



SANME



# SMH 系列 液压圆锥破碎机

*SMH Series Cone Crushers*



上海山美环保装备股份有限公司  
SHANGHAI SANME MINING MACHINERY CORP., LTD.  
(中德合资控股)  
(Sino-German JV Holding)

# SMH系列多缸液压圆锥破碎机

SMH Series Cone Crusher

## SMH系列 液压圆锥破碎机

*SMH series hydraulic cone crusher*

SMH 系列液压圆锥破碎机是山美工程师采用稳定、专业的破碎技术研制出的新型设备，广泛应用于冶金、建筑、水电、交通、化工、建材工业中，适合破碎坚硬、中等硬度以上的各种矿山和岩石。

SMH series hydraulic cone crusher is a new type of equipment developed by SANME engineers using stable and professional crushing technology. It is widely used in metallurgical, aggregate, building material industries, it is suitable for crushing varies of hard and above mid hard ores and rocks.



# SMH系列多缸液压圆锥破碎机

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## SMH系列液压圆锥破碎机有二种排矿口调整形式：

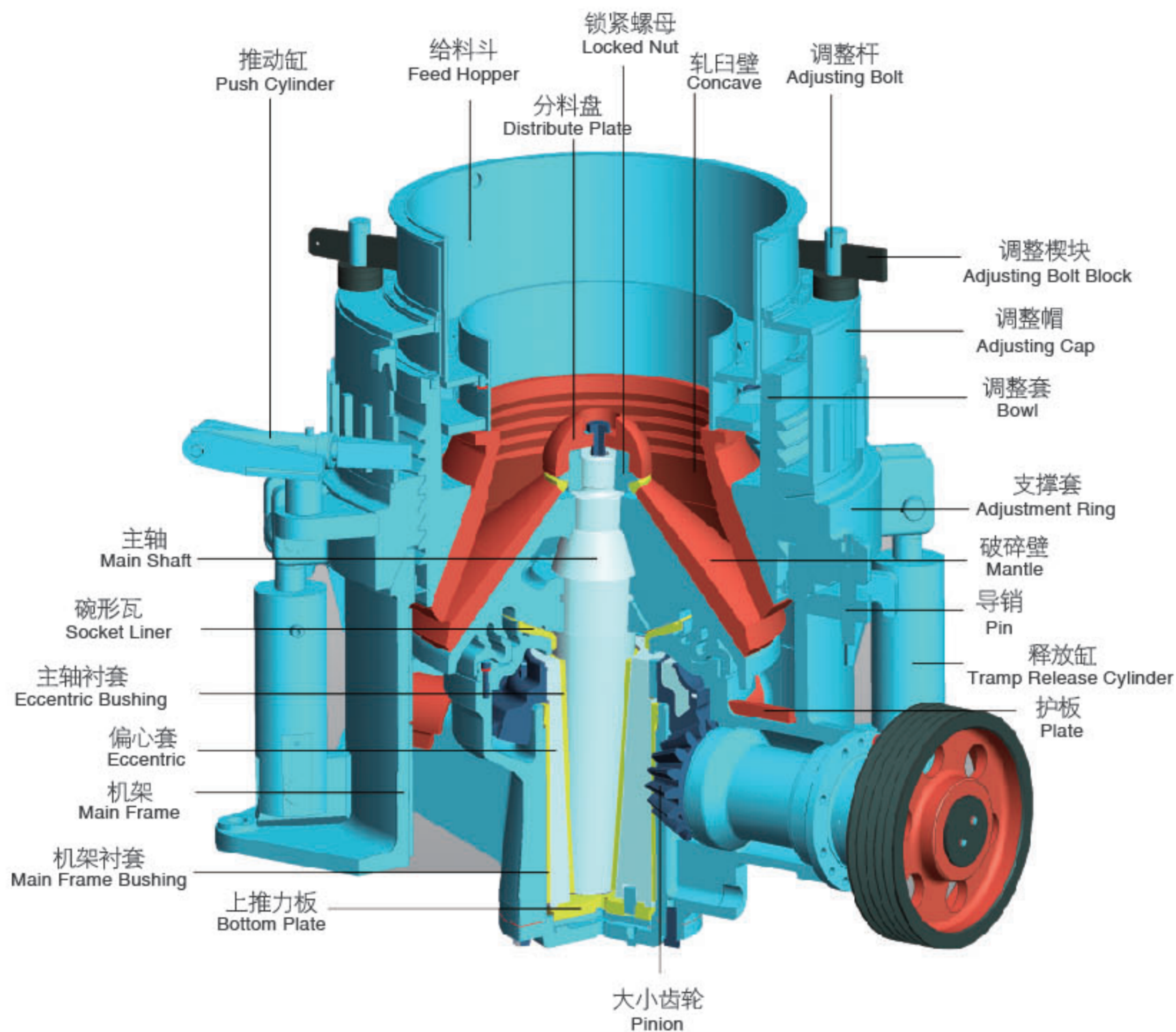
There are two types of discharge setting adjustment for SMH series hydraulic cone crusher:

液压缸调整排矿口；

Discharge setting can be adjusted by hydraulic cylinder

### 主要部件

### Main Components



### 技术特点：

- 结构合理，破碎原理及技术参数先进，运转可靠，运行成本低；
- 具有大破碎力，生产效率高、产量高，产品粒形好；
- 液压系统方便可靠，能提供安全有效的过载保护；
- 多种破碎腔，适应大范围产品粒度要求；
- 采用液压调整、液压清腔设置，自动化程度大为提高。

### Features and Benefits:

- Reasonable structure, advanced crushing principle and technical data, reliable work and low cost.
- Strong crushing ability, high efficiency productivity, high capacity, good product shape.
- Hydraulic system is reliable, provide safe and effective overload protection.
- Types of crushing cavity are for wide range of product size requirement.
- Use hydraulic adjustment and hydraulic clean cavity setting, much increase automation.

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液压马达调整排矿口；

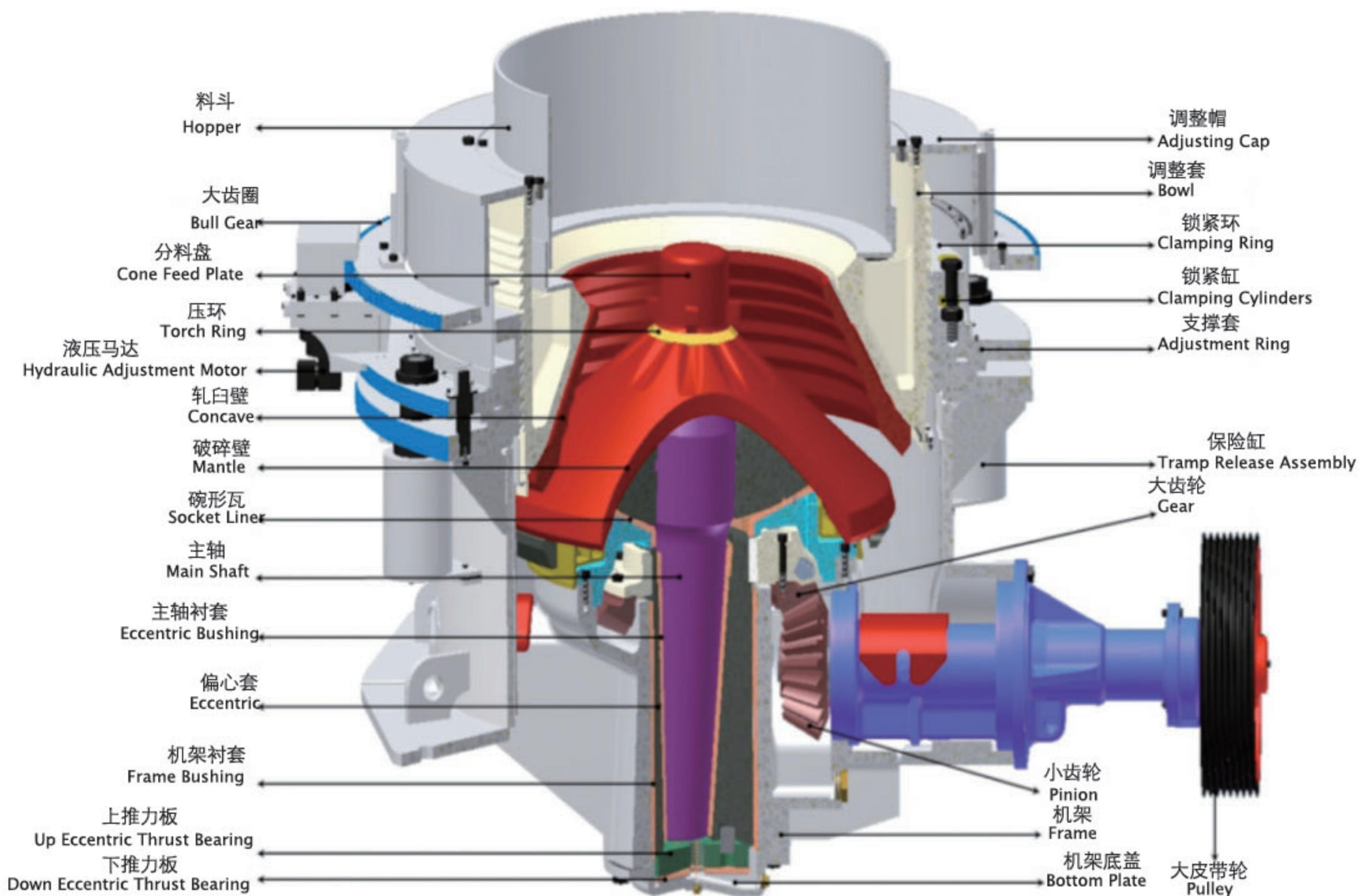
Discharge setting can be adjusted by hydraulic motor

