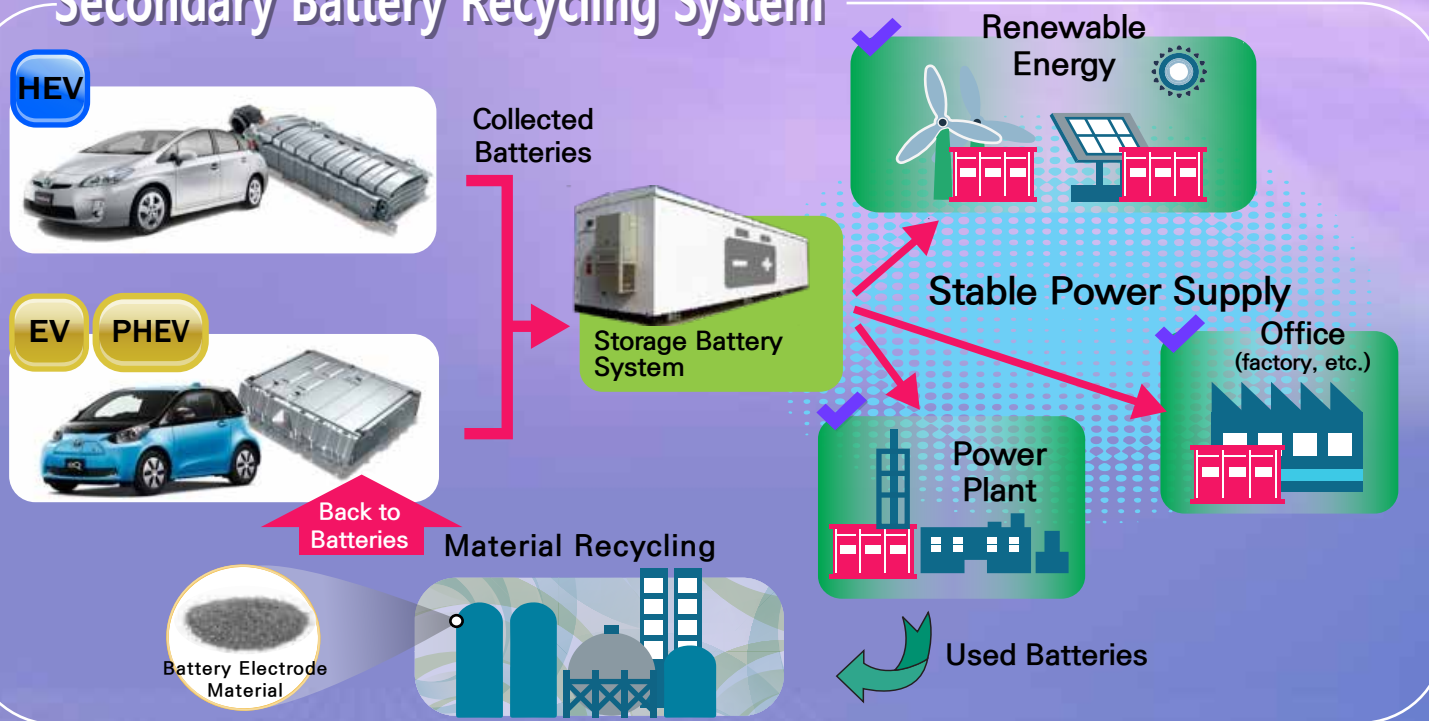
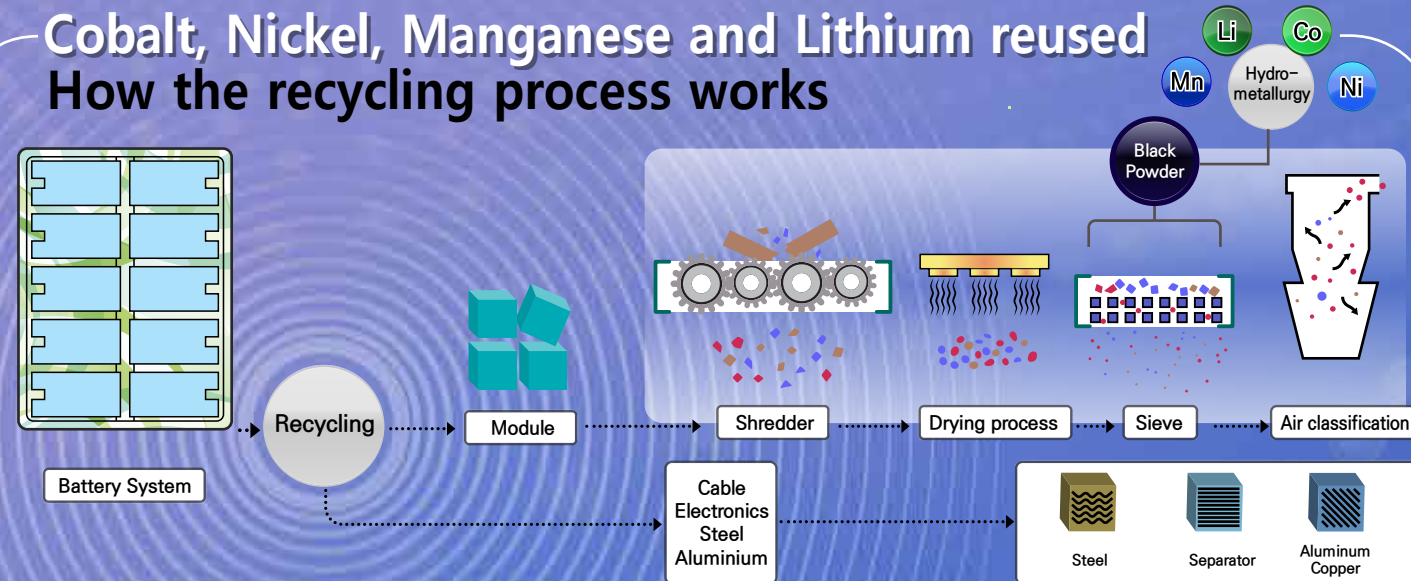


