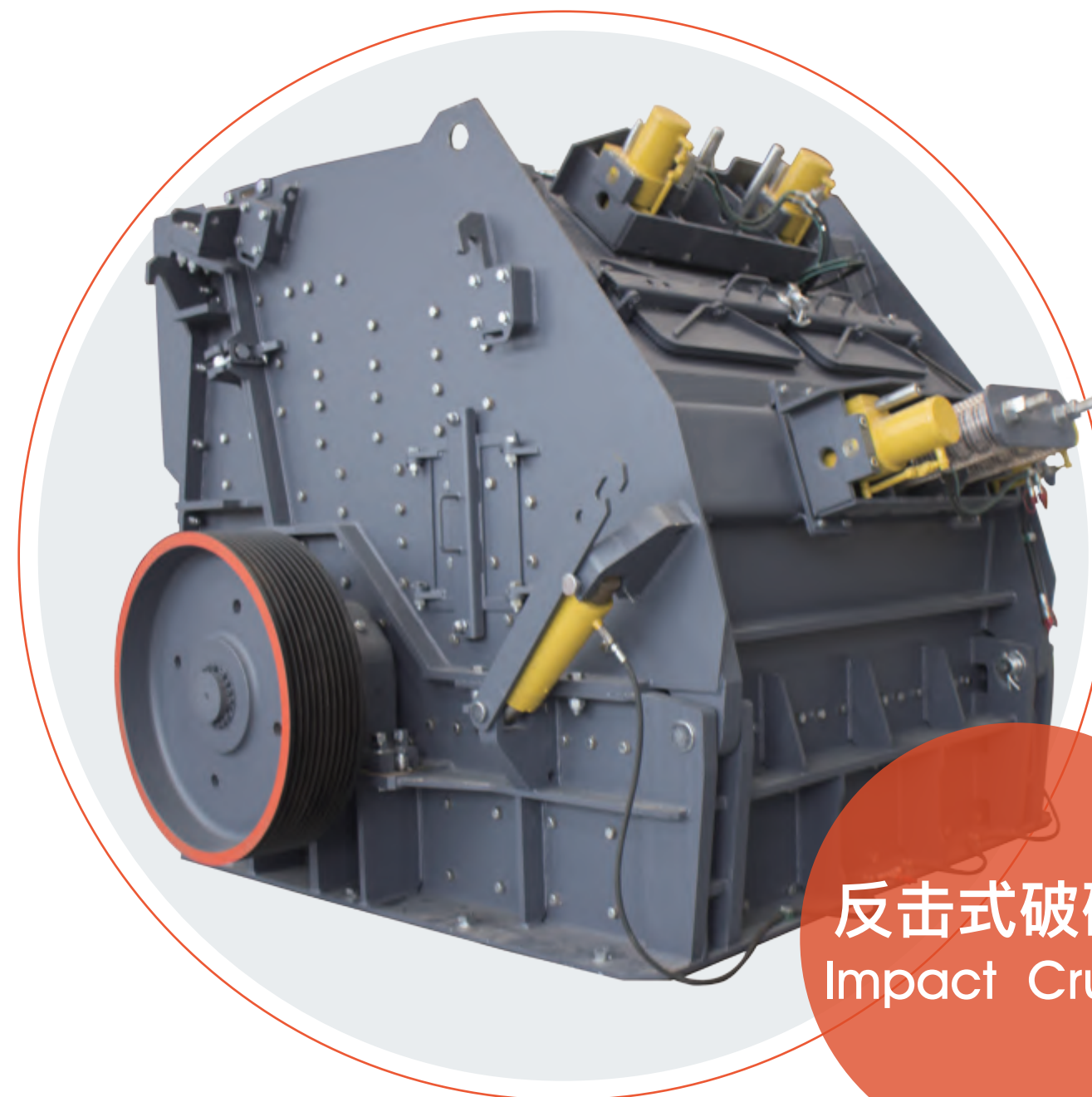


/ Z E N I T H I N T H E W O R L D /



反击式破碎机
Impact Crusher

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【中英V1P1-1811】

上海西芝矿山工程机械有限公司
Shanghai Zenith Minerals Co., Ltd.

