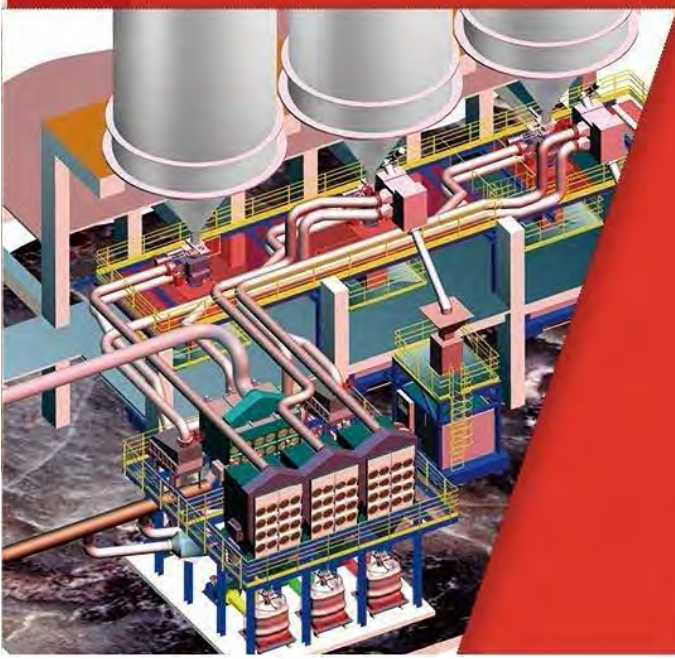


LF EP

SpotLesser 洁料器&洁粒系统

19层级洁粒技术/层层技术机理各异
洁粒精度突破8ppm
远远高于全球的行业优异值50ppm

PELLET CLEANING TECHNOLOGY WITH 19 PHASES,
A GROUNDBREAKING PELLET CLEANING PRECISION OF 8 PPM,
WHICH EXCELS THE GLOBAL INDUSTRY'S OUTSTANDING
VALUE OF 50 PPM.



SpotLesser 洁料器

A NEW PARAMOUNT HEIGHT FOR
DUST AND STREAMER REMOVAL.

企业简介

COMPANY PROFILE

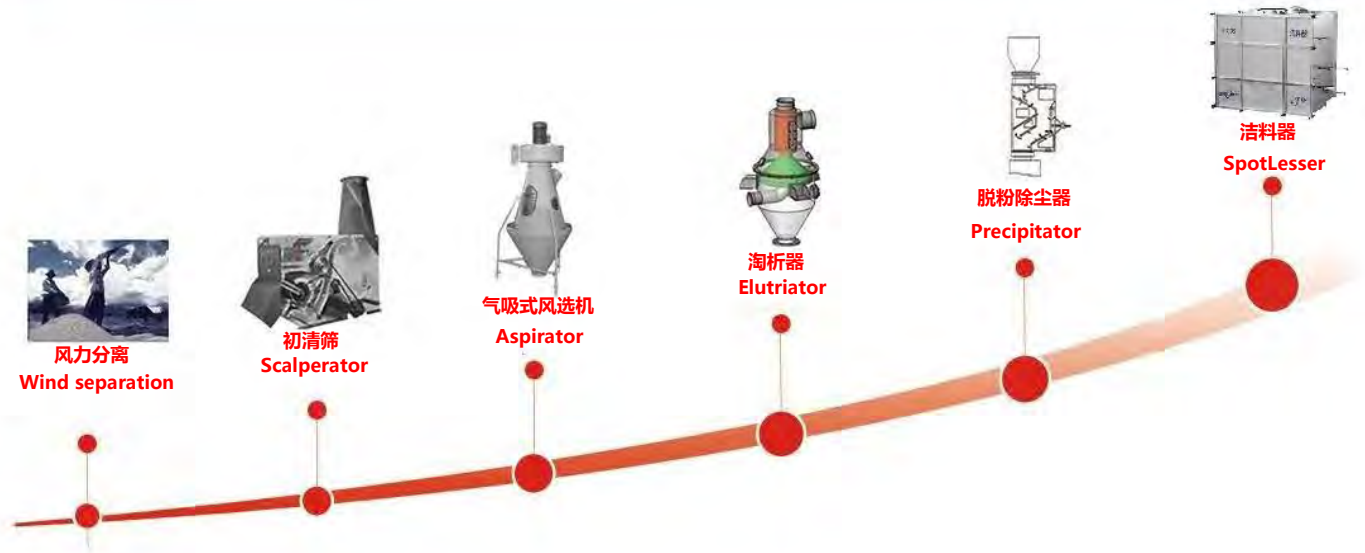
公司成立于2000年，是一家集设计、研发、贸易为一体的专业化公司。位于北京工业文化底蕴深厚的房山区。经过二十余年的探索研究，过滤与分离产品已发展成四大系列，品种达几百个。并已成功应用于石油化工、冶金、制药、环保、制漆和食品饮料等行业。公司自2007年致力于SpotLesser洁粒技术、洁料器、洁粒系统及系统配套部件的研发。现已拥有多项知识产权及相关专利，处于国际进步水平。



