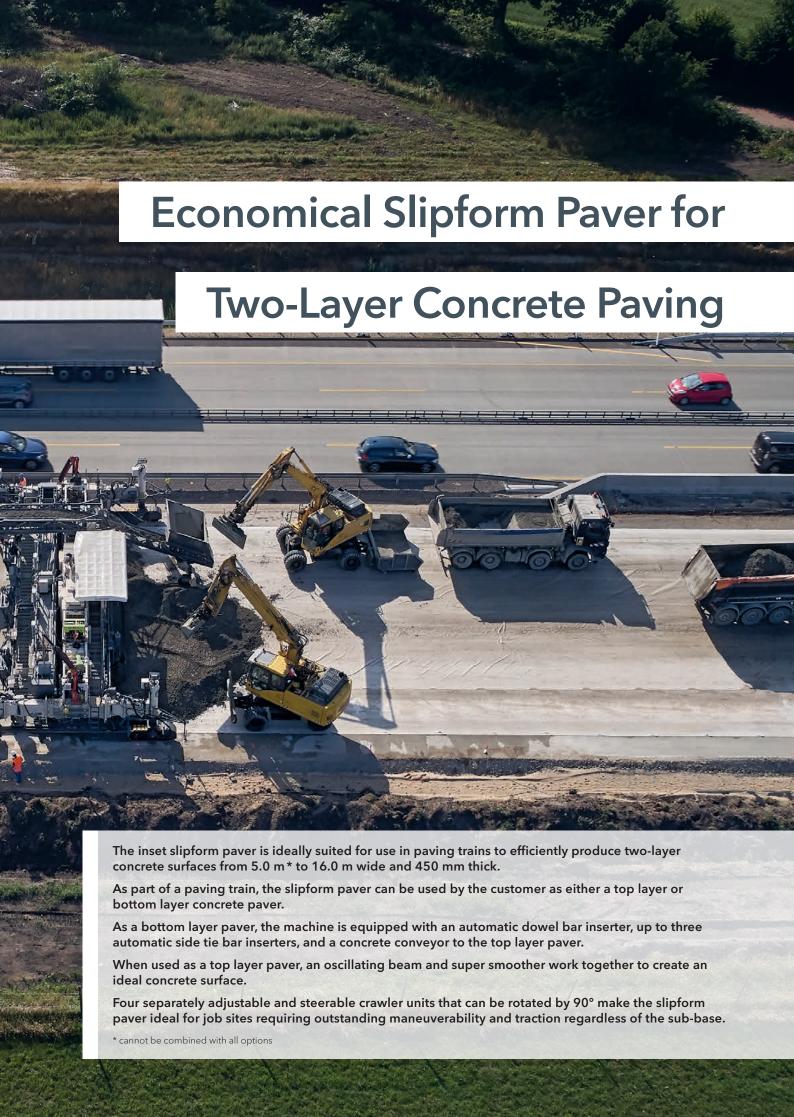


 $\frac{02}{03}$ 



# Highlights of the SP 154i Slipform Paver

#### **SWING LEGS**

Hydraulically adjustable swing legs make it possible to quickly and easily adapt the crawler units to the respective job site conditions.

#### **CRAWLER UNITS**

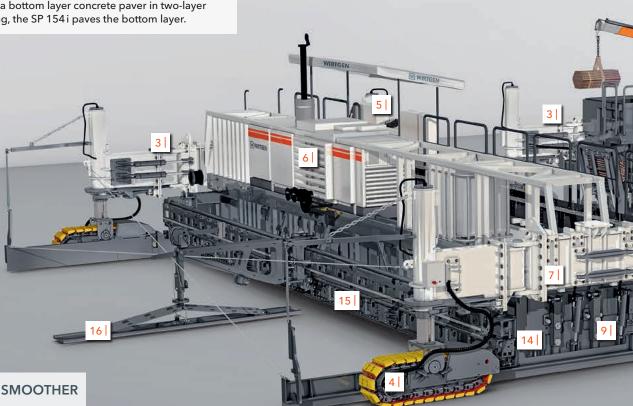
Hydraulically-powered, individually height-adjustable and steerable crawler units for precise driving behavior and high-precision concrete paving.

### 21 SP 154 i TOP LAYER CONCRETE PAVER

When used as a top layer paver in two-layer concrete paving, the SP 154 i paves the top layer "wet on wet."

11 SP 154 i BOTTOM LAYER CONCRETE PAVER

When used as a bottom layer concrete paver in two-layer concrete paving, the SP 154i paves the bottom layer.



**SUPER SMOOTHER** 

Super smoother for a perfect surface finish.

### **HEAVY-DUTY OSCILLATING BEAM**

Eccentric-driven, heavy-duty oscillating beam to smooth the surface

### SIDE TIE BAR INSERTER

Automated, precise insertion of side tie bars according to dowel bar plan when paving adjacent lanes and extensions.

