

REELEX® Packaging Guide

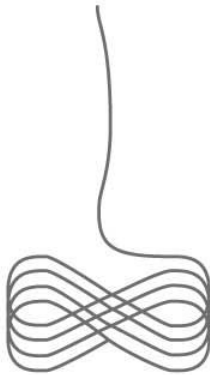
Packaging Manual and Best Practices

Updated: June 2023

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REELEX®
Figure-Eight,
Tangle and Twist-Free



Reels and Spools
Linear wind, requires rotation,
can twist and tangle



Linear Coils
Linear wind,
can twist and tangle



Introduction

The Licensed REELEX® Packaging System is a method of winding wire, cable or any other flexible product in such a way as to result in a self-supporting woven coil featuring tangle and twist-free payout characteristics.

The REELEX coiling method works by canceling any twist in the product by using a computer-controlled traverse to guide the product back and forth across the coil while winding.

By weaving the product across the width of the coil, the winding process imparts a twist in one direction, and then back in the other direction resulting in a figure-8 pattern. These twists cancel each other out as the coil is dispensed and the result is low-tension, smooth payout without any

twists, kinks, snags or tangles.

REELEX coiling machines wind these coils using multiple crossovers and a low tension pattern that creates a radial hole passing through the center of the coil wall. The product dispenses through this hole via a guide tube which assists in the smooth payout of the product. A variety of different tube designs and sizes are available and are chosen based on the diameter and flexibility of the product.

Over the last 30 years, this packaging technology has become the standard for “last-mile” lengths of twisted-pair LAN cables as well as Coaxial and some Fiber Optic cable types. Today REELEX machines are in use by over 130 manufacturers across the globe.

The purpose of this guide is to educate the REELEX licensee on the basics of REELEX packaging as well as provide solutions to common issues. These guidelines have been developed over 30 years of REELEX packaging and thus reflect the knowledge and experience ratioed over that period of time. As a result, it is highly recommended that all guidelines be followed, though it should be noted that every product is different and that many products require special attention. Please contact REELEX Packaging Solutions, Inc. for a complete set of recommendations pertaining to specific products.

Please note that REELEX Packaging Solutions offers package development assistance free of charge including samples, package design, testing and other development services and we are happy to lend our expertise in ensuring REELEX maintains its reputation for quality and dependability.



“WITH REELEX, YOU JUST PULL AND GO... NO SETUP, NO HASSLE.
JUST PAYOUT THAT IS FREE OF TWISTS, TANGLES AND DISPENSES
AS FAST AS YOU NEED IT TO.”

Required Package Marking



FOR MORE INFORMATION: <http://www.reelex.com/licensing/#logo>.

As part of the license agreement contract, all packages containing REELEX coils must have a REELEX trademark logo located somewhere on the package. The license trademark can be placed anywhere on the package and in any size or color as long as the text is legible. This trademark serves several purposes:

- To identify to the user that the package contains a genuine REELEX coil which will perform as expected and is far less likely to tangle or snag as products packaged using counterfeit REELEX methods.
- To indicate that the coil is packaged using a patented and licensed method utilizing the intellectual property of REELEX Packaging Solutions, Inc.
- To protect the licensee's investment in REELEX by indicating the utilization of the brand and thereby the legal protection, marketing advantages and authenticity of quality the REELEX brand logo represents.
- To certify to end-users that they are purchasing a genuine, quality product in a genuine, quality package from an honorable and honest company.

Color and Size:

Either of the following trademark logos must be printed on any package containing a coil wound on REELEX machinery and utilizing REELEX-related intellectual property. There are no restrictions on size or color except that the logo must be visible on the outside of the package.

Horizontal REELEX Logo:

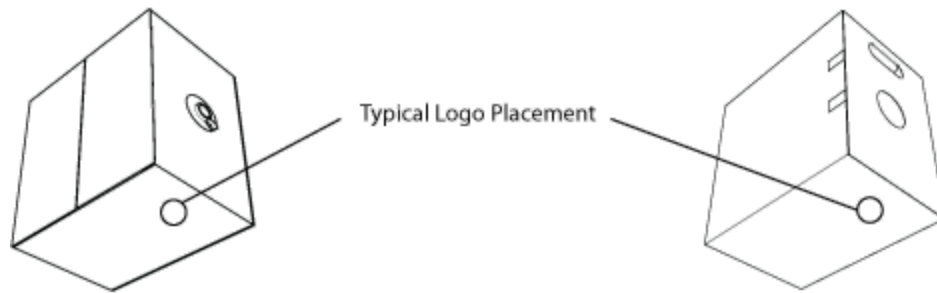


Vertical REELEX Logo:



Placement:

Typical location is on the bottom of the package near the box certification seal, although there is no set requirement for placement.



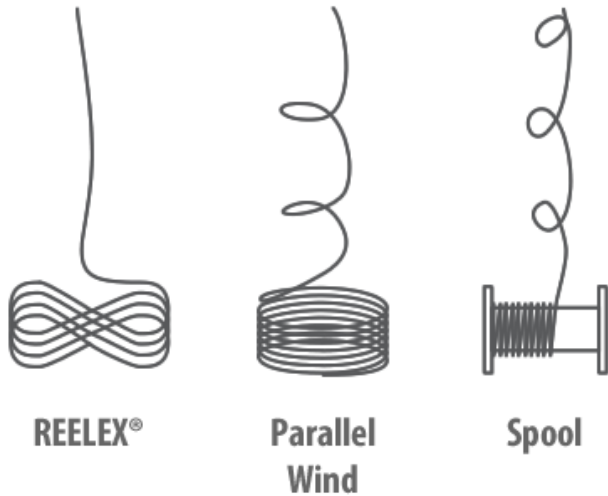
Electronic Versions:

To acquire electronic versions suitable for box manufacturers or marketing departments, please visit: <https://www.reelex.com/contact/#trademarkform>

If you have questions, please email support@reelex.com.

REELEX Coiling Overview

What is REELEX?



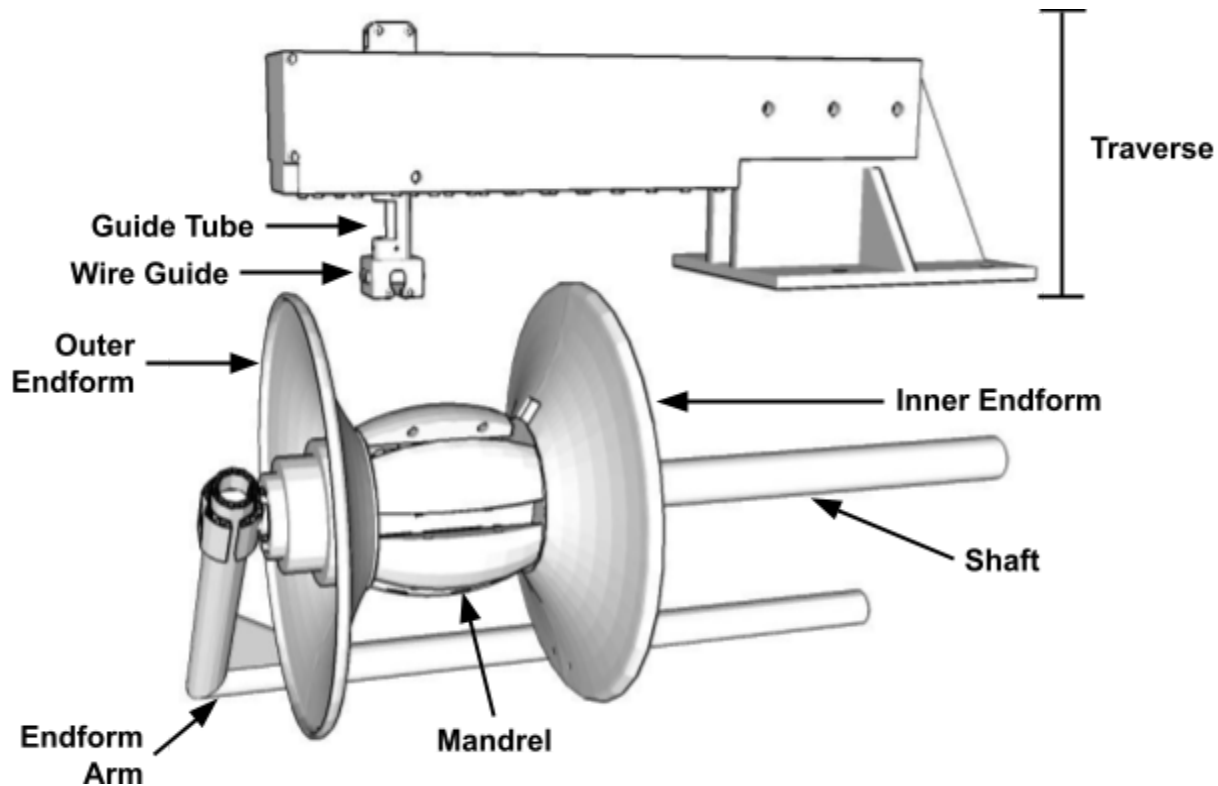
REELEX tangle-free technology is a patented method of winding a filamentary product (such as cord, wire, cable or tubing) into a figure-eight coil on a specialized coiling [machine](#).

This unique coil dispenses from the inside-out without twists, tangles, snags or overruns. Because the coil does not rotate during payout, there is no inertia, and thus no need for payoff stands or brakes. And since the coil does not require any moving parts as a means of dispensing the product, it may be packaged in a wide variety of package shapes and materials, or simply placed in a cardboard box.

This coiling method cancels any twist in the product by using a traverse to guide the product back and forth across the coil while winding. By weaving the product across the width of the coil, the winding process imparts a half-twist in one direction, and then back in the other direction. These twists cancel each other out as the coil is dispensed, resulting in low-tension, smooth payout without any twists, kinks, snags or tangles.

REELEX II, REELEX AIR or EcoCore is recommended for LAN cable, whereas REELEX I is acceptable for products like security/alarm wires, building wire, etc. The product dispenses through a payout tube which is inserted into a hole woven into the wall of the coil by the coiling machine.

Mandrels, Endforms and Traverse



Mandrels

The REELEX mandrels are what the product is wound on and define the interior diameter of the coil.

If too small a mandrel is used on a stiff product, the interior diameter of the coil may be too small and may prevent the product from paying out smoothly.

Likewise, if too big a mandrel is used, the coil may be unnecessarily large, or the product may collapse on itself, causing tangles.

It should be noted that a larger mandrel does not necessarily produce a larger coil.

Please consult REELEX Packaging Solutions for suggestions on mandrel size. Always run sample coils and perform payout tests before production begins.

Endforms

Like the mandrels, the endforms are also designed specifically for REELEX coils. The endforms work to shape the REELEX coil and help guide the product so that the layers lie properly. Endform sizes are typically determined by the choice in mandrel size, though larger endforms can sometimes be paired with smaller mandrels for longer coil lengths.

Traverse Guide Tube

Distance: The guide tube should always be set as close as possible to the endforms without the guide or the product striking them. This ensures precise control over the cable during winding. If the guide tube is too far away, the product can fall over the ends of the coil and cause excessive denting. The guide tube stroke should also be centered between the endforms.

NOTE: The product should never “bend” over the endforms during winding. If it does, confirm that the mandrel is centered to the traverse and that the guide tube is not set too low. The product should barely contact the endforms during winding.

Example of product bending over endforms:



Incorrect



Correct

Orientation: Roller guides with box roller outputs should have the guides controlling the left-right motion closest to the endform. If this is not the case, rotate the guide 90 degrees.

Type: Four-roller type guides or the new [adjustable wire guide](#) should be used.

Reference: [Drawing 99511](#) - Wire Guide Types

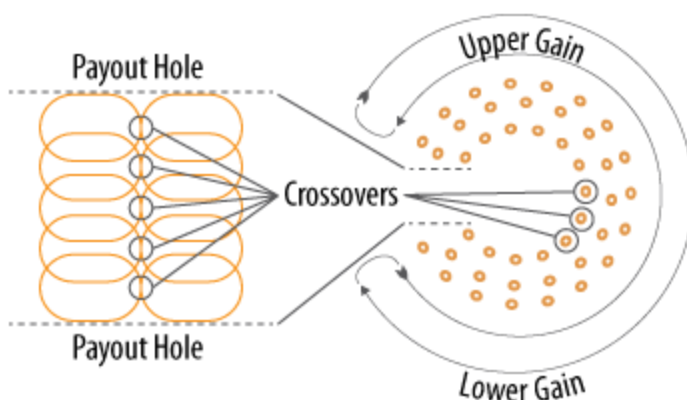
Coil Settings and Adjustments

Line Tension

Line tension is adjusted by an air regulator on the dancer and measured in Pounds Per Square Inch (PSI) or BAR. Tension should be always as low as possible without causing a detrimental effect on coil rigidity or slack in the line. High line tension can cause the payout hole to close up while winding, cause damage to the cable or cause slipping layers, while too low tension can cause the coil to fall apart.

IMPORTANT: Recommended line tension for UTP cables is **no more than 12 psi (0.8 bar), and typically as low as 5-10 psi.**

Upper and Lower Ratios



The ratio (also referred to as “gain”) adjustments control the distances between wraps in a layer. Generally, the lower the ratio, the less negative space in the coil and therefore the coil will be denser and result in a smaller diameter. However, if the ratio goes too low the coil will start to increase in diameter, as layers have nowhere to go but build atop one another.

In addition to fine-tuning the diameter of the coil, the ratios also adjust tension placed on the product within the coil. Higher ratios will help ease the tension within the coil if the product being wound is sensitive to pressures or deformation.

$$\text{Ratio Setting} = (\text{Upper Ratio} + \text{Lower Ratio}) \div 2$$

In the packaging charts or packaging program, the chart will indicate the minimum diameter size at the minimum ratio setting and the maximum ratio gives the maximum diameter size.

NOTE: Calculate ratio settings for a given product on the REELEX packaging calculator:
<http://www.reelex.com/support/packaging-calculator/>

EXAMPLE: Given a product with OD of 0.242 inches (6.14 mm)

If the chart or program gives Minimum Ratio of 36 and Maximum Ratio of 48, select a ratio somewhere between those two numbers (closer to 36 will give a smaller diameter coil, whereas an average ratio closer to 48 will create a larger coil).

A good setting for this product is 38. Thus, make Upper Ratio = 41, and Lower Ratio = 35. When averaged, these two numbers produce an Average Ratio of 38.

41 + 35, divided by 2 equals = 38

Upper and Lower Ratio should not be the same. Typically, it is best if they are different by 3 or 4 digits. It is also generally good practice to make the ratios not divisible by the same number. For example, an upper ratio of 20 and lower of 10 is not ideal because at some point the layers will stack atop one another. It is instead better to use prime or an odd and an even number such as 21 and 9.

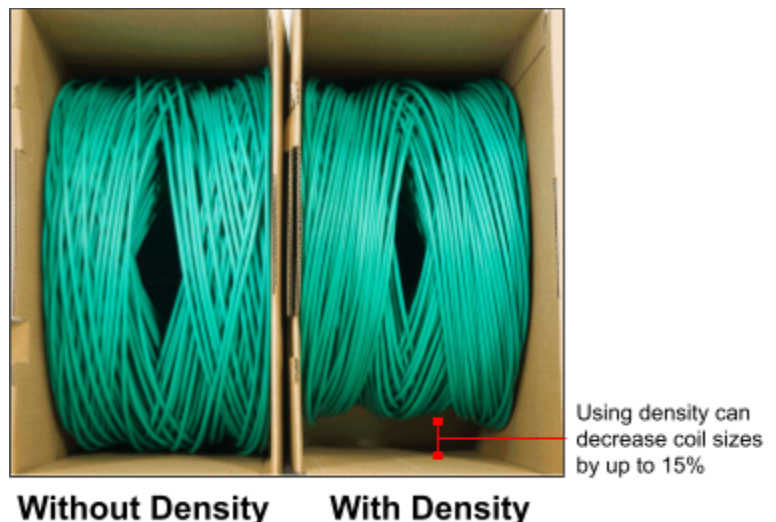
Density

The “variable density” setting increases the number of crossovers (places where the wire crosses over itself) as the coil builds. This increases the density of the wind resulting in smaller, denser REELEX coils and potentially reducing package sizes by up to 15%.

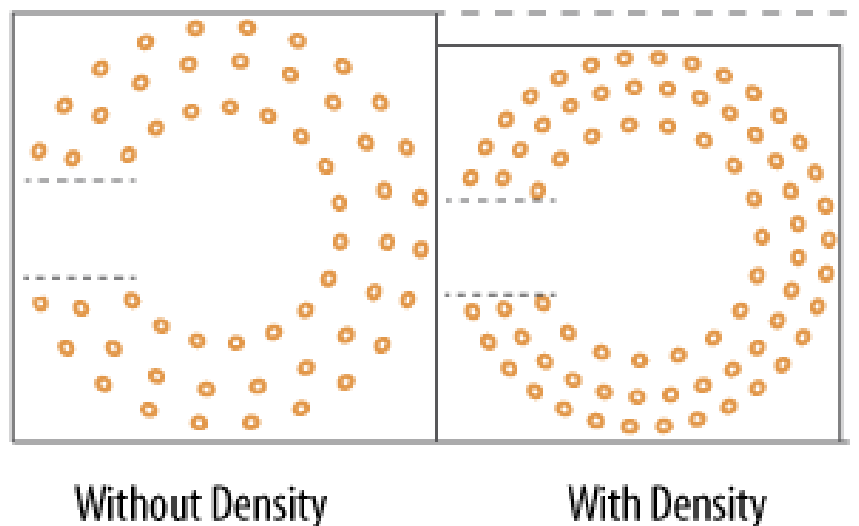
NOTE: The Density Program is included on most modern REELEX machines. An upgrade is available on many REELEX machines manufactured prior to 2001.

The Density Program also staggers the location of the crossovers so they occur at irregular intervals.

In addition to allowing for increased coil density, the shifting of the crossovers have a significantly positive effect on the electrical performance of data cables such as Category 5e, Category 6 and more.



This means products that previously performed marginally in electrical testing can now be packaged in REELEX with little or no degradation in performance.



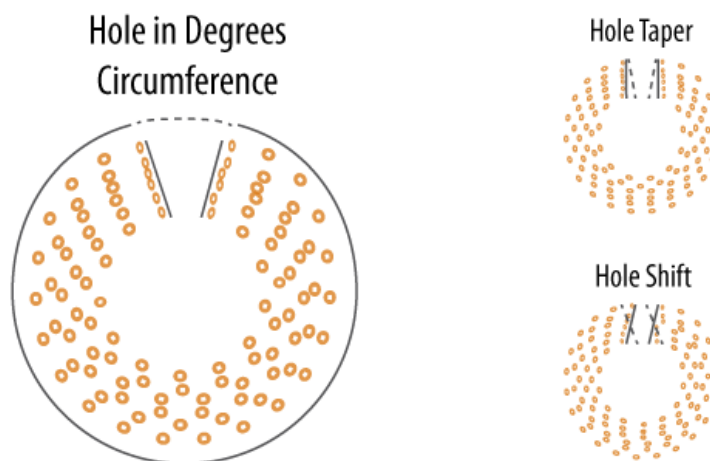
Hole Settings

Hole Size:

The hole size setting on all REELEX machines can be adjusted in degrees. The larger the setting, the larger the payout hole, however the coil size will also increase. Any settings larger than 120 may produce a coil that may collapse or cause the product to slip. The hole size should be chosen so that the machine or operator does not have a problem inserting the tube.

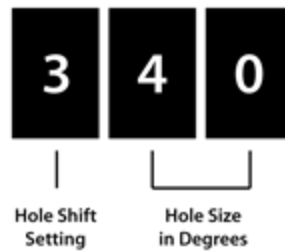
On G1 machines featuring REELEX II default software, the hole size setting is already offset by 50, so that the hole size in degrees is equal to the setting plus 50. Thus, to create a coil with an actual hole size of 110 degrees, the hole size setting would be 60, because $50 + 60 = 110$.

Range: 0° to 120°



Hole Shift:

The hole shift setting is the hundred digit of the Hole Size setting and adjusts the slant of the hole. To determine the proper hole shift setting, use the following formulas. Range: 0 to 9



$$\text{English} = 20 \times \text{Cable OD in inches}$$

$$\text{Metric} = 0.8 \times \text{Cable OD in mm}$$

EXAMPLE: Cable has an OD of 0.242 inches (6.14 mm)
English: $20 \times 0.242 = 4.84$ round up to **5**
Metric: $0.8 \times 6.14 = 4.91$ round up to **5**

Hole Taper:

Adjusts the shape of the hole to adjust for product slippage and to shape the payout hole to easily accept the payout tube. Has the added benefit of smoothing coil shape to reduce ridges.

Range: 0.00-5.00

REELEX "I" Settings

Hole Settings for REELEX I	G1 Machines	G1 Machines with Density Upgrade	G2+ Machines
Hole Size	350 to 360	300 to 310	50° to 60°
Hole Taper	N/A	N/A	3

G1: "REELEX I" or standard REELEX coils feature a small (approx 1-inch/25mm) diameter payout hole. Typical hole settings for winding UTP cable on machines built prior to 1999 (old software) are: 350 to 360

G1 with Density Upgrade: On newer machines, the upgraded REELEX II-enabled software offsets the hole size by 50, so to produce a REELEX I coil on newer machines, typical settings would be: 300 to 310

G2+: On newer machines equipped with touch-screen controls, various coil settings are clearly marked and separated. For REELEX "I" coils: Hole Shift: 3, Hole Size: 50 to 60°

REELEX II/REELEX AIR Settings

Hole Settings for REELEX II	G1 Machines	G1 Machines with Density Upgrade	G2+ Machines
Hole Size	390 to 399	340 to 370	90° to 120°
Hole Taper	N/A	N/A	3

REELEX II coils feature payout holes up to 4-inches/101mm in length, and can be produced by all modern REELEX machines. However, most REELEX machines produced since 1999 have upgraded software in which the hole size setting is offset by 50.

G1: To produce REELEX II coils using old software, typical hole settings are: 390 to 399. A “99” hole size setting will produce the largest possible hole on this software. If a larger hole is required, a software upgrade is needed.

G1 with Density Upgrade: To produce REELEX II coils on machines built since 1999, typical hole settings are: 340 to 370

Keep in mind a hole setting of 340 using the new software will produce a coil with a 90-degree hole, because 50 (the software offset) added to 40 (the setting inputted into the machine) will equal 90.

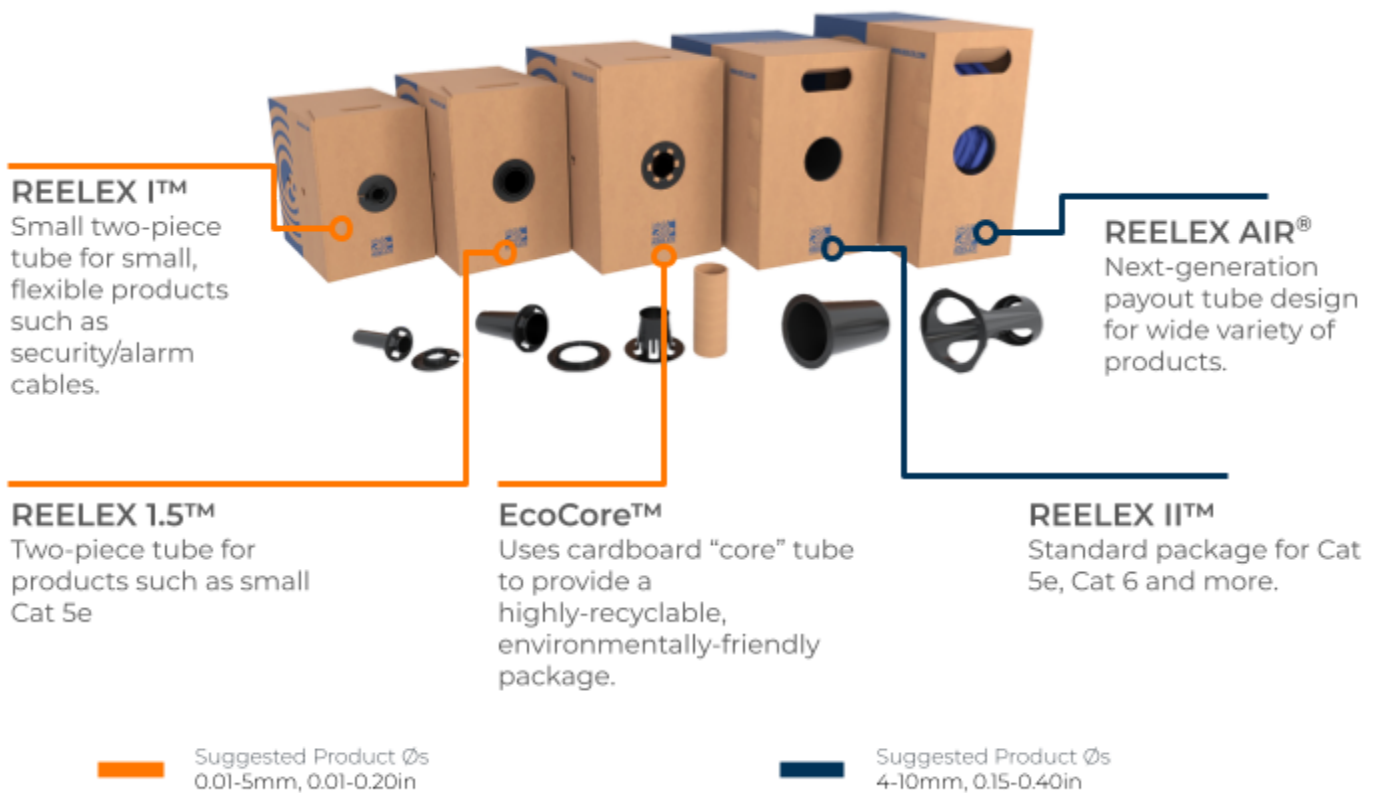
G2+: On G2 and higher machines equipped with touch-screen controls, various coil settings are clearly marked and separated. For REELEX “II” coils: Hole Shift: 3, Hole Size: 90 to 120°

REELEX Package Types

About REELEX Packaging

All REELEX coils require two components: a **payout tube** and a **container**. The payout tube type is often synonymous with the package designation. Thus, a REELEX II tube uses a REELEX II box, but may also be used in a shrink wrap or Reuser Case package.

The vast majority of REELEX packaging uses a cardboard box. The following package types are the most common REELEX designs currently available. Other designs and materials including stretch-wrap and alternate-shape cartons are available.



Common Box Package Types

REELEX I™

The original REELEX package, REELEX I uses small 0.75-inch OD payout tubes (called “EZ-Tubes”) and is suitable for small, flexible products. Typical box designs are side-loaded with interlocking flaps.

- Smallest package type for smaller, flexible products.
- Payout tube includes snap-on ring (“locking ring”) to affix tube to package
- Can be sold as tube-only without locking ring for use in clamshells or shrink wrap packages
- Available in lengths in one-inch increments from 3in (7.5cm) to 6in (15cm) long
- Typically uses side-load box designs
- Tube is exposed on the outside of the package in typical box designs

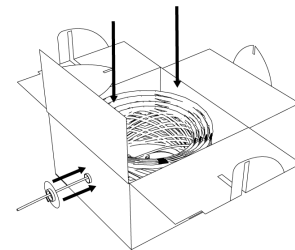
Box Design Example:



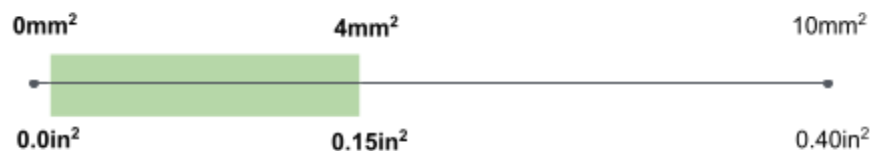
Payout Tube Design:



Typical Box Loading:



Recommended Product OD Range:



Reference: <https://www.reelex.com/packaging/reelex-i/>

REELEX 1.5™

Slotted between REELEX I and REELEX II is “1.5”. This payout tube uses a similar design as the REELEX I “EZ-Tubes”, but features a larger inside diameter suitable for larger products.

- Mid-sized guide tube option for a wide variety of flexible products.
- Includes snap-on ring to affix tube to package
- Can be sold as tube-only
- Available in 4in (10cm) length
- Suitable for side-load box designs

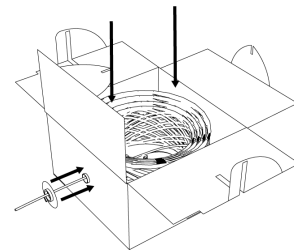
Box Design Example:



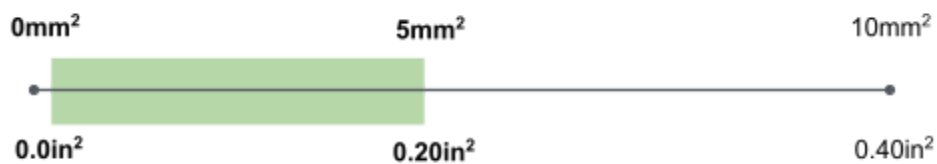
Payout Tube Design:



Typical Box Loading:



Recommended Product OD Range:



Reference: <https://www.reelex.com/packaging/reelex-1-5/>

EcoCore™

EcoCore uses a strong paper tube called a “core” and fastens it to the package via a plastic locking ring. The advantage of EcoCore is that it provides REELEX II payout performance in a smaller, cheaper, more environmentally-friendly package.

- Environmentally-friendly guide tube uses locally-sourced cardboard tube (“core”) affixed to package via a plastic locking ring (“Nano”)
- Suitable for use with 2.0in (5cm) ID cardboard tubes sold separately
- Available in any length
- Suitable for side-load box designs, or custom box designs
- Not advised for coils heavier than 20 lbs (9 kg)

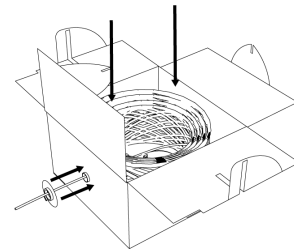
Box Design Example:



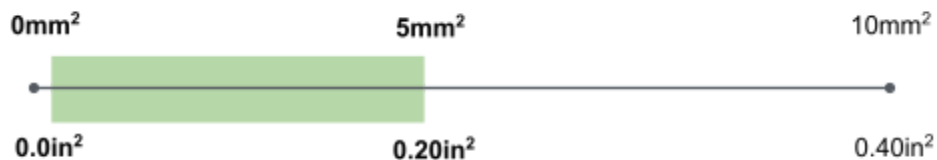
Payout Tube Design:



Typical Box Loading:



Recommended Product OD Range:



Reference: <https://www.reelex.com/packaging/ecocore/>

REELEX II™

The global standard for most high-performance data cables, REELEX II is a term which incorporates both the tube design and the coil itself. REELEX II coils are made by weaving a much larger payout hole into the coil and thus require a larger diameter tube. This winding method was developed in 1999 to improve payout performance of all products, especially in cold temperatures. Today it is the most commonly used REELEX package, as it vastly improves payout performance of all products with minimal sacrifice in package size.

- Larger guide tube provides excellent payout for larger high-performance cables, including Category 6 and higher
- Suitable for use with automated REELEX equipment or top-load box designs
- Available in 6in (15cm) length with 2.5in (6.3cm) input opening

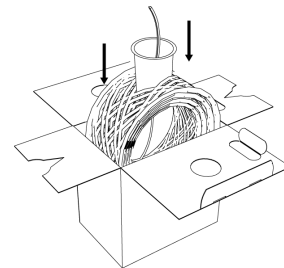
Box Design Example:



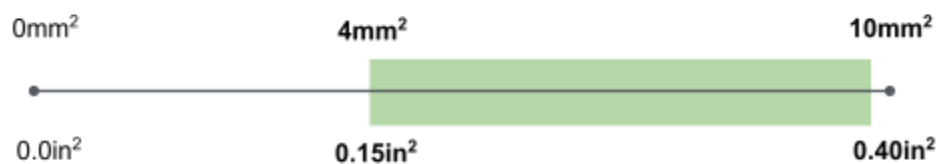
Payout Tube Design:



Box Loading:



Recommended Product OD Range:



Reference: <https://www.reelex.com/packaging/reelex-ii/>

REELEX AIR®

REELEX AIR™ is an evolution of the ubiquitous REELEX II payout tube used in the majority of REELEX® packaging of low voltage cables. This new design offers a significantly narrower package size and improved payout performance compared to the MP60 REELEX II tube. REELEX AIR is backwards compatible with the MP60.



- Latest guide tube design offers maximum payout performance while allowing superior packing density and 45% reduction in material
- Suitable for use with automated REELEX equipment or top-load box designs
- Available in 6in (15cm) length
- 30% narrower packages translates to 40% increase in shipping density

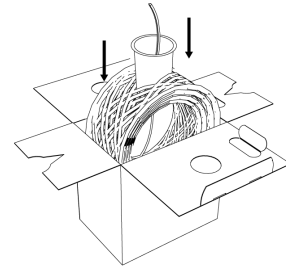
Box Design Example:



