



PATCHING &  
MAINTENANCE

SP5E

# BERGKAMP®



## SP5E

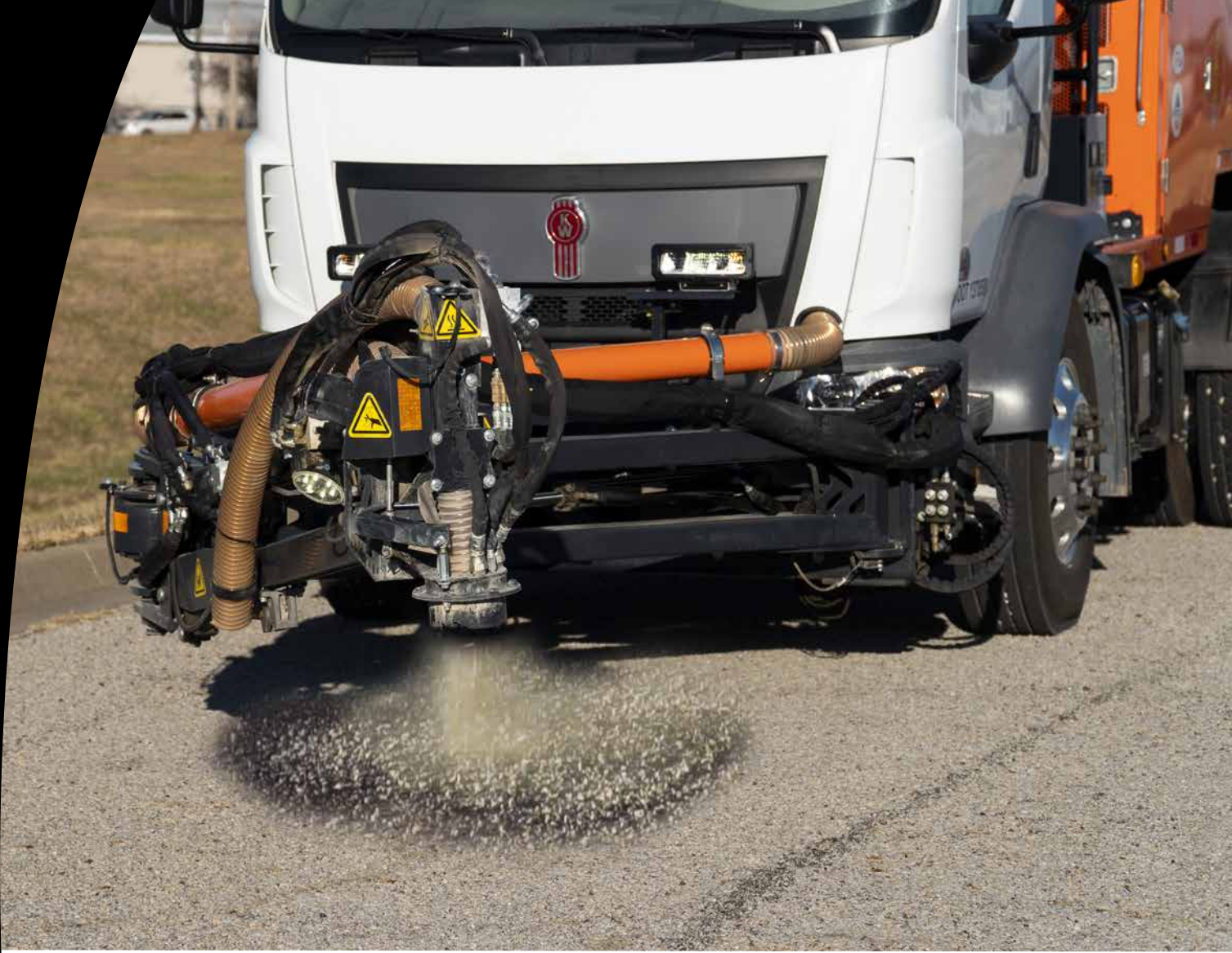
### Spray Injection Pothole Patcher



SCAN WITH  
CAMERA APP

Safe, Quick, and Simple Pothole Repair and Management.

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## Offering the Safest Pothole Patching Solutions in the Industry

Bergkamp brings together the best options in pothole patching solutions for government agencies and contractors worldwide. With the SP5E truck-mounted spray injection pothole patcher, we offer safe, simple, and quick patching solutions.

