



HST / HPT SERIES HYDRAULIC CONE CRUSHER

HST / HPT系列液压圆锥破碎机



ZHENGZHOU

Zhengzhou Kefid Mechanical Industry
Science & Technology Co., Ltd.(Headquarters)

Address: No. 169 Kexue Avenue, National HI-TECH Industrial
Development Zone, Zhengzhou, China.

Tel: 0086-371-67999255 / 67988500

Zip Code: 450001

Website: www.kefid.com

Email: sales@kefid.com

SHANGHAI

Zhengzhou Kefid Mechanical Industry
Science & Technology Co., Ltd.(Shanghai branch)

Address: No 201 Huaxiasanlu road,Pudong new distric,
Shanghai, China.

Tel: 0086-21-50471909/50591026/50458961

Zip Code: 201299

Website: www.kefidchina.com

Email: kefidsh@kefidchina.com



HST



HPT



HST系列液压圆锥破碎机

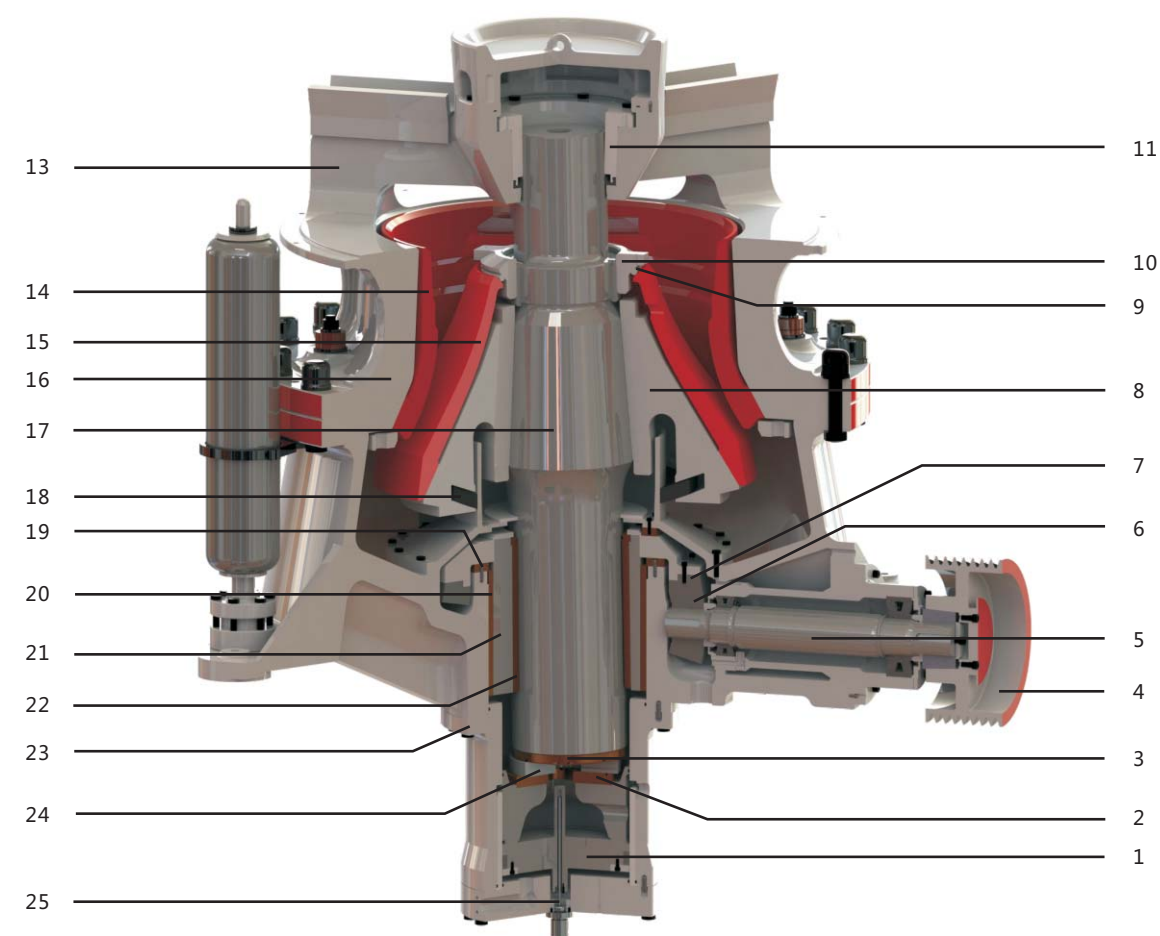
HST SERIES SINGLE CYLINDER HYDRAULIC CONE CRUSHER

设备系统组成：主机（含电机），液压润滑站，电气控制柜，电机启动柜，触摸液压屏，正压防尘系统。

Includes: Cone crusher (motor included), hydraulic & lubrication station, electrical control cabinet, start cabinet, touch screen, positive pressure dust proof system.



结构构成 Structural Features



- | | | |
|------------------------------|---------------------------------|--------------------------------|
| 1. 液压缸 Hydraulic Cylinder | 10. 破碎壁锁紧螺母 Mantle Clamping Nut | 19. 中摩擦环 Middle Friction Ring |
| 2. 下摩擦盘 Lower Friction Plate | 11. 锥套 Upper Main Shaft Bushing | 20. 偏心套外衬 Outer Bushing |
| 3. 上摩擦盘 Upper Friction Plate | 12. 盖帽 Feeding Cap | 21. 偏心套 Eccentric |
| 4. 皮带轮 Pulley | 13. 星臂架 Tri-Arm Rack | 22. 偏心套内衬 Inner Bushing |
| 5. 传动轴 Countershaft | 14. 轧臼壁 Concave | 23. 下架体 Lower Frame |
| 6. 小锥齿轮 Pinion | 15. 破碎壁 Mantle | 24. 中摩擦盘 Middle Friction Plate |
| 7. 大锥齿轮 Gear | 16. 上架体 Upper Frame | 25. 位移传感器 Displacement Sensor |
| 8. 动锥 Head | 17. 主轴 Main Shaft | |
| 9. 切割环 Torch Ring | 18. 防尘密封圈 Dust Sealing Ring | |

研发背景 Research Background

HST系列圆锥破碎机具有坚固耐用维修方便，液压调整及保护安全可靠，全智能控制方便可靠，操作简单，磨损低等特点。其体积小，重量轻，生产能力强，还可在降低生产成本的同时产出粒型优良（针片状含量低）的石料产品。针对不同的砂石破碎作业，可定制最合适的偏心距，提高其生产效率。

HST series cone crusher is sturdy, durable and easy to maintain; the hydraulic adjustment and protection are safe and reliable; the full intelligence control system makes it convenient, reliable, easy for operation, low abrasion etc. It's small in size with light weight and high capacity; and it can produce cubic shape aggregates with low cost of production. For different stone crushing operations, the most suitable customized eccentricity can improve its production efficiency.

