



北京大通龙源能源技术有限公司  
Beijing DaTongLongYuan Energy Technology Co.,Ltd



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## 旋转清堵装置使用

## 说明书

Anti blocking bunker operation manual



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## 第一章 设备简介

### Chapter one Simply introduction of the device

旋转清堵装置系统是我公司结合各煤电厂所存在的问题以及长期对堵煤情况进行分析，研发了落煤管清堵装置和旋转清堵料仓加新型插板门结构配合使用。能够适用于所有煤仓结构及煤质情况，是目前最有效且可以彻底解决堵煤的方案。整套设备是利用落煤管清堵装置刮刀设计的灵活性，其上部穿到插板门端面下部伸入至给煤机入口处，整个系统通过一次分离、二次疏松、三次搅拌、四次下料的方式，彻底的解决了从旋转设备到给煤机入口整个仓段的堵煤问题。

Activation anti blocking bunker system is our Company, based on the analysis of existing blocking problem in many coal-fired power plants, developed a falling coal tube and rotary anti blocking device, equipped with new type of sliding door. It is suitable for any kind of coal bunker structure and coal quality. For the time being, it is the best way to completely resolve the coal blocking problem. The whole device is using coal falling tube anti blocking erasing knife penetrated to the lower part of sliding door plate into the coal feeder. The whole system through first classified, second loosen, third mixing and forth blanking four stage is hundred percent solving the bunker blocking problems.

旋转清堵装置是解决物料仓堵塞问题的专用设备，具有疏松导流效果好、适用范围广、手动自动兼容、安全可靠等特点。传动系统采用减速机带动支撑传动，结构合理、动作平稳、布局灵活方便，广泛应用于火力发电厂、焦化厂、化工、造纸、自备电厂等行业，对料仓中蓬料堵料的疏通导流具有显著效果。

The rotary anti-blocking bunker is a special device to resolve the bunker blocking problem. It has a feature of good loosen and river diversion results, wide scope of application, compatible manual/remote and on the safe side. The transmission system adopts the reducer driven



supporter, its structure is reasonable, stable moving, large power mass ratio, convenience overall arrangement. It has widely used in Power Plant, coke plant, chemical industry, papermaking, self-use power plant and so on. It has obviously resolved in bunker anti-blocking and dredge.

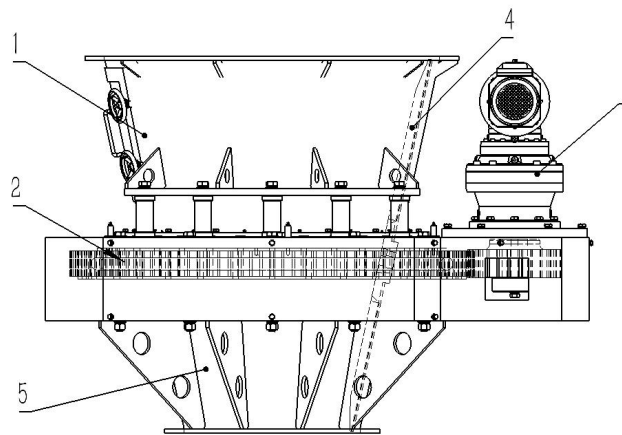


## 第二章 结构原理与操控

### Chapter two Construct principle and control

#### 一、上刮刀旋转清堵装置 Upper scraper Anti-blocking

##### 1. 结构及原理 Structure and principle



结构示意图

Schematic diagram of structure

1-上部筒体 upper cylinder 2-回转部件 rotary part 3-减速机 reducer  
4-清堵刮刀 anti-blocking erasing knife 5-下部筒体 lower cylinder

旋转清堵装置运行动态为通过外置减速机驱动回转支承旋转从而带动刮刀沿仓壁 360° 运转，并对仓体内的物料产生相对性的切割运动，将附着在仓壁上的燃煤刮离；使得物料与清堵装置内壁之间的粘结力被破坏，物料与仓壁之间形成一个全面积的分离区，能够同时达到破拱和清除粘壁的效果。同时在旋转过程中产生疏松作用，减小了物料之间的粘接力，使得燃煤更易于在料筒内流动；同时，通过清堵料斗内壁清堵装置的特殊安装方式和位置，使得旋转过程中形成了一定的螺旋向下对物料的推力作用，料斗出口处的物料很顺利的被推向下一级设备。

The operate dynamic state of that rotary blockage clearing device is that an external speed reduce drives the slewing bearing to rotate so as to drive the scrap to rotate 360 degrees along the bin wall, and generates relative cutting motion to the materials in the bin body to scrape away the fuel coal attached to the bin wall; O that the cohesive force between the material and the inner wall of the blockage removing device is destroyed, a full-area