Every piece of our equipment is backed by an experienced technical support staff and extensive parts inventory. Each equipment delivery comes complete with application, operation, and maintenance training, as well as comprehensive parts and operation manuals. This level of attention to our customers ensures that every startup is smooth and trouble-free. And our experienced support staff is always just a telephone call away.

All Bergkamp pothole patchers are available for purchase through these government procurement services:



## Safer By Design

Safety for your crew members and the traveling public is our first priority, and the safety features of the SP5E truly set it apart from other spray injection patchers:

- One-person operation from inside the truck
- Asphalt repairs are handled from the front of the machine
- Traffic stays safely behind the patcher
- Lights, arrow boards, and camera options (basic or 360-degrees) provide additional safety measures



## B-FIT Service Program Offers Additional Security

# B-FIT

FOLLOW-UP / INSPECTION / TRAINING

Peace of mind is what we all want. That's why, during the first year of your patcher ownership, we offer a free B-FIT visit — our Follow-up, Inspection, and Training program. The program includes an annual onsite visit from one of our technicians to inspect your equipment and provide additional crew training. Our B-FIT program helps to keep your investment performing well, so you can rest assured you have made a safe, sound decision. Additional visits are available for purchase.

## B-FIT Offers

- **Safety for Workers:** Ensures proper factory safety measures and operator procedures are in place.
- **Safety for the Public:** Well-functioning equipment can repair more potholes per day.
- **Protection for the Environment:** Better performance means less pollution.
- **Peace of Mind:** Our annual inspection checks your patcher and trains your crews to make sure your equipment is operating optimally, and your crews are operating safely.



# The SP5E: Spray Patching Made Safer and Easier



The SP5E is simple to use. By design, your operators will be proficient at producing quality, long-lasting pothole repairs with minimal training time. Each repair takes just a few minutes, where traditional hot-mix patchers require much more time to complete a patch. The SP5E requires just one operator, so it frees your crew members for other tasks.

The Bergkamp SP5E is truck-mounted and can be operated safely from inside the cab, utilizing industry-leading material mix control technology. Units are equipped with a joystick and touchscreen display that provide full operator control from the truck cab.

## As Seen on the News:

The City of San Antonio, Texas, fills 100 potholes a day with Bergkamp's spray injection pothole patcher.



Our exclusive **SPECS (Smart Patching Equipment Control System)** controls material outputs according to a configurable mix design, increasing the quality and repeatability of pothole repairs. Easy-to-follow steps on the touchscreen display simplify operation, increasing operator efficiency. SPECS also monitors boom position, temporarily stopping boom movement and notifying the operator if the boom is moved outside of the user-defined safe operating zone. This helps to increase safety for the operator and public.



The SP5E is also fully compatible with Bergkamp's exclusive telematics solution — **InPave® Technology Pothole Patching Management System** — which provides agency administrators with the most innovative and supported method to manage pothole patching data and costs for planning and budgetary purposes. The SP5E is the only spray patcher on the market compatible with InPave.





# SPRAY INJECTION PATCHER PROCESS

Bergkamp's SP5E provides a safe, simple, and quick pothole repair using the spray injection patching process that is designed to completely fill and cover each pothole without the operator leaving the truck. The steps are outlined below.

**1**

## STEP 1

Blow air into the pothole to clean out and dry the damaged area.

**2**

## STEP 2

Spray the pothole with asphalt emulsion, covering the cleaned pothole and coating the cracks and edges around the pothole. This primes the surface for optimal adhesion.

**3**

## STEP 3

Fill the pothole completely with a homogeneous mixture of asphalt emulsion and the proper gradation of aggregate from the single-chamber or dual-chamber hopper.

**4**

## STEP 4

Cover the repaired pothole with clean, dry, uncoated stones to form a tack-free surface.



## COMPLETED REPAIR

Compaction is not necessary. Pothole patch is ready for traffic.



# SP5E Spray Injection Pothole Patcher

## Features



### SPECS (Smart Patching Equipment Control System):

SPECS provides a solution to the common challenge of delivering the correct emulsion-to-aggregate mixture. When patching, as the operator increases or decreases the aggregate output rate, SPECS automatically adjusts the emulsion output to maintain the pre-determined mix ratio. This ability increases consistency on every patch. The 7-inch touchscreen display allows interaction with these aspects of the machine and patch process:

- The patching process steps
- Emulsion-to-aggregate mix ratio
- Emulsion temperature
- Aggregate hopper level
- Material output rates
- Calibration information
- Machine status indicators and warnings
- Spray boom position warning

### Joystick Operator Controls:

The joystick was developed to make pothole repair easier, safer, and more efficient. As a safety feature, an operator-presence switch on the joystick prevents unintended movement if the joystick is accidentally bumped.