设计理念 Design Concept

传统设计理念——单粒子破碎：破碎发生在衬板和物料之间。

Traditional design concept(single particle crushing): crushing occurs between the liners and stone.

缺点 Disadvantages

破碎效率低。
Low crushing efficiency.

产品呈扁长形，不利于建筑作业。
Products is flat long shape which is not conducive to construction operations.

衬板磨损快，钢耗高。
Liner wears fast with high steel consumption.

HST设计理念——层压缩破碎：破碎发生在物料与物料之间。

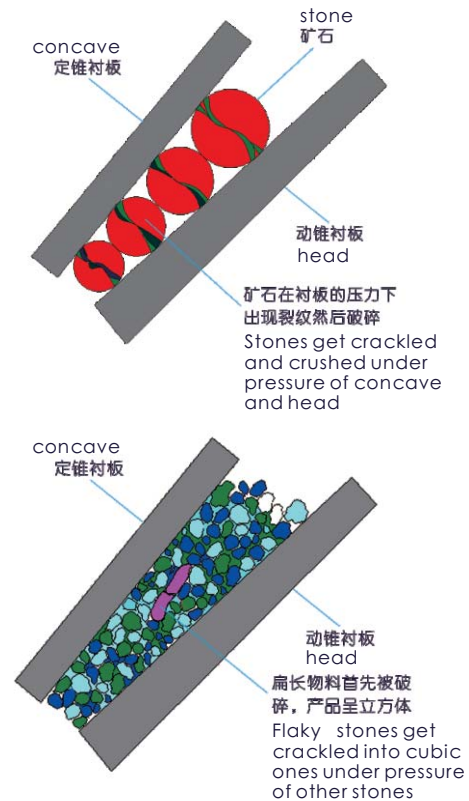
HST design concept (inter-particle crushing): crushing occurs between stone and stone

优点 Advantages

破碎效率高。
High crushing efficiency.

产品成立方体，利于建筑作业。
Product is cubic shape which is conducive to construction operations.

衬板磨损慢，钢耗低。
Liner wears slow with low steel consumption.



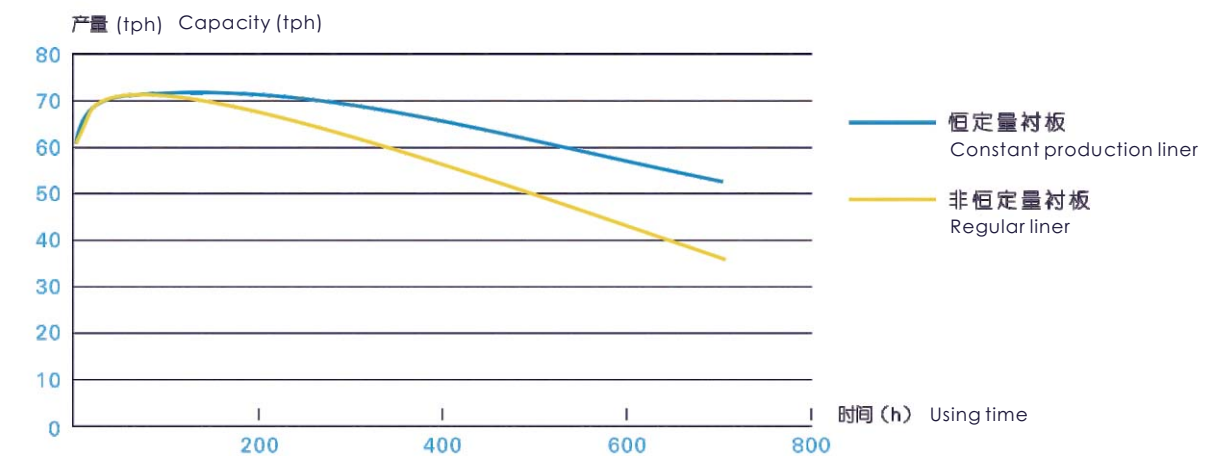
产品特点 Features

恒产量衬板

Constant production liners (mantle and concave)

破碎腔衬板（破碎壁，轧臼壁）在投入使用初期和后期产量变化小，总产量能提高15%，衬板寿命提高6%。

HST liners can guarantee minor change of the capacity from early to late using stage, thus total capacity can increase by 15% and liner's service life extends by 6%.



智能控制系统

Intelligent control system

可实时显示各运行参数，并对排矿口、电机功率、破碎机压力实现带负荷动态调节。
Real-time display of the operating parameters; and the CSS(close side setting), motor power, crusher pressure can be adjusted during the crushing process.

可实现无人操作，排矿口自动检测并调整。
It can achieve unmanned operation, since the CSS can be detected and adjusted automatically.

可发挥破碎机最大功率，并减少由于人为操作失误造成的不必要损失。
It can play the maximum power of the crusher, and reduce the unnecessary losses caused by man-made errors.



浮动式主轴 Floating shaft

调整排料口极其方便，自动控制系统可实现负荷时动态调整（调整排放口可在破碎工作中完成，无需停止喂料）。

Floating shaft enables the dynamic adjustment of CSS for HST at load condition (no need to stop feeding or crushing), with automatic control system.

可实现自动负荷设置，自动排矿口设置，最大程度发挥破碎效率，灵活调节产品级配，为用户节约生产成本。

Floating shaft enables consistent setting of capacity and CSS which maximizes the crushing ration, optimizes the outputs grade, and then saves cost for users.

