Automatic Plastic Filament Cutting Coiling Enlacing Machine ACE0001

Model No. ACE0001



SPECIFICATIONS

Model Number	ACE0001
Filament Diameter	1.0～5.0 mm
Feeding Speed	⩽2.0 m/s
Coiling Inner Radius	70～100 mm
Coiling Length	5～30 m
Production Rate	2～5 Pcs/min (based on 15m length)
Operator Required	1 person (can operate 2～4 units)
Machine Length	1350 mm
Machine Width	650 mm
Machine Height	1700 mm
Machine Weight	Approx 300 kg
Power Supply	1 Phase AC 220V 50Hz 2kW
Compressed Air	0.4～0.6MPa 1 m^3/hr

The ACE0001 cuts plastic filament from 1.0 to 5.0 mm, coils it to an inner radius of 70-100 mm and closes the coil with an enlace wrap. Coil length is set from 5 to 30 m, feed runs at up to 2.0 m/s, and output is 2-5 pcs/min at a 15 m length. Control is by PLC with a touch screen, on 2 kW single-phase 220 V and 0.4-0.6 MPa air.

Enlacing by hand needs a coil jig, a tape or filament dispenser and one hand holding the coil closed while the wrap is applied, which fixes one operator to one station. This machine forms, wraps and releases the coil on its own cycle, and one operator can tend two to four units, which is where the labour change sits. Output is 2-5 pcs/min at 15 m.

This is the long-length coiler of the pair: 5-30 m coils enlaced, against the BWM0001 blister at 6-10 pcs/min. Filament range and power are the same, 1.0-5.0 mm and 2 kW; the difference is the package, an enlaced coil here and a sealed blister there. Its per-minute rate is lower because each piece carries 15 m or more of filament.

Key Features

1. Cut, coil and enlace in one cycle, so the coil leaves wrapped rather than loose.

2. Filament 1.0-5.0 mm, covering monofilament trimmer line and plastic filament in the same guide set.

3. Coil inner radius 70-100 mm with coil length of 5-30 m, for long hanks rather than short packs.

4. Output 2-5 pcs/min at a 15 m length, so the rate follows the length ordered.

5. One operator for two to four units, which sets the labour cost per coil.

6. PLC and touch screen control, 1-phase 220 V 2 kW, air at 0.4-0.6 MPa and 1 m3/h; 1350 x 650 x 1700 mm, about 300 kg.

Technical Specifications

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Model Number	ACE0001
Filament Diameter	1.0-5.0 mm
Feeding Speed	⩽2.0 m/s
Coiling Inner Radius	70-100 mm
Coiling Length	5-30 m
Production Rate	2-5 pcs/min (based on 15 m length)
Operator Required	1 person, can operate 2-4 units
Control	PLC with touch screen
Power Supply	1 phase AC 220 V 50 Hz, 2 kW
Compressed Air	0.4-0.6 MPa, 1 m3/h
Machine Dimensions	1350 x 650 x 1700 mm
Machine Weight	About 300 kg

Applications

— Grass trimmer line: 2.4-3.0 mm nylon in 15-30 m coils, enlaced for distributor bulk packs.

— Brush and sweeper filament: 1.0-2.0 mm PP or PBT monofilament coiled and wrapped for brush makers.

— Agricultural monofilament: 2.0-4.0 mm line for binder and baler applications, coiled in long hanks.

— Fence and trellis line: 2.0-4.0 mm UV-stabilised filament cut to 30 m and enlaced for farm supply.

— Heavy trimmer line: 4.0-5.0 mm line coiled at the 5 m end of the range, where the per-minute rate is highest.

FAQ

What is the primary function of the Automatic Plastic Filament Cutting Coiling Enlacing Machine ACE0001?

The ACE0001 is an automated industrial machine designed for the integrated processing of plastic monofilament. Its primary function is to automatically cut plastic filament to a set length, coil it into a compact spool or bundle, and then enlace (tie or secure) the coil to prevent unraveling. This end-of-line automation is essential for producing finished, retail-ready coils of products like grass trimmer line and nylon monofilament.

What filament diameter range and production speed can the ACE0001 machine handle?

The ACE0001 is engineered to process plastic filaments with a diameter range of 1.0 mm to 5.0 mm, making it versatile for various monofilament products. It operates at a production speed of 2 to 5 pieces per minute. The exact speed within this range depends on factors like filament diameter, coil size, and the specific cutting and enlacing program selected via the PLC control system.

How is the machine operated and controlled?

Operation is streamlined through a user-friendly, PLC-controlled system with a touch screen interface. The PLC (Programmable Logic Controller) ensures precise, repeatable, and reliable automation of the entire cutting, coiling, and enlacing cycle. Operators use the touch screen to input parameters (like length and coil count), select programs, monitor production status, and perform diagnostics, requiring only one operator to run the machine efficiently.

What are the key benefits of using this automated machine over manual methods?

The ACE0001 machine offers significant benefits: 1) **Increased Productivity:** Automates a labor-intensive process, achieving 2-5 consistent coils per minute. 2) **Uniform Quality:** PLC control ensures every coil is identical in length, winding tension, and secure enlacing. 3) **Labor Efficiency:** Requires only one operator, reducing labor costs and physical strain. 4) **Reduced Waste:** Precise cutting and controlled coiling minimize filament waste. 5) **Improved Safety:** Automates handling of sharp cutters and winding mechanisms, creating a safer work environment.

Is the ACE0001 suitable for producing products other than grass trimmer line?

Yes, absolutely. While grass trimmer line (nylon monofilament) is a primary application, the ACE0001 is a versatile plastic filament processing machine. It is ideal for any industry requiring finished coils of flexible plastic monofilament, such as fishing line, nylon bristle filaments for brushes, cable harness ties, or other industrial and consumer nylon filaments within the 1.0-5.0mm diameter range. Its programmability allows it to be adapted to various coiling and packaging specifications.