CI5X系列反击式破碎机

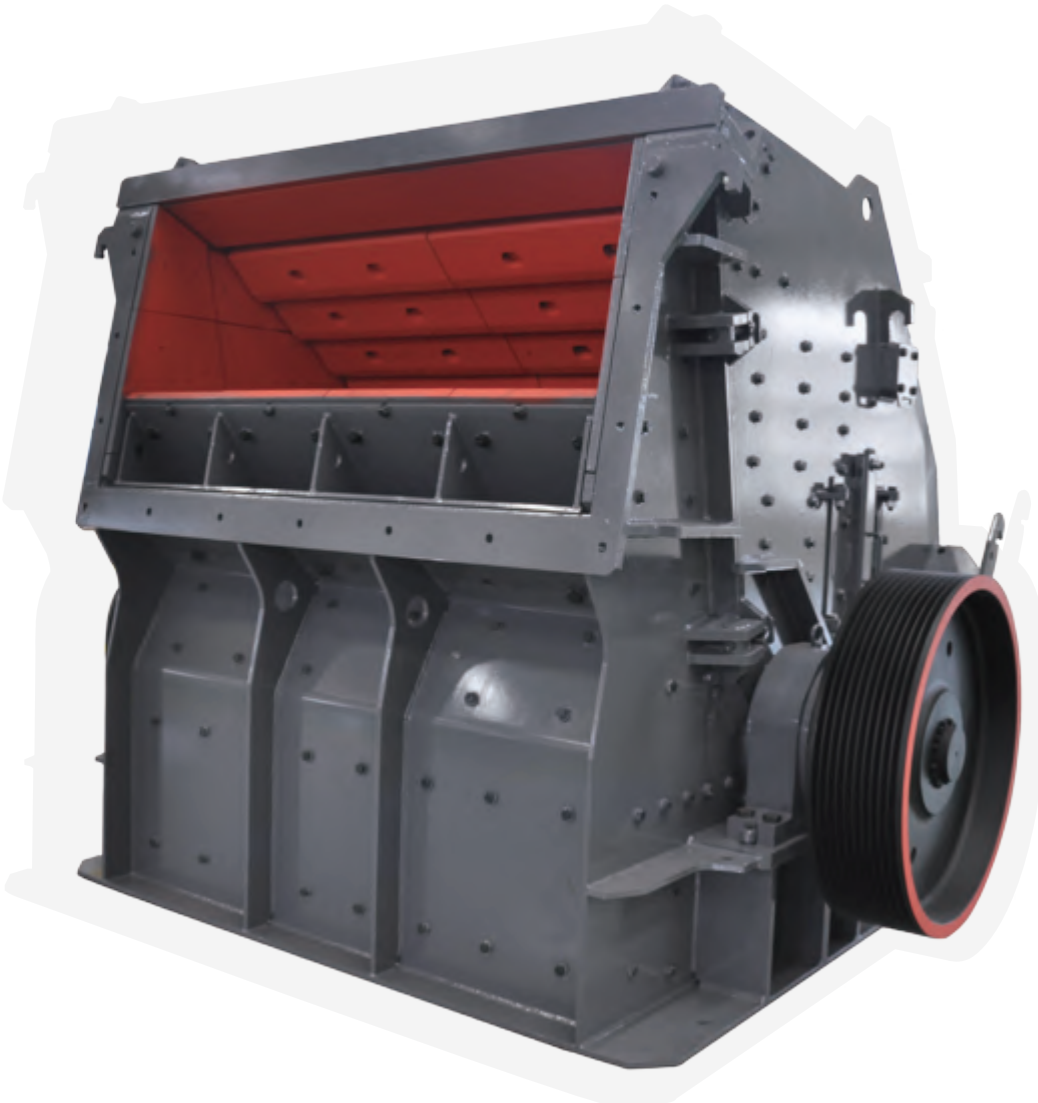
CI5X Series Impact Crusher

当用于软岩的粗碎、中细碎作业时, CI5X 系列反击式破碎机代表了当今先进的破碎工艺和技术, 大转动惯量高精度转子、多功能全液压操作系统、渐开线型高效破碎腔等科研成果成功的整合应用以及关键部件耐磨材料的选择, 赋予了设备更高的破碎效率、更简单的维护操作、更可靠的性能。

To satisfy users' requirements for high profits, low costs, and energy saving, and to overcome the shortcomings of conventional crushing equipment such as complex operation procedures and low crushing efficiency, Shanghai Zenith Mining and Construction Machinery Co., Ltd. (hereinafter referred to as ZENITH) as a world-class supplier of crushing equipment used in mines, according to the feedback from users in more than 160 countries as well as its experience in engineering application, and taking into consideration of the latest scientific research achievements, has developed the new generation of high-efficiency coarse and medium-fine crushing equipment—CI5X series impact crushers. They are ideal upgrade of conventional crushing equipment.

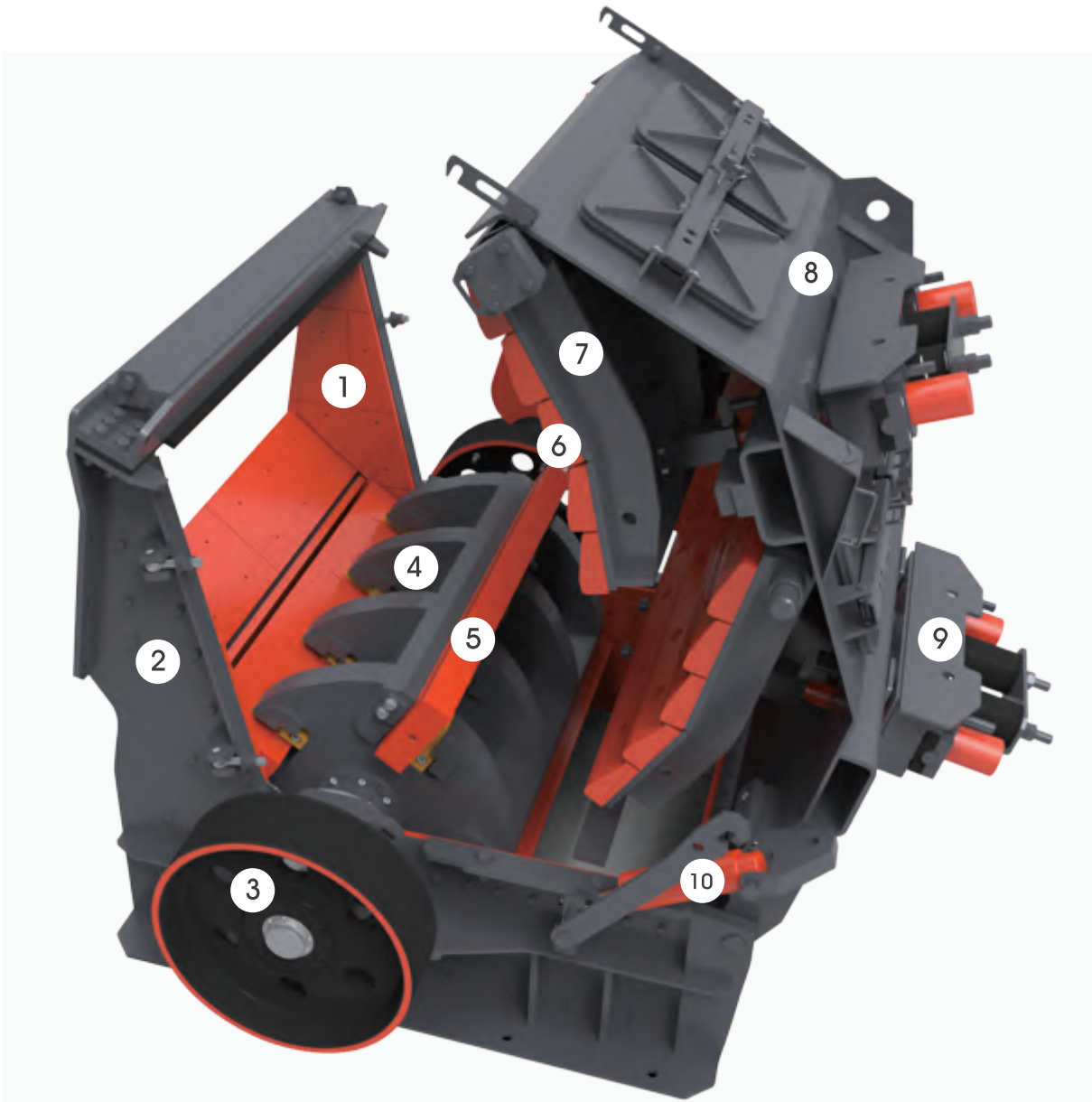
CI5X 系列反击式破碎机的高效率破碎和人性化操作设计, 使其能适应多种破碎工况、针对用户的需求提供高效率的解决方案, 帮助用户提高投资回报率。

High-efficiency crushing workmanship plus ergonomic design enable CI5X series impact crushers to adapt to various crushing conditions and meet users' needs. They are high-efficiency solutions and can help users improve returns on investment.



