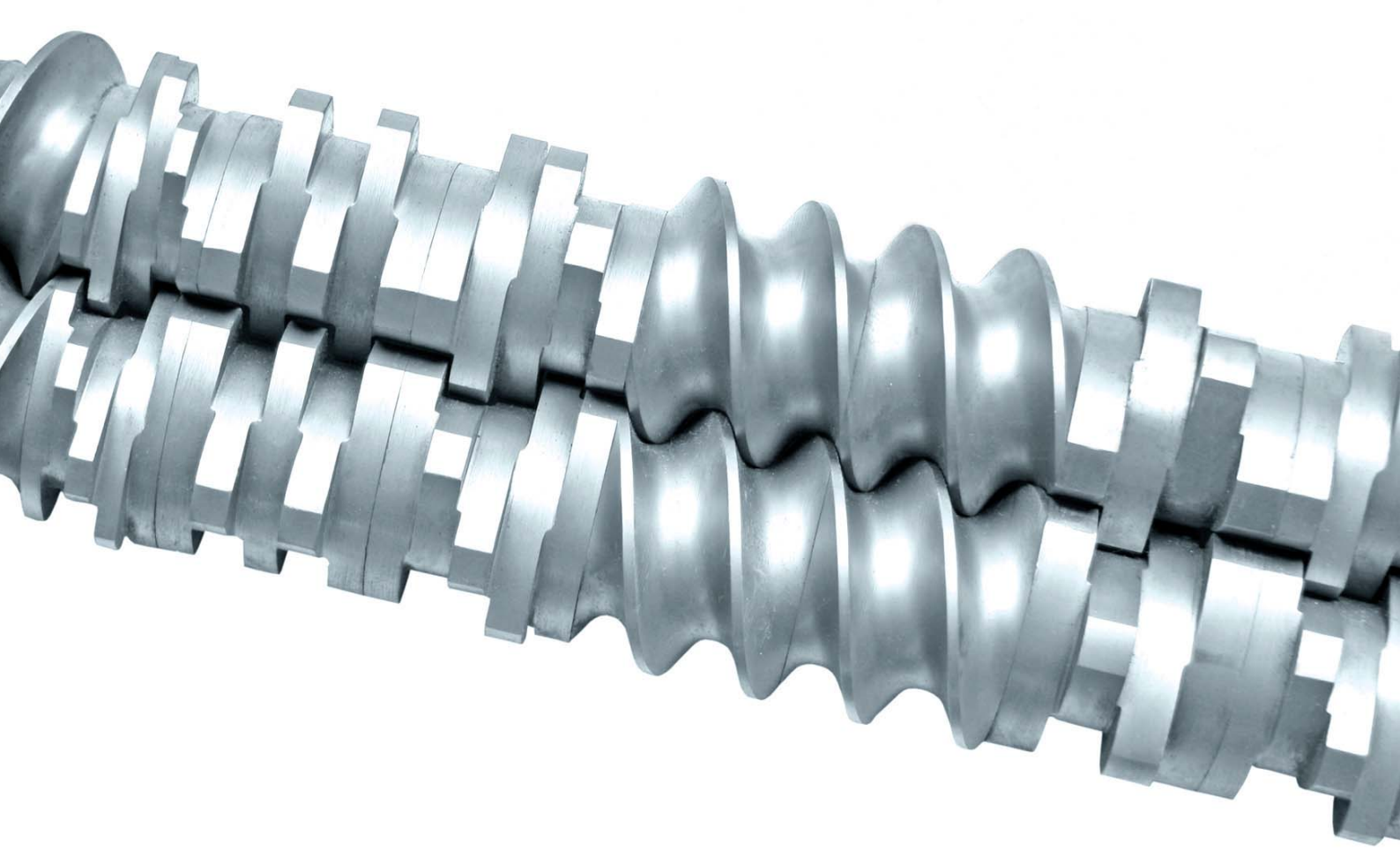


SAT COMPOUNDER

■ Applications ■ SAT features ■ SAT data sheet ■ EC data sheet ■ Lab compounder ■ Pelletizing units