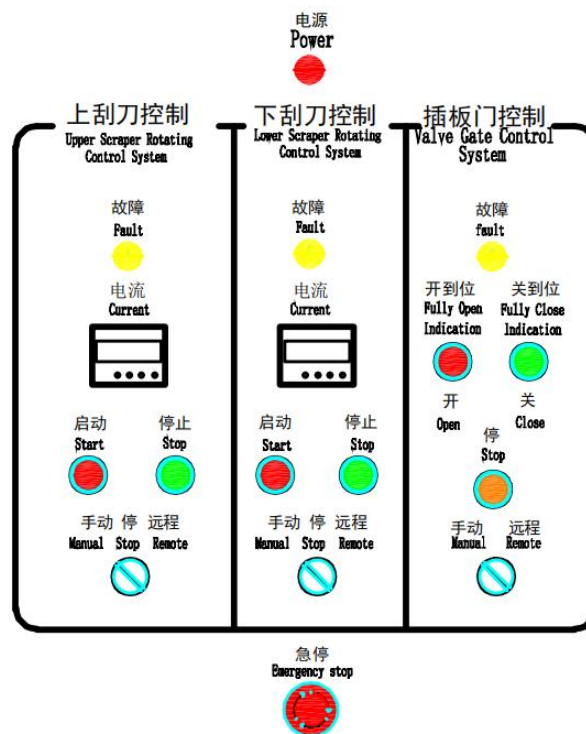


separation area is formed between the material and the silo wall, and the effects of arch breaking and wall sticking removal can be achieved simultaneously. Meanwhile, a loosening effect is generated in the rotating process, so that the adhesive force between the materials is reduced, and the coal is easier to flow in the charging barrel; and meanwhile, through the special mounting mode and position of the blockage removing device on the inner wall of the blockage removing hopper, a certain spiral downward thrust effect on the materials is formed in the rotating process, and the materials at the outlet of the hopper are smoothly pushed to the next stage of equipment.

### 设备主要参数 The main parameter of the device

1	减速机功率 Motor power	1.5KW	5	清堵高度 Unblocking height	1500mm
2	减速比 Reduction ratio	1:490	6	清堵面积 Unblocking area	5.0m <sup>3</sup> -10m <sup>3</sup>
3	转速 Scraper speed	0.4r/min	7	仓体材质 bunker body	10mmQ235+3mm1Cr13
4	清堵刀材质 Scraper material	42CrMo	8	密封形式 Sealing model	迷宫综合密封 Labyrinth sealing

### 2. 控制面板功能简介 Introduction to Control Panel Features



控制面板

Control panel diagram

2.1 “上刮刀运行指示”指示灯：显示设备处于工作运行状态。



“Upper erasing knife operation” lamp indicator: Shown the device in operation.

2.2 “上刮刀停止指示”指示灯：显示设备处于停运状态。

“Upper erasing knife stop” lamp indicator: Shown the device is stop.

2.3 “上刮刀故障”指示灯：显示设备处于故障状态。

“Upper erasing knife fault” indicator lamp: Shown the device is in the fault state.

2.4 “手动/远程”转换开关：可将设备切换“就地”、“远程”工作方式之间切换。

“manual/remote” change-over switch: Switch the device to “local”, “remote” operation state.

2.5 “上刮刀启动”按钮：就地启动设备。

“Upper erasing knife start-up” button: Locally start-up the device.

2.6 “上刮刀停止”按钮：就地停止设备。

“Upper erasing knife stop” button: Locally stop the device.

2.7 “急停”按钮：当设备处于紧急状态需要立即停止时按下此按钮。

“Emergency stop” button: When the device is in emergency, press this button.

2.8 电流表：显示当前工作电流，当电流出现异常时需停机检查。

Current meter: Shown present working current. When the current is abnormal, the device should be stopped.

### 3. 操作方法 Operational method

旋开“急停”旋钮，合上控制箱内空开“上刮刀停止”指示灯亮。用户可以根据需求选择手动、远程、等控制方式。

Rotate the “emergency stop: knob, close the air switch in control box “upper erasing knife stop” lamp indicator light up. According to the willing of the user, they can choose the manual/remote control mode.



**3.1 手动控制：**现场就地人工控制，也可作为日常巡检之用。首先将“**手动/远程**”转换开关扳至“**手动**”位置，按下“**上刮刀启动**”按钮，上刮刀开始旋转运行，同时“**上刮刀运行指示**”指示灯亮；按下“**上刮刀停止**”按钮，上刮刀停止运行，同时“**上刮刀停止指示**”指示灯亮。

Manual control: locally manual site control as well as daily routine inspection. First the “manual/remote” change-over switch should be put to the “manual” position, press the “upper erasing knife start-up” button, the upper erasing knife start running, while the “upper erasing knife operation indicator” lamp light up. Press “upper erasing knife stop” button, the upper erasing knife stop operating, while “the upper erasing knife stop indicator lamp” light up.