主要结构

Main Components



- | | |
|----------------------|---------------------------------------|
| 1. 机架衬板 Lining Plate | 6. 反击衬板 Impact Plate |
| 2. 下机架 Lower frame | 7. 反击架 Impact Rack |
| 3. 主轴轮 Shaft pulley | 8. 上机架 Upper Frame |
| 4. 转子 Rotor | 9. 液压调整装置 Hydraulic Regulation Device |
| 5. 板锤 Hammer Bar | 10. 液压启顶装置 Hydraulic Jacking Device |

最新科研成果整合应用

Integrated application of latest scientific research achievements

CI5X 系列反击式破碎机在分析了大量国内外反击式破碎机技术和工况的基础上，将破碎腔、转子和调整装置等多项最新科研成果整合应用，使得设备的破碎性能和操作维护性能达到国际最先进水平。

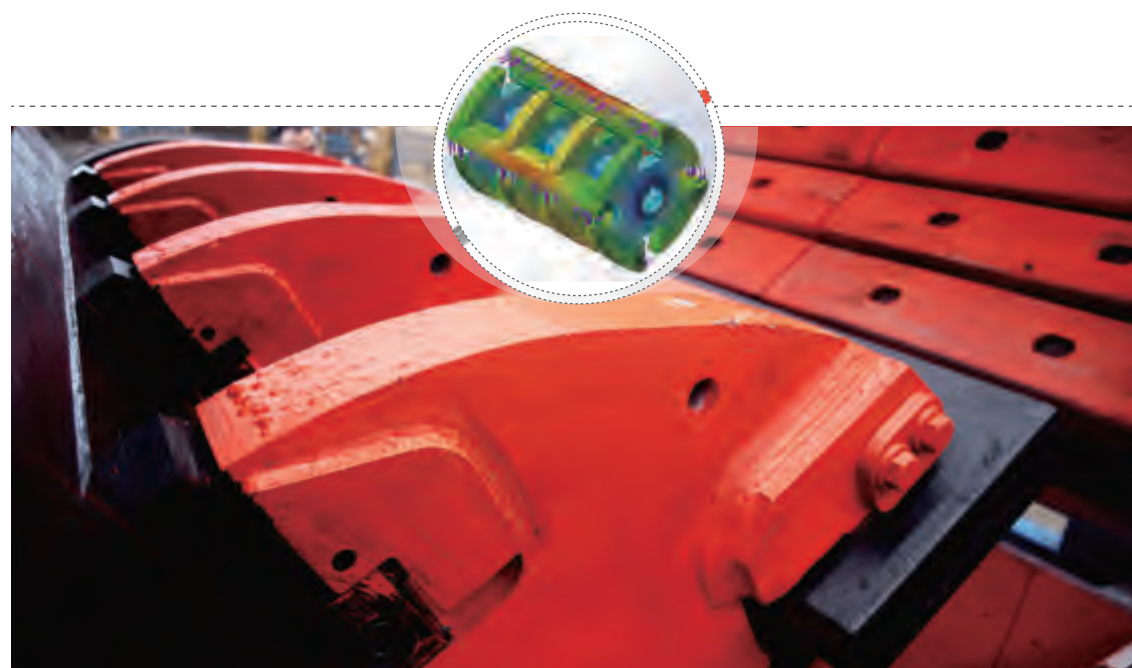
Integrated application of many latest scientific research achievements, for example, those concerning crushing chamber, rotor and adjusting device, based on the analysis of technical details and operating conditions of a good many domestic and foreign impact crushers makes CI5X series impact crushers internationally most advanced in respect of crushing performance and easiness of operation and maintenance.

大转动惯量高精度重型转子

Great-rotation-inertia high-precision rotor

CI5X 系列反击破转子采用大转动惯量的高精度重型转子设计，经过数控机床整体加工，配备高品质轴承，保证转子精度和高承载能力，物料可以经过充分加速而破碎，破碎比更大，同时在高负荷工作时，转子的高转动惯量能更有效的破碎物料，配合反击架的自动过载保护功能，确保设备稳定运行。

CI5X series impact crushers have a heavy-duty, great-rotation-inertia, high-precision rotor that is machined using numerically-controlled machine tool and equipped with high-quality bearings that have great load ability and high rotation precision. Material breakage after full acceleration produces a greater reduction ratio. Under a heavy load, the rotor exhibits great rotation inertia, more effectively crushing materials. The impact racks of automatic overload protection along with the rotor ensure the safe and stable operation of impact crusher.



多功能全液压操作系统

Multi-functional fully-hydraulic operating system

CI5X 系列反击破采用多功能全液压操作系统，反击架间隙调节采用全液压装置，调节精度高，速度快，降低人工和时间投入，提高设备的作业率；利用反击架调节液压系统可以直接驱动启闭装置液压缸，方便设备板锤和反击块的维护工作，实现了排料粒度调节、机器维护的轻松快速完成，降低了工作强度、减少停机时间，提高设备作业率。

CI5X series impact crushers employ a multi-functional, fully-hydraulic operating system to accurately and rapidly adjust the clearance between impact rack and rotor to realize discharge grain size adjustment, saving both labor and time, and increasing machine utilization ratio. The hydraulic cylinder of the opening and closing device can be directly operated by the hydraulic system, facilitating maintenance of hammer bars and impact blocks hence reducing production interruption time.

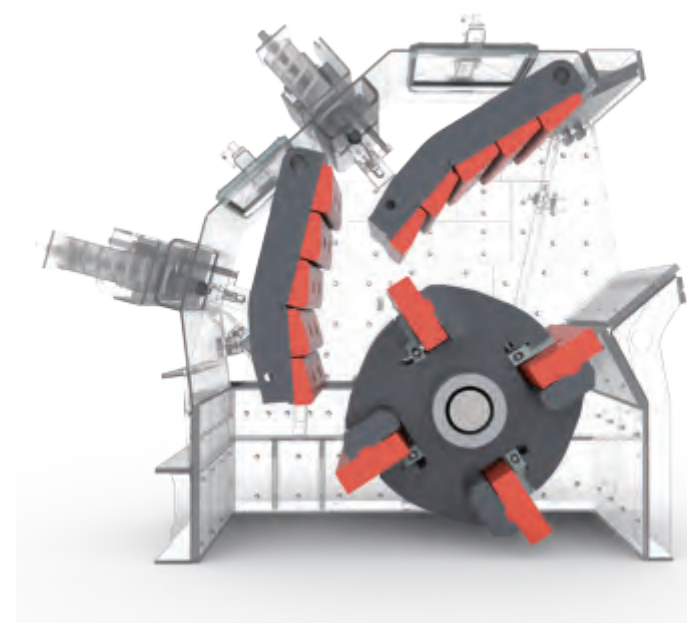


渐开线型高效破碎腔

High-efficiency involute-shaped crushing chamber

破碎腔采用仿真软件设计并经实践验证的渐开线型高效大破碎腔型，破碎效率高，进料粒度更大，可以用于中硬和较软岩石的粗碎和中细碎作业；物料在破碎腔内经过多次撞击破碎，产品粒型成立方体，可以满足高品质骨料的加工生产要求。

The crushing chamber is a high-efficiency, involute-shaped crushing chamber designed with simulation software and verified through actual application. It can process materials of larger grain size. It can be used in the coarse and medium-fine crushing of medium-hard and soft rocks. Undergoing collision time after time in the crushing chamber, rocks break into high quality cubic aggregates satisfying production requirements.