Established in 2000, LFEP is a professional company focusing on the R & D, design and trading. LFEP is located in Beijing Fangshan Industrial Park. After decades of development, the filtration and separation products have evolved into four ranges, with hundreds of types and models, which are widely used in industries like petrochemical, metallurgy, pharmaceutical, environmental protection, food and beverage etc. The company started its activity with SpotLesser, pellet cleaning technology, system and auxiliary parts as early as 2007. The company owns many patents and intellectual property rights and is in a leading position worldwide.

颗粒除尘净化发展历程

THE DEVELOPMENT OF PELLET CLEANING AND DUST REMOVAL



人们对物料净化的要求是提高促进分离技术的发展驱动力。很早前，人类仅用简单的风力从谷物中分离尘土，但近几个世纪，随着人们对分离要求和除尘效率要求的日益增加，LFEP开始注意到粒料中粉尘产生的原因以及粉尘带来的危害，并不遗余力寻找解决方案，经过数十年的研究，自主研发了SpotLesser洁料器。

The requirement for clean product is the driving force for the development of separation technology. In ancient times, people simply use wind to separate dust from grain. With the increasing higher separation requirements and dust removal efficiency in modern days, LFEP, realizing the cause of dust generation in pellets and the harm of dust, devoted to providing a solution, after decades of research and development, the SpotLesser is finally developed.

颗粒料中的总污染物含量

TOTAL CONTAMINATION CONTENT(TCC)IN PELLET

总污染物含量(TCC)包括粉尘、丝带、丝绒、丝团、碎屑、液态成分、气态成分、铁磁物质和某些菌类和病毒等。

Total Contamination Content (TCC) including dust, streamer, fluff, angle's hair, fines, moistureurons, certain bacteria and microbe etc.



树脂颗粒的构成

THE COMPOSITION OF PELLET

天然颗粒及人造颗粒,包括化工原料颗粒、药片或者粮食颗粒、化肥颗粒、电缆原料颗粒、功能性颗粒、染色颗粒、吸附剂颗粒、干燥颗粒、助剂颗粒、交换树脂颗粒,等等。颗粒的尺寸在0.5毫米至50毫米,形状为球状、柱状、椭圆状、方体、片体、三角体、锥体、不规则体等。在生产、加工和运输时,会不可避免形成粉尘,丝带,絮状物等污染物。虽然这些污染物与粒料具有同样的物质结构,但会使下游的各种制成品出现质量缺陷,出现斑点,着色不均等情况。这些污染物统称为TCC。

Some dust, streamer and other contaminants occur during the production,including petrochemical granules,medicine or grain pellets, fertilizer graules, cable raw material granules, functional granules, coloring granules, adsorbent granules, desiccant granules, agent granules, exchange resin, and so on. The size of the particle is 0.5 mm to 50 mm, and the shape could be spherical, columnar, elliptical, square, sheet, riangular, pyramid, irregular and so on. Processing and transportation of natural or fabricated resins, although contaminant have same material structure with the pellets, impuritiesincluding both fines (dust) and streamers could cause quality problem for the finished product, like spot,uneven coloring etc, all these contaminant are collectively called TCC.



