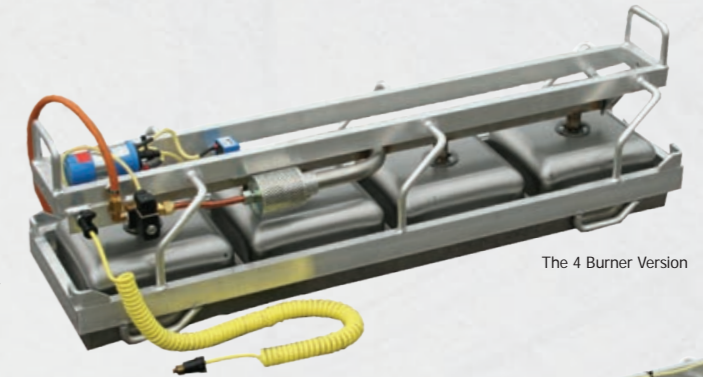
The 4 Burner Version

The 6 Burner Version

Joint Heater Mounting Hooks
S-50785

Joint Heater Mounting Arms
S-50786

Clamping Plates Kit.
Four clamping plates with bolts.
To Clamp on the Mounting Arms.
SP-51628

Product

| Part no.	Product	Burner Heads	Power Supply	Output	Dimensions (LxWxH)
S-50416	Joint Heater	6	12VDC	~40kW at 1.5 bar	180x30x40 cm
S-50418	Joint Heater	6	24VDC	~40kW at 1.5 bar	180x30x40 cm
S-50462	Joint Heater	4	12VDC	~25kW at 1.5 bar	120x30x40 cm
S-50463	Joint Heater	4	24VDC	~25kW at 1.5 bar	120x30x40 cm
S-50468	Extension Kit for Joint Heater	-	-	-	-
S-50791	Joint Heater Mounting	-	-	-	-

Spare Parts

S-50420/4,0	Cable for Joint Heater
S-50020	Ignition Coil
S-50111	TF-1B 12V Constant Spark Box
S-50112	TF-1B 24V Constant Spark Box
S-50150	Spark Plug Cap angled at 90° with built-in 1kΩ noise resistor
S-50009	Gas spark plug TF-100, 100mm
S-50785	Mounting Hooks
S-50786	Mounting Arms for Joint Heater
SP-51628	Clamping Plates Kit (4 plates, bolts, locking nuts and spacers for both Mountings)
SP-51618	Tow Arm Bracket Kit