**3.2 远程控制：**可通过集控室 DCS 远程操作。将“**手动/远程**”转换开关扳至“**远程**”位置，设备即可根据 DCS 设置的逻辑自动远程启停设备或人工远程操作，控制室操作人员可根据现场运行需要在电脑画面上对清堵装置进行操作。（集控室 DCS 系统由程序启动无源节点，由 DCS 启动设备，控制箱内预留有与 DCS 系统远程控制的硬接线接口）。

Remote control: It can through DCS run remotely in central control room. Switch the “manual/remote” to “remote” position, the device can automatic run and stop the device or manually remote operation followed the DCS logic setting. Operator can operate the anti- blocking device from the computer screen. (The DCS system in control room follows the program to start-up the passive bus, from DCS to start-up the device. There are some pre-located hard-wired connectors for the DCS system remote control in the control box.)

**自动控制：**远程控制中设计有自动定时运行功能，设备会定时自动启停旋转料仓，用户可通过时间继电器设定循环启停的时间，当有断煤信号时，旋转料仓自动启动，启动设定时间结束后自动停止。用户可根据现场煤仓运行实况进行自动运行时间的设置

Automatic control: The automatic timer operation function has been designed in remote control. The device can at regular time automatic





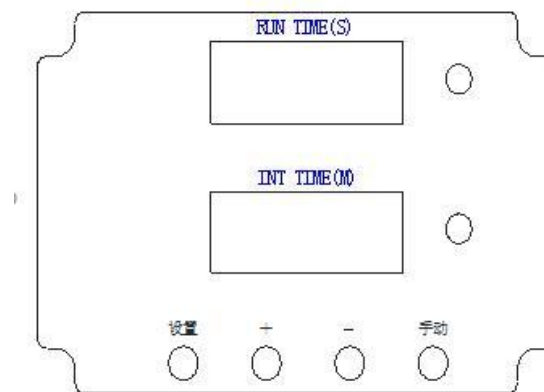
start-up and stop rotary bunker. According to the timer relay, the user can set the circulating time for starting-up and stop time. When there is a loss coal signal, the rotary coal bunker automatic start-up. When the start-up setting time is over, the device will automatic stop. Based on the coal bunker's operation condition, the user can set the time of automatic operating.

### 3.3 油泵控制器设置说明 Oil pump controller setting sm

3.3.1 控制器可设置润滑脂泵：运行时间（1-9999）秒 间隔时间（1-9999）分钟

Running time (1-9999) seconds Interval time (1-9999) minutes

3.3.2 操作和间歇时间设置：长按“设置”按钮 3 次以上 秒，“运行时间”显示数字开始 闪烁时，按“设置”选择闪烁的数字，按“+”和“-”键设置闪烁数字 价值。设定数值后，长按“SET”按钮 3 秒以上，“INT 时间”显示数字开始闪烁，按“设置”选择闪烁的数字，按“+”和“-”键设置闪烁数字值。设置好数值后，按住“设置”按钮 超过 3 秒，显示屏停止闪烁，运行和间歇时间设置 已完成。“手动”按钮：按下“手动”按钮，系统进入工作状态 设置运行和间歇时间



控制面板

Control panel diagram

Operation and intermittent time setting:

Long press the "Set" button for more than 3

seconds, the "RUN TIME" display number starts

to flash, press "Set" to select the flashing digit, and

press the "+" and "-" keys to set the flashing digit

value. After setting the value, long press the "Set" button for more than 3 seconds, the "INT



TIME" display number starts to flash, press "Set" to select the flashing digit, and press the "+" and "-" keys to set the flashing digit value. After setting the value, press and hold the "Set" button for more than 3 seconds, the display stops flashing, and the running and intermittent time settings are completed.

"Manual" button: Press the "Manual" button, the system enters the working state according to the set running and intermittent time

#### 4. 注意 Notice

①上刮刀正常工作情况下应是处于正转状态（顺时针旋转），

In normal condition, the rotary of upper erasing knife is forward (clockwise rotation).

②只有电动插板门处在“开到位”位置时，给煤机皮带运行信号有时设备才可以正常自动启动。

Only when the electric flashboard door is in the "open in place" position, the belt operation signal of the coal feeder can automatically start the equipment normally.

③自动定时情况下，默认设定为每 30 分钟自动启动一次，启动时间为 3 分钟，如需要调整间隔时间，时间继电器上进行调整。

When in the automatic timing condition, the default setting is start-up one time for every 30 minutes. The running time is 3 minutes. If time interval needs to adjust, it can easily adjust on the timing relay.