### LONGITUDINAL **TIE BAR INSERTER**

Automated, precise insertion of longitudinal tie bars according to the dowel bar plan to prevent adjacent slabs from drifting apart.

### 51 OPERATOR'S PLATFORM

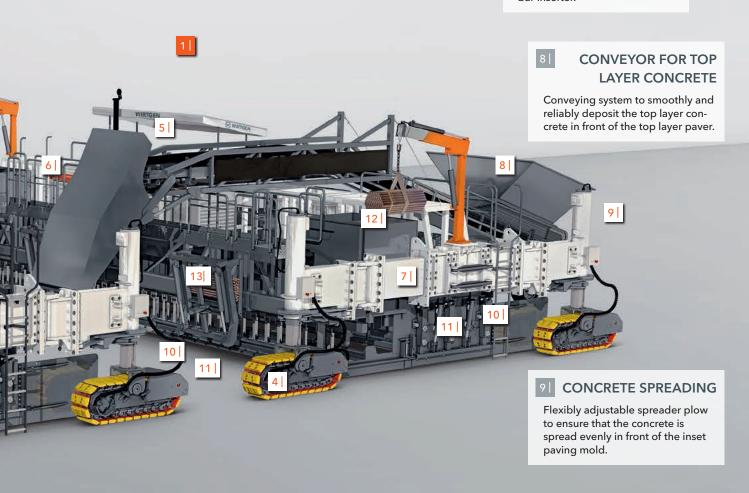
Full-length, ergonomically designed operator's platform for fatigue-free, productive working.

Modern engine technology with high maximum engine power that meets EU Stage 5 / US EPA Tier 4f emission standards and ECO mode for economical diesel consumption and low noise emissions.

**DRIVE UNIT** 

# 71 TELESCOPING MACHINE FRAME

Longitudinally telescoping machine frame for using the dowel bar inserter.



### 12 | DOWEL BAR INSERTER

Automated, precise insertion of dowel bars according to the dowel bar plan to maintain the elevation levels of adjacent slabs.

### 11|

## INSET PAVING MOLD

Inset paving mold integrated into the machine frame between the crawler units for even, precise concrete paving.

#### 10|

### **ELECTRIC VIBRATORS**

Electric vibrators for reliable concrete compaction with constant high compaction performance and low power consumption.



# When It Comes to Concrete Paving, This Paving Train Is an Express Train

## HIGH-QUALITY, TWO-LAYER CONCRETE SURFACES

WIRTGEN uses a proven method to efficiently pave two-layer concrete pavements. The paving train consists of three separate units: a bottom layer paver, a top layer paver, and a TCM texture curing machine. In this context, the SP 154i slipform paver can be used by the customer as both a bottom layer and top layer paver.

Thanks to this ingenious concrete paving method, the resulting high daily production rates, easy transport, and variety of configuration options, the paving train is capable of cost-effectively producing high-quality two-layer concrete slabs up to 16.0 m wide in record time. The flexible SP 154i is equipped with four crawler units. The units are able to

operate independently of each other, which simplifies machine transport by reducing the time and effort required for assembly and disassembly. In addition, the SP 154 i's high degree of automation makes it possible to work extremely cost-effectively.

Paving two concrete layers simultaneously is a recognized method to economically produce concrete surfaces.





- 1 In this efficient process, the top layer concrete and bottom layer concrete are paved in immediate succession.
- 2 The SP 154i can be used as both a bottom layer and top layer paver, depending on the requirements.



# Save Time and Cut Costs When Paving the Bottom Layer Concrete

## THE RELIABLE PAVING METHOD FOR SUPERIOR RESULTS

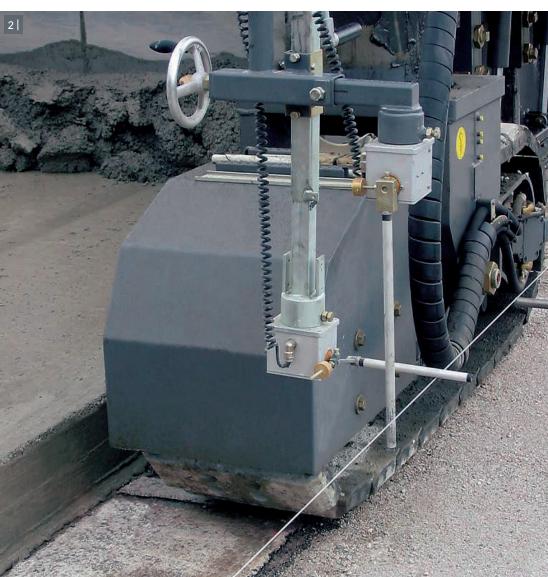
Deposit the concrete for the bottom layer in front of the SP 154i and the machine will take care of the rest virtually automatically – a truck dumps the concrete in front of the bottom layer paver, which spreads it evenly across the entire width using a spreader plow. The metering gate ensures that the height of the concrete in the compaction chamber remains constant.

