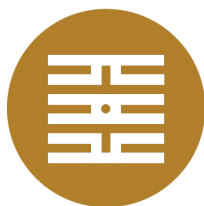


**SRAD-series Bitumen distributor**



**SINORoader**

**SRAD-series Bitumen distributor**



**河南国基重工机械有限公司**

**HENAN SINORoader HEAVY INDUSTRY CORPORATION**

### Part I *Brief Introduction*

#### *1. Introduction*



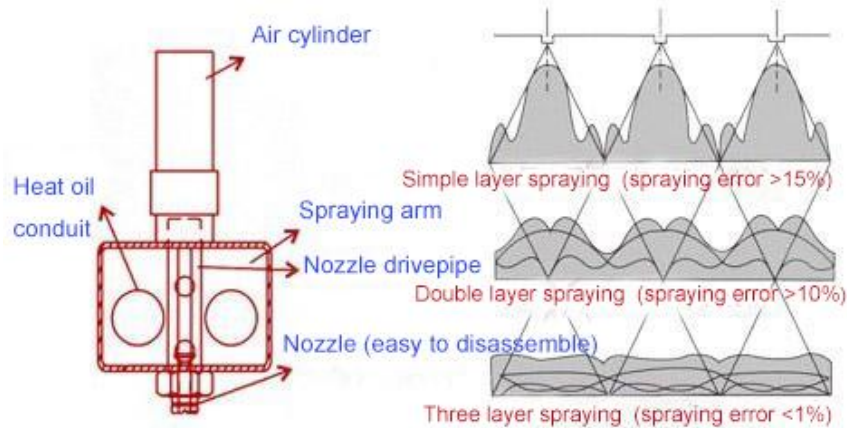
The automatic asphalt distributor is researched and developed by our company on the basis of many years of construction and equipment design experience combined with the present road conditions. It is one of the series of asphalt distributing machinery which is easy-operated, economical and practical. It is professional construction equipment specialized in spraying emulsified asphalt, cutback asphalt, hot asphalt, hot modified asphalt and various binder.

On the basis of introduced advanced technologies both domestic and abroad, this distributor add some humanized designs that ensure technical content of construction quality and improve construction conditions and environment. Heat oil pipe is equipped in asphalt pipelines. Heat oil internal heating method guarantees liquid running smooth and prevents asphalt from coke burning. In the process of manual spray, the rotation indicator reads asphalt pump rotation speed. The operator could calculate the corresponding vehicle speed and asphalt rotation speed to different spray volume according to our specified formula, so as to guarantee uniform spray volume. In the process of automatic spray, the operator just set spray volume in the console and start velocity meter, and then the automatic control system could regulate asphalt pump rotation speed according to the vehicle speed, so as to guarantee precise and even spray. Its reasonable designs guarantee the asphalt spray uniformity. This product gets through the strict detection of our operators and enjoys stable and reliable construction performance, and is known as ideal economical road maintenance equipment.

It could be used to deal with upper and lower seal layer, prime layer, asphalt surfacing, asphalt penetration surface, fog seal layer and so on. It also could be used to transport liquid asphalt and other heavy oil.

#### *2. Operation principle*

The operating principle of asphalt distributor is to pump the hot asphalt from asphalt storage pool into asphalt tank through asphalt pump; Transport it to construction site and heats the asphalt up to working temperature by heating system; Open asphalt pump and spraying valve by operating electrical apparatus control system; According to three overlapping spraying effect to spray the hot asphalt on pavement on the basis of measured distributing amount and pressure. The residual asphalt in pipeline will be transported into asphalt tank after finishing the work.



### 3. Construction technology introduction



Asphalt distributing is used special asphalt distributor to spray hot asphalt on pavement on the basis of measured distributing amount and pressure. It is mainly used deal with the construction of upper and lower seal coat, prime layer, asphalt surfacing, asphalt penetration surface, fog seal layer and so on.

.Tack coat is for combining the multiple layers together. Tack coat acts as a binder with high bond strength and high anti-shear strength; for this purpose, modified emulsion is better then normal emulsion. It is recommended to use quick breaking modified emulsion in tack coat.

.Prime coat is the thin penetration layer with liquid petroleum asphalt, coal tar or emulsion base on the non-asphalt base to make the top asphalt layers combine well with the non-asphalt base.

