

## Full-bridge peripheral drive sludge scraper technical requirements

(For Iron sludge)

### 1. Scope of supply:

Each set of complete sludge scraper includes

(but is not limited to the following):

Working bridge (full bridge, including maintenance platform)

Rake assembly

Couplings and guards

Gears and Pinions

Gear Boxes

Feed well

Over flow weirs

Electric motor driver.

Local control board.

Interconnecting piping and wiring between equipment and accessories.

Bonding and earthing (to be connected to the central system).

Foundation plate and bolts.

Lubrication system

Local control panel

Torque switches

Running signal

### 2. Main technical parameters

Quantity: 1 set, diameter: 50 meters, see attached picture for details

The clarifier size:  $\Phi 50*5.5\text{m}$ , with capacity  $3600\text{m}^3/\text{hr}$ , SS  $3100\text{mg/L}$

It's heavy SS with iron sludge.

The every hour max SS weight is 17ton

### 3. Equipment performance and structure description

#### (1) Working principle

The water to be treated enters from the water inlet pipe of the central cylinder, enters the sedimentation tank through the steady flow cylinder, and then diffuses and settles around. The water level difference will discharge the sludge at the bottom of the pool through the sludge discharge pipe. At the same time, the scum in the pool is collected by the scum scraper and discharged out of the pool through the slag discharge bucket.

(2) The entire equipment runs smoothly and normally, without shock, vibration and abnormal noise, and can run continuously for 24 hours.

#### (3) Description of each component of the equipment

##### a. Main beam

The main beam is a truss structure, which is welded by rectangular steel pipes, and the walkway slab is laid on it. The transmission mechanism, the scraping and collecting device, the scum scraper, the scum scraper, the electrical box and other components are fixed on it, which play an important load-bearing role. Driven by the transmission mechanism, the main beam drives the above components to rotate clockwise around the center. The design of the working bridge considers the fixed load of the bridge body as well as the static load or wind load. The working bridge has sufficient strength and rigidity, and the maximum deflection does not exceed  $L/750$ . The working bridge should be installed horizontally to avoid jitter due to different plane supports. .

b. Transmission mechanism

It consists of connecting beams, brackets, main and driven wheel boxes, etc. There is a reducer connected to the driving wheel frame, and the entire mud scraper rotates. The reducer adopts SEW brand. The connecting beam is fixed under the main beam, and the bracket is made into a certain angle according to the diameter of the pool, so that the double rubber wheel is radially in the tangential position of the pool circumference. There is an overload protection device. When the mud scraper is prevented from being overloaded, the equipment overloads an alarm to protect the motor and the mud scraper components from damage.

c. Scraping and collecting mud device

The sedimented sludge is scraped from the whole bottom of the tank to the center of the tank for discharge. This function is completed by the scraping and collecting device. The scraping and collecting device is composed of various hangers, which are hoisted under the main beam. The sediment is scraped and collected by the scraper to the suction port, and the sludge at the bottom of the pool is discharged through the sludge discharge pipe by using the water level difference.

d. Cleaning brush

The cleaning brush is installed on the mobile scraping bridge, and it is driven to rotate by the reducer for cleaning the water outlet weir.

e. Scraping device

Including slag scraper, slag scraper, slag collecting bucket, etc. The slag scraper scrapes the scum on the liquid surface of the sedimentation tank to the periphery of the pool, and the scum is scraped into the slag collecting hopper by the cooperation of the slag scraping rake and the slag collecting bucket wall. The end of the slag scraper is provided with a neoprene wear-resistant belt to ensure that the slag scraper is sealed with the scum baffle. A slag discharge pipe is connected under the slag collecting hopper, and the scum is discharged out of the pool through the slag discharge pipe. The slag collecting bucket bracket and the civil engineering embedded steel plate are welded on site. The slag collecting hopper has a flushing valve, the opening of which is controlled by a mobile scraper bridge, and has the functions of continuous cleaning and intermittent flushing.

#### f. Mud collection tank

The sludge is discharged out of the pool from the central sludge discharge pipe.

#### 4、Material of main parts

working bridge	Carbon steel anti-corrosion
Underwater part	Carbon steel anti-corrosion
sludge collection tank	Carbon steel anti-corrosion
weir, Scum Baffle	Carbon steel anti-corrosion
scraper	Rubber/Carbon Steel Corrosion Resistant
Skimmers and slag hoppers	Carbon steel anti-corrosion

#### 5. Equipment anticorrosion

(1) The surface anti-rust treatment of all carbon steel parts is in accordance with GB8923-88 of "Steel Surface Corrosion Grade and Derusting Grade before Coating", and the surface quality reaches Sa21/2 level standard.

(2) The raw material purchase and manufacturing inspection of the

equipment shall be carried out according to GB, JB, Q/ZB and other standards.

(3) For the anti-corrosion treatment of the equipment, except stainless steel, other materials should be sandblasted and derusted first, and after reaching the Sa2 1/2 level requirements specified in the GB8923 standard, first apply two coats of H06 epoxy zinc-rich primer, and then apply one coat. Epoxy micaceous iron anti-rust intermediate paint, after coating two coats of H52-68 epoxy anti-corrosion top coat. The weld of the weldment is smooth and smooth, without cracks, pores, slag inclusions, lack of penetration, lack of fusion and other defects.

(4) The damaged part of the coating during transportation and installation shall be repainted in strict accordance with the requirements of the coating process, and its quality shall not be lower than that of the original coating.