SMH120/180/250为选装 - **Optional**

SMH350/550为标准配置 - **Standard**

## 主要部件

### Main Components



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- 采用液压调整、液压清腔设置，自动化程度大为提高；
- 采用液压马达调整排矿口，方便快捷。

### Features and Benefits:

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- Hydraulic system is reliable, provide safe and effective overload protection.
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- Use hydraulic adjustment and hydraulic clean cavity setting, much increase automation.
- By hydraulic motor, the discharge setting can be easily and quickly adjusted.

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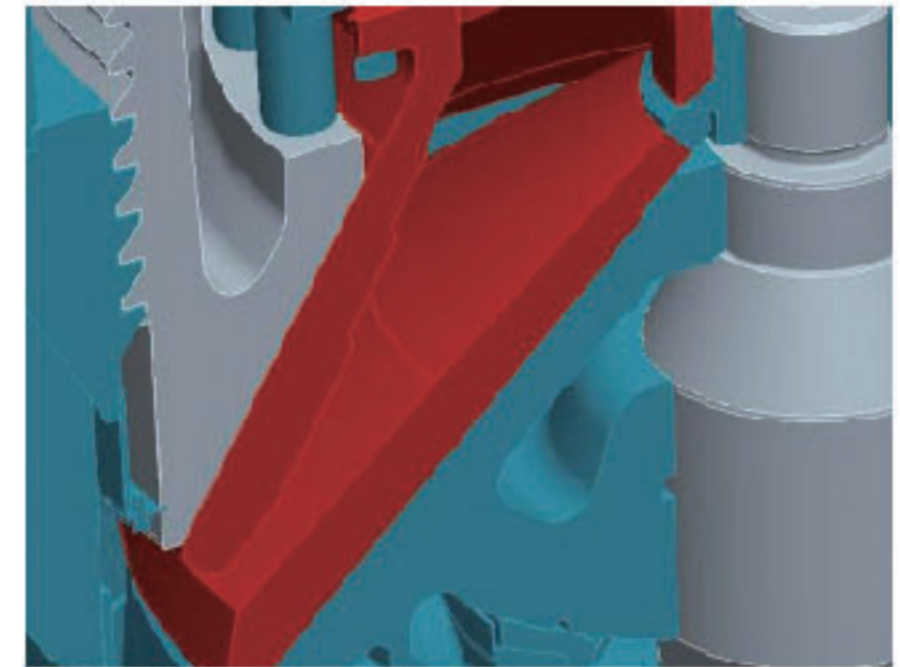
SMH Series Cone Crusher

## 特点及优势

Features and Benefits

### 优化的腔型 更高的产量

在总结了各种破碎腔型的优缺点基础上，在经历理论的分析 and 实践的检验情况下，山美工程师设计出的SMH系列液压圆锥破碎机的腔型具有产量高、能耗低的特点。在同样的破碎壁直径下，破碎行程更长、破碎比更大。在满腔情况下更能利用层压破碎作用，使最终的产品粒度组成更稳定、粒形（立方体）更优。



### Optimized cavity and higher output

Through much the orectic analysis and practice examination, engineers in SANME designed this hydraulic cone crusher on the basis of advantages and disadvantages of different kinds of cone crusher. Its output is high and its energy consumption is low. Under the same diameters of mantle, the crushing stroke is longer and the crushing ration is bigger. Laminated crushing function can be fully realized with full load, which can ensure reliable composition and good shape of final sizes.

### 更短的停车时间

山美圆锥破碎机采用液压锁紧、过载保护方式。当有不可破碎的异物进入破碎腔时，液压系统可以平缓的释放冲击力以保护主机，并在异物通过后回复到原来的排料口，避免出现闷车的现象。

如果破碎机在负载的情况下停机，全新的双作用液压缸能提供较大的清腔行程，帮你快速的清理掉破碎腔中的物料，并可以恢复到原来的排料口，不需要您再次调整排料口。相对于传统的弹簧式圆锥破碎机来说，更加安全、更加快捷，最大限度的节约了您的停机时间。



### Minimize the amount of downtime

SANME cone crusher adopts hydraulic pressure locking, overload protection. When some unbreakable foreign materials enter the crushing cavity, hydraulic system can release the impact force gently to protect the mainframe and the discharge opening will go back to the original place after the foreign materials are discharged.

