

Make your

**Hose the Best &  
Lead the Rest**

with

**PENGUIN**

- Braiding
- Knitting
- Wrap / Unwrap

**Penguin**

**Leader in Hose Machines**



**DIGITAL  
PRECISION**

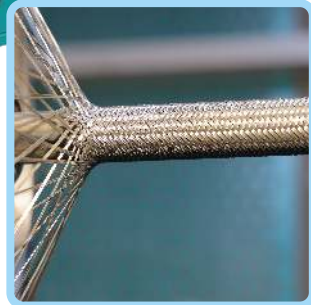


**CE**

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# HEAVY DUTY / BRAIDER

## Hydraulic Hoses for Export / OEM



- 100% carriers and bobbins included in the machine price and supplied along with machine
- Built-in Haul-off with separate geared motors for each jaw suitable for flexible and rigid hoses
- Latest Technology – No top plate braider
- Heavy duty horn gears for high pressure braiding – Tension from 3 to 13 kg / carrier
- Acoustic enclosure
- Sufficient suction fans for temperature control
- Large bobbin capacity upto 9 kg wire / bobbin and 1.25 kg yarn / bobbin – Reduced bobbin change time
- Carriers require minimum compensation
- Heavy duty deck plates
- Ergonomically designed doors and openings
- Smooth carrier transfer by “carrying type” horn gears
- Specially crafted heavy duty horn gear and smooth track
- All springs included in the supply of carriers; Clutch springs & Torsion springs
- Hose guides at each braiding point and Haul-off ends
- Suitable for braiding – High tensile brass coated steel wire, Stainless steel wire, Different yarns like Kevlar, Aramid, Nylon, Polyester (Coated and Uncoated)
- Upto 48 carrier braiders for maximum coverage upto 75mm braiding diameter
- Electronic gearing for "On the Go" pitch control
- Independent deck drive motor and control
- Complete Electronic drives, controls, PLC, Touch panel and Pitch control
- Start / Stop / Jog push buttons at convenient places
- Single wire cut, Bobbin empty, Full wire cut sensors included for efficient quality braiding
- Interlock switches for door openings

Number of carriers	24	36	48
Carrier Speed	27 rpm	18 rpm	13 rpm
Dimension of the machine - Excluding caterpillar (L x B x H in mm)	Double deck 3765 x 2060 x 2200	Double deck 4825 x 2620 x 2690	Single deck 4900 x 3600 x 3285
Power requirement	16 kW	20 kW	16 kW
Power supply	415V / 3 Phase		
Carrier tension	3 to 13 kg		
Weight of wire / bobbin	9 kg (1600 cc)		
Weight of yarn / bobbin	1.25 kg (1600 cc)		
Machine configuration	Horizontal / Vertical		
Number of decks (Optional)	Single / Double / Triple		
Haul off caterpillar type	Chain drive with PU lugs 600mm long pulling / Capstan		
Type of braiding	Wire / Yarn		
Type of wire / yarn carrier	Heavy duty carrier with interchangeable shoes		
Design pitch	22 to 75 mm		
Horn gear diameter	270 mm (PCD)		
Height of heavy duty long shoe	118 mm		
Horn gear speed	160 rpm		
Wire bobbin size	125mm OD / 147mm Traverse		
Yarn bobbin size	125mm OD / 150mm Traverse		
Electronic control	PLC and digital drives		
Pitch control	Electronic pitch control (No change gears)		
Oil lubrication	Automatic force feeding recirculating type		



