

BM 双压带磨边机 BM Double belts squaring machine

Foshan Basair Mechanical&Electrical Co., LTD

使用说明书

Operation Manual

——BM 双压带磨边机

BM Double belt squaring machine



操作前请仔细阅读此说明书 Please carefully read this manual before operation
妥善保存此说明书以备查阅 Please keep this manual properly.

目 录 INDEX

用户须知 User notice	IV
安全警告 Safety warning	V
第 1 章 概述 Summary	1
1.1 设备的用途 Equipment application	1
1.2 设备型号与含义 Equipement type and meaning.....	1
1.3 设备外形及设备技术参数 Equipment design and technical parameters.....	2
第 2 章 系统配置及功能介绍 System configuration and function	4
2.1 工作原理 Working principle.....	4
2.2 主要结构 Main structure	4
第 3 章 厂房环境、吊运、贮存与安装 Plant environment, handling, storage and installation	12
3.1 厂房环境与基础 Plant environment and foundation.....	12
3.2 运输、吊装 Transportation,handling	12
3.3 设备确认与安装前准备 Equipment confirmation and preparation before installation	13
3.4 设备安装的步骤和方法 Installation steps and methods	15
第 4 章 调试与参数设定 Testing and parameters set.....	17
4.1 大梁位置的调整 Beam position adjustment	17
4.2 对中装置的调整 Centre device adjustment.....	17
4.3 推砖装置的调整 Adjustment of push brick device.....	18
4.4 压梁装置的调整 Adjustment of the pressing beam device	18
4.5 磨头的调整 Head adjustment	18
4.6 陶瓷抛光线用磨具 Abrasive tools	19
第 5 章 使用与操作 Use and operation	21
5.1 开机前准备 Preparation before start.....	21
5.2 空机试运行 No-load testing	22
第 6 章 故障分析与排除 Fault analysis and solution	24
6.1 磨边机常见故障及排除方法 Common malfunction and troubleshooting.....	24
第 7 章 安全防护 Safety protection	26
7.1 磨边机安全防护设备 Safety protection equipment	26
7.2 噪音及操作位置状况 Noise and operating position.....	26
7.3 机器的危险区域 Dangerous area of machine	26
7.4 厂房环境的安全设备 Plant environment safety equipment.....	27
7.5 安全措施 Safety measures	27
7.6 安全注意事项 Safety notes	28
7.7 人身安全的注意事项 Personal safety notes.....	30
7.8 安全的组织管理 Organization and management of security.....	32
第 8 章 维护与保养 Maintenance	33
8.1 操作者的任务 Operator's task.....	33
8.2 全面维护建议 Complete maintenance recommendation	33

BM 双压带磨边机 BM Double belts squaring machine

8.3 机器维修 Machinery repair	34
8.4 润滑 Lubrication	36
8.5 机器设备维修说明 Equipment maintenance instructions	37

用户须知

在进行任何操作、维修前，请仔细阅读本说明书。

用户应妥善保管说明书，遗失不补。



为便于查阅，说明书应放在靠近设备的地方，使操作和维修人员能在需要的时候马上查阅。


请认真遵循说明书中的指导，以避免造成设备损坏和人身伤害！

因误操作、违章操作所造成的设备损坏、人员伤害，巴赛尔机电有限公司不负任何责任！

本说明书如有变更，恕不另行通知。

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本手册中，将安全等级分为“危险”和“注意”：

危险 ----指不正确的操作造成的危险情况，将导致死亡和重伤发生。

注意 指不正确的操作造成的危险情况，将导致一般或轻微的伤害造成硬损伤。注意会帮助用户识别危险、避免危险，知晓忽视警告的后果。

User notice

Please read this manual carefully before any operation or maintenance is carried out.

Users should be properly kept the manual.

For easy access, the manual should be placed near the equipment, so that the operation and maintenance personnel can read immediately when needed.


Please follow the instructions carefully to avoid the equipment damage and personal injury!


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Without the permit of Guangdong Basair electrical company limited license, this manual shall not be copied or distributed in any form and way.

In this manual, the security level is classified into "Danger" and "Attention"

 "Danger". The dangerous situation caused by incorrect operation will lead to death or serious injury.

 "Attention": The dangerous situation caused by incorrect operation will result in minor or general staff damage. Attention will help users identify danger, avoid danger, and know the consequence by ignore warning.

安全警告 Safety warning

安装、操作、维护或检查机器之前，认真阅读本说明书。

Before installing, operating, maintenance or inspection of the machine, carefully read this manual.

在开始使用机器之前，必须对本设备，安全信息及所有的警告已经真正了解。

Before using the machine, must have a real understanding of the machine, security information and all warnings.

只有熟悉BM双压带磨边机操作的合格专业人员，才能对本系统进行调试、安装、运行操作和维修，否则会导致设备损坏或人身伤害。

Only the qualified professional personnel that familiar with the operation of BM double press belt squaring machine, can do testing, installation, operation and maintenance of the system, otherwise it will lead to equipment damage or personal injury.

1.安装 Installation

注意 Attention

- ◆ 检查并确认该机的安装位置和安装方向！
Check and confirm the installation position and orientation of the machine.
- ◆ 安装工作应按照使用手册的说明进行；确认磨边机各部件安装位置。
The installation work should be carried out in accordance with the manual instructions; confirm the grinding parts machine installation position
- ◆ 不要把电控设备安放在易燃物料附近，否则将容易导致火灾。
Don't put the electric control equipment installed near flammable materials, otherwise it will easily lead to fire
- ◆ 动力柜应安装平稳，否则可能会导致设备其倾倒而引起设备损坏或人身伤害。
The power cabinet should be installed smoothly, otherwise it may be dumping and cause equipment damage or personal injury.
- ◆ 不要将总电源接在漏电保护开关的输出端。
Please don't connect the general power supply to the output terminal of the leakage protection switch.

2.接线 Wiring

注意 Attention

- ◆ 必须在机械安装完成后进行布线。
Wiring should be done after machine installation, otherwise easily lead to accidents
- ◆ 布线或检查时，应断开电源，经检测确定无误后方可进行。
Wiring or inspection, please disconnect the power
接线前应先确定电控设备额定电压与交流电源供电电压匹配，否则会引起伤害和火灾。
Before wiring, please confirm the voltage of electrical control equipments whether is matched with the AC voltage or not, otherwise, it will cause damage or fire

BM 双压带磨边机 BM Double belts squaring machine

- ◆ 一定先接好地线，否则将会导致触电事故或引起火灾。
Be sure to connect the earth wire, otherwise it will lead to electric shock accident or cause a fire.
- ◆ 请不要对电缆施加外力或钳压，更不要任意损伤或驳接，否则会导致触电。
For cable, please do not apply to the external force clamp pressure, not to any damage or split, otherwise it will lead to electric shock

3.运行Running

注意 Attention

- ◆ 检查整机并确认启动时不会造成机械损坏后，方可开机试运行。
Check the machine and make sure that the mechanical damage is not caused by start
- ◆ 正确调整连接控制柜输出与电机之间的三相关系，保证电机的旋转方向无误。
Correct connection and adjustment of the three phases between the output of the control panel and the motor, and ensure that the motor's rotation direction is correct.
- ◆ 如果有机械损坏或电气控制缺少组件，请不要开机
If there is damage of machine or lack of electrical control components, please don't run.

4.维护、检查及部件更换Maintenance, inspection and replacement of parts

注意 Attention

- ◆ 设备在长时间闲置后重新使用前必须进行全面检查和试运行。
The equipment must be fully checked and tested before running after long time idle.
- ◆ 检查电气控制时，请先断开输入电源后等待 5 分钟方可进行，否则将会导致触电事故
Before checking, it must cut off the input power and wait for five minutes, then start inspection of electrical equipment. Otherwise, it will lead to electric shock accident.
- ◆ 请使用巴赛尔公司生产的零配件进行检修换件，对使用非巴赛尔零配件而造成的设备损坏，巴赛尔公司将不予保修。
Please use the spare parts that produced by Basair for the maintenance, the use of the parts that produced by others and lead to machine damage, Basair will not take responsibility.

第1章 概述 Summary

1.1 设备的用途 The use of the machine

磨边倒角自动化生产线是墙地砖加工自动生产线中必不可少的机械设备，整线由进砖线架、（前）磨边机、调头线架、（后）磨边机组成。主要用于墙地砖四边的侧磨修整，及倒角磨削修整，能有效地消除墙地砖的收缩不定、“大小头”、“波浪边”及微量崩边等缺陷。磨边机除用于陶瓷砖的磨削修边外，还可用于大理石、人造玉、花岗石等材料的磨削修边，其加工宽度范围可在200~1200mm之间任意调整，最大加工厚度20mm。

Squaring and chamfering automatic production line is the necessary equipments of tile production line, the whole line is including feeding conveyor, (before) squaring machine, U-turn conveyor, (after) squaring machine. It is mainly used for squaring and chamfering four sides of wall and floor tiles, can effectively eliminate the uncertain contraction of tiles, "big or small head", "wave" and slightly edge collapsed, etc defects. Besides edges process of tiles, the squaring machine is also used for processing marble, artificial jade, granite etc, it can be adjusted for the scope of processing width in 200 - 1200mm, the maximum processing thickness is 20mm.

我公司磨边机筛选参照了国内外先进技术及设计方案，融机、电、气于一体，自动化程度高，使用性能稳定。整机设计新颖，具有结构紧凑、性能可靠、造型美观、生产效率高等特点。

Our squaring machine has been combined the advanced technology and design from both at home and abroad, which is integrated with machinery, electricity and gas. It has a high degree of automation and stable performance. The design of the whole machine is new with the characteristics of compact structure, reliable performance, beautiful appearance and high production efficiency.

1.2 设备型号与含义 Equipment model and meaning

双压带式磨边机型号含义见图 1-1 The model of the double belt squaring machine is shown in

Figure 1-1

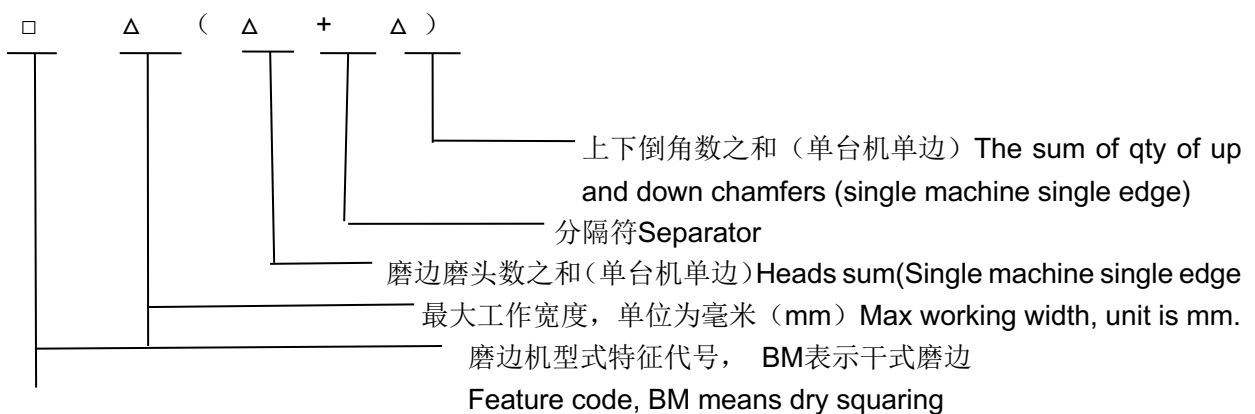


图1-1 型号含义 Figure 1-1: Type meaning

1.3 设备外形及设备技术参数 Equipment appearance and technique parameters

设备外形见图1-2；技术参数见表1-1。

BM 双压带磨边机 BM Double belts squaring machine

Equipment appearance as shown in Figure 1-2, and technical parameters are shown in Table 1-1



图1-2 设备外形 Figure 1-2:Equipment appearance

型号 Model	总功率 /kw Total power/ kw	磨 头 数 heads / pcs	下 倒 角 磨 轮 数 lower heel s/ pcs	上 倒 角 磨 轮 数 upper wheel s/ pcs	75 下带 工作宽 度 75 lower belt width/m m	100 下 带工作 宽度 100,low er belt width/m m	磨削量 Square amount/ mm	同步带速 度 Belt speed/m/ min	对角线 误差 Diagon al error /mm	前机重 量 Front machin e weight/ kg	后机重 量 End machi ne weight /kg
BM650 (9+2)	149	36	4	4	250~ 650	300~ 650	≤10	10~22	≤0.5	3800	4000