If cone crusher is stopped with load, the whole-new hydraulic cylinder of double functions clears the materials in the cavity, and then the discharge opening goes back to the original place. Compared with the traditional spring cone crusher, the hydraulic cone crusher will be even safer and faster, which will save downtime time.

### 液压马达调整排矿口

采用液压马达调整排矿口，方便快捷。

### Discharge setting can be adjusted by hydraulic motor

By hydraulic motor, the discharge setting can be easily and quickly adjusted.

SMH120/180/250为选装 – **Optional**

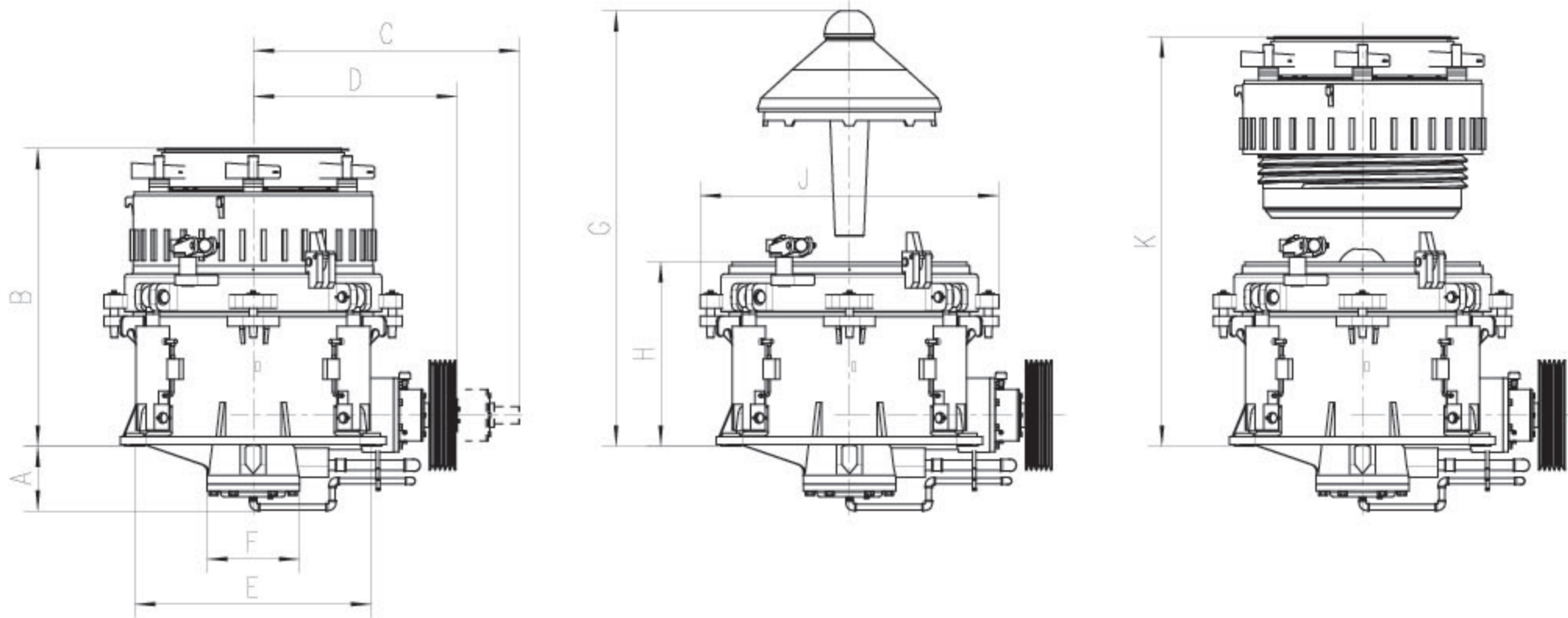
SMH350/550为标准配置 – **Standard**



# SMH系列多缸液压圆锥破碎机

SMH Series Cone Crusher

## 拆卸外形尺寸和重量 Clearance Dimensions and Weight



| 拆卸外形尺寸和重量<br>Clearance Dimensions and Weight  | 单位<br>Unit | 破碎机规格 Crusher Specifications |        |        |        |        |       |
|---|------------|------------------------------|--------|--------|--------|--------|-------|
|   |            | SMH120                       | SMH180 | SMH250 | SMH350 | SMH550 |       |
| 机架底面至底部油管最低点<br>Distance between rack bottom and oil pipeline at the bottom                     | A          | mm                           | 377    | 263    | 593    | 850    | 1020  |
| 机架底面至给料斗顶部<br>Distance between rack bottom and hopper top                                       | B          | mm                           | 1737   | 1810   | 2119   | 2496   | 3290  |
| 拆卸传动轴部所需水平空间<br>Horizontal space at the time of drive shaft disassembling                       | C          | mm                           | 1773   | 1833   | 2396   | 3510   | 4420  |
| 破碎机中心线至传动轴外端面<br>Distance between centre line of crusher and outside end surface of drive shaft | D          | mm                           | 1191   | 1191   | 1566   | 2465   | 2968  |
| 地脚螺钉位置尺寸<br>Size of bolt position   | E×E        | mm                           | 1380   | 1380   | 1766   | 2260   | 2490  |
| 底盖直径<br>Diameter of bottom cap  | F          | mm                           | 540    | 400    | 686    | 800    | 927   |
| 拆卸主轴部所需高度空间<br>Vertical space at the time of main axis disassembling                            | G          | mm                           | 2538   | 2233   | 3353   | 4065   | 5860  |
| 机架底面至支撑套顶部<br>Distance between rack bottom and top of supporting ring                           | H          | mm                           | 1074   | 1147   | 1324   | 1705   | 2431  |
| 支撑套最大直径<br>Max diameter of supporting ring  | J          | mm                           | 1740   | 1740   | 2258   | 3620   | 3721  |
| 拆卸调整套部所需高度空间<br>Vertical space at the time of adjustment set disassembling                      | K          | mm                           | 2387   | 2460   | 2937   | 3755   | 4576  |
| 破碎机总重<br>Total Weight   |            | kg                           | 12500  | 13500  | 24200  | 45850  | 86700 |

注：“/”下面数据为液压马达调整排放口型式的外形尺寸

Note: The data after the “/” refers to oversize of the crusher which discharge setting is adjusted by hydraulic motor.

# SMH系列多缸液压圆锥破碎机

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## 标准型液压圆锥破碎机技术参数 Technical Data of Standard Head Cone Crusher

| 型号<br>Model | 最大给料尺寸<br>Max Feeding Size(mm) | 排料口范围<br>Discharge Range(mm) | 电机功率<br>Motor Power (kw) | 生产能力 (吨/小时)—— 开路循环, 闭边排料口<br>Capacity(t/h)——open circuit, closed discharge(mm) |     |     |     |     |     |     |     |      |      |      |      |  |  |
|-------------|--------------------------------|------------------------------|--------------------------|--|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|--|--|