Electric vibrators use high-frequency vibrations to compact the concrete. The heavy-duty

slipform mold paves pave the concrete true to line and level while the paver moves forward. Then dowel bars and tie bars are precisely inserted into the bottom layer concrete. The result is a low-cost, homogeneous concrete surface that serves as an ideal base for the high-quality top layer concrete.

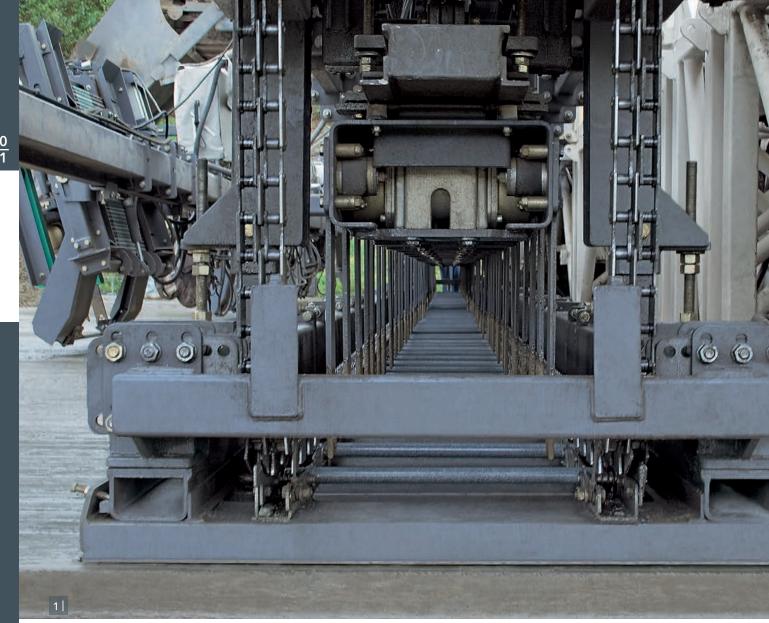
Four crawler units provide excellent stability and good traction regardless of the surface conditions. A small minimum distance between the crawler units and the concrete surface make cost savings possible when preparing the sub-base.





- 1 Cost-effective paving of lowcost bottom layer concrete at working widths of up to 16.0 m.
- 2 | Sensors for height and direction control. Crawler tracks travel close to the concrete surface.
- 3 | Standardized design across all models: Stateof-the-art control units and control systems.





# Automated Dowel Bar Insertion without Stopping Construction

## EXPLOIT SAVINGS POTENTIAL WITH A HIGH DEGREE OF AUTOMATION

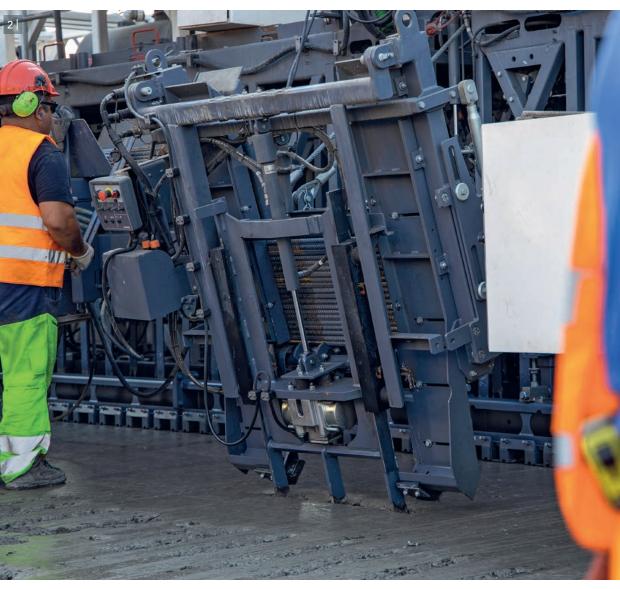
The ability to automatically insert dowel bars and tie bars into the concrete is another of the SP 154 i's impressive features. The dowel bars are inserted lengthwise into the precompacted bottom layer concrete, the tie bars perpendicular to the roadway. What makes this system so special is that the dowel bar inserter attached to the machine is movably mounted so that it can move in the direction of travel, meaning that it remains above the insertion point without the need to interrupt the machine's forward movement until the

dowel bars have been precisely inserted into the concrete.

The dowel bar and tie bar insertion process is highly automated. The dowel bars are dispensed fully automatically from the dowel magazine. As a result, the labor required for the dowel bar insertion process is reduced to simply monitoring the process and stocking the dowel bars.

Dowel bar and tie bar lengths and intervals can be modified in accordance with project requirements.





- 1 The dowel bar inserter remains above the point of insertion as the machine continues to move forward.
- 2 | Automatic insertion of the longitudinal tie bars.
- 3 4 | The tie bars are inserted into the bottom layer concrete with pinpoint precision.
- 5 | The dowel bars are conveniently lifted onto the machine in packages via crane and placed into the dowel magazine.