高标准的原材料确保设备高强度

Raw materials to high standard
ensuring high strength of equipment

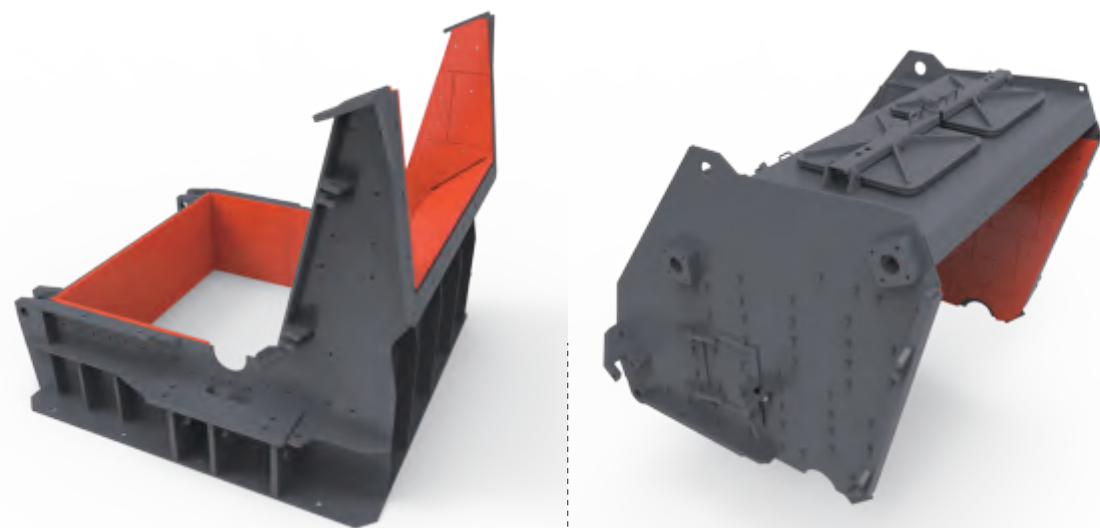
CI5X 系列反击破与同类产品相比, 性能更可靠、强度更高, 这一切都归功于品质一流的原材料选择, 并且整机采用 ANSYS 有限元计算机辅助设计, 不仅保证了设备在运行的过程中安全可靠, 还大大降低了设备维修成本, 提高了破碎机使用寿命。

Compared to conventional crushing equipment, CI5X series impact crushers present higher reliability, safety, and strength as they are designed with computer-aided finite element design software ANSYS, and fabricated with raw materials of first class quality. The crusher maintenance costs are greatly reduced with the service life extended.

轻量化机架 Lightweight frame

优化机架结构, 选用高强度优质钢材制造, 整体经过加工, 设备结构紧凑, 强度高重量轻, 安装运输也更加方便。

Optimized structurally, fabricated with quality steel, and machined integrally, the frame is of high strength, compact, light, and easier to transport and install.



高精度主轴 High-precision shaft

CI5X 系列反击破主轴采用优质钢材锻造而成, 经过高精度加工, 配合高品质轴承, 使设备在持续高强度工作时依然非常稳定。

Forged with quality steel, machined highly accurately, and supported by high quality bearings, the shaft is capable of operating very steadily even under harsh conditions.



高强度反击架 High-strength impact rack

反击架采用高强度钢材焊接而成, 高耐磨反击块通过大直径螺栓固定在反击架加工面上, 整体强度大, 且能很好的避免在工作过程中反击块的非正常脱落。

Highly wear-resistant impact blocks are fixed by large-diameter bolts to the machined faces of high-strength steel welded impact racks, producing high integral strength and effectively avoiding accidental detachment of impact blocks during (the) operation.



高耐磨板锤 Highly wear-resistant hammer bars

CI5X 系列反击破的板锤和衬板都采用高耐磨材料, 使用寿命大大提高; 板锤经过加工精度更高, 采用特殊的斜块固定在转子上, 固定可靠, 磨损后可以翻转使用, 提高易损件利用率。

Both the hammer bars and liner plates are made of highly wear-resistant steel, with service life greatly prolonged. The hammer bars more accurately machined are securely fixed by special wedge-shaped blocks to the rotor. The hammer bars are so designed that these can be reused by repositioning after one face wears out, with the utilization ratio increased.



人机工程设计理论降低使用成本

Ergonomics design theory reducing operation cost

CI5X 系列反击式破碎机的优秀源于其顶尖设计和材料，即使是最微小的细节也做到了尽善尽美，它不单保证设备高强度高性能，还兼顾了可靠性和维护操作便利性，引入人机工程设计理论，使得易损件更换与整机维护更加简单便捷，减少了停机时间，降低了运行成本。

(The) Excellence of CI5X series impact crushers comes from their first-class structural design and material selection, pursuing perfection in every tiny detail. High reliability, maintainability, and operational convenience are ensured besides high strength and performance. Replacement of vulnerable parts and maintenance of the machine are simplified by ergonomics design with both production interruption time and operation cost reduced.

整体式轴承座设计降低损坏风险

Integral bearing block design reducing risk of damage

CI5X 系列反击式破碎机采用整体式轴承座设计，利用特殊定位装置，提高了径向承载能力，降低了轴承因轴承座移位受到损坏的风险。

Integral bearing block utilizes special positioning design enhancing radial load ability and reducing the risk of bearing damage due to bearing block displacement.