|             |                                |                              |                          | 9  | 13  | 16  | 19  | 22  | 26  | 32  | 38  | 51   | 63   | 76   | 89   |  |  |
| SMH120C     | 160                            | 22-32                        | 75-90                    |  |     |     |     | 120 | 130 | 150 |     |      |      |      |      |  |  |
| SMH120M     | 130                            | 13-26                        |                          |  | 70  | 85  | 100 | 120 | 130 |     |     |      |      |      |      |  |  |
| SMH120F     | 102                            | 9-22                         |                          | 58   | 70  | 85  | 95  | 110 |     |     |     |      |      |      |      |  |  |
| SMH180C     | 180                            | 22-32                        | 132-160                  |  |     |     |     | 185 | 195 | 215 |     |      |      |      |      |  |  |
| SMH180M     | 140                            | 13-32                        |                          |  | 90  | 115 | 135 | 160 | 180 | 200 |     |      |      |      |      |  |  |
| SMH180F     | 60                             | 9-22                         |                          | 60   | 80  | 100 | 120 | 140 |     |     |     |      |      |      |      |  |  |
| SMH250EC    | 260                            | 26-51                        | 160-200                  |  |     |     |     |     | 250 | 290 | 340 | 395  |      |      |      |  |  |
| SMH250C     | 220                            | 19-51                        |                          |  |     |     | 182 | 209 | 236 | 279 | 334 | 365  |      |      |      |  |  |
| SMH250M     | 150                            | 16-38                        |                          |  |     | 140 | 165 | 185 | 220 | 275 | 330 |      |      |      |      |  |  |
| SMH250F     | 115                            | 13-31                        |                          |  | 115 | 133 | 156 | 176 | 192 | 226 |     |      |      |      |      |  |  |
| SMH350EC    | 315                            | 38-63                        | 250-280                  |  |     |     |     |     |     |     | 555 | 649  | 766  |      |      |  |  |
| SMH350C     | 230                            | 26-63                        |                          |  |     |     |     |     | 366 | 430 | 468 | 629  | 657  |      |      |  |  |
| SMH350M     | 205                            | 22-52                        |                          |  |     |     |     | 296 | 343 | 387 | 427 | 479  |      |      |      |  |  |
| SMH350F     | 180                            | 16-38                        |                          |  |     | 212 | 239 | 270 | 320 | 355 | 374 |      |      |      |      |  |  |
| SMH550EC    | 450                            | 38-89                        | 355-400                  |  |     |     |     |     |     |     | 920 | 1179 | 1380 | 1475 | 1566 |  |  |
| SMH550C     | 350                            | 31-76                        |                          |  |     |     |     |     |     | 800 | 850 | 1100 | 1288 | 1398 |      |  |  |
| SMH550M     | 320                            | 25-63                        |                          |  |     |     |     |     | 612 | 735 | 815 | 980  | 1137 |      |      |  |  |
| SMH550F     | 268                            | 19-52                        |                          |  |     |     | 392 | 453 | 535 | 620 | 725 | 867  |      |      |      |  |  |