# The Next Step: Wet-On-Wet Paving of the Top Layer

## PAVING THE SECOND CONCRETE LAYER DIRECTLY AFTER THE FIRST

Second-to-none, functional solutions geared to job site requirements are also used to pave the top layer concrete. In this process, a conveyor transports the top layer concrete over the bottom layer paver and deposits it onto the freshly paved bottom layer concrete in front of the top layer paver – an ingeniously simple solution.

The top layer paver travels over the concrete at a constant speed, evenly spreading it over the entire width with a spreader plow. The top layer is compacted and paved "wet on wet" while the paver keeps moving forward. T-vibrators specifically designed for the top layer concrete ensure that compaction is carried out perfectly. The oscillating beam and super smoother then produce a perfect surface finish.

The high degree of automation allows the paving crew to fully focus on monitoring the process.



- 1 | Concrete is transported in front of the top layer concrete paver by means of a belt conveyor.
- 2 | Uniform distribution of the deposited top layer concrete over the entire paving width.
- 3 High-precision stringline scanning ensures that all machines produce consistent and accurate results.



# Automated Smoothing: For the Perfect Finishing Touch

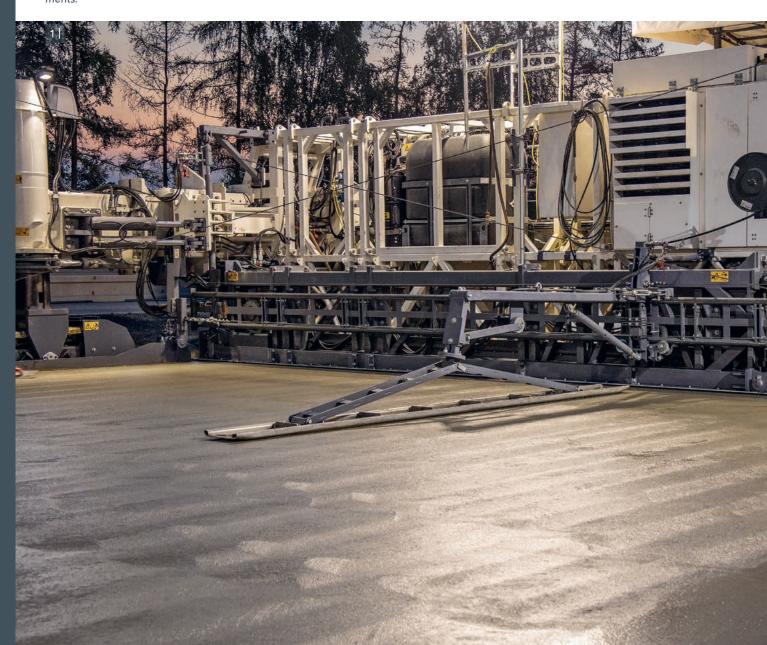
#### A PERFECT FINISH FOR A PERFECT SURFACE

An ideal surface finish is one factor that determines the quality and service life of a road surface. The SP 154 i also stands out in this regard because it delivers outstanding results.

The top layer concrete that was paved wet on wet bonds perfectly with the bottom layer concrete. As the machine continues to travel over the road surface, the oscillating beam oscillates across the direction of travel and the super smoother following behind it oscillates in the direction of travel. This combination always ensures that the desired surface structure is achieved.

The hydraulically adjustable side plates on both sides minimize concrete loss. In addition, the trailing form and extended side plates, which are designed for the respective paving thickness, produce perfect concrete edges.

1 After smoothing, the concrete surface meets all of the quality requirements.

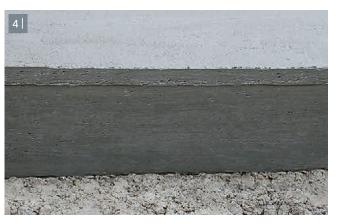


2 | Hydraulically adjustable side plates produce clean edges.









3 The heavy-duty oscillating beam oscillates continuously across the direction of travel to produce a level surface.

4 | Expensive material only needs to be used for the thin, upper layer.



# Texture Curing for Ideal Results - From the Same Supplier

## WELL-ENGINEERED DOWN TO THE LAST DETAIL

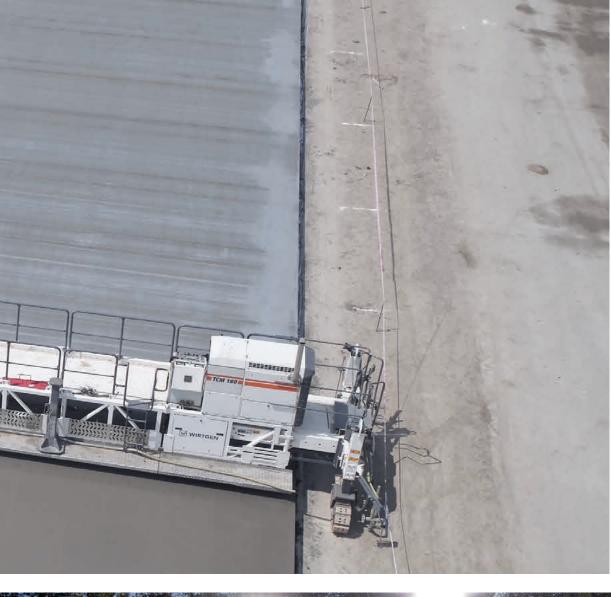
The paving train is equipped with a multitude of practical, time-saving features.