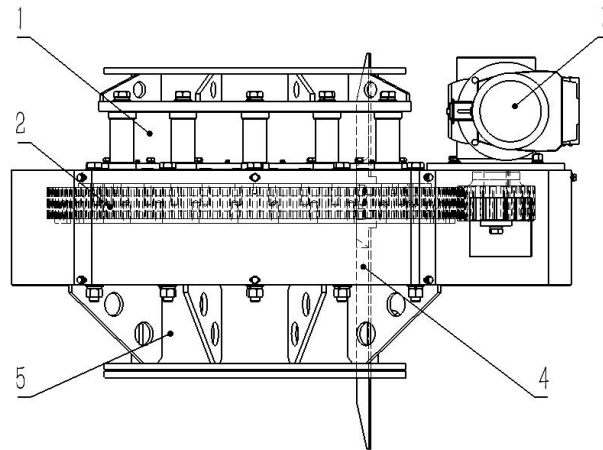
④自动加油泵使用#2 锂基脂，必须有给煤机运行信号时才会自动泵油，一般设定每 4000 分钟自动加油一次，一次加油 40 秒，时间可根据需要任意设置。

The automatic refueling pump uses # 2 lithium base grease, which can pump oil automatically only when there is a coal feeder operation signal. Generally, it is set to automatically refuel once every 4000 minutes, 40 seconds at a time, and the time can be set arbitrarily as required.



## 二、下刮刀旋转清堵装置 Lower scraper Anti-blocking

### 1. 结构及原理 Structure and principle



结构示意图

Schematic diagram of structure

2-上部筒体 upper cylinder 2-回转部件 rotary part 3-减速机 reducer

4-清堵刮刀 anti-blocking erasing knife 5-下部筒体 lower cylinder

下刮刀旋转清堵装置运行动态为通过外置减速机驱动传动系统旋转，带动刮刀转动，与筒体形成相对运动搅动整个物料，将附着在料仓内壁上的燃煤刮离料仓。

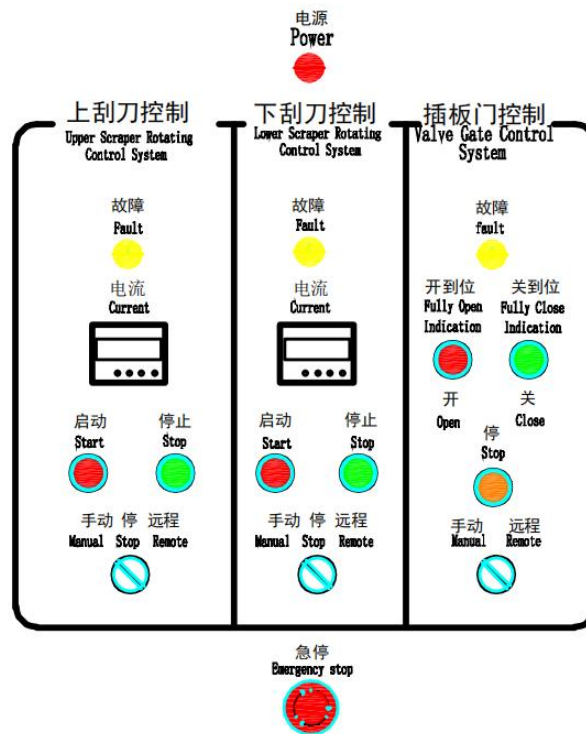
Lower scraper Anti-blocking operation dynamic is that the external reducer drives the transmission system to rotate, drives the scraper to rotate, forms relative motion with the cylinder to stir the whole material, and scrapes the coal attached to the inner wall of the bin away from the bin.

设备主要参数 The main parameter of the device

1	减速机功率 Motor power	1.1KW	5	清堵高度 Unblocking height	1000mm
2	减速比 Reduction ratio	1:474	6	清堵面积 Unblocking area	3.0m <sup>3</sup>
3	转速 Scraper speed	0.5r/min	7	仓体材质 bunker body	10mm1Cr13
4	清堵刀材质 Scraper material	42CrMo	8	密封形式 Sealing model	迷宫综合密封 Labyrinth sealing



## 2. 控制面板功能简介 Introduction to Control Panel Features



控制面板

Control panel diagram

2.1 “下刮刀运行指示”指示灯：显示设备处于工作运行状态。

“Lower erasing knife operation” lamp indicator: Shown the device is in operation.

2.2 “下刮刀停止指示”指示灯：显示设备处于停运状态。

“Lower erasing knife stop” lamp indicator: Shown the device is stop.

2.3 “下刮刀故障”指示灯：显示设备处于故障状态。

“Lower erasing knife fault” indicator lamp: Shown the device is in the fault state.

2.4 “手动/远程”转换开关：可将设备切换“就地”、“远程”工作方式之间切换。

“manual/remote” change-over switch: Switch the device to “local”, “remote” operation state.

2.5 “下刮刀启动”按钮：就地启动设备。

“Lower erasing knife start-up” button: Locally start-up the device.

2.6 “下刮刀停止”按钮：就地停止设备。



“Lower erasing knife stop” button: Locally stop the device.

**2.7 电流表：**显示当前工作电流，当电流出现异常时需停机检查。

Current meter: Shown present working current. When the current is abnormal, the device should be stopped.