JOINT HEATER
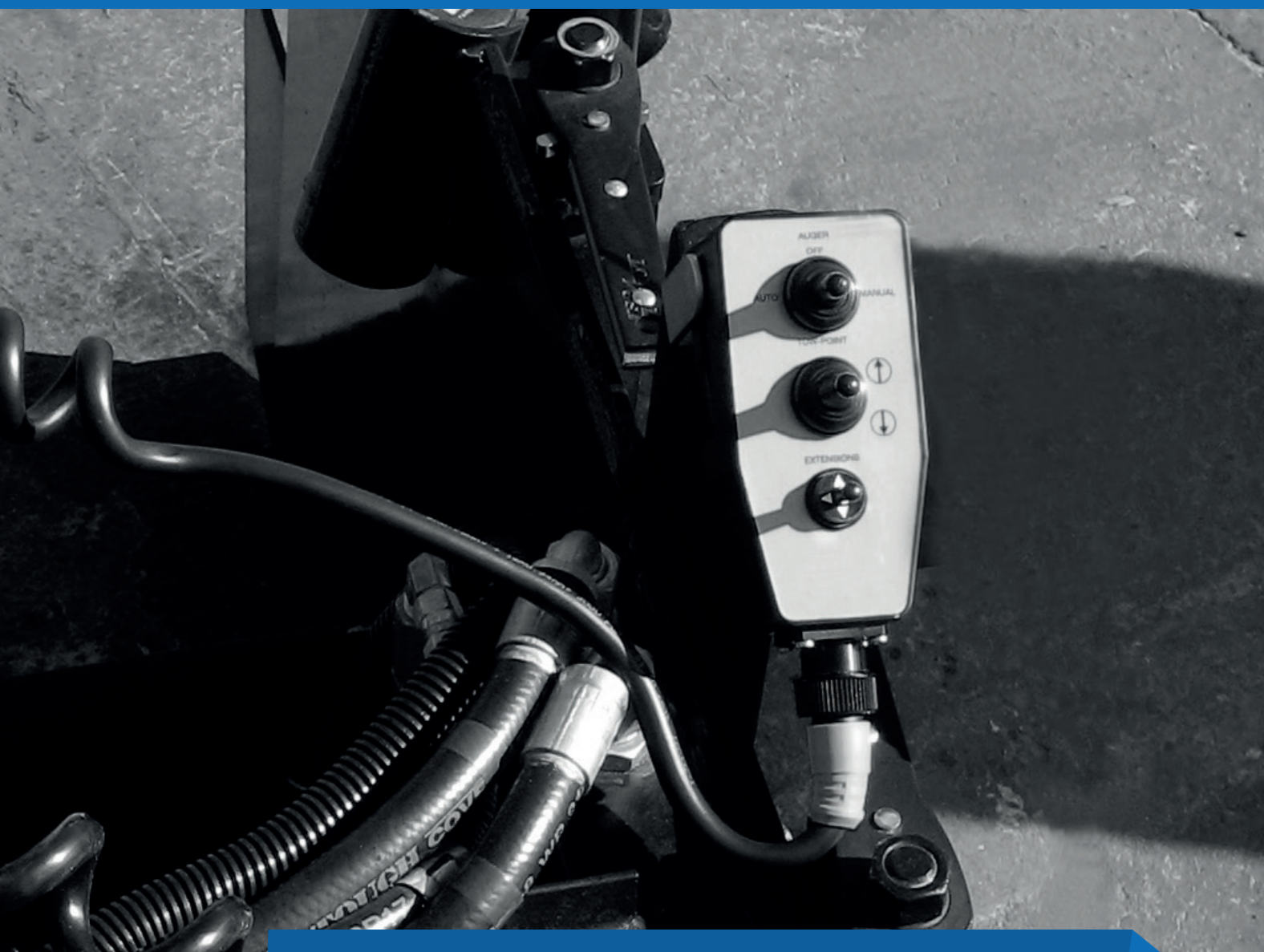
Remote Control
For Asphalt Pavers

The Remote Control enables the user to manually lower or raise the tow-point height, adjust the auger speed and extend the screed extention plates. Each is controlled by its own toggle switch.

Remote Control, Silver   Remote Control, Black

Kit Options

S-50589   S-50267

Kit Contains

P/N	Pcs.	Description
S-50588	2	Remotes, Black
S-50576	2	Mounting Bracket
S-50474	2	Dummy Plug
IR-20350591	2	Cable
S-50950	1	Carry Case

Kit Contains

P/N	Pcs.	Description
S-50266	2	Remotes, Silver
S-50576	2	Mounting Bracket
S-50474	2	Dummy Plug
S-50492	2	Cable
S-50951	1	Carry Case

Product Specifications

Power Supply	0-30 VDC
Storage Temperature	-40°C to 85°C / -40°F to 185°F
Operating Temperature	-10°C to 85°C / 14°F to 185°F
Connector	Male 14 Pin

Product

Part no.	Product
S-50588	Remote Control, Black
S-50589	Remote Control Kit, Black
S-50266	Remote Control, Silver
S-50267	Remote Control Kit, Silver

Accessories

S-50576	Mounting Bracket for Remote Control
IR-20350591	Cable for Remote Control, Black, 1.1m, 14-Pin female + 14-Pin male
S-50492	Cable for Remote Control, Silver, 1.1m, 14-Pin female + 14-Pin male
S-50474	Dummy Plug
S-50950	Carry Case for Remotes, Black
S-50951	Carry Case for Remotes, Silver

REMOTE CONTROL

TECHNOLOGIES
PAVING INNOVATION