BM 双压带磨边机 BM Double belts squaring machine

BM650 (10+2)	163	40	4	4			≤10	10~22	≤0.5	4000	4200
BM650 (12+1)	185	48	0	4			≤10	10~22	≤0.5	4200	4400
BM650 (12+2)	191	48	4	4			≤10	10~22	≤0.5	4400	4600
BM650 (14+1)	213	56	0	4			≤10	10~22	≤0.5	4600	4800
BM650 (14+2)	219	56	4	4			≤10	10~22	≤0.5	4800	5000
BM650 (16+1)	241	64	0	4			≤10	10~22	≤0.5	5000	5200
BM850 (9+2)	149	36	4	4			≤10	10~22	≤0.5	3890	4100
BM850 (10+2)	163	40	4	4			≤10	10~22	≤0.5	4090	4300
BM850 (12+1)	185	48	0	4			≤10	10~22	≤0.5	4290	4500
BM850 (12+2)	191	48	4	4	250~ 850	300~ 850	≤10	10~22	≤0.5	4490	4700
BM850 (14+1)	213	56	0	4			≤10	10~22	≤0.5	4690	4900
BM850 (14+2)	219	56	4	4			≤10	10~22	≤0.5	4890	5100
BM850 (16+1)	241	64	0	4			≤10	10~22	≤0.5	5090	5000
BM1000 (9+2)	149	36	4	4			≤10	10~22	≤0.5	4050	4270
BM1000 (10+2)	163	40	4	4	250~ 1000	300~ 1000	≤10	10~22	≤0.5	4250	4470

BM 双压带磨边机 BM Double belts squaring machine

BM1000 (12+1)	185	48	0	4			≤10	10~22	≤0.5	4450	4670
BM1000 (12+2)	191	48	4	4			≤10	10~22	≤0.5	4650	4870
BM1000 (14+1)	213	56	0	4			≤10	10~22	≤0.5	4850	5070
BM1000 (14+2)	219	56	4	4			≤10	10~22	≤0.5	5050	5270
BM1000 (16+1)	241	64	0	4			≤10	10~22	≤0.5	5250	5470

表 1-1 BM 双压带磨边机技术参数

Table1-1 the technique parameters of BM Double belt squaring machine

第2章 系统配置及功能介绍 System configuration and function

2.1 工作原理 Working principle

进砖线架→磨边机输送→(前)磨边机对中→(前)磨边机压砖→(前)磨边机磨边→(前)磨边机倒角→调头线架90°调头→(后)磨边机对中→(后)磨边机推砖→(后)磨边机压砖→(后)磨边机磨边→(后)磨边机倒角→出砖线架。

Feeding conveyor→transfer→(front) centering→(front) pressing→(front) squaring→(front) chamfering→U-turn conveyor turn at 90°→(later) centering→(later) pushing→(later) pressing→(later) squaring→(later) chamfering→output conveyor

2.2 主要结构 Main structure

瓷质砖双压带磨边机主要由两底架、大梁、主传动机构、对中机构、压砖轮机构、推砖机构(后机才有,前机没有)、压梁装置、碟形磨边头、倒角磨头、电器系统、气动系统、除尘系统等组成。This squaring machine is mainly composed of two chassis, girders, main drive mechanism, centering mechanism, pressing mechanism, pushing mechanism (the Later machine has it, Front machine without it), beam compression device and disc squaring head, chamfering head, electrical system, pneumatic system, dust removal system etc.

碟形磨边头 Disc squaring head

碟形磨边头见图2-1。磨头电机法兰,带动磨轮转动,执行磨削动作,磨头座由固定座、滑座、镶条、调节座丝杆、调节座螺母等组成,磨头电机与滑座固定,通过旋转调节手轮可以实现磨轮的进刀和退刀功能。Disc squaring head see figure 2-1. The head motor flange drives wheel to move, and take

action of squaring, the head seat comprises a fixed seat, a sliding seat, inlaid strip, adjusting seat screw, regulating nut seat etc., head motor is fixed with slide seat, can realize wheel knife go and back function by rotating the hand wheel.

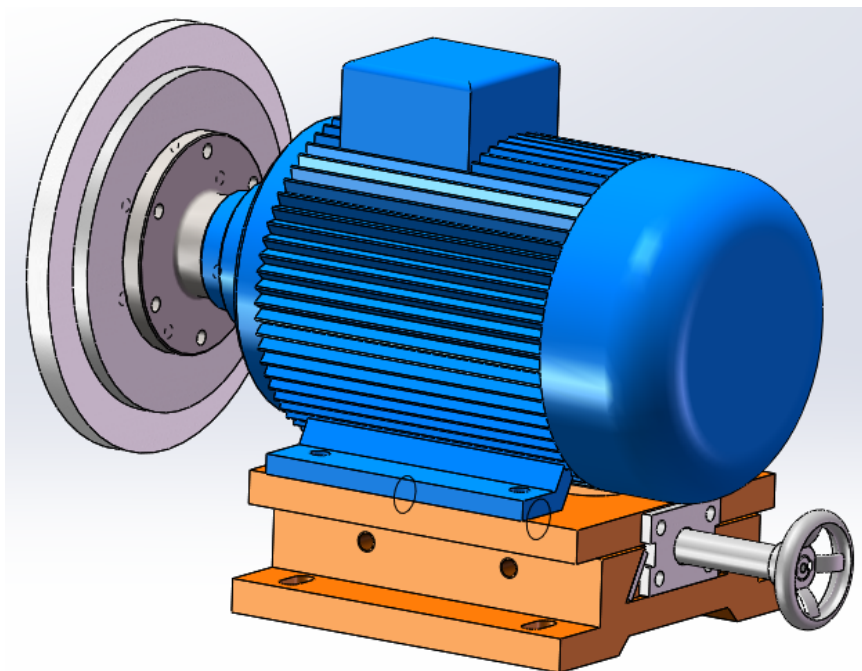


图2-1 碟形磨边头 Figure 2-1 Disc squaring head

2.2.1 倒角磨头 Chamfer head

1) 上倒角磨头 Upper chamfer head

上倒角磨头见图2-2。由电机、滑动轴、滑动套、滑轴、砂轮、砂轮安装盘、气缸、气缸连接板、翻板座、翻板、倒角头支座等组成。电机通过滑动套带动滑动轴，滑动轴与砂轮安装盘锁定，砂轮与砂轮安装盘旋紧（旋紧方向与工作时砂轮转向相反），从而实现电机驱动砂轮作旋转运动。气缸通过连接板驱动滑套前后运动，滑套与滑动轴相对固定，从而实现砂轮前后运动。翻板座与大梁固定，倒角头支座与翻板相对固定，可实现砂轮倾斜角度的调整。

Figure 2-2 shows upper chamfer head. It compose by motor, sliding shaft, sliding sleeve, shaft, grinding wheel, grinding wheel mounted disc, cylinder, cylinder connecting plate, turning plate seat, turning plate, chamfer head support etc. Motor drives sliding shaft through sliding sleeve, and slide shaft is locked with wheel mounted disc, wheel is screwed tightly with wheel mounted disc (screw direction is in the opposite direction of wheel), so as to achieve the motor drives wheel to do rotation. The cylinder is working by connecting plate driving sliding sleeve, the sliding sleeve and the sliding shaft are relatively fixed, so as to realize the movement of the grinding wheel. Turn plate seat is fixed with beam, chamfering head seat and the turn plate is relatively fixed, so that can adjust the inclined angle of grinding wheel.

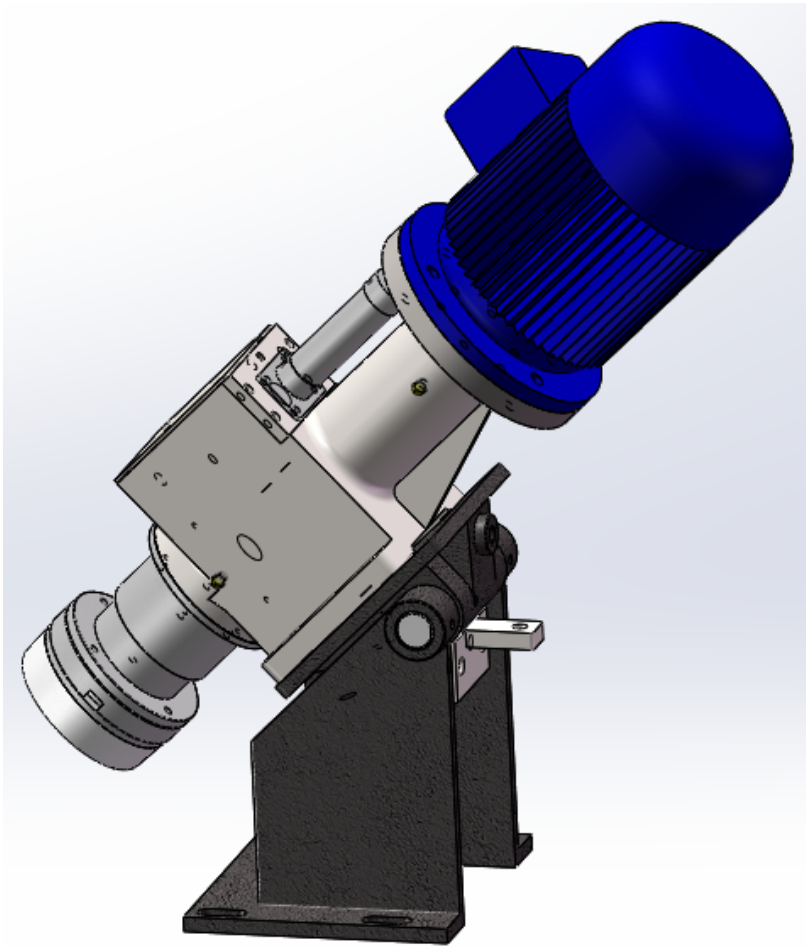


图2-2 上倒角磨头 Figure 2-2 Upper chamfer head

2) 下倒角磨头 Lower chamfer head

下倒角磨头见图2-3，由电机、下倒角座板、旋转支架、下倒角主动轮、下倒角被动轮、皮带、下倒角磨头轴、下倒角磨轮磨头支座3、倒角磨头支座1、翻板2等组成。在倒角磨头支座及支座座板的组合安装后，使倒角磨头轴7与水平线倾斜45度，以达到倒角的目的。倒角磨头翻板的设置主要是便于更换倒角砂轮8。倒角砂轮8安装在磨头轴7上，由调节手轮5带动作上下位移，并由电机带动作旋转磨削运动。固定倒角磨头根据定尺寸控制磨块，保证磨削尺寸一定，磨削时不会随砖外形而仿形变化。

Lower chamfer head as shown in Figure 2-3, it is composed by motor, lower chamfering seat plate, rotary bracket, active wheel, passive wheel, belt, head shaft, grinding wheel and head seat 3, head seat 1, turning plate 2 etc. After installation of the combination of chamfering head seat and seat plate, make the chamfer head shaft 7 and a horizontal line is tilted by 45 degrees to reach chamfer. Chamfer head turning plate is mainly for the convenience of replacement of chamfer wheel 8. Chamfer wheel 8 is fixed on the head shaft 7, by adjusting hand wheel will take action on displacement, and do rotation motion of grinding with driving of the motor. Fixed chamfer head according to the fixed size control grinding media, to ensure the fix dimension for grinding, the profile won't change together with the shape of tile during grinding.

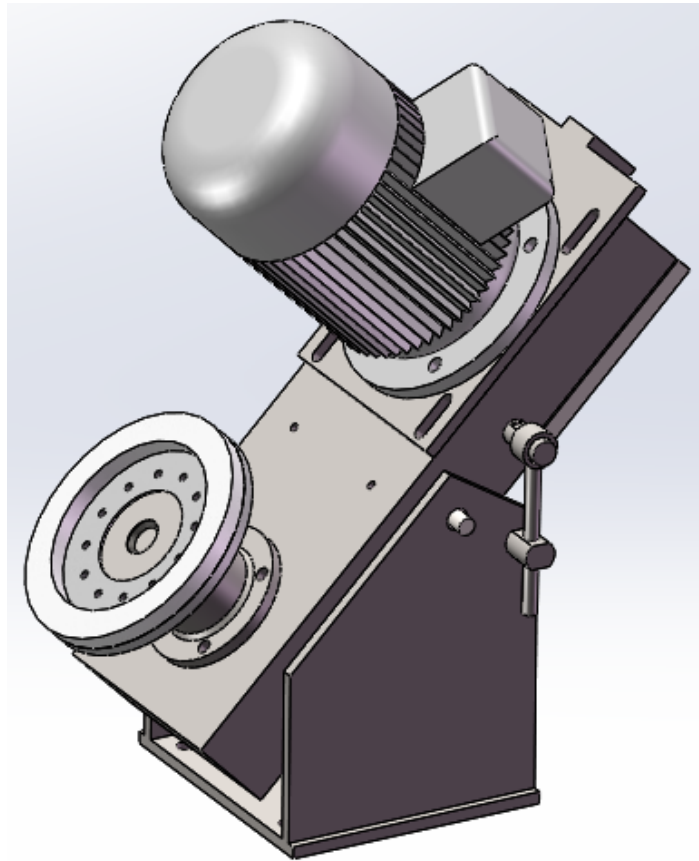


图2-3 下倒角磨头 Figure 2-3 Lower chamfer head

2.2.2 气动系统 Pneumatic system

气动系统是瓷质砖双压带磨边机中一个重要组成部分，它主要由气源三联体（空气过滤组合）、储气罐、减压阀、电磁换向阀、单向节流阀、排气阀等气动组件组成。

Pneumatic system is an important part of this squaring machine. It is mainly composed by the air triplet (air filter combination), air storage tank, pressure relief valve, solenoid valve, one-way throttle valve, exhaust valve etc.