### 3. 操作方法 **Operation method**

旋开“急停”旋钮，合上控制箱内空开“下刮刀停止”指示灯亮。用户可以根据需求选择手动、远程、等控制方式。

Rotate the “emergency stop: knob, close the air switch in control box “lower erasing knife stop” lamp indicator light up. According to the willing of the user, they can choose the manual/remote control mode.

**3.1 手动控制：**现场就地人工控制，也可作为日常巡检之用。首先将“手动/远程”转换开关扳至“手动”位置，按下“下刮刀启动”按钮，下刮刀开始旋转运行，同时“下刮刀运行指示”指示灯亮；按下“下刮刀停止”按钮，下刮刀停止运行，同时“下刮刀停止指示”指示灯亮。

Manual control: locally manual site control as well as daily routine inspection. First the “manual/remote” change-over switch should put to the “manual” position, press the “lower erasing knife start-up” button, the lower erasing knife start running, while the “lower erasing knife operation indicator” lamp light up. Press “lower erasing knife stop” button, the lower erasing knife stop operating, while “the lower erasing knife stop indicator lamp” light up.

**3.2 远程控制：**可通过集控室 DCS 远程操作。将“手动/远程”转换开关扳至“远程”位置，设备即可根据 DCS 设置的逻辑自动远程启停设备或人工远程操作，控制室操作人员可根据现场运行需要在电脑画面上对清堵装置进行操作。（集控室 DCS 系统由程序启动无源节点，由 DCS 启动设备，控制箱内预留有与 DCS 系统远程控制的硬接线接口）。

Remote control: It can through DCS run remotely in central control room. Switch the “manual/remote” to “remote” position, the device can automatic run and stop the device or manually remote operation followed



the DCS logic setting. Operator can operate the anti- blocking device from the computer screen. (The DCS system in control room follows the program to start-up the passive bus, from DCS to start-up the device. There are some pre-located hard-wired connectors for the DCS system remote control in the control box.)

自动控制：远程控制中设计有自动定时运行功能，设备会定时自动启停旋转料仓，用户可通过时间继电器设定循环启停的时间，当有断煤信号时，旋转料仓自动启动，启动设定设计结束后自动停止。用户可根据现场煤仓运行实况进行自动运行时间的设置

Automatic control: The automatic timer operation function has been designed in remote control. The device can at regular time automatic start-up and stop rotary bunker. According to the timer relay, the user can set the circulating time for starting-up and stop time. When there is a loss coal signal, the rotary coal bunkers can automatic start-up. When the start-up setting time is over, the device will automatic stop. Based on the coal bunker's operation condition, the user can set the time of automatic operating.

#### 4. 注意 Notice

①下刮刀正常工作情况下应是处于正转状态（顺时针旋转）。

In normal condition, the rotary of lower erasing knife is forward (clockwise rotation).

②给煤机皮带运行信号有时设备才可以正常启动操作。

The equipment can be normally started and operated only when the coal feeder belt runs.

③自动定时情况下，默认设定为每 30 分钟自动启动一次，启动时间为 3 分钟，如需要调整间隔时间，时间继电器上进行调整。

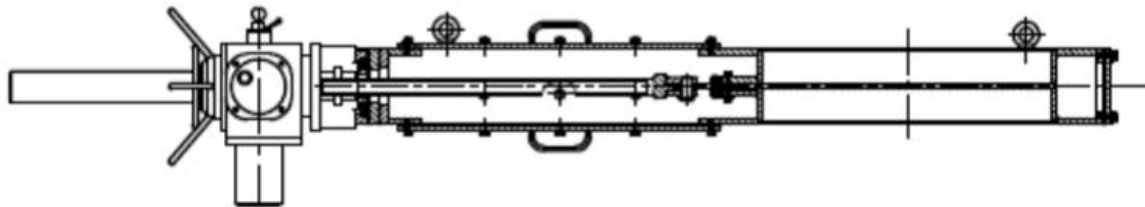
When in the automatic timing condition, the default setting is start-up one time for every 30 minutes. The running time is 3 minutes. If time interval needs to adjust, it can easily adjust on the timing relay.





### 三、电动插板门 Electric valve gate

#### 1. 结构与工作原理 Structure and work principle



结构示意图  
Schematic diagram of structure

- 单向电动插板门结构上采用贯通式圆筒结构,消除了闸门内部存煤点,避免堵煤问题。

One way electric driven sliding door adopted pass through cylinder structure to eliminate the inner coal piling point to avoid coal blocking problem.

- 单向电动插板门的主筒、门板、门板托柱等均采用不锈钢制作,具有优良的耐磨性、抗腐蚀能力,并有效的解决了由于锈蚀而粘结物料使其闸板卡死、打不开的现象。

The main cylinder, door plate and door plate supporter are made from stainless steel. It has excellent feature of abrasion and corrosion resistance to actively solve the binding material due to the rush of material to prevent the door getting stuck and hard to open.