TCC产生的主要原因

MAIN SOURCE OF TCC GENERATION



- 粒料在造粒，倒仓，运输的过程中都会产生TCC
尤其在管道输送中速度越高产生的杂质越多。

- The pellets will generate TCC during the pelletizing, silo transfer and conveying process, the higher the conveying velocity, the more contaminant it generates;



- 在管线输送的弯头处也会因摩擦力大，
壁温更高，产生更多的TCC

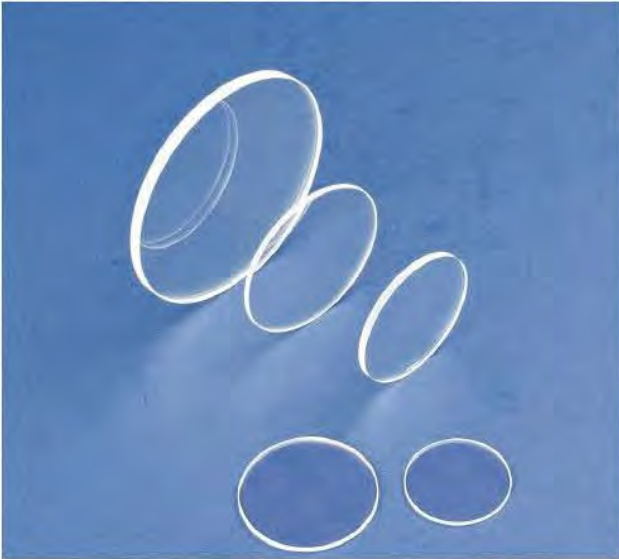
- The temperature of elbow will rise during conveying, generating more TCC.

为了确保产品的性能和质量，为了产品提高竞争力，为了符合HSE标准需要粒料净化，为了确保产品的美观，需要粒料净化。为了保证食品安全，保证药品卫生安全，保证工程安全需要粒料净化，所有的粒料净化都是为了满足人类对高质量产品的追求。

To ensure the performance and quality of products, to enhance the competitiveness of products, to meet the HSE standards, to ensure the appearance of products, the material need to be purified, to ensure food safety, to ensure the hygiene and safety of pharmaceuticals, to ensure the engineering safety, all the material purification is to meet the people's requirements for high quality products.

TCC带来的危害

HARM CAUSED BY TCC



粉尘会给诸多行业带来诸多问题。首先塑料粒料中的粉尘就会对塑料加工业带来诸多问题。粉尘含量高,会降低粒料品质影响价格,粒料在加工的过程中,粉尘发飞散的空气中造成空气污染,还会粘附传送螺杆,造成堵塞并减少设备使用寿命。

此外粉尘携带静电容易吸附灰尘,会使注塑成品表面粗糙影响玩具等产品的美观和质感,使树脂眼镜,塑料薄膜甚至医疗设备出现瑕疵透明度不理想等质量问题,降低产品合格率,粉尘甚至会影响内部结构,使电缆出现绝缘瑕疵,破坏阻燃防火塑料的安全性能。农产品如大米等粮食作物中的有毒有害物质会降低产品品质,影响食品安全,催化剂干燥剂等助剂中的粉尘会降低产品的功效等等。

Firstly, dust in plastic pellets will cause many problems for plastic processing industry. The high dust content will reduce the product quality and have negative impact on the price, the dust will absorb water and damage the long chain molecular structure of pellets, shortening the service life of material. During the pellet processing process, the dust in the air will lead to air pollution, the dust will stick to the conveying screw, causing blockage and reduce equipment life.

The static charged dust adsorb ash, causing rough surface of injection molding, affecting the appearance and texture of product like toys etc., the resin glasses and plastic film will have blur and transparency problem as well, the dust even affect the internal structure, endanger the cable product with insulation defects, breaking the safety performance of flame-retarded pellet etc.. The hazardous and harmful contaminants in agricultural products such as rice etc. can reduce the quality of products and affect food safety, and dust in additives such as catalysts and desiccants can reduce the efficiency of products, etc.