### Front-Mounted Working Boom:

The two-piece folding boom provides a large working reach of 14.5 feet (4.4 m) and has a spray head oscillation feature, delivering precise control when repairing potholes. The boom's automated latch enables the operator to securely stow the boom for travel without leaving the safety of the cab.



### Self-Clearing Spray Head:

During blowout, the spray head directs a maximum air blast to clear debris. While tack-coating, the three spray nozzles allow for even coverage of the hole. When mixing aggregate and emulsion for the fill, the emulsion spray pattern ensures homogeneous aggregate coating. It also reduces overspray around the patch. During the final dust-coating, SPECS automatically directs a blast of air through the spray nozzles to prevent emulsion buildup.



### InPave® Technology Pothole Patching Management System:

InPave helps to better manage your patching programs by monitoring production, performance, and locations of your pothole patcher and crew. As potholes are repaired, InPave automatically gathers data and transmits it to an online server, which can be imported into your GIS, allowing the generation of application and operating time reports, among others. Data gathered includes:

- Vehicle, crew, and job ID
- Material source
- Material type
- Vehicle location
- Engine parameters
- Road, air, and emulsion temperature
- Aggregate amount (lbs.) per patch
- Emulsion amount (gallons) per patch
- Application location, start, and end times





**Two Aggregate Hopper Configurations:**

We offer an industry-exclusive choice of a single-chamber or dual-chamber aggregate hopper. With the dual-chamber hopper, a divider and an additional auger configure the hopper into a 60/40 or 50/50 split. Operators can load the unit with two different gradations of aggregate for a more effective repair.

**No Auxiliary Engine:**

Cleaner, quieter, and less maintenance. The SP5E is the only spray injection patcher on the market that does not require an auxiliary engine. Operating on a single engine is more environmentally friendly, and also eliminates additional repairs, reporting, and log-keeping.

**PTO-Powered System:**

The SP5E provides PTO-driven hydraulic power to operate all machine functions.

**SP5E Standard Safety Equipment:**

- Arrow board. Able 2, 10-light, LED
- Single, front-mounted LED strobe light
- LED flush-mount lighting. Side/rear/3 lt. bar

**SP5E Optional Equipment:**

- Retractable hopper cover
- Tool holder
- Traffic cone holder

**SP5E Optional Safety Equipment:**

- 360-degree birds-eye camera system. Includes four (4) cameras, mobile digital recorder, with a 10-inch display, wi-fi, and 4G capabilities
- Single rear back-up camera with night vision and 7-inch in-cab display
- Rear-mounted DOT 30x60 LED arrow board with in-cab controls
- Additional LED work-light packages and flashers
- Additional LED arrow boards in other sizes

# SP5E Spray Injection Pothole Patcher Specifications

## SP5E CAPACITIES:

Aggregate (struck): 5 yd<sup>3</sup> (3.8 m<sup>3</sup>)

Asphalt Emulsion: 275 gallons (1,041 L)



## SPECS (SMART PATCHING EQUIPMENT CONTROL SYSTEM)

The operator controls SPECS with three main control features:



1. The spray rate rotary control



2. The joystick



3. The touchscreen display

The spray rate rotary control directly manages aggregate output and emulsion flow rate. The joystick controls the spray boom position for left/right and up/down, output start/stop, advance to next patch step, toggle spray head oscillation, and aggregate hopper chamber selection (in the case of having dual-chamber hoppers). Buttons on the joystick, while color-coded, are also ergonomically positioned so that the operator can quickly learn to fulfill all functions by touch — without taking his/her eyes from the work at hand. The 7-inch touchscreen display provides all necessary information for the operator, including:

- Aggregate hopper levels
- Aggregate output rates
- Emulsion temperature
- Mix ratios and output rates
- Calibration information
- Blend modes
- Diagnostics
- Boom position warning



## INPAVE® TECHNOLOGY:

The SP5E is equipped with the InPave Technology Pothole Patching Management System, a telematics system that automatically generates reliable performance information for each crew, patcher, and all patching materials.

The InPave system features an in-cab, 8-inch tablet that displays relevant information. The InPave telematic module includes GPS capability, and reports all data to a back-end server. Mapping data can be exported from the server for seamless blending into a GIS system. All other data can be exported, as well, in various formats, for reporting and management analysis.