.Seal coat is a thin asphalt mixture layer for sealing the road surface pores to prevent water penetrating into surface or base. Seal coat on surface is top seal coat and under surface is bottom seal coat.

.After a few years service, the asphalt pavement would have slight cracks and fine aggregates losing and lose the waterproof ability. Water will penetrate into the road structure through the small cracks and lost aggregates space to damage the road. In the status, the road is good in basic condition. If the small disease could not be treated in time, they will lead serious damage like network cracks, chapping and pits, etc. The most effective treatment method is FOG SEAL with very low costs for these small problems.After fog seal treatment, the flowing materials could fill slight cracks and aggregates spaces to recover the asphalt adhesion and prevent water penetrating through cracks and pores. It would sustain the good service condition for 2 or 3 years to earn more time for later maintenance work with high costs.





## Part II. *Features*

- .The operator just set spray volume in the cab, and then the automatic control system could regulate asphalt pump rotation speed according to the vehicle speed, so as to guarantee precise and even spray.
- .Hydraulic servo System, strong power and stable performance.
- .Intelligent control system, dedicated controller, auto detection operation, precise spray volume control. Manual/auto two sets operating system. Various distributing requirements can be finished in the cab or rear control-platform. Operation can be completed with one person.
- .Anti-collision folding nozzle with high safety. Using high precision three overlapping nozzle spraying ensure consistency and accuracy of spraying.
- .Completed heat oil coverage of asphalt pipe make sure that smooth circulation of all the parts without cleaning after operation.
- . Large asphalt tank volume, fast heat up, good Insulation effect, durable outer.
- .Imported burner with auto temperature control system, high combustion efficiency and safe and stable operation.
- .Viscous asphalt pump of famous brand can meet the requirements of various spraying.
- .Hand-held spray gun can meet the demand of edges and other special purposes.

### 1、 *Main Performance:*

- A. It adopts special chassis, which has advantages of large bearing capacity, high power, low fuel consumption and emission, easy operation and reliable breaking.
- B. Equipped with auxiliary engine, to realize the heating when walking, shorten work time , improve the work efficiency.
- C. It adopted fully automated control, high degree of automation, automatic control asphalt spray width, can accurately calculate the spray volume when working;
- D. It adopts special asphalt valve group structure, high degree of automation, reduces labor intensity.
- E. This equipment reduces the construction labor intensity, budgets and human resources, improves the work efficiency and work quality.
- F. Good anticorrosive and durable insulation layer makes sure the temperature drop no more than 12℃/8h (Under normal temperature ).
- G. The tank adopts imported diesel burner, high combustion efficiency and high heating efficiency, automatic ignition and automatic temperature control system, operation security and stability.
- H. It can spray hot (modified) asphalt, diluted asphalt, emulsified asphalt, etc.
- I. Spray bar can be folded and the height can be adjusted.
- J. It adopts high processing precision of nozzle, to realize each nozzle spray consistency and efficiency.
- K. Asphalt pump adopts international brand internal gearing pump, high output ,stable flow rate, good seal performance and compacted structure.
- L. Humanized design of control system could not only control remotely, but also operate on site, which makes the operation more convenient;
- M. It is perfect combination by electrical control and hydraulic system, to realize the zero initial spray;
- N. With much engineering construction experience, we improve the equipment to make it more reliable in performance and more convenient in operation and maintenance.



### 2. Main technical parameters

Product Name	Asphalt Distributor	Asphalt Distributor	Asphalt Distributor
Product Model	SRAD-13	SRAD-8	SRAD-6
Auxiliary Engine Power	/	26kW/35hp	26kW/35hp
Tank Volume	13000L	8000L	6000L
Spray Width	6000mm	6000mm	6000mm
Spray Volume	0.2-3kg/m <sup>2</sup>	0.2-3kg/m <sup>2</sup>	0.2-3kg/m <sup>2</sup>
Spray Media	Hot asphalt, Emulsified asphalt, Modified asphalt		
Asphalt Heat-up Speed	≥12°/h	≥12°/h	≥12°/h
Total Weight	25000kg	16000kg	12490kg
Dimensions	10740x2496x3820mm	8970x2496x3350mm	8970x2496x3135mm

### 3. Product advantages:

#### 3.1 Working condition

Environment temperature: 0~45℃; RH:≤95%; Altitude: ≤3000m.

