

广州海狮软件科技有限公司  
GUANGZHOU SEALION SOFTWARE TECHNOLOGY CO.,LTD



挤出生产线智能一体化解决方案生产商



4008-4040-80

# 公司简介

## COMPANY INTRODUCTION

广州海狮软件科技有限公司成立于2008年，总部坐落在风景秀丽的南国花城广州。2012年进驻广州高新技术开发区之核心——广州科学城。全国设立有上海，华东，华南，西南，华北，西北等办事处。

海狮科技是一家专业致力于工业控制系统研发、生产、销售为一体的高新技术企业。海狮以高科技项目为主体，以高素质人才为支柱。专业领域涉及硬件EDA开发、底层DSP研发、软件开发、电气控制系统设计等。核心产品有米重控制系统、超声波在线测厚系统、手持超声波测厚仪、米重色母一体控制系统、失重式喂料机系统、多组份混配料系统，管材表面缺陷检测系统等众多产品。自公司成立以来，在全体员工不断努力、创新和完善下，海狮科技生产的产品已达到国际先进水平。深受广大客户的认可及赞誉，产品遍布全国及世界各地。

在政府大力支持下，海狮科技于2016年先后荣获"高新技术企业培育入库企业"、"科技创新小巨人企业"、"高新技术企业"。公司心怀感恩，将一如既往地专注于为广大客户降低制造成本、提升产品质量、增加经济收益。秉承“专业、专注、专心、专诚”的企业精神，以真诚和信誉广交四海宾朋，竭诚把更好的产品和更完善的服务奉献给您和您的企业。

Guangzhou Sealion Software Technology Co., Ltd. was founded in 2008, Located in Guangzhou city, The company entered Guangzhou science city where is the core of Guangzhou Hi Tech Development Zone in 2012 .

Sealion Technology focus on R&D, production and sales of industrial control system .Sealion takes high-tech projects as the priority, with high-quality talent as a pillar. It's professional areas involves hardware EDA development, DSP R&D; Software development, Electrical control system design etc.. The core products contain Gravimetry Control System, Ultrasonic Online Thickness Measuring System, Gravimetry and Masterbatch Integrated Control System, Lost In Weight Feeding System, Multi-component Batch Blender System, Pipe surface defect detection system. Since the company established, with all the staff of the company continued efforts to update and innovate, the sealion products has been reached the international advanced level. Gain the full recognition and praise by vast number of customer , products have spreaded throughout the country and all over the word.

With the support of the government, Sealion Technology has awarded the "high-tech enterprises to cultivate warehousing enterprise", "science and technology innovation small giant enterprise", "high-tech enterprise" in 2016, Sealion will continue to focus on the majority of customers to reduce manufacturing costs, improve product quality, increase economic returns. Adhering to the "professional, focused, concentrate, dedication" spirit of enterprise, with sincerity and reputation to make friends from all over the world, we give better products and better service to you and your business.

# 海狮产品

## SEALION PRODUCT



米重控制系统  
Gravimetric control system



米重色母控制系统  
Gravimetric masterbatch control system



米重色母系统称重版  
Gravimetric masterbatch weighing control system



超声波在线测厚(管材)  
Ultrasonic thickness online control system (pipe)



超声波在线测厚(小管)  
Ultrasonic thickness online control system (small tube)



多组份混配料系统  
Muti-component blending system



失重式喂料机系统  
Lost-in-weight feeding system



# 米重控制系统

## gravimetric control system

What is gravimetric control system  
>> 什么是米重控制系统



米重是指产品每米的重量，根据产品的尺寸和材料密度，可以计算出产品每米的重量，在生产过程中，米重的恒定在很大程度上决定了产品质量的优劣。

海狮米重控制系统安装在挤出机的进料口上端，采用PID(比例微积分)闭环控制，系统自动而严格控制管材每米重量，在任何时刻都不间断地自动控制管材生产线的主机转速，牵引速度和喂料量。

Meter weight is the product weight of per meter. The weight of the product can be calculated according to the size of the product and the density of the material. The constant weight per meter determines the quality of the product to a great extent.

The sealion Gravimetric control system is installed at the top of the feed port of the extruder. It can control the pipe meter weigh by adopting PID closed loop control. In any cases, any time can control engine speed, traction speed and feeding amount of pipe production line.