These include the tried-and-tested texture curing machine that follows right behind the two slipform pavers. To give the surface the perfect texture and grip, either a burlap sheet, artificial turf, or a brush can be dragged lengthwise or crosswise over the freshly paved concrete.

For effective protection against rapid evaporation and cracking, the entire width of the concrete is sprayed with a special curing agent. A foil can also be automatically applied to the road surface to protect the concrete from the elements. For this purpose, the machine can be equipped with a foil unwinder.

The TCM texture curing machine supports all common texturing and curing methods, such as exposed aggregate concrete design or longitudinal brushing.

The operator's platform of the texture curing machine offers excellent visibility and ergonomically arranged controls that fit seamlessly into the operating concept of the WIRTGEN slipform paver fleet. Long periods of productivity are guaranteed by a generously sized storage container for the curing agent. Optional ancillary equipment is available to extend the machine's range of applications, such as an agitator, a filler pump, a crane, or a water heating system for removing any residual curing agent remaining in the hoses and nozzles.



- 1 The texture curing machine is used to produce the required surface texture and, in the same operation, applies a combined dispersion to protect the surface.
- 2 The final application of a concrete protection agent prevents the concrete from drying out too quickly and cracking.



# **Technical Specifications**

Area of Application	Roadways, airfields, container terminals
Concrete Spreading	
Spreader plow for working widths of	5,000 - 16,000 mm
Paving Equipment for Bottom Layer Concrete	
Working width	5,000 - 16,000 mm*1
Paving thickness	0 - 450 mm* <sup>1</sup>
Crown profile adjustment	At a paving width of 5,000 mm - 9,500 mm: max. 3%
Dowel Bar Inserter	
Working width	5,000 - 16,000 mm* <sup>2</sup>
Dowel bar diameter	25 - 40 mm* <sup>2</sup>
Dowel bar length	450 - 600 mm* <sup>2</sup>
Longitudinal Tie Bar Inserter	
Tie bar diameter	20 - 40 mm* <sup>3</sup>
Tie bar length	400 - 1,200 mm*³
Vibration for Bottom Layer Concrete	
Connectors for electric vibration	16, can be extended to 48 (optional)
Number of electric vibrators, curved	16, can be extended to 48 (optional)
High-frequency generator	80 kVA
Paving Equipment for Top Layer Concrete	
Working width	5,000 - 16,000 mm*1
Paving thickness (bottom layer and top layer concrete)	0 - 500 mm*1
Crown profile adjustment	At a paving width of 5,000 mm - 9,500 mm: max. 3%
Side Tie Bar Inserter	
Tie bar diameter	20 - 40 mm* <sup>3</sup>
Tie bar length	400 - 800 mm* <sup>3</sup>
Vibration for Top Layer Concrete	
Connectors for electric vibration	16, can be extended to 32 (optional)
Number of electric T-vibrators	10, can be extended to 32 (optional)
High-frequency generator	80 kVA
Oscillating Beam	
Working width	5,000 - 16,000 mm
Super Smoother	
Working width	5,000 - 16,000 mm

 $<sup>^{\</sup>star 1}$  = Other special applications available on request

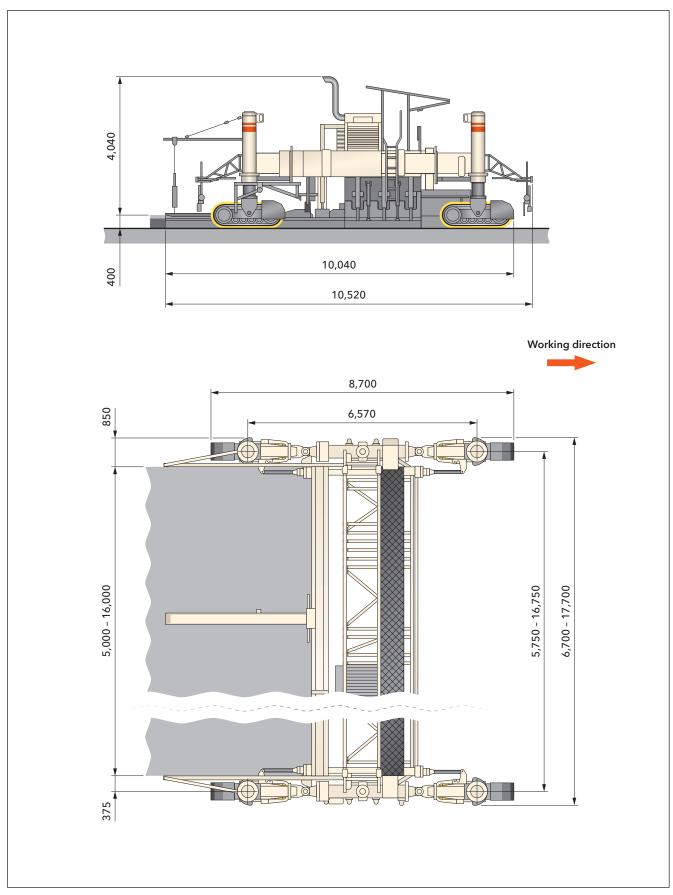
<sup>\*\*2 =</sup> Applicable to the range of dowel bar sizes listed, other sizes available on request, the dowel bar inserters are configured according to preselected customer requirements