Wire Carriers



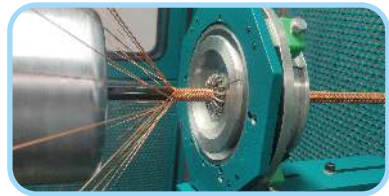
Yarn Carriers



Wire 9 kg / 1600cc



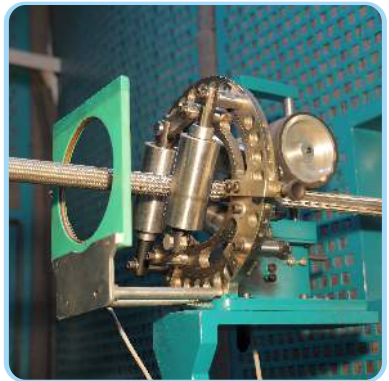
Yarn 1.25kg / 1600cc



Single yarn cut sensor



Torsion springs from 3 to 13 kg



Adjustable guide rollers for different hose diameters & Single wire cut sensor



Bobbin empty sensor

- Heavy duty horn gear
- Braid path guiding track
- Heavy duty long guide shoe
- High tension heavy duty carrier (13 kg)
- Big bobbin with 9 kg. wire

# HIGH SPEED / BOBBIN WINDER

Electronic Brake System



Model: PHEW-LO12

- High winding speed : 720m/min.
- Modular Let-off stations with electronic brake system
- Electronically controlled hysteresis brake Let off system
- Constant winding speed and controlled wire speed during start and stop
- Digital variable speed servo motor drive
- Zero backlash electronic gearing
- Ball screw traverse
- Beakless roller moving traverse
- Excellent catenary quality
- Digital tension control system
- Multilingual color touch screen - HMI



12 - Letoff Station

	Bobbin Winder	12 Let-Off Station
Main drive	5.5 kW / 380V	
Ambient temperature of operation	+10°c to 35°c	+10°c to 35°c
Electrical connections	(400 V / 50 Hz) ±10%	(400 V / 50 Hz) ±10%
Power consumption	8 kW	1.5 kW
Pneumatic connection	6 bar	
Bobbin dimension		
Flange diameter	50 to 160 mm	
Traverse	50 - 230 mm	
Speed of drive spindle (Maximum)	2600 rpm	
Torque of drive spindle	20 Nm	
Pitch range	0.01 - 12mm	
Wire diameter	0.19 - 0.4mm	
Wire count	Max. 12 Ends (16 Optional)	
Wire strength		5 - 16N (0.2 - 0.3 wire diameter: Tensile strength 2450 - 3050 N/mm2)
Max. speed of wire	12 m / s (0.3mm wire) 8 m / s (0.4mm wire) 4 m/s (0.19mm wire)	
Mass	Approx. 850 kg	Approx. 950 kg
Size (L x B x H) in mm	1110 x 1560 x 1860	2000 x 1250 x 2300
Noise level	less than 83 dB (A) BP 60 supplier bobbins	
Programmings	99 Programs	



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Wound bobbin



Bobbin



Human Machine Interface

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# HOSE WRAP / UNWRAP SYSTEM



**Model: WRAPMASTER 1000C with LH Head assembly**

- High speed wrapping / unwrapping of flexible hose upto 1000 rpm
- Controlled wrap tension upto 15 kg Concentric tape wrapping
- Precision wrap with accurate pitch
- Delicate handling of hoses
- User-friendly operator interface with 9" colour touch screen
- Accurate placement of brand tape
- Adjustable tape tension
- One tape core in operation and three in storage
- Reliable machine for continuous automatic operation
- Release solution collecting arrangement with stainless steel doors
- Electrical and pneumatic brakes for rapid stop
- Pneumatic door operating system
- Hose guide tubes for wrapping different sizes of hoses
- Automatic hydraulic head movement (optional)