# Why must equip Gravimetric Control System on the extrusion production line

## >> 为什么传统生产线上必须配置海狮米重控制系统



管材所处阶段 Pipe stage	未配置控制系统 Without gravimetric control system	增加海狮米重控制系统 After equiped sealion gravimetric control system
开机过程 Booting	<p>开机过程产品每米重量不确定，只能出来很长一段管材才能清楚管材的厚薄，需经过多次调整方能符合品质要求，造成大量物流、时间、和人工的浪费。</p> <p>It can be konwed the pipe thickness only when a long pipe output in the booting process. and needs to be adjusted many times to meet the quality requirements, this will waste lots of material, time and labor.</p>	<p>开机即可获得产品米重数据，并显示屏幕上，缩短开机时间：操作人员可以在海狮米重控制系统调节牵引速度和挤出机速度。节约用料，提高效率</p> <p>Obtain the weight per meter data, and dispaly on the screen. Shorten boot time: the operator can control and adjust the tractor speed and extruder speed, save material, improve efficiency</p>
生产过程 Production process	<p>依赖操作工人的经验和生产技巧，生产过程无法监控，管材米重变化不均，管材偏差不可预知。</p> <p>Depend on the experience and skills of the operator.unable to monitor the production process, leads to the weight per meter unevently and deviation unpredictable for pipe.</p>	<p>通过设定米重配方自动调控挤出机和牵引机速度，摆脱人为失误，全程监控管材的米重，保持管材米重一直恒定，出现偏差立刻报警，及时处理。</p> <p>Automatically control the extruder and tractor speed by setting meter weight recipe. prevent human error, monitor the pipe weight per meter, maintain the pipe weight per meter constantly. Alarm and handle immediately when deviation.</p>
换料过程 Change material	<p>厂家原料不同，米重变化不得而知，不可避免产生大量废料。</p> <p>The weight per meter unable to know with different material, this will cause large amount of waste pipe</p>	<p>不管原料如何变化，自动检测，自动调整处理</p> <p>No matter how material change, the system will check and adjust automatically</p>
产后追踪过程 Post production tracking	<p>入库后无法追踪</p> <p>Unable to track after warehousing</p>	<p>全程记录并保存，事后可追溯</p> <p>Record and save for whole process, traceability</p>

## Application

### >> 米重控制系统适用范围

塑料管材、薄膜、线缆等产品的挤出生产过程和质量控制

Plastic pipes, films, cables and etc. extrusion produce process and quality control

## The main function

### >> 主要功能

- 缩短开机时间，解决开机、生产中无法及时调整的问题。
- 解决生产过程中米重偏差浪费原料的问题。为您节省2%-5%原料。
- 解决断管接管的问题，控制管材米重和挤出量。
- 解决原料密度、比例变化导致管材厚薄不均的问题。
- 稳定生产过程，控制产品质量。
- 解决因过滤网堵塞造成废管的问题。
- 统计保存生产数据。

- Shorten start-up time, Solve the problem that can not be adjusted in start-up and during production
- Solve the problem of meter weight deviation and waste material. Can save 2%-5% raw material.
- Solve the problem of pipe broken pipe joint, Control pipe meter weight and extrusion output
- Solve the problem of uneven thickness of pipes caused by changing density and proportion of raw materials
- Stabilize production process, control product quality
- Solve the problem of the waste pipe caused by the blockage of the filter net
- Statistics and save production data

序号	时间	米重	控制前
1	16:15	174	没控制
2	16:12	173	没控制
3	16:26	165	没控制
4	16:59	166	没控制
5	17:19	167	没控制
6	17:41	165	没控制
7	20:18	167	没控制
8	20:39	162	没控制
9	21:21	167	没控制
10	21:43	166	没控制
序号	时间	米重	控制后
11	00:14	164	米重控制
12	00:31	164	米重控制
13	00:50	164	米重控制
14	01:16	164	米重控制
15	01:38	164	米重控制
16	01:57	164	米重控制
17	02:30	164	米重控制
18	03:00	165	米重控制
19	03:15	165	米重控制
20	03:40	165	米重控制



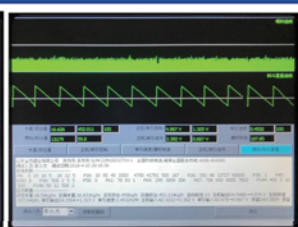
缺料报警功能  
Lack of alarm function



海狮米重开机及配方参数设置保存  
Sealion starting up & recipe parameter setting and saving



生产数据统计保存(累计, 清零, 产量, 长度, 数量)  
production data statistics and save (accumulate, zero, output, long, quantity)



生产过程喂料量曲线&料斗重量曲线  
feeding capacity curve & hopper weight curve



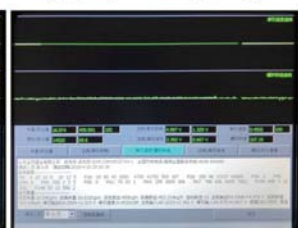
米重曲线&挤出量曲线  
meter weight curve & extrusion curve



主机控制器曲线&牵引控制曲线  
extruder control curve & tractor control curve



主机信号曲线&牵引信号曲线  
extruder signal curve & tractor signal curve



牵引速度曲线&螺杆转速曲线  
tractor speed curve & screw speed curve

## System workflow

### >> 系统工作流程

米重控制系统含有智能秤料装置，它所起的作用就是料斗不断地开阀与关阀循环控制下料，保证每批次的下料压力都为自由落体，压力都一致。每一次的开阀、关阀和再开阀都由微电脑严格按照以下流程控制：

第一步：物料填充到料斗80%时，阀门关闭。

第二步：物料往下自由落体向主螺杆喂料。

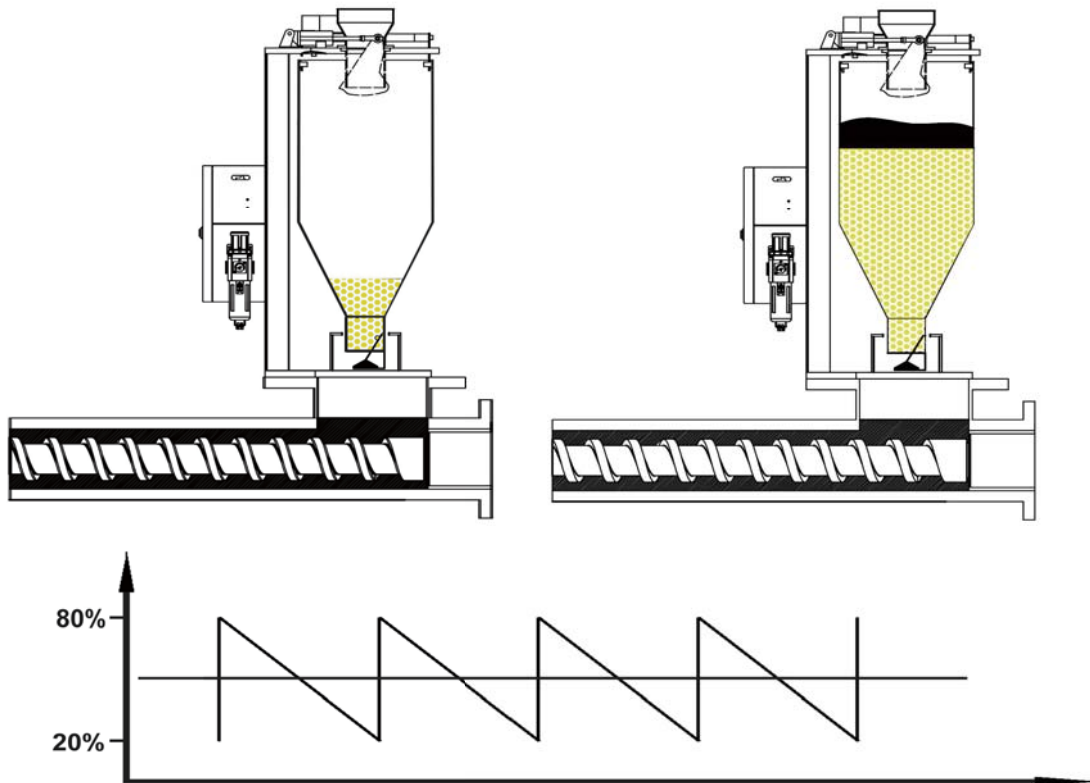
第三步：当物料下落到料斗20%时阀门打开，重新填充物料进行下一循环。

The Gravimetric control system contains a intelligent scale, The function of the scale is that the small hopper opens and closes the valve continuously to cycle control the material. Make sure that each batch of material is free falling and keep the same pressure. The action of opening and closing valves are controlled by microcomputer which is based on the following procedures strictly;

1st step: The material is filling to the hopper and the valve will be closed when reach to 80%,

2nd step: The material in the hopper will fall down and feed to the main screw.

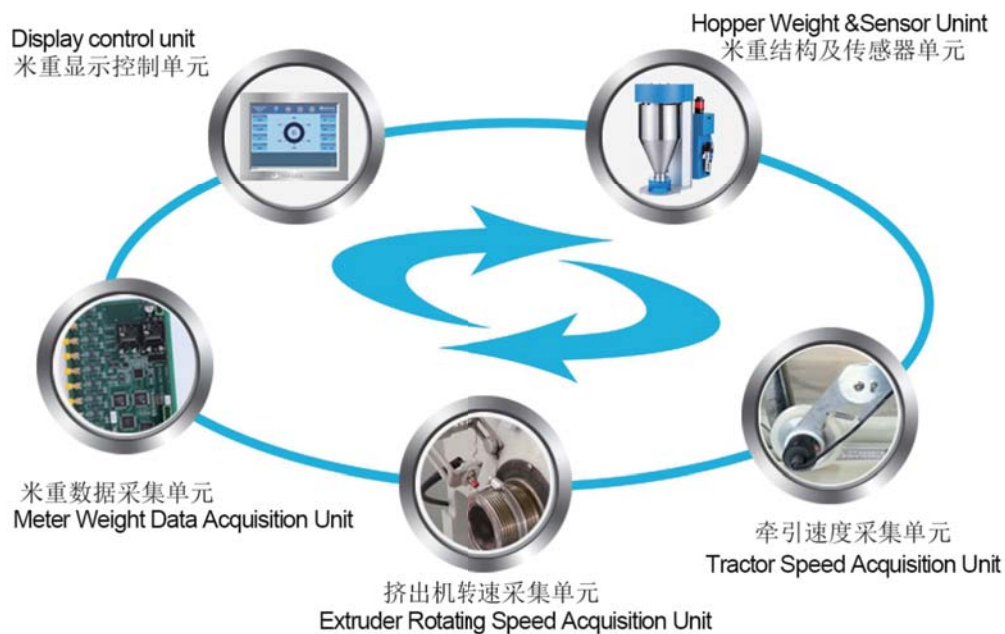
3rd step: When the material is lower to 20%, the valve will be opened, reload material and proceed to next cycle.