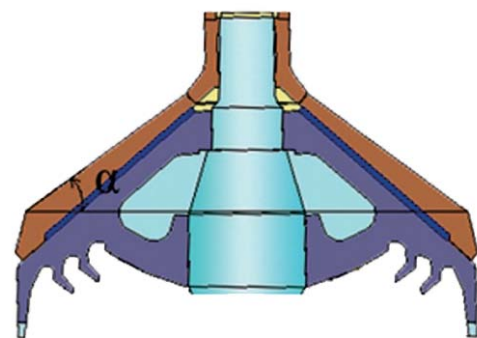
由上下两端支撑破碎锥，主轴受力条件比较好，可承受更大的破碎力。

The main shaft can bear more crushing force because of the support from suspension beam at the top and hydraulic cylinder at the bottom.

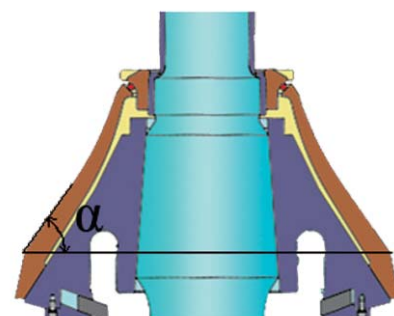
陡锥型动锥 Steep-shape liners (head, mantle and concave)

破碎锥底角 53° - 56° ，破碎腔深，在高通过能力的情况下，破碎次数多，层压效果好。由于破碎锥较陡，原矿的含水量对产量影响较小。

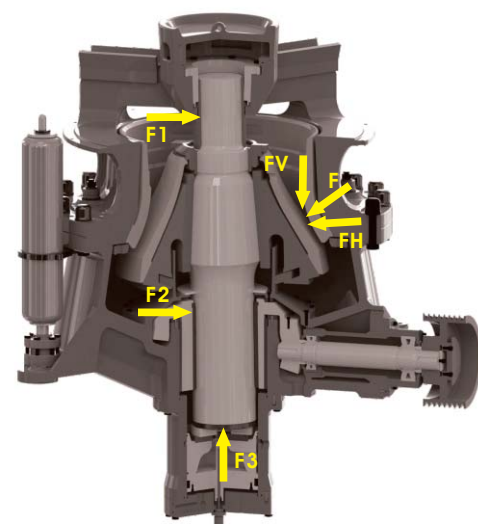
The angle for head is 53° - 56° . With the large crushing capacity and deep crushing chamber of HST, the stone can be crushed more times and make better effect of inter-particle crushing. In addition, the moisture content of stone effects little on the capacity.



平锥型动锥, α 约 40°
Regular liners, α as 40°



陡锥型动锥, α 约 55°
Steep-shape liners, α as 55°



F1:水平反力 Horizontal counter-force
F2:水平反力 Horizontal counter-force
F3:垂直反力 Vertical counter-force
FV:垂直分力 Vertical stress component
FH:水平分力 Horizontal stress component
F:破碎力 Crushing force

安全可靠的液压保险系统 Safe and reliable hydraulic insurance system

液压系统采用高压设计来满足低压需求，设备正常运行时有较高的压力裕量，提高了液压系统的可靠性。

The designed pressure is much more than the needed pressure; this pressure margin improves the HST reliability.

密封件设计压力20MPa。

The designed pressure for sealing element is 20MPa.

液压缸工作最大压力4MPa。

The maximum pressure for hydraulic cylinder is 4MPa.

优化的液压润滑站设计 Optimized hydraulic & lubrication station

进口风冷散热器，运转可靠，节省空间，安装便捷，并且不会产生缺水漏水等对破碎机伤害极大的严重故障，在缺水地区也可使用。

Imported air-cooled radiator enables HST working in water-lacking area, with reliable operation, easy installation, and no serious failure such as water shortage or leakage.



运行可靠 Reliable operation

选用国际一流品牌的控制器、传感器、阀（Winner, Sun, Danfoss, MTS等），保证设备可靠性。
HST uses the first-class brand (Winner, Sun, Danfoss, MTS, etc.) controllers, sensors, valves to insure performance.



技术参数
Technical Data

Model 型号	Cavity 腔型	Maximum feed size(mm) 最大进料尺寸	CSS min-max (mm) 排料口调整范围	Power Kw(HP) 功率	Dimension (L×W×H) (mm) 外形尺寸 (长×宽×高)	Weight (t) 重量
HST100	S1(超粗)Extra Coarse	240	22-38	90(125)	1535×1275×2710	9.6
	S2(中粗)Medium Coarse	200	19-32			
HST160	S1(超粗)Extra Coarse	360	25-54	132(175)	2045×1635×3040	15.5
	S2(中粗)Medium Coarse	300	22-48			
	S3(粗)Coarse	235	19-48			
HST250	S1(超粗)Extra Coarse	450	35-54	220(300)	2675×2550×3940	28
	S2(中粗)Medium Coarse	400	29-51			
	S3(粗)Coarse	300	25-51			
HST315	S1(超粗)Extra Coarse	560	41-76	315(400)	3110×2945×4480	43.5
	S2(中粗)Medium Coarse	500	38-70			

Any change of technical data shall not be advised additionally. 技术数据如果有变动，恕不另行通知。

Model 型号	Cavity 腔型	Maximum feed size(mm) 最大进料尺寸	CSS min-max (mm) 排料口调整范围	Power Kw(HP) 功率	Dimension (L×W×H) (mm) 外形尺寸 (长×宽×高)	Weight (t) 重量
HST100	H1(细)Fine	135	10-32	90(125)	1540×1280×2300	7.5
	H2(中细)Medium Fine	65	8-19			
	H3(超细)Extra Fine	38	4-16			
HST160	H1(细)Fine	185	13-38	132(175)	2000×1550×2600	10
	H2(中细)Medium Fine	90	10-32			
	H3(超细)Extra Fine	50	6-25			
HST250	H1(细)Fine	215	16-44	220(300)	2315×1830×2940	19.5
	H2(中细)Medium Fine	110	13-38			
	H3(超细)Extra Fine	70	8-32			
HST315	H1(细)Fine	275	16-51	315(400)	2740×2200×3590	28.5
	H2(中细)Medium Fine	135	16-38			
	H3(超细)Extra Fine	65	13-22			