- 传动系统结构简单、工作平稳,对工作环境要求低,故障率低,维护很方便。

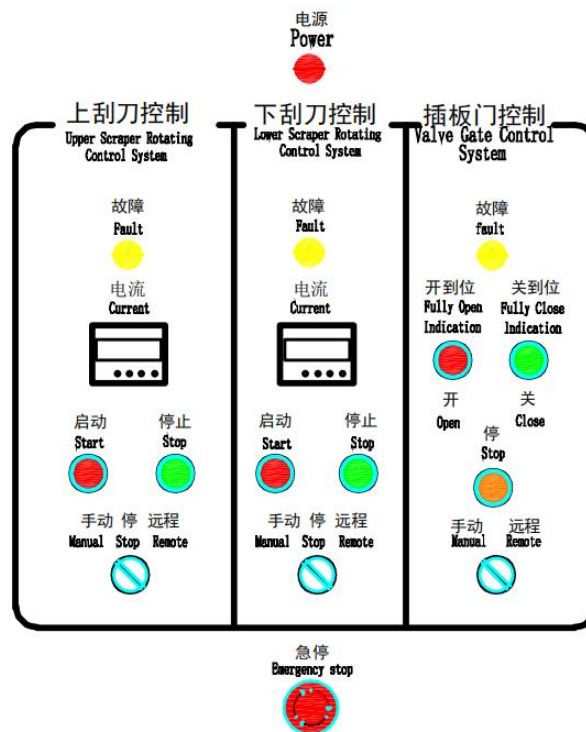
The structure of transmission system is very simple, working smoothly, low requesting of work environment, low fault rate and easy to maintain.



## 主要技术参数 main technical parameter

型号 model	DC-DD630	功率 Motor power	1.1KW
扭矩 Nominal torque	300NM	行程 Stroke of door platen	630mm
推力 Nominal thrust force	100KN	主筒尺寸 Size of main cylinder	Φ630
转速 Output revolution	36r/min	材质 Material of main cylinder and door platen	1cr13

## 2. 控制面板功能简介 Introduction to Control Panel Features



控制面板

Control panel diagram

2.1 “开到位”指示灯：显示插板门处于开到位状态。

“Fully opened” lamp indicator: Shown the valve gate is in the fully opened condition.

2.2 “关到位”指示灯：显示插板门处于关到位状态。

“Fully closed” lamp indicator: Shown the valve gate is in fully closed condition.



2.3 “插板门故障”指示灯：显示插板门处于故障状态。

“Sliding door fault” lamp indicator: Shown the valve gate is in fault condition.

2.4 手动/远程”转换开关：将插板门在“手动”、“远程”两种工作方式之间切换。

“Manual/remote” change-over switch: Switch over the valve gate in “manual”, “remote” two working condition.

2.5 “开插板门”按钮：就地打开插板门。

“Open sliding door” button: Open the valve gate in local.

2.6 “关插板门”按钮：就地关闭插板门。

“Close sliding door” button: Close the valve gate in local.

2.7 “停插板门”按钮：就地插板停止动作。

“Stop sliding door” button: Stop the valve gate in local.

### 3. 插板门的操作方法 **Operational method of valve gate**

#### 3.1 手动控制 **Manual control**

首先将插板门“手动/远程”转换开关扳至“手动”，按下“开”旋钮，插板门开始打开；当打开到位后，插板门自动停止“开到位”指示灯亮，插板门打开完成。按下“关”旋钮，插板门开始关闭；当关到位后，插板门自动停止“关到位”指示灯亮，插板门关闭完成。

First puts the “manual/remote” change-over switch to “manual”, then turns the switch to “open” position, the valve gate starts opening. When reach the fully opened, the valve gate automatic stop, “fully opened” lamp light on, complete to open the valve gate. Turn the switch to “close” position, the valve gate starts closing; when fully closed the valve gate automatic stop, and fully closed lamp indicator light on, complete to close the valve gate.

#### 3.2 远程控制 **Remote control**

当选择远程控制模式时，可通过集控室对插板门进行控制操作。将“手动/远程”转换开关扳至“远程”位置，在已经组态好的画面上



点击 “开插板门”，插板门开始打开；点击 “关插板门”，插板门开始关闭。同时，控制系统提供“开到位”和“关到位”反馈信号干接点。集控室 DCS 系统由程序启动无源节点，由 DCS 启动设备，就地控制箱预留有与 DCS 系统远程控制的硬接线接口。

When selecting the remote control mode, the valve gate is able to run in the central control room. Switch the change-over switch to “remote”, click the “open valve gate” at the configuration displayed screen, the valve gate starts opening. Click the “close valve gate” the valve gate starts closing. At the same time, control system offers “fully opened” and “fully closed” feeding back signal. (The DCS system in control room follows the program to start-up the passive bus, from DCS to start-up the device. There are some pre-located hard-wired connectors for the DCS system remote control in the control box.)