**Model: WRAPMASTER 1000C with RH Head assembly**



**Model: WRAPMASTER 600RC**

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	Wrapmaster 1000C	Wrapmaster 600RC
Head drive	22 kW	
Spool drive	15 kW	
Caterpillar drive	3.3 kW	4 kW
Brand tape drive	1.5 kW	
Drives	Servo drive	
HMI	9" Color touch screen	
Operation	Fully automatic with PLC control	
Caterpillar	Positive drive belt with pressure distributing rollers	
Frame	Heavy duty steel structural frame	
Compressed air	7 kg/cm <sup>2</sup> ; 30 liters / hour	
Noise level	< 75 dB	
<b>PRODUCTION DATA</b>		
Mandrel system	Flexible mandrel	Rigid mandrel
Hose / Cable length	No restriction	
Type of hose	Wire / fabric reinforced	
Pintle bore diameter	upto 80 mm	140 mm
Output	upto 60 m / min.	upto 40 m / min.
<b>TAPE SPOOL CAPACITY</b>		
Core	Taper core with removable section	
Storage	One operational + Two storage	One operational + One storage
<b>TAPE</b>		
Core diameter	308 mm (12.1")	
Maximum tape spool diameter	740 mm (29.1")	
Tape width	50 mm to 100 mm	50 mm to 130 mm
Maximum tape length	1600 m (5,252 ft)	1500 m (4,921 ft)
Power consumption	<15 kW	
Floor space	1.4 x 3.0 m	1.6 x 3.5 m
Weight	3500 kg	5000 kg



Pneumatic sliding door



Touch Screen



Brand tape system



Wrapping head

## TAPE WET & WINDER



Tape width	50 to 120 mm
Tape package diameter	1500 m
Tape outer diameter	750 mm

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## BATCH PROCESS



Number of feeders	2 to 4 (depending on size of the hose)
Inner diameter of cylinder	10 to 100 mm
Maximum diameter of knitted hose	100 mm
Yarn package core diameter	94 mm
Maximum diameter of yarn packing	210 mm
Maximum height of spool	260 mm
Knitting module power	2.25 kW; 3 Phase 440V
Caterpillar power	1.1 kW; 3 Phase 440V
Interchangeable heads	Optional
Type of stitch	Plain stitch
Type of needle	Groz-Beckert make straight needle
Number of needles	10 to 40
Line speed	1 to 3 m / min.
Electronic control	PLC & 4" HMI

- Sturdily built tubular frame structure with enclosures
- Shaft mounted encoders and forced cooling fan for motors
- 2 to 4 feeders (bobbins) depending on size of the hose
- PLC & HMI touch screen for Electronic synchronisation of head & caterpillar motors for uniform pitch control
- Upto 3 kg different sizes of cone or cheese with upto 95 mm bore can be directly used
- Stainless Steel Yarn cover to avoid entanglement at high speed
- Knitting heads can be designed from 10 mm to 100 mm hose ID
- Photo sensor stop motion for yarn cut
- Use of Economical and sturdy knitting needles
- Interchangeable knitting heads
- Line speed, Shift production indications and on-the-go pitch change through HMI
- Roof mounting light tower indication
- Different yarns like Aramid, Kevlar, Polyester etc can be used

## CATERPILLAR

- 75 mm width timing belt with 6 mm thick linatex coating
- Bottom jaw adjustable by screw-rod for central line alignment
- Top jaw adjustable through steering wheel
- Sturdy worm-reduction gearbox
- Two numbers of 90° gear boxes for jaw drive
- Tyre coupling for splined drive shaft
- Hose guide assembly at both the ends of caterpillar



