



**SINORoader**

## Hydraulic Drummed Bitumen Decanter



**HENAN SINORoader HEAVY INDUSTRY CORPORATION**

## 1. R&D and classification of equipment

Our company has been working in the asphalt industry for many years and has formed industrial chain equipment for the asphalt industry, including asphalt mixing equipment, asphalt transportation equipment, bitumen decanter, asphalt spreader trucks, slurry seal trucks and synchronous gravel seal trucks. Provide you and your customers with a comprehensive one-stop solution.



During transportation bitumen is often packed in three forms: bag, drum and bulk. Bitumen is solid at room temperature, so drummed and bagged bitumen need to be decanted before used in asphalt mixing plant, emulsified bitumen plant or other related sites. In the past, people often used open flames to burn barrels of bitumen. This method is not environmentally friendly in a few steps, and the bitumen will release a lot of harmful gases when heated, causing great damage to the operator's body. So now people use a machine called bitumen decanter to melt bitumen. At present, we have bitumen equipment that can be used for bag bitumen melting and drummed bitumen melting.

Bitumen decanter is our company's key R&D equipment. After continuous trial and error and improvement, we are now introducing two types of bitumen decanter to customers, one is the direct-heating form of bitumen melting machine, and the equipment is burned through the burner. Diesel or natural gas provides heat for melting and melting of the bitumen; one is to heat and melt the bitumen by heat radiation from the thermal oil in the thermal oil furnace.



## 2. Bitumen Decanter Components and working process

The bitumen decanter mainly consists of bitumen (1) barrel hydraulic tumbling device, (2) barrel melting up-room, (3) bitumen storage bottom-room, (4) thermal oil coil heating system (5) bitumen output pipeline with bitumen pump (6) control system.

The barrel is transported to the platform by the forklift, and receiving arms turn over the bitumen barrel into the melting room by hydraulic control.

The bitumen decanter body is divided into two parts, the upper part is a heating chamber and the lower part is a bitumen storage tank. The body is covered with 100mm insulation rockwool.

After the barrels enter the cylinder, the barrels are heated by the thermal oil coils. After the bitumen is softened by heating, it steps into the bitumen heating chamber and continues to heat the bitumen.

And the bitumen will fall to the bottom-rooms for heating. The bitumen can be heated by the heat-exchange hot coils or hot air heated by burner.

After the molten bitumen reaches the pumping temperature (120°C), the bitumen pump automatically starts to pump the bitumen to the asphalt tank or asphalt carrier for final usage.

As a professional bitumen application supplier, we can provide you with professional technical support and selection schemes for asphalt tanks and asphalt transportation trucks or carriers.



## 3. Function introduction of each component of the equipment

### 3.1 hydraulic barrel tumbling system

This system consists of a platform, a barrel arm, and a hydraulic power unit. Use a forklift to place the over-opened oil barrel on the platform. The barrel arm is hydraulically driven to descend the mechanical collision platform, the platform is turned over, and the oil barrel falls onto the barrel arm. The hydraulically driven barrel arm pushes the bucket up to the machine body. The hydraulic pumping station uses a motor-driven hydraulic pump to provide power to the equipment.



### 3.2 barrel-melting body

In order to ensure the heat-dissipation efficiency and prevent heat loss, the device is completely insulated with 100 mm rockwool.

The inside of the equipment is divided into upper and lower rooms. The upper room is for heating the bitumen barrel. The upper chamber temperature is kept at about 70 degrees. The bitumen in the barrel is softened by heat and flows out to the lower chamber of the equipment. The melted bitumen continues to be heated in the lower chamber to pumping temperature (120°C).

### 3.3 bitumen heating system

In the hot oil heating bitumen decanter, all the heating of the bitumen is done by thermal oil; the equipment with the burner, the heating of the bitumen barrel is completed by the thermal oil, and the heating of the melted bitumen is through the hot steam generated by the burner.

### 3.4 Pump set and asphalt piping system

The asphalt pump set adopts a screw pump, and cooperates with the heat preservation three-way valve to complete the pumping and internal circulation functions. In the asphalt pipeline system, a filtering device is provided to automatically remove the barreled asphalt slag. The burner heating device is equipped with a heat-conducting oil pump to accelerate the heat-conducting oil circulation and accelerate the heat exchange rate between the heat-conducting oil on the upper part of the equipment and the asphalt drum.

### 3.5 electrical control system.

The electrical operating system adopts manual and automatic methods. You can switch freely according to your needs



## 4. The advantages of our equipment

- Turn the barrel and the barrel into one time, and the single turning-barrel time is less than 20s.
- The machine automatically reverses the oil barrel instead of manually turning the oil barrel which greatly reduces the labor intensity of the workers.
- The direct heating equipment adopts an integrated design integrates the thermal oil furnace and the bitumen decanter, which saves the transportation cost and the occupied space of the thermal oil furnace, reduces the trouble of installing the thermal oil furnace, and is more directly due to the built-in heat transfer of the furnace. The reuse of high-temperature exhaust gas greatly reduces heat loss and improves heat utilization.
- The bitumen pump set has an internal circulation function to optimize the heat transfer coefficient and increase the bitumen melting speed.
- The electrical operating system uses manual and automatic two ways.
- Hydraulic cylinder speed can be adjusted according to actual needs.
- Automatic slag removal: The equipment has automatic slag removal function. The asphalt pipeline system is provided with a filtering device, which can automatically remove the slag of the barreled asphalt through the filtration of the filter.
- Good environmental protection: closed structure, no pollution.
- Adaptability: It can be customized according to various sizes of asphalt drums.
- Convenient relocation: The whole machine is assembled with large parts, which is convenient for relocation and quick assembly.

