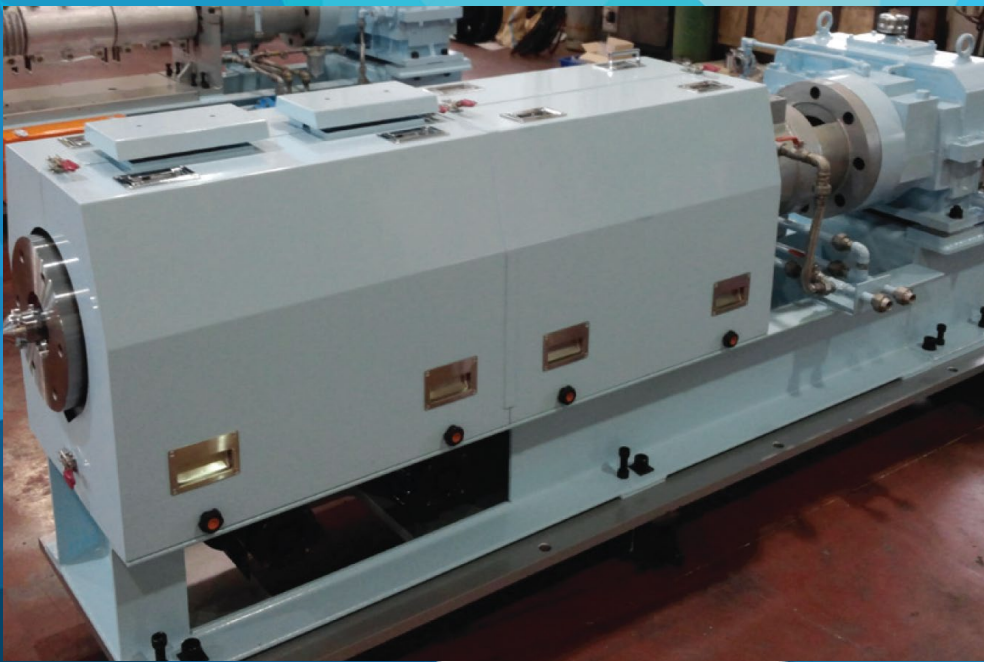


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# ILJIN A-TECH

## ILJIN Advanced Technologies...

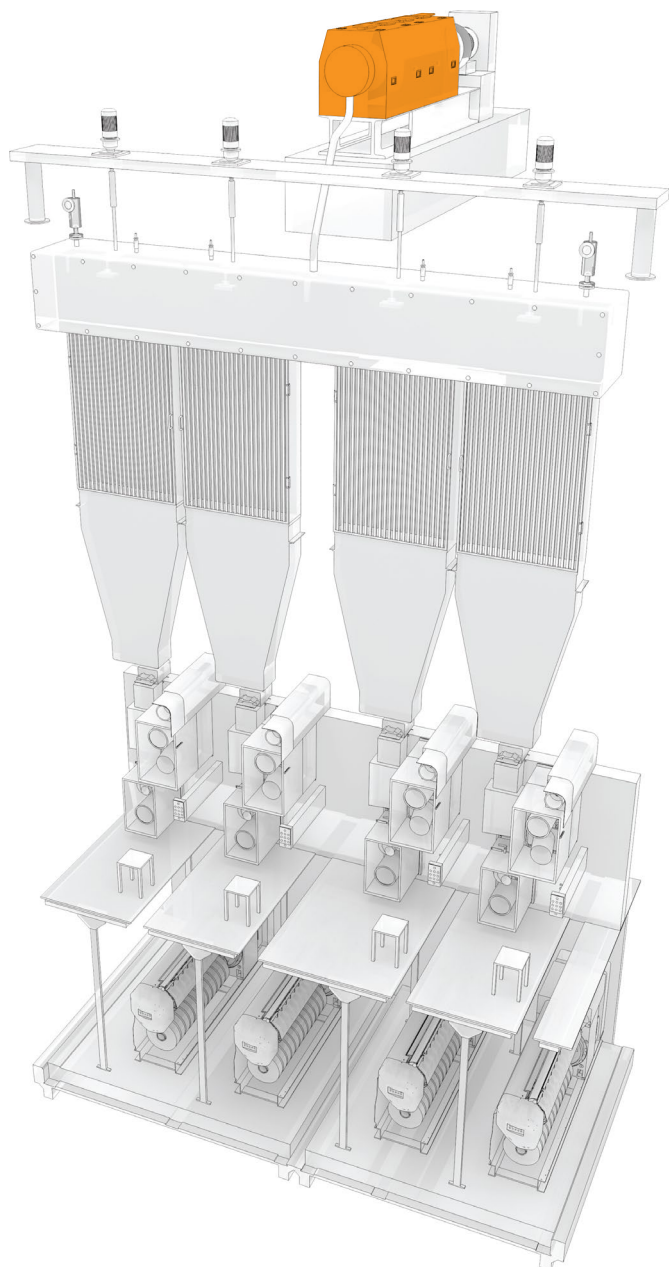
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Our equipment is best choice for your benefit.  
Manufacturing by large-scale, heavy-duty machining tools.



## Spinning Extruder

With decades of experiences and expertise, ILJIN has delved into the meticulous precision of extruders. Extruding facility built by ILJIN Series is expressly and precisely designed for producing synthetic yarns with PET/PA6 or PET/PP Chips mixed. Our relentless efforts and experience over the decades lays the foundation of realizing high profile technology and machining schemes.

# Spinning Extruder



## Application

Melt spinning of PET/PA6/PA66 & PP chips.

## The characterizes of our extruder

### High Melting Performance

The applicability of screw designs has been delicately managed, so that our offerings work fit, conveying high melting performances.

### Energy Efficiency

Our extruder optimizes its energy uses by high-profile components. The major parts, including insulations, thermostats, and inverter motor, are harmoniously interlocking each other, eliminating wasted energy as much as 20 ~ 30%

### High Durability

Our decades of experiences and know-how guarantee the major machines' durability. High precision in machining prevents being worn-out and strong rigidity from Bimetal alloy stands against unfriendly working conditions.

### Easy Operation

Our operation system is very user-friendly and efficient. Centralized basement system(DCS system) of our choice has its users comfort and ease and every component from global conglomerates ensures its high proficiency and optimization of this system.

### Electric control system for Extruder

We simplify the system's interfaces by adapting the direct interfaces and with the support of efficient design comes accuracy and safety to its users. The components of our choice are always from highly regarded corporations in order to certify the system's high particularity, safety, and constant performance. This system can be added with extra functions like ethernet control and so on, to customers' request.



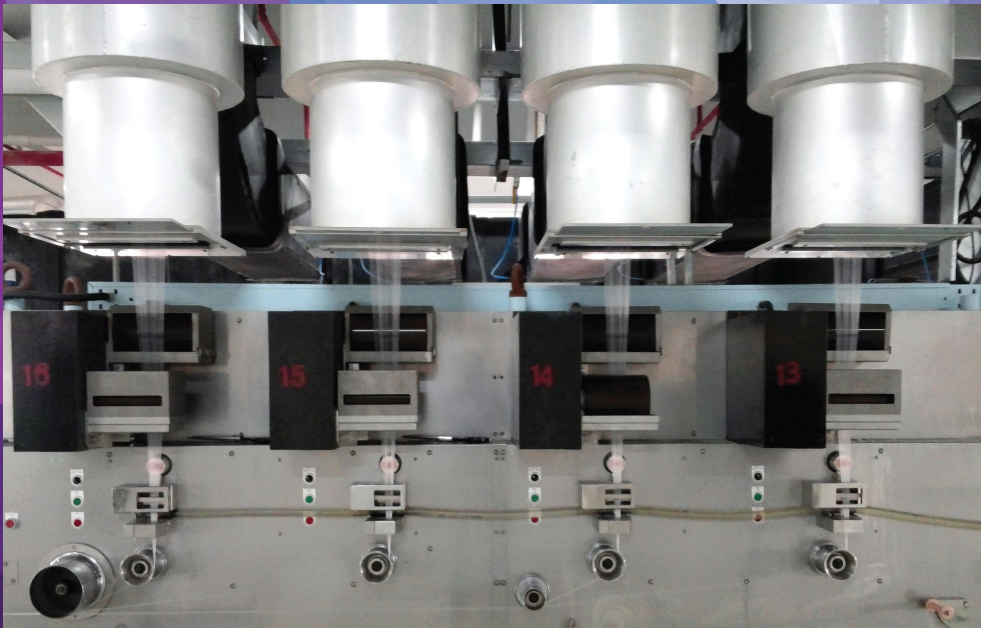
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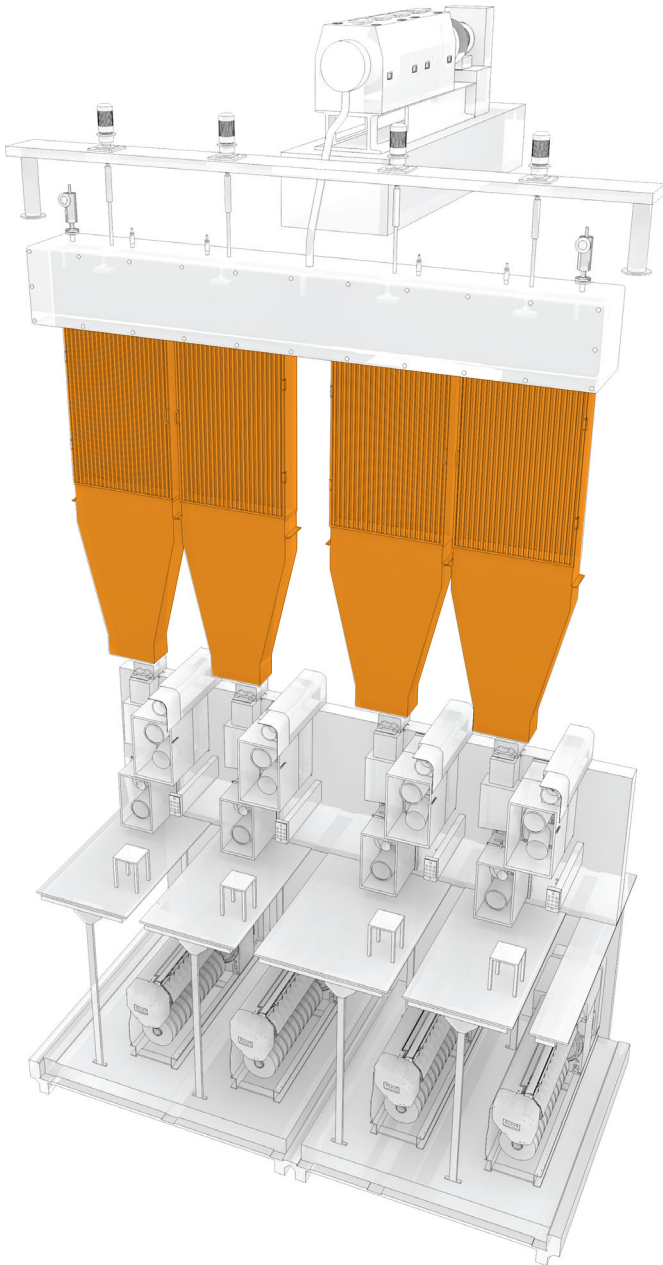


## Quenching system

During the quenching process, filament is cooled down at a melting temperature below glass transition temperature. Its features and system designs are determined by the type of material due to the different glass transition temperature. Therefore, we contemplating over various features (ie. the size and shape of spinneret, number of filament output, size of denier, and structure of spin beam) decide to set the specifications of quenching system. Over the years of researches, development, and accumulated expertise, we have provided precise and optimized quenching system whose application includes PET, PA6, PA66 and PP for the type and specifications of fiber.



# Quenching system



## Application

PET/PA6/PA66 & PP

## The type of Quenching



### Open Flow(Cross Flow) Quenching

It is the most commonly used quenching system, equipped with honeycomb or sintered mesh as a rectifier.



### Out Flow Quenching

This low pressured Out Flow System is categorized in open window type, a cooling method that carries film from inside to outside to cool down. It has the maximum air pressure at 2500pa, is used as a rectifier, low in air speed reduction and easy to be cleaned up.



### In Flow(Circular) Quenching

In-flow system has its quenching tube tightly sealed with spinning beam by means of the controlling valve. Fujibon filter or mesh filter is used as a rectifier and like Out-flow Quenching low in air speed reduction and easy to be cleaned up.



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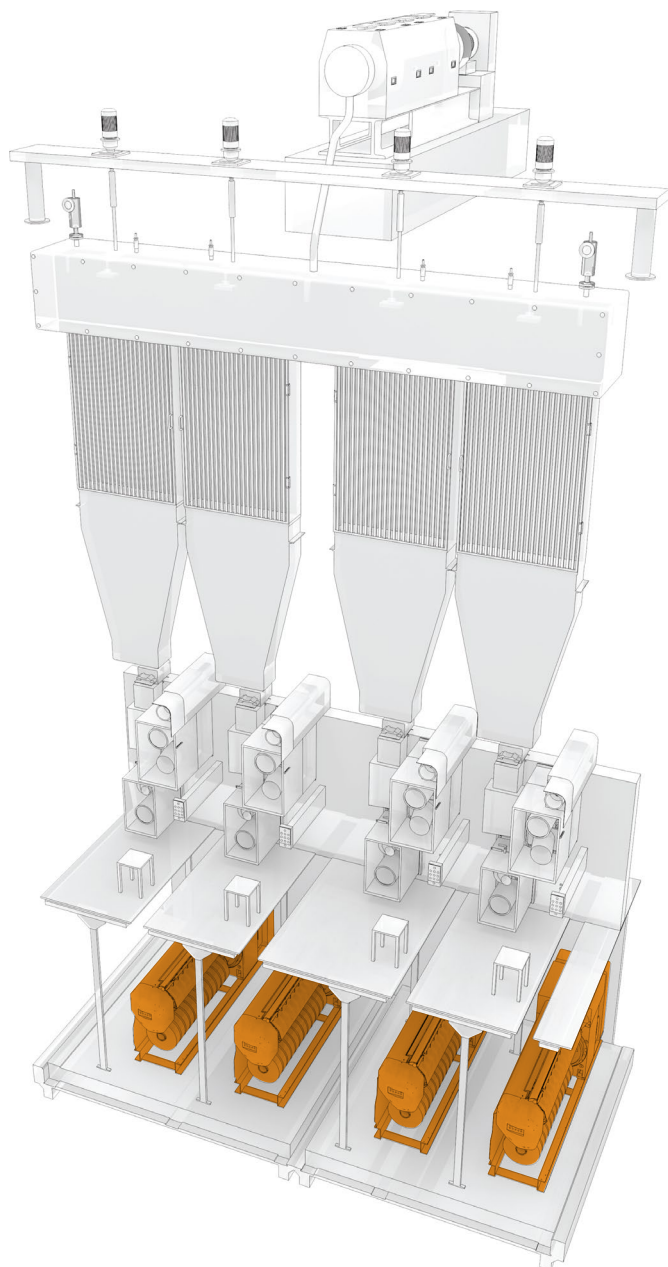
## Winder

Winder is a machine that forms the final shape of yarns and winds it up.

We, ILJIN A-TECH, produce facilities churning out synthetic fibers such as Spandex, PET, PA, and similar sorts.



# Winder



## Superior Adaptability

Our offerings can be manufactured with its specification up to the customer's appetite and its manufacturing lines varied.

All environmental factors given by customers are applied to our drawings, a complete adjustment.

## Whole Package of profitable features

In addition, the high profile technology has been implemented in Winder designed by ILJIN. Our research on Winder machines allows its outstanding performance; winding at a high-paced speed, improved productivity, compact design, and high energy efficiency.

The trials and experimentations on Winder are aggressively ongoing, in order to guarantee the flawless and high-end packages particularly when outputs are unwoven for post-processes.

### Spandex

	ISW-516	ISW-516D	ISW-212L
YARN(DENIER)	20~300	20~40	500~1,300
SPEED(m/min)	500~1,200	500~1,200	200~750
B/H LENGTH	920mm	920mm	690mm
NUM. OF PACKAGE	16	16x2	6
PACAGE DIAMETER	Ø200	Ø180	Ø320
TRAVERSE WIDTH	44	44	92
BOBBIN DIAMETER	Ø73.5xØ83	Ø73.5xØ83	Ø73.5xØ83
BOBBIN LENGTH	57.5mm	57.5mm	115mm
DRIVE SYSTEM	FRICTION	FRICTION	FRICTION
TRAVERSE SYSTEM	CAM	CAM	CAM
CONTROL SYSTEM	INDIVIDUAL	INDIVIDUAL	INDIVIDUAL
	INVERTER	INVERTER	INVERTER
	CONTROL	CONTROL	CONTROL
DIMENSIONS	1,810x433x806	1,900x566x1345	1,502x538x993

### PET, PA

	IJAT-508C	IJAT-1612	IJAT-1624
SPEED(m/min)	3,000~4,500	3,000~5,500	2,500~5,500
TRAVERSE SYSTEM	CAM	ROTARY	ROTARY
CHUCK LENGTH	1,200mm	1,380mm	1,380mm x 2
PAPER TUBE	Ø110xØ124	Ø110xØ124	Ø110xØ124
PACKAGE OUTER DIAMETER	Ø400	Ø440	Ø430
DIMENSION	2,892x675x1324	2,776x749x1267	2809x1126x1190

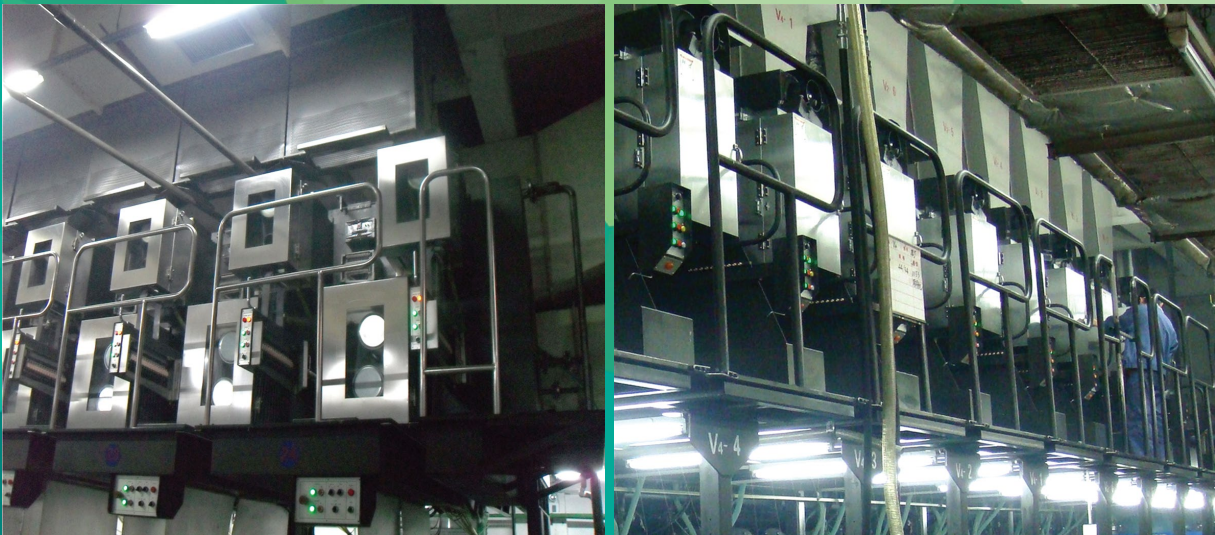


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## FDY Spinning Solution (PET, PA-6)

Fully-drawn yarns (FDY) are used to manufacture textile fabrics without the need for further finishing. Wherever textiles are to hang smoothly or glide fully-drawn yarns are used. Our core competence is the sophisticated design for energy efficiency and system for high quality standard yarns. Varying its size and specifications, our products give privileged advantages to customers' success. The high-end production of filament and energy saving structure – these are a few of numerous reasons to be ILJIN as a chosen one.

# FDY Spinning Solution (PET, PA-6)



## Competence

### Up to 30% Energy saving

With ILJIN Systems, you can save 20~30% energy efficiency by special designed spinning beam solution.

### High Quality Yarns.

The quality of the yarns can now be exactly adapted to your requirements.

with ILJIN systems, you don't have to concern about yarn quality.

you can spin raw material with stable temperature distribution and a high efficiency mixer.

also our quenching system helps you can have uniform quality yarns by Iljin's innovated air flow technology.

### Spinning costs saving

With ILJIN systems, you can save spinning cost by precise temperature control system.

also you can save maintenance costs by special designed spinning pack for easy assembling.

### Better Quality and better performance

With Iljin system, you can look forward to a outstanding product quality even in harsh working condition by strong durability Barrel made of bimetal.

and also finely designed monomer suction and steam stray, precise air distribution, improved GR3 specification and so on – features of our products - clearly demonstrate us surpassing our rival companies' performance especially for micro filament produce.

### PET-FDY Spinning Technical Specification

Spinning type	Chip Spinning or director Spinning
Denier/Fila	33~330/12~144F
End/Position	8,10,12,20,24
Winding Speed	3500~6000m/min
Godet roll	HotΦ220x490/Φ250x500
Separator roll	ColdΦ110x490/Φ125x500
Pack type	Round or Double housing
Spinneret	Φ50~Φ110
Quenching Chamber	Closs Q.C
Finish Oil	Oil roll or JET Spray
Winder	Auto Winder

### PA6-FDY Spinning Technical Specification

Spinning type	Chip Spinning
Denier/Fila	20~330/12~144F
End/Position	8,10,12,20,24
Winding Speed	4000~5000m/min
Godet roll	HotΦ220x450
Separator roll	ColdΦ110x450
Pack type	Round or Double housing
Spinneret	Φ50~Φ110
Quenching Chamber	Closs Q.C
Finish Oil	Oil roll or JET Spray
Winder	Auto Winder





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## POY Spinning Solution (PET, PA-6)

Our system is designed for outstanding yarns quality (whether PET or PA-6) as extruder or direct spinning. Our core competence is the sophisticated design for energy efficiency and system for high quality standard yarns. Varying its size and specifications, our products give privileged advantages to customers' success. The high-end production of filament and energy saving structure – these are a few of numerous reasons to be ILJIN as a chosen one.

# POY Spinning Solution (PET, PA-6)



## Competence

### Up to 30% Energy saving

With ILJIN Systems, you can save 20~30% energy efficiency by special designed spinning beam solution.

### High Quality Yarns.

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you can spin raw material with stable temperature distribution and a high efficiency mixer.

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and also finely designed monomer suction and steam stray, precise air distribution and so on – features

of our products - clearly demonstrate us surpassing our rival companies' performance especially for micro filament produce.

#### PET-POY Spinning Technical Specification

Spinning type	Chip Spinning
Denier/Fila	20~330/12~144F
End/Position	8,10,12,20,24
Winding Speed	4000~5000m/min
Godet roll	ColdΦ180x180
Pack type	Round or Double housing
Spinneret	Φ50~Φ110
Quenching Chamber	Closs Q.C
Finish Oil	Oil roll or JET Spray
Winder	Auto Winder

#### PET+PA6-Composite Spinning Technical Specification

Spinning type	Chip Spinning
Denier/Fila	55~330/24~144F
End/Position	6, 8
Winding Speed	2500~4000m/min
Godet roll	ColdΦ160x160
Pack type	Top Mounted Round
Spinneret	Φ115
Quenching Chamber	Closs Q.C
Finish Oil	Oil roll or JET Spray
Winder	Auto Winder



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## Bi-Component Spinning Solution (PET+PA-6 POY Composite Filament Spinning)

Bi-component yarns are special POY material being manufactured by special process combine 2 different raw materials. Devide shapes are as orange-shape, sea-island, side by side and so on.



# BI-Component Spinning Solution

## (PET+PA-6 POY Composite Filament Spinning)



### Customer Satisfaction.

Combined with finely designed products and strong sense of customary focus, our products give privileged advantages to customers' success.

The high-end production of filament and high tolerant structure – these are a few of numerous reasons to be ILJIN as a chosen one.

### Better Quality and better performance

With Iljin system, you can look forward to a outstanding product quality even in harsh working condition by strong durability Barrel made of bimetal.

and also finely designed monomer suction and steam stray, precise air distribution, improved GR3 specification and so on – features of our products - clearly demonstrate us surpassing our rival companies' performance.

### Specialized Design

You don't have to concern the risk of temperature difference.

our special designed spinning beam prevent temperature problem.

2 spinning zones as High melt polymer zone and low melt polymer zone are separated and this special design can give you high quality yarns.

Also, our pack is designed 2types as Top mounting or bottom mounting type.

### PET+PA6-Composite Spinning Technical Specification

Spinning type	Chip Spinning
Denier/Fila	55~330/24~144F
End/Position	6, 8
Winding Speed	2500~4000m/min
Godet roll	ColdΦ160x160
Pack type	Top Mounted Round
Spinneret	Φ115
Quenching Chamber	Closs Q.C
Finish Oil	Oil roll or JET Spray
Winder	Auto Winder



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## Industrial Yarn Spinning Solution

This type of facility is expressly designed for producing a various kind of yarns (PET, PA, PP and etc) from chips in high velocity. With the technology of multiple layers of elongation and heat settings, our recipe creates excellent performances in churning out industrial Polyamide Yarn in high intensity and low shrinkage.

# Industrial Yarn Spinning Solution

## (PET+PA-6 POY Composite Filament Spinning)



### High Durability

Superior designed Screw is installed inside of Extruder and it enhances melting performance with low calorific feature minimizing the velocity drop rates.

Spinneret assembled in Bottom Mounting Pack realizes withstanding the high pressures and gasket-less structures with self-sealing design. These two features allow extremely low failure rates, having the performance of this facility long and consistent. of numerous reasons to be ILJIN as a chosen one.

### Adaptability

Countless requirements and specifications from the numerous types of Industrial Polyamide Yarn are fulfilled by the means of multiple layers of elongation and different degrees of framed temperature in each section.

### Stability

The surface of Hot Godet Roller is heated by the induction heaters evenly and safely. The heating section is designed to be heated individually under the control base.

## PET-INDUSTRIAL YARN Spinning Technical Specification

### High Tenacity & Low shrinkage

Spinning type	Chip spinning		
Denier	250~500	1500	2000~3000
End/Position	4, 6, 8, 12	4, 6, 8	4, 8
Winding Speed	3000~6500m/min		
Godet roll	HotΦ250x400		
Pack type	Round		
Spinneret	Φ220~Φ240		
Quenching Chamber	Circular Q.C		
Finish Oil	Oil roll or JET Spray		
Winder	Auto Winder		

### High Speed Industrial

Spinning type	Chip spinning		
Denier	1000	1500	2000
End/Position	3,4	3,4	3,4
Winding Speed	3000~6500m/min		
Godet roll	HotΦ250x400		
Pack type	Round		
Spinneret	Φ220~Φ240		
Quenching Chamber	Circular Q.C		
Finish Oil	Oil roll or JET Spray		
Winder	Auto Winder		

### Super Low shrinkage

Spinning type	Chip spinning	
Denier	500	1500
End/Position	4, 5, 6	4, 6, 8
Winding Speed	2500~4000m/min	
Godet roll	HotΦ220x500	
Pack type	Round	
Spinneret	Φ150	Φ220
Quenching Chamber	Circular Q.C	
Finish Oil	Oil roll or JET Spray	
Winder	Auto Winder	

## PA-INDUSTRIAL YARN Spinning Technical Specification

### High Tenacity

Spinning type	Chip spinning		
Denier	420	840	1260~1680
End/Position	4, 6, 8	4, 6, 8	3, 4
Winding Speed	2500~4000m/min		
Godet roll	HotΦ250x400		
Pack type	Round		
Spinneret	Φ120~Φ220		
Quenching Chamber	Class Q.C or Circular Q.C		
Finish Oil	Oil roll or JET Spray		
Winder	Auto Winder		



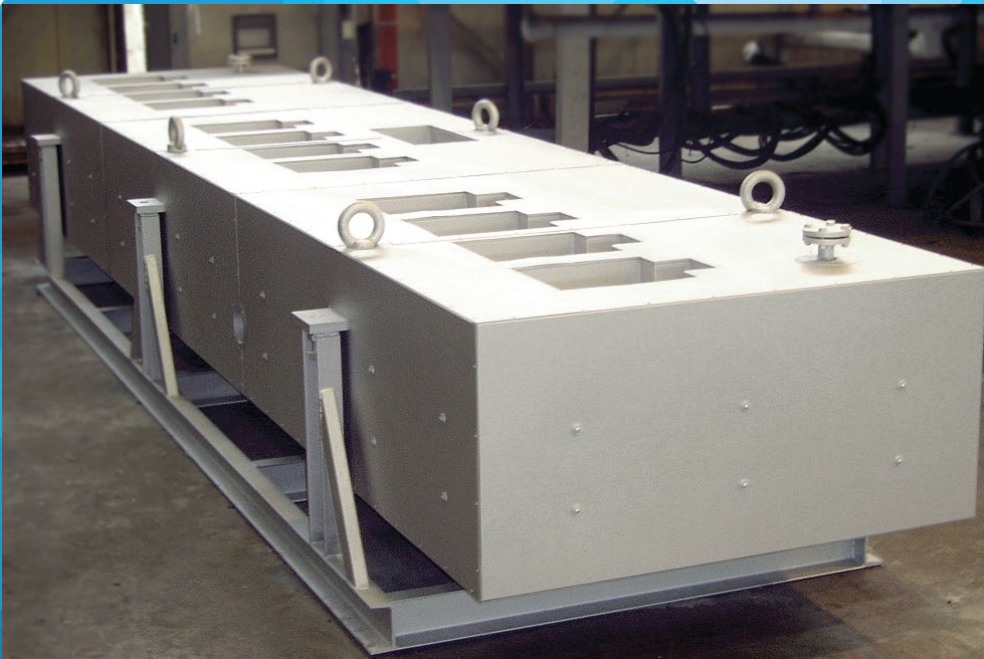


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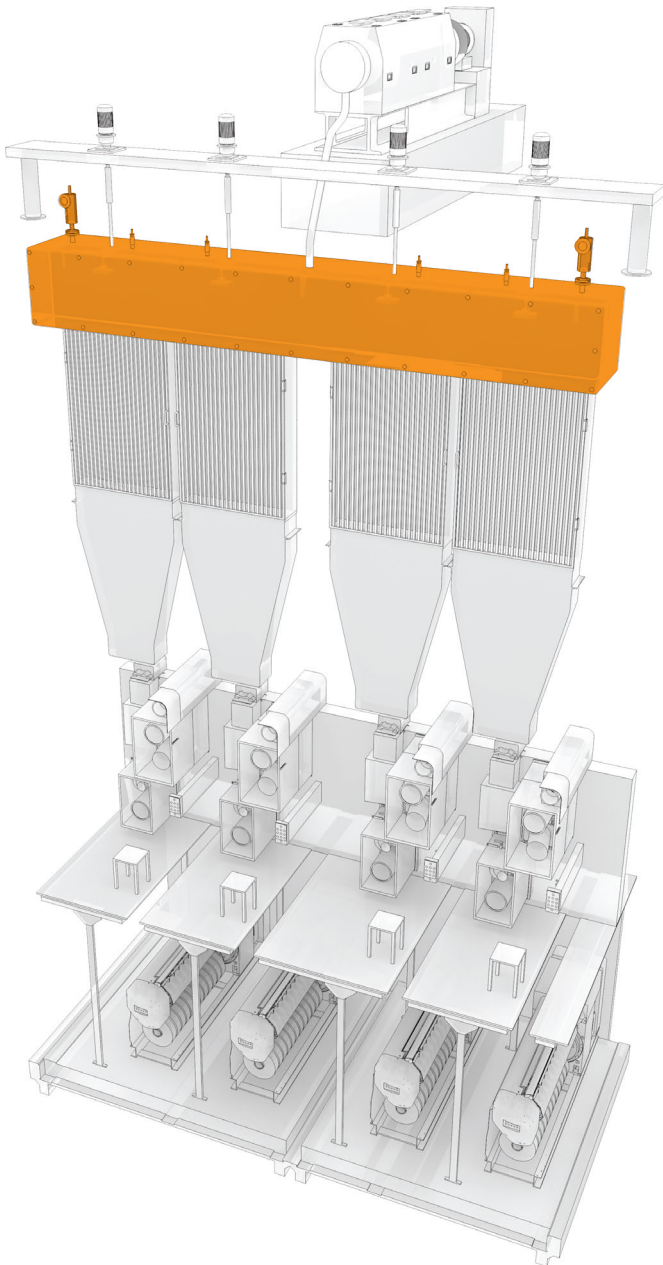
## SPIN BEAM

Our years of experiences and expertise realize the series of spin pack armed with technological advance and customary benefits.

Designing different types of spin pack, we could design this facility to our customer's needs; space-efficiency and improved quality and quantity of output.

In addition, our extensive capacity of production scope enables us to fulfill customer's requirement and conditions; the best solution for your business.

# SPIN BEAM



## Features

### 1. Identical outputs with low investment

With decades of experience and research, the spinneret of our spin beam has an improved output by 25%, maintaining its external dimensions. This means that our customers can have a same required output with smaller size of spin beam; low investment in the facility.

### 2. Implementation of Double-in-one system

DIO(Double-in-one) concept with two completely-independent spinnerets in one base, allows manufacturers to use approx. 30% less space vis-à-vis single packages while retaining the titer evenness. The 24 and 32-fold Double-in-one (DIO) spinning plant concept has been able to considerably reduce the investment costs while maintaining yarn quality

### 3. Energy saving

The temperature on its surface will be added with 30°C and because of outstanding evenness in inside temperature, energy usage will be decreased by 20~30%.



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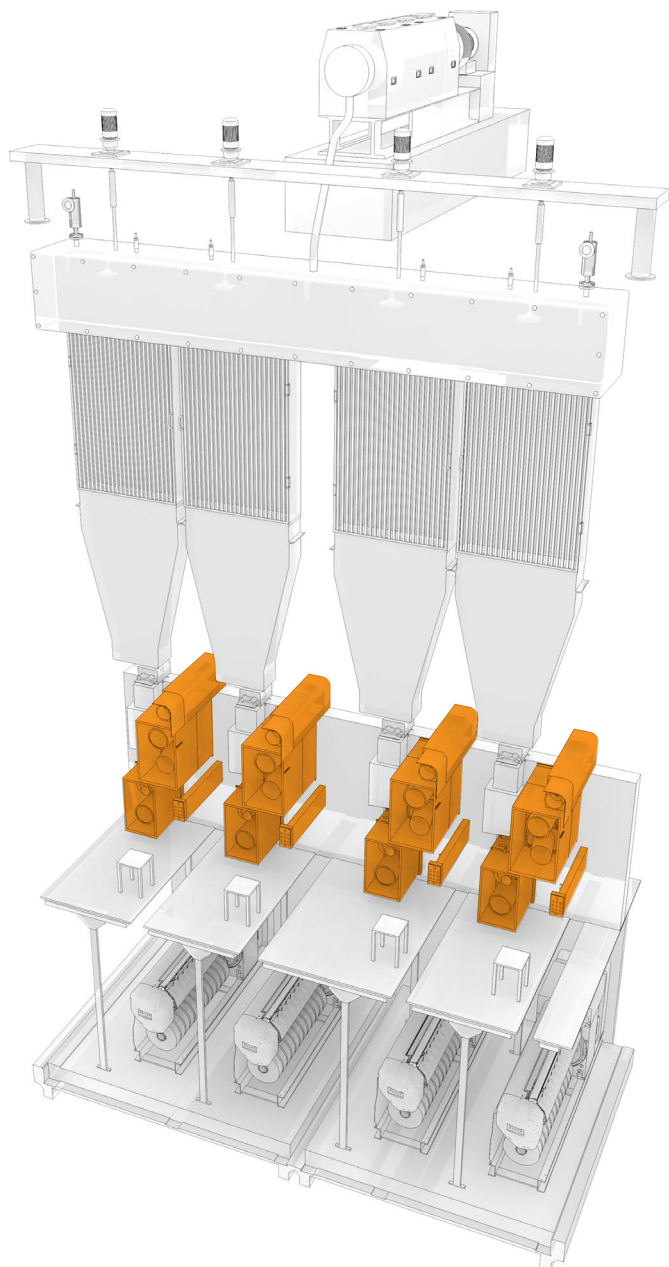


## Take up

Of the Korean manufacturers, we, ILJIN A-Tech, reach at the top producer providing global textile companies  
We concentrate on customer service and advanced specifications over the decades drives  
our TAKE-UP facility to the best of all.  
The essential part of this facility, Godet Roller, is designed with tight allowance and condition.



# Take up



## Features

### 1. Multiple version of TAKE-UP

Our production scope is included with high-speed and low-speed roller, whose specifications are decided by customer's requirement. In case of High speed roll, we once produced winder at the maximum of  $\text{Ø}250 \times 560$ .  $\text{Ø}600 \times 1200$  size of low speed roller is in our manufacturing scope. Our GODET roller has a maximum speed of 6000m/min. Rollers for filament has at a maximum of 2 to 3 layers and roller for industrial yarn 5 to 6 layers at maximum.

### 2. Tighter Allowance in specifications

About the vibration regulation of GODET roller surfaces, our quality assurance team checks out the products within the scope of 4m/s. We abide by the standard of major global competitors (BARMAG, TMT). In addition, the allowance of temperature scope is within  $2^{\circ}\text{C}$  at two edges of roll.

### 3. Use of prominent brand parts


Its crucial part, the ceramic guide; Interlace and Migration Nozzle, are all produced from HEBLINE.



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## Small Quantity Batch Production

(PA-6, PA-66, PET, PP, Bi-Component)

ILJIN A-TECH CO.,LTD can produce large scale Plant, even for customers that require small quantity batch production. and we can satisfy customer needs with collective response system that it is Engineering Design System, installation, commissioning guidance.

# Small Quantity Batch Production

## (PA-6, PA-66, PET, PP, Bi-Component)



ILJIN A-TECH CO., LTD was established in 1979, and For 36 years, Our company specializes in the production of synthetic fiber equipment is committed to producing competitive products based on years of experience and accumulated technology, We produce the best products that can satisfy the needs of our customers from large scale to small quantity batch production. We ask your continuous attention and encouragement.

## Applications

- Multi Filament Line (PA-6, PA-66, PET, PP, Bi-Component)
  - High Speed Spinning (POY, FDY, SDY)
  - Micro Fiber Spinning
  - Bi-Component Spinning
- Industrial Yarn
  - Textile Yarn
  - Sewing Yarn
  - Carbon Fiber
- Lyocell
  - Aramid Fiber
  - Acrylic Fiber
- Staple Fiber Line

## Technical Specification

### Textile Yarn

	PET-FDY	PA6-FDY	PP-FDY	Bi-Component
Spinning type	Chip Spinning	Chip Spinning	Chip Spinning	Chip Spinning
Denier/Fila	30~330/12~144F	10~400/12~144F	30~100/24~72F	30~150/24~72F
End/Position	8, 10, 12, 24	8, 10, 12, 24	8, 10, 12	6, 8
Winding Speed	3500~6000m/min	4000~5000m/min	2000~3500m/min	2500~5000m/min
Godet Roll	HotΦ220x500/Φ250x500	HotΦ220x500/Φ250x500	HotΦ220x400	HotΦ220x400
Separator Roll	ColdΦ110x500/Φ125x500	ColdΦ110x500/Φ125x500	ColdΦ110x400	ColdΦ110x400
Pack type	Round	Round	Rectangular	Round, Rectangular
Spinneret	Φ50~Φ110	Φ50~Φ110	Ø90	Ø130
Quenching Chamber	Cross, RIQ, ROQ	Cross, RIQ, ROQ	Cross	Cross
Finish Oil	Oil Roll, Jet Spray	Oil Roll, Jet Spray	Oil Roll	Oil Roll, Jet Spray
Winder	Auto Winder	Auto Winder	Auto Winder	Auto Winder

### Industrial Yarn

	PET - Industrial	PET - High Tenacity & Low Shrinkage	PET - Super Low Shrinkage	PA66 - High Tenacity
Spinning type	Chip Spinning	Chip Spinning	Chip Spinning	Chip Spinning
Denier	1000   1500   2000	250~500   1500   2000	500   1000, 1500	420   840   1260, 1680
End/Position	3, 4, 8   3, 4, 8   3, 4	4, 6, 8, 12   4, 8   4	4, 8   4, 8	4, 8   4, 8   4
Winding Speed	3000~6500m/min	3000~6500m/min	2500~4000m/min	2500~4000m/min
Godet Roll	HotΦ250x400	HotΦ250x400	HotΦ220x500	HotΦ250x400
Pack type	Round	Round	Round	Round
Spinneret	Φ220~Φ240	Φ220~Φ240	Φ150   Φ220	Φ120~Φ220
Quenching Chamber	Circular Q.C	Circular Q.C	Circular Q.C	Cross Q.C, Circular Q.C
Finish Oil	Oil Roll, Jet Spray	Oil Roll	Oil Roll, Jet Spray	Oil Roll
Winder	Auto Winder	Auto Winder	Auto Winder	Auto Winder