## 短头型液压圆锥破碎机技术参数 Technical Data of Short Head Cone Crusher

| 型号<br>Model | 最大给料尺寸<br>Max Feeding Size(mm) | 排料口范围<br>Discharge Range(mm) | 电机功率<br>Motor Power (kw) | 生产能力 (吨/小时)—— 开路循环, 闭边排料口<br>Capacity(t/h)——open circuit, closed discharge(mm) |    |     |     |     |     |     |     |     |    |    |  |  |  |
|-------------|--------------------------------|------------------------------|--------------------------|--|----|-----|-----|-----|-----|-----|-----|-----|----|----|--|--|--|
|             |                                |                              |                          | 3  | 5  | 6   | 9   | 13  | 16  | 19  | 22  | 26  | 32 | 38 |  |  |  |
| SMH120DC    | 70                             | 6-19                         | 75-90                    |  |    | 62  | 82  | 102 | 123 | 138 |     |     |    |    |  |  |  |
| SMH120DM    | 51                             | 5-16                         |                          |  | 45 | 58  | 78  | 99  | 116 |     |     |     |    |    |  |  |  |
| SMH120DF    | 35                             | 3-13                         |                          | 30   | 45 | 58  | 78  | 95  |     |     |     |     |    |    |  |  |  |
| SMH180DC    | 70                             | 6-19                         | 132-160                  |  |    | 72  | 90  | 108 | 131 | 158 |     |     |    |    |  |  |  |
| SMH180DM    | 51                             | 5-16                         |                          |  | 68 | 76  | 95  | 118 | 145 |     |     |     |    |    |  |  |  |
| SMH180DF    | 35                             | 3-13                         |                          |  | 70 | 82  | 95  | 120 |     |     |     |     |    |    |  |  |  |
| SMH250DC    | 89                             | 9-22                         | 160-200                  |  |    |     | 126 | 168 | 196 | 215 | 252 |     |    |    |  |  |  |
| SMH250DM    | 70                             | 6-16                         |                          |  |    | 88  | 117 | 156 | 172 |     |     |     |    |    |  |  |  |
| SMH250DF    | 54                             | 5-16                         |                          |  | 63 | 86  | 115 | 143 | 169 |     |     |     |    |    |  |  |  |
| SMH350DEC   | 133                            | 13-25                        | 250-280                  |  |    |     |     | 262 | 308 | 322 | 358 | 385 |    |    |  |  |  |
| SMH350DC    | 133                            | 10-25                        |                          |  |    |     | 208 | 262 | 308 | 322 | 358 | 385 |    |    |  |  |  |
| SMH350DM    | 89                             | 6-19                         |                          |  |    | 136 | 186 | 233 | 260 | 293 |     |     |    |    |  |  |  |
| SMH350DF    | 70                             | 6-13                         |                          |  |    | 136 | 186 | 233 |     |     |     |     |    |    |  |  |  |
| SMH550DEC   | 203                            | 16-25                        | 355-400                  |  |    |     |     |     | 516 | 593 | 665 | 696 |    |    |  |  |  |
| SMH550DC    | 178                            | 13-25                        |                          |  |    |     |     | 455 | 498 | 552 | 608 | 643 |    |    |  |  |  |
| SMH550DM    | 133                            | 10-19                        |                          |  |    |     | 355 | 416 | 472 | 530 |     |     |    |    |  |  |  |
| SMH550DF    | 105                            | 6-16                         |                          |  |    | 276 | 355 | 385 | 448 |     |     |     |    |    |  |  |  |

注：上述生产能力是在破碎物料密度为 1.6 t/m<sup>3</sup> 时开路循环生产中总吨数。生产能力与破碎物料的物理性能、给料方式、进料粒度及其组成等工况有关。

**Note:** The capacity is total tons per hour passing through crusher at open circuit when crushing mid-hard material and bulk density with 1.6 t/m<sup>3</sup>. Capacities are relative to physical character and type of feeding, feeding size and composition and so on.