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生产能力
Capacity

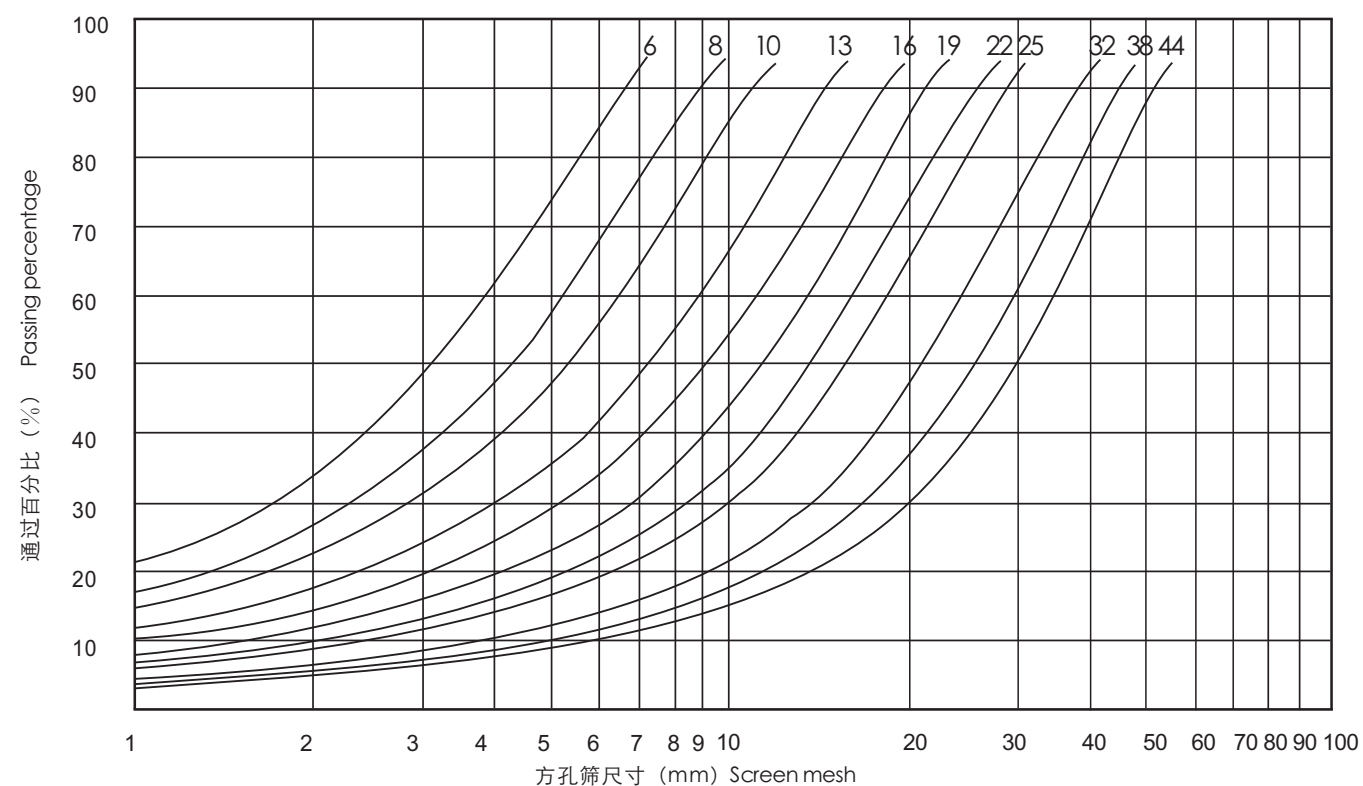
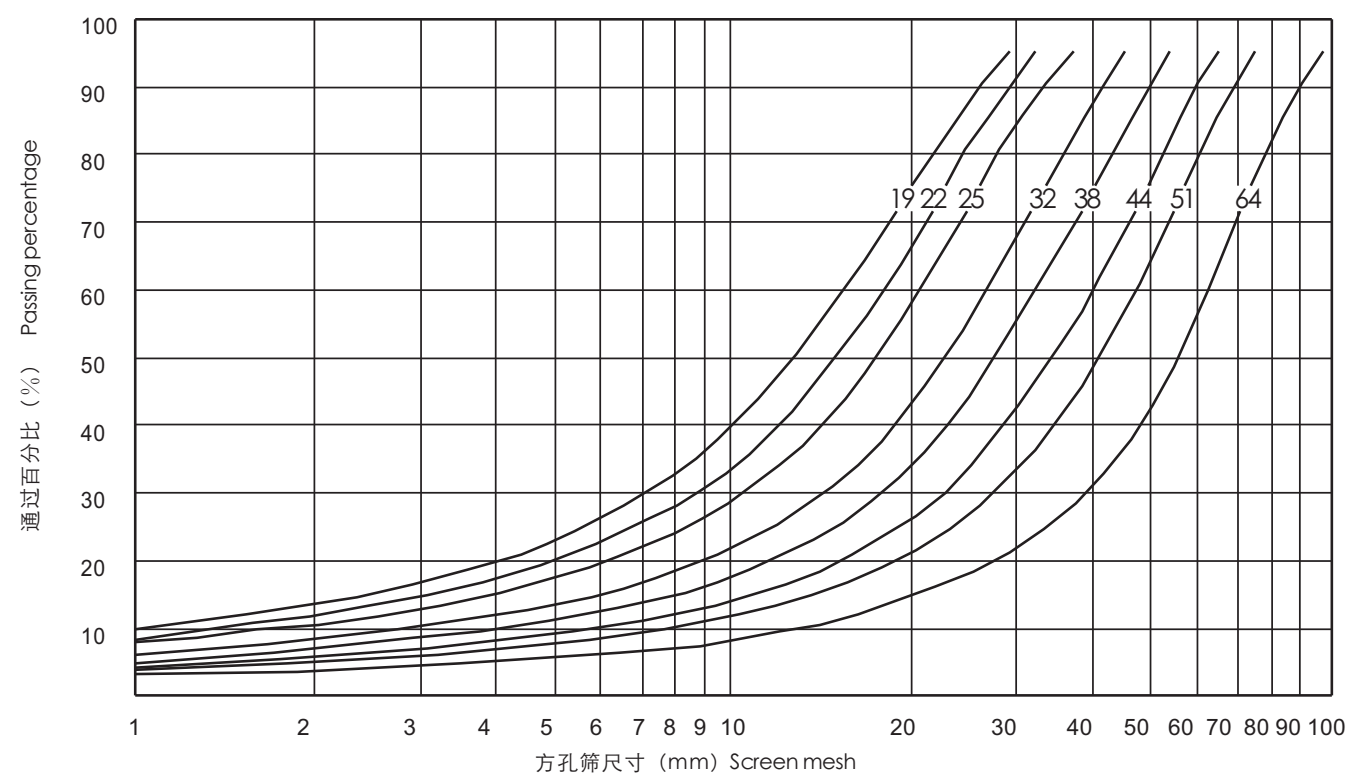
Model 型号	HST100		HST160			HST250			HST315	
Cavity 腔型	S1(超粗) Extra Coarse	S2(中粗) Medium Coarse	S1(超粗) Extra Coarse	S2(中粗) Medium Coarse	S3(粗) Coarse	S1(超粗) Extra Coarse	S2(中粗) Medium Coarse	S3(粗) Coarse	S1(超粗) Extra Coarse	S2(中粗) Medium Coarse
CSS (mm) 紧边排料口 尺寸	19	70			90					
	22	85		105	95-125					
	25	90-115	80-130	120	115-145	105-170		190		
	29	100-160	90-115	135-175	125-200	115-220	215	205-270		
	32	105-170	95	140-230	130-255	120-235	230-300	220-345		
	35	110-145		150-295	140-270	125-250	255	245-385	230-435	
	38	115		160-310	145-285	135-265	270-355	260-485	245-465	305
	41			170-330	155-305	140-275	285-450	270-515	260-490	335
	44			175-345	165-265	150-245	300-565	285-450	270-430	350-460
	48			190-310	175	160	320-605	305-400	290-380	375-590
	51			195-260			335-525	300	305	390-720
	54						350-460			410-860
	60									445-930
	64									465-980
	70									500-1050
	76									535-985