CE

ISO9001-2000

USEON Extrusion

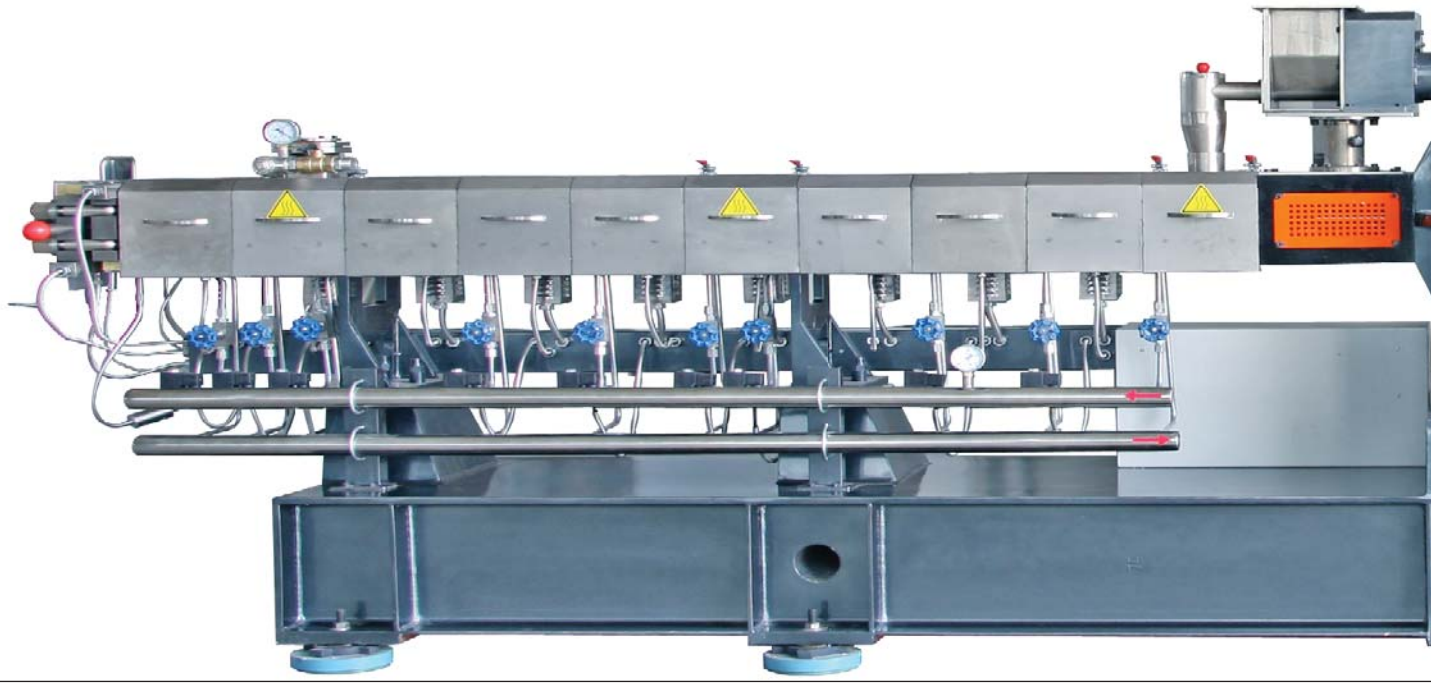
SAT-A MILESTONE OF USEON'S COMPOUNDER

USEON's extremely professional team always focus on the ongoing development for twin screw extruders. Since the first China-made high torque level twin screw extruder was installed in 2007, USEON has delivered more than 300 sets of high performance machines and now the series come to SAT. SAT series machines are exactly featured as it's label:

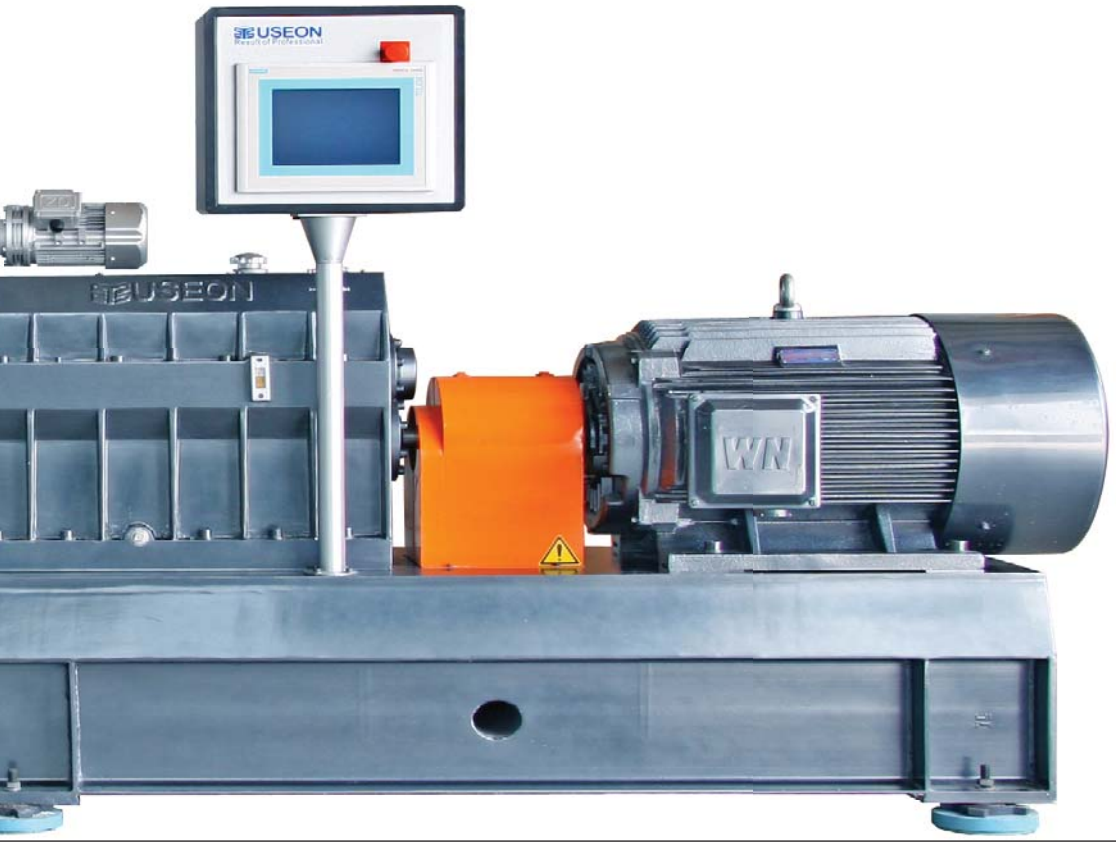
Safety--SAT series machines are equipped with sufficient safety protection systems to provide the highest safety factor.

Accuracy--SAT series machines are assembled with accurate parts that were mostly manufactured by the CNC tools. The innovative CNC tools for screw elements and kneading blocks ensure the high accuracy kneading effect.

Torque--SAT series machines are equipped the USEON-made high torque gearboxes. The strictly-monitored procedures with digital torque split trial provide the gearbox with extremely safety factor. All SAT series machines have specific torque factor of 10.30Nm/cm^3.

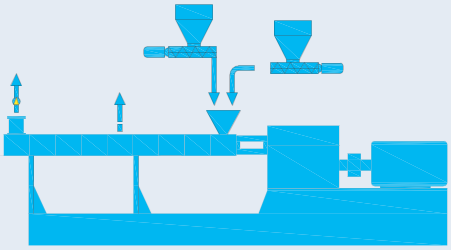


USEON's rich experience on polymer processing and other basic material processing and It's exploring and Innovating spirits will contribute to developments of the co-rotating twin screw extruders' application. USEON's strong technical background, multi-functional lab center and first-rate equipments will definitely meet with your specific technology requirements.

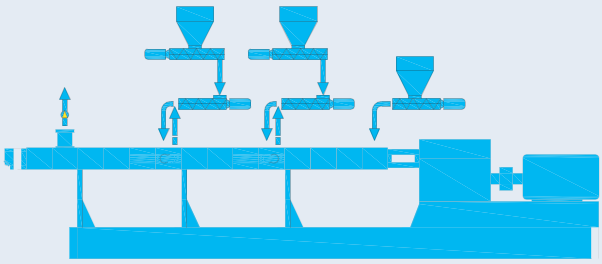


The features of SAT makes the series machines can be possible for precise compounding and accurate controlling of the process parameters. The low processing temperature, best mixing and higher throughput can be combined together in SAT machines. The procedural steps in compounding includes:

Metering → Feed intake and conveying → Melting → Dispersing / Homogenizing → Degass



Plasticizing and alloying



Filling and Reinforcing

Filling Modification

- Calcium carbonate
- Talc
- Barium sulphate
- TiO_2
- Ceramic powder
- Wood and fiber
- Other fillers

Masterbatch Preparation

- Carbon black
- Color pigments
- Flame-retardants
- Degradable MB
- Functional MB