# SMH系列多缸液压圆锥破碎机

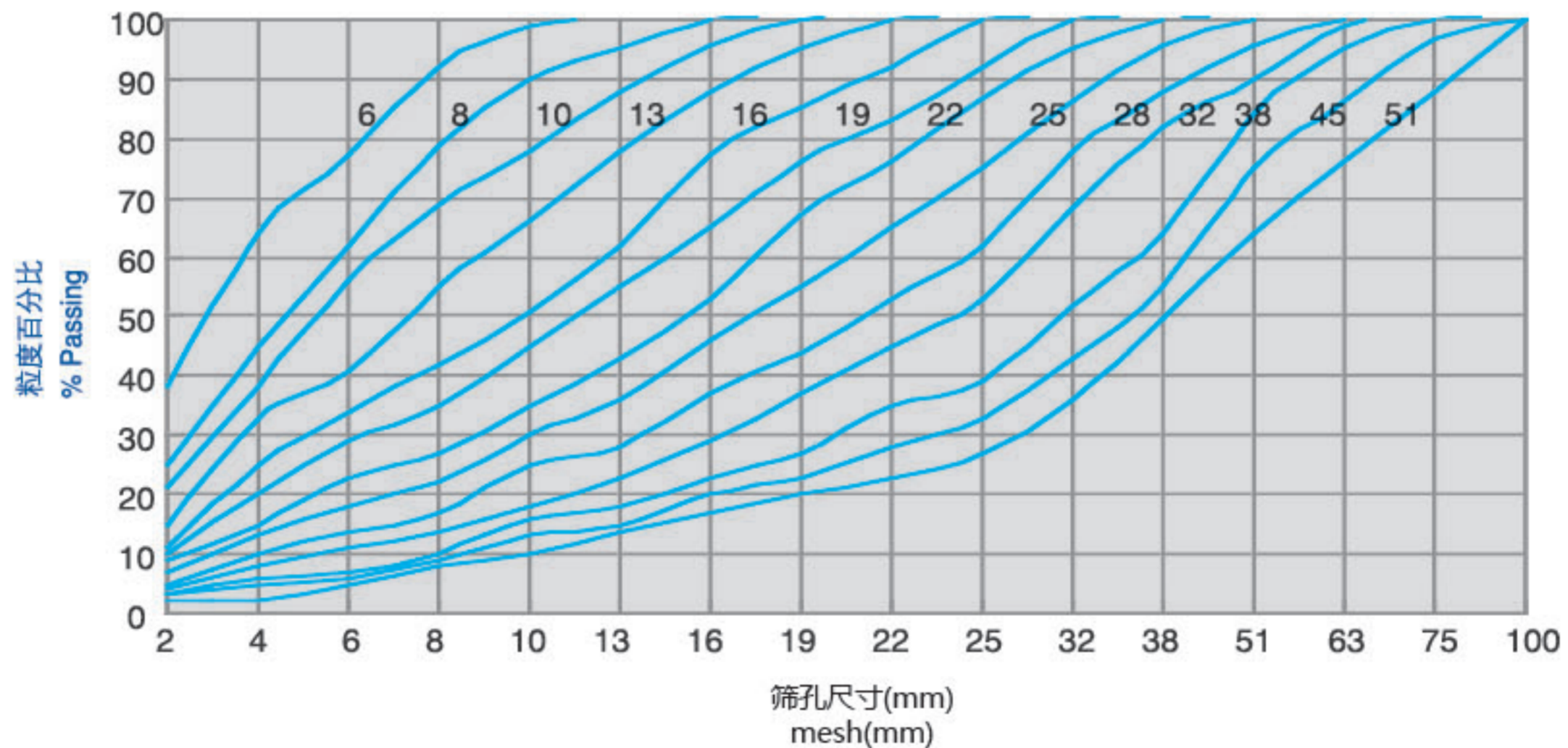
SMH Series Cone Crusher

不同排料口 ( mm ) 条件下, 产品粒度特性 ( 通过方孔筛 mm 的百分比 % )