**TRUCK-MOUNTED UNIT:**

The SP5E spray injection patcher is a truck-mounted unit, specifically designed for a cab-over chassis. It features a joystick-controlled, front-mounted boom that can easily be seen by the operator for optimum safety.

**PTO-POWERED SYSTEM:**

The SP5E boom and sprayer system is powered exclusively by the power take-off (PTO) on the chassis transmission. This allows the chassis engine to power all machine functions during travel and patching, eliminating the need for an auxiliary engine. This feature helps to fulfill Tier 4 compliance for stringent emissions regulations, while also providing a simplified, low-maintenance solution.

**NO AUXILIARY ENGINE:**

In a Bergkamp-exclusive design, the SP5E requires no auxiliary engine. The boom and spray system are fully powered by the PTO on the chassis transmission. This allows the chassis engine to power all machine functions during travel and patching, eliminating the need for a second engine. With just one engine, the SP5E is more friendly for the environment, quieter to operate, and it requires less maintenance.

**SINGLE-CHAMBER AGGREGATE HOPPER MODEL:**

The SP5E has an aggregate hopper total volumetric capacity of 5 yd<sup>3</sup> (3.8 m<sup>3</sup>) struck, whether the user has chosen a single-chamber or dual-chamber hopper. Aggregate augers, with protective covers for the entire length, are hydraulically driven and offer variable output rates for patching, to control the flow of aggregate into the forced-air delivery system. A 55-degree hopper wall angle allows material to flow steadily to the augers, eliminating the need for a vibration system.

**DUAL-CHAMBER AGGREGATE HOPPER MODEL:**

An industry-exclusive dual-chamber aggregate hopper (user-configurable for 60/40 or 50/50 split) allows the distribution of two different gradations of aggregate for more effective repair of deeper potholes and to better match the characteristics of the existing asphalt pavement. Each chamber of the hopper is equipped with a separate auger and protective cover. The dual-chamber hopper also has a 55-degree wall angle, so no vibration system is required for material flow.

**EASY AGGREGATE REMOVAL:**

A feature exclusive to the SP5E, aggregate can easily be unloaded from the hopper by removing a cover in the rear and operating the auger(s) in reverse.

#### **AGGREGATE DELIVERY SYSTEM:**

The aggregate delivery system utilizes reinforced steel components to allow for extended service life. Flexible joints at the boom utilize an abrasion-resistant hose with antistatic layers and steel wire reinforcement. The aggregate flows directly through the nozzle assembly, where it is coated with heated asphalt emulsion before entering the repair area.



#### **ASPHALT EMULSION TANK AND HEATER:**

The SP5E has a 275-gallon (1,041 L) insulated asphalt emulsion tank to maintain the emulsion at the recommended temperature. An AC electric heater heats antifreeze, while a pump then circulates the heated antifreeze. Controlled by SPECS, this system works to provide stable temperature regulation to the tank, heat trace to all emulsion lines, and heat to key emulsion system components. The heater and circulation pump are powered by the onboard AC electric generator during working hours. At the end of the shift, the operator simply disconnects the generator plug and connects it to a landline plug. This ensures that the emulsion is always kept at the desired temperature, drastically decreasing the need for emulsion system cleaning and maintenance. The heating system is completely independent from the chassis engine coolant. The complete unit includes an emulsion-level indicator, electric emulsion heater with in-cab controls, easy-to-clean strainer, and a hydraulically driven emulsion pump.

#### **FRONT-MOUNTED BOOM:**

With full operator control from the truck cab, the boom has a working range of 14.5 feet (4.4 m). The second section of the boom rotates a full 270 degrees at the pivot to allow for precise control of the spray head placement over the work area. An automated latch allows the operator to secure the boom for safe travel without leaving the cab.



