

**FUTURE
NEXT**

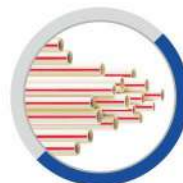
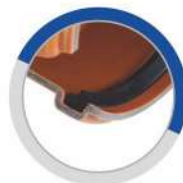
We are future ready to
make it possible.



WINDSOR
Partner in Progress



Pipe Extrusion





Welcome to the new Windsor. A Windsor where values are driven by happy customers and growth is recorded in satisfied smiles. After we led the industry for five decades, with our latest technologies and highly reliable products, the coming years will see a new-age Windsor.

As we complete 50 years of a journey of your trust, the new Windsor accumulates from its vast experience, the best practices that led to higher levels of customer satisfaction and loyalty. Blending in all such inputs, we came out with a "WIN WIN" strategy, where a value is created for each interacting partner of Windsor.

Experience with Windsor a new age of excellence in partnered ecosystem, where we begin a new era of progress, customer satisfaction, technology and above all, winning together.

Windsor's long term experience in extrusion machinery production is evident through a range of successful series of machineries, the latest of which (the third generation models) commands high repute across the globe.

Serving a wide scope of purpose, a Windsor trademark guarantees quality to your end customers. Be it the house hold and agricultural pipe segment or flexible film packaging segment, Windsor offers a value in the form of reliability and optimum quality standards.

Hence windsor is the most reliable partner for a customer.