Product Gradation Table (%passing through square mesh depending on the setting)

| 排料口 c.s.s.<br>筛孔 mesh | 6   | 8   | 10  | 13  | 16  | 19  | 22  | 25  | 28  | 32  | 38  | 45  | 51  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2                     | 38  | 25  | 21  | 15  | 11  | 10  | 9   | 7   | 5   | 4   | 3   | 3   | 2   |
| 4                     | 64  | 45  | 38  | 33  | 25  | 20  | 15  | 13  | 10  | 8   | 6   | 5   | 2   |
| 6                     | 77  | 62  | 56  | 41  | 34  | 29  | 23  | 18  | 14  | 11  | 7   | 6   | 5   |
| 8                     | 92  | 79  | 69  | 55  | 42  | 35  | 27  | 22  | 17  | 14  | 10  | 9   | 8   |
| 10                    | 99  | 90  | 78  | 66  | 51  | 45  | 35  | 30  | 25  | 18  | 16  | 13  | 10  |
| 13                    | 100 | 95  | 88  | 78  | 62  | 55  | 43  | 36  | 28  | 23  | 18  | 15  | 14  |
| 16                    |     | 100 | 96  | 88  | 77  | 65  | 53  | 46  | 37  | 29  | 23  | 20  | 17  |
| 19                    |     |     | 100 | 95  | 85  | 76  | 67  | 55  | 44  | 37  | 27  | 23  | 20  |
| 22                    |     |     |     | 100 | 92  | 83  | 76  | 65  | 53  | 45  | 35  | 28  | 23  |
| 25                    |     |     |     |     | 100 | 92  | 87  | 75  | 62  | 53  | 39  | 33  | 27  |
| 32                    |     |     |     |     |     | 100 | 95  | 86  | 78  | 68  | 52  | 43  | 36  |
| 38                    |     |     |     |     |     |     | 100 | 96  | 88  | 82  | 64  | 55  | 50  |
| 51                    |     |     |     |     |     |     |     | 100 | 96  | 90  | 84  | 75  | 64  |
| 63                    |     |     |     |     |     |     |     |     | 100 | 99  | 95  | 86  | 76  |
| 75                    |     |     |     |     |     |     |     |     |     | 100 | 100 | 97  | 88  |
| 100                   |     |     |     |     |     |     |     |     |     |     |     | 100 | 100 |

粒度分布曲线  
Gradation Curves



注: 表中粒度与给料粒度、破碎腔型、含水量、物料密度、可碎性、含泥量等因素有关。

Note: The gradation shown are depend on the feed gradation, the crushing chamber, the material density, the material mud content, its moisture and its crushability.



# SMH系列多缸液压圆锥破碎机

SMH Series Cone Crusher

圆锥破碎机的生产能力表可作为正常发挥SMH系列圆锥破碎机生产能力的参照。破碎机是生产线中的一个组成部分。因此它的性能受给料机、皮带机、振动筛、电动机、传动部件及料仓是否正确选择和操作影响。

The capacity charts is for properly using SMH cone crusher and get to its capacity. Crusher is component of mining production line, so it's character result from feeder, conveyor, screen, electric motor, drive part, hopper.

所以使用时注意以下因素可提高破碎机的生产能力和性能:

Noticing following factors can enhance crusher capacity and character:

- 针对所破碎的物料正确的选择破碎腔;  
*According on crushing material to select chamber*
- 给料粒度配比适当;  
*Feed rate is controlled.*
- 在破碎腔360° 范围内给料分布均匀;  
*Feed is average distribute at 360° crushing chamber.*
- 自动控制装置;  
*Automation controls*
- 破碎机排料区通畅;  
*Enough crusher discharge area.*
- 输送带的规格与破碎机的最大处理能力相适应;  
*Capacity of discharge conveyor is more than cone crusher*
- 适当的选择预先筛分和闭路筛分的筛子规格。  
*Use right scalping and closed circuit screens*

以下因素会降低破碎机的生产能力:

Following factors reduce capacity of crusher:

- 给料中小于排料口的细料超过破碎机生产能力的10%;  
*Fine material of feeding is more than 10% of capacity*
- 给料中含有粘性物料;  
*Containing sticky material in feed*
- 缺少给料控制;  
*Lack of feeding control*
- 沿破碎腔周围的给料分布不均匀;  
*Feed is not averagely distributed around crushing chamber*
- 未使用推荐的功率;  
*Horsepower is not getting to recommended*
- 系统筛分能力不足;  
*Discharge area, discharge conveyor, scalper and screen are not sufficient*
- 破碎机排料区不畅通;  
*Insufficient crusher discharge area*
- 物料过硬或者过于坚韧。  
*Feed material is too hard or too tough*



# SMH系列多缸液压圆锥破碎机

SMH Series Cone Crusher

## 液压圆锥破碎机 SMH550

SMH550 Hydraulic Cone Crusher



## SMH350 在豪瑞印尼安山岩骨料项目现场

SMH350 at Holcim Andesite Aggregates Production Plant in Indonesia



# SMH系列多缸液压圆锥破碎机

SMH Series Cone Crusher

SMH250,SMH350 在蒙古铁矿破碎生产线现场

*SMH250,SMH350 at Mongolia Iron Ore Crushing Production Line*



SMH350 液压圆锥破碎机在俄罗斯的使用现场

*The Operation site of SMH350 Hydraulic Cone Crusher in Russia*





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