\*\*3 = Applicable to the range of tie bar sizes listed, other sizes available on request, longitudinal tie bar inserter and / or side tie bar inserter configured according to preselected customer requirements

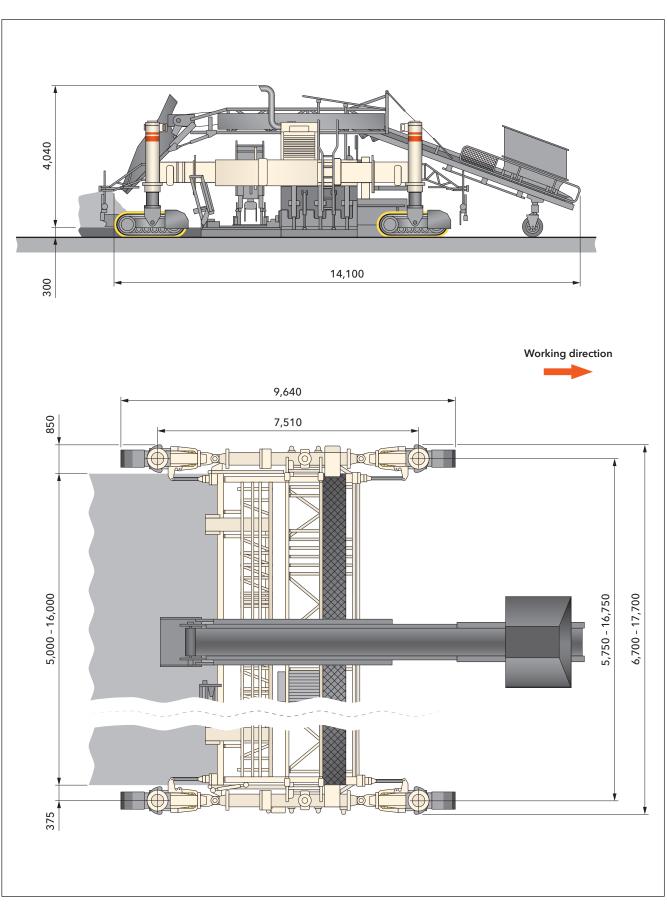
Engine	
Manufacturer	Cummins
Туре	L9 C430
Cooling	Water
Number of cylinders	6
Rated power at 2,100 rpm	321 kW / 430 hp / 436 PS
Displacement	8,900 cm <sup>3</sup>
Fuel consumption, full load   2/3 load	88.41/h   58.91/h
Sound power level in accordance with EN 500-6, engine   operator's platform	≤ 104 dB(A)   ≥ 86 dB(A)
Emissions standard	EU Stage 5 / US EPA Tier 4f
Electrical System	
Power supply	24 V
Tank Capacities	
Fuel	800
AdBlue*/ DEF*4	95 I
Hydraulic oil	165
Water	870 I
Driving Performance	
Operating speed	0 - 5 m / min
Travel speed	0 - 20 m / min
Crawler Units	
Number	4
Steering angle	±30°
Dimensions (L x W x H)	2,100 x 350 x 715 mm (optional: 2,100 x 430 x 715 mm)
Machine Height Adjustment	
Max. hydraulic height adjustment	950 mm
Transport Dimensions (L x W x H)	
Machine for bottom layer concrete with working width of 16,000 mm	22,250 mm x 3,800 mm x 3,100 mm
Machine for top layer concrete with working width of 16,000 mm	22,250 mm x 3,600 mm x 3,100 mm
Weight Specifications *5	
Operating weight, CE*6 of basic machine with options for bottom layer concrete with working width of 16,000 mm	73,580 kg
Operating weight, CE*6 of basic machine with options for top layer concrete with working width of 16,000 mm	61,720 kg
Transport weight of basic machine with options for bottom layer concrete with working width of 16,000 mm	66,060 kg
Transport weight of basic machine with options for top layer concrete with working width of 16,000 mm	58,820 kg

 $<sup>^{*4}</sup>$  = AdBlue® is a registered trademark of the German Association of the Automotive Industry (VDA).  $^{*5}$  = Weight specifications depend on the installed equipment and working width  $^{*6}$  = Machine weight, half-full tanks, vehicle tool kits, machine operator (75 kg), excluding optional equipment