## Technical Structure

### >> 米重控制系统的技术组成结构



## Installation

### >> 系统安装





## Technical Parameter

### >> 米重控制系统的技术参数

电源	AC220V
工作温度	-10~50℃
最大湿度	90%R.H不可结露
功耗	10W
传感器量程	10.20.30.50kg
输入灵敏度	0.5uV/d
输入范围	0.2~25mV
A/D精度	24bit
D/A 精度	12bit
转换方式	Sigma-Delta
A/D转换速度	4000次/秒
非线性	0.01%F.S
增益漂移	10PPM/℃
最高显示精度	1/10000
控制方式	主机控制或牵引控制
控制精度	0.4/100
料斗容积	7L,22L,48L,52L
设备高度	1000mm
设备总重	60KG

Power Supply	AC220V
Temperature	-10~50℃
Max humidity	90%R.H non condensation
Capacity	10W
Sensor range	10.20.30.50kg
Input sensitivity	0.5uV/d
Input range	0.2~25mV
A/D accuracy	24bit
D/A accuracy	12bit
Conversion mode	Sigma-Delta
A/D switching rate	4000/Sec
Nonlinear	0.01%F.S
Gain drift	10PPM/℃
Max accuracy	1/10000
Control mode	Host or traction control
Control accuracy	0.4/100
Hopper capacity	7L,22L,48L,52L
Height	1000mm
Weight	60KG

## Double output Gravimetric control system

### >> 单米重双出控制系统

针对现在流行的PE/PPR/PERT高速生产线单线速度达到20米/分钟，因为调整速度会导致管材的过厚或过薄，甚至产生断管的情况出现，单米重双出控制系统根据生产线开机的双牵引速度以及主机产量同时对两边挤出进行控制，工作原理也是通过实时自动控制管材生产线的主机转速，双牵引速度和喂料量，使之与我们设定的米重精度吻合，从而控制管材产品米重的恒定，

In view of the popular PE/PPR/PERT pipe of high speed production line, the linear speed reaches to 20m/min, If adjust the speed, the tube will be thickness or thin, even occur pipe broken. The double output Gravimetric Control System controls the two extrusion according to the double traction speed and host output and feeding rate which matches the setting accuracy. So as to control the pipe meter weight constantly

# Model

## >> 产品配置型号

### 单主机米重控制系统

Single host gravimetric control system

型号 Model	可控挤出范围 Output	尺寸 Size
MIXSCAN7	300Kg/h	404x500x726
MIXSCAN22	500Kg/h	404x500x886
MIXSCAN48	800Kg/h	404x500x996
MIXSCAN52	>=1000Kg/h	404x500x1096

备注：可根据客户需求量身定做      Remark: customized according to customer

### 双主机共挤米重控制系统

Two host gravimetric control system

型号 Model	可控挤出范围 Output	尺寸 Size
Mixscan7-7	300Kg/h	404x500x726
	300Kg/h	404x500x726
Mixscan22-7	500Kg/h	404x500x886
	300Kg/h	404x500x726
Mixscan48-7	800Kg/h	404x500x996
	300Kg/h	404x500x726
Mixscan52-7	1000Kg/h	404x500x1096
	300Kg/h	404x500x726
Mixscan22-22	500Kg/h	404x500x886
	500Kg/h	404x500x886

备注：可根据客户需求量身定做      Remark: customized according to customer

### 三主机共挤米重控制系统

Three host gravimetric control system

型号 Model	可控挤出范围 Output	尺寸 Size
MIXSCAN 7-7-7	300Kg/h	404x500x726
	300Kg/h	404x500x726
	300Kg/h	404x500x726
MIXSCAN 22-7-7	500Kg/h	404x500x886
	300Kg/h	404x500x726
	300Kg/h	404x500x726
MIXSCAN48-7-7	800Kg/h	404x500x996
	300Kg/h	404x500x726
	300Kg/h	404x500x726

备注：可根据客户需求量身定做      Remark: customized according to customer

# 米重色母一体控制系统

## Gravimetric Masterbatch Control System

### What is Gravimetric Masterbatch Control System >> 什么是米重色母一体控制系统



米重色母一体控制系统是指控制米重同时自动控制色母的添加，使得米重控制系统和色母添加控制合二为一的控制系统。

每个产品组份都不一样，长期以来，色母组份添加都是以人工混合为主，这样就产生了组份添加不准确，混合不均匀的情况，导致生产出来的管材质量不稳定，增加人工成本和不必要的劳动强度。而因为工人的责任心问题，一时的疏忽可能会给企业带来重大的不可弥补的损失。

Gravimetric masterbatch control system can control the masterbatch adding while control the pipe meter weight, this system makes gravimetric control and masterbatch control together.

Every product is made by different component, masterbatch adding is mixed by worker for a long time, this can make inaccuracy component and uneven mixture. Lead to pipe quality unstability. Also, increase labor cost and intensity. worker's carelessness may bring significant irredeemable loss because of the sense of responsibility.



## Application field

### >> 适用行业

塑料薄膜、电缆、管材、塑料改性，化工以及各种多组份精确配比添加行业。

Plastic film, cable, pipe, plastic modify, chemical industry and multi-component adding industry.

## Advantages

### >> 米重色母一体控制系统优点

- 辅机随主机动态变化，严格控制任何时间节点的物料配比
- 微积分闭环控制，智能化，高精度
- 在线连续混配，减少人工混料的耗时费力，提高效率
- 直流无刷电机，无需保养
- 自动混料装置，保持混料均匀
- 底层软硬件控制，运行更可靠
- Auxiliary engine dynamic change along with the host, control the proportion at any time strictly
- PID close-up control, intelligent, high-Precision
- Mixed continuous on-line, save mix time, improve efficiency.
- Brushless DC motor without maintenance.
- Mixed automatically, keep the mixture even
- Control by bottom software and hardware made operation more reliable

## Parameter

### >> 米重色母一体控制系统技术参数

#### 米重色母一体控制系统技术组成结构

##### structures



#### 米重色母一体控制系统技术参数

##### Parameter

- 可添加组份的范围 ( Kg/h ) : 根据客户要求定制
- 可添加组份数 : 1-3种 ( 可为客户定制4组份以上 )
- 添加精度 :  $\pm 1\%$  (色母带称重精度可达4‰)
- 自动分离技术
- Range of adding component ( Kg/h ) : according to customer
- The quantity of component: 1-3(Customizing more than 4 components for customers)
- Addition accuracy:  $\pm 1\%$
- Isolation automatically

## Model

### >> 米重色母一体控制系统配置型号



#### 色母螺杆控制

型号 Model	主机产量 Host Screw	色母螺杆 Masterbatch screw	可控产量 Component controlled
MIXSCAN7-S1	300Kg/h	DN6-DN16	单组份 ( 1-300Kg/hr ) Single component ( 1-300Kg/hr )
MIXSCAN7-S2	300Kg/h	DN6-DN16	双组份 ( 1-300Kg/hr ) Double component ( 1-300Kg/hr )
MIXSCAN22-S1	500Kg/h	DN6-DN16	单组份 ( 1-300Kg/hr ) Single component ( 1-300Kg/hr )
MIXSCAN22-S2	500Kg/h	DN6-DN16	双组份 ( 1-300Kg/hr ) Double component ( 1-300Kg/hr )
MIXSCAN48-S1	800Kg/h	DN6-DN16	单组份 ( 1-300Kg/hr ) Single component ( 1-300Kg/hr )
MIXSCAN48-S2	800Kg/h	DN6-DN16	双组份 ( 1-300Kg/hr ) Double component ( 1-300Kg/hr )
MIXSCAN52-S3	>=1000Kg/h	DN6-DN16	三组份 ( 1-300Kg/hr ) Three component ( 1-300Kg/hr )

备注：可根据客户需求量身定做

Remark: customized according to customer



#### 色母米重称重控制

型号 Model	主机产量 Host Screw	色母螺杆 Masterbatch screw	可控产量 Component controlled
MIXSCAN7-SW1	300Kg/h	DN6-DN16	单组份 ( 1-300Kg/hr ) Single component ( 1-300Kg/hr )
MIXSCAN7-SW2	300Kg/h	DN6-DN16	双组份 ( 1-300Kg/hr ) Double component ( 1-300Kg/hr )
MIXSCAN22-SW1	500Kg/h	DN6-DN16	单组份 ( 1-300Kg/hr ) Single component ( 1-300Kg/hr )
MIXSCAN22-SW2	500Kg/h	DN6-DN16	双组份 ( 1-300Kg/hr ) Double component ( 1-300Kg/hr )
MIXSCAN48-SW1	800Kg/h	DN6-DN16	单组份 ( 1-300Kg/hr ) Single component ( 1-300Kg/hr )
MIXSCAN48-SW2	800Kg/h	DN6-DN16	双组份 ( 1-300Kg/hr ) Double component ( 1-300Kg/hr )
MIXSCAN52-SW3	>=1000Kg/h	DN6-DN16	三组份 ( 1-300Kg/hr ) Three component ( 1-300Kg/hr )

备注：可根据客户需求量身定做

Remark: customized according to customer



# 超声波在线测厚系统

## Ultrasonic Online Thickness Measuring System

### What is Ultrasonic Online Thickness Measuring System

#### >> 什么是超声波在线测厚系统

根据超声波脉冲反射原理来进行管材厚度测量，当探头发射的超声波脉冲通过媒介到达管材的内外径界面时，脉冲被反射回探头后，通过精确测量超声波在管材中传播的时间，超声波处理模块进行快速的运算来确定被测材料的厚度。

超声波在线测厚系统是采用国内外先进技术的基础上，运用数字化处理模块技术，采用高精度数据采集和处理芯片自主研发的高端管材在线测量系统，主要由海狮超声波处理模块和超声波探头、超声波扫描结构三部分组成。主机电路包括发射电路、接收电路、显示和控制电路三部分。超声波在线测厚系统理论测量分辨率达到0.001mm，因为管材表面的不平整以及生产环境的影响，实际测量分辨率达到0.01mm，处于行业先进水平。

The pipe thickness measurement is according to the principle of ultrasonic pulse reflection, when the probes launch the ultrasonic pulse which reach to the interface of the inner and outer pipe through media, the pulse is reflected back to the probe, calculate the time between the pipe, ultrasonic processing unit rapidly calculate then figure out the pipe thickness.