Extrusion Machinery Division
Ahmedabad, Gujarat



Injection Moulding Machinery Division
Chhatral, Gujarat



Injection Moulding Machinery Division
Brescia, Italy

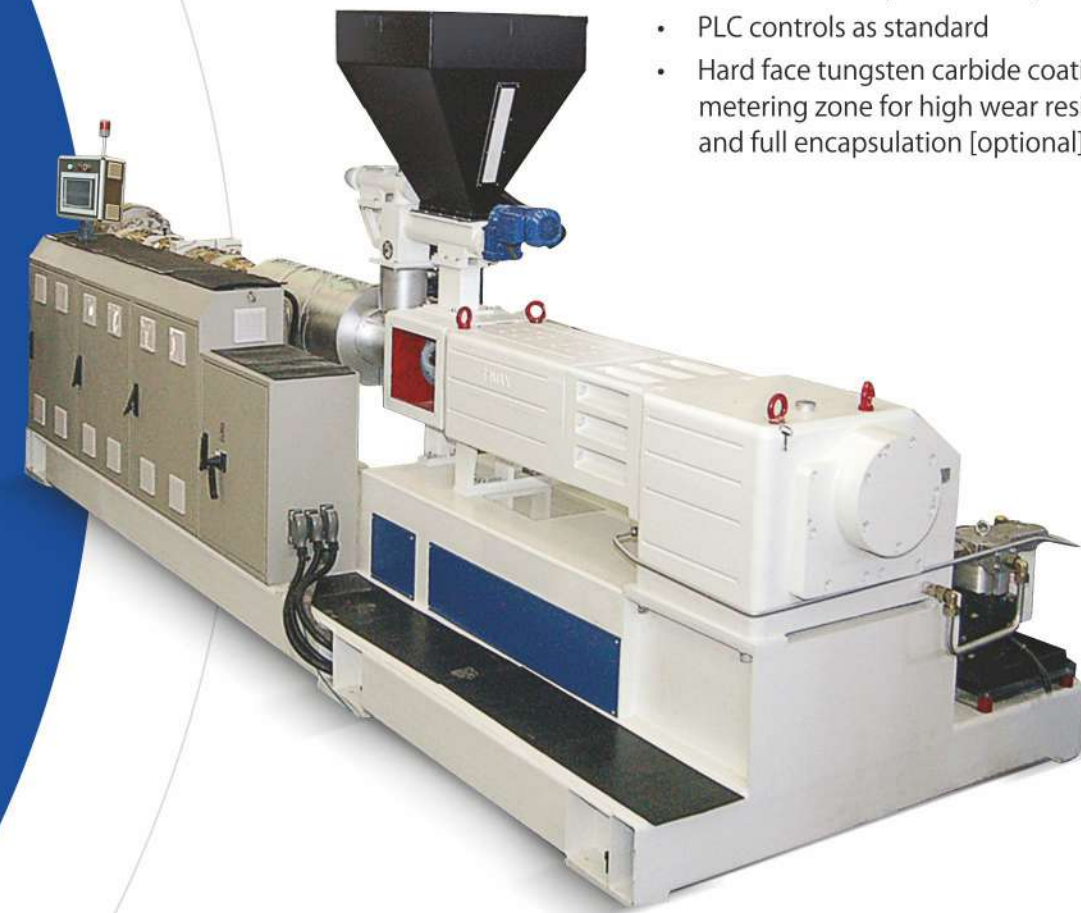


TWIN SCREW PIPE EXTRUSION LINE | UPVC

UPVC being a heat sensitive material necessitates a very controlled temperature during processing. Windsor twin screw extruders are known for the power optimisation and are offered in the range from 110 Kg/hr up to 1500 Kg/hr.

Features

- Minimizes energy inputs
- Achieves uniform pumping
- Two piece barrel construction
 - (a) Front barrel with HSS sleeve offered as standard, minimizes wear & tear
 - (b) Economic replacement option
- PLC controls as standard
- Hard face tungsten carbide coating on flight ends in metering zone for high wear resistance - standard and full encapsulation [optional]



Extruder Specifications

PARAMETER	UNIT	KTS 110	KTS 170	KTS 200	KTS 250	KTS 350	KTS 450	KTS 550	KTS 700	KTS 900	KTS 1500
Screw Diameter	mm	52	65	65	65	71	91	91	92	110	135
Screw Speed	rpm	5-50	4-45	5-53	5-53	5-53	4-40	4-40	4-40	3-32	3-26
L/D Ratio	-	20:1	18:1	18:1	22:1	28:1	22:1	25:1	28:1	28:1	28:1
Main Motor	kW	11	15	22	22	30	45	56	75	90	160
Max. Output	Kg/hr	100-110	150-170	180-200	230-250	330-350	420-450	520-550	650-700	850-900	1300-1500
Pipe Range (Single Die)	mm	20-110	20-200	20-200	63-250	110-315	110-400	110-400	160-400	160-400	250-630
Pipe Range (Twin Die)	mm	19-50	19-50	19-50	20-110	20-110	20-110	63-200	63-200	90-200	110-250

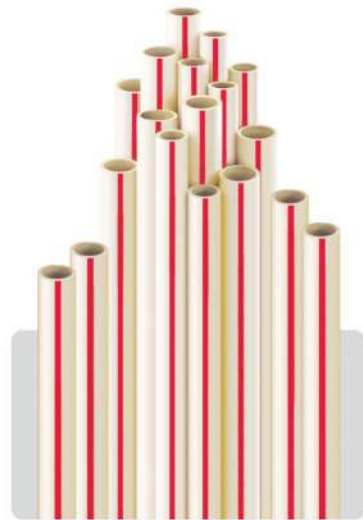
CTS 63 CONICAL TWIN SCREW EXTRUSION LINE | CPVC

Features

- Versatile design
- Imported screw-barrel set and gear box from Germany
- Triple chrome plated Die
- Twin Die with extruder capacity 300 kg/hr for small sizes

Applications

- Best suited for extreme climatic conditions
- Hot & Cold water distribution systems
- Industrial Fluids transportation pipe lines
- Water & Waste water treatment plants
- Chemical transportation pipe lines



Conical Extruder Specifications

PARAMETER	UNIT	CON KTS 63
Screw Diameter	mm	63/130
Screw Length	mm	1426
Main Motor	kW	37
Max. Output CPVC	Kg/hr	200 - 220
Max. Output UPVC*	Kg/hr	310 - 340

* Advisable with change of screw pair

Vacuum Sizing Tank Specifications

PARAMETER	UNIT	VST CON 63
Pipe Range	mm	12-63
Cooling Length	mm	6000
No. of Chambers		2

Die Head Specifications

PARAMETER	UNIT	TDH 63 C
Pipe Range	mm	12-63
Output Capacity up to	Kg/hr	250
Center Distance**	mm	260

** Pipe output depending on pipe size and material receipt.

Traction & Cutter Unit Specifications

PARAMETER	UNIT	DTC 63
Pipe Range	mm	12-63
Contact Length	mm	850
No. of Track		2x2
Clamping From		Top
Line Speed	m/min	17

DIE HEAD | PVC PROCESSING

Windsor offers spider dies right up to 630 mm dia with single head, dual head and quadruple head.