油脂润滑

Grease lubrication

设备轴承采用油脂润滑形式，润滑和密封可靠，确保轴承持续稳定工作，润滑方便快速。

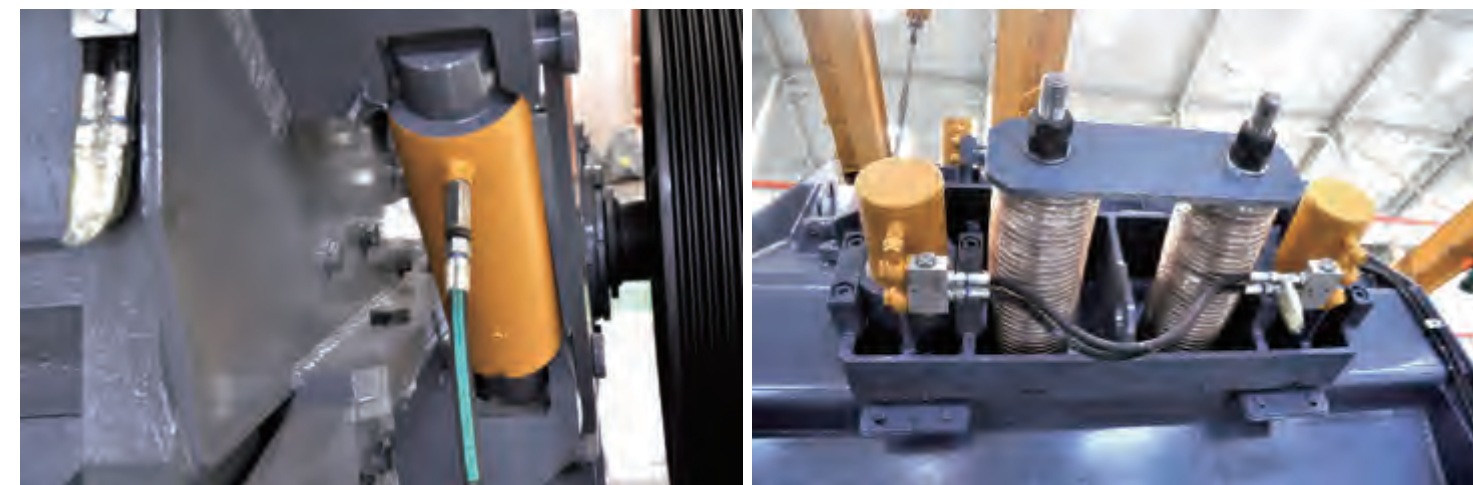
Efficiently lubricated with grease and provided with reliable seals, the bearings are capable of continuously operating steadily. Grease addition and replacement can be performed conveniently.

液压调整装置方便快捷

Hydraulic adjustment device quick and convenient

CI5X 系列反击式破碎机采用液压调整反击架，可以连续调节反击架和转子间隙，以控制设备的排料粒度和级配，调节过程方便快捷。

Clearance between impact rack and rotor can be hydraulically adjusted continuously and conveniently to control discharge grain size and gradation.



液压启闭装置易于维护

Hydraulically-operated opening and closing device easy to maintain

设备在维护的时候可以通过液压系统直接控制启顶液压缸，实现上机架的开启和闭合，无需额外吊装设备，方便维护。

To maintain the machine, hydraulic cylinder can be directly driven by the hydraulic system to open and close the frame, with maintainability enhanced without need of any hoisting equipment.

PFW系列反击式破碎

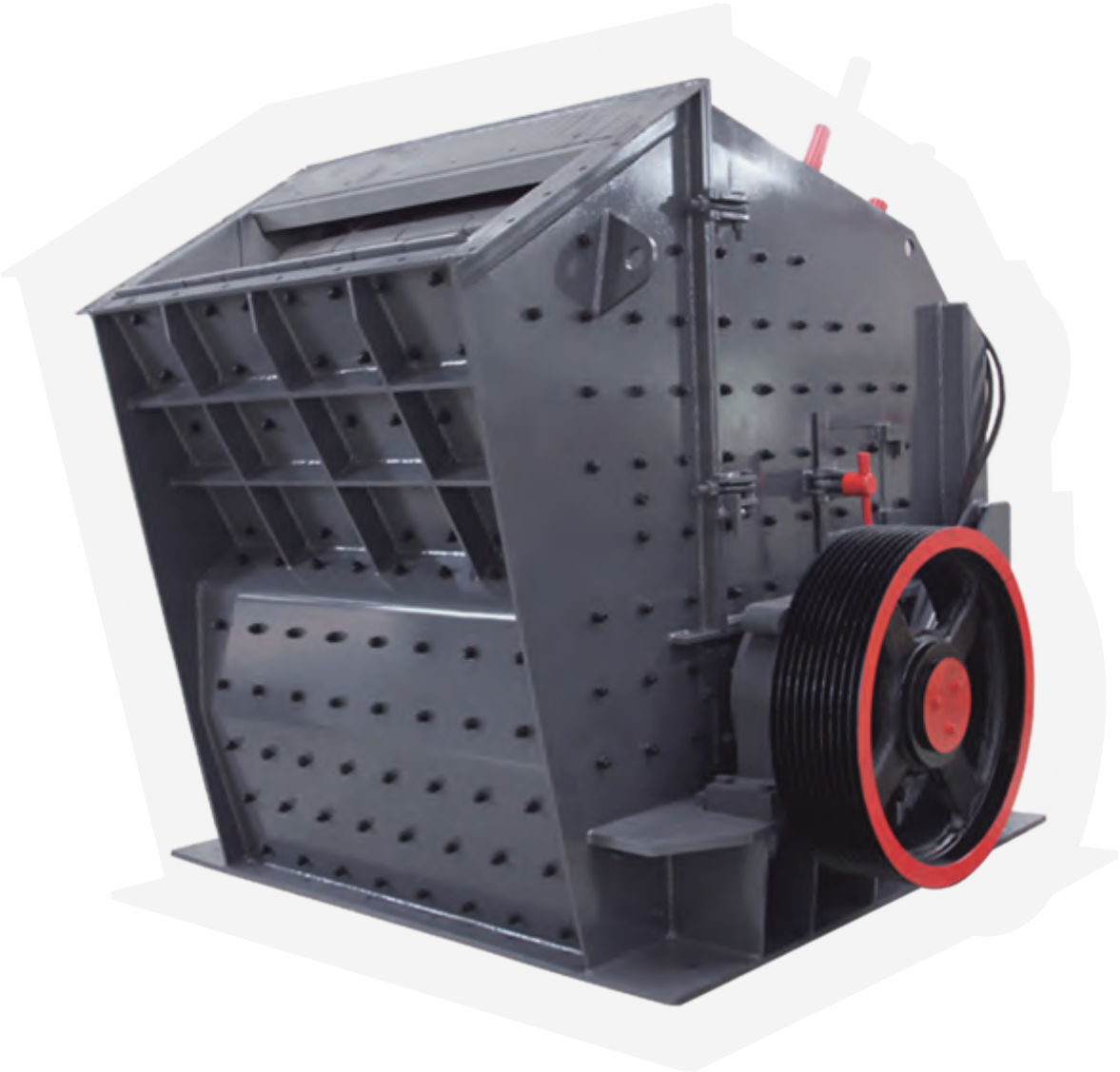
PFW Series Impact Crusher

PFW 系列反击式破碎机是采用国际先进的反击式破碎机技术开发的新型高性能液压反击式破碎机，其主要目的是为了把反击式破碎机的维护操作变得更容易，同时提高易损件寿命和设备性能，降低软物料的加工成本。

The PFW series impact crushers are new high-efficiency hydraulic control impact crushers developed on the basis of international advanced technology for impact crushers, mainly to ease maintenance operation of impact crushers, improve the service life of wearing parts and the equipment performance, and simultaneously reduce the crusher, and simultaneously extend the service life of quick-wear parts, improve device performance and reduce the processing cost of soft materials.