Ultrasonic online thickness measuring system is an independent R&D high-end system which is based on the advanced technology of domestic and foreign country, using digital processing module, adopt high-precision digital acquisition and processing chip. The system contains Sealion ultrasonic processing unit, ultrasonic probe and ultrasonic scanning box. The host circuit contains radiating circuit, receiving circuit, display and control circuit. The theory of measuring resolution is 0.001mm, actual measuring resolution is 0.01mm due to the uneven surface of the pipe and the production environment. This is in the advanced level of the industry.





## Why must equip the Ultrasonic Online Thickness Measuring System on extrusion production line

### >> 为什么挤出生产线上必须配置超声波在线测厚系统



市场竞争日益激烈，管材生产企业要想获得高品质、高经济效率和高盈利能力，必须提高企业的自动化生产水平，让您的产品处于实时的，在线的，不间断的监控之下，海狮在线测厚系统正是管材以及塑料挤出行业处于先进水平的测厚系统之一。

开机阶段，即可直观发现管材的状况，杜绝废品、次品产生，缩短开机时间；

生产过程阶段，系统实时监测管材的厚度、偏心、椭圆以及外径。全程监控产品的变化，做出详尽的生产记录，并完整的存档，以备您随时对生产状况进行查验，让管材生产一直在您的掌控之中；

生产入库后，即便已经送达施工现场，如果您想知道某批次的产品情况，您只需打开本系统资料库，即可为您进行追溯。

Market competition increasingly, the pipe company in order to get high quality, high economic efficiency and high profitability, they must improve the automation production level to make your product under the real-time, on-line monitoring. Sealion ultrasonic online thickness measuring system is one of the high level thickness measuring system which apply to the pipe and plastic industry.

In boot stage: system can directly find the status of the pipe, put an end to waste, defective products, shorten the start-up time

In production process: the system monitor the pipe thickness, eccentric, elliptical and outer diameter in real-time, monitoring product changes and make detail production records complete saved. to check the production status at any time, let the pipe and tube production under your control

After warehouse: Even if you have already sent them on-site, if you want to know about the certain batch of product, you only need to open the database of this system and trace it back.

## Operating principle

### >> 超声波在线测厚系统的工作原理

海狮超声波在线测厚系统采用超声学原理，运用精密的高频超声波传感器，通过DSP高速数据采集和处理，对挤出生产线上运动的管材和线缆做非接触式的测量，并通过工业触摸屏显示管材截面，可以显示多个方位的壁厚偏差和偏心数据，直观可靠的提供给现场生产人员参考，及时对厚度、偏心、椭圆以及外径偏差做出处理，减少废管的产生，缩短开机周期，为您节约大量昂贵的材料和人工成本。

Sealion ultrasonic online thickness measuring system adopt ultrasonic theory, using precision high-frequency ultrasonic sensor, DSP high-speed data acquisition and processing. Measure the moving pipe and cable of extrusion line in non-contact way. Display the pipe section with touch screen. It displays the date of thickness deviation and eccentricity of various directions which refer to the local worker. To deal with thickness, eccentricity, ellipse and outer diameter deviation in time. Reduce waste pipe, shorten booting time, this will save lots of expensive materials and labor costs for you.

## The main function

### >> 主要功能

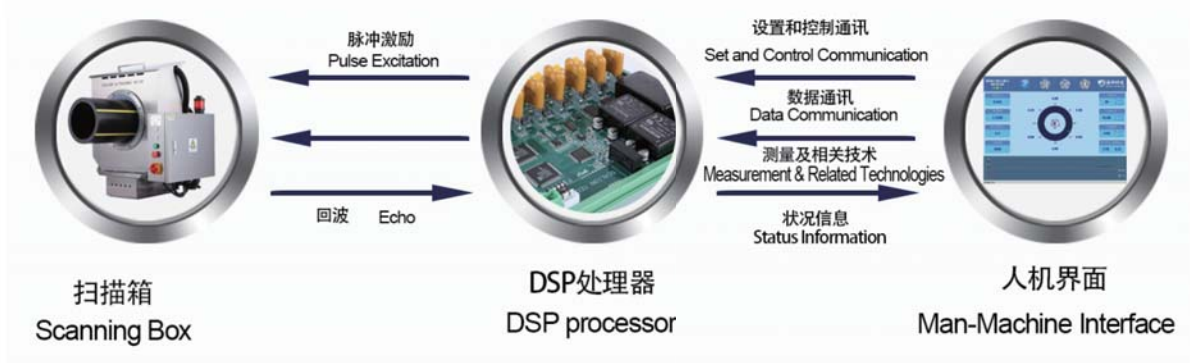


## Composition structure

### >> 超声波在线测厚系统组成结构

测量系统由扫描箱、DSP信号处理器，工控机和人机界面等软硬件组成，如下图：

The measuring system is composed of scanning box, DSP processor, IPC(industrial personal computer) and software. As follow



## 扫描箱

### Scanning box

扫描箱结构可对任何管材曲面进行完全吻合，保证探头脉冲信号与管材曲面保持垂直相切，确保了测量数值的准确性。实现超声波介质的均匀稳定，维持DSP信号处理的恒定，减少介质不稳定对信号的影响。同时该结构设计简洁直观，操作简单便捷。

Scanning structure can be perfectly fit for any curved surface of pipe, can keep the probe pulse signal and pipe surface vertical tangent, ensure the measuring value accuracy, make the ultrasonic media stability, maintain the DSP signal constantly, reduce the affective caused by media, also, The structure is simple, intuitive and easy to operate.

