

BL800×17670

焙砂输送机

HOT CALCINE PLATECONVEYOR

# 使用说明书

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湖南中伟正源新型材料贸易有限公司

HUNAN ZOOMWE ZHENGYUAN ADVNCED MATERIAL TRADE CO.,LTD.

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附：基础图

Attached: foundation drawing

## 一、用途 Application

焙砂输送机可用于沿水平或倾斜方向由储仓向破碎机、输送机或其它工作机械送各种块状或松散物料。广泛用于矿山、冶金和水泥等行业，是原料处理或连续生产过程中不可缺少的设备，对运行大块和尖锐的物料尤为适宜。

Hot calcine plate conveyor can be suitable for conveying all kinds of lumpy or loosened material from storage bin to crusher, conveyor or other working machinery along horizontal or inclined direction. It is widely used for mine, metallurgy and cement industries etc. and especially suitable for large lump and sharp materials. It is necessary equipment during raw material treatment or continuous production.

针对喂给粘性物料，在焙砂输送机底部增加了刮板输送装置，能将撒料收集至喂料仓，收集效果非常出色，很好的改善了客户现场的工作环境。

In order to feed viscous materials, scraper conveying device is added on the bottom of Apron conveyor for collecting spreading material and feeding the bin; Due to very good collecting efficiency, it can well improve site working environment for the client.

BL800焙砂输送机按中型设备设计，使用中可运送块度不大于 100mm 堆积密度不大于  $1.8 \times 10^4 \text{ N/m}^3$  的石灰石、砂岩等物料。

BL800 Apron conveyor is designed for middle equipment. It can convey limestone and sandstone etc. whose lumpiness shalln't be more than 100mm and stacking density shalln't be more than  $1.8 \times 10^4 \text{ N/m}^3$  during operation.

## 二、安全 Safety

本章主要介绍焙砂输送机操作的基本安全常识，因而不能取代安全规程、安全措施及各地方公司有关安全的规章与条例。

This chapter mainly introduces the basic knowledge of safety operation of apron conveyor; So it is no substitute for safety regulations、safety measures and relative safety rules & regulations shown by local companies.

熟悉和掌握技术要求、预防措施和工作现场存在的事故隐患并和管理人员探讨这类问题是每个操作人员的职责。为了保证操作过程中的安全，所有操作人员必须通晓并全面遵守安全操作规程。

Familiar with and master technical requirements、preventive measures and accident. Threat hidden on

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the site; It is the responsibility of each operator for investigating this kind of problem with the management. In order to ensure safety during operation, all operators must know and fully comply with the rules for safe operation.

设备安全取决于操作人员的精心操作和对设备技术性能的掌握。

Equipment safety depends on carefully operating and mastering technical characteristics of equipment by the operators.

### 1. 了解设备性能 Understanding performance of equipment

阅读说明书可以使您熟悉设备的操作方法与维护要领，了解机器的生产能力与应用范围。熟悉设备全部控制器、报警装置的位置与作用，同时注意警告说明。学会并掌握设备的报警装置与安全设施。

Reading the manual can keep you knowing operation method and maintenance method well; understanding production capacity and application range; and knowing position and function of all controllers for this equipment; meanwhile, noticing the warning as well as learning & mastering alarm device and safety facilities for this equipment. Operation method of reading the instructions allows you familiar with the equipment and maintenance method

### 2. 启动前的检查 Inspection before starting

未进行操作准备的设备不是安全设备，接班时要进行仔细检查，既已发现问题，又决定“维持现状”您可要考虑再三。即使是微小的机械故障也可能导致人身伤亡和设备事故。

It isn't the safe equipment for the equipment without ready for operation; Carefully checking is very must consider again and again. Even the tiny mechanical fault may also cause personal casualty and equipment accident.

#### 2.1 不允许未经批准的人员上机操作。

Don't allow to operate it by unauthorized personnel .

#### 2.2 确认全部护板和保护装置工作正常、安全、无损坏。

Confirm all guard plates and protection devices can normally and safely run without damage.

#### 2.3 绝对不可乱动安全设施。

Never touch the safety facilities.

#### 2.4 彻底检查给料机的可见故障，诸如：螺栓松动等。

Thoroughly examine the visible fault of feeder; for example: loosening of bolts etc.