## CONTINUOUS LINE PROCESS - High Speed Online with Extruder

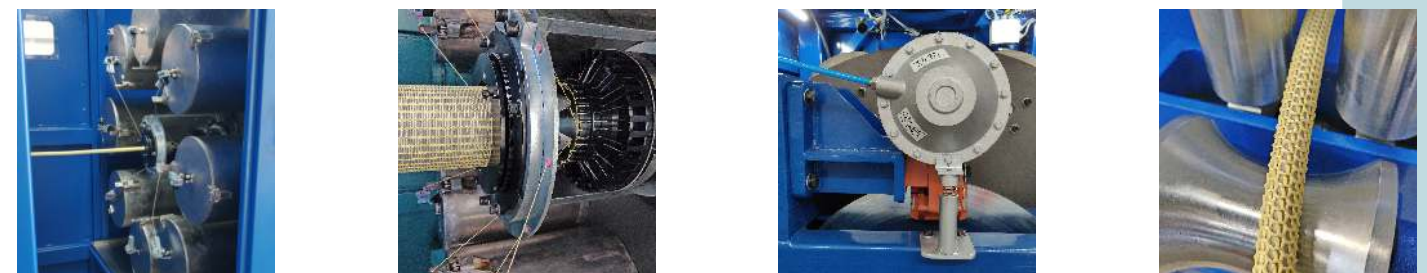


Number of feeders	8
Yarn content / bobbin	5 kg max.
Maximum diameter of knitted hose	10 - 80 mm (other sizes optional)
Bobbin dimensions (Ø x L)	240 x 260 mm
Knitting module power	5 HP
Caterpillar power	1 HP
Interchangeable heads	Optional
Head speed	upto 400 rpm
Type of needle	Crank type
Line speed	Upto 20 m / min. (depending on pitch)
Knitted reinforcement	Circular knitting type, plain stitch
Yarn type	Dipped or un-dipped (Aramid, Polyester, Rayon)
Yarn package type	Cross-wound on cylindrical standard bobbins type
Rubber types	EPDM, NBR, NBR/PVC, CR, EACM, CSM, CPE .
Knitted hose types	Radiator hoses, fuel hoses and other hoses
Power supply	380 - 440V, Three phase, 50 - 60 Hz
Electronic Control	PLC & 4" HMI

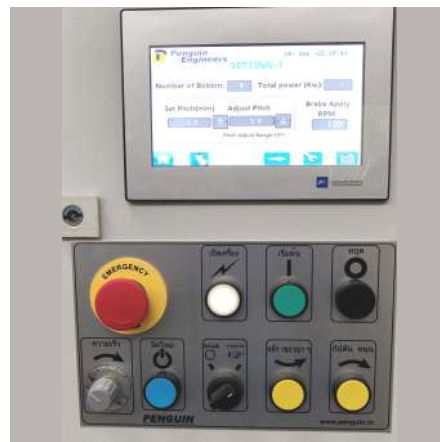
- Suitable for low-medium pressure knitted hose
- Minimum distortion from the manufacturing process
- Photo sensor stop motion for yarn cut
- Precision cams for efficient knitting
- Large yarn capacity - Big bobbins
- Variable speed drive
- Precision pulling caterpillar
- HMI - Multi function
- Rope pulley for interchangeable Knitting head
- Use of Economical and sturdy knitting needles
- Front door opening protected with safety switch
- Automatic PLC Control system
- Pneumatic caliper brake
- Dancer control

## CATERPILLAR

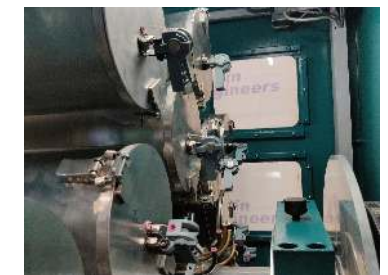
- Sturdily built rigid structure with enclosures
- Contact length ~600mm, width 76 mm
- Linatex coated timing belt
- Control system with communication to the knitting machine drive
- Speed adjustment by potentiometer with digital display
- Encoder for measuring real product speed
- Hose guide assembly at both the ends of caterpillar



