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★ 使用前请仔细阅读本说明书

★ 请注意保存本说明书及随机资料

# PE (X) 复摆颚式破碎机使用说明书

## 敬告客户

■ 为了保证您的服务信息及时处理，需求服务及时，请直接联系“使用说明书”内所登陆的我厂服务热线电话，我厂将提供标准统一的服务。

当专业人员将设备安装调试完毕后，请您认真填好“产品调试报告”。如果您感到服务不满之处，可直接向我厂反映。我厂会及时处理，保证您的满意。

随着产品的不断优化，可能与“使用说明书”中图示不完全一致，谨此致歉。

## 产品特点

■ 破碎比大 结构简单 工作可靠 维护方便

## 产品用途

■ PE (X) 复摆颚式破碎机，破碎比可达 4-6，且产品粒度均匀，可广泛应用于破碎坚硬、中硬、软质矿石。如各种矿石、溶剂、矿渣、建筑石料、大理石等，抗压强度不超过 320 兆帕。即可用于中、细碎作业。适用于矿山、冶炼、建材、公路、铁路、水利和化学工业等众多行业。

## 常用颚式破碎机的规格和性能

### ■ 技术参数

执行标准号：JB/T 1388-92

型号	进料口尺寸 (mm)	最大 进料 粒度 (mm)	排料口调整 范围 (mm)	处理能力 (mm)	偏心轴 转速 (r/mi n)	电动机 功率 (kw)	重 量 (T)
PE-150×250	150×250	125	10-40	1-5	300	5.5	0.81
PE-250×400	250×400	210	20-60	5-20	300	15	2.8
PE-400×600	400×600	340	40-100	16-60	275	30	6.5
PE-500×750	500×750	425	50-100	45-80	275	55	10.1
PE-600×900	600×900	500	65-160	50-120	250	55-75	15.5
PE-750×1060	750×1060	630	80-140	52-180	250	110	28
PE-800×1060	800×1060	640	100-200	136-228	250	110	29
PE-900×1200	900×1200	750	95-165	140-260	200	110	50
PE-1000×1200	1000×1200	850	195-265	315-342	200	110	51
PE-1200×1500	1200×1500	1020	150-300	400-800	180	160	100
PE-250×1000	250×1000	210	25-60	16-52	330	3-37	6.5
PE-250×1200	250×1200	210	25-60	20-60	330	37	7.7
PE-300×1300	300×1300	250	20-90	16-104	300	55	11
PE-350-750	350-750	300	15-80	30-52	300	30	6.8

■ 本机主要由 1、机架部件；2、固定颚板；3、活动颚板；4、动颚；5、偏心轴；6、肘板；7、调整座；8、铁轨部件；9、润滑部件；10、基础部件；11、电控部分等组成。

■ 本机是以电动机为动力，通过电动机皮带轮，由三角皮带和槽轮驱动偏心轴，使动颚按预定轨迹作往复运动，从而将进入由固定颚板，活动颚板和边护板组成的破碎腔内予以破碎，并通过下部的排料口将成品物料排出。

### ■ 机架部件

颚式破碎机的机架在工作中受到很大的冲击载荷，因此，它应具有足够的强度和刚度。

机架为焊接件（小型颚破为铸钢件）。机架的前墙装有螺钉紧固的固定颚板；机架的左、

右内侧壁装有螺钉紧固的上边护板和下边护板。

## ■ 动颚部件

### 结构特征

动颚为整体优质铸钢结构，其内孔以及槽等部位经过精细加工与检测，确保工作时安全，可靠。

偏心轴为优质高强度锻钢，经多次精密的机械加工，热处理和探伤检查制成，因此具有足够的强度和刚度。

轴承采用 4 套双列向心球面滚子轴承，具有良好的承载和自动调心的性能。

活动颚板和固定颚板均为优质高锰钢铸件，为延长其使用寿命，其形状设计成上、下对称，即一端磨损后可掉头使用。飞轮和槽轮为优质铸铁件，其重量和结构足够保证破碎机平衡地工作。飞槽轮在偏心轴上的两端位置可以相互调换，并通过胀紧套连接。

动颚部件装配过程：

a. 偏心轴、轴承二只并用煤油清洗干净，然后将两只挡油盘装于偏心轴的两端。二只轴承置于 80-100℃ 油中加热 15 分钟左右，测量轴承的内圈孔大于偏心轴颈 0.15 时，取出并热套于偏心轴的两端，用压力顶住轴承使之与轴肩靠紧，直到轴承完全冷却为止，其间隙不得大于 0.05。套合后整理清洗干净，在轴承中注入 50%-70% 润滑脂。

b. 装妥动颚一端的透盖、纸垫圈等，并用螺栓紧固。此时，将动颚孔竖放，使装好透盖的一端朝下，接着将偏心轴装配组件吊入动颚中，吊装时须注意：偏心轴和动颚孔中心线保持一致，放正轴承外套，先轻压作好导向，当压入量均匀渐进时，方可进行连续敲压。（不能用锤敲击轴承，应在轴承上垫放铜棒后，再敲击铜棒）；当第一只轴承压入后装第二只轴承时程序同上。继后，在轴承中注入 50%-70% 的润滑脂，最后再装妥另一侧的透盖、纸垫等，并用螺栓紧固。装妥后应使轴承外圈端面与透盖端面有 0.2-0.4 的间隙，他是通过装入适量纸垫圈得到的。

c. 把各个键分别装入偏心轴上的键槽内，再分别装入迷宫内环透盖，注意在右方向，取另外两只轴承，用煤油清洗干净，把紧定衬套放入轴承孔内，再安装于偏心轴上，按结构图旋入圆螺母，止退垫圈。注意偏心轴上有左、右旋螺纹，目的是偏心轴旋转时应使圆螺母越旋越紧，先旋偏心轴上圆螺母，使压紧紧定衬套，再旋紧定衬套的圆螺母，使轴承内圈靠紧密封圈，这样反复数次，最终使轴承紧固，把紧定衬套的圆螺母退出，使之与轴承内圈间隙为 1mm 左右（在拆轴承时，先松掉偏心轴上的圆螺母再旋紧紧定衬套上的圆螺母即可把轴承拆下）。把止退垫圈的长短齿分别压入紧定衬套上的圆螺母槽内并紧固，然后在轴承中注入 50%-70% 润油脂，再分别装入透盖内环。

### b. 飞、槽轮的安装

把飞、槽轮及胀紧套（或键）放入偏心轴上，是飞、槽轮与密封圈靠紧，并注意使飞、槽轮上的标记与偏心轴上标记对应后旋紧胀紧套上的螺栓，每个螺栓的旋紧力为 190N.M，然后装妥轴端挡圈。（注意：飞槽轮系铸铁件，安装时切忌热套）槽轮常规是安装在偏心轴左端（面对进料口方向看），也可根据现场需要使飞、槽轮位置进行对调。

## ■ 肘板与调整部件

肘板是经过精确计算的铸铁件。它不只是传力构件，而且也是破碎机的保险零件。当破碎机中落入不能破碎的物料而使机器超过平常负荷时，肘板就立即折断，破碎机停止工作，从而避免整个机器的损坏。肘板和肘板垫采用滚动接触方式，正常使用情况下很少磨擦，只需在其接触表面上涂上一层润滑脂即可。

调整部件是用于调整排料口大小，以及补偿颚板、肘板和肘板垫之间磨损的机构。

## ■ 调整部件的装配过程：

肘板垫通过角钢和螺栓紧固调整座上，调整垫片置于调整座与机架之间，并置于支撑架，

起顶螺栓（或顶头与液压起顶机）通过螺母或可穿过调整垫片顶住调整座，调整座上面通过楔块与机架连接，起顶螺栓或顶头与液压起顶机都可单独起到调整作用。

当调整排料品时，首先适度拧松拉紧部件的拉杆螺母，松开弹簧，然后再松开楔块螺栓，松开楔块，拧紧起顶螺栓，（或把液压起顶机头部装入顶头，旋入机架后的螺母内，将液压起顶机的出油阀打开，扳动手柄）起顶螺栓或顶头向前推动调整座，达到一定的开口度时，取出调整垫片，以达到增大排料口的需要；若放入调整垫片，则可达到减小排料口的需要。在达到用户所需的排料口尺寸后，首先松开起顶螺栓（可打开液压起顶机的进油阀，扳动手柄，松开顶头）调整座在动颚部件自重的推力作用下，调整座及调整垫片组向机架后墙靠拢，压实，注意起顶螺栓或顶头松开程度应达到调整座向后墙靠拢，压实后而不相接触，再拧紧楔块螺栓，将楔块与调整座与机架牢固，适度拧紧拉杆螺母收紧弹簧，既完成调整排料口工作。

#### ■ 拉紧部件

拉紧部件是用来保证破碎机整个机械紧密结合，并部分平衡在动颚与肘板工作时产生的惯性力。

拉紧部件的装配过程：

拉杆的一端铰接于动颚下端的耳环上，另一端通过垫圈支撑在机架后墙的下端，弹簧通过其两端的垫圈和螺母压紧。破碎机工作时弹簧需要一定的预紧力，以防止肘板在工作时脱落，但不宜过大，只要能消除肘板与动颚、调整部件间冲击响声即可，否则将影响弹簧的使用寿命，甚至使弹簧断裂。

#### ■ 铁轨部件

铁轨通过地脚螺栓紧固在钢筋混凝土基础上。

电动机安装在铁轨上，支座嵌入铁轨的槽中，根据三角皮带的松紧程度调整电动机与主机的距离，当距离确定后，用紧固在支座上的调整螺钉顶住电动机的底座，以防其走位。

#### ■ 润滑部件

润滑部件系有来把润滑油方便可靠的注入润滑点的机构（本机共 4 个润滑点，分别为四只轴承处）。

### 安装、调整和试车

■ 本机是由制造厂装配经过空载试车后成台提供的，用户有收到产品后应按装箱单仔细清点，以便发现和排除运输过程中可能带来的问题。

■ 由于本机在工作时振动量较大，因此应安装在钢筋混凝土结构的基础上，基础的大致可取为本机器重量的 8-10 倍，地基的深度要大于该处土地冻结的深度，基础图的尺寸为主机和电动机地脚螺栓的相对位置以及有关的其它参数。安装地脚螺栓处必须留出预留孔，作为二次灌浆的依据。下料槽的高度和大小根据下部的出料方式由现场决定。

■ 为了减轻振动，在二次灌浆时，应在破碎机和混凝土基础中间垫以不小于 10 毫米厚的夹布橡胶带等缓冲材料，待二次灌浆的水泥牢固后再拧紧地脚螺栓。在此过程中必须用水平仪测定机器的水平度，水平度的偏差在机架前端的宽度范围内控制在 5 毫米以下，机架水平度的检验尤为重要，它可确保进料口位置不至因偏斜而使破碎机在工作时发生单边进料现象，避免因负荷不均而损坏设备。

■ 安装电动机时除检查与主机的距离外，还应检查电动机皮带轮的端面与主机槽轮的端面是否在同一平面内，以确保所有的三角皮带有效地一致工作。

■ 排料口尺寸大小应按所需产品的粒度和处理能力进行调整，再调整排料口前应松开拉紧弹簧，待调整后，再适当调整弹簧的胀紧程度，以防止肘板在工作时脱落，详见调整部件。

■ 机器安装、调试后进行试车

## 空载试车

- a. 连续运转 2 小时，轴承温升不超过 30℃。
- b. 所有紧固件应牢固，无松动现象。
- c. 飞、槽轮运转平稳。
- d. 所有摩擦部位无擦伤，掉屑和研磨现象，无不正常的响声。
- e. 排料口调整范围应符合要求。

## 带载试车

当空载试车合格后加料进行带载试车。

- a. 破碎机不得有周期性或显著的冲击声。
- b. 最大给料粒度应符合设计规定。

连续运转 8 小时，轴承温升不超过 30℃。

## 使用与维护

### ■ 破碎机启动前的准备工作：

检查轴承的润滑；肘板与动颚、调整座上肘板垫的接触等情况是否良好，肘板与肘板垫接触处是否足够的润滑脂。

检查所有紧固件是否坚固。

检查飞、槽轮配重中心位置是否正确，一般正确位置为机器振动最小时为最佳。

检查传动皮带是否安装正确和情况良好，若发现皮带破损应及时更换，当皮带或槽轮上有油污时应用干净抹布及时擦净。

检查防护装置是否良好，若发现防护装置不安全现象，应及时排除。

检查破碎腔内有无物料或其他杂物，若有时应及时清除干净。

检查调整垫片是否安装正确和压紧。

### ■ 破碎机的启动

经检查，证明机器与传动部件情况正常后方可启动。

本机只准在无负荷情况下启动。

启动后若发现不正常现象时应及时停止启动，必须查明原因排除异常后方可再次启动破碎机。

### ■ 破碎机的使用

破碎机正常运转后方可开始投料。

应将破碎物料均匀地加入破碎腔内，避免侧面加料或堆满加料，以防止单边过载、负荷突变或阻塞。

在正常工作情况下，轴承的温升不应超过 30℃，最高温度不得超过 70℃。若超过 70℃时应立即停车，查明原因并加以排除。

停止前应首先停止加料，待破碎腔内的破碎物料全部排出后，方可关闭电动机。

在破碎时若因破碎腔内物料阻塞而造成停车时，应立即关闭电动机，必须将物料清除后方可再次启动破碎机。

固定颚板和活动颚板当一端磨损后，可上、下调头使用。

破碎机使用一段时间后，应重新紧固所有紧固件。

### ■ 润滑

为保证机器的正常运转和延长使用寿命，应定期注油润滑。

加入轴承座内的润滑脂应为容积的 50%-70%，每 3-6 个月更换一次。在换润滑脂时应用洁净的汽油或煤油仔细清洗滚柱轴承的滚道等部位，清洗时应打开轴承座下的放油孔。

本机采用润滑脂应根据机器使用的地区、气候等条件决定，一般可采用钙基，钠基或钙钠基润滑脂，在润滑脂较干燥时，可用稀油与润滑脂调和后使用。

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肘板与肘板垫之间只需在装配或检修时，在其接合处加上适量的润滑脂即可。



### 可能发生的故障及排除方法

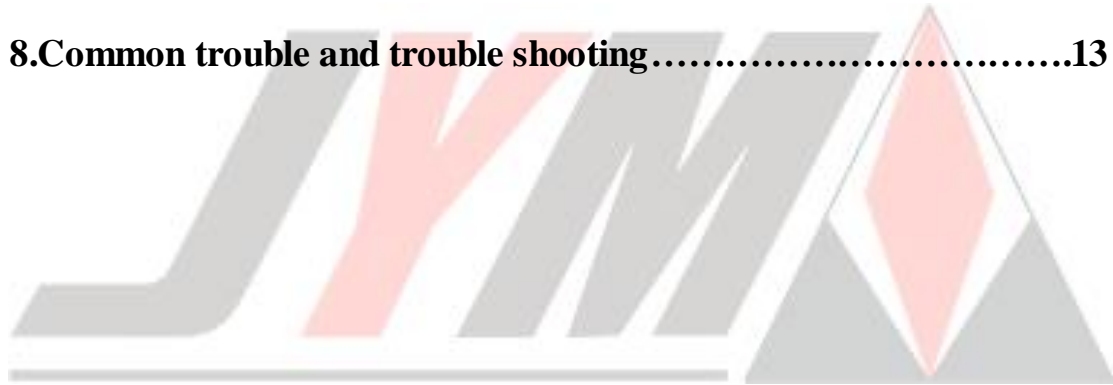
可能发生的故障	主要原因	排除方法
剧烈的辟裂声后，动颚停止摆动，飞轮继续回转，拉开弹簧松弛	破碎腔内进入不能破碎的物料或其他原因合推力板破坏	扭开拉杆螺母，取下拉杆弹簧，将动颚挂起，更换新推力板
破碎板抖动并产生撞击声	1. 破碎板固定螺栓松动 2. 破碎板固定螺栓断裂	1. 紧固破碎板固定螺栓，如松动弹簧性不足应更换 2. 更换破碎板固定螺栓
飞轮回转、破碎停止，推力板从支座中脱出	拉杆弹簧或拉杆断裂	更换损坏件
推力板支座中产生撞击声或其他不正常声音	1. 弹簧紧度不够或松弛 2. 推力板支座磨损或松弛 3. 推力板肘头磨损严重 4. 出料口调整装置调整的不均匀，造成推力板左右吃力不一致	1. 拧紧弹簧或更换弹簧 2. 更换推力板支座 3. 更换推力板调整出料口调整装置
飞轮松动	1. 键配合过松，键和键槽磨损严重 2. 轴端锁紧装置松动	把键打紧，或重开键槽更换键，将轴端锁紧装置上紧
破碎产品粒度增大	颚板底部磨损严重	调整排料口调节装置，缩小排料口，如不行时，可将颚板上下对换或更换新颚板
破碎腔堵塞，主电动机的电流高于正常运转电流	1. 大石块进入破碎腔的上方，但又不能被破碎造成堵塞 2. 破碎机下面的皮带机发生故障，排料口被堵 3. 进入粘性物料和其他杂物堵塞排料口 4. 喂料量太大	1. 停车后，用钢丝绳拴住大石头，再用吊车将大石块吊出破碎机 2. 停止喂料，排除皮带机的故障，此时尽可能不停破碎机 3. 停止喂料，疏通出料口，此时尽可能不停破碎机 4. 调慢喂料机转速，减少喂料量
轴承温度过高	1. 润滑脂不足 2. 润滑脂脏污 3. 轴承损坏	1. 加入适量的润滑脂 2. 清洗轴承后更换润滑脂 3. 更换轴承

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★ Please read the operation instruction carefully before use the machine

★ Please preserve this instruction and documentary of the machine

## Inform users

■ In order to guarantee your service information is dealt with in time, please contact in our factory's hot-line, our factory will offer the unified and standard service. After professional people installing and debugging, please fill in "products debug report". If you feel dissatisfied to the service, please reflect to our factory directly. Our factory will deal with in time, and guarantee your satisfaction.

Because of the improvement of our produce, so maybe there are some items are not complying with the operation instruction.

## Product characteristic

■ High reduction ratio, simple structure, reliable operation, convenient maintenance.

## Product application

■ PE series Jaw breaker, whose reduction ratio up to 4-6 and the finished products are even, can be widely used in breaking hard, medium-hard, soft ore, such as various kinds of ore, the solvent, slag, building stones, marble, etc. Compression strength does not exceed 320Pa. This machine is suitable for mines, building materials, highway, railway, water conservancy and chemical industry, etc.

## Specifications and technical parameter

### Technical parameter

Operation standard number: JB/T 1388-92

Model number	Feeding size(m m×mm)	Max feeding size(mm)	Discharge adjusted scope (mm)	Capacity(mm)	Rotational speed of eccentric shaft(r/min)	Electric motor Power(kw)	Weight(T)	A	B	C	D	E	F	G	H	I
PE-150×250	150×250	125	10-40	1-5	300	5.5	0.81	758	528	300	530	Φ640	875	450	140	480
PE-250×400	250×400	210	20-60	5-20	300	15	2.8	1315	938	554	890	Φ812	1450	750	220	735
PE-400×600	400×600	340	40-100	16-60	275	30	6.5	1732	1110	636	1105	Φ962	1565	955	255	990
PE-500×750	500×750	425	50-100	45-80	275	55	10.1	1916	1356	820	1270	Φ1200	1890	1375	395	1190
PE-600×900	600×900	500	65-160	50-120	250	55-75	15.5	1840	1420	960	1540	Φ1515	2305	1590	400	1505
PE-750×1060	750×1060	630	80-140	52-180	250	110	28	2472	1820	1060	2010	Φ1660	2450	1850	530	1980
PE-800×1060	800×1060	640	100-200	136-228	250	110	29	2472	1820	1060	2010	Φ1660	2500	1900	530	1980
PE-900×1200	900×1200	750	95-165	140-260	200	110	50	3182	1976	1200	2125	Φ1800	3335	2155	830	2560
PE-1000×1200	1000×1200	850	195-265	315-342	200	110	51	3182	1976	1200	2125	Φ1800	3435	2255	830	2530
PE-1200×1500	1200×1500	1020	150-300	400-800	180	160	100	3732	1780	1620	2700	Φ2285	4200	2940	970	3480
PE-250×1000	250×1000	210	25-60	16-52	330	3-37	6.5	1992	1500	1010	930	Φ900	1530	905	330	850

																0	
PE-250 ×1200	250×1200	210	25-60	20-60	330	37	7.7	21 92	17 00	12 20	93 0	Φ1 000	19 00	19 65	3 6 5	85 0	
PE-300 ×1300	300×1300	250	20-90	16-104	300	55	11	23 20	18 40	13 20	11 10	Φ1 220	17 50	11 70	4 3 0	93 0	
PE-350- 750	350-750	300	15-80	30-52	300	30	6.8	18 80	14 70	77 0	10 30	Φ8 00	15 80	85 5	3 0 5	85 0	

■ This machine is driven by the motor. Through the motor's wheels driving the eccentric shaft by conveyor belt and trough, this can make the fixed jaw move by the track. So the materials can be crushed in the storage that consists of fixed jaw, movable jaw and side-lee board. Then the output is out through the out-material gap.

■ The parts of the frame of the machine  
The frame of jaw crusher is stroked heavily during work. So it must be of high intensity and rigidity. The frame is jointing (the small jaw crusher is steel-cast). The fixed jaw plate fastening by the bolt is installed at the front of the frame. The up and down lee board are installed at the left and right side of the frame.

■ Parts of movable jaw  
Structure characteristic

Movable jaw is made of high-quality casting steel structure. Its holes and troughs are tested and machined exactly, which can make sure that they can work safe and credible.

The eccentric shaft is made of the excellent forging steel. It is experienced machined, heat treatment and tested. So it must be of high intensity and rigidity.

Bearing used the four sets and double lines ball bearing. The bearing is of excellent loading and adjusting automatic.

Both the fixed and movable jaw are made of manganese-steel. In order to extend its working time, it is designed symmetrically. So if one end is frayed, another end also can be used. Flywheel and groove wheel are made of good casting iron. Their weight and structure can ensure the crusher worked balanceable. The flywheel on the eccentric shaft can be exchanged and connected by the distensible cover.

Installation of the movable jaw parts

- a. The eccentric shaft and the bearing must be washed by coal oil, then install the protect-oil plate at two ends of the eccentric shaft. Put the two bearing into the oil of 80-100 degree for 15 minutes. When the hole is bigger than the eccentric shaft at 0.15, then put it on the ends of the eccentric shaft pressure the bearing so it would close to the shoulder of bearing, until the bearing become cool, the clearance must be lower than 0.05. After clearing, you should put lubricant at 50 percent to 70 percent.
- b. Put the cover and the paper gasket well and use the bolt to fasten them. At this time set up the cover, make sure have one end of the cover down. Then put the eccentric shaft parts into the movable jaw. When arrange it please pay attention to make sure that the eccentric shaft and the movable jaw's center line be consistent. Put the bearing a cover well and pressure light, then stricke and press gradually when the pressing amount is even. The procedure is the same as pressing the second bearing after the first one is pressed, then pour into 50%-70% lubricating grease in the bearing, afterwards put on another side cover, paper cushion, etc. Fasten with bolt, should make bearing outer surface with cover surface have 0.2-0.4 gap.
- c. Put each key into the keyway of eccentric shaft, then pack the cover of inner loop of the

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maze, pay attention to the direction, fetch other two bearings, wash clean with the kerosene, put the adapter sleeve into the hole of the bearing, install on the eccentric shaft, fasten into the round nut according to the structure chart. Notice that the whorl is on the eccentric shaft, with the purpose that eccentric shaft can make round nut fasten urgent when rotating fasten the round nut on the eccentric shaft first, make inner ring to the bearing close to the sealed ring, repeated for several times, make the axle bush fasten finally and make round nut of bush withdraw, make the interval between round nut and inner circle is about 1 mm. Press the long-short teeth of gasket into the slot of round nut and fasten them, then pour 50%-70% lubricant into bearing, then put into the inner loop of the cover respectively.

d. Installation of flywheel and grooved pulley

Put flywheel, grooved pulley and intensity cover on the eccentric shaft and have flywheel, grooved pulley close to sealed ring. Then fasten the bolt of intensity cover after make sure that the mark of flywheel and grooved pulley be corresponding to the mark of eccentric shaft. Each screw's strength is 190N, put proper axle end block and enclose each bolt. A routine is that have groove pulley install on the left end of eccentric shaft, and also can exchange groove pulley's position according to spot's requirement.

■ The axle board and adjust parts

The axle board is made of accurate casting iron. It is not only the component that spreads the strength, but also the insurance parts of breaker. The toggle will break up immediately and the crusher will stop working when some unbreakable materials go into the crusher. Toggle and toggle mat adopt rolling contact way, which can reduce attrition during the normal operation, so the user only needs to put some lubricant on the contact surface.

Adjusted parts are used for adjusting the discharge size and reducing the attrition among jaw plate, toggle and toggle mat.

■ Adjusted parts and installation process

When adjusting and arranging the material mouth, unscrew the pull rod nut which strains the part appropriately at first, unclamp spring, unclamp wedge a bolt, unclamp the wedge one, tighten get up of bolt, get up of bolt or is it change to promote forward to come directly towards, reach a certain one when opening one's mouth degree, take out and adjust the spacer, has already reached and increased the need which has arranged the material mouth, if put into and adjust the spacer, can reach and reduce the need which arrange the material mouth. In reach what user need arrange material mouth size, unclamp blow of bolt at first, adjust in move jaw under the impetus that part conduct oneself with dignity, adjust and adjust spacer group draw close to odd back walls, debunk, pay attention to a bolt or should reach and adjust the back wall of the orientation to draw close to come directly towards the degree of unclamping, without keeping in touch, tighten wedge pieces of bolt, adjust and firm framework wedge piece after the debunk, tighten the poll rod nut appropriately and tighten up the spring, namely finish adjusting and arranging the material mouth to work.

■ Strain of the part

It is used for guaranteeing whole organization strains and combines the breaker, and some balanced mass force that produce while moving the jaw and knee work straining the part.

Strain the assembling process of the part

The assembling process of straining the part draws one of pole's end and connects on the

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earrings which move the jaw underpants,another end supports the underpants in the framework back wall through the washer,the spring is compressed tightly its both ends washer and nut,the spring needs certain tight strength in advance when the breaker works,in order to prevent the knee from coming off while working,but should not too big,can dispel knee and move jaw,adjust part strike noise,otherwise influence the service life of the spring,will even make the spring rupture.

■ Part of the rail

The rail is fastened on the basis of armored concrete through the ground corner bolt.Motor is at rail,prop up flat imbed trough or rail,adjust motor and distance of host computer according to elasticity degree of V belt to install,after the distance is confirmed,with fasten adjustment screw on propping up seat withstand base of motor.

The part of Lubricate

The part of Lubricate is a framework that used convenience infuse Lubricate to the Lubricate site.This machine have four Lubricate site,each is four axletree part.

### Structure description and assemblage

- This machine is whole set offered by assembled of factory and trial run unload.The user must check the amount after receive this product.In order to discover some problems that form conveyance.
- Because this machine has a bit strong vibration,it must install the ferroconcrete base.The weight of the base is 8-10 times than this machine.The depth of groundwork must deep than the deep of grond freeze.The base of chart offered dimension is main and electromotor's ground bolts comparatively distance and other parameter.It must set aside aperture in order to install the ground bolts.It used second grouting basis.The high of drag trough and bulk is decide according to locate.
- In order to lighten vibration,at the second grouting time,it must not less than 10mm rubber of other amortize material between crusher and beton,after the cement curdle of second grouting screw down ground bolts.In this process must determine level degree with gradienter,the warp of level degree control below 5mm.To check up machine frame'level degree is very important,it can make sure not appear unilateral feeding in working,and avoid shatter machine because burthern odds.
- Install the electromotor,not only inspect the distance with main,but also inspect electromotor'strap wheel and main trough wheel'plane isn't on one plane.Make sure all triangle strap wheel effective working.
- The size of discharge open adjust according to the product' granularity and disposal capacity.You should disentangle spring before adjust discharge open.After adjust,propriety adjust spring tighten degree.In order to brush off.
- After install machine and adjust trial run
  - (1) No loaded test run
    - a. Continum movement 2 hour,axletree temperature hoist less than 30°C
    - b. All clamping fastener must fasten.
    - c. Grooved pulley and moveflywheel calm
    - d. All the part of rub haven't abrade and rubbing,haven't abnormal noise.
    - e. Discharge open adjust range must accord with request.

- (2) Loaded run
    - a. Crusher haven't periodicity or prominence sound.
    - b. The biggest size of the feeding material must accord with request.
- Continuous movement 8 hour,bearing temperature hoist can not exceed 30°C.

## Operation and maintenance

- The prepare working before crusher start-up
  - (1) Check-up the lubricate of axletree;knee plate and adjust the contact of knee plate'mat,it's have enough lube between knee plate and knee plate mat or not.
  - (2) Adjust all fastener firmly.
  - (3) Adjust grooved pulley'center position is all right.The right position is the smallest vibration of this machine.
  - (4) Adjust transmission strap installed all right,if you find some damnify of strap,you must replacing in time.You must rub-up with duster cloth when strap and grooved pully miry.
  - (5) Adjust defend setting is all right,if you find insecurity,eliminate as soon as possible.
- Start-up the crusher
  - (1) You can start-up after check up machine ad transmission parts is all right.
  - (2) This machine must start-up under no burden.
  - (3) You must stop if find abnormality.Must check up and eliminate abnormality,after all that start-up the crusher.
- Use of the breaker
  - (1) Begin to throw the material after running well.
  - (2) The broken supplies are joined in broken evenly,avoid the side and feeds in raw material or piled and feed in raw material in check,in order to prevent unilateral overload,load sudden change to block.