# **Dimensions**



 $\ensuremath{\mathsf{SP}}\,154\,\mathrm{i}\,\mathrm{slipform}$  paver, concrete unit for top layer concrete Dimensions in mm



SP 154i slipform paver, concrete unit for bottom layer concrete Dimensions in  $\ensuremath{\mathsf{mm}}$ 

# **Standard Equipment**

SP 154i

	Bottom-Layer Concrete	Top-Layer Concrete
Basic Machine		
Fuel tank 800 liters		-
Hydraulic oil tank, 165 l		•
Water tank, 870 l		
AdBlue tank, 95 l		
Separate hydraulic oil cooler		-
Electrical system (24 V)		-
Hydraulic system including an generously dimensioned hydraulic oil tank and a pump transfer gearbox with four output shafts and the pumps required for the machine's basic equipment package	•	•
High frequency generator, 80 kVA, 110 V, 200 Hz, with a hydraulic drive motor, for a maximum of 48 vibrators for concrete compacting		•
Main Frame and Height Adjustment		
Equipped with paving molds between the track units for a working width of at least 5.00 m	•	•
The frame with paving molds can be extended to 16.00 m using extension elements		
Four hydraulic leveling cylinders with a stroke of 0.95 m		
Crawler Units and Chassis Linkage		
Infinitely variable paving speed from 0 - 5.00 m / min		-
Infinitely variable transport speed from 0 - 20 m / min		•
Hydraulic motors with two speed ranges		-
Four track units type B4 with polyurethane track pads, 350 mm		
Machine Control, Leveling and Steering		
WI-CONTROL - high-quality control system ensuring perfect interaction between all machine features		
Proportional electrohydraulic leveling and steering by means of a PLC system including four leveling sensors and two steering sensors	•	•
Sensor mounting brackets, adjustable in height and range		
Vibration		
16 curved vibrators D76, electrically driven, including suspension		-
10 x curved vibrators D76, electrically driven	_	
Concrete Equipment for Slab Paving		
Spreading plow with two drives		
= Standard equipment		

Standard equipment
 Standard equipment, can be replaced with optional equipment if desired

= Optional equipment

	Bottom-Layer Concrete	Top-Layer Concrete
Concrete Equipment for Slab Paving		
Depth paving mold left and right 0.20 m (others on request)		_
Depth paving mold left and right 0.30 m (others on request)	-	•
Metering gate for molds - basic width 5.00 m		
Single-piece side plate for paving molds		
Automatic dowel bar inserter, base 5.00 m		_
Base group for dowel bar inserter (DBI) for paving widths of up to 5.00 m		-
Electrical control DBI / TBI		_
Oscillating beam - basic width 5.00 m	-	
Super smoother 5.00 m - 16.00 m	-	
Operator's Platform		
Ergonomically designed operator's platform providing a perfect view of the paving process		•
Equipment of the operator's platform with a height adjustable stand-up seat		•
Three control panels with clear, language-independent labeling for ergonomic operation		
Control panel 1 for machine setup according to site requirements		•
Control panel 2 with multifunctional control screen providing the operator with all relevant machine parameters and allowing settings to be made via a menu	•	•
The control panel can be adjusted to all directions of travel and paving configurations		•
Control panel 3 for controlling the concrete equipment		•
Both control panels (2+3) can be safely stored on the machine for transport		•
Automatic recognition of each machine configuration provides easy orientation for the machine operator		
Miscellaneous		
Large tool kit in lockable tool box		
Comprehensive safety package with EMERGENCY STOP switches		•
Pre-fitting for installing the WITOS FleetView control unit		
Filling of the machine's hydraulic system with mineral hydraulic oil		-
Standard painting in RAL 9001 (cream)		
WITOS FleetView - professional telematics solution for machine operation and service optimization		
Lighting system including 4 halogen working lights, 24 V		
- Standard aguinment		

# **Optional Equipment**

	Bottom-Layer Concrete	Top-Layer Concrete
Crawler Units and Chassis Linkage		
Four track units type B4 with polyurethane track pads, 430 mm		
Machine Control, Leveling and Steering		
Two slab tracers		
Four slab tracers		
Pre-fitting for 3D leveling		
Additional slope sensors for 3D leveling		
Vibration		
Suspension for vibrators		-
Curved vibrator D76, electrically driven		-
Horizontal T-vibrator, electrically driven, 0.50 m wide	-	
Connection box for 8 vibrators		
Concrete Equipment for Slab Paving		
Automatic metering gate control for concrete paving mold		
Metering gate - extension element 0.25 m		
Metering gate - extension element 0.30 m		
Metering gate - extension element 0.40 m		
Metering gate - extension element 0.50 m		
Metering gate - extension element 0.75 m		
Metering gate - extension element 1.00 m		
Metering gate - extension element 1.25 m		
Metering gate - extension element 1.75 m		
Metering gate - extension element 2.00 m		
Two-piece side plate for paving molds		
Paving mold - extension element 0.25 m		
Paving mold - extension element 0.30 m		
Paving mold - extension element 0.40 m		
Paving mold - extension element 0.50 m		