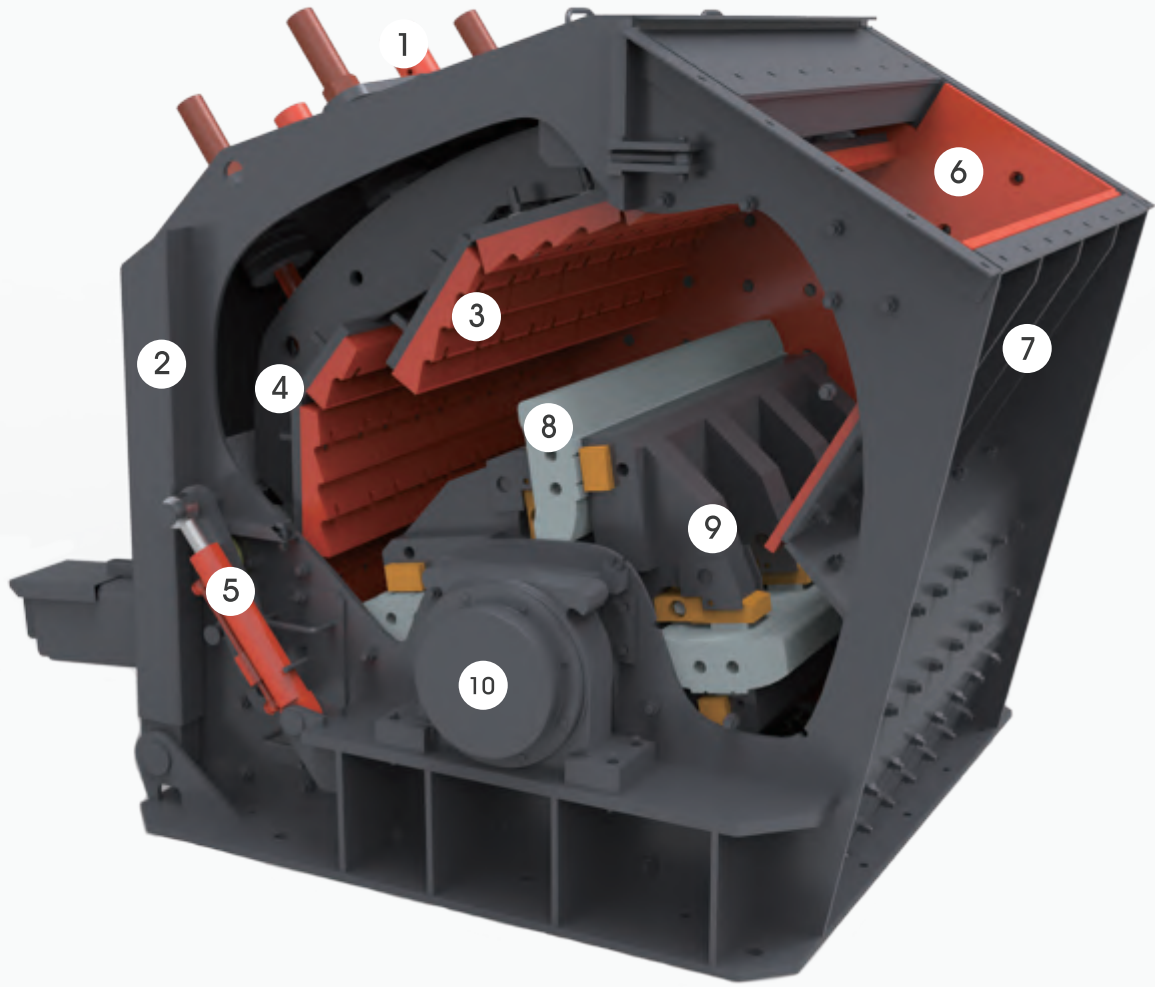
PFW 系列反击式破碎机除了在转子和反击架的创新设计外，还引入了液压系统来进行调整和启顶操作，同时根据用户需求推出粗碎和中碎机型，用于不同作业要求。

The PFW series impact crushers have innovatively designed the rotors and impact frames, introduced a hydraulic system for adjustment control and top opening operation, and simultaneously developed coarse and intermediate crushing models according to users' demands to satisfy different job requirements.



主要结构

Main Components



- 1. 液压调整装置 Hydraulic regulation device
- 2. 后机架 Rear frame
- 3. 反击衬板 Impact plate
- 4. 反击架 Impact rear
- 5. 液压启顶装置 Hydraulic jacking device

- 6. 机架衬板 Lining plate
- 7. 前机架 Front frame
- 8. 板锤 Hammer bar
- 9. 转子 Rotor
- 10. 轴承盒 Bearing house

特色及优势

Features & Advantages

重型转子设计

Heavy duty rotor design

所有的 PFW 系列反击破都有一个为达到更高转动惯性、最佳破碎性能的重型转子。这种重型转子重量通常是竞争对手同等型号转子的 1.5-2 倍。正是这种重型转子设计确保了 PFW 系列反击破破碎物料时能产生最大的破碎惯性和反冲击力，达到最大的破碎比和最佳的产品粒形。

All pfw series impact crushers have a heavy duty and superior weight rotor, which deliver high inertia required for optimum crushing performance. These heavy duty rotors usually are 1.5-2 times heavier than the rotors of other competitor's comparable size, and ensure maximum inertia and superior impact forces, resulting in optimum reduction while maintaining cubical product shape.



独特的板锤锁紧装置

Unique hammer locking device

板锤锁紧楔块同时从横向和纵向紧固住板锤，板锤的安装和更换非常简单快捷。

Hammer locking wedges fix the hammers both vertically and horizontally. It is very easy and quick to fit or remove the hammer. The rear of the hammer locks easily along the whole length of the backing plate and hammer, give solid abutment positioning and maintaining rigidity during operation.