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Model 型号	HST100			HST160			HST250			HST315		
Cavity 腔型	H1(细) Fine	H2(中细) Medium Fine	H3(超细) Extra Fine	H1(细) Fine	H2(中细) Medium Fine	H3(超细) Extra Fine	H1(细) Fine	H2(中细) Medium Fine	H3(超细) Extra Fine	H1(细) Fine	H2(中细) Medium Fine	H3(超细) Extra Fine
CSS (mm) 紧边 排料口 尺寸	4		27-35									
	6		30-50			48-80						
	8	35-45	31-55			50-85			90-135			
	10	45	38-75	32-60	65-85	53-90			95-180			
	13	50-85	40-80	35-50	66-110	70-135	56-100	115-190	100-195			205-295
	16	52-95	45-76	38	75-150	75-145	60-104	110-200	120-280	110-210	170	190-295
	19	58-100	50-60		80-165	80-155	65-105	120-280	130-300	115-225	185-340	205-440
	22	60-105			85-175	85-165	70-95	125-295	140-320	125-240	195-440	215-470
	25	63-115			90-185	90-155	75	135-315	150-340	135-255	210-465	230-500
	32	75-130			100-210	100		155-360	170-285	150-210	235-550	265-505
	38				110-210			170-395	185		260-605	290-405
	44							185-385			285-665	
	51										315-515	

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粒度分布曲线
Products size distribution curve



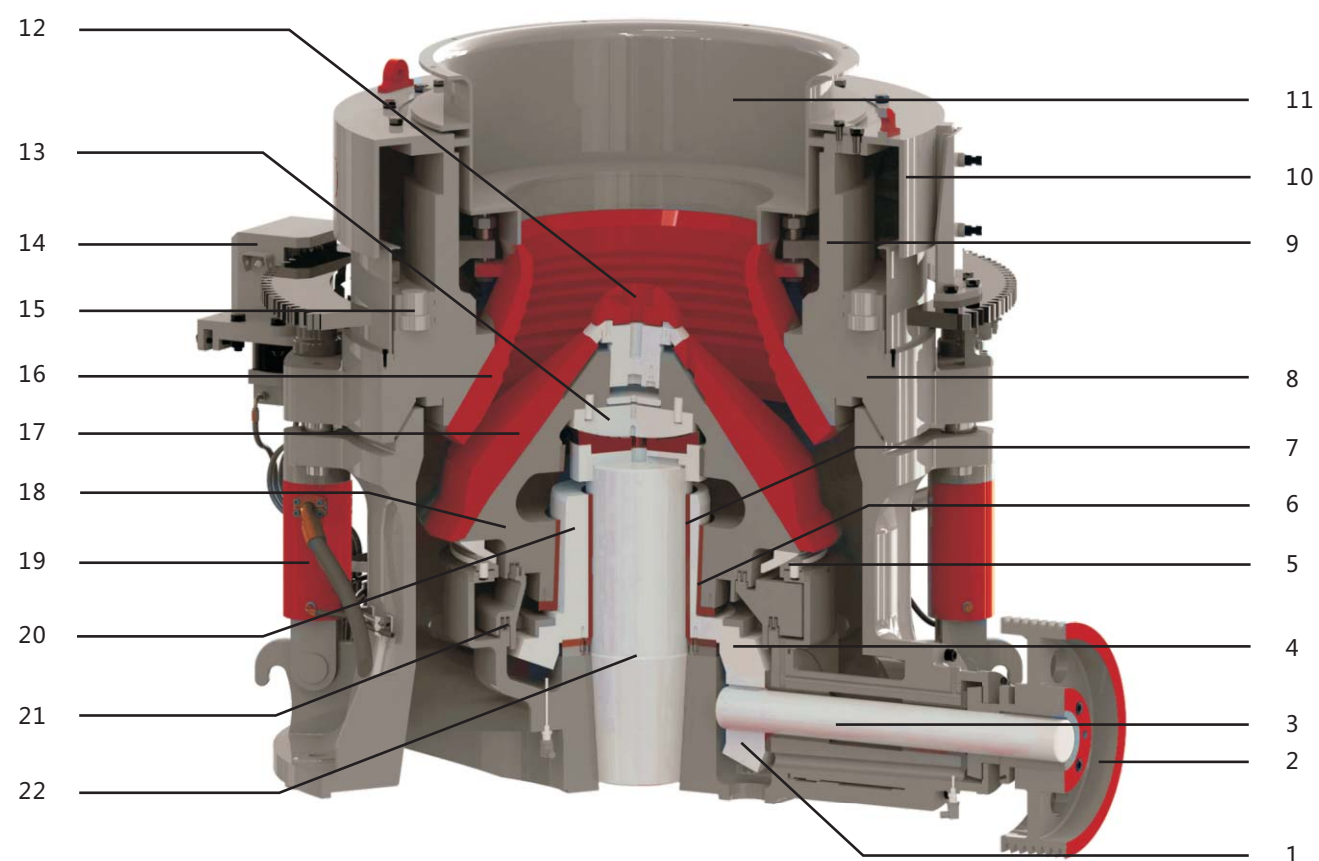
HPT系列多缸液压圆锥破碎机 HPT SERIES MULTIPLE CYLINDER HYDRAULIC CONE CRUSHER

设备系统组成：主机（含电机），液压润滑站，电气控制柜，电机启动柜，触摸液压屏，正压防尘系统。

Includes: Cone crusher (motor included), hydraulic & lubrication station, electrical control cabinet, start cabinet, touch screen, positive pressure dust proof system.