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2.5 根据岗位手册和管理人员的指示来检查机器设备。

Check machinery and equipment according to the post manual and the instructions of management

2.6 开机前面绕着机器走上一圈，确认机器旁边，底下，上面都没有人。在您开车的时候要提醒您周围的人。

Face to the machine and walk in a circle around it before starting for confirming nobody near and under/on it. You must remind the people around it while starting.

**安全启动： Safe starting** :

1. 按照警告标记检查设备。

Inspect equipment according to the warning label.

2. 根据电气使用说明书所述的启动程序启动。

Start it in accordance with startup procedure described in the electrical operating instruction .

3. 给料机启动后，检查全部仪器、仪表，确认一切正常。

After the feeder starts, we check all instruments to make sure that everything is normal.

4. 看到读数异常立即停车。

See the abnormal readings to immediately stop it.

5. 测试全部控制器的功能。

Test all functions of the controller.

6. 监听并报告任何异常噪声。

Monitor and report any abnormal noise.

7. 重新检查报警装置或其它警告与安全设施。

Re-check the alarm device or other warning and safety facilities.

8. 给料机运转过程中，不要靠近运转部件。

Don't get close to the working parts while the feeder is running.

9. 不要侥幸使用有故障的设备。要向管理人员及时报告设备故障。

Do not use defective equipment; Timely report equipment fault to the management.

### 三、 规格与性能 Specification and performance

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宽度 Width: 800mm

倾斜角度 Inclination: 0 °

头/尾轮中心距 Center distance of head/end wheel: 17670mm

输送速度 Conveying speed: ~0.26m/s

额定给料量 Amount sending amount : ~100t/h

输送粒度 Conveying material: ≤50mm

电动机 Motor: YVF2-160L-4

功率 Rated power: 15kW

减速机型号 Reducer model : B408HSB-160-UF31

速比 Speed ratio : i=160

刮板输送机 Scraper conveyor

倾斜角度 Inclination: 0 °

头/尾轮中心距 Center distance of head/end wheel: 18280mm

输送速度 Conveying speed: ~0.058m/s

减速机型号 Reducer model : K309TG/C205-D40-D100-MS090M4B15

速比 Speed ratio : i=400

功率 Rated power: 1.5kW

#### 四、 工作原理与结构特点

##### Working principle and structure & character

本焙砂输送机由驱动装置、机架、头部装置、运行部件及尾部张紧装置等部件组成。运行部件是本机的关键部件。由组成环路的牵引链条牵引，行走滚轮在轨道上行走，以达到运送物料的目的。

The Apron conveyor consists of drive unit, frame, head device, running parts and end tension device etc. Running parts is a key of the machine. It can be dragged by circular circuit drag chain; drag chain can be traction on supporting wheel and supporting roller can support conveying channel so as to convey materials.

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## 1. 工作原理 Working principle

运行部件中输送槽与牵引链条及承载机构分别相联接。

由电动机、减速器驱动含有齿槽结构的头部链轮转动，从而使与链轮相啮合的牵引链条一套筒滚子链运动，牵引装有物料的输送槽向前运行。承载机构—滚轮部件在轨道上行走，承受了物料与运行构件的重量。由具有一定强度、刚度的机架承受全机重量，并通过机架传向基础。

物料由位于尾部上方的储仓内推落到输送槽内，随输送槽向前运行至头部罩壳的溜槽口卸出。

Running parts such as conveying channel, drag chain and supporting mechanism can be separately connected. Motor and reducer can drive head sprocket rotation with toothed channel structure to be rotated so that dragging chain geared with sprocket will drag conveying channel loaded with material to run towards. Load bearing mechanism ---dragging chain can travel on the load bearing wheel; supporting roller can support conveying channel to bear weight of material and running component parts; a certain strength and rigidity frame will bear weight of the whole machine and transfer towards foundation through frame. Material will be pushed and dropped into conveying channel through storage bin on the upper at the end; then move forwards along conveying channel to chute port at head casing for discharging.

## 2. 主要结构概述 Main structure description

BL800 焙砂输送机由驱动装置、头部装置、机架、运行机构、尾部张紧装置等部件组成。

BL800 Apron conveyor is make up of drive unit, head device, frame, running parts, end tension device etc.

### 2.1 驱动装置 Drive unit

采用了 YVF2 系列变频调速电动机和 B 系列螺旋锥齿轮-斜齿齿轮箱。

Adopt YVF2 series variable speed motor and B series industrial bevel-helical gear units.

焙砂输送机可以调速操作，一般以 0.13-0.26 速度范围内为宜。储仓内不允许空料，当来料少时，允许间歇操作，不允许大块物料冲砸输送槽，避免输送槽的变形及给料机的歪斜。

Apron conveyor can operate with adjustable speed as per the speed range of 0.13-0.26m/s ; Don't allow to let storage bin empty ; While feeding material is low, intermittent duty is allowed; Don't allow large lump material to impact conveying channel avoid distortion of conveying channel and slanting of

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apron feeder.

B 系列螺旋锥齿轮-斜齿齿轮箱速比大，输出轴扭矩亦较大，可以直接减速驱动，亦较适宜低速重载设备的起动。

It is too high for speed ratio of B series industrial bevel-helical gear units gear reducer and also torque moment of output shaft; It can directly reduce the speed to drive and be suitable for starting of low speed heavy load equipment.

传动装置分为左、右两种传动型式，视工艺布置的需要而选取。

Drive unit has left and right type's transmission; selecting it according to process arrangement.

## 2.2 头部装置 Head unit

本机的头部链轮采用了整体式的齿槽块结构形式，且为 6 齿数，便于装拆，有互换性，增加了啮合次数。既能提高作用寿命，又能方便维修。

Head chain wheel of the machine adopt integral type teeth channel block structure with 6 tooth for easily assembling and disassembling ; It has exchangeability and gearing times can be increased; Thus it can not only increase operating life time and also easy to maintenance.

## 2.3 机架 Frame

机架采用了全新的结构形式，构造简单，且强度、刚性好，简化土建，便于工艺布置和安装。

Adopt full new structure frame with advantages of simple constitution, good strength and rigidity, simplified civil so as to easily arrange the process and install it.

## 2.4 运行部件 Running parts

运行部件是本给料机的关键部件，在设计与制造技术上均采用了较新的技术。其牵引链条与承载构件分开，加上采用适宜的节距，保证了啮合与运行的平稳。

Running parts is key of apron feeder; advance technology is adopted for design and fabricating. Its drag chain is divided with load bearing constituent part; it adopts suitable pitch to keep gearing and running steady and smooth.

牵引链条——套筒滚子链按 ISO1977: 2000 设计，符合 GB/T8350—2003 标准规定。主要零件选用了低合金结构钢，并施以一定的热处理手段，有利于提高制造质量，能有效地提高使用寿命。

Drag chain---bush roller chain is designed as per ISO1977:2000 and conform to regulations of 湖南中伟正源新型材料贸易有限公司



GB/T8350-2003 standard; Low alloy structural steel is selected for main parts; It is machined by a certain heat treatment and goes far towards effectively increasing fabrication quality and life time.

承载构件——滚轮采用了滚动轴承结构，有利于减小运行阻力，减少动力消耗。该结构型式便于维护。

Load bearing parts---Rolling bearing structure is adopted for idler; It goes far towards reducing running resistance and power consumption; The structure form is easy to maintenance.

输送槽的设计采用了合理的底隙与侧隙保证了底板的交迭和侧板的重叠，能有效地防止物料的散漏现象。

During designing conveying channel, we adopt reasonable bottom and side clearances to ensure base plate congruence and side plate reiterative and effectively prevent material scattered leakage.

## 2.5 尾部张紧装置 End tension unit

采用压缩张紧装置，张紧行程较大，结构紧凑，尾部采取拆卸结构，便于轴承座的安装。尾架直接安装在机上，安装方便。

Adopt butterfly spring tension unit with advantage of compact structure to easily install bearing bracket; End frame can be directly erected on the machine for convenient installation.

## 3. 主要结构特点 Main structure characters

3.1 机架构造简单，强度与刚性较好，制造安装便利。机架支腿直接落地，工艺布置灵活、简化土建。

Simple frame structure, good strength and rigidity, easily fabricating and installing; Legs of frame will be directly load on the ground; flexible process arrangement and simplified civil.

3.2 运行部件的牵引链条在设计、选材与制造技术诸方面能保证提高制造质量，提高使用寿命。

Design, selecting material and fabrication technology etc. respects for drag chain of running parts will increase manufacturing quality and life time.

## 4. 刮板输送机 Scraper conveyor

### 4.1 工作原理 Working principle

刮板输送机是以环形链条作为牵引件的连续输送机械。链条绕过驱动链轮和拉紧链轮形成二条闭式传动链，且在二条链条之间连接上刮板；上

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链条由托链轮支承，下链条由滑轨支承。机器运转由电动机的转动经过减速器带动主轴装置旋转，并通过主轴装置上的链轮与链条啮合带动链条上的刮板作直线运动，将散落在重型板式给料机底部的物料刮送到出料漏斗中，达到即刮料又输送的目的。

Scrapper conveyor is one kind of continuously conveying machinery by ring chain as traction components. Chain bypass drive sprocket and form two closed drive chains with tension sprocket; Moreover, upper scraper is connected between two chains; Upper chain is supported by supporting sprocket; lower chain is supported by slide rail. Motor drive main shaft device for rotation through reducer; and sprocket on main shaft device mesh with chain to drive scraper on the chain for linear motion; Thus, scattered material on the bottom of heavy apron feeder can be conveyed into discharge hopper for meeting the purposes of scraping and conveying.

#### 4.2 主要结构 Main structure

BL800 刮板输送机由传动装置、主轴装置、拉紧装置、链条等部件组成。

BL800 scrapper consists of drive device main shaft device、tension device and chain etc.

##### 4.2.1 传动装置

由电动机、联轴器、硬齿面减速器、链轮、链条、底座等组成。

It consists of motor、coupling、hard tooth gear box、chain wheel、chain and foundation etc.

##### 4.2.2 主轴装置 Main shaft device

由轴、链轮、轴承、轴承座等组成。

It consists of shaft、sprocket、bearing and bearing bracket etc.

##### 4.2.3 拉紧装置 Tension device

是一种螺旋丝杆拉紧机构，主要作用是拉紧刮板装置。它由轴、链轮、滑动轴承座、压缩弹簧、拉杆等组成。

It is a kind of screw rod tension mechanism; its main role is tension scrape device; It consists of shaft、sprocket、slide bearing bracket、pressure spring、pull rod and so on.

##### 4.2.4 链条 Chain

由环链、连接环、刮板等组成。

It consists of chain 、connecting ring and scraper etc.

## 五、 安装与试运行 Installation and test running

正确的安装、调试与操作，正常的维护都是保证焙砂输送机的良好使用，提高使用寿命的必要手段。

Correctly installing, debugging and operating as well as normally maintenance will be necessary means for ensuring good operation and increasing life time of hot calcine plate conveyor

### 1. 安装前的准备与检查 Preparation and checking before installation

1.1 必须持有链条等关键部件的质量验收报告及材质分析报告，均须符合相应图纸上的要求。

Must hold quality acceptance report and material analysis report of key parts such as chain etc. And live up to requirements on relevant drawing.

#### 1.2 检查链条的组装是否与要求相符。

Check if assembly of chain conforms to the requirements.

1.3 检查滚轮能否灵活运转，各零件的安装位置及轮体质量均须与图纸要求一致。

Check if wheel can flexibly run; Location of erecting each part and quality of wheel body must agree with the drawing requirements.

1.4 凡组装件到现场的，在安装前需检查是否锈蚀、损坏等情况，如有应重新修复、清洗和加油才能准许安装。

After all assembly parts are delivered on the site, we check if rusty and damaged parts appear before erection. If happens. It shall be repaired, cleaned and filled oil again; then allow to be erected.

1.5 仔细检查、核对安装现场的位置测定工作，各装置及机架的基础尺寸须与图纸所标注的尺寸一致。发现问题应及时处理，待一切尺寸都正确无误后才能安置各部件。

Carefully check and confirm location measurement method on the site; foundation dimensions of each device and frame must agree with marked size on the drawing; If questions happen, we shall handle them in time; After all sizes are corrective and no error, each part can be erected.

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