Concrete Equipment for Slab Paving  Paving mold - extension element 0.75 m  Paving mold - extension element 1.00 m	
Paving mold - extension element 1.00 m	
Paving mold - extension element 1.25 m	
Paving mold - extension element 1.75 m	
Paving mold - extension element 2.00 m	
Dowel bar inserter (DBI) - extension element 0.25 m	-
Dowel bar inserter (DBI) - extension element 0.30 m	-
Dowel bar inserter (DBI) - extension element 0.40 m	-
Dowel bar inserter (DBI) - extension element 0.50 m	-
Dowel bar inserter (DBI) - extension element 0.75 m	-
Dowel bar inserter (DBI) - extension element 1.00 m	-
Dowel bar inserter (DBI) - extension element 1.25 m	-
Dowel bar inserter (DBI) - extension element 1.75 m	-
Dowel bar inserter (DBI) - extension element 2.00 m	-
Base group for dowel bar inserter (DBI) for paving widths of up to 6.00 m	_
Base group for dowel bar inserter (DBI) for paving widths of up to 7.00 m	-
Base group for dowel bar inserter (DBI) for paving widths of up to 8.00 m	-
Base group for dowel bar inserter (DBI) for paving widths of up to 9.00 m	-
Base group for dowel bar inserter (DBI) for paving widths of up to 10.00 m	-
Base group for dowel bar inserter (DBI) for paving widths of up to 11.00 m	-
Base group for dowel bar inserter (DBI) for paving widths of up to 12.00 m	-
Base group for dowel bar inserter (DBI) for paving widths up to 13.00 m	-
Base group for dowel bar inserter (DBI) for paving widths up tp 14.00 m	-
Base group for dowel bar inserter (DBI) for paving widths up to 15.00 m	-
Base group for dowel bar inserter (DBI) for paving widths up to 16.00 m	_
One longitudinal joint tie bar inserter with path measuring system for tie bars ø $12$ - $25$ mm, length $400$ - $800$ mm	-
Two longitudinal joint tie bar inserters with path measuring system for tie bars ø $12$ - $25$ mm, length $400$ - $800$ mm	-

# **Optional Equipment**

	Bottom-Layer Concrete	Top-Layer Concrete
Concrete Equipment for Slab Paving		
Three longitudinal joint tie bar inserters with path measuring system for tie bars ø $12$ - $25$ mm, length $400$ - $800$ mm		-
A longitudinal joint tie bar inserter with path measuring system for tie bars ø 12 - 25 mm, length 800 - 1,200 mm		-
Two longitudinal joint tie bar inserters with path measuring system for tie bars ø 12 - 25 mm, length $800$ - $1,200$ mm		-
Three longitudinal joint tie bar inserters with path measuring system for tie bars ø 12 - 25 mm, length 800 - 1,200 mm		-
Longitudinal joint tie bar magazine for approx. 200 tie bars with ø 20 mm		_
Oscillating beam - extension element 0.25 m	_	
Oscillating beam - extension element 0.30 m	_	
Oscillating beam - extension element 0.40 m	_	
Oscillating beam - extension element 0.50 m	_	
Oscillating beam - extension element 0.75 m	_	
Oscillating beam - extension element 1.00 m	_	
Oscillating beam - extension element 1.25 m	_	
Oscillating beam - extension element 1.75 m	_	
Oscillating beam - extension element 2.00 m	_	
Concrete Equipment for Two-Layer Concrete Paving		
Belt conveyor for upper layer		_
Operator's Platform		
Weather canopy for operator's platform, hydraulically telescoping in height		

	Bottom-Layer Concrete	Top-Layer Concrete
Miscellaneous		
Painting in one special color (RAL)		
Painting in two special colors (RAL)		
High-performance lighting system including 8 LED working lights, 24 V		
Stringline tensioning system, complete with 1,000 m steel wire rope		
Additional tensioning winch for stringline tensioning system		
High-pressure cleaner		
Additional water tank, black, 1,100 litres		
Self-leveling feature for transport mode		
Two flashing beacons, 24 V, with magnetic base		
Rotating beacon, halogen 24 V, with magnetic base		
Automatic crown adjustment for machines without an oscillating beam		
Four LED floodlights (24 V), including bracket		
Four LED floodlights (220 V), including power generator		
High-performance lighting system including 4 LED working lights, 24 V, for illuminating the compaction compartment		
Hydraulically driven crane system		
Machine commissioning (day rate)		_
Export packaging		
Exportverpackung		

 <sup>■ =</sup> Standard equipment
 □ = Standard equipment, can be replaced with optional equipment if desired
 □ = Optional equipment



WIRTGEN GmbH

Reinhard-Wirtgen-Str. 2 · 53578 Windhagen · Germany Phone: +49-264-5131-0 · Fax: +49-264-5131-392 Internet: www.wirtgen.de · E-mail: info@wirtgen.de