衬板可内部调整更换

Interchangeable liners

一般情况下，反击破在使用一段时间后，其不同位置衬板的磨损情况是不一样的。所有 PFW 系列反击破的衬板都是可以在机器内部进行调整更换的，这样就可以保证易损件最大程度的利用率，进一步降低设备的运行成本。

In a crusher, liners are not worn out at the same rate. All liners in PFW series impact crusher can be can be interchanged to compensate for areas unequal wearing. This results in further reduces operating costs. maximum utilization of wearing parts and further reduces operating costs.



初级破碎和二级破碎两用

Flexible application in primary and secondary crushing

PFW 系列反击式破碎机即可作为初级破碎机使用 (II 型具有两个反击架)，也可作为二级破碎机使用 (III 型具有三个反击架)。II 型具有比较高的破碎腔，可以接受更大的进料粒度；III 型具有第三个可调节的反击架破碎比更大产品中细骨料含量更高。

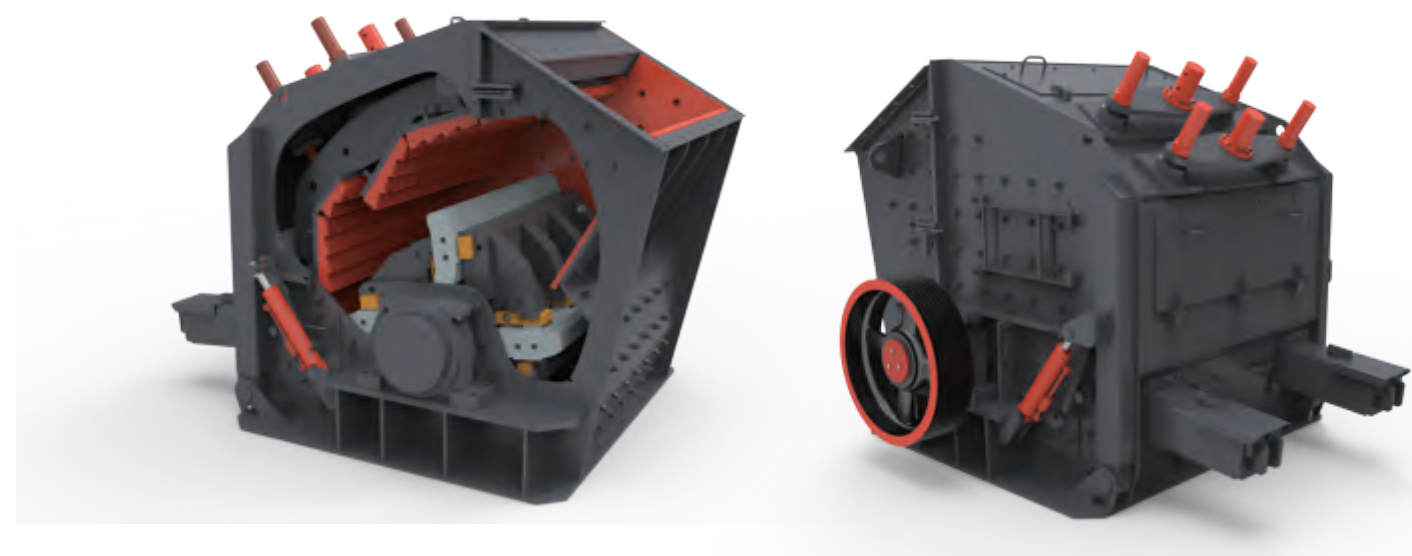
PFW series impact crusher can be used both as primary crusher (type II, with two break curtain) and secondary crusher (type III, with three break curtain). Type II has higher crushing chamber and accept bigger feeding size. Type III has the third adjustable break curtain, gives higher reduction ratio and finer fraction sizes.

操作简单，维护方便

Easy operation and simple maintenance

转子和反击架的间距，反击破上盖的启闭都是由液压系统完成。机器自带的吊装装置 (可选) 可以在更换配件、维修保养时带来巨大的便利。

Both the distance between rotor and breaking curtain and the opening or closing the crusher shell are done by hydraulic system. One lifting device (optional) is available for changing spare parts and maintenance.



PF系列反击式破碎机

PF Series Impact Crusher

PF 系列反击式破碎机采用了国内传统的反击破技术, 经过多年的设计优化, 性能更加优异, 使用更加可靠, 是国内外应用最普遍的中硬和软物料中细碎处理设备。

The PF series impact crushers adopt the technology of domestic traditional impact crushers. After years' design and optimization, such crushers boast more excellent performance and more reliable operation, and act as medium and fine crushing equipment most widely used domestic and abroad for medium hard and soft materials.

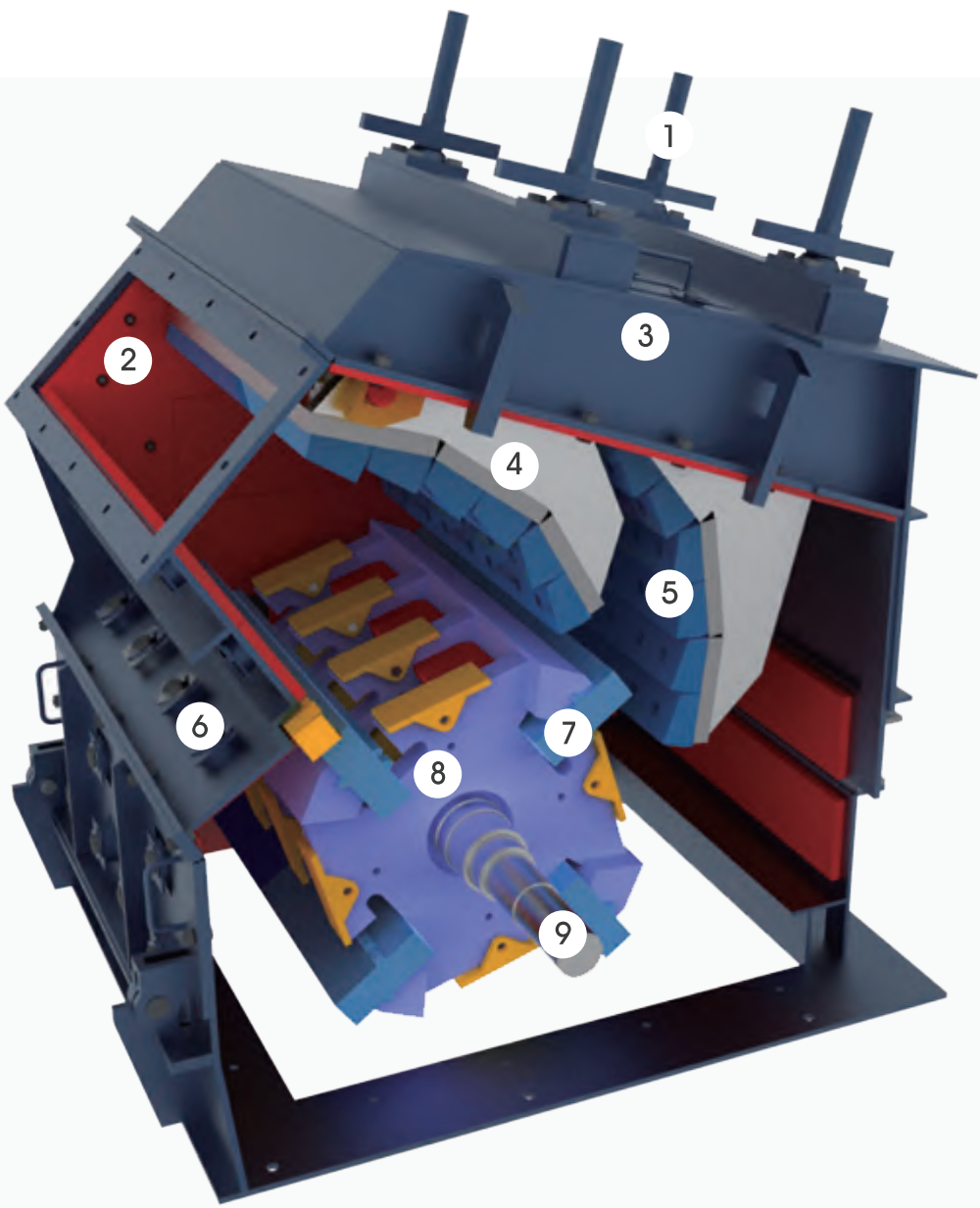
PF 系列反击式破碎机破碎腔和转子经过优化设计, 设备产能和成品粒型较传统反击破都有所提高, 采用机械调整反击架和转子间距, 简单可靠。