前沿的洁粒技术：SpotLesser洁料器

THE MOST ADVANCED PELLET CLEANING

SpotLesser洁料器是专门用于清洁颗粒类物料的成套设备,具有多级分离洁粒单元,洁粒层级高达19级,针对黏结态粉尘特性,通过气流、P/N波、磁力等多种手段消除粉尘与颗粒间的引力(静电力等4种引力),并针对难处理丝带进行多重拦截,通过对空间的特殊设计,使洁料器空间内任何一点都有4-6种处理手段,对粒料进行全方位立体式的反复净化处理,有效清除颗粒料里的粉尘、碎屑、绒毛、丝带等杂质,洁粒精度 ≤ 8 ppm,丝带脱除率: $>99.9\%$ 。

SpotLesser洁料器本质安全,不会因为使用洁粒系统而影响正常下料。



●强磁单元
Intense Magnetic unit

●加速单元
Acceleration unit

●流膨单元
Fluidization unit

●一次波单元
Primary wave unit

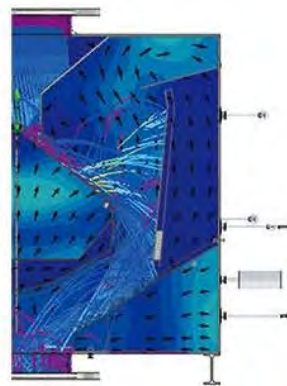
●分离单元
Separation unit

●二次波单元
Secondary wave unit

●多元气流单元
Multi-airflow unit

●动量反转单元
Momentum reverse unit

●多点多级分布式静电消除单元
Multi-point & stage distributed static elimination unit



洁料器分离示意图
SpotLesser SEPARATION SCHEMATIC DIAGRAM



洁料前

BEFORE CLEANING



洁料后

AFTER CLEANING THE MATERIAL
MATERIALS

SpotLesser is specially designed for cleaning granular materials, with multi-stage separation and cleaning unit, the purification stage up to 19 phases, for the characteristics of the sticky dust, through airflow, wave, magnetic and other means to eliminate the attraction force between dust and granular (force like electrostatic force etc.), and for streamers that are difficult to deal with, multiple interception is realized through the ingenious design of space, so that the SpotLesser has 4-6 treatment measures at any point, which can purify the granule material repeatedly in a comprehensive three-dimensional way, effectively removing the dust, debris, fluff, streamer and other impurities in the granule material, Pellet Cleaning Precision ≤ 8 ppm, streamer removal rate: $>99.9\%$.

SpotLesser is intrinsically safe, the application of pellet cleaning system would not affect the normal operation of material flow.



性能对比

PERFORMANCE COMPARISON

对比要素 COMPARISON

洁料器 SpotLesser

脱粉除尘器 PRECIPITATOR

传统淘析器 TRADITIONAL ELUTRIATOR

性能指标 PERFORMANCE

含粉量 < 30PPM并可调节,参数调优后可达8PPM,同时有效去除丝带。

Dust level less than 30ppm and it is adjustable, the best result could be down to 5ppm after optimization.streamers could be effectively removed at the same time.

可同时有效消除黏结态粉尘、丝带及各类TCC污染物。

Dust and streamer, cohesive fines, together with all other contaminants (TCCs) could be removed at the same time.

产品含粉量 ≥ 50 PPM。

Dust level ≥ 50 ppm.

No comments.

产品含粉量 ≥ 70 PPM,产品含有丝带。

Dust level ≥ 70 ppm, with streamers and fluff.

理论的缺陷使其只能去除部分粉尘和丝带,不能有效去除丝带、不能有效去除丝团,不能有效去除黏结态粉尘。

Theory drawback make it limited to the removal of some dust and streamer, long streamer, fluff and sticky dust could not beremoved.

设备特点 CHARACTERISTICS

洁料层级高达19级。

19 pellet cleaning phases in total.

设有针对堵塞和夹带的技术,完美应对尘暴。

Anti clogging knife gate and carryover preventing baffles, perfectly handling the dust storm problem.

一级筛板、二级筛板。

Two stage of baffleplate, for dust removal.

No comments.

不评价。

No comments.

无法应对料仓尘暴。

Unable to handle the storm problem.

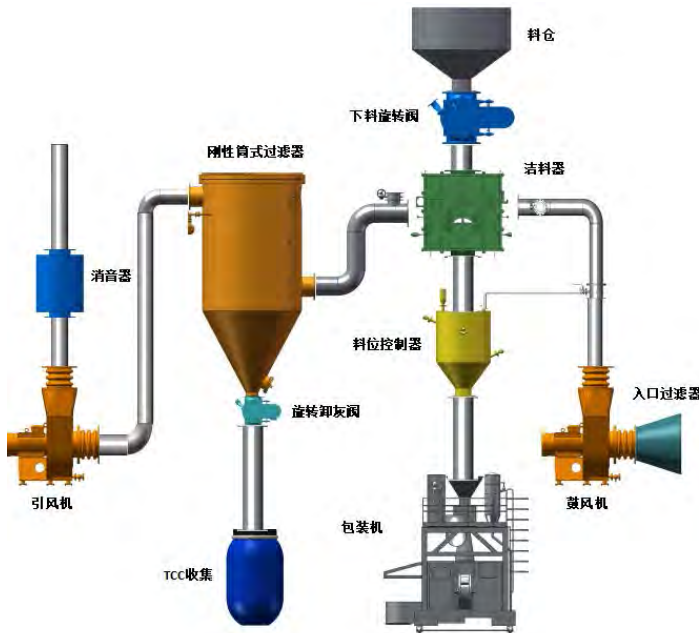
结构特点 MECHANISM

运行状况 OPERATION CONDITIONS



SpotLesser洁粒系统运行模式

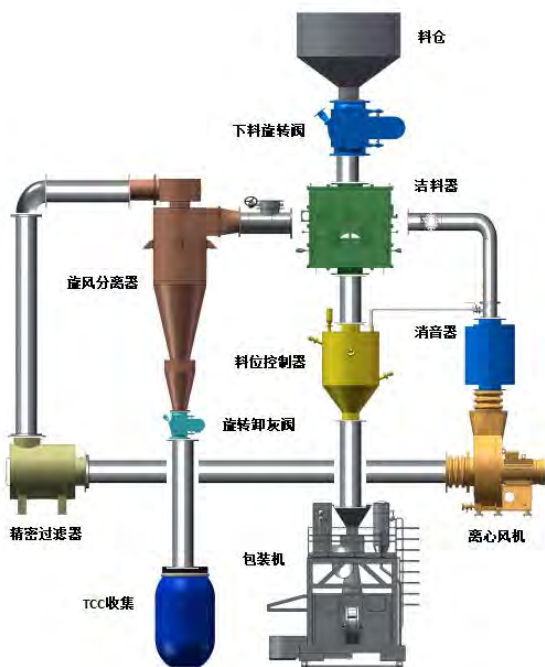
OPERATION MODES OF SpotLesser



开环模式(OPEN LOOP MODE)

开环运行模式适合交替处理不同种类的物料或是更换生产线使用，还可以避免同种物料的循环污染。它是将过滤后的新鲜空气通过鼓风机进入洁粒系统。引风机将含粉尘的气体吸入过滤器。经过过滤器中分离后,TCC进入集尘器,净化后的空气排向大气。

The SpotLesser pellets cleaning system could be operated in open loop and closed loop modes, the open loop mode is suitable for the cleaning of different material or changing of production line, it avoids the pollution problem in the same pellets. The filtrated air is supplied by the Blower fan. The induced fan indrafts the dusty air into the filter. TCC are separated with air by filter and fall into dust bin, the purified air is discharged into atmosphere.



闭环模式(CLOSE LOOP SYSTEM)

闭环运行模式则适用于标准工况和使用惰性气体的工况。风机为洁粒系统提供循环的气体。TCC与气体在精密过滤器中分离后,TCC进入集尘器,净化后的气体返回到风机。

The close loop mode is suitable for standard and inertia gas applications. Fan provides fresh air to the SpotLesser pellet cleaning system. TCC are separated with air by precision filter and fall into dust bin, the purified air is returned to fan.

大型移动洁粒系统整套系统主要包括一台洁料器、一台向洁料器供风的风机、一台从气体中分离粉尘的旋风分离器、一台从气体中分离细微粉尘的精密过滤器、一套支撑定位各部件的钢结构以及一台移动的驱动底盘。

Mobile Pellet Cleaning System, the system consists of one set of SpotLesser, one blower to supply air to SpotLesser, one cyclone separator to separate dust from air, one HEPA filter to separate fine particulate from air, one steel structure to support all components and an omni-directional mobile chassis.



SpotLesser大型洁料系统 处理量：46吨/小时

- 洁净精度高,经优化后丝带脱除率可达99.9%,经优化后粉尘小于30ppm;
- 颗粒夹带低,物料无破损;
- 规格型号齐全,处理量30公斤/小时至100吨/小时;
- 主机高度低,适用范围广;
- 可根据现场进行旧设备设计升级改造;
- 安全性高,自主设计大型开环系统,拥有10年以上的安全运行记录;
- 无电磁辐射,无磁场辐射,无电场辐射,噪音水平低全面符合HSE标准;
- 可连续长周期运行,无需停机维护;
- 国产研发,完全自主知识产权,无外贸壁垒;
- 提供多种功能选配,用户可根据自身要求进行定制。
- 已获得CE认证并拥有产品质量保证保险。

洁粒系统特点

SYSTEM CHARACTERISTICS

- Cleaning with high precision, streamer removal rate up to 99.9% after optimization, dust removal down to 30 ppm;
- Lower pellets carryover rate, no degradation of pellet particles;
- Full range of models, capacity from 30 kg/hour up to 100 ton/hour;
- Upgrading of existing equipments as per site conditions;
- The SpotLesser is compact in height and could be used in a widerange;
- High safety level, innovative open loop system with over 10 years of safe operation records in China;
- No electromagnetic/magnetic field radiation, no electric field radiation, Low noise level, fully compliance with HSE;
- Long term continuous operation;
- With complete knowhow and intellectual property right;
- Multiple featured option for customer's selection, tailor made as per specific requirements on site.
- CE certified, with warranty of product quality from insurance company.

SpotLesser 洁料器应用领域

AREA OF APPLICATIONS

塑料行业

PLASTIC INDUSTRY

化工化肥空分行业等其他领域

PETROCHEMICAL, FERTILIZER AND SEPARATION INDUSTRY

医疗行业

PHARMACEUTICALS INDUSTRY

高端农业

HIGH END AGRICULTURE

其他行业高端透明制品

OTHER HIGH-END INDUSTRY



高压电缆

HVCABLE



分子筛

MOLECULAR SIEVE



颗粒药片

TABLETS AND PILLS



咖啡豆

COFFEE BEAN



车辆灯罩

CAR LIGHT SHIELD



母料

MASTER BATCH



催化剂

CATALYST



医疗器械输液袋注射器

MEDICAL INFUSION BAG SYRINGE



高端大米

QUALITY RICE



电池隔膜

BATTERY DIAPHRAGM

塑料行业范围

PLASTICINDUSTRY

普通塑料颗粒

PLASTIC PELLETS

高压电缆

HV CABLE LON

离子交换树脂

EXCHANGE RESINS

母粒

MASTERBATCH

化工化肥空分行业等 其他领域范围

PETROCHEMICAL, FERTILIZER
AND SEPARATION INDUSTRY

分子筛

MOLECULAR

催化剂

SIEVE CATALYST

干燥剂吸附剂

DESICCANT & ADSORBENT

医药行业范围

PHARMACEUTICALS INDUSTRY

颗粒药片

TABLETS AND PILLS

医疗器械输液袋

MEDICAL INFUSION BAG AND SYRINGE

注射器

SYRINGE

高端农业范围

HIGH END AGRICULTURE

咖啡豆

COFFEE BEAN

高端大米

QUALITY RICE

其他行业高端

OTHER HIGH-END INDUSTRY

眼镜片

LENS

塑料薄膜

PLASTIC FILMS

手机壳

CELLPHONE CASE

冰箱内盒

FRIDGE DRAWER

汽车灯罩

CAR LIGHT SHIELD

饭盒

LUNCH BOX

矿泉水瓶

WATER BOTTLE

电池膜

BATTERY DIAPHRAGM

儿童玩具

TOY



洁粒系统型号及选配表

MODEL AND OPTIONS
& CONFIGURATION TABLE FOR
PELLET CLEANING SYSTEM

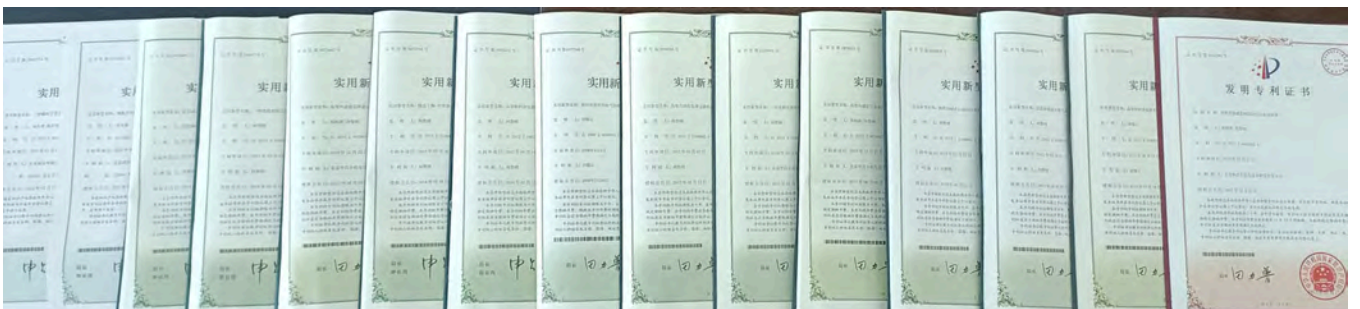
SL-95 SpotLesser 洁料器

型号 Model	SL-95-KA	SL-95-KB	SL-95-KC	SL-95-KD	SL-95-TA	SL-95-TB	SL-95-TC	SL-95-TD	SL-95-TE	SL-95-TF	SL-95-TG	SL-95-TI
处理量 Capacity	20-90 (kg/h)	80-350 (kg/h)	300-600 (kg/h)	500-1100 (kg/h)	1.0-2.0 (t/h)	1.8-4.0 (t/h)	3.8-8 (t/h)	7.8-16 (t/h)	15-30 (t/h)	28-45 (t/h)	40-60 (t/h)	55-80 (Vh)

产品的型号需要根据净化产品的堆积密度、颗粒形状、类型和粉尘含量选择
Product model shall be selected based on the bulk density, particle shape, product type and dust contents.

系统选配 System Options	防爆防护 Ex proof		风量调节 Air regulation		除湿干燥 Drying		制造标准 Code	
	材质选择 Material selection		消毒杀菌 Disinfection		除铁质物 Iron removal		抛光/耐磨 Polish/Wear resist	
	开环/闭环 Open/Close loop		检测控制 Monitor & Control		固定/移动 Fixed/Mobile		表面处理 Surface treatment	
配置要求 Configuration Requirements	风机 Fan	电机 Motor	分离器 Separator	阀门 Valve	消音器 Silencer	精密过滤器 Precision filter	料位控制器 Level controller	控制系统 Control system

规格参数及其它配件可按需定制，如有需要请向我们索取征询书。
The specification and parameters and other auxiliaries could be tailor made as per requirements, please contact us for questionnaire if needed.



19层级洁粒技术
层层机理各异 级级效果精进
一尘不染 洁粒无瑕
多点分布式静电消除技术
安全有效去除颗粒静电
专利证号：14671796
(已申国际pct专利)等

19 Phases Pellet Cleaning Technology;
Different Layers with Different Mechanism;
Every Phase with More Precise Effect;
Spotless for Every Pellet;
Multipoint Distributed Static Elimination Technology;
Effective Static Removal with Intrinsic Safety;
Patent No. : 14671796
(International PCT Patent pending)

**人民日报对
洁料器的
肯定和赞誉!**

**Affirmation and appraisal
for SpotLesser from
Mainstream Media!**

**新华社
对洁料器的
肯定和赞誉!**

**Affirmation and appraisal
for SpotLesser from
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