2.2.3 电气控制系统 Electrical control system

电气控制系统详见电气控制原理图。

For electrical control system, please see electrical control diagram for details.

2.2.4 对中机构 Centering device

对中装置见图2-4。由对中轻钢气缸、对中齿轮箱、主动齿条轴、被动齿条轴、连接杆、对中导向轴、对中活块、对中板,对中胶轮等组成。对中气缸的伸缩通过主动齿条轴转化为对中活块的往复运动，

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借助摆动齿轮，使左右两侧的滑块动作协调一致，从而实现砖坯置于磨边机正中央，均衡两边磨头磨削量，完成准确对中。

See figure 2-4 for centering device. It is composed by cylinder, gear box, active gear shaft, passive gear shaft, connecting rod, guild shaft, live block, board, and rubber wheel etc. The expansion of the cylinder makes live block reciprocation through active gear shaft transformation, with swing gear, to have movements coordinated of both sides slider, so as to realize the tile is placed in the center of squaring machine ,and balanced grinding amount of both sides heads, so that to be centering accurately.

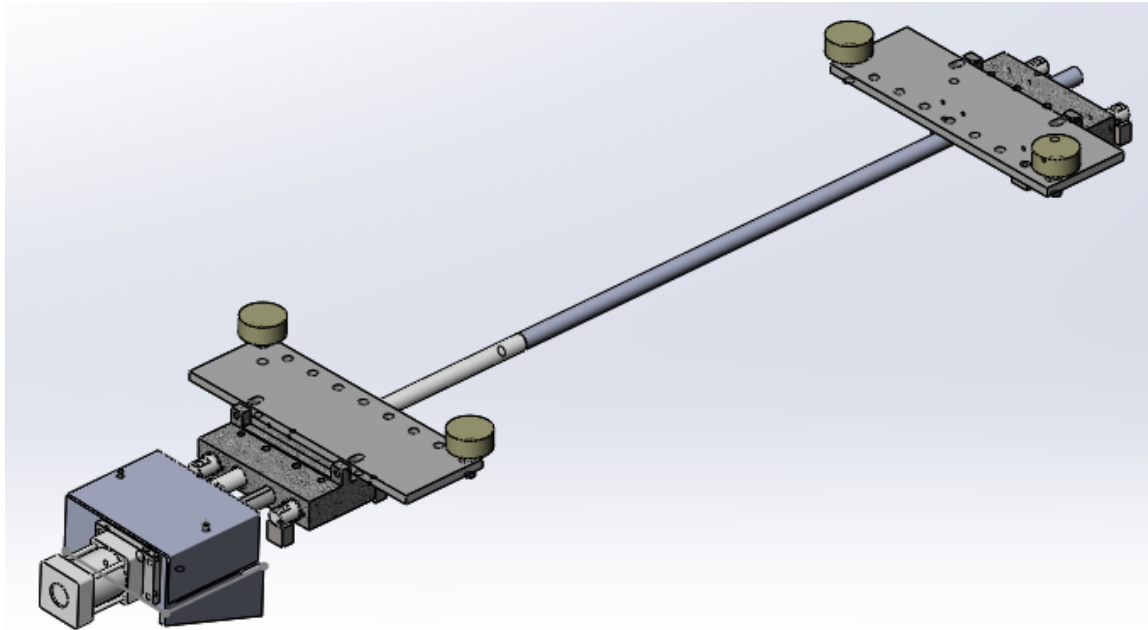


图2-4 对中机构 Figure 2-4 Centering device

2.2.5 推砖机构 Pushing device

推砖机构用于校正出砖的对角线,结构见图 2-5。

Pushing mechanism used to correct the diagonal line, the structure is as shown figure 2-5.

由变频器控制推砖电机变速后，经同步带带动滑板底座在导轨上作往复运动，达到推砖目的。推砖的极限位置由装于接近开关架上的接近开关控制。滑板底座上设有一个气缸，气缸伸缩运动通过鱼眼接头、连杆等辅助件转化为旋转支撑轴的转动，从而实现推砖爪的往复摆动。推砖时气缸带动推砖爪下插，推砖前进；复位时，气缸驱动推砖爪上提。推砖爪上装有微调螺钉，用来调整出砖对角线。

The pushing motor speed is controlled by inverter; the sliding base plate is taken by the synchronous belt for reciprocating movement on the rail, so as to achieve the purpose of pushing tiles. The limit position is controlled by the proximity switch that on the switch frame. The base plate is provided with a cylinder, the extension movement of which through assistant elements, such as fisheye joint, the connecting rod etc convert into rotation of supporting shaft, so as to achieve reciprocating swing of the jaw. When pushing the tile, the cylinder pushes the jaw down, and pushes the tile forward. When reset, the cylinder pushes the jaw up. The adjustment screw is arranged on the jaw to adjust the diagonal of the tile.

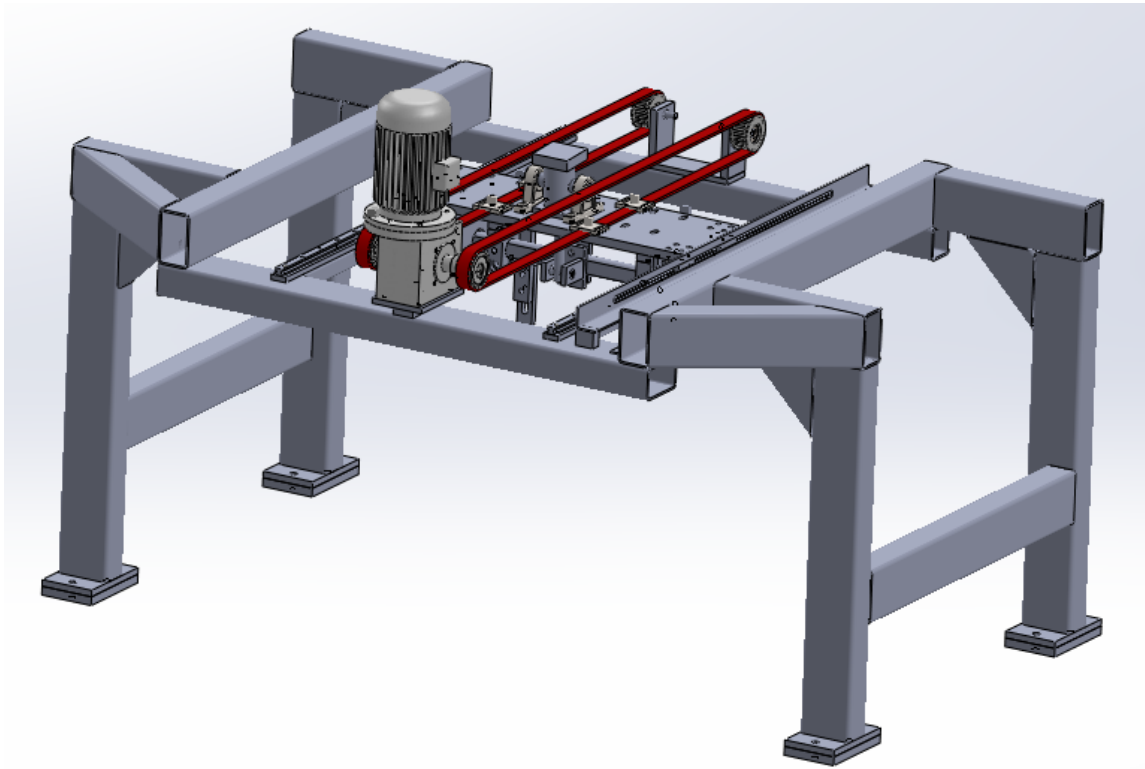


图2-5 推砖机构 Figure 2-5 Pushing device

2.2.6 调宽机构 Width adjustment device

磨边机调宽结构见图 2-6。当摇动调宽手轮转动时就带动蜗箱中蜗轮转动，同时通过调宽连接杆带动另一端蜗箱中的蜗轮转动，蜗轮带动调宽丝杆转动。调宽螺杆与装于导向座上旋向相反的一对螺母配合，导向座（与横梁连接，左右横梁各用两个导向座）带动左（右）横梁沿导向轴作相向或相离运动，从而实现调宽功能。

The structure of the width adjustment device is shown in figure 2-6. When moving hand wheel, it will take driving of worm wheel that in worm box to rotate, and by the connecting rod to drive the rotation of the worm gear of the other side worm box, worm wheel drive the rod to rotate. The width adjustment screw rod is coordinated with the nut which is arranged on the guide seat, the guide seat (connected with the cross beam, left and right beams with two guide seat each) takes beams to make opposite or deviation movement along the guide shaft, so as to achieve width adjustment function.

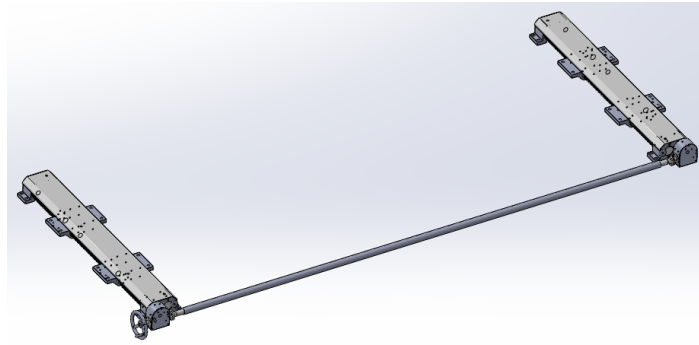


图2-6 调宽机构 Figure 2-6 Width adjustment device

2.2.7 主传动机构 Main driving device

主传动装置由减速机、传动主动轴、传动被动轴、齿轮箱、主传动副箱座、同步带轮、齿轮等组成，用户可通过对主传动装置中的电机频率的调整，以实现加工不同规格砖所需要的输送速度。

The main driving device is composed of reducer, active shaft, passive shaft, gear box, main driving vice box seat, timing belt wheel, and a gear, etc. The user can adjust the frequency of the motor in the main driving device to realize the conveying speed of different specifications tiles.

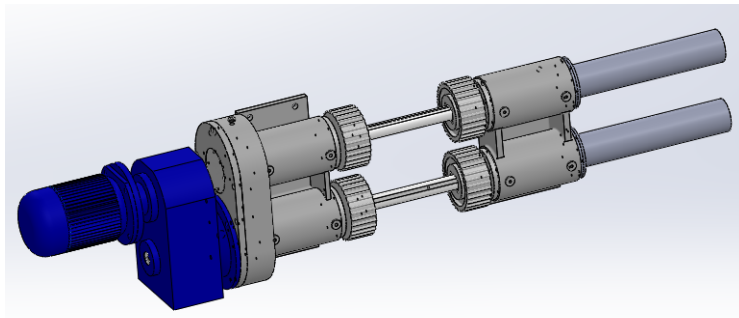


图2-7 主传动机构 Figure 2-7 Main driving device

2.2.8 转臂装置 Turn arm device

转臂装置见图 2-8。转臂装置由转臂、转臂转轴、转臂固定轴等组成。转臂装置一端与压梁固定，另一端与大梁上的其他固定件锁定。压梁转臂可以使压梁不侧偏，保证压梁的稳定性，两个转臂的相对转动又不影响压梁的上下运动。

Turn arm device as shown in figure 2-8. The turn arm device is composed of rotating arm, shaft, fixed shaft etc. One side of the turn arm device is fixed with pressing beam, and the other side is locked with other fixing parts of beam. The turn arm of the pressing beam can make the pressing beam won't be cornering, to ensure the stability of the pressing beam, the relative rotation of the two turning arm won't affect the upper and lower movement of pressing beam.

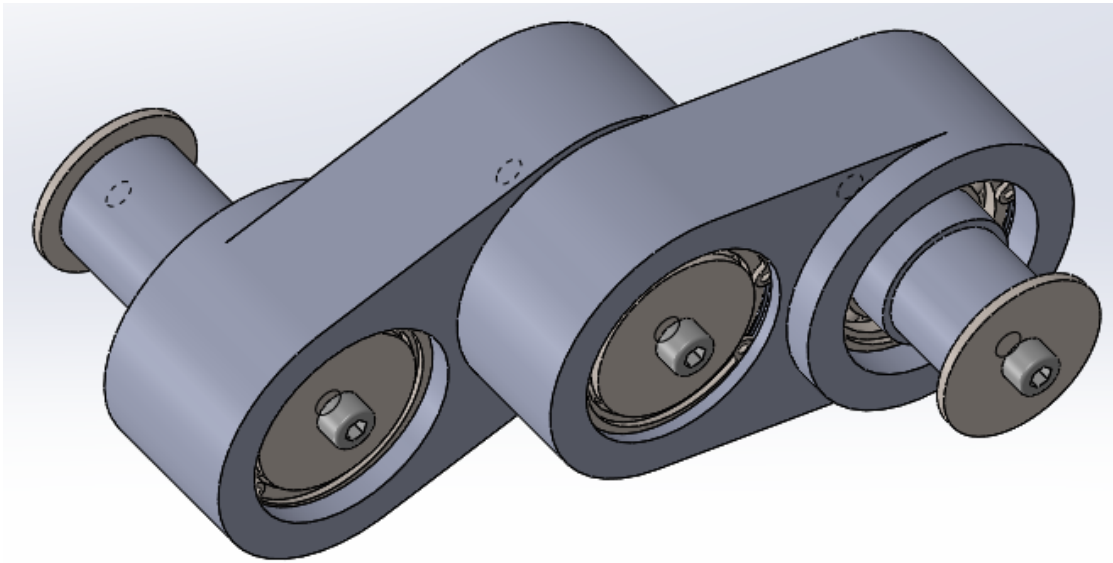


图 2-8 转臂装置 Figure 2-8 Turn arm device

2.2.9 压梁装置 Pressing beam device

压梁装置见图 2-9。压梁装置包括压梁焊接支架组件、托板组件、托槽组件、不锈钢托槽、过渡轮组件等。压梁气缸伸缩运动通过气缸活结转化为压梁的上下运动，可以通过调节气缸气压大小来改变压梁对砖块的压紧力，压梁滑座一开三起到导向作用。

The pressing beam device is shown in figure 2-9. The pressing beam device includes welding bracket assembly, pallet assembly, trough assembly, stainless steel trough, transition wheel assembly etc. The telescopic movement of the cylinder through the piston makes pressing beam moving up and down, it can change the pressure force of pressing beam to the tile by adjusting the air pressure of cylinder, and the sliding seat is taking guide role.

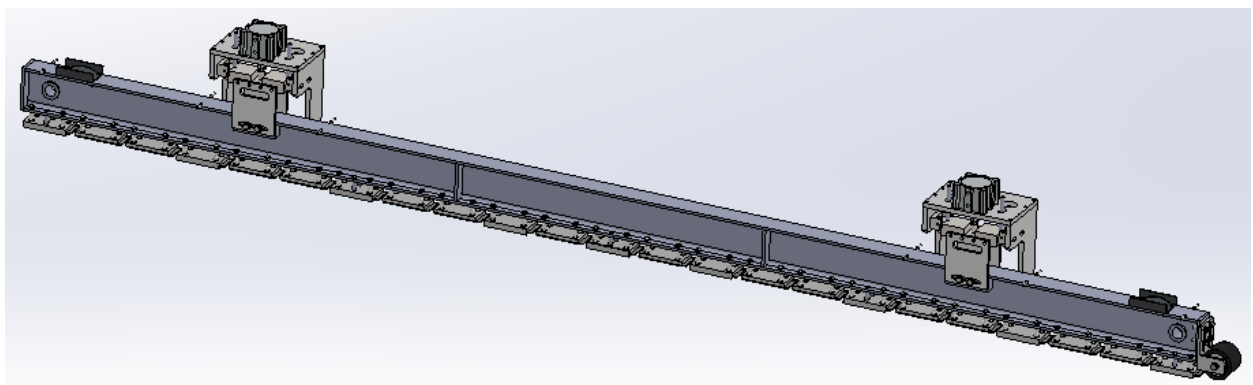


图2-9 压梁装置 Figure 2-9 Pressing beam device

第3章 厂房环境、吊运、贮存与安装 Plant environment, handling, storage and installation

3.1 厂房环境与基础

厂房设计应尽可能通风、明亮并有降噪功能，电、气柜所在位置须无尘无水。厂房必须有良好的供电、供气系统。供给系统的基本参数（电压、频率、电缆线径等）可视设备的具体配置而定，总气源压力应在 0.6~0.8MPa 之间。

Plant design should be ventilation as well as possible, reduce the noise, electrical or air control panel location should be no dust and water. Plant must have good power supply, air supply system. The supply system basic parameters (voltage, frequency, cable diameter) shall be depending on the specific configuration of the visual equipment, the total air pressure should be between 0.6 ~ 0.8MPa.

3.2 运输、吊装 Transportation and handling

3.2.1 运输 Transportation


根据所发产品的型号、尺寸及重量,巴赛尔公司将采用合适的包装以确保产品完好地送达客户处。产品运输方式的选择决定于目的地的远近和所订合同的条款,一般地,国内客户采用公路运输,国外客户则采用海运。运输时主机将组装完整并盖上防水保护布料。

According to the model, size and weight of the product, Basair company will use the appropriate package to ensure that the product is delivered to the customer in good condition. The choice of product transport mode is decided by the distance and the terms and conditions of the contract. In general, domestic customers by road transportation, foreign customers by sea. The machine will be assembled and covered with waterproof protective fabric.

3.2.2 吊装 Handling

具体吊装步骤如下 Specific handling steps are as follows:

- 1) 根据机器的外形尺寸、重量选择合适的起吊工具和机车;
According to the size, weight of the machine to choose suitable lifting tool and crane;
- 2) 仔细检查所用的悬车或吊车、吊钩、起吊绳锁等工具是否牢固可靠;
Carefully check crane, hoisting rope, hook lock and other tools are reliable or not.
- 3) 检查起吊绳是否会夹坏其它零件, 确定起吊绳位于调宽联接轴内侧;
Check the rope whether will damage other parts, make sure the hoisting rope is in inner side of connecting shaft.
- 4) 起吊绳与机架和支座的接触处应垫上橡胶垫, 以防擦伤机器表面油漆;
It should put rubber pad to the contacts between the rope and machine frame or seat, to prevent scratches the paint of machine surface.
- 5) 装车后应将机器固定, 以防在运输过程中颠簸或震动。
After loading, the machine should be fixed, in order to prevent the bumps or vibrations during transportation.

 注意: 吊移机器时, 要避免任何急剧的起吊或碰撞, 勿使机器晃动, 不要吊起过高, 并确认在吊机的活动区域内无任何对象、更不得有人! 由于机器较重, 吊运过程中应特别注意安

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全，以防发生事故！

Note: When handling the machine, it should avoid any drastic lifting or collision, do not make the machine shaking, do not lift too high, and make sure there is no any object, especially no man in the crane activities area. Because of heavy weight of the machine, it should pay special attention to safety during lifting process, to avoid accident!

3.2.3 吊装\卸车: Loading and unloading

- 1) 根据设备具体外形尺寸与整机重量选择合适的起吊设备（通常要求承载能力为 5 吨以上的起吊设备）； According to the equipment specific dimensions and weight to select suitable lifting equipment (usually require the lifting machine with load more than 5 tons)

- 2) 仔细检查吊装用具是否完好，各项连接是否牢固可靠。

Carefully check whether the lifting appliance is in good condition, whether the connection is firm and reliable

3.3 设备确认与安装前准备 Equipment confirmation and preparation before installation

3.3.1 设备确认 Equipment confirmation

在产品发送至目的地后，我们要求客户做到以下几点：

After the product is sent to the destination, we request the customer to do the following

- 1) 检查产品包装是否完好，设备有否受到损伤；

检查正面操作面板的巴赛尔商标和机架上的铭牌所示设备编号、出厂日期，确认产品是否与定货合同相符。产品铭牌如图 3-1 所示。

Check whether the product packing is good, whether the equipment has been damaged;

Check the Basair trademark that in front control panel and the frame plate shown in equipment number, date of manufacture, confirm whether the product is consistent with the order of the contract. Product nameplate as shown in figure 3-1.



图3-1 铭 牌 Figure 3-1 Name plate

- 2) 根据所发产品发货清单认真核对所发物品是否与定货合同相符,随机附件有无丢失; According to the product packing list carefully check whether it is consistent with the contract, whether there is shortage of accessories

- 3) 在设备安装前，请将设备及相应组件放置于干燥、封闭、清洁的场所，并远离具有腐蚀性

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的环境；

Before installation, the equipment and the corresponding components should be placed in dry, closed, clean place, and away from corrosive environment.

- 4) 保持出厂前所有设备构件润滑点的润滑状态。

Lubrication condition of all equipment components should be maintained as it is before leaving the factory.

3.3.2 安装前准备 **Preparation before installation**

- 1) 安装工具清单:Installation tools list:

a) 2 个千斤顶 (一大一小) Two jacks (one big, one small)

b) 1 个手提式打磨机 One portable grinding machine

c) 1 台冲击钻 (钻头直径 10、12、14、16) One impact drill (drill diameter 10, 12, 14, 16)

d) 1 台水平仪 One level meter

e) 1 台水平仪 One level meter

f) 棉线 1 卷 One rolls of cotton

g) 常用机械安装工具 1 套 One set of commonly used machine tools

h) 常用电气安装工具 1 套 One sets of commonly used electrical installation tools

- 2) 瓷质砖双压带磨边倒角机安装前的检测操作按以下步骤进行：

Inspection before installation should be done as following steps:

- a) 检查所有的设备组件是否都存在并完好，以避免在安装阶段不必要的时间与费用浪费；根据上面所列的安装工具清单，检查工具是否备齐，以确保安装工作能有效进行；

Check all the equipment components whether are there and in good condition, in order to avoid the waste of time and cost during the installation phase;

Check all the tools whether are ready according to the above tools list, to ensure that the installation work can be carried out effectively;

- b) 列出需要外部协助的安装工序并在安装前具备好这些条件(如吊车)；

List the installation procedures that require external assistance and have it ready (such as cranes) before installation.

- c) 用不会损坏设备的稀释液认真清洗各个设备组件； Carefully cleaning the equipment components with the dilution that won't damage the equipment.

- d) 认真检查基础，确保安装基础的施工符合先前所给的地基图；

Carefully check the foundation to ensure that the foundation of the installation is in accordance with the previously given foundation drawing.

- e) 安装人员必须有明确的个人职责与操作分工，接受过基础的技术培训并具有基本的装配能力，以便提供基本的维修培训。 Installation personnel must have a clear division of responsibilities and jobs, received basic training and have the basic ability to assemble, in order to provide basic maintenance and training.

3.4 设备安装的步骤和方法 **Steps and methods for equipment installation**

3.4.1 设备安装步骤 **Installation steps**

- 1) 检查基础,确保磨边设备能顺利置于基础之上；

Check foundation, to ensure that the equipment can be placed on the foundation

successfully.

- 2) 确定好设备供给系统安装位置。参照所给地基图中尺寸，确认供气、供电口存在并接近各个主机；

the installation location of the equipment. According to the size of the foundation drawing, ensure the existence of air supply and power supply and close to the machines.

- 3) 定出磨边主机安装位置。参照所给地基图，将磨边主机放置于基础安装位置附近；
Set the location of the squaring machine . Referring to the foundation drawing, the squaring machine is placed near the foundation installation area.

- 4) 定出 90° 转向联机安装位置。将 90° 转向联机放入两台磨边主机之间；
Set the location of the 90 degree turning machine. Put this machine between the two squaring machines.

- 5) 调整输送带进出口位置。调整输送带使其松紧合适并在进出口位置能很好地同其它机器设备衔接；

Adjust the inlet and outlet position of the conveyor belt. Adjust the conveyor belt so that it is appropriate and can be well connected with other equipment in the inlet and outlet position.

