

**Dual backwashing
pressure filter
canister**

Catalog



Dual backwashing pressure filter canister Instruction manual

1. Product introduction

Dual backwashing pressure filter canister is medium size grading of quartz sand, magnetite as a filter layer packing, Through the filter and the filter layer adsorption to remove oily wastewater interceptor role in the crude oil and solid suspended substances. When the filter run for a period of time, the surface of the filter media bed layer adsorption and filter layer trapped waste oil, solid impurity particles reached saturation, the filter layer lost the filtration performance. Then we should be backwash on the filter media , from the filter direction of Reversing water. The filter layer has a certain swelling upward dispersion, Clean water will be included in the filter layer between the crude oil and solid particles far away, Discharged to the outside of the filter tank sewage pool, and then restore the filter layer filtering function ,putting back into service.

Dual backwashing pressure filter canister filter size graded according to the user requirements of different water quality indicators to be adjusted accordingly, its structure fully considered the handling characteristics of oilfield wastewater containing polyethylene, in the water on the installation of stainless steel water distribution device ,so small backwash filter media will not be washed away.

Dual backwashing pressure filter canister filter for the depth of oily wastewater treatment and other water treatment industry. The device is simple and compact structure, convenient operation, stable operation, equipment filtration rate, filtration precision, interception capability, backwash thorough, easy maintenance and so on. The less investment in equipment, stable water quality indicators. in oilfield wastewater treatment have been widely used and have achieved good results.

2. Model description

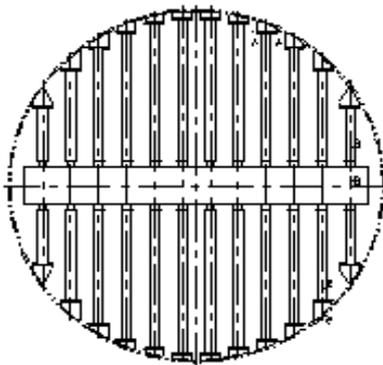
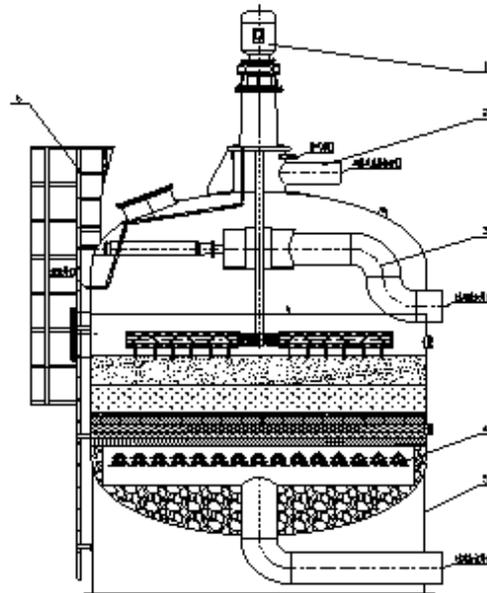
Example: XXX— — 4000 / S
 | | |
 Product Code Canister diameter Quartz clock sand filter code (not write to dual-media)

Divided into one and two dual-media can be in the product name before the "one" or "two" to distinguish, for XXX-4000 Pressure to fill a canister double filter media can be labeled as “XXX-4000 — A double Dual backwashing pressure filter canister”.

3. Structure

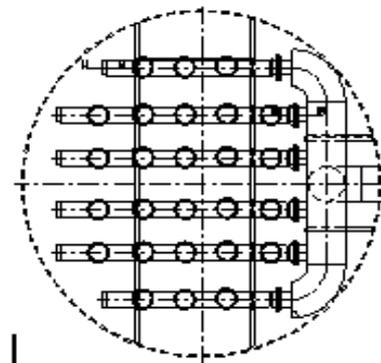
Dual pressure filter backwash tank structure is divided into six parts:

- 1 Mesh stirrer
- 2 Dual backwash the outfall
- 3 Water distribution Devices
- 4 Catchment Devices
- 5 Skirt seat
- 6 Ladders fence



集水装置

Catchment Devices



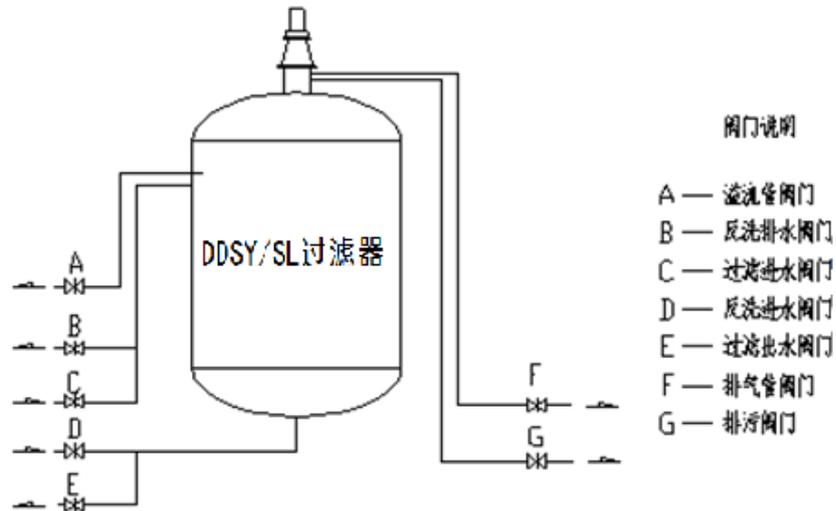
配水装置

Water distribution Devices

4. Workflow

4.1 Process installation process:

Process flow is shown below:



双路反洗压力过滤器工艺联接图

- A Overflow pipe valves
- B Backwash drain valves
- C Filter inlet valves
- D Backwash inlet valves
- E Filtered the water valves
- F Exhaust pipe valves
- G Blowdown valves

Dual pressure filter backwash process connections Figure

4.2 Workflow Description

(1) Filtering Process : Open the C valve, E valves, tap water from the upper to enter, is filtered through a filter canister, after the filtered from the lower outlet pipe discharge. Filtering the calculated amount of water Formula $Q1 = S * V$, Of which Q1 is the filtration flow (m^2 / h), S is the cross-sectional area of the canister (m^2), V is the filtration rate (once the canister is 10m, the second canister is 8m).

(2) Backwash flow : When the filter canister filter backwash cycle time to reach, it is necessary to do gymnastics for backwash, backwash is intended to rinse filter layer intercept material, so



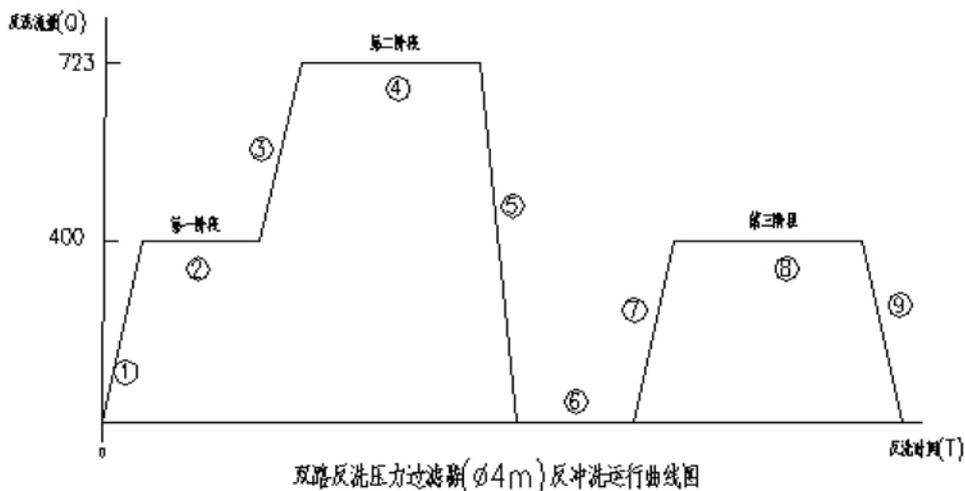
that the filter layer restoration retained filter performance. Backwash water from the canister into the lower part, washed from the filter layer, the upper part of the canister from the water distribution Devices discharge. Canister when to backwash water is calculated by the formula, $Q_2 = 3600S * P/1000$, Of which Q_2 is the backwash flow rate (m^3 / h), S is the cross-sectional area of the canister (m^2), P is the backwash strength ($16 -18L/s.m^2$).

As with a Dual backwash discharge of oil, so that there are three stages, the total time 20 minutes.

First phase : Oil discharge process, close the valve C, E valve, open the valve D, G valve, backwash tap water for the small intensity

Second phase: Rinse the mixing process in the first phase, based on the open valve B, G valve closed, backwashing flow increased to the maximum, while starting the mixer.

Third phase: Rinsing process, stop the mixer, in the second phase, based on the open G valve, close the valve B, backwashing flow back to the level of the first phase, after backwash, backwash pump is stopped, the valve closed D, G valve, open C Valve, E valves. See detailed graph below.



- ① 关闭进、出水阀，打开反冲洗进口阀、排污阀，关闭反冲洗出口阀。变频启动反冲洗水泵
反冲洗双层滤料滤罐流量由0-400m³/h，需0.5分钟；
- ② 反冲洗流量稳定在400m³/h，需1.5分钟；
- ③ 打开反冲洗出口阀，关闭排污阀，反冲洗流量由400m³/h升至723m³/h，需0.5min；
- ④ 启动海螺搅拌器，反冲洗流量稳定在723m³/h，需7.0min；
- ⑤ 停反冲洗泵，停搅拌器，关闭反冲洗出口阀，需0.5min；
- ⑥ 滤料回落，需1.5min；
- ⑦ 打开排污阀，关闭反冲洗出口阀，启动反冲洗泵，需0.5min；
- ⑧ 反冲洗流量稳定在400m³/h，需7.5分钟；
- ⑨ 停反冲洗泵，打开进、出水阀，需0.5min。



- ① Closed, the valve, open the backwash inlet valve, drain valve, close the backwash outlet valve, variable start backwash pumps, dual-media filter backwash tank flows from 0 to 400m³ / h, requires 0.5 minutes.
- ② Backwash flow rate stabilized at 400m³ / h, takes 1.5 minutes.
- ③ Open the backwash outlet valve, close the drain valve, backwash flow from the 400m³ / h rose to 723m³ / h, requires 0.5 minutes
- ④ Start canister blender, backwash flow rate stabilized at 723m³ / h, 7 minutes
- ⑤ Stop backwash pump, stop blender, turn off the backwash outlet valve requires 0.5 minutes
- ⑥ filter media down, needs 1.5 minutes
- ⑦ Open the drain valve, close the backwash outlet valve, start the backwash pump requires 0.5 minutes
- ⑧ Backwash flow rate stabilized at 400m³ / h, requires 7.5 minutes
- ⑨ Stop backwash pump, open the valve and out, need 0.5 minutes

(3) Discharge of wastewater flow : This process is mainly the upper space in the tank discharge tap water accumulation of crude oil, can be automatically or manually (by the design department design). Interval of 6 hours under normal circumstances row once again we continued for 1-2 minutes, drain valve when you can simply open G, completed and then close the valve.

(4) relief valve A must be normally open, to ensure that the mixer shaft packing shed spilled liquid; exhaust valve F is the water in the tank and venting to the exhaust and intake.

5. Main Features

(1) The installation of a water system of stainless steel water distribution device. Dual backwashing pressure filter canister fully consider the characteristics of oilfield wastewater containing polyethylene, in The installation of a water system of stainless steel water distribution device, in the backwash tiny filter material process will not be taken away.

(2) The introduction of dual backwash. Dual backwashing has drain (machine mixed) function, a substantial relaxation of the requirements of runoff oil content, impact stronger. Dual backwash was introduced to correct the problems of backwash tank blocking, most filters are of



stainless steel sieve water distribution device structure, and its narrow and narrow the gap can easily be clogged debris and mechanical impurities, Our company adopts dual structure of backwash successfully solved the problem .

(3) Adopted tooth blender to make a fuller filter regeneration,

(4) Water distribution, catchment device parts are made of stainless steel

(5) Filter media with high purity, density, hardness, smooth surface, anti-rinse thoroughly, and use a relatively large density of magnetite, Such is not easy to loss of filter and prolong life, and then through the rational base with effectively remove suspended solids and oils.

(6) Compact structure, small size, high efficiency, easy operation, stable and reliable.

(7) Dynamically determined backwash parameters.

6. Specifications Parameter Table

6.1 The main technical parameters

A double pressure canister

| | | | |
|------------------------------------|---|-----------------------|----------------------------|
| Filtration speed | 8~10m/h | Backwash cycle | 24h |
| Filter size | Quartzsand 0.8~1.2mm Magnetite 0.4~0.8mm | Backwashing intensity | 14~16L/(s.m ²) |
| Pressure loss | ≤0.15MPa | Backwash time | 20min |
| Grade water Qualitative indicators | Containing oil | Tapwater≤30mg/L | The effluent≤10mg/L |
| | Suspended solids | Tapwater≤30mg/L | The effluent≤8mg/L |

Two double pressure canister

| | | | |
|---------------------------------------|--|-----------------------|----------------------------|
| Filtration speed | 6~9m/h | Backwash cycle | 24h |
| Filter size | Quartzsand 0.5~0.8mm Magnetite 0.25~0.5mm | Backwashing intensity | 12~14L/(s.m ²) |
| Pressure loss | ≤0.15MPa | Backwash time | 20min |
| II Grade water Qualitative indicators | Containing oil | Tapwater≤15mg/L | The effluent≤5mg/L |
| | Suspended solids | Tapwater≤15mg/L | The effluent≤5mg/L |
| | particle diameter Median | | The effluent≤2μm |

6.2 Specifications Parameter Table

| Specifications Model | D (mm) | Water inlet pipe diameter | | Outlet pipe diameter | | Run Weight |
|----------------------|--------|---------------------------|----------|----------------------|----------|------------|
| | | I Grade | II Grade | I Grade | II Grade | |
| XXX-2600 | 2600 | DN250 | DN200 | DN250 | DN200 | 47.5t |
| XXX-3000 | 3000 | DN250 | DN250 | DN250 | DN250 | 62.2t |
| XXX-3200 | 3200 | DN300 | DN250 | DN300 | DN250 | 71.2t |
| XXX-3600 | 3600 | DN350 | DN300 | DN350 | DN300 | 93.5t |
| XXX-4000 | 4000 | DN400 | DN350 | DN400 | DN350 | 118t |

Remark: (1) On the table " I Grade" " II Grade" refers to the filter packing different gradations
 (2) All filters exhaust port are nominal diameter DN50, overflow orifice diameter is DN25.



(3) Water inlet pipe port, outlet port, exhaust pipe, dual backwash outfall mouth overflow pipe openings, the skirt height, the height of the actual situation tank design.

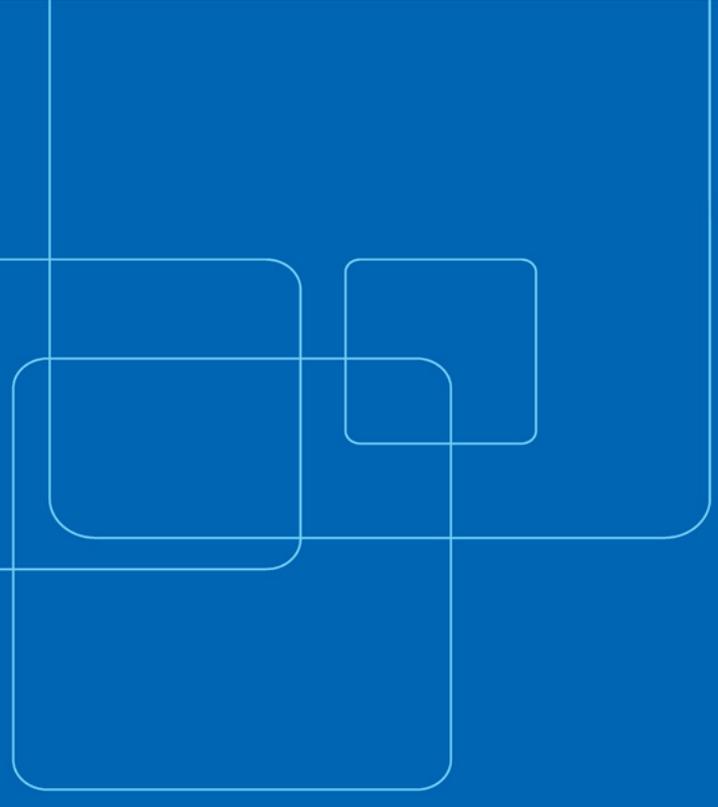
7. For instructions

(1) User If you choose a single-stage dual pressure filter backwash water treatment process, it is recommended to use a filler grade II code, if you select two treatment process, the first Grade dual pressure filter backwash fill I level code filter material, the second Grade dual backwashing pressure filled ii level code filters material.

(2) Outlet pipe according to the user's process design requirements from the filter tank skirt extending laterally, orientation process with the user installation diagram coincide.

(3) Filters based ring cement concrete foundation ,by the user according to the relevant standards designed and built.

(4) According to user needs, manufacturers can be equipped with oil discharge control system (related to an electric valve diameter, field control cabinet)



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