## VERTICAL



Number of feeders	4	8
Yarn weight	2 kg max.	
Maximum diameter of knitted hose	10 - 37 mm	40 - 70 mm
Bobbin dimensions (Ø x L)	146 x 172mm	
Knitting module power	5 HP; 3.7 kW	
Capstan power	2 HP; 1.5 kW	
Head speed upto	600 rpm	500 rpm
Type of needle	Crank type	
Electronic Control	PLC & 11" HMI	
Line speed (depending on pitch)	upto 24 m / min.	upto 32 m / min.
Knitted reinforcement	Circular knitting type, plain stitch Yarn type Dipped or undipped (Aramid, Polyester, Rayon)	
Yarn package type	Cross-wound on cylindrical standard bobbins type	
Rubber types	EPDM, NBR, NBR/PVC, CR, EACM, CSM, CPE	
Knitted hose types	Radiator hoses, fuel hoses and other hoses	
Power supply	380 - 440V, Three phase, 50 Hz	



- Pneumatic brake for instant stop
- Two doors with either side accessibility; Bobbins can be easily accessed
- Inlet and exit guide rollers
- 2 heads of 36 bobbins each
- PLC & Human Machine Interface for easy operation of the machine
- High torque motors to give a slow speed and high torque applications at very slow speed.
- The pitch is maintained with encoder
- The operation of the machine is controlled with PLC and the parameters can be input safely with an HMI.
- The safety elements in the machine includes, the pneumatic brake, safety relay at the panel, braking resistors and many other features.
- The pneumatic reservoirs act to store the extra needed air, even if the compressed air requirement fails at one point of time.
- The pneumatic brake setting, of when to apply and when NOT to apply, is easily set able in the HMI screen.
- The stop motion of the yarn sensor, 2 numbers for each deck, will assist the operator to stop the machine immediately, if there is any breakage of yarn.
- The tower lamp will assist the operator to show the working status of the machine.
- Ergonomic design of the machine with HMI in an movable design, for easy access for the operator.

Max. spiraling diameter	75 mm
Number of bobbins	Max. 36 x Double head
Weight of bobbin	1.5 kg
Bobbin volume	2300 cc
Speed of spiral head	310 rpm
Yarn static tension	30 - 150 g
Yarn dynamic tension	within ±10%
Center height of hose from floor	1150 ± 10 mm
Pneumatic pressure	6 bar
Power required	23.5 kW
Electric supply	440V, 3 Phase, 50 Hz
Overall dimensions (L x B x H) in mm	3300 x 1550 x 2550

# COIL WRAPPER



DIMENSIONS OF COIL TO PACK	
Inner diameter	Max. 600mm; Min. 400mm
Outer diameter	Max. 900mm; Min. 600mm
Height	Max. 350mm; Min. 200mm
Weight	Max. 150 kg
MACHINE	
Table height	960 mm
Max. ring speed	70 rpm
Power requirement	440V, Three phase, 50 hZ
Installed power	3.0 kW / 4.0 HP
FILM DETAILS	
Material	LLDPE Stretch film 23 - 30μ thick
Film width	100 mm
Core diameter	25.4 mm
Maximum film diameter	150 mm
Number of packing rolls	2 (one for stretch film roll; one for HDPE Woven fabric)

- Enables torus shaped products to be wrapped through eye
- A wide range of coil sizes can be wrapped in the same machine
- Human Machine Interface
- Suitable for use with stretch film roll and HPDE Wovenfabric
- Adjustable film overlap
- Cycle time adjustable
- Indigenously made

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# TAKE-UP / LET-OFF



## FOR BRAIDERS



Let-off



Take-up (Servo Drive)

Drum diameter	1524 mm
Drum width at winding area	1310 mm
Diameter of center hole for clamping	67 mm
Line speed	0.5 - 4.0 m / min. (optionally you can give your requirement)
Max. pull on hose	500 N
Drives	
Main drum axis drive	Servo drive; 1.5 kW
Traverse drive	Servo drive; 0.8 kW
Control	PLC with operator interface for data entry
Pneumatics	
Lifting of drum	200mm dia. cylinder - 2nos.
Clamping	50mm dia. cylinder - 2nos.