In case of normal job,the temprature change of the bearing should not exceed 30 degrees Centigrade,maximum temprature can't exceed 70 degrees Centigrade.Should park immdiately when exceeds 70 degrees Centigrade ,find out the reason and get rid of.

  - (3) Should stop feeding in raw material at first before parking,after the broken supplies in broken are all discharged,can shut off the motor.
  - (4) In the broken when caused by that supplies are blocked in broken and park,should shut off the motor immdiately,can start the breaker again after removing the supplies.
  - (5) If one end of the fixed jaw plate and movable plate is worn-ot,user can replace one end by the other.
  - (6) The breaker is used some time later,should fasteners again.
- Lubricate.
  - (1) For gurantee normal operation of machine and lengthen service life,should the fixed note oil is lubricated.
  - (2) It should be 50%-70% of the volume to put into the lubricating grease in the pedestal,change once every 3-6 months.Use position,such as one,etc.Of rolling that clean petrol or kerosene wash the roller bearing carefully while changing the lubricating grease,should open to put the oil-hole pedestal when washing.
  - (3) This machine adopts the lubricating grease and should be decided according to conditions,such as area,climate where the machine use,etc.,can generally adopt calcium

base or sodium base calcium sodium base lubricating grease. When the lubricating grease is drier, can use after mediating with rare oil and lubricating grease.

(4) Knee and cushion take while assembling or overhaul only, office add the right amount lubricating grease to joint its.

### Common trouble and trouble shooting

Trouble	Main reason	Trouble shooting
After the violent broken sound, move the jaw and stop swinging, the flywheel	Enter supplies that can't be broken or other reasons to make the thrust plate destroy in broken	Draw back the pull rod nut, take down the pull rod spring, will move the jaw to hang up, change the new
The broken board shakes, produce and strike sound	<ol style="list-style-type: none"> <li>1. The set bolt of broken board becomes flexible</li> <li>2. The set bolt of broken board ruptures</li> </ol>	1. Fastenning the set bolt of broken board, it should be changed that the elasticity of the spring is insufficient such as defending becoming flexible
The flywheel is turned round, stop brokenly, the thrust plate is deviated from propping up seats	Pull rod spring or the pull rod rupture	Change and damage one
Thrust plate prop up flat produce and bump into or other abnormal sounds	<ol style="list-style-type: none"> <li>1. Pull rod spring or the pull rod rupture</li> <li>2. The thrust plate supports the seat is worn and torn or relaxed</li> <li>3. The elbow very beginning of the thrust plate is worn and torn seriously</li> <li>4. Produce material mouth adjust whom device adjust even, cause the thrust plate about straining and inconsistent</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten the spring or change the spring</li> <li>2. Change the thrust plate and prop up seats</li> <li>3. Change thrust plate is it produce material mouth</li> <li>4. Change the device to revitalize</li> </ol>
The flywheel becomes flexible	1. The key is cooperated with and too loose, the key and keyway are worn and torn	1. Tighten key, open keyway change key, lock axle end device urgent again
The grain size of the broken products increases	Low department wears and tears the jaw board seriously	Is it arrange material mouth regulate device, is it arrange material mouth to narrow, if not in vogue to

		adjust,can change new jaw board jaw board upper and lower exchange
Broken stops up,the electric current of the main electrical machinery is higher than the electric current running well	<p>5. Big stone enter broken,but can't broken to is it stop up to lead to the fact</p> <p>6. Breaker following belt machine break down,arrange material mouth stop up</p> <p>7. Enter supplies of viscosity and other incidentals and stop up and arrange the material mouth</p> <p>8. The amount of material fed is too big</p>	<p>1. After shutting down,fasten live in big stone with steel wire rope,is it produce the breaker to hang with crane heavy stone</p> <p>2. Stopping feeding the material,get rid of the trouble of the belt machine,no breaker will stop as much as possible at this moment</p> <p>3. Stopping feeding the machine,dredge out the material mouth,no breaker will stop as much as possible at this moment</p> <p>4. Adjust the rotational speed of the slow feeder,reduce the amount of material fed</p>
The temperature of the bearing is too high	<p>5. The lubricating grease is insufficient</p> <p>6. The lubricating grease is dirty and corrupt</p>	<p>1. Join right among lubricating grease</p> <p>2. Change the lubricating grease after washing the bearing</p>