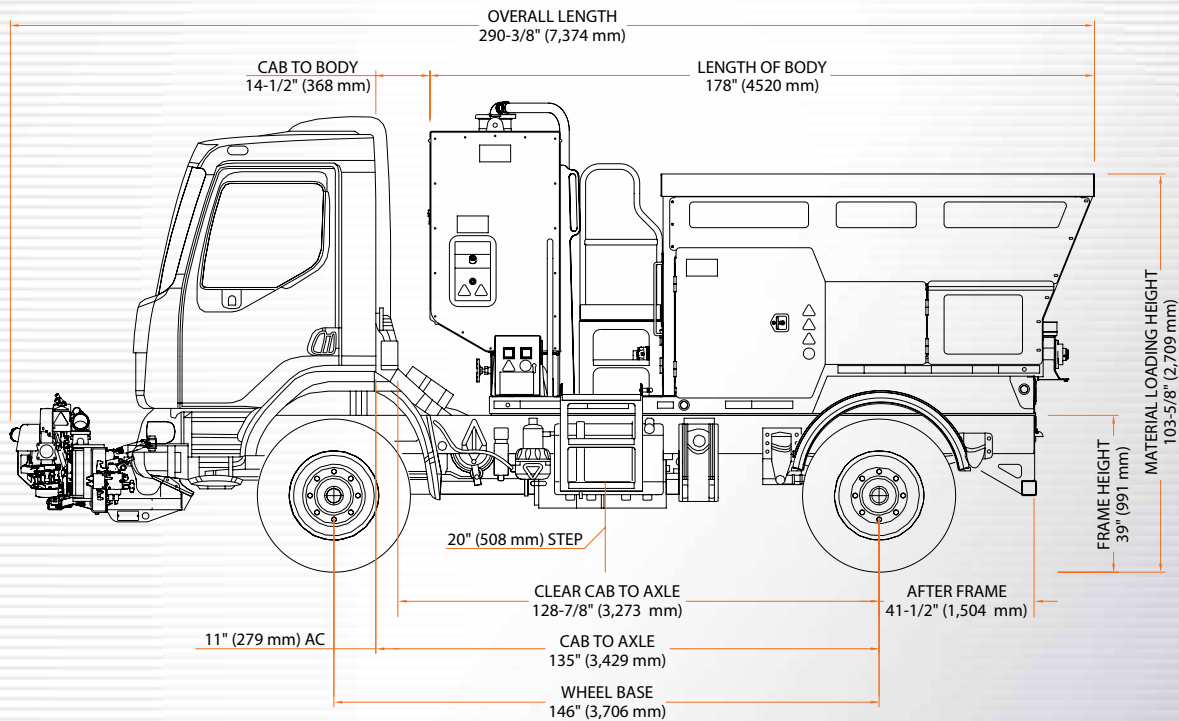
#### **SELF-CLEARING SPRAY HEAD:**

Three emulsion nozzles in the spray head guarantee homogeneous coating of aggregate with asphalt emulsion. The spray head oscillates to provide precise control and even distribution of patch material in the pothole, reducing the boom movement necessary to make the repair. The emulsion nozzles automatically blow out to self-clean after every spray, preventing nozzle blockages from developing.





# SP5E Cab-Over Truck Specifications



## SP5E Cab-Over Truck Specifications

<b>Minimum GVWR</b>	33,000 lbs. (14,968 kg)
<b>Front Axle Capacity</b>	12,000 lbs. (5,443 kg),
<b>Rear Axle Capacity</b>	21,000 lbs. (9,525 kg) and air brakes
<b>Engine</b>	220 HP minimum
<b>Transmission</b>	Automatic Transmission
<b>PTO Requirements</b>	10-bolt; left-side outlet
<b>Air Tank</b>	Tank location behind the drive axle, under the frame and perpendicular to the frame
<b>Exhaust</b>	Horizontal components are preferred
<b>Wheels/Tires</b>	11R22.5
<b>Lighting</b>	Taillight wiring to include combination stop/tail/turn/reverse wiring harness

The end user is responsible for loading the SP5E unit within the truck manufacturer's axle rating and within the appropriate federal, state, and local laws.

## SP5E Measurements:

<b>Length</b>	178 in (4,521 mm)
<b>Width</b>	82 in (2,083 mm)
<b>Height</b>	86.375 in (2,193 mm)*
<b>Weight</b>	7,830 lbs. (3,493 kg)**

\* Without options

\*\*Empty weight, not including chassis



## Providing Pavement Preservation Solutions Worldwide

Bergkamp Inc. has been an expert in the design and manufacture of pavement maintenance equipment for more than 40 years, and works with customers throughout the world. The company's success continues to grow through hands-on knowledge of the industry and its products, and also the company's dedication to customer support.

Bergkamp Inc. offers safe and durable pothole patchers, including an all-in-one flameless pothole patcher and a spray injection pothole patcher. Bergkamp is known for building the only full-size continuous slurry seal and micro surfacing paver in North America. The company also manufactures a full line of truck-mounted and trailer-mounted slurry seal and micro surfacing pavers and equipment.

Bergkamp Inc. believes in giving every customer a high level of support, and we have a team of technicians ready to answer your calls. **Contact Bergkamp today to find cost-effective solutions for extending the life of highways, roads, streets, and parking lots.**



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