结构构成 Structural Features



- | | | |
|---------------------------------|-------------------------------------|------------------------|
| 1.小锥齿轮Pinion | 9.调整环Bowl | 17.破碎壁Mantle |
| 2.皮带轮Pulley | 10.防尘罩Dust Cover | 18.动锥Head |
| 3.传动轴Countershaft | 11.料斗Feed Hopper | 19.保险缸 |
| 4.大锥齿轮Gear | 12.锥头Cone Head | Tramp Release Assembly |
| 5.球面浮动密封Spherical Floating Seal | 13.球轴承Ball Bearing | 20.偏心套Eccentric |
| 6.下衬套Outer Bushing | 14.液压调整装置Hydraulic Adjustment Motor | 21.U密封U-Shape Seal |
| 7.偏心套内衬Inner Bushing | 15.锁紧缸Clamping Cylinders | 22.主轴Main Shaft |
| 8.支撑套Adjustment Ring | 16.轧臼壁Bowl Liner | |

研发背景 Research Background

HPT多缸液压圆锥破碎机集机械、液压、电气、自动化、智能控制等技术于一体，采用了全新的破碎机结构、优化的层压式破碎腔型，使其效率更高，维护调整更加方便准确，破碎性能和可靠性进一步提升，可以广泛地应用于中碎、细碎以及超细碎等破碎作业。

HPT multiple-cylinder hydraulic cone crusher is integrated of mechanical, hydraulic, electric, automation, intelligent control technologies, etc. . Adopting new structure and optimized inter-particle crushing cavity, the HPT gets higher efficiency, easier maintenance and adjustment, improved performance and reliability. HPT can be widely used in medium, fine and super fine crushing.

立足客户反馈，我司推出了圆锥破破碎单元，安装简洁，使用方便。

In response to customer feedback, KEFID launches steel-structure module for HPT, which is convenient to install and use.



设计理念 Design Concept

偏心套围绕固定的主轴转动，从而减少偏心套和主轴的损耗。

采用了层压缩破碎设计，破碎发生在物料和物料之间，破碎效率高。不依靠较小的排矿口获得较小的产品粒度。

The eccentric bushing rotates around the fixed main shaft, which will reduce their wearing.

Adopting inter-particle crushing design, crushing happens among stones with high crushing efficiency which doesn't rely on CSS to get small outputs.

► 优点： Advantages

产品呈立方体。

Final products are with cubic shape.

满腔给料，提高破碎效率。

Full feeding, to increase crushing efficiency.

衬板磨损小，运行成本低。

Liners wear less with lower operation cost.

层压缩破碎条件：破碎腔、转速、偏心距等合理结合。

Inter-particle crushing prerequisite: reasonable combination of crushing cavity, rotation speed and eccentricity etc.

产品特点 Product Features

全液压——保险 清腔 过铁 排料口调节
Full hydraulic – Insurance, cavity clearance,
metal release, CSS adjustment.

新型大通径油管配备大容量蓄能器的液压系统，缓冲性能更好，保压性能好，设备更加安全稳定。

New type large-drift-diameter oil tube and large-capacity accumulator improve the cushioning and pressure maintaining performance of the hydraulic system, which makes HPT more stable.

一键清腔，远程控制。

One button crushing cavity cleaning, with remote control.

良好的过铁性能：反应更迅速。

Flexible and reliable metal release.

通过液压马达正反向旋转，可实现远程准确连续调节排料口大小；以及实现快速拆装，减少停机时间，大大节省了人力物力。

Through the forward and reverse rotation of the hydraulic motor, users can remotely adjust the CSS, assemble and disassemble HPT rapidly with less downtime and manpower.

智能电气控制系统 Intelligent electric control system

采用西门子品牌的PLC和触摸屏智能控制系统，可靠性高。

HPT adopts Siemens PLC with intelligent control system and touch screen.

操作方便直观，数据记录齐全。

Convenient and intuitive operation, and complete data record.

保护灵敏，设置灵活方便。

Sensitive protection and easy setting.

世界知名品牌元器件。

International top brand components, like Winner, Sun, Danfoss, MTS.



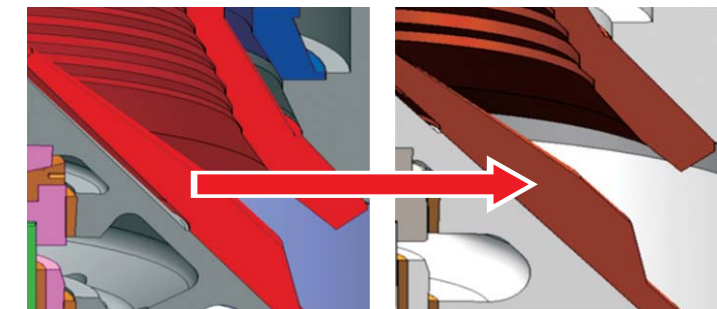
优化型衬板 Optimized liners (bowl liner & mantle)

衬板固定采用更先进的方式，安装更换无需浇灌衬板胶（衬板胶固定需要24小时（25°），节约了衬板更换的材料和人力成本；缩短了设备停机时间。

HPT liners are more advanced, no need for filling compound. So the replacement is fast and easy; material and human cost is saved; and downtime is shortened.

椎体壁加厚设计，更加有力、可靠，衬板使用寿命长。

HPT thickening liners are more powerful and reliable with longer service life.