Secondary Battery Recycling System



Cobalt, Nickel, Manganese and Lithium reused How the recycling process works



Batteries that are not given a second life will be recycled by the staff. In this process, the individual battery parts will first be shredded, then the material will be dried and sieved, allowing the employees at Group Components to extract the so-called "black powder." This contains the valuable raw materials of nickel, manganese, cobalt and lithium. these materials then just have to be separated individually, after which they are immediately available again for the production of new batteries.

Secondary Battery Recycling System Plant



KPS

SIZE REDUCTION TECHNOLOGY

한국분체기계 (주)

본사 · 공장 22837 인천광역시 서구 가재울로 32 번길 31

Tel. 032-505-5580 Fax. 032-876-8454

기술연구소 Tel. 032-576-2300 Fax. 032-576-9650

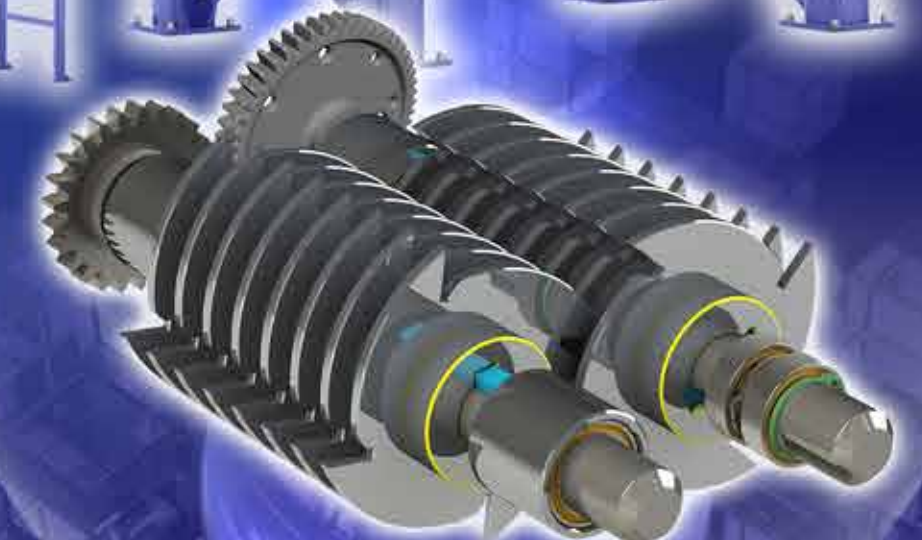
E-mail. hkc@hankookmc.co.kr www. hankookmc.co.kr

KPS PRE-SHREDDER

INNOBIZ | MAINBIZ | ISO9001 | ISO14001 | CE |

벤처인증기업 | 소재부품·장비전문기업 | 인천시비전기업 | 인천시유망중소기업

SINCE 1982
SIZE REDUCTION TECHNOLOGY



KPS

KOREA POWDER SYSTEM CO.,LTD.
ADVANCED TECHNOLOGY TOWARD THE FUTURE

한국분체기계 (주)