## 第三章 检修与维护

### Chapter three Overhaul and maintenance

#### 一、上刮刀旋转清堵装置的检修与维护

##### The overhaul and maintenance of the upper anti-blocking device

检修与维护保养是保持设备正常技术性能和延长其使用寿命的重要措施，用户需定期检查，认真做好。

The overhaul and maintenance is the important measure for keeping the device at normal technical features and prolonging the life-time. User needs to seriously do the periodical inspection.

按现场堵料情况合理设置活化清堵料仓运行参数，定期检查驱动系统的工作情况，检查清堵装置紧固螺栓是否松动，检查传动系统是否需要添加黄油。

Based on the site blocking condition, the rational operating parameters of anti-blocking device are set, periodically inspect the work condition of driven system. Check the fixing bolts of the device if they become less crowded. Check the transmission system if it need to add grease or lubrication oil.

经常观察系统的运转情况，如发现异常响声、电流表显示增大、减速机或电机发热等情况应立即停机检查，排除故障，必要时拆检。

Frequently observe the system operation condition. If any abnormal noise, shown greater current in Ampere meter, the reducer or motor are heated up the device should be immediately stopped, removal of the fault, if needed the device should be dismantled for inspection.

设备每运行 3 个月回转支撑要补充一次 2#锂润滑脂。每次注润滑脂时都必须注满，直到从密封胶条处溢出为止；注润滑脂时要均匀转动回转支承，使之填充均匀。（最好在空仓情况下加注）可根据设备实际运行频率调整注油间隔（注：注油点在回转支撑的侧面或上、下



端面)。

The rotary supporter should add the #2 Lithium grease every 3 month operation. The grease should be fully feeding up each time until the grease from sealing joint strip over flows. When filling up the grease, the rotary supporter should be smoothly rotated so as the grease filling up uniformly. (It is better to fill the grease when the bunker is empty.) The time interval of filling the grease should be adjusted according to device operation condition. (Note: grease filling spot is on the side or upper and lower part of the rotary supporter).

大齿轮和小齿轮的齿面要保持清洁，经常清除齿面上的颗粒物，防止煤块等杂物进入齿轮，并涂以新的润滑脂（黄油）。严禁坚硬的物体接近齿轮区域。

The surface of the big and small gear should keep clean. Frequently remove the particle from the surface to prevent coal particle and so on entering into the gear. While apply a new grease. Hard particle is prohibited near the gear area.

回转支撑使用中禁止用水冲刷，以防止水进入支撑滚道；

设备第一次运行 1 个月，必须检查各螺栓的预紧力；以后每运转 2 个月检查一次。

It is prohibited to flush the rotary supporter with water to avoid the water entering the rollaway nest of supporter.

At the first month operation, the bolt pre-tightening force should be checked and then checked every two months.

减速机采用齿轮油进行润滑在出厂前已注入齿轮油。机油加注点位于减速箱上端，拧开螺栓用专用的注油管拧入加注。

The reducer has been filled up the gear oil before leaving the factory. The machine oil filling point is on the top of reducer, open the bolt to fill gear oil with special tool.

减速机更换齿轮油的时间查看减速机说明书

The time of changing the gear oil for reducer, please look at the





reducer manual.

## 二、下刮刀旋转清堵装置检修与维护

### The maintenance of the lower erasing knife anti-blocking device

按现场堵料情况合理设置活化清堵料仓运行参数，定期检查驱动系统的工作情况，检查清堵装置紧固螺栓是否松动，检查传动系统是否需要添加黄油。

According to the site blocking condition the rational operation parameter would be set. Check periodically the driven systems. Check its fixing bolt for its loosening state. Check the transmission system, if needed, filing up the grease.

经常观察系统的运转情况，如发现异常响声、电流表显示增大、减速机或电机发热等情况应立即停机检查，排除故障，必要时拆检。设备每运行 3 个月回转支撑要补充一次 2#锂润滑脂。每次注润滑脂时都必须注满，直到从密封胶条处溢出为止；注润滑脂时要均匀转动回转支承，使之填充均匀。（最好在空仓情况下加注）可根据设备实际运行频率调整注油间隔（注：注油点在回转支撑的侧面或上·下端面）。

Frequently observe the system operation condition. If any abnormal noise, shown greater current in Ampere meter, the reducer or motor are heated up the device should be immediately stopped, removal of the fault, if needed the device should be dismantled for inspection.

大齿轮和小齿轮的齿面要保持清洁，经常清除齿面上的颗粒物，防止煤块等杂物进入齿轮，并涂以新的润滑脂（黄油）。严禁坚硬的物体接近齿轮区域。

The surface of the big and small gear should keep clean. Frequently remove the particles from the surface to prevent coal particle and so on entering into the gear. While apply a new grease. Hard particle is prohibited near the gear area.

回转支撑使用中禁止用水冲刷，以防止水进入支撑滚道；

设备第一次运行 1 个月，必须检查各螺栓的预紧力；以后每运转 2



个月检查一次。

It is prohibited to flush the rotary supporter with water to avoid the water entering the rollaway nest of supporter.

At the first month operation, the bolt pre-tightening force should be checked and then checked every two months.

减速机采用齿轮油进行润滑在出厂前已注入齿轮油。机油加注点位于减速箱上端，拧开螺栓用专用的注油管拧入加注。

减速机更换齿轮油的时间查看减速机说明书

The reducer has been filled up with gear oil before leaving the factory. The machine oil filling point is on the top of reducer, open the bolt to fill gear oil with special tool.

The time of changing the gear oil for reducer, please look at the reducer manual.

### 三、插板门 维护与保养

#### The maintenance and keeping fit for sliding door

经常检查插板门各系统部件完好，动力与执行机构动作无松动与卡涉、异响现象，紧固件齐全无松动。

Frequently check the parts of every system of sliding door. All parts should be in good condition. Motive power and actuator should not have the loosen part, getting stuck and abnormal noise.

每 1 个月检查一次插板门本体内外有无物料，有物料时及时清除。

The inner part of sliding door should be checked for existing material and remove it every month.

每 3 个月给丝杠加少许 2#锂基润滑脂。

The guide screw should be added a little #2 lithium base grease every three months.

电动执行机构的维护保养详见电动执行机构说明书。

The maintenance of electric actuator please looks at the manual of actuator.



### 注意事项 Matters need to be attention

1. 定期检查各限位开关的工作状态，必要时更换

Periodically check the working condition of every limit switch, if needed replace with new one.

2. 经常注意设备工作电流，有异常时停机检查

Frequently take care of the working current, if any abnormal should stop the device and inspect it.

3. 检修期间详细检查设备内部，防止出现异常。

During overhaul, carefully check the inner part of the device to prevent occurring the abnormal matters.



## 旋转装置故障的排除

### The fault removal of the anti-blocking device

旋转清堵装置包含多个精密元件，在高压介质作用下传递动力，环境及使用情况对其影响很大，使用不当容易产生故障。

The anti-blocking device consists of many accurate elements. It transmits power under the high pressure medium. The environment and using condition have a great influence on it. It is easy to produce fault problems when not in proper use.

下表为故障及排除方法，供用户参考。

The fault and eliminate method for user reference are shown in the following table.

故障现象 Fault phenomenon	故障可能原因 The possible season of the fault	排除方法 Eliminate methods
电流过大 Current too big	清堵刀发生异物卡涩 The erasing knife gets stuck.	短时反转异物倒出 Short-time reverse foreign matter pouring out
	齿轮卡入异物 The foreign matter enter the gear	清除异物 Clean up the foreign matter
设备无法启动 The device can't start-up	热过载继电器是否动作 heat over relay acts or not	手动恢复热保护 Recover the heat protection by manual
	电缆松动 The cable loosen	检查电路，重新紧固 Check cable and tighten it again
	接触器损坏 The relay broken	更换 Replace
	电机损坏 The motor damage	更换 Replace
	电源缺相 Power lack phase	检查电源 Check the power supply
减速机异常摆动 Reducer abnormal swing	紧固螺栓松动 Fixing bolt loosen	重新紧固螺栓 Tighten the bolt
	齿轮磨损 Gear abrasion	更换齿轮 Replace the gear
	减速机损坏 Reducer damage	更换减速机 Replace the reducer



## 插板门故障及排除方法

### The fault an eliminating method for sliding door

项目 Item	故障现象 Fault phenomenon	故障可能原因 Possible reason for the fault	排除方法 eliminating method
1	电机不启动、插板门不工作 the motor and sliding door don't work	1、三相电源线是否正常 Check the three phase source cable 2、控制线路是否有异常 Is there any wrong with control circuit	1、检查电源线 Check the power cable 2、排除线路故障 Eliminating the fault circuit
2	插板门开、关方向不正确 The open and close direction of the sliding door is incorrect.	1、电源相序接反 Misconnect the phase of source	1、调换任意两相电源线 Exchange any two phases source cable.
3	电机过热 The motor ever heat	1、连续工作时间过长 Continuous working too long 2、电机是否过载 Check if the motor is over load. 3、一相线断开 One phase cable broken	1、停止运行,使电机冷却 Stop operating to cool down the motor 2、检查是否有卡滞等 过载现象 Check if there is any getting stuck and over load 3、检查电源线 Check the source cable
4	插板门开关不到位 The sliding door not fully opened and closed	1、插板门卡滞,有异物 The sliding door get stuck by foreign matter 2、控制系统不正常 The control system abnormal 3、连接机构松动或脱落 Connection mechanism loosen or fall off	1、检查、清除异物 Check. Clean up the foreign matter 2、参考电动执行机构 说明书 Refer to the manual of motor actuator 3、检查连接机构 Check the connection mechanism.