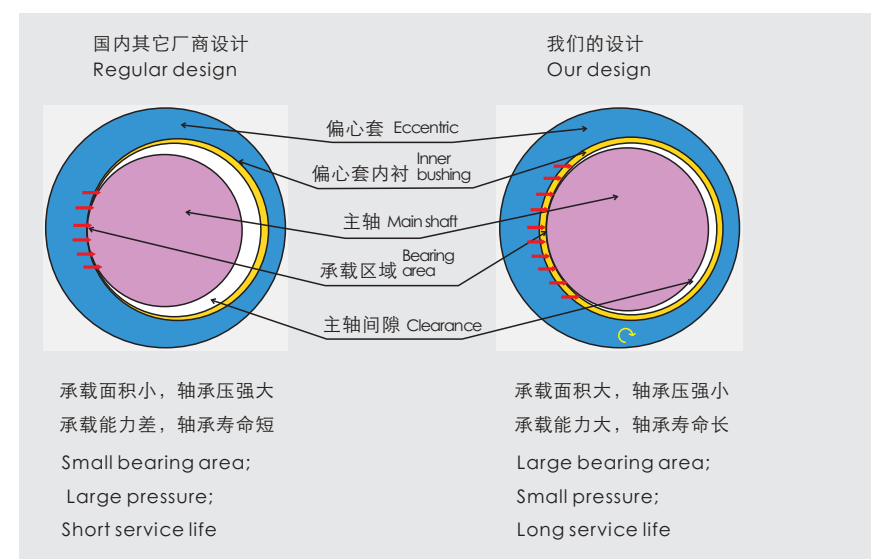
先进的轴承设计 Advanced bearing design

承载面积大，轴承压强小，轴承寿命长。

Large bearing area, small pressure, long service life.

试机后全面检查，保证轴承质量。

Comprehensive check after testing, ensuring the quality of bearing.



多重密封保护装置 Multiple sealing protection

HPT在正压防尘和U-T型密封基础上增加接触式球面浮动密封。密封更可靠，保证润滑油的清洁度。

HPT uses contact spherical floating seal together with the positive pressure dust prevention and U - T seal, to ensure the purity of lubricating oil.

全接触式浮动密封装置提供摩擦力，限制设备空转时的动锥转速，避免球瓦过早磨损。

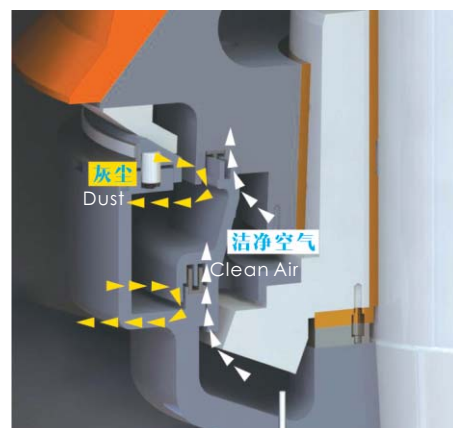
Full contact floating seal provides friction to rotation of movable cone, in order to reduce unnecessary wear of socket liner.

耐磨护板和机架用螺栓连接，更换简单快捷，使用周期更长。

Wear plate is connected to the frame by bolts with easy replacement and longer service life.

新型设计，保护配重平衡圈不被磨损破坏。

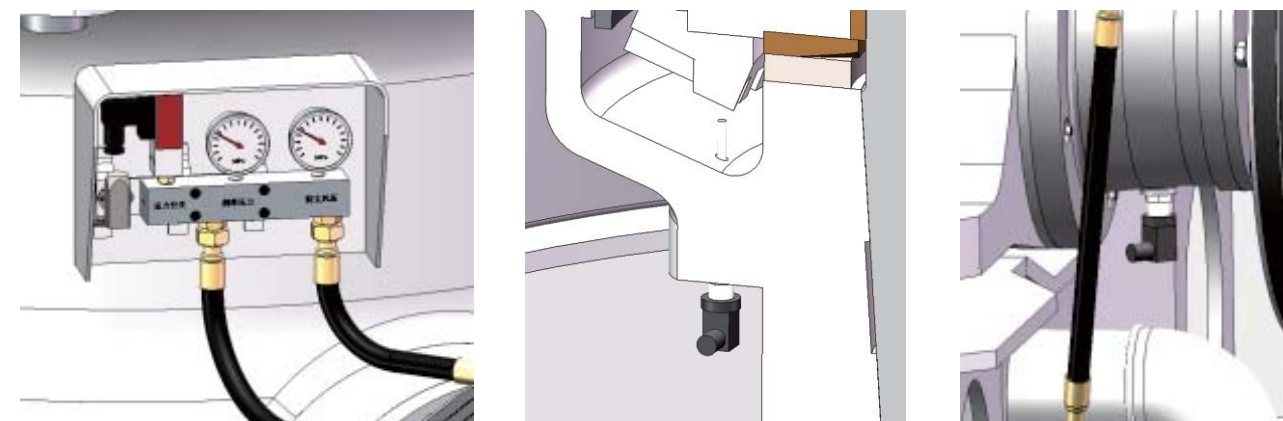
Advanced design to protect the balancing weight from wear and damage.



运行稳定可靠 Stable performance

设备上（油池回油处；传动轴回油处）增加回油温度传感器，回油检测更准确，保护更可靠。

Accurate monitoring and reliable protection from temperature sensors for returning oil on counter shaft and lubrication station.



传动系统采用螺旋伞齿轮设计，传动可靠，平稳，噪音低，扭矩大，寿命长。

Spiral bevel gear is used for reliable and stable power transmission, with low noise, large torque and long life-span.

进一步优化整体铸造机架。

Optimized integral casting frame.

严格的制造工艺保证产品的长使用寿命。

Craftsmanship, strict quality control, and CNC Lathe for long service life of HPT.



一体式液压润滑系统
Integrated hydraulic and lubricating station

润滑油用量400L，是国内同规格设备用油量的20%。
Oil consumption is only 400L, 80% less compared to the machines with same specifications from the other suppliers.

油站选用较国际同规格稍大流量的齿轮泵，供油稳定可靠。
Bigger gear pump is adopted for a reliable oil supply.

采用德国AKG或HYDAC风冷散热器，安装方便，不需单独提供冷却用水，防止水油混合造成设备损坏。
Use German brand AKG or HYDAC air-cooled radiator, to avoid problems caused by water shortage or water & oil mixture.