Exceptional Regrind Quality

EASE of Maintenance & Safety

Application Flexibility

Since 1982 Engineering Excellence,

Unsurpassed Quality
Innovated & Efficient

The Best **KPS** shredder Type

Materials Recycling For a Sustainable Future



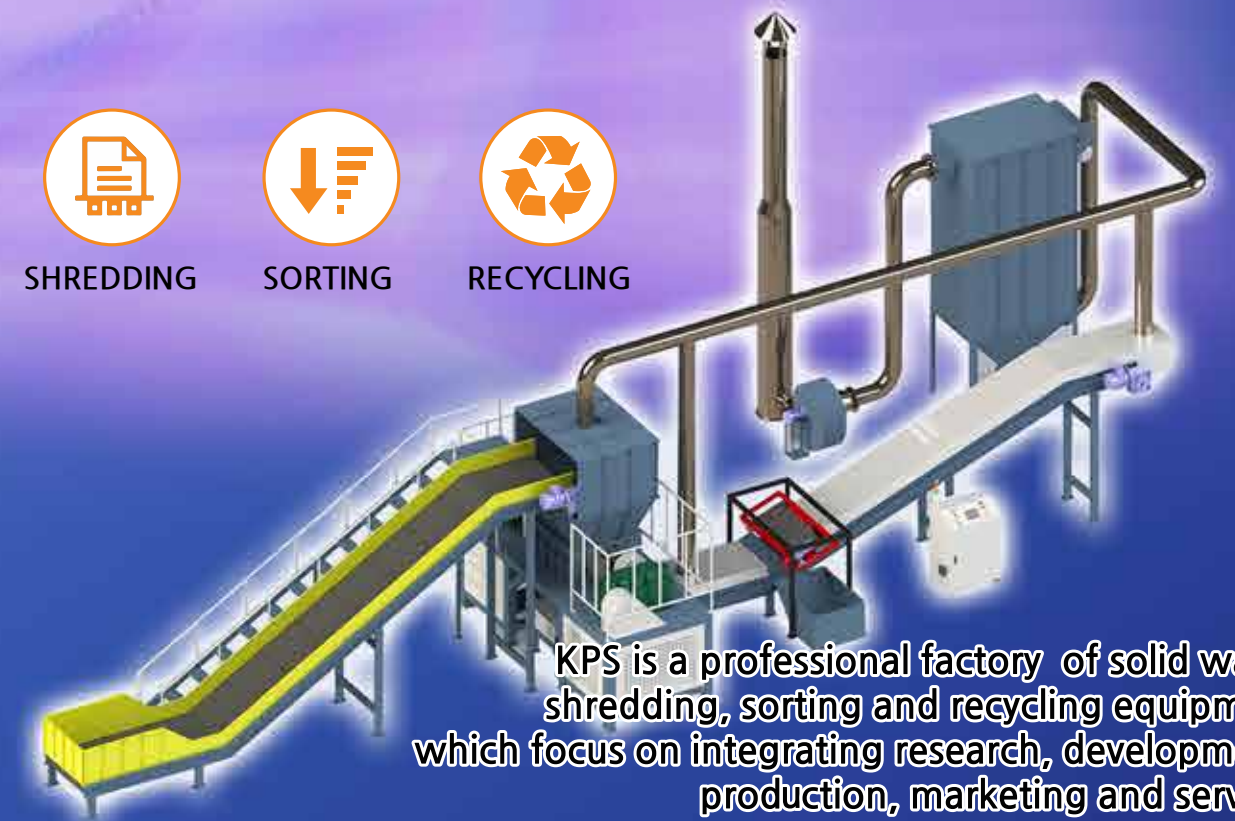
SHREDDING



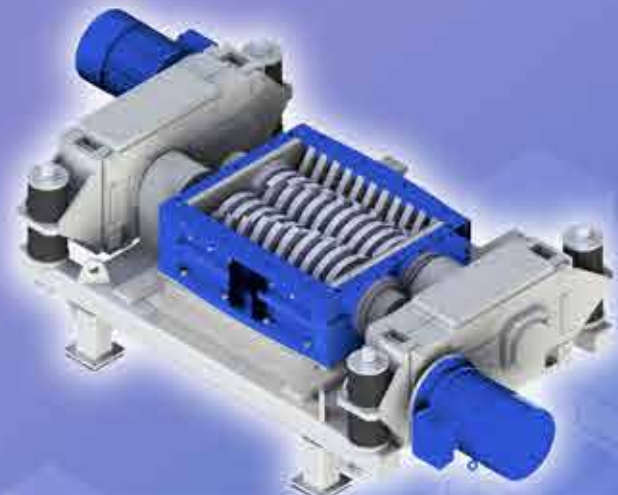
SORTING



RECYCLING



KPS is a professional factory of solid waste shredding, sorting and recycling equipment which focus on integrating research, development, production, marketing and service.



- The Strong Body, Secure Safety Device, 견고한 몸체, 확실한 안전장치
- Mass Crushing in short time, 단시간내 대량분쇄
- Easy Separation & Cleaning, 간편한 분리와 청소
- Low vibration & Low Noise, 저진동, 저소음
- Various Model & Function, 다양한 MODEL & 기능보유

강력한 힘, 놀라운 저소음, 자원을 최대한 활용하여 부피를 최소화하는 산업용 파쇄기

KPS Pre-Shredder의 특징을 기본 기능에 충실하고 매우 견고하게 제작이 됩니다. 파쇄강도를 높이고 나이프의 마모를 최소화한 디자인과 개발된 절단 테이블입니다. 이 두가지 기술을 접목시켜 개발된 KPS Pre-Shredder는 기존에 불가능했던 파쇄 물체를 모두 파쇄할 수 있는 최고의 성능과 내구성을 보장하는 탁월한 고성능 파쇄기입니다.

주로 재활용시설, 폐기물 연료화시설(SRP), 유해 폐기물 처리시설, 열병합 발전시설, 생활폐기물 전처리 시설(MBT), 바이오매스 생산시설, 2차전지 재활용 시설, 폐반도체 재활용 시설등에 적용 할 수 있습니다.

KPS Pre-Shredder는 기계식 & 유압식으로 구동됩니다. 진보된 폐기물 재활용 응용기술에 의해 강력한 파워, 동력 대비 놀라운 저소음, 자원을 최대한 활용하여 부피를 최소화하는 산업용 파쇄기로서 파쇄 대상에 따른 특수설계가 가능하고 저고압 유압시스템을 적용하여 회전력의 조절, 고강력 특수재질의 Knife를 장착 하였으며 분해 조립이 간편하도록 설계 제작되었습니다. 광범위한 여러 가지 모든 종류의 파쇄물질에 대한 노하우를 적용, 24시간 연속 안정적으로 구동이 가능하며 최대 용량, 최소 전력의 소모를 위해 특별히 진보된 장비로 설계 되어 모델별 파쇄 용량의 차이는 배출물의 절크기, Shaft의 수, 회전 knife의 Size를 감안하여 구동방식(기계식, 유압식)의 파워 용량에 따라 다르게 결정됩니다.

Production list

- Single-Shaft Shredder
- Twin-Shaft Shredder
- Four-Shaft Shredder

Low Operating Costs 고효율 운영 비용

The load of the rotating and stationary tearing tools is distributed evenly across its entire length. In many cases, both the rotor shafts and shredding table can be regenerated by hard-face welding.

On-Target Shredding Results 타겟 파쇄 결과

The first process step in the mechanical processing or thermal utilization of waste materials is to reduce and homogenize the particle size of the feed material. The pre-shredder shreds the feed material to the desired granulation to ensure trouble-free downstream processing.

Doubly Effective Shredding Capability 이중 효과적 파쇄 기능

Shredding takes place between the rotating tools and the stationary tearing table, or a crossbeam under the shafts. This means that even a partial rotation of the shaft results in very intensive shredding.

Forward-Reverse Sequence 순방향-역방향 절차

During operation, the machine automatically carries out a sequence involving different inward and outward directions of rotation. This produces intensive shredding results, even with very coarse feed material, and helps to prevent material build-up.

High System Availability 높은 시스템 가용성

The Pre-Shredder is designed to maximize system availability and ensure a long service life of wear parts. The rotor shafts can be replaced in just four hours. This is facilitated by the proven quick changing system.

High Throughput Rates 높은 처리 속도

The machine is equipped with a robust, high-torque drive. This facilitates high throughput rates. The machine can be used in three-shift operation without difficulty.

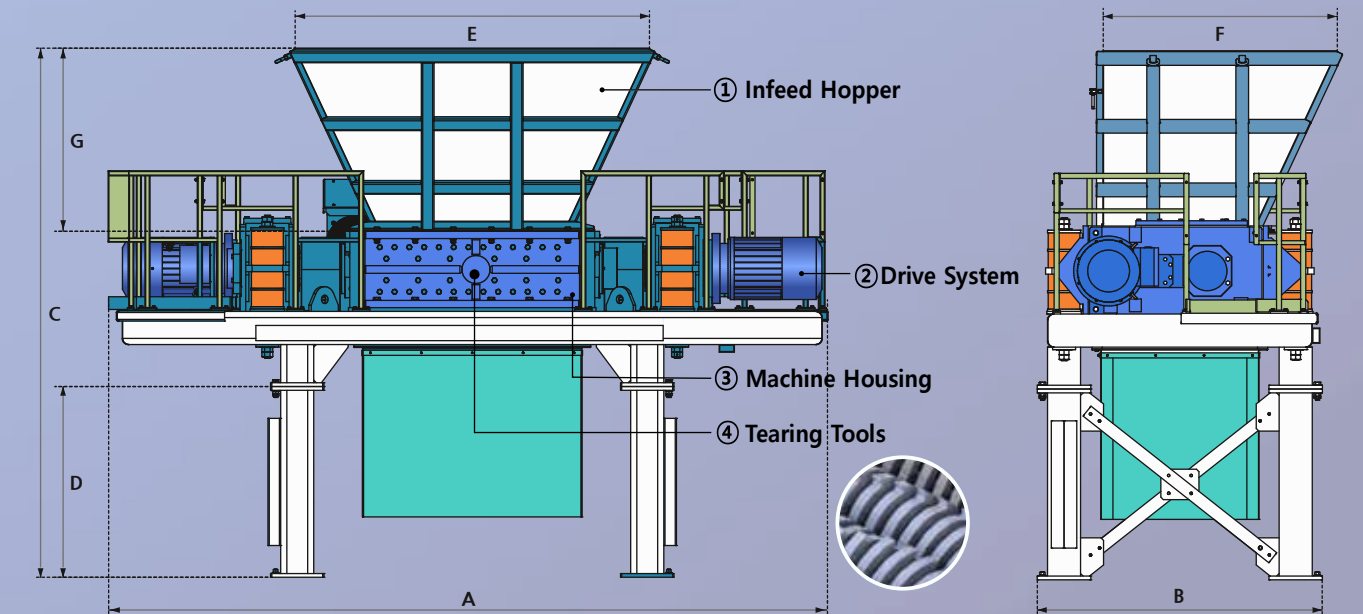
Flexibility 유연성

The Pre-Shredder is capable of processing a broad range of feed materials. Due to the relatively large shaft diameters, the tearing tools can safely process even voluminous or bulky feed material.

One-Piece Machine Housing 원피스 기계 하우징

The machine housing is designed as a highly robust, one-piece, welded steel construction. There are no screw connections, as these are prone to causing malfunctions. This construction also guarantees a long service life of the machine.

Technical Specifications



Performance Data (Standard Designs)

| Type | Drive power | Rotor speed (max.) | Rated torque | Rotor Diameter x length | Number of tearing tools | Width of tearing tools |
|---------|-------------|--------------------|--------------|-------------------------|-------------------------|------------------------|
| HKS 100 | 2 x 55kW | 16-37rpm | 20,000Nm | 480 x 1,200mm | 4-8 | 60 - 80mm |
| HKS 200 | 2 x 90kW | 16-37rpm | 33,000Nm | 530 x 1,500mm | 4-8 | 80mm |
| HKS 300 | 2 x 132kW | 16-37rpm | 47,000Nm | 730 x 1,800mm | 6-12 | 80 - 120mm |

Dimensions and Weights (Standard Designs)

| Type | A | B | C | D | E | F | G | Work access opening Length x width | Weight |
|---------|---------|---------|---------|---------|---------|---------|---------|------------------------------------|--------|
| HKS 100 | 5,200mm | 2,200mm | 4,000mm | 1,500mm | 2,500mm | 1,600mm | 1,400mm | 1,200 x 900mm | 14t |
| HKS 200 | 5,500mm | 2,500mm | 4,200mm | 1,500mm | 2,800mm | 1,800mm | 1,500mm | 1,500 x 1,200mm | 22t |
| HKS 300 | 7,600mm | 3,000mm | 4,800mm | 1,500mm | 2,900mm | 2,000mm | 1,500mm | 1,800 x 1,500mm | 35t |