After optimal design of the crushing chamber and rotor, the PF series impact crushers have won significant improvement on the equipment capacity and finished product grain shape over the traditional impact crushers, using mechanical adjustment of the impact frame and rotor spacing to achieve simple and reliable control and operation.



主要结构

Main Components



- 1. 调整装置 Adjustment device
- 2. 机架衬板 Lining plate
- 3. 后机架 Rear frame
- 4. 反击架 Impact rear
- 5. 反击衬板 Impact plate

- 6. 前机架 Front frame
- 7. 板锤 Hammer bar
- 8. 转子 Rotor
- 9. 主轴 Main shaft

参数

Specification

产品系列 Series of crusher	型号 Model	性能参数 Specification							外形尺寸 Overall dimension			功能结构 Structure and function				设备配置 Configure			
		转子直径 Diameter of rotor (mm)	转子宽度 Width of rotor (mm)	进料口长度 Length of feed port(mm)	进料口宽度 Width of feed port(mm)	最大进料粒度 Maximum feeding size(mm)	处理能力 Capacity (t/h)	功率 Power (Kw)	设备长度 Device length (mm)	设备宽度 Device Width (mm)	设备高度 Device Height (mm)	破碎功能 Crushing function	板锤结构 Structure of plate hammer	破碎腔 Crushing cavity	传动方式 Transmission mode	设备调整 Equipment adjustment	润滑配置 Lubrication configuration	防护罩 Protection cover	进料斗配置 Configuration of feed hopper
CI5X系列 CI5X Series	CI5X1313	1300	1300	1320	1225	800	300-450	200-250	2963	2560	2611	粗碎 Coarse crushing	整体式板锤 Integral plate hammer	两腔 Two cavities	单电机驱动 Single motor drive	液压调整 Hydraulic adjustment	全自动集中润滑 (选配) Automatic centralized lubrication (Optional)	标准防护罩 (标准配置) Standard shield (Standard)	标准进料斗 (选配) Standard feed hopper (Optional)
	CI5X1415	1400	1500	1540	1320	900	350-550	250-315	2995	2790	3090				双电机驱动 Dual motor drive				
	CI5X1620	1600	2000	2040	1630	1100	500-900	400-500	3485	3605	3720								
	CI5X2023	2000	2300	2310	1990	1300	1200-2000	1000-1200	4890	4330	4765								
	CI5X1110	1100	1000	1320	820	500	150-200	160-200	2626	2106	1945	中细碎 Medium-fine crushing		两腔/三腔 Two/Three cavities	单电机驱动 Single motor drive				
	CI5X1213	1200	1300	1020	880	550	200-300	200-250	2809	2529	2091				双电机驱动 Dual motor drive				
	CI5X1315	1300	1500	1540	930	600	250-350	250-315	2880	2755	2560								
	CI5X1520	1500	2000	2040	995	700	400-600	400-500	3390	3520	2790								
PFW系列 PFW Series	PFW1214II	1150	1400	1100	1430	500	130-200	132	2400	2310	2550	粗碎 Coarse crushing	分段式板锤 Sectional plate hammer	两腔 Two cavities	单电机驱动 Single motor drive	选配 Optional	液压调整 Hydraulic adjustment	选配 Optional	选配 Optional
	PFW1315II	1300	1500	1200	1530	600	180-320	200	2700	2570	2800								
	PFW1318II	1300	1800	1200	1830	700	240-400	250	2700	2870	2800								
	PFW1415II	1400	1500	1450	1530	700	300-480	250	2900	2700	3120								
	PFW1214III	1150	1400	570	1430	250	90-170	132	2550	2310	3000	中细碎 Medium-fine crushing		三腔 Three cavities					
	PFW1315III	1300	1500	625	1530	300	180-270	200	2960	2570	2380								
	PFW1318III	1300	1800	625	1830	300	220-300	250	2960	2870	2380								
	PFW1415III	1400	1500	800	1530	350	280-350	250	3120	2650	2660								
PF系列 PF Series	PF1010	1000	1050	400	1080	350	50-80	75	2455	2086	2800	中细碎 Medium-fine crushing	分段式板锤 Sectional plate hammer	两腔 Two cavities	单电机驱动 Single motor drive	选配 Optional	机械调整 Mechanical-adjustment	选配 Optional	选配 Optional
	PF1210	1250	1050	400	1080	350	50-80	110	2590	2050	2810								
	PF1214	1250	1400	400	1430	350	80-160	132	2590	2400	2810								
	PF1315	1300	1500	860	1520	350	120-260	200	2930	2760	3050								



CI5X系列反击式破碎机生产现场

CI5X Series Impact Crusher production field



PFW系列反击式破碎机生产现场
PFW Series Impact Crushers production field



PF系列反击式破碎机生产现场

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