## 5. How to Choose bitumen decanter

If you have a thermal oil furnace on site, you can choose model BD-40E; if you do not have an thermal oil furnace, we recommend that you choose self-heating model BD-36D,so you will save cosf of heat-conducting oil furnace.

## 6. Specific parameters of bitumen decanter

Model	BD-40E	BD-36D
Productivity (t/h)	8-10	6-8
Capacity of Melting Pool (m <sup>3</sup> )	17	15
Qty of Barrels Accommodated	20*2	18*2
Overall Dimension (L*W*H)	10500X2250X2450	10000X2250X2450
Total Power (kW)	19	17

## 7. Bitumen decanter operation instructions

- Open the heat conduction oil valve according to the actual operation. Use forklift truck or other transportation tools to place the drums on the turnover platform.
- Start the hydraulic pump and select the manual and automatic selection switch to automatic. Press the bucket button of the corresponding platform. The pail feeding device can complete the pail feeding operation by itself. 1#, 2# bucket feeding device alternately into the bucket.
- Bitumen pump and bitumen pipe preheating. This operation applies to the steps prior to any operation of the bitumen pump. Open the bitumen pump and bitumen pipe preheating valve until the hand can easily turn the bitumen pump coupling.
- Note: it is forbidden to start the pump forcibly with the motor under the condition of incomplete preheating. This violation will twist the seal of the asphalt pump.
- Bitumen cycle: Bitumen temperature above 100°C, Bitumen cycle operation can be carried out. Asphalt pump inlet three-way valve position selection extraction high, pump outlet valve selection back to the equipment. Start the asphalt pump.
- Bitumen extraction: When the temperature of bitumen is higher than the required temperature or the temperature of asphalt is higher than 110°C, the asphalt extraction operation shall be carried out. Asphalt pump inlet three-way valve position selection extraction high, pump outlet valve selection output. Start the asphalt pump.
- Asphalt emptying operation: When it is necessary to empty all bitumen in the stripper. Open all heat conducting oil valves and the bitumen enters circulation mode. Asphalt temperature above 150°C, stop the bitumen pump. Bitumen pump inlet
- three-way valve position selection extraction low, pump outlet valve selection back to the equipment.
- The thermometer on the filter can be maintained at about 120°C during the cycle. Stop the bitumen pump, switch the outlet three-way valve to the output mode, and start the bitumen pump to empty all the asphalt inside the equipment.
- Manual operation: When a relay or an induction switch fails to work automatically, manual switch can be used for work.
- select the automatic and manual selection switch to manual. (select in case of power failure) place the oil drum on the turnover platform. barrel feeding is carried out with 1#up or 1#down for 1# bucket feeding device. 2#up or 2#down is adopted for bucket feeding with 1# bucket feeding device.

No.	Fault phenomenon	Elimination methods
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1	A motor - tripping when started	<ol style="list-style-type: none"> <li>1. Check whether there is a short circuit fault in the motor junction box;</li> <li>2. Check whether the connection between the motor and the distribution box is short-circuited</li> <li>3. Check whether the three-phase connector of contactor and air switch controlling the motor in the distribution box is short circuit.</li> </ol>
2	After starting a motor, the motor emits a "buzz" sound but does not rotate.	<ol style="list-style-type: none"> <li>1. After encountering this fault, the power should be cut off immediately to check whether there is any three-phase short circuit in the distribution box</li> <li>2. Check whether there is open circuit in the motor junction box</li> <li>3. Check whether the pump with the motor is jammed.</li> </ol>
3	After pressing the start button, you can hear the sound of contactor closing inside the distribution cabinet, but the motor does not turn	<ol style="list-style-type: none"> <li>1. Check whether the air switch is tripping</li> <li>2. Check whether the wiring between the distribution cabinet and the motor is short-circuited.</li> <li>3. Check whether the motor is short circuit</li> </ol>
4	The whole hydraulic system has no pressure	<ol style="list-style-type: none"> <li>1, hydraulic pump reversal</li> <li>2, hydraulic overflow valve failure or adjustment bolt loose</li> <li>3, hydraulic oil temperature is too high</li> </ol> Hydraulic system filter blocking, cleaning
5	Individual cylinders have no power	<ol style="list-style-type: none"> <li>1, the way of reversing valve failure.</li> <li>2, the cylinder seal ring leak, replace the seal ring.</li> </ol>
6	Limit switch failed	change accessory

## 8. Common fault and eliminating methods





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