#### 3.2 Components

It mainly has chassis, asphalt spray system, air circuit system, heating system, water circuit system, hydraulic system, speed measuring system and power supply system. Compact structure, good appearance, strong bearing capacity, easy operation, stable performance.

##### Spray Bar

Three Section foldable spray bar moves up and down to fulfill the operation of dual or multiple spray. By left or right moving can adjust the spray range and avoid obstacles. Each nozzle is controlled individually, which can flexibly change the spray width.

##### Asphalt Tank

The outer layer of tank is made of stainless steel plate, inter layer is made of thermal insulation material, within fire tube and heat oil coil. It also has liquid level indicator and alarm device.

##### Chassis

The chassis with low fuel consumption and low emission is durable and powerful stable and simple in operation.

##### Control System

It has auto and manual modes to ensure the equipment be in the operation status. Radar, speed meter, encoder and PLC are installed to make system work stably and ensure the proper spray volume.

##### Burner

It adopts imported diesel burner with high efficiency of burning and fast heating. It uses auto ignition and auto temperature control system, which works safely and stably.

##### Hydraulic System

It adopts famous brand components such as hydraulic pump, valves and hydraulic motor, which ensures the reliable drive performance.

##### Bumper

To protect spray bar.

##### Asphalt Pump & Heat Oil Pump

They are all famous international brands, featured by large output, stable flow rate, low noise, small inner discharge, compact structure and good sealing property.

##### Water Circuit System

Effectively avoid the asphalt adhering to the tire in the construction. It can cool the tires down and prevent skidding when drive the mountains or high temperature region.

##### Emptying Device by Gravity

Completely empty the tank without starting the hydraulic pump.

### 3.3 Chassis



.It adopts special chassis, which has advantages of large bearing capacity, high power, low fuel consumption and emission, easy operation and reliable breaking.

.High gear ensures the driving speed, low gear ensures the good operation performance.

### 3.4 Asphalt tank



.The tank body has the advantages of safety, reliability and fast heating speed.

.It has washboard in the tank, which can protect from hidden danger.

Asbestos insulation layer with thickness of 100mm preserves heat of heated asphalt. Good anticorrosion and durable insulation layer maintain temperature drop by no more than 12°C/8h.

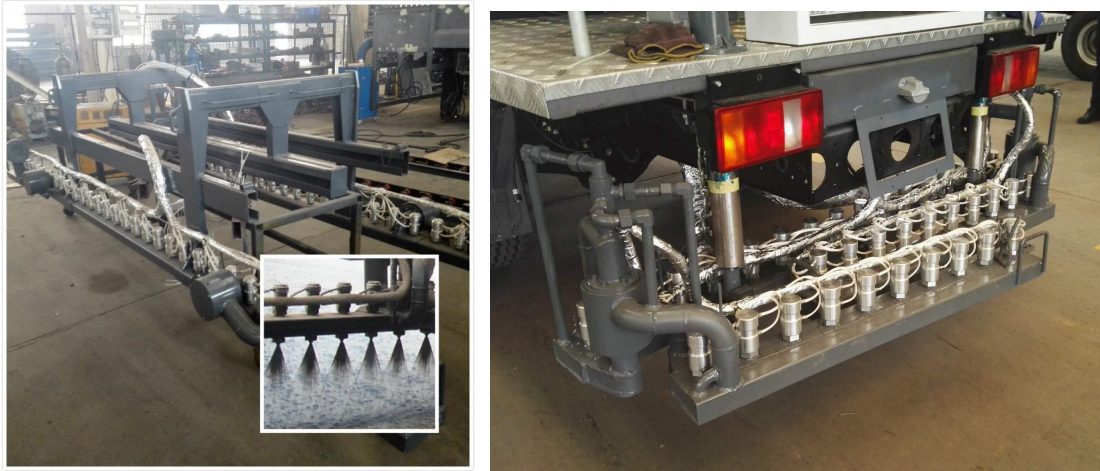
.Stainless steel frosted board out of the insulation layer is elegant and easy to clean.

.Vents are on the tank to keep the ordinary pressure.

.It can self-priming and discharge, which can add or discharge the asphalt automatically, increase the efficiency.



### 3.5 *Spray System*



.Asphalt pump: which has good pumping capacity, large discharge capacity, can do a better performance of asphalt circulation and spraying.

.Asphalt Pipeline can realize the heating oil whole coverage, guarantee the smooth circulation of asphalt in the pipeline.

.Special folding Spray Bar are used proper asphalt circulation and precise nozzle design ensure the accuracy and uniformity distributing precision.

.It can spray all kinds of asphalt, especially hot (modified) asphalt, diluted asphalt, emulsified asphalt.

.Spray volume: 0.2-3kg/m<sup>2</sup>, 48 nozzles in all, each has the space of 125mm.

.Each nozzle can be controlled by computer. High precision spraying, and aren't influenced by speed.

.Computer control the whole process of spraying, it can change the spraying width any time to meet the need of different pavement.

### 3.6 *Heating System*



.Italy RELLIO diesel burner is applied.

.U-shape heating tube make the system heat fast.

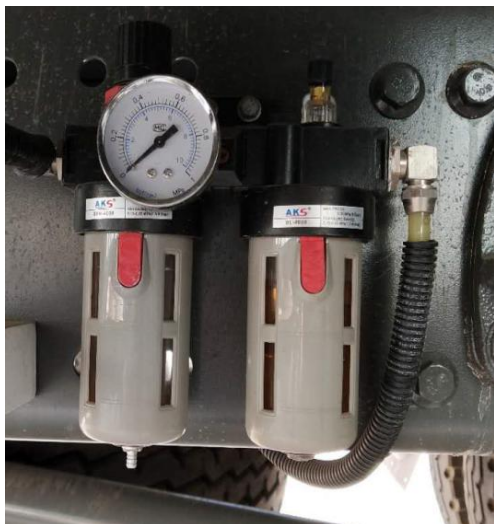
.The heating oil coil pipes are parallel double loop, make the heat speed fast.

.The heating oil makes the asphalt cover all the pipe, which can realize no-clean.

.The upper and lower limits can be set, which are more safe and reliable.

### 3.7 *Air circuit system*





.Plenty air source directly from the chassis guarantees the good performance of asphalt spray, spray bar lift and swing, air control angle seated valve and water system.

.Long-life service solenoid directional valve and elements are used.

.Different air circuit Pressure regulating valve and ball valves controls, ensure the main vehicle air circuit and the different circuits without interference.

### 3.8 Water circuit system



.The water nozzle are installed on the upper part of each tire, which can effectively prevent asphalt adhesion on the tires during the construction process, avoid tire skidding on the mountain road and reduce tire temperature of long distance travel in summer.

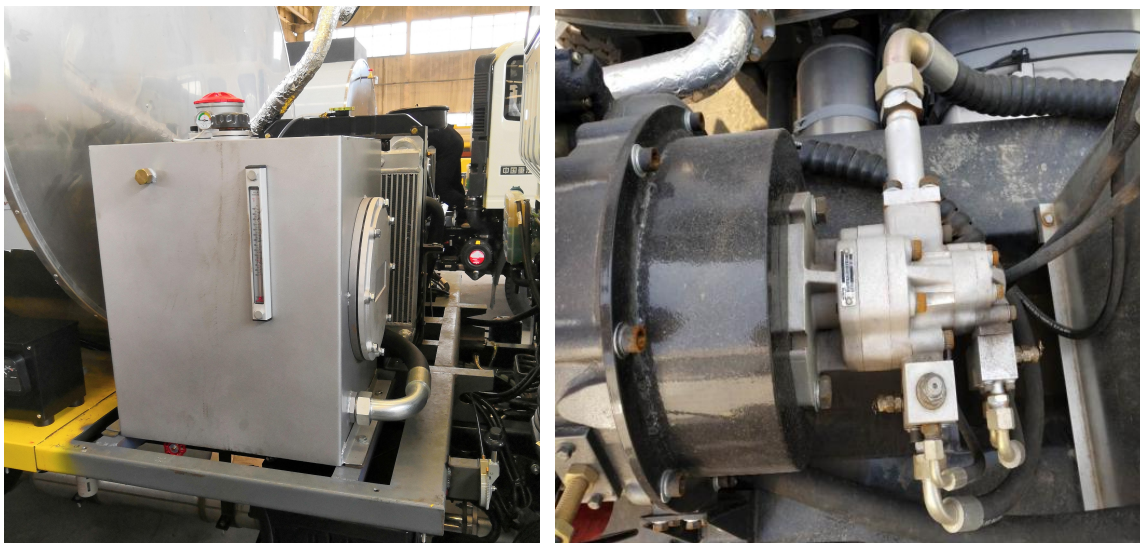
.The main vehicle air circuit give the pressure to the water tank, simple and convenient.

### 3.9 Power Supply System

.The auxiliary engine give the power to whole equipment.



### 3.10 Hydraulic system

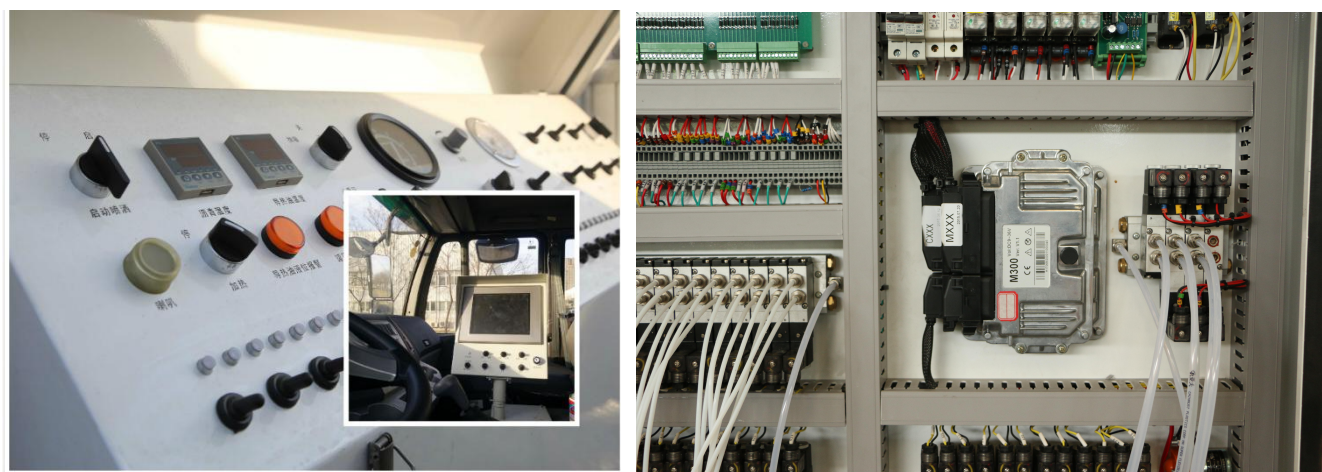


.Key hydraulic components adopt abroad famous brand , quality is stable and reliable.

.The auxiliary engine provides power to the hydraulic pump, which transmits the hydraulic oil through the proportional valve to drive the hydraulic motor, which drives the asphalt pump and the heat conduction oil pump to work.

.Hydraulic system is the choice of open system, this system structure is relatively simple, and the failure rate is very low.

### 3.11 Electric control system



.Asphalt spray can be controlled in the cabin with operation buttons or on the operating platform at the end of vehicle.

.It adopts vehicle control, to improve the stability of electrical system.

.Work according to the different requirements for operators to provide accurate distributing parameters, through the cabin or the back platform, the actual measurement parameters changing accurately reflects the operation of the equipment.

.Control system can modify parameters based on the actual asphalt density and load amount to accurately control the output of asphalt pump to keep spray precision error of  $\pm 1\%$ .

.The asphalt pump rotation speed ,speed gear accurate testing to ensure that the asphalt distributing



precision.

.It is also simple to operate manually. Flexible switch between manual and auto mode could improve working efficiency.

.Distribution box design with high protection against corrupt design, reduce the power distribution box components by tar and dust pollution.

.The well-known speed measuring sensor is adopted to accurately detect the speed of the vehicle and the speed of the asphalt pump respectively. The computer can automatically control the spraying amount according to the input working parameters and the data fed back by the speedometer, so as to ensure the spraying accuracy.

.The computer can calculate the speed of the vehicle and the speed of the asphalt pump automatically according to the spray volume and the density of the medium, so as to control the spray volume automatically.

.Equipped with automatic alarm device: thermal oil automatic alarm, asphalt lower limit alarm indicator function.





#### 4. Projects





河南国基重工机械有限公司  
HENAN SINOROADER HEAVY INDUSTRY CORPORATION

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**SINOROADER**



Tel:+86-371-65825868    4000-676-878

WhatsApp:+86 18137858347

E-mail:info@sinoroader.com

Add:Longxiang Industrial Park ,Weidu District, XuChang,HeNan, China

Website:https://www.sinoroader.com