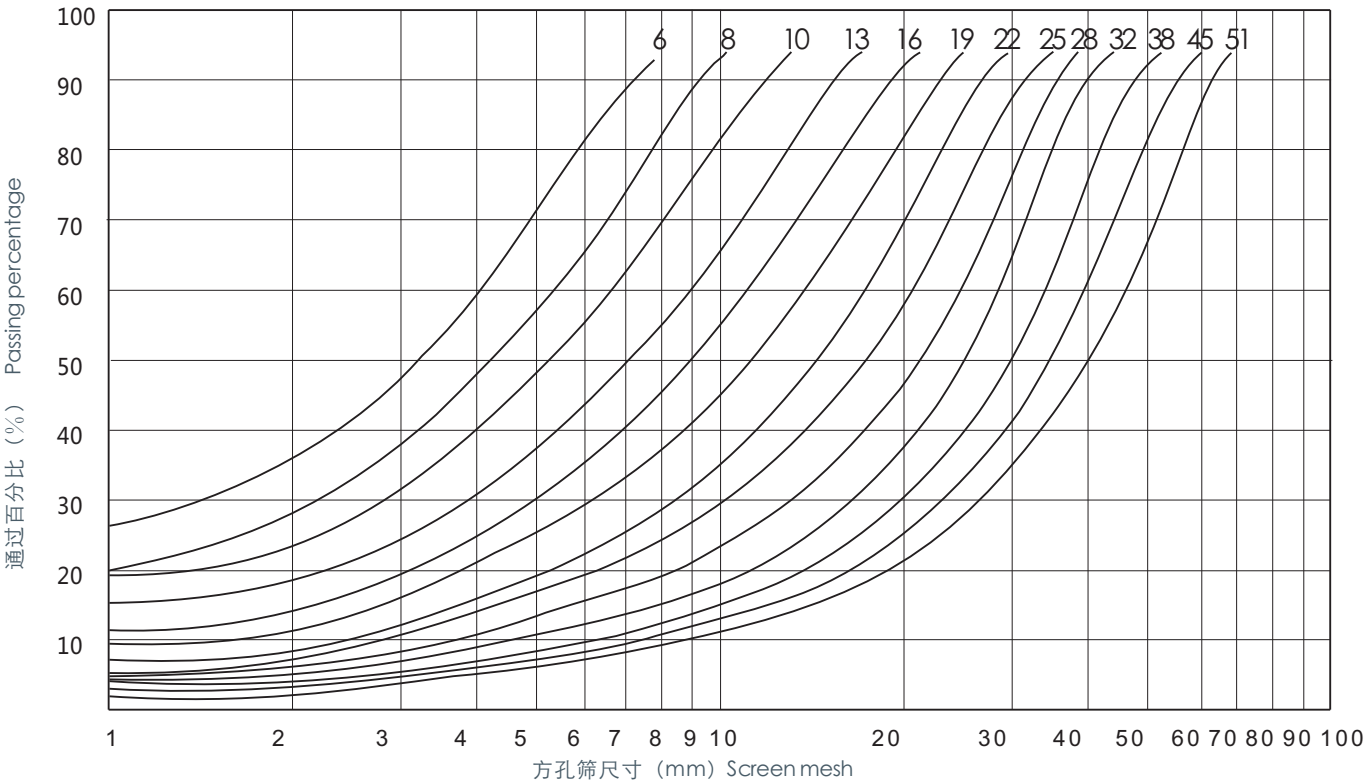


生产能力
Capacity

Model 型号	CSS (mm) 紧边排料口尺寸										
	8mm	10mm	13mm	16mm	19mm	22mm	25mm	32mm	38mm	45mm	51mm
HPT300	80-120	115-140	150-185	180-220	200-240	220-260	235-290	250-320	300-380	350-440	
HPT500		175-220	230-290	280-350	320-400	345-430	370-460	405-535	445-605	510-700	580-790

Any change of technical data shall not be advised additionally. 技术数据如果有变动，恕不另行通知。

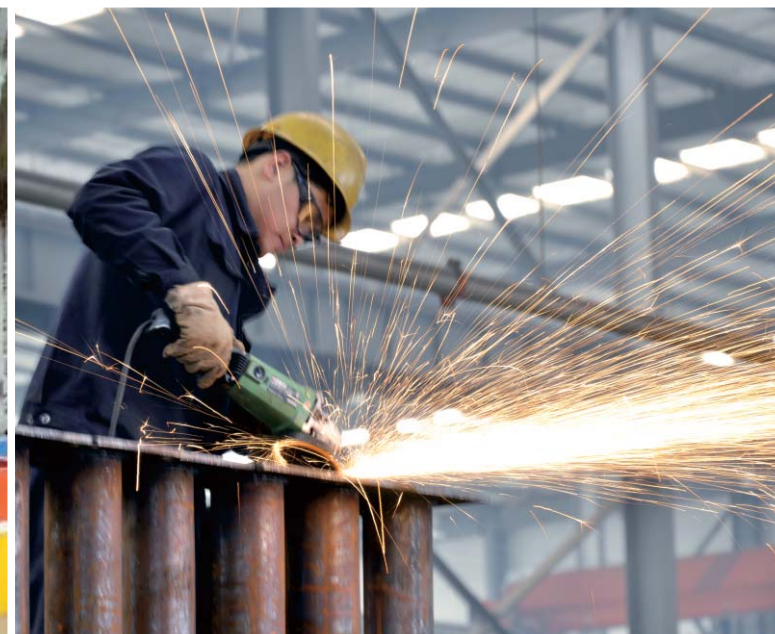
粒度分布曲线
Size distribution curve



技术参数
Technical Data

Model 型号	Cavity 腔型	Closed side feed opening (mm) 闭口边进料口尺寸	Min CSS(mm) 最小排料口尺寸	Capacity(tph) 处理能力	Power kW(HP) 功率	Dimension (L×W×H) (mm) 外形尺寸 (长×宽×高)	Weight (t) 重量
HPT300	C1(超粗) Extra Coarse	230	25	220-440	220(300)	2726×1950×2182	20
	C2(粗) Coarse	210	20	190-380			
	M(中) Medium	150	16	175-320			
	F1(细) Fine	105	13	110-260			
	F2(超细) Extra Fine	80	10	100-240			
HPT500	C1(超粗) Extra Coarse	330	38	425-790	400(500)	3447×2830×2977	40
	C2(粗) Coarse	290	30	380-700			
	M(中) Medium	210	22	330-605			
	F1(细) Fine	130	16	270-535			
	F2(超细) Extra Fine	95	13	200-430			

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WORKING
SITES
现场照片