- 6) 定出机器的安装中心线。在基础中心上方拉一条棉线并固定好，如果该设备是同其它机器设备配套，必须使安装中心线重合；

Set the installation center line. At the top of the foundation center pull a cotton line and fixed, if the device is with other equipment, must make installation coincidence of the center line;

- 7) 连接设备。定出每台设备的中线，根据安装中心线，将设备衔接成线，使各台设备的中线与安装中心线重合；

Connecting equipment. Set out the center line of each machine, according to the center line, the equipments will be connected to be line, so that the center line of the equipment is coincidence with the installation center line.

- 8) 校正设备整线水平。将水平仪放置于一个合适的位置，将各单台主机的输送带表面当作参考面，粗校整线水平；

Calibration equipment level. The level instrument is placed in a suitable position; take the conveyor belt surface as the reference surface, to adjust the level of the whole line.

- 9) 安装设备。校正好设备水平后，用膨胀螺栓将设备固定；

Install equipment. After the equipment level calibration, fix the equipment with expansion bolts;

- 10) 设备电源连接。根据电气原理图，将磨边机的电柜与总电源接通。(详见安装方法：电气连接)；

Power supply connection. According to the electrical diagram, connect the electric panel of the squaring machine to the power supply. (see installation method: electrical connection);

- 11) 设备气源连接。将磨边机的气柜与总气源接通；

Air source connection. Connect the air control panel to the air source.

- 12) 安装磨边轮、倒角轮。Install squaring wheel and chamfering wheel.

3.4.2 安装方法 Installation methods

具体进行安装操作前，请确认：整线设备已正确就位；从总供给系统出来的各个接口存在，并正确地处于各台机器的附近，电、气均已送至；电缆线径、气管管径与设备的输入端接口大小相符；所需的安装工具已准备好。

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Before installation, make sure that the whole line equipments have been ready; every interface from source supply system is ready, and correctly located near to the machine, electricity and air have been ready; cable diameter, pipe diameter match the requirement of equipments; the required installation tool is also ready.

3.4.2.1 安装设备 Equipment installation

经过整线就位并粗校水平后,就可以进行设备安装:

When the complete line is ready and leveling, it can start equipments installation.

- 1) 拆除磨边机调宽导向轴上的防尘罩, 将水平仪放置于导向轴上;
Remove the dust cover of the guide shaft, and put the level gauge on the guide shaft.
- 2) 精校磨边主机的水平;
Accurately adjust the level of the main machine.
- 3) 校完水平后, 用紧固螺栓将磨边机机脚与机脚垫板地面相连;
After leveling, connect the machine foot and base plate with the fastening bolts.
- 4) 重新装好防尘罩。
Install the dust cover back to the machine.

3.4.2.2 电气连接 Electrical connection

电气连接必须使用合适线径的电缆, 以确保设备的电压与输入电压同总电源电压相一致。在电力输送线, 安装一个自动短路保护开关。确定机器设备的地线与地相连十分重要。

Electrical connections must be in line with the appropriate wire diameter to ensure that the voltage of the machine and input voltage match the total supply voltage. In power transmission line, install an automatic short-circuit protection switch. It is very important to make sure the equipment is connected with earth wire.

3.4.2.3 气源连接 Air source connection

- 1) 将压力监控单元设定值调在 0.6MPa, 压力监控单元起监控气动系统压力的作用;
The pressure monitoring unit is set up to be 0.6MPa, and the pressure monitoring unit monitors the pressure of the pneumatic system.
- 2) 用气管将总供气源口与气联三联体进气口相联(气源三联体具有净化和润滑气体的作用), 打开总供气源开关, 调节空气减压阀, 使压力表读数显示为 0.4~0.6 之间。
Use air lines to connect air source and the inlet of air triplet (air triplet with the role of purification and lubrication air), open the air source switch, adjust the air pressure relief valve, to make the pressure gauge readings show between 0.4 – 0.6 Mpa.

第4章 调试与参数设定 Commissioning and parameter setting

4.1 大梁位置的调整 Beam position adjustment

当磨边机所磨削的砖坯规格发生变化时，需要通过调节调宽装置来调整横梁的间距，这项操作主要是通过调宽机构来实现。操作步骤如下：

When the size of tile is changed, by adjusting the width adjustment device to adjust the beam spacing. This operation is mainly done through the width adjustment mechanism. Operation steps are as follows:

- 1) 松开对中连杆及调宽滑座上的锁紧螺钉；
Loosen the locking screw on the connecting rod and the sliding seat.
- 2) 通过摇动调宽手轮,将横梁移动到新的工作位置；
Move the beam to a new working position by shaking the hand wheel.
- 3) 锁紧对中连杆及调宽滑座上的锁紧螺钉。
Locking tightly for the bolts that on the connecting rod and the sliding seat.

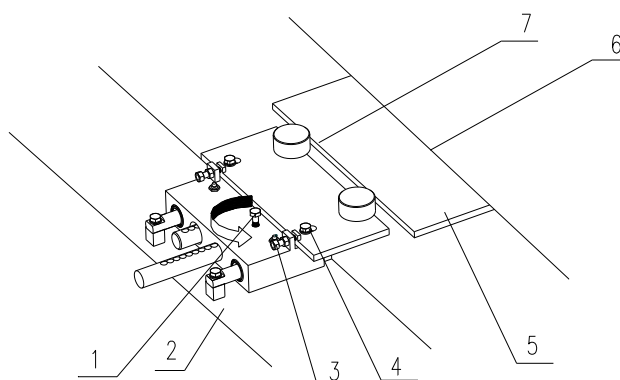
4.2 对中装置的调整 Adjustment of centering device

对中装置调整示意图见图 4-1 The adjustment of the centering device is shown in Figure 4-1

4.2.1 偏中心的调整：调节定位螺钉，可矫正对中装置偏中心。

Deviation center adjustment: adjust the positioning screw to correct the center deviation of centering device.

4.2.2 偏直线的调试：推板前端装有两只滚轮，将两轮外圆作直线，使这条直线与主机中心线基本平行，如有偏移可调节推板上的调节螺钉。Deviation from the straight line adjustment: the front of the push plate is equipped with two rollers; take outer rounds of these two rollers as straight line, making this line parallel to the center line. Adjusting the screws of push plate, if there is any deviation.



1--锁紧螺钉 Lock bolts 2--横梁 Beam 3--调节螺钉 Adjusting screw 4--定位螺钉 Positioning screw 5--砖坯 Tile 6--主机中心线 Center line 7--滚轮对中线 Centering line of rollers

图4-1 对中装置调整示意图 Figure 4-1 Centering device adjustment sketch map.

4.3 推砖装置的调整 Pushing device adjustment

4.3.1 调整砖坯规格的方法 The method of adjusting tile specification

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移动控制推砖架极限位置的接近开关，使推砖架保持在相应的极限位置以适应砖的规格要求，调整推砖爪之间的距离。

Moving the contact switch which controlling the limit position of the pushing support, make the pushing support is kept in the corresponding limit position to meet the requirements of the tile specification, and adjusting the space between jaws.

4.3.2 精校出砖对角线的方法: The method of accurate calibration of the tile diagonal.

微调调节螺钉使推砖爪接触点直线与主机中心线垂直，边观察边调节，直到对角线误差在规定范围内为止。

Slightly adjusting the screw makes the line of jaws contact points to be vertical with center line of the main machine, carefully adjusting to make the tolerance of diagonal be within the specified range.

4.3.3 推砖速度采用变频调速，任意选择最佳速度。

Take inverter to control the speed of tile pushing, it can chose any best speed.

4.4 压梁装置的调整 **Pressing beam adjustment**

- 1) 调整压梁气缸压力在0.2MPa左右;

Adjusting the air pressure of cylinder to be around 0.2 Mpa.

- 2) 调节压梁高度,使上压带下限位置与下压带间距比砖坯厚小约1mm,并确保同一压梁的前后间距尽量一致。

Adjust the beam height, make the space between lower limit position of upper belt and lower belt is around 1mm smaller than the tile thickness , and to ensure that the front and back space of the same pressing beam is as same as possible.

4.5 磨头的调整 **Head adjustment**

- 1) 调整磨头座固定螺栓,使金刚砂轮前沿伸出,后沿收缩,其收缩量在1mm~1.5mm之间。Adjust the head fixing bolt, make the diamond wheel with front expansion and back contraction, its shrinkage shall be between 1mm - 1.5mm

- 2) 使每对金刚砂轮前沿联机相对于主机中心线垂直度偏差不超过1mm。

Make the deviation of verticality between the front line of each pair diamond wheel and the center line of the main machine shall be not more than 1mm

- 3) 总磨削分三道工序或四道工序 () 完成,磨削量应逐渐递减。

General grinding is divided into three procedures or four procedures (without chamfer type), the amount of grinding should be gradually decreasing.

- 4) 倒角磨头磨削量应在0.5mm~1mm之间,四边倒角量应尽量一致。

Chamfer head grinding quantity should be 0.5mm - 1mm, the chamfer amount of each edge should be as same as possible

4.6 陶瓷抛光线用磨具 **Abrasive tools of ceramic polishing line**

4.6.1 磨料磨具基本知识 Basic knowledge of abrasive tools

- 1) 磨料Abrasive material:

磨料是制造磨具的主要原料，是磨具能产生磨削、研磨、抛光作用的基本因素。The abrasive material is the main raw material for the manufacture of abrasive tool, and is the basic factor of abrasive tool that have function of squaring, grinding and polishing.

- a) 黑碳化硅磨料——是以石英砂和石油焦炭为主要原料，在电阻炉内经高温冶炼而成，呈黑色不透明体，六角形结晶。性脆而锋利，适合于加工非金属材料。

Black silicon carbide abrasive... use quartz sand and petroleum coke as the main raw material, is made in the resistance furnace by high temperature smelting, with black opaque, hexagonal crystal. It is sharp and suitable for processing of non metallic materials

- b) 绿碳化硅磨料——绿碳化硅制造方法与黑碳化硅一样，只是采用的原料较纯、配料的成分稍有不同(加食盐)。产品呈绿色半透明体，较黑碳化硅性脆而纯度高。

Green silicon carbide abrasive... The manufacturing method of green silicon carbide is the same as black silicon carbide, but with more pure raw materials, and a slightly different in salt content of ingredients (add salt). Product is with green translucent body, more crisp and higher purity than black silicon carbide.

- c) 金刚石磨料——金刚石是一种碳的等轴晶系矿物，是迄今人类发现自然界中最硬的物质。莫氏硬度为 10，并且有较高的强度和良好的导热性。金刚石有天然和人造之分，我们使用的均为人造金刚石，是碳素材料在触媒剂作用下，于高压高温中合成的。

Diamond abrasive... The diamond is a kind of carbon mineral with equiaxial crystal structure, which is the hardest material in the nature. Mohs hardness is 10, and has high strength and good thermal conductivity. Diamond is divided into natural and artificial. What we used are artificial diamond, which is formed by carbon materials in high temperature and high pressure with adding catalyst.

2) 磨料粒度: Abrasive grain

用于制造磨具的磨料，需加工成粗细不同的颗粒，并将大小相近的颗粒按一定尺寸范围分级，从大到小用规定的数字表示，称为粒度号。颗粒尺寸小于 40 微米的极细磨料称作微粉。

The abrasive needs to be processed into different grains, and divide grades according to the size of the grains, from large to small with the provisions of the digital representation, known as the grain number. Fine abrasive grains of less than 40 micron size are called micro powder.

3) 结合剂: Bond

主要作用是将磨料固结在一起，使之具有一定的形状和强度，在磨削时，能使变钝的磨料及时脱落，以保持磨具有良好的磨削性能。

The main function is to be fixed with the abrasive, so that it has a certain shape and strength. It can make the grinding wheel drop off during grinding in order to maintain a good grinding performance.

4) 磨具的硬度: Abrasive hardness

指的是结合剂固结磨粒的强度。也就是当外力作用在磨具表面时，结合剂抵抗外力使磨粒从表面脱落的难易程度。磨粒容易脱落的，称谓该磨具的硬度低；反之，谓之硬度高。

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It means the strength of the bond to fix with abrasive grains. That is, when the external forces acting on the surface of the abrasive, the difficult degree for the bond to resist external forces to have the abrasive grains drop from the surface. If the grain easy to fall off, it is said its hardness is low; conversely, the hardness is high.

5) 磨具: Abrasive tool

用于磨削、研磨、抛光的工具。The tool which used for squaring, grinding and polishing.

4.6.2 磨削机理: Grinding principle

磨块、金刚滚轮(滚筒)、磨边轮为什么能加工瓷质砖? 这是依据物质的硬度差别, 硬度高的物质可以划磨比其软的材料。

Why grinding media, diamond roller (roller), grinding wheel can process porcelain tile? This is based on the hardness difference; high hardness material can process the material with lower hardness.

金刚石硬度最高, 莫氏硬度 10

The highest hardness material is diamond which with Mohs hardness of 10

碳化硅硬度9.3~9.5 Silicon carbide hardness 9.3- 9.5

瓷质砖硬度7-8之间 Porcelain tile hardness 7-8

4.6.3 磨边线磨具的配制及问题 Abrasive tools arrangement and problems

a) 崩边、崩釉: 砂轮切削力不好, 不锋利。

Edge crack, glaze crack: grinding wheel is not good, not sharp

b) 边磨成锯齿状: 砂轮不锋利, 磨头轴配合不良, 砂轮产生旋转振动。砂轮呈台阶状也造成锯齿状。

Edge is processed to be tooth shape: grinding wheel is not sharp, not good collocation of head shaft, grinding wheel has rotation vibration. Wheel wear with serrated step shape may be also caused this problem.

c) 各组磨边头调整切入量: 0.5 mm ~2mm Adjust all heads to cut inside 0.5-2mm more.

磨边轮锋利度与其它性能指针有很大关系:

The sharpness of the grinding wheel has a great relationship with other performance indexes

1) 锋利度不够, 噪音较大, 电流增加。Sharp degree is not enough, the noise is large, the current increase.

2) 走速减慢, 切深减少, 这样必然影响到生产效率和所加工板材的尺寸精度。需重新修整甚至报废。Speed slow down, decrease cut depth, so that will inevitably affect the production efficiency and the accuracy of the tile specifications. Need to repair or useless.

第5章 使用与操作 Use and Operation

5.1 开机前准备 Preparation before running

开机操作前请务必认真阅读电气说明书以及各有关操作面板的介绍，认真做好充分准备，具体内容如下：

Please be sure to carefully read the electrical manual and the introduction of the operation panel before starting the machine, carefully prepared and the specific contents are as follows

- 1) 逐个检查机器上每个电机的旋转方向是否正确；
Check whether the rotation direction of each motor is correct or not.
- 2) 确认上、下压带能正常工作；
Make sure the upper and lower belt can work.
- 3) 将两台主机及连接线的输送带速度调整到合适的大小；
Adjust properly for the speed of the conveyor belt and the two main machines.
- 4) 检查安全传感器与光电检测开关是否工作正常；
Check whether the safety sensor and photoelectric detection switch is working correctly or not.
- 5) 检查磨边轮与倒角轮是否正确安装于磨头轴与砂轮夹盘上，并紧固连接；
Check whether the squaring wheel and the chamfering wheel is properly installed on the head shaft and the grinding wheel chucks, and then fastening it.
- 6) 检查压梁装置能否正常工作并检查其工作压力是否合适；
Check whether the pressing beam device is working and check the work pressure is appropriate or not.
- 7) 确认砖坯能在对中装置作用下正确对中，且对中是同步进行；
Make sure the tile will be in center position with the action of centering device, and the centering is synchronize.
- 8) 确保磨边头处于正确工作位置，检查各砂轮与皮带间距是否合理；
To ensure that the squaring head is in the right position, and the distance between the grinding wheel and the belt is reasonable.
- 9) 打开气源开关，接通三联体气路，调整三联体气压在 0.6~0.8MPa 之间；
Open air source switch, get air on the triple, adjust pressure of air triplet to be between 0.6 - 0.8MPa.
- 10) 检查输坯线挡砖角铁的开度与磨边机横梁的间距是否满足所磨砖规格的要求，并作适当调整。
Check the space between the angle iron of conveyor and the beam whether meets the size requirement of the tile, and to make appropriate readjustment
- 11) 调整各气缸压力到规定值附近；
Adjust the pressure of cylinder to meet specified.
 - a).....压梁气缸 Pressing beam cylinder 0.20MPa
 - b).....对中气缸 Centering cylinder 0.40MPa
 - c).....推砖爪气缸 Jaw cylinder 0.40MPa
 - d).....倒角气缸 Chamfering cylinder 0.20MPa

5.2 空机试运行 No-load testing

5.2.1 开机 Start-up

- 1) 依次启动磨边、倒角电机或自动启动。

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In sequence to start the motor of squaring and chamfering machine or automatic start.

- 2) 按照从后至前的顺序依次启动各传动电机，或自动启动。

Starting from the last to the first of the sequence of the drive motor, or automatically start.

- 3) 开始进砖工作。

Start to feed tiles.

- 4) 检查出砖质量，必要时重新对整机进行调整。

Check the quality of the tile, when necessary, to adjust the machine.

- 5) 在开机状态下旋动各主机变频及输送线中的无级变速器旋钮，调整进砖间距及输砖速度。

During running, by controlling the main machine inverter and speed regulator of conveyor line, to adjust the tiles space and transmission speed.

5.2.2 关机 Shut down

- 1) 待全部砖走空。

It should be done after tiles are finished processing and not in the line.

- 2) 关闭各磨边、倒角电机及主传动减速机，按下急停按钮。

Close the motors of squaring, chamfering machine and the main drive reducer, press the emergency stop button.

- 3) 关闭总气阀。

Close the general air valve.

5.2.3 整线运行 Complete line running

确认试运行正常、出砖质量无误后，开始进砖，作整线运行。

After confirming the commissioning is successful and the quality of the processed tile is no any problem, then start to feed tiles the whole line operation.

5.2.4 操作注意事项 Operation notes

- 1) 出现意外情况应立即按下急停按钮，排除故障后再重新开机。

If any unexpected circumstances come out, it should immediately press the Emergency Stop button, and then restart after problems solved.

- 2) 出现碎砖时应立即按下急停按钮，升起上压带，消除碎砖后重新开机。

If any tile is broken, it should immediately press the Emergency Stop button, lifting upper belt, and restart it after removing the damaged tile.

- 3) 应尽量使各对磨边轮磨削量逐渐递减。

It should be as far as possible to make the squaring wheel grinding quantity gradually decreasing.

- 4) 更换砖的规格时，应先旋松对中齿条轴及调宽滑座紧定螺丝，然后摇动调宽手轮。

When feeding with different size tile, it should loosen on the rack shaft and width adjusting slide screw, and then move the width adjusting hand wheel to adjust it.

- 5) 机器在运转过程中应勤检查、多观察，实时了解运动机构工作状态、各润滑点的润滑情况等，确保设备处于正常运行状态。对严重发热的电机应停机查明原因，排除故障后再开机。

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During machines running, it should frequently check and observe to know the working condition of every moving parts and lubrication situation, ensure that the equipment is in good operation state. For the motor being over heat, the motor should be shut down to find out the reasons, and then start after trouble shooting.

- 6) 磨边机使用过程中发现的问题，可参看本手册的“维修保养”章节，亦可向巴赛尔公司售后服务部咨询。

For the problems found during the operation of the squaring machine, please refer to the "Maintenance" section of this manual, or consult with after-sales service department of Basair company.

- 7) 磨边机的使用及调整务请按照本手册要求执行。因操作原因导致机器故障及损坏，本公司不负任何责任。

The use and adjustment of the squaring machine will be required in accordance with this manual. Our company is not responsible for the failure of the machine and the damage caused by the incorrect operation.



危险：消除碎砖时，请使用工具，不要将手直接伸入磨头和压梁里。

调节大梁位置时，请不要将脚放于机架上。

Danger: the elimination of broken tiles, please use the tools, do not put the hand directly into the head and the pressing beam. When adjusting the beam position, please don't put the foot on the frame.



注意：调节大梁宽度时，一定要先松开对中齿条轴及调宽滑座紧定螺丝。

Note: when adjusting the beam width, it must first loose the rack shaft and adjustable sliding seat screw.

第6章 故障分析与排除 Problems and solutions

6.1 磨边机常见故障及排除方法 Problems and solutions

磨边机常见故障排除方法见表6-1

For problems and solutions of squaring machine, please see table 6-1.

表 6-1 磨边机常见故障排除方法 Table 6-1, commonly problems and solutions

序号 No.	常见故障 Problem	产生故障原因 Possible reasons	排除方法 Solution
1	砖边修磨不直 The tile edge is processed not straight	a、压带过松或两边压力不均匀； The belt is too loose or the pressure of both sides is not uniform. b、输送带两条的松紧不一致； The elastic of both sides of conveyor is not inconsistent. c、两相对磨头的磨入量相差过大。The grinding amount difference of the two opposite heads is too large	a、调整压带的压力，张紧压带； Adjust belt pressure, tension belt. b、调整输送带的平衡及松紧； Adjust the balance and tightness of the conveyor belt c、调整两相对磨头的磨入量，使其基本一致。 Adjust the grinding amount of the two opposite heads, and make them almost same.
2	砖边对角线超差 The diagonal of tile edge is not good	a、推砖拨爪的接触直线与主机中心线不垂直； The contact line of jaw is not verticality with center line. b、推砖机构中连接件有松动； The loosen of some connection parts of pushing device. c、对中机构的滚轮接触直线与主机中心线平行度偏差过大。 The parallel deviation of the roller contact line and the center line is too big	a、调节拨爪使其接触直线与主机中心接近垂直； Adjust jaw to make its contact line is verticality with center line. b、调整和紧固推砖机构各部位； Adjust and tighten all parts of pushing device. c、调整对中机构中的滚轮位置，使两滚轮的接触直线与主机中心线平行。 Adjust the roller position to make its contact line is parallel with center line.
3	瓷砖崩边、碎	a、磨头的磨入量超大	a、调整磨头的磨入量；

	边 Crack and broken of tile edge	<p>Grinding amount is too large</p> <p>b、磨头轴松动； Loosen of head shaft</p> <p>c、输送带过松或两带松紧不一致。 The conveyor belt is too loose or the elastic of both sides of conveyor is not inconsistent.</p>	<p>Adjust the grinding amount.</p> <p>b、检查磨头及磨头轴排除松动； Check head and head shaft have it without loosen.</p> <p>c、调整输送带的松紧度使两带松紧趋于平衡。 Adjust the balance and tightness of the conveyor belt</p>
4	砖边漏磨 Edge not to be processed	<p>a、对中机构不能将砖坯推至主机中央位置； The tile can not be sent to the center position by centering device.</p> <p>b、砂轮磨削量过小； Grinding amount of grinding wheel is too small.</p> <p>c、相对磨头位置与主机中心线位偏移。 Deviation between the opposite head position and center line.</p>	<p>a、调整对中机构的推砖位置； Adjust the pushing position of centering device.</p> <p>b、加大磨削量； Increase grinding amount.</p> <p>c、调整相对磨头与主机之间的中心线位移度。 Adjust the space between opposite head and center line.</p>

第7章 安全防护 Safety and protection

7.1 磨边机安全防护设备 Safety protection equipment for squaring machine

- 1) 防止人员触及碟形磨边头中磨削轮的刚性防护罩;
Prevention of touching rigid protective cover of the grinding wheel in squaring head.
- 2) 防止人员触及倒角磨头中磨削轮的刚性防护罩;
Prevention of touching rigid protective cover of the grinding wheel in chamfering head.
- 3) 防止人员触及同步齿形带的刚性防护罩;
Prevention of touching rigid protective cover of the synchronous gear belt.
- 4) 防止人员触及对中装置中对中轮的刚性防护罩。
Prevention of touching rigid protective cover of the centering wheel in centering device.

7.2 噪音及操作位置状况 Noise and operating position situation

整机运行噪音小于90dB(A), 强噪声源距离操作位置5米, 操作者需要带上护耳器。

The running noise is less than 90dB (A), if strong noise source location is 5 meters away from operation position, the operator needs to take ear protectors.

7.3 机器的危险区域 Dangerous area of the machine

开机的情况下绝对不允许接触机器的危险部位! 在维修或更换皮带、垫板必须触及危险区域时, 应先关机, 确认运动件完全停止, 电源关闭, 挂上“严禁开机”字样, 确保无他人开机情况下方可进行修机或其它操作。

The dangerous part of the machine is absolutely not allowed to touch during machine running! In the repair or replacement belt or plate must touch the danger zone, it should shut down machine first, confirm movement pieces completely stop, turn off the power, hanging on "it is strictly prohibited to start," the words, to ensure that no one to start the machine when do repair or other operation.