扫描箱内置超声波测量探头，分布结构如图所示

- 内置固定式超声波探头，可以测量一系列范围的管材壁厚。
- 超声波探头个数可选1、2、3、4、6、8、16（根据具体型号确定）
- 超声波探头为IP68防护等级，从而可直接固定的扫描箱上，整体安装在水箱里面。
- 可测量多层管材的厚度，每一层的厚度单独显示

Ultrasonic probe built in scanning box, the distribution structure is shown as follow:

- Built-in fixed ultrasonic probe, can measure all ranges of pipe thickness
- The number of ultrasonic probe can select 1, 2, 3, 4, 6, 8, 16 (according to the specific model)
- Ultrasonic probe protection level is IP68, so they can be fixed in the scanning box and installed inside the water tank;
- Can measure multilayer pipe thickness, display the thickness separately for each layer



## 超声波数字信号处理

### DSP/ Ultrasonic Digital signal processor

- 自主性：DSP能快速而准确地接收回波并区别杂波；
- 自调整：即使产品材质有所变化,根据所设参数，DSP能自行调整捕捉窗口锁定回波；
- 高精度：DSP对捕捉到的信号同步运输，保证计量数值的准确性；
- Autonomy: DSP can receive echos fast and accurate while distinguishing clutter echos
- Self-adjusting: Even if the product material change, DSP can self-adjust to capture echo according to set parameters.
- High-accurate: DSP transport capture signals synchronous, ensure the calculate date accuracy



显示控制硬件及软件

Display control hardware and software

- 配备工业级平板电脑，内置超声波测控软件，界面整洁直观
- Equip with IPC, Built-in ultrasonic measurement and control software, clean and intuitionistic interface.

Model

>> 超声波在线测厚系统型号

型号 Model	可测管径 ( mm ) Pipe O.D range	可测厚度 ( mm ) Thickness	探头数 ( 个 ) Qty of probe
SL-meas63	φ63	≤60	4
SL-meas125	φ63-125	60	4、8
SL-meas250	φ125-250	60	4、8
SL-meas315	φ250-315	60	8、12、16
SL-meas450	φ315-500	60	8、12、16、32
SL-meas630	φ500-800	80	8、12、16、32
SL-meas1200	φ800-1200	100	12、16、32



SL-Ultrascan 系列超声波在线测厚系是针对小管径和电缆在线测厚产品，同样采用超声波原理对管外径、厚度、偏心、椭圆实时测量及保存数据报表。适用于医疗导管，电线电缆，管材等相关行业。测量壁厚 0.3-10mm，直径3-40mm；

SL-ultrascan series of online thickness measurement system is for small tube and cable online thickness measurement and also measure pipe diameter, thickness, eccentricity, ellipse and save data reports using ultrasonic principle. Suitable for medical catheters, wires and cables, pipes and other related industries. Measuring wall thickness 0.3-10mm, diameter 3-40mm;

## Model

### >> 超声波在线测厚系统型号

型号 Model	可测管径 ( mm ) Pipe O.D range	可测厚度 ( mm ) Thickness	探头数 ( 个 ) Qty of probe
SL-Ultrascan10	φ3-10	0.3-3	4
SL-Ultrascan20	φ10-20	0.5-5	4
SL-Ultrascan40	φ20-40	1-10	4



# 失重式喂料机系统

lost-in-weight feeding system



海狮失重式喂料系统为动态加料系统，系统采用失重原理，自动控制并修正喂料量，实现喂料值恒定。喂料螺杆根据物料特性选定。对于处于喂料范围两端的，建议进行测试后选择合适的螺杆。

失重式喂料系统由料斗、喂料器（单、双轴螺旋喂料器）、称重系统和调节器组成，在操作中，料斗、物料和喂料器共同连续地进行称重。随着物料送出后，测量真实的失重速率，并将它与所需要的失重速率（设定值）加以比较。失重式喂料机通过调整喂料器速率来自动修正偏离设定点的偏值。从而可以均匀准确地连续喂送物料。

The sealion Lost-In-Weight Feeding System is a dynamic feeding system. The system adopt the principle of weightlessness to automatically control and correct the feed quantity and realize the constant feeding value. The feeding screw is selected according to the material characteristics.

The Lost In Weight Feeding System consists of hopper, feeder (single and double shaft screw feeder), weighing module and regulator. In operation, the hopper, material, and feeder are combined to weigh. As the material is sent out, the actual rate of weight loss is measured and compared with the required rate of weight loss (setpoint). The Lost In Weight Feeding System corrects the deviation from the set point automatically by adjusting the feeding rate. Thus, the material can be continuously and uniformly feed continuously.



## Application field

### >> 应用领域

原料生产、塑料改性、化工、塑料薄膜、电缆、管材等相关行业。

Raw material production, plastics modification, chemical industry, plastic film, cable, pipe and other related industries.

## Application range

### >> 应用范围

适用于颗粒、粉末、碳酸钙、滑石粉、树脂膜粉粒品、面粉、淀粉等不同形状的取药定量喂料在线生产过程。

The Lost-in-weight feeding system is suitable for the material such as powder, calcium carbonate, talcum powder, resin film powder, flour, starch and other shapes which are feeding on-line.

## Functional characteristics

### >> 功能特点

- 采用伺服控制、螺杆喂料；
- 下料性能稳定，精度高，输送能力可选范围大；
- 触摸控制屏，操作直观方便；
- 输出量或配方可实时更改；
- 本系统原件容易分解，组装简单，清扫容易；
- Servo control, Screw feeding
- Feeding stability, high precision, large range of transportation;
- Touch control panel, intuitive and convenient operation;
- Output or recipe can be changed in real time;
- The system is easy to decompose, easy to assemble and easy to clean;

## Model

### >> 型号与技术参数

型号Model	产量 Output ( dm/hr )
VVF-C1	100kg/h
VVF-C2	250kg/h
VVF-C3	350kg/h
VVF-C4	500kg/h



# 多组份混配料系统

ulti-component batch blender system



海狮多组份混配料系统是针对于在线自动混配料的需求，基于称重计量原理，根据每个组份的配比设定物料的加入量，所有组份物料的配比精度都受到程序检测和控制，采用自适应算法来保证加料精度。

The sealion multi-component batch blender system is meet the demand of the on-line automatic mixture, based on the weighing principle, set material addition according to the proportion of each component, The precision of proportion with all components are detected and controlled by software. using adaptive algorithm to make sure the feeding accuracy

## Application field

### >> 应用领域

塑料薄膜、电缆、管材、片材、原材料生产、塑料改性以及化工等其他行业。

Plastic film, cable, pipe material, sheet material, raw material production, plastic modification, chemical industry and other industries.

## Application range

### >> 应用范围

海狮多组份混配料系统适用于注塑、挤出或吹膜中需要多种原料按重量比例作精确混合使用的场合。该系列产品采用先进的配料算法，能根据实际下料量自动校准以确保精度，操作界面简洁、易学、方便。高精度重量传感器使批次的混合配比差控制在 $\pm 0.1\% \sim \pm 0.3\%$ 。

The Sealion multi-component batch blender system is suitable for injection molding, blown film and plastic extrusion industry which need accurate mixture with multiple material according to weight. This series of products adopts advanced batching algorithm. can be automatic calibrated according to the actual feeding quality. Simple operation interface. easy to learn and convenient. A high precision weight sensors control the proportioning error rate within  $\pm 0.1\% \sim \pm 0.3\%$ .

## Functional characteristics

### >> 功能特点

- 配比高精度，混料均匀；
- 底层软硬件控制，运行更可靠！
- 在线自动配料与混合；
- 抗干扰的滤波算法获得精确数据；
- 自适应配比控制，自动修正加料误差；
- 远程发送模块，便于生产；
- High accuracy proportioning. mixing uniform;
- Hardware and software control, more reliable operation;
- Batching and mixing automatically online;
- High accuracy by filtering algorithm;
- Proportional control, feeding error can be self-correcting ;
- Remote sending module, make production facilitate;

## Model

### >> 型号与技术参数

型号 Model	产量 ( kg/H ) Output	组份数量 Component Quatity
SEAMGBB-S1	≤150	2、4、6、8
SEAMGBB-S2	≤380	2、4、6、8
SEAMGBB-S3	≤660	2、4、6、8
SEAMGBB-S4	≤1020	2、4、6、8
SEAMGBB-S5	≤1680	2、4、6、8





## Chinaplas >> 中国橡塑展



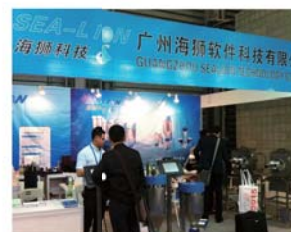
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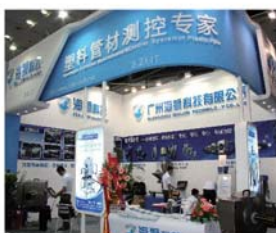
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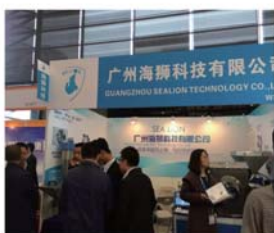
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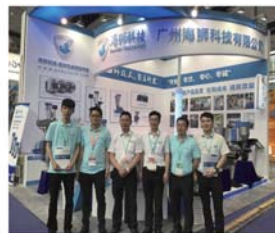
2014年上海橡塑展



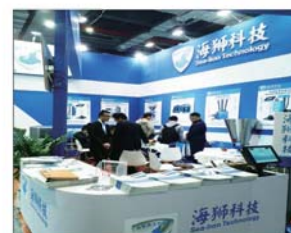
2015年广州橡塑展



2016年上海橡塑展



2017年广州橡塑展



2018年上海橡塑展

## Customer Training >> 客户培训



## Oversea Exhibition & Customer

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德国K展



伊朗橡塑展



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