Reinforcing Modification

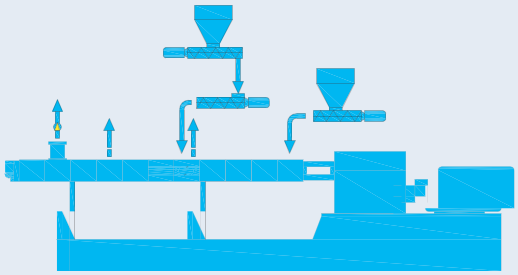
- Short GF
- Long GF
- Carbon Fiber
- Other fillers

Blending And Alloying

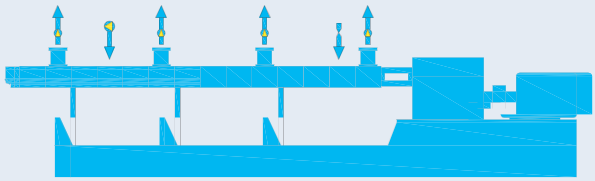
- Thermoplastic/Rubber
- Plastic alloy

Nearly all kinds of different materials and different technologies could be available with the USEON co-rotating twin screw extruders' great flexibilities resulting from modular metering and feeding systems, modular screw elements and barreis configurations, modular melt filtration systems and modular granulation systems.

Pressurization → Screening → Pelletizing or producing semi-finished product



Masterbatch production



Reactive extrusion and Degassing

Cable And Wires

- PVC series
- LSFH
- PE series
- PE cross-linkable
- Special cables

Reactive Extrusion

- TPU
- Polymerization
- PI
- PMMA
- POM
- Silicon rubber
- Grafting reaction
- Controllable degradation
- Other reaction

Degassing

- K-resin
- CPP
- FI rubber
- SBS/SEBS
- Others

Other Applications

- Direct extrusion
- Powder paints
- Polymer recycling
- Homogenization

The USEON-patented torque transmitter

The perfect concept of the split-transmitting principle has been successfully applied in USEON-patented gearbox. With the digital online monitoring system, each gearbox is assembled with precise positioning for torque balance.

The gearboxes are manufactured by USEON with CNC tooling machines. Each gearbox is guaranteed by USEON itself.

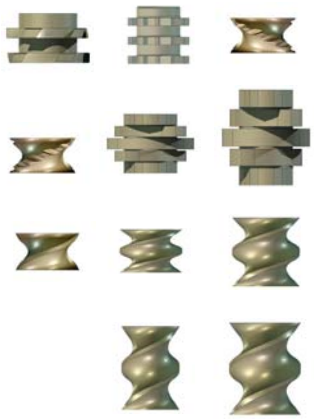
The specific torque factor is up to 10.3Nm/cm^3, which features the gearbox properties in twin screw extruder. Higher factor means stronger outputting force to screws.

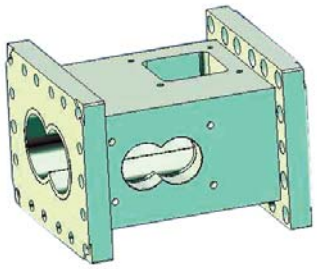
Screw elements

SAT series extruders feature the excellent self-wiping functions. Under the condition of balance between screw torque and screw channel volume,Do/Di is determined to be 1.55.

All screw elements are connected through the spline axial. The best nitriding steel with special heat treatment or highly anti-abrasive tool alloy with vacuum quenching treatment could be optional. Additionally,special stainless steel could be required when heavy corrosion appears for special tasks.

The most advanced specialized screw milling machines are equipped to manufacture the screw elements to have extreme surface quality and precision. High interchangeability is convenient for further configuration and maintenance.





USEON-patented heating design barrels and heat insulation

Barrel elements

SAT series extruders equip fully modular barrel elements and all elements dependant on process technology are connected together by high strength bolts units.

Nitriding steel barrels could be equipped for normal process tasks and the bimetal linear barrels are preferred for high abrasive tasks.The bimetal linear is coated with one special alloy.

SAT series barrels apply the lastest design of cooling channels Inside to make the cooling efficient and quick.The barrels have extreme smoothness and high precision made from the special machines.The high Interchangeable features make it easy to replace or adjust when required.

Torque limiter-the overload protection torque limiter

Over-load protection

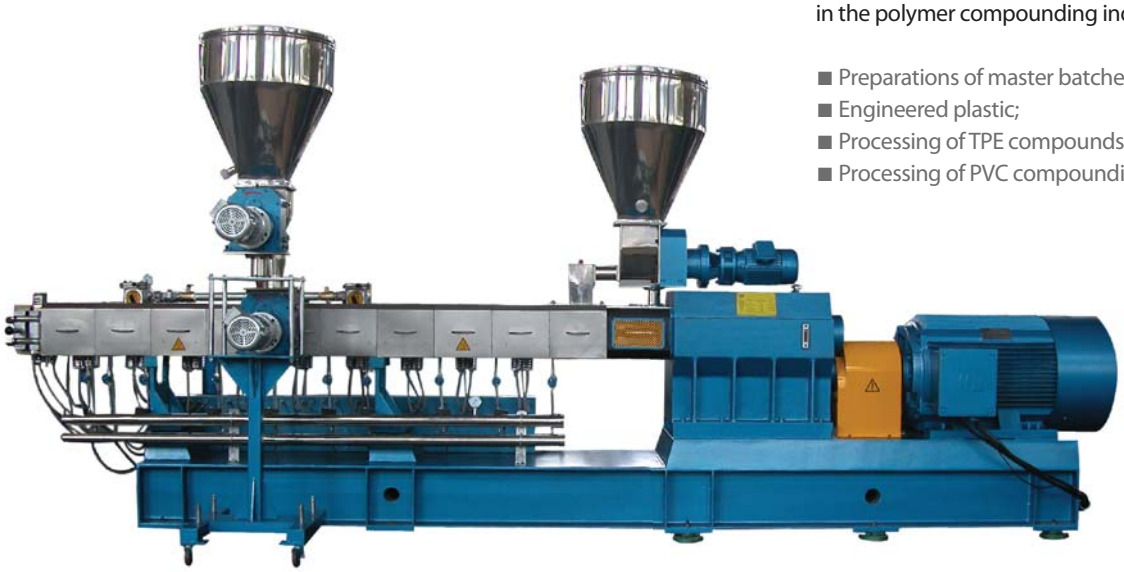
■ Torque limiter-the overload protection torque limiter applied for instant protection for gearbox and extrusion units. This will be helpful for sudden mechanical load protection.

■ Precise speed difference sensors and control panel. There are two sensors between the motor side and gearbox side which will transfer digital signal to control system once any readable speed difference for the both sides speed occurs.

■ Overloading protection from the main motor driving unit

EC compounder-Economic solutions

EC-compounder series machines are specially designed for those users who wish to make small to medium size compounding quantities. The EC series machines have the features of easily-maintained, simple operation concept, and user-friendly. The EC-series machines have significant PRICE/PERFORMANCE ratio.



The EC-compounders are designed for a wide range of uses in the polymer compounding industry:

- Preparations of master batches;
- Engineered plastic;
- Processing of TPE compounds;
- Processing of PVC compounding with tandem extruders.

TDY Counter-Rotating Extruders-Specially for reaction and devolatilization

Along with the enterprise management criteria"quality as essence and innovation on technology", USEON has developed and is developing more and more new technologies to meet with the higher and latest technological demands from customers. TDY series extruders, as a distinguished extruder model, are featured with very special mixing principles and consequently new options for some critical demands.

Extremely large exposures surface area, specially for polymer reaction extrusion and devolatilization process.
Modular extrusion unit for flexible purposes, that is borrowed from the co-rotating twin screw extruders.
Unique elongation flow effect to have weaker shearing effect, but better mixing

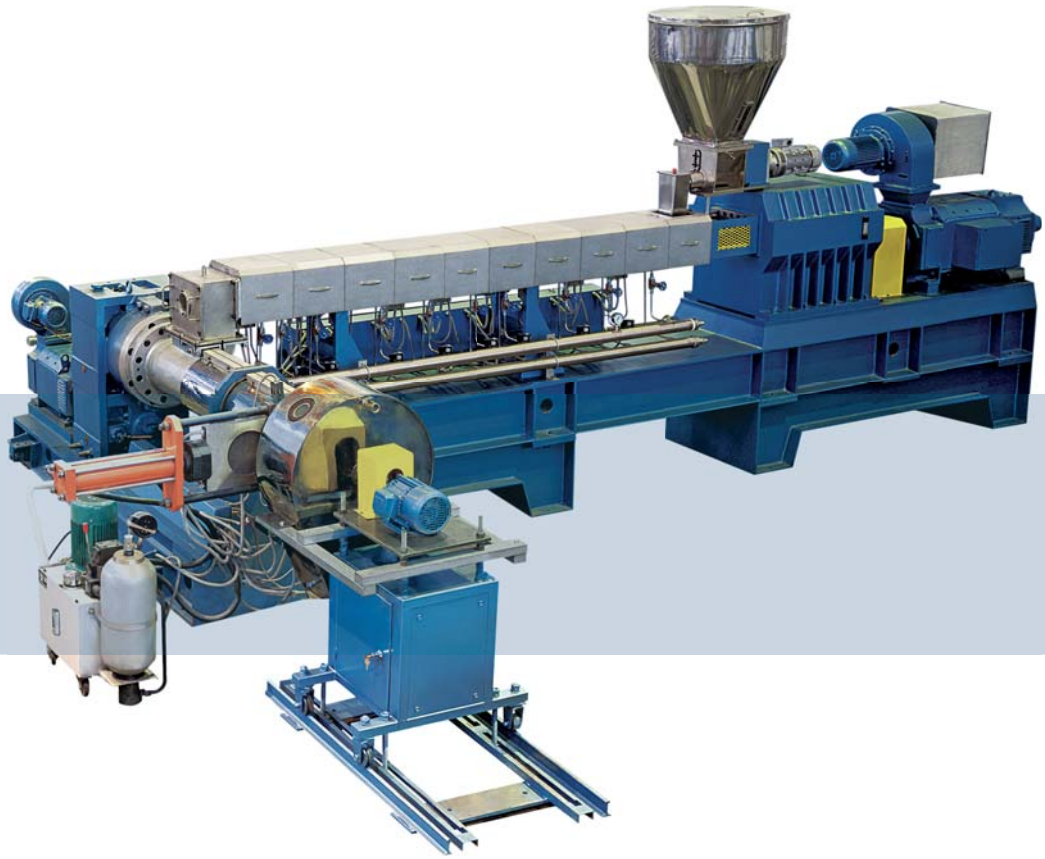
Based on the above features, TDY extruders can be successfully applied to the following purposes.

- Polymer reactive extrusion.
- Polymer devolatilization.
- PVC compounding.
- WPC inline compounding extrusion.

Lab-compounder-trial machines

Lab compounders are specially designed for the trial-level or entry-level users, or the small scale production for color masterbatch and some functional masterbatch.

Fully integrated features are demonstrated in the Lab compounder. All the temperature controlling systems, electric controlling systems and even the mini-vacuum system are integrated into the machine frame. There are water terminal ports and plugs for electric source available. All jobs for users are just to plug in cables..



Tandem compounders

Tandem extruders for pelletizing

As mentioned, before pelletizing without water involved the melt should be cooled enough for some compounds. And for some applications, it is necessary to avoid over shearing and overheat that are usually caused by too high screw speed in the compounding extruders and the melt should be cooled and pumped by the proceeded single screw extruder with lower screw speed and cooling capacity if required. Beside these, because of nearly on pumping capacity, TDW reciprocating single screw extruders should be equipped with melt screw extruders to pump the melt or direct forming of products. The typical processing applications includes **PVC, LSFH, WPC, EVS, cross-linkable PE and high concentration carbon black MB, etc**

Technical Data Sheet

SAT Series

model	SAT40	SAT52	SAT65	SAT75	SAT95	SAT110	SAT130
Dia. mm	41	51.4	62.4	71	93	110	130
rpm	600	600	600	600	600	400	400
L/D	32~64	32~64	32~64	32~64	32~64	32~64	32~64
Motor kw	55	110	180	280	500	750	1200
Torque NM	438	875	1432	2228	4000	8953	14325
Outputkg/hr	130~200	320~430	400~800	750~1200	1500~2600	2000~4500	3000~6000

EC Series

model	EC40	EC52	EC65	EC75	EC95
Dia. mm	41	51.4	62.4	71	93
rpm	600	600	600	600	600
L/D	32~64	32~64	32~64	32~64	32~64
Motor kw	30	55	90	132	315
Torque NM	240	440	720	1050	2500
Outputkg/hr	50~100	120~250	150~300	250~600	800~1500

Tandem Compouding Lines

model	Dia. mm	rpm	L/D	Motor kw	kg/hr
SAT52-180	52/180	600/90	32~64/8	110/75	200-600
SAT75-220	72/220	600/90	32~64/8	250/132	500-1500
SAT95-240	93/220	600/90	32~64/8	550/220	1000-3000

TDY Series

model	TDY40	TDY52	TDY65	TDY75	TDY95	TDY110
Dia. mm	41	51.4	62.4	71	93	108
rpm	600	600	600	600	600	400
L/D	32~64	32~64	32~64	32~64	32~64	32~64
Motor kw	30	55	90	132	280	450
Torque NM	240	440	720	1050	2228	3400
Outputkg/hr	50~100	120~250	150~300	250~260	600~1200	1000~2000

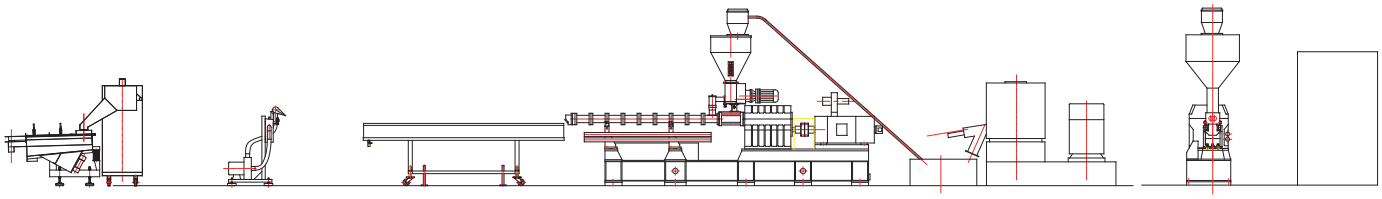
Lab Compounder

model	Dia. mm	rpm	L/D	Motor kw	Kg/hr
Lab-20	20	750	32~64	7.5	2~20
Lab-30	30	600	32~64	18	5-30

Pelletizing systems

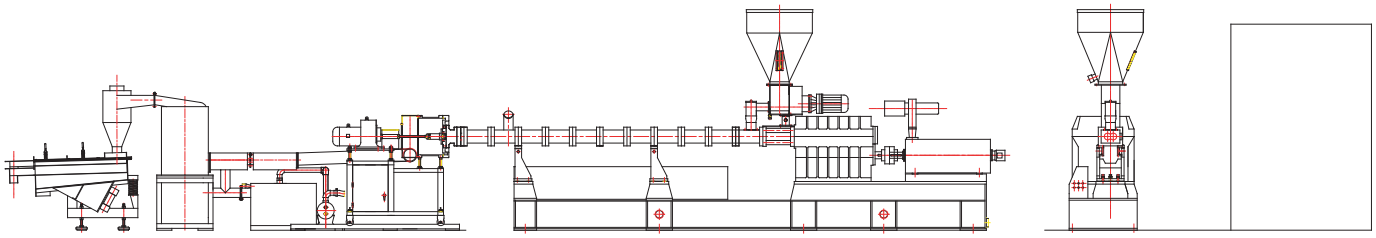
Strand Die

Strand die is proper for most applications of pelletizing. It features simple construction, convenient operation, easy maintenance. It is built of strand die, water bath, air wiper pelletizer, shifter, and packaging.



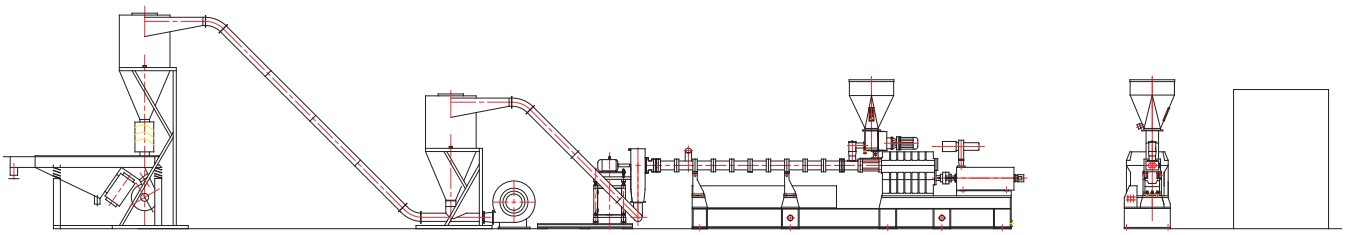
Water Ring Pelletizing System

Water ring pelletizing system could be applied to some polymers, including PE, PP, PS, TPU, EVA etc. Its pellets has smoother appearance and better flowdity. The main components include extrusion plate, pelletier, water circle system, centrifugal dewater machine, silo and packaging system. The final products look round and smooth.



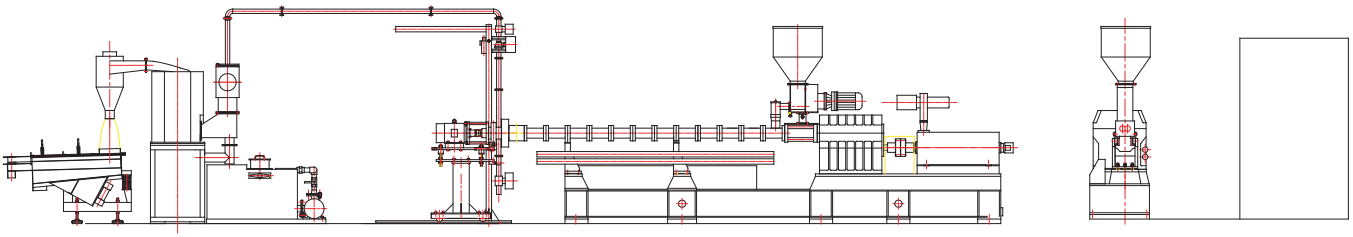
Air-Cooling Pelletizing System

Air-cooling hot face pelletizing system could be applied to process of some special polymers, including PVC, LLDPE, MB, highly filled Calcium Carbonate MB, degradable MB, LSFH, carbon black MB, cross-linkable PE. Air cooling hot face pelletizing system could avoid the moisture involved during pelletization process with replacing of air cooling. The main components usually include extrusion die plates, pelletizer, cyclone cooler and conveying units, shifter, silo and package units.



Under Water Pelletizing System

Under water pelletizing system could be used to process most polymers, especially for some special material that could not be palletized by other kinds of pelletizing systems, such as TPU, TPV etc. The under water pelletizing system is relatively complicated and highly costly to maintain. The main components in this system usually include extrusion die plates, pelletizer, water circle system, centrifugal dewater, silo and packaging system.



Control options

USEON equipments could be equipped with different control levels to adapt individual customer requirements.Either the simplified flow chart panel with running status indication or the industrial PC system with site BUS system,we could meet with nearly all strict requirements.High controlling precision and fully automatic levels are both avallable for our single machine or turnkey projects.

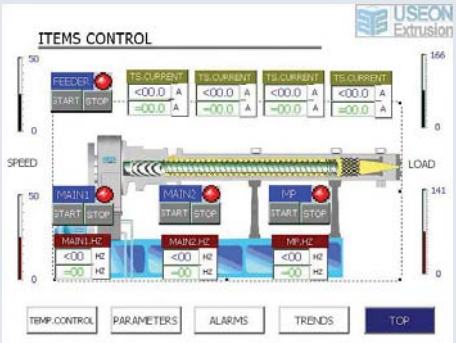
Auto-Control 1

Flow chart diagram-to online show the running status of main motors, solenoid valve, water pumps,oil pumps, auxiliary motors or blowers;

Panels-temperature control panels, RPM indicator, load indicator, time accumulator, power consumption accumulator etc.;

Speed adjustor-Regulators to change motor speed;

PLC-Optional for logic control and safety control;



Auto-Control 2

Touch screen and industrial PC-standard Omron touch screens or Simens products,size variable for machines;

PLC-Omron or Simens for logic control,safety control,close-loop control and synchronous control;

Speed adjustment and safety protections-set by screens;

Help system-Alarm system and diagnosing system;

USEON, a system solution parnter

To select USEON is ont only selection of best extruders but also selection of best partner!

Consulting us anytime

If you are a rich-experienced user of twin screw extruders,you could purpose any possible requirement on equipment and USEON will definitely give you strong supports with our extruders.

If you have no professional know-how on extruders,USEON will share our rich experience and knowledge with you to get the most reasonable technology and equipments.

If you have no enough learning about extruders,USEON's professional technical team will give you detailed consulting.More importantly,USEON will share its own lab center with you.You could carry out any possible labs in USEON before your decision of purchasing machines.

First-rate equipments with reliable quality and advanced performance,high responsibilities with strong technical support could make USEON enough trustable.

How to select proper extruders

1、To learn fully about the working principle and features and identify whether twin screw extruders are suitable for your materials,your technologies and final products.

2、To determine the main parameters,I.e.L/D,screw diameter,driving motors,screw speed according to technology and capacity requirements.

3、To fulfill the auxiliary systems,I.e.metering and feeding units,vacuum units,screen changers and pelletizing units according the proper technology.

All the steps involved will be easily and properly determined with USEON's professional team if you contact us.

Result of professional

Compounder

SAT Twin screw compounder and Pelletizing line

Foam extrusion

IFC-USEON Eco-friendly Polymer foaming extrusion line

WPC technic

Direct extrusion lines for sheet/film/board

USEON Extrusion

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