各危险点操作说明及注意事项: Each danger points and notes

- ◇ 危险点 1——线架带轮两端转动部分不得把手伸入, 以免卷入受伤;
Point 1: don't put the hand into the rotating part of line wheel, to avoid injury
- ◇ 危险点 2——推砖装置两端转动部分, 以及推砖架内侧齿形带等活动部分;
Point 2: the rotating parts of both sides pushing device, and that movement part like gear belt.
- ◇ 危险点 3——操作柜, 不得湿手操作按钮, 清洗机器时不得喷溅进水;
Point 3: operation panel, don't press buttons with wet hands, don't splash water when cleaning the machine.
- ◇ 危险点 4——推砖装置推砖爪部分, 工作时不得触及;
Point 4: jaw of pushing device, can not touch when it is working.
- ◇ 危险点 5——对中装置齿轮齿条副等活动部分, 以及对中轮部分;
Point 5: the movement parts like gear of centering device, and centering wheel.
- ◇ 危险点 6——主机传送带与压梁带之间, 不得把手伸入, 以免压入受伤;
Point 6: The area between driving belt and pressing belt, don't put hand inside to avoid injury.
- ◇ 危险点 7——在电动调节大梁宽度时, 注意连接轴以及手轮旋转部分;

Point 7: In the electric control beam width, pay attention to the connecting shaft and wheel rotation part.

- ◇ 危险点 8——磨边头防尘罩部分，工作时不得拆卸；压梁盖槽部分，工作时不可拆卸；

Point 8: dust cover of head and cover trough of pressing beam can not to be removed during machine running.

- ◇ 危险点 9——压梁转臂装置，工作时不得触及；

Point 9: turning arm device, can't touch when it is working.

- ◇ 危险点 10——传动轴与齿形带部分，工作时不得触及；

Point 10: driving shaft and gear belt parts, can't touch when they are working.

7.4 厂房环境的安全设备 Plant environment safety equipment

安装磨边线的车间必须具备如下的安全条件：

Install the squaring line workshop must have safety conditions as follows

- 1) 必须有足够的厂房空间，环境不能太狭窄、低矮；

There must be sufficient workshop space, the environment can not be too narrow, short.

- 2) 厂房设计应宽敞、通风，空气流动性好，装有通风设备；

Plant design should be spacious, ventilation, air flow is good, equipped with ventilation equipment

- 3) 必须具备防火设施；

Must be equipped with fire protection facilities

- 4) 厂房环境必须有符合视觉条件的天然采光和人工照明系统，以消除潜在的危险因素，减少工伤事故；

Plant environment must have natural lighting and artificial lighting system, in order to eliminate the potential risk factors, and reduce accidents.

- 5) 人行道不能太窄，不得乱堆乱放砖坯、磨块、其它杂物，确保过道畅通。

The sidewalk should be not too narrow, not cluttered tile, abrasives, and other debris, to ensure the smooth passage.

7.5 安全措施 Safety measures

- ✦ 在机器运转时，请不要打开防护装置，更不要将头、手伸入以免给您造成伤害。

When the machine is running, please do not open the protective device, and not put the head, hands inside to avoid injury.

- ✦ 请不要用湿手操作开关，以防止触电。

Please do not use wet hand operation switch to prevent electric shock

- ✦ 正常使用前的安装、调试和检修工作、都应由专业技术人员进行。

The installation, commissioning and maintenance jobs shall be carried out by the professional technical personnel


7.6 安全注意事项 Safety notes

7.6.1 搬运和安装 Handling and installation

- ✦ 当搬运本设备时，请使用合适的升降工具及移动设备，以防止意外发生。

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When handling the equipment, please use appropriate lifting tools and moving devices to prevent accidents.

 搬运时请不要施外力于磨边头电机；更不要使磨边头电机受到撞击，这样会对其造成损坏。

Please do not apply the external force on the motor; not to make impact on the motor, otherwise will cause damage.

机器在搬运中不要受到强烈冲击和碰撞。

Don't make the machine have a strong impact or collision while moving the machine.

机器的机械及电器损坏或缺少组件，请不要试机。

Please do not test the machine if the machine is damaged or missing components.

检查并确认机器安装位置及安装方向。

Check and confirm the installation position and orientation of the machine.

安装应按照本说明书的第 3 章进行。

The installation should be carried out in accordance with the instructions of chapter 3 of this operation manual

7.6.2 布线 Wiring

 布线或检查，请断开电源。确定断电后方可进行。

Wiring or inspection, please disconnect the power.

应在机械安装完成后进行布线，否则易引起事故。

Wiring should be done after machine installation, otherwise easily lead to accidents.

接线前先确认机器电控设备额定电压与交流电电压是否匹配，否则会引起伤害或火灾。

Before wiring, please confirm the voltage of electrical control equipments whether is matched with the AC voltage or not, otherwise, it will cause damage or fire

一定要先接好地线，不然会导致触电事故或引起火灾。

Be sure to connect the earth wire, otherwise it will lead to electric shock accident or cause a fire.

不要将总电源接在漏电保护开关输出端。

Do not connect the main power to the output of the leakage protection switch

请不要对电缆施外力钳压，更不要任意损伤或驳接，否则会导致触电。

For cable, please do not apply to the external force clamp pressure, not to any damage or split, otherwise it will lead to electric shock

7.6.3 试运行 Commissioning

检查整机并确认突然启动时不会造成机器损坏。

Check the machine and make sure that the mechanical damage is not caused by the sudden start

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正确调整连接控制柜输出与电机的三相关系，保证电机的旋转方向无误。

Correct connection and adjustment of the three phases between the output of the control panel and the motor, and ensure that the motor's rotation direction is correct.

7.6.4 操作 Operation

在初期调试入砖时，请不要站在压梁附近。

In the initial commissioning of the tile feeding, please do not stand near the pressing beam.

 碎砖后应立即停机，并不得用手直接清理砖渣。

If tile broken, please immediately stop the machine, and can not directly clean the broken parts by hand, requires the use of special tools to clean it.

水量或气量不足时，请勿开机。

Do not start the machine when the water or air pressure is not enough.

7.6.5 检查和维护 Check and maintenance

检查前须切断输入电源并等待五分钟、同时确认电源指示灯已经熄灭，再开始检查电气设备。否则将会导致触电事故发生。

Before checking, it must cut off the input power and wait for five minutes, meanwhile recognizing the power indicator light is off, then start inspection of electrical equipment. Otherwise, it will lead to electric shock accident.

设备在长期闲置后重新使用前必须进行全面检查和试运行。

The equipment must be fully checked and tested before running after long time idle.

请使用巴赛尔公司生产的零配件进行检修换件，对使用非巴赛尔公司的零配件而导致机器损伤，巴赛尔公司将不予包修。

Please use the spare parts that produced by Basair for the maintenance, the use of the parts that produced by others and lead to machine damage, Basair will not take responsibility.

没有巴赛尔公司技术人员的协作，请不要对设备进行改造，否则巴赛尔对其行为造成的后果不负任何责任。

No collaboration of technical personnel of Basair company, please do not transform the equipment, otherwise, Basair will not be responsible for the consequences.

7.7 人身安全的注意事项 Personnel safety note

7.7.1 人身安全防患装备 Safety prevention equipment

巴赛尔的磨边机在设计上已多方面考虑了使用的安全性，增加了必要的安全防患措施。使用操作者除了必须清楚机器的危险区域之外，还必须作好自身的安全防患装备：

The design of Basair squaring machine has been considered safety in many aspects, and has

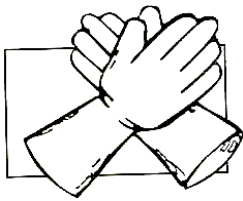
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increased the necessary safety precautions. The operator in addition to know clearly for the hazardous area of the machine, but also must make their own safety prevention equipment:



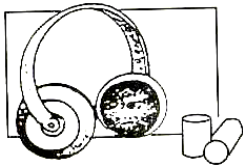
◇ 保护头部——任何工作场合都必须戴安全帽。以防上面掉下的物体砸伤头部，或不小心头部碰撞到其它障碍物。

The purpose of protecting the head -- any work occasions must wear a helmet, in order to prevent the head hurt from falling objects, or accidentally head impact to other obstacles.



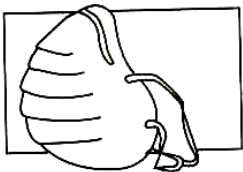
☆ 保护手部——刚从窑炉取出的砖坯还留有余热，送砖者必须戴耐热手套，防止手烫伤；清理烂砖时必须戴耐磨手套，防止手部被划伤；清洗机器时应戴防水手套；进行电气维修或其它跟电接触的地方必须戴绝缘手套。

Protect the hands,-- the tile just comes out from the kiln with some residue heat, so the tile operator must wear heat-resistant gloves to prevent hand scald; must wear gloves when cleaning the broken tiles, prevent the hand from being scratched. When cleaning the machine, should wear waterproof gloves; electrical maintenance or other with electrical contact place must wear insulated gloves.



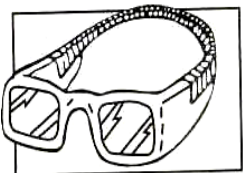
◇ 保护听觉——在噪声 $\geq 85\text{DB(A)}$ 区域内操作时，必须戴耳塞，以保护人的听觉。

Hearing protection in the noise – operating in the area with noise more than 85DB (A), must wear earplugs, to protect people's hearing.



◇ 保护呼吸——在机器使用过程中水雾较严重或清扫地面灰尘较多时必须戴口罩，以保证呼吸到干净的空气。

Protect breathing – when the water fog is more serious during the machine running or many ground dust during cleaning the ground, must wear a mask, in order to breath clean air..



◇ 保护眼睛——在观察砂轮的刮削情况时必须戴上眼镜，以防喷出杂物伤害眼睛。Eye protection -- in the observation of the grinding situation of grinding wheel must wear glasses, to prevent damage to the eyes from debris.

7.7.2 人身安全的自我防患措施 The safety of self prevention measures



- ☆ 防止手压伤——A) 在搬运砖坯时；
B) 磨边机上压带与下压带的接合处；

Prevent hand hurt by hitting -- A) when handling tile

B) the joint of the upper belt and the lower belt of the squaring machine



- ◇ 防止脚砸伤——在搬运砖或其它物体时，防止放不稳或脱手砸伤脚部；
Prevent foot injured -- in handling tile or other objects, prevent foot injured by material to be put instability or out of hand.



- ◇ 防止手划伤——在清理碎砖或其它带锋口物体时，应戴手套，防止手被划伤；

Prevent hand hurt by scratching -- in cleaning up the debris or other sharp materials, should wear gloves, to prevent hand scratched;



- ◇ 防止摔倒——地面应保持干净，不得有积水现象，不能穿容易滑倒的胶鞋，防止滑倒；人行道上不能乱放东西，走路要小心，防止被拌倒；

Prevent falling--the ground should be kept clean, no seeper phenomena, can not wear easily slip rubber shoes, to prevent slipping; don't scatter in sidewalk, and walk to be careful, prevent tripped and fell;



- ☆ 防止撞伤——在走路或其它作业时，应警惕空中物体，防止不小心撞伤；
To prevent bruises – in walking or doing other operations, should be alert to the air objects, to prevent accidentally injured



- ☆ 防止扭伤——注意不要搬运太重的物体，合理使用辅助工具；
To prevent a twisted - note not to carry too heavy objects, reasonably to use auxiliary tools.

7.8 安全的组织管理 Organization and management of security

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设备使用的安全性要求有科学的管理才能收到实际效果。组织管理的重点应从计划、组织、控制等方面，对安全生产采取有效的措施，控制人的不安全行为，预防伤亡事故的发生。

The safety of equipment requires scientific management and then can receive the actual effect. Organization and management should focus on the plan, organization, control etc, to take effective measures to the safety of production, control the unsafe behavior of people, and prevent the occurrence of casualties.

- 1) 坚持“安全第一、预防为主”的方针，建立“分级管理，分线负责”的系统安全管理体系，制定安全制度，并严格监督检查，贯彻执行；

Adhere to the "safety first, focus prevention" principle, establish the safety management system of "Management at different levels, responsibility at different lines", formulate safety regulations, and strictly supervise and inspect the implementation.

- 2) 坚持安全生产，增强安全意识，提高操作者的安全操作技能；

Stick to safety production, enhance safety awareness, improve the operator's safe operation skills.;

- 3) 提高工人素质，包括技术知识、工作态度、工作责任心及职业道德等各方面素质，杜绝违规作业、违反纪律的现象；

Improve the quality of workers, including technical knowledge, work attitude, work responsibility and professional ethics and other aspects of quality, to eliminate illegal operations, the phenomenon of violation of discipline. ;

- 4) 加强生产现场的安全管理，待抛砖坯、半成品、工具器具等要定置定位、定量、整齐、安全，不超高；道路畅通，地面状态良好，安全标识醒目；

Strengthen production safety management, tiles, semi finished products, tools, etc, should be positioning, quantitative, neat, safe, not over high; road smooth, good ground state, clearly security identifier.

- 5) 加强监督检查，开展安全性评价，实施安全规范化、标准化作业，不断提高安全管理水平，确保生产安全。

Strengthen supervision and inspection, carry out safety evaluation, the implementation of safety standardization and normalization, and continuously improve the level of safety management, to ensure production safety.

第8章 维护与保养 Maintenance

8.1 操作者的任务 Operator's task

在磨边线工作过程中，机器操作者必须进行以下工作：

In the working process of squaring line, machine operator must perform the following tasks

1) 遵守安全操作规程，核查

Compliance with safety operation procedures, verification:

- a) 安全系统处于正常工作状态； Safety system is in normal working condition
- b) 安全系统处于正确位置； Safety system is in correct position
- c) 每项安全规则都被很好地遵循。 Every safety rule is well followed.

2) 确认工作循环正常，确保产品产量最大

Ensure that the work cycle is normal, so that would get the maximum product output.

a) 主要机器部件完好且工作正常；

The main machine parts are in good condition and work properly

b) 各个工作刀具、皮带及运输带状态良好；

All working tools, belts and conveyor belt are in good condition.

c) 各项工作参数最适合于所磨削砖坯；

The working parameters are the most suitable for the processing tiles.

d) 所有待磨砖坯规格一致。

All tiles are of same size.

3) 定期检查确保砖坯质量最佳

Regularly check to ensure the best quality of tile

a) 尺寸符合要求；

Dimensions conform to requirements

b) 整批砖坯厚度及单边尺寸统一；

The whole set tile thickness and single side size is uniform.

8.2 全面维护建议 Complete maintenance suggestion

不遵循安全规程的任何操作都可能导致人员伤亡与机器的严重损坏。为了您与设备的安全，请仔细阅读以下建议：

Any operation that does not comply with the safety regulations may result in serious damage to the personnel or machine. For your safety, please read the following suggestions.

1) 必须严格遵循使用手册中使用与维护部份的安全规则，并要注意机器自身上的相应标识。在进行操作前，请仔细阅读本手册中所介绍的操作说明。

Must follow the use and maintenance part of the safety rules and pay attention to the corresponding identification on the machine itself. Please read the operation instructions described in this manual carefully before the operation.

2) 所有的日常和特殊维护都必须在关机、急停旋钮断开和气压卸压的状态下进行。

All the daily and special maintenance must be performed under the condition of shutdown, emergency stop button disconnected, and air pressure released.

3) 当电力仪器工作时，它的每个部份都可能带有危险电压。

When electric equipment works, every part of it may be dangerous.

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- 4) 任何电气在机器金属部件、机架和防护屏障上进行连接时，都必须断开主电力源，并连接一条地线至地面。

Any electrical connection on the metal parts of the machine, machine frame and protective barrier, must disconnect the general power source, and should be connected to a earth wire.

- 5) 如果在电力源未断开的情况下进行操作，机器的电力设备将会受到损坏。

If the power source is not disconnected, the machine will be damaged.

- 6) 在主电源断开 4 分钟之内，中间环路上仍有可能存在危险电压。

There may still have dangerous voltage in the middle circuit within 4 minutes after general power source disconnection.

- 7) 所有维修保养工作必须由受过培训且有充分准备的人员进行。

All maintenance work must be carried out by trained and adequately prepared workers.

- 8) 坚持按所要求的维护周期进行设备维护保养。

To maintain the equipment according to the maintenance period required.

- 9) 为了保证维修质量，任何更换件都必须采用巴赛尔公司的专用零配件。

In order to ensure the quality of maintenance, any replacement parts must be used by the special parts of the Basair company.

- 10) 一旦进行了维修工作，在开机前，一定要注意：所有安全设备都处于正常工作状态
确认使用的工具、更换的零件等已经从机器设备上移开。

Once doing the maintenance work, before start machine, be sure to note: all safety devices are in the normal working state, confirm the tools, replacement parts, etc. have been removed from the machine equipment

8.3 机器维修 Repair

8.3.1 清洗设备 Cleaning

- 1) 在每个轮班结束时,关闭电源后,用水和压缩空气喷射机清洗同步带、磨边头、倒角头，除去机器上所有杂物、烂砖。不要用压力水枪清洗正在运转的零部件，以避免水渗入机器。认真清洗光电管、接近开关、微电开关和所有机器上的控制和安全装置。

At the end of each shift, after shut off the power, use water and compressed air sprayer to clean synchronous belt, squaring head, chamfer head, remove all the debris and broken tiles on the machine. Don't use water pressure gun to clean running parts, in order to avoid water comes inside. Carefully clean the photoelectric tube, contact switch, micro switch, and all the control and safety device on the machine.

- 2) 经常清扫工作现场，清除油迹和杂物。

Regular cleaning work site, remove waste oil and debris

- 3) 仔细地清洗能避免污垢沉积结壳，并能使机器常处于良好的工作状态。

Carefully cleaning to avoid dirt crust, and can make the machine is in good working condition.

8.3.2 定期维护保养 Regular maintenance

- 1) 每工作 8 小时，清理机身上的污物、烂砖，冲洗输送带内外表面，清扫工作现场，清洗压缩空气过滤器。

Every 8 hours, clean the dirt and broken tile on the machine, washing the inside and outside

surface of belt conveyor, clean the work site, clean compressed air filter.

- 2) 每工作 1 周, 检查各紧固件是否紧固, 旋转件是否松动, 检查输送带、同步带的张紧, 机器的磨损, 各运转零件之间的润滑情况。

Every 1 week, check whether the fasteners are fastened, rotating parts are loose, check the conveyor belt, synchronous belt tension, machine wear, the lubrication between the running parts.

- 3) 按要求定时、定质、定量对各润滑点进行润滑。

According to the requirements of the lubricating time, quality and quantity for everything lubrication points, to do the lubrication.

- 4) 每工作 1 个月, 检查输送带、同步带和导轨的磨损情况, 检查轴承的运转、输送带和电机三角带的张紧, 如不符应予调整。

Every 1 month, check wear situation of the conveyor belt, synchronous belt and the rail, check the operation of the bearing, conveyor belt and the motor belt tension, it should be adjusted if not meet requirement.

- 5) 每工作 6 个月, 该换油的地方换油, 重复上述各项检查, 对磨损严重的零件进行修复或更换。Every 6 months, replace the oil when necessary, repeat the above inspections, repair or replace the serious damage parts.

- 6) 每工作一年, 进行全面检查与维修。更换运转不良的轴承; 对零件的磨损作必要的检测、修理、更换; 对密封件进行检查更换; 检查确认工作导轨、输送带的磨损情况, 必要时做出更换。

Every one year, make a complete inspection and maintenance. To replace the poor running of the bearing; to do necessary detect, repair or change the parts of the wear and tear; to check or replace the seal; to check and confirm the wear of rail, conveyor belt, if necessary, do change.

8.4 润滑 Lubrication

磨边机润滑点润滑要求见表8-1。Please see table 8-1 for lubrication requirement of the squaring machine

BM 双压带磨边机 BM Double belts squaring machine

序号 No.	润滑位名称 Item	润滑油名称 Lubrication oil	润滑周期 Lubrication period	润滑量 Quantity	备注 Remark
1	主传动装置 Main driving device	轴承用钙基润滑脂, 齿轮箱用 N46. Calcium base grease for bearing, N46 oil for gear box.	润滑脂:每 24 小时压注一次;N46 同无级变速器.Grease: once every 24 hours; N46 oil: same as variator	润滑脂注满油杯,润滑油加至油标线 Grease:full of oil cup.N46 oil:upto oil level.	同无级变速器 Same as variator
2	调宽装置 Width adjustment device	钙基润滑脂 Calcium base grease		调宽蜗箱内注满,涂抹均匀覆盖零件表面 full of gear box and evenly cover the parts	
3	倒角磨头 Chamfer head	0#通用锂基润滑脂 0# General lithium based grease	每两周检查一次油量,半年换油一次.Check oil qty once every two weeks,replace oil once half year.	润滑脂注满型腔容积的 3/4.Fill upto 3/4 of cavity volume.	
4	磨边头 Squaring head	2#锂基润滑脂 No.2 lithium based grease	每 3 天压注一次,半年换油一次. Add oil once every 3 days,replace oil once half year.	润滑脂注满型腔容积的 2/3.Fill upto 2/3 of cavity volume.	每次压注油量不可过多 The quantity should be not too much
5	对中:齿轮与齿条副 Centering:gear box and rack	钙基润滑脂 Calcium base grease	每 24 小时涂抹一次 Fill once every 24 hours	涂抹均匀覆盖零件表面 Evenly cover the parts	
6	对中:导轴与铜套移动副 Centering: guide shaft and copper sleeve	N46 润滑油 N46 oil	每 8 小时注油一次 Fill once every 8 hours	润滑油加满 Full	
7	转臂装置 Turning arm device	N46 润滑油 N46 oil	每 24 小时注油一次 Fill once every 24 hours	润滑油加满 Full	
8	推砖装置 Pushing device	N46 润滑油 N46 oil	每 24 小时注油一次,半年换油一次 Fill once every 24 hours,replace once every half year.	润滑油加满 Full	

9	活动轮装置 Active wheel device	钙基润滑脂 Calcium base grease	每 24 小时压注一次 Fill once every 24 hours	润滑脂注满油杯 Full	
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表 8-1 磨边机润滑点润滑要求 Table 8-1 lubrication requirement of squaring machine

8.5 机器设备维修说明 Machine maintenance instructions

由于巴赛尔磨边机在顺应市场需要的同时，自身还不断的完善及改进，所以结构可能有不尽相同之处，如果在操作安装过程中遇有疑问，请与巴赛尔公司联系。

Basair squaring machine is in the adaptation to the market needs, and also make itself continuous improvement, so the structure may have somewhere difference, if have any doubt in the operation or installation process, please contact Basair company.



注意：在进行以下机器设备维修前，我们提醒您一定要先切断电源！

Note: before doing following maintenance, we remind you must first cut off the power

8.5.1 检查传感器 Check sensors

由于震动、潮湿、灰尘等较差的工况，传感器等组件较容易失效。为了保证正常的生产，因此要经常检查清洁传感器，失效的更换，保证其灵敏无误。

Due to vibration, moisture, dust and other poor conditions, the sensor parts are more easily to failure. In order to ensure the normal production, it should always check the cleaning sensor, and replace the damaged sensor, to ensure they are working with good sensitivity.

8.5.2 更换磨边轮 Replacement of squaring wheel

由于磨边轮的磨损，因此要进行磨边轮的更换，经常是成对更换相同参数规格的磨边轮。Because of the wear and tear of the squaring wheel, it needs to replace it, and commonly it is replaced with same parameters.

磨边轮更换操作步骤如下：

The operation steps for squaring wheel replacement are as follows

- 1) 使用急停按钮断开电源，停机，并将电源开关打至“关”位，在电源口处悬挂警示牌；
Use the emergency stop button to disconnect the power, stop the machine, and turn the power switch to the "Off" position, hanging warning sign in the power inlet location.
- 2) 移去防尘罩，更换新的金刚磨边轮；
Remove the dust cover, replace the diamond grinding wheel.
- 3) 盖上防尘罩，放上一块已磨过边并达到尺寸要求的砖坯，调整调节丝杆，使其接触到砖坯； Fix dust cover, put on a piece of tile that have been processed and get the required size, adjust the adjustment screw rod, making it accessible to the tile;
- 4) 将电源开关打至“开”，让急停按钮复位，按下启动开关，使机器重新开始工作；
Turn the power switch to be "open", reset the emergency stop button, press the start switch to start the machine.
- 4) 检查出砖尺寸是否达到要求，如有必要，松开紧固螺栓，调整磨边头。

BM 双压带磨边机 BM Double belts squaring machine

Check the size of the tile whether meet the requirements, if necessary, loosen the fastening bolts, adjust the squaring head.

8.5.3 更换倒角轮 Replacement of chamfer wheel

倒角轮更换操作步骤如下:

The operation steps to replace chamfer wheel is as follows:

- 1) 使用急停按钮断开电源, 在电源口处悬挂警示牌, 停机, 并将电源开关打至“关”位;
Use the emergency stop button to disconnect the power, stop the machine, and turn the power switch to the "Off" position, hanging warning sign in the power inlet location.
- 2) 反向旋转砂轮, 即旋转方向与砂轮工作转向方向相反;
Reverse rotating wheel, that is, the direction of rotation is opposite to the direction of the wheel.
- 3) 正向旋转, 装上新的倒角轮;
Forward rotation, and install new chamfer wheel
- 4) 将倒角头复位、启动。
Reset chamfer head and start.