## FOR EXTRUDERS

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# HOSE CUTTER



- Cutting machine for hydraulic and Non hydraulic hoses.
- Hoses from coils are automatically measured and cut.
- Machine is controlled by PLC provided with HMI which allows to setup different haul off speed.
- Machine can cut hoses of diameter (OD) upto 30mm.
- An adjustable hose unwinder with belt friction brake to accommodate hose reels which pays off the hose into the machine.
- Hose is haul off from unwinder to the machine is done by 4 drive rollers.
- Hose cutting take place by pneumatic bending.

Power	4.5 HP
Voltage	400 V
Phase	3 Phase
Blade diameter	250 mm
Speed of blade motor	2800 rpm
Dimension (L x B x H)	1700 x 1450 x 650 mm
Weight	330 kg
Control	PLC

# CATERPILLAR HAUL-OFF



- Provision for adjusting center height according to requirement (Standard center height: 950mm)
- Max. opening of belt: 100 / 150mm
- Wide timing pulleys for trouble free operation
- Pneumatic gripping with adjustable gripping pressure

Caterpillar - AC Control	
Application	Extruder / Cutting / Printing / Winding
Output	upto 60 m / min.
Center height	950mm adjustable
Drive	AC Motor; 4 kW
Jaw opening	Pneumatic type
Dimensions (L x B x H) in mm	1410 x 790 x 1580

- Digital AC drive
- Adjustable inlet and outlet roller guides
- Adjustable lower belt height to accommodate different hose diameter
- Positive drive belt with pressure distribution rollers
- Caterpillar with long contact length and multiple spreader rollers to pull the hose by applying uniform pressure

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# LIST OF CUSTOMERS



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# PENGUIN WORLDWIDE

Penguin Installations dot the globe spanning over 44 countries in Asia, Europe, Africa, South America, United States of America, South East Asia etc. A total of over 1500 installations are serving client needs to their satisfaction, supported by the extensive aftersales service network of the company that ensures minimum down time when the machines require service and upgrades.

The list of countries include:



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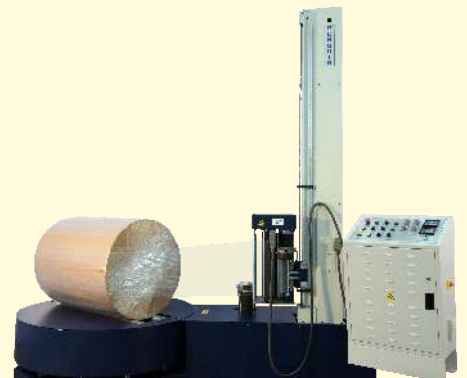
# STRETCH WRAPPING MACHINE



**PALLET STRETCH WRAPPER - AC Drive**  
 Model: INNOVA  
 Productivity: 15-25 pallets/hour  
 Applications: Palletizing yarns, boxes, bags, tins...



**PALLET STRETCH WRAPPER- DC Drive**  
 Model: CLASSIC  
 Productivity: 15-25 pallets/hour  
 Applications: Palletizing yarns, boxes, bags, tins...



**REEL WRAPPER**  
 Productivity: 15-30 reels/hour  
 Applications: Rolls of paper, film, PP fabric, denim fabric, foils...



**BOX WRAPPER**  
 Productivity: 30-75 packs/hour  
 Applications: Apparels, garments, food products, computers, etc., packed in carton boxes



**FABRIC ROLL WRAPPER**  
 Productivity: 20-40 rolls/hour  
 Applications: Fabric rolls, denim rolls, carpets, PP rolls, film...



**MINI ROLL WRAPPER**  
 Productivity: 30-75 rolls/hour  
 Applications: Retread rubber rolls, tyres, coils, mini paper rolls, flexible packaging rolls, spools...



**RING WRAPPER**  
 Productivity: 50-200 meters/hour  
 Applications: For door panels, profiles, pipes...

Manufactured by



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 Vaiyampalayam Post  
 Coimbatore - 641 110. Tamil Nadu INDIA  
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