Advantages

- High volume low pressure design ensures wider thickness range
- Uniform melt distribution throughout the entire pipe circumference
- Twin die heads for higher outputs in smaller diameters
- Dual die with dual downstream for pipe sizes 20-110 mm & 63-200 mm
- Extruders utilization from 80-100% even with smaller pipes

Die head with trolley for P-200 and above models for easy movement

Single Die Head



Twin Die Head



Quadruple Die Head



Single Head Die Specifications

PARAMETER	UNIT	P 63	P 110	P110HV	P200 LV	P 200	P 250	P 315	P 400	P 630
Pipe Range	mm	20-63	20-110	20-110	32-200	63-200	75-250	90-315	160-400	250-630
Output Capacity up to	Kg/hr	100	200	250	250	320	425	550	700	1000



Column Pipe Die Head Specifications

PARAMETER	UNIT	WCP 110	WCP 200
Pipe Size Range	Inch	1", 1 1/4", 1 1/2"	2" - 4"
Output Capacity up to**	Kg/hr	230	450

Double Spider Die Specifications

PARAMETER	DS 110	DC 280	DC 450
Pipe Range	16-110	63-280	160-450
Output Capacity up to**	700	900	1200

Multiple Head Die Specifications

PARAMETER	UNIT	TDH 50	TDH 63 (Dual)	TDH 110 HV (Dual)**	TDH 200 (Dual)	QDH 32 (Quadruple)
Pipe Range	mm	19-50	20-63	20-110	63-200	19-32
Output Capacity up to**	Kg/hr	200	200	500	850	280

* In common down stream equipment. ** Pipe output depending on pipe size. ## Optional up to 200 mm.

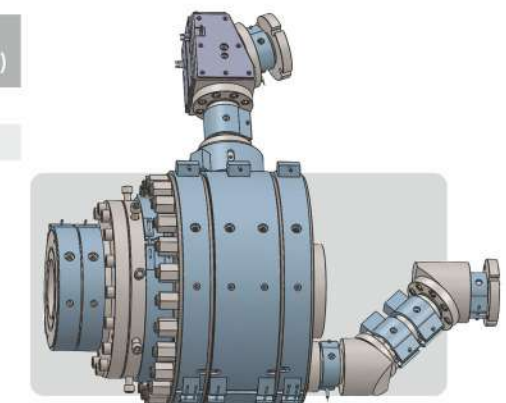
Multi Layer Pipe Die Head Specification - PVC

- 3 Layer Die Head with high filler middle layer
- Foam core pipe die head

PARAMETER	UNIT	P 250 FC
Pipe Range	mm	75-250
Output Capacity up to	Kg/hr	700
Max Layer Ratio		15:70:15



Round Coat hanger type Design



* Three Layer RPVC Foam Core / High Filled Die Head

SINGLE SCREW PE/PPR PIPE EXTRUSION LINE | SPEED SERIES

Features & Advantages

- 4th generation energy efficient extruder
- European Proven Technology ensures excellent linearity of specific output
- L/D ratio of 37 : 1 ensures excellent melt homogeneity
- Grooved feed design extruder
- Versatile screw designed for PE & PP Random Copolymer
- Direct coupled design ensures minimum transmission loss
- Wear resistant Tungsten Carbide coating ensures long screw life at high rpm



Extruder Specifications

PARAMETER	UNIT	Speed 45-22	Speed 45-45	Speed 45-55	Speed 45-75	Speed 45-90	Speed 60-110	Speed 60-132	Speed 75-200	Speed 75-250
Screw Diameter	mm	45	45	45	45	45	60	60	75	75
L : D Ratio		37:1	37:1	37:1	37:1	37:1	37:1	37:1	37:1	37:1
Main Motor	kW	22	45	55	75	90	110	132	200	250
Max. Output	Kg/hr	60-80	140-160	180-190	220-240	300-330	380-400	500-550	650-700	800-850

FUTURE GENERATION AGILE SERIES

Features & Advantages

- Gear less drives
- 15% Energy savings
- L/D ratio of 40 : 1 ensures excellent melt homogeneity
- Grooved feed design extruder
- Wear resistant Tungsten Carbide coating ensures long screw life at high rpm



PARAMETER	UNIT	AGILE 45	AGILE 60	AGILE 75	AGILE 90
Screw Diameter	mm	45	60	75	90
L : D Ratio		40	40	40	40
Main Motor	kW	125	200	315	450
Max. Output	Kg/hr	480-530	750-800	1150-1200	1650-1700

DIE HEADS | POLYOLEFIN PROCESSING (PE / PPR)

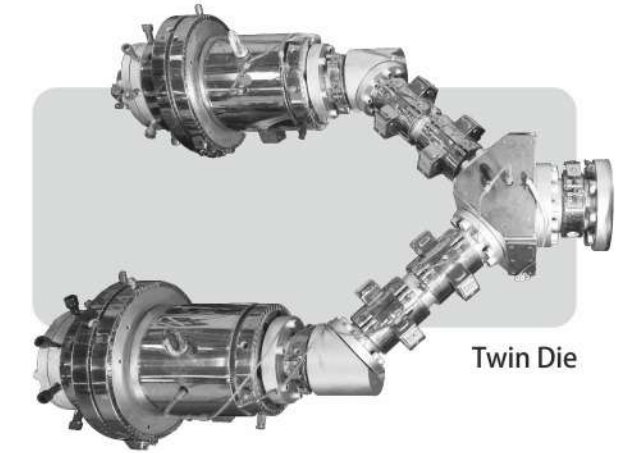
Most versatile Spiral Mandrel Design

Advantages

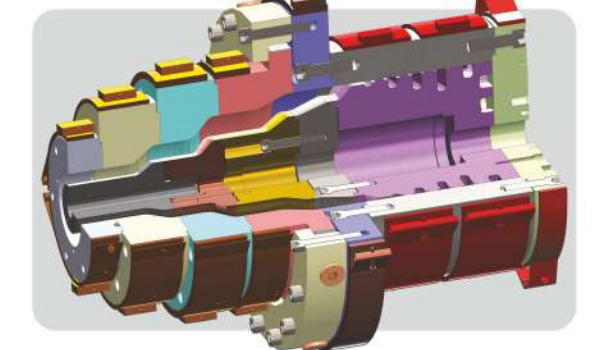
- Improved inner pipe surfaces
- Short purging time
- Optimized back pressure allows a balance of compression & melt temperature control
- Uniform melt flow can be achieved yielding minimum wall thickness deviation
- WINDSOR spiral die is versatile by design which enables PE, PPR, ABS processability only by changing the toolings
- Possibility with high speed design upto 30 mtr/minute line speed for smaller pipe size 20 - 40mm



* Spiral Mandrel Die Head



Twin Die



Spiral Mandrel Design with IPC

Single Pipe Die Head Specifications

PARAMETER	UNIT	SM 50	SM 200	SM 250	SM 450	SM 630	SM 800
Pipe Range	mm	12-50	20-200	63-250	90-450	225-630	315-800
Output Capacity up to**	Kg/hr	200	500	800	1000	1200	1500
Internal Pipe Cooling		N.A	N.A	IPC	IPC	IPC	IPC

Dual Pipe Die Head Specifications

PARAMETER	UNIT	TDSM 50	TDSM 200
Pipe Range	mm	12-50	20-200
No. of Layers		1	1
Output Capacity up to**	Kg/hr	400	1000

Co-extrusion Pipe Die Heads Specifications

PARAMETER	UNIT	CSM 50	CSM 50/R	CSM 110	CSM 110/R	CSM 110 HV	TSM 110	TSM 110 HV	TSM 250*	TSM 450*
Pipe Range	mm	12-50	12-50	20-110	20-110	20-110	20-110	20-110	20-250	90-450
Outer Thickness										
Range up to%		90	10	90	10	85	10:80:10	25:50:25	25:50:25	33:33:33
No. of Layers		2	2	2	2	2	3	3	3	3
Output Capacity up to**	Kg/hr	200	200	350	350	450	240	400	550	900

** Pipe output depending on pipe size and material recipe. * Die head suitable for PPR

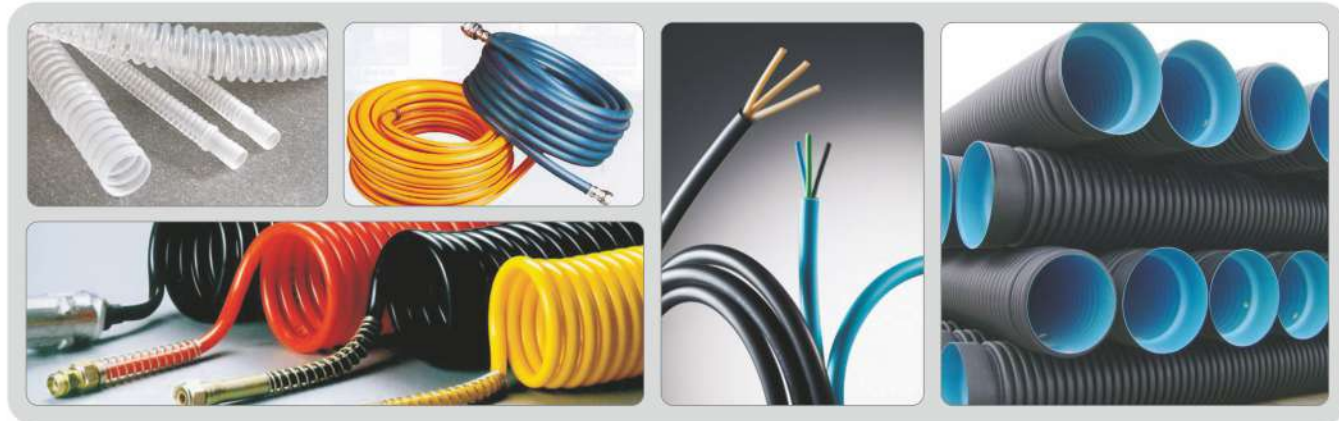
Single Screw Extruders | LX Series

- Understanding extrusion market requirements thoroughly, Windsor extruders take lead in technical superiority
- The screw and barrel are designed and developed to match specific raw material and end product requirement by simulation software
- We offer barrier screws yielding improved output rate, low melt temperature and improved melt quality



Only Bare Extruders for following applications

- Soft PVC tubing for medical applications
- Soft PVC garden hose
- Suction hose pipes
- HDPE/PP corrugated pipes
- PP tubes for automobiles
- PU tubes for pneumatic pipes
- Cable coating
- Nylon tubing for medical application



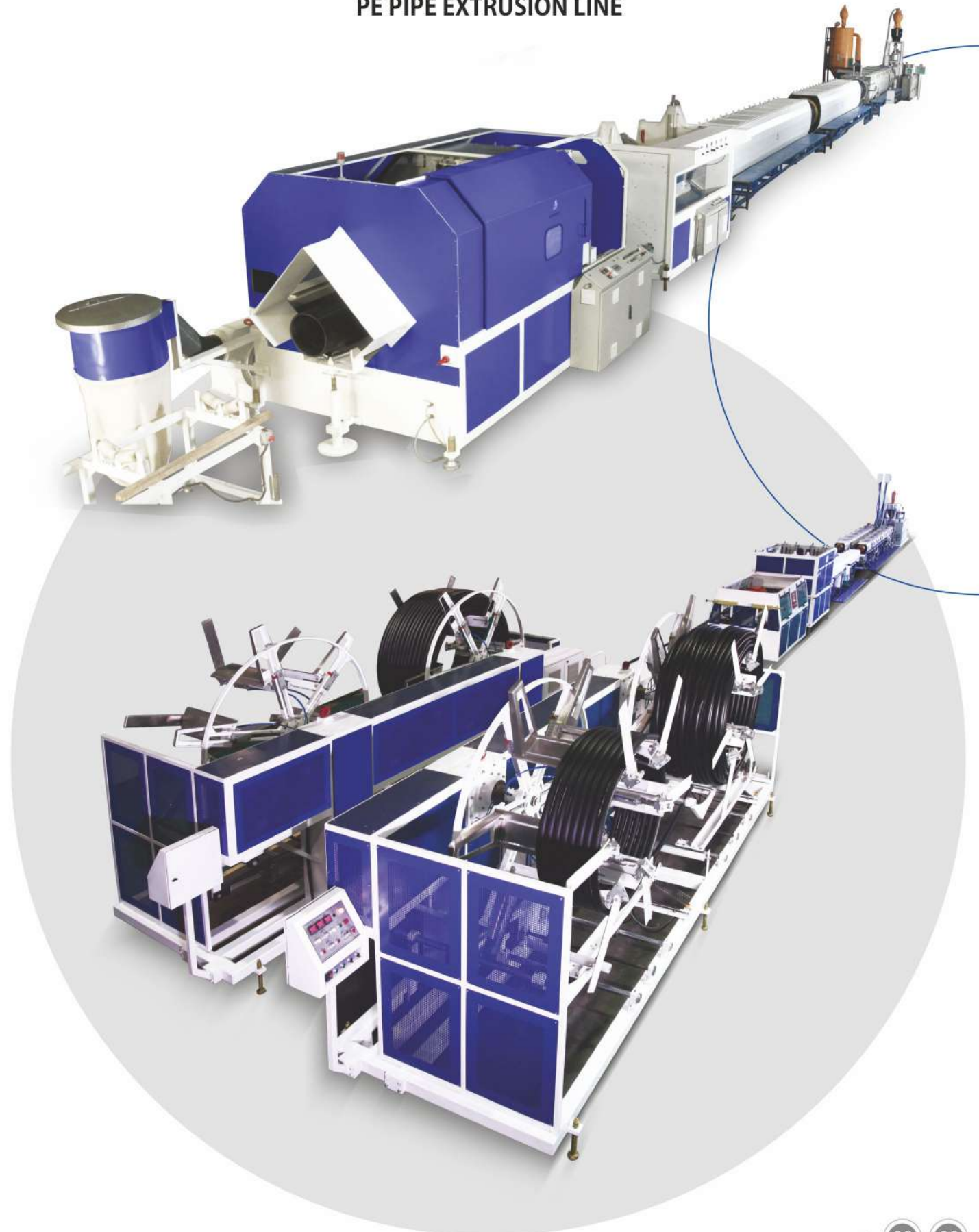
*Picture for illustration purpose only

Plain Barrel Extruder Specifications

PARAMETER	UNIT	LX 18*	LX 25*	LX 40	LX 50	LX 65	LX 75
Screw Diameter	mm	18	25	40	50	65	75
L/D Ratio	-	20:1	24:1	26:1	26:1	26:1	26:1
Main Motor	kW	0.75	3.75	7.5	15	30	37.5
Max. Throughput (HDPE)	Kg/hr	1.5-2	5-6	18-20	36-40	90-100	120-130

Smooth Bore Extruders for PVC application available.
 * Jokey extruder for stripping.

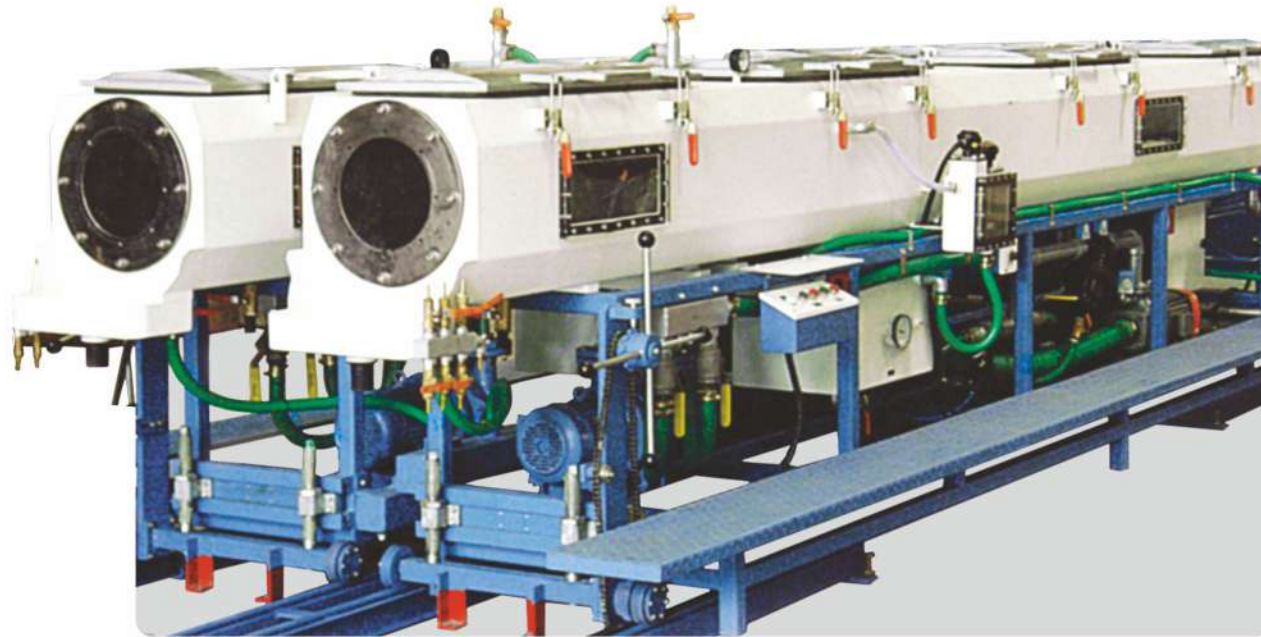
PE PIPE EXTRUSION LINE



Vacuum Sizing Tank Specifications

PARAMETER	UNIT	VST 110*	VST110 HS	VST 200*	VST 250	VST 315	VST 450	VST 630	VST 800
Pipe Range	mm	16-110	16-110	20-200	50-250	50-315	75-450	110-630	315-800
Cooling Length	mtr	4/6/8	9	4/8	6/8	6/8	6/8	8	2/8
No. of Chamber		1	2	1	2	2	2	2	2

*Dual models are also available
Optional : Stainless steel tanks / 8 mtrs. length / dual models available.
Pressure sizing tanks and extension cooling tanks for above sizes available



VST 630 with optional feature of ultrasonic sensor to measure pipe wall thickness

Calibrating System | Vacuum & Pressure

Vacuum Sizing Tanks

- Intensive cooling provided to ensure high production rate
- Self cleaning spray nozzle
- Accurate vacuum control, water level control & temperature control
- Two vacuum chambers and motorized axial movement provided from VST-250 and above for quick startup and less wastage
- Manual slide rail arrangement for Axial and Transverse movement of the tank
- Dual vacuum spray tanks on common frame for dual pipe extrusion line
- Imported filter for online cleaning
- Air operated solenoid valves optionally
- Cyclone separator for vacuum pump optionally
- Aluminium cast lids

Extra cooling tanks

- Adjustable spray nozzle
- Self cleaning filters
- Pipe guides support from UMWHDPE
- Automatic water level control

Extra cooling tanks Specifications

PARAMETER	UNIT	ECT 110*	ECT 200*	ECT 250	ECT 315	ECT 450	ECT 630
Pipe Range	mm	16-110	20-200	50-250	50-315	75-450	110-630
Cooling Length	mtr	4/6/8	6/8	6/8	6/8	6/8	8
No. of Chambers		1	1	1	1	1	1

Traction | Unit

- Up to 8 track to suit pipe diameters
- Different line speeds can be changed through change of sprockets (on request)
- Track adjustment by pneumatic control
- Direct drive offered for selected models
- Counter balance pressure to balance track weight for thin pipes
- Encoder for length measurement & feed back arrangement offered optionally
- Easy accessibility for maintenance of all components
- Dual twin-track traction units for dual pipe extrusion line
- Servo design (Optional)
- Thick – Thin provision (Optional)



Tube Traction Unit Model Specifications

PARAMETER	UNIT	TTU 32	TTU 110	TTU 200	TTU 250	TTU 250/4	TTU 315/4	TTU 450/4	RA 630/6E	RA 630/8E	RA 800/8E
Pipe Range	mm	up to 32	16-110	20-200	50-250	63-250	63-315	75-450	110-630	250-630	160-800
No. of Tracks	Nos.	2	2	2	2	4	4	4	6	8	8
Max. Line Speed	Mtrs./Min.	120	15	15	15	7	10	7	6	4.5	4.5
Contact Length	mm	700	800	1200	1600	1200	1200	1600	1450	1450	1800
Drive Option		Servo Elec.	Servo Elec./Std	Servo Elec./Std	Servo Elec./Std	Servo Elec./Std	Servo Elec./Std	Servo Elec.	Servo Elec.	Servo Elec.	Servo Elec.

Models with higher line speeds & wider speed range available on request. Minimum Line speed upto 1% of maximum speed (optional features).

Higher sizes available on request.

* Pipe range of 160 with four tracks only.

** Servo and non servo drive and motor from preferably Lenze-Germany available as option

** Thick & Thin device available as option

Cutting | Unit

Tube Cutting Unit (TCU)

- Carbide tipped circular saw for longer life
- Pneumatically operated carriage movement
- Clamping force adjustable depending upon the wall-thickness of the pipe
- Maintenance free Top clamping
- Swarf removal system optional
- Trolley movement on linear motion bearings
- Special guillotine designed cutter for PPR pipes
- Dual cutter for dual pipe extrusion line
- Digital counter to measure length
- PLC based controls available optionally



Tube Cutting Unit Model Specifications

PARAMETER	UNIT	HSC 110	HSC 200	TCU 250	TCU 315	HSC 110/2	HSC 200/2
Pipe Range	mm	20-110	20-200	50-250	90-315	20-110	20-200
Cutting Speed (Max.)	Mtrs/Min.	20	12	10	6	20	12
Clamping From		Top	Top	Top	Side/ Top	Top	Top

Chipless Cutter Specifications

PARAMETER	UNIT	SLEEC 110	SLEEC 200	SLEEC 450	SLEEC 630	SLEEC 800
Pipe Diameter Range	mm	16-110	63-200	110-450	200-630	250-800
Line Speed (Max.)	Mtrs/Min.	25	12	5	5	2.5
Max. Pipe Thickness	mm	20	28	60	80	100

*High line speed cutter available on request
*For PE or PPR Pipes

Chipless Cutter



Planetary Cutting Unit (PCU)

- Online chamfering preferred for pipe diameter range 110-800 mm
- Suction blower for swarf removal
- Universal Clamping system
- Self centering design
- With inbuilt battery backup

Planetary Cutting Unit Specifications

PARAMETER	UNIT	RS 25 PZ	RS 40 PZ	RS 80 PZ
Pipe Range	mm	50-250	75-400	110-800
Cutting Speed (Max.)	Mtrs/Min.	10	7	4
Clamping System		Universal	Universal	Universal

*For PVC pipes with RR joint



Coiling | Unit

- Two station coiler with pneumatic collapsing arms
- Suitable for pipe size up to 125 mm
- Online tension adjustment achieved through tension control
- Pneumatic pipe end retaining device provided to prevent loosening of the coil
- Auto traversing with servo and non servo drive available
- A. C. Drive
- Single station coiler available on request



Coilers Specifications

PARAMETER	UNIT	PC - 32/2	PC - 63/2	EPC - 63/2 HD	PC - 125/1
No. of Wind up Stations		2	2	2	1
Pipe Diameter Range	mm	12-32	16-63	16-63	63-125
Line Speed Max.	Mtrs/Min.	80-120	15/30	15/30	10

WINDSOR PACKAGE DEAL | TOTAL SOLUTIONS

Windsor can offer complete project solution:

- UPVC / CPVC / HDPE / PPR Pipe Plants
- High Speed mixer with cooler
- Grinder / Pulveriser
- Water Chillers
- Cooling Tower
- Air Compressor
- Printing equipments
- Pipe testing equipment
- Semi Auto / In Line Pipe socketing machine.
- Gravimetric Dosing system for HDPE Pipes
- Ultrasonic sensors for measurement and display of Pipe wall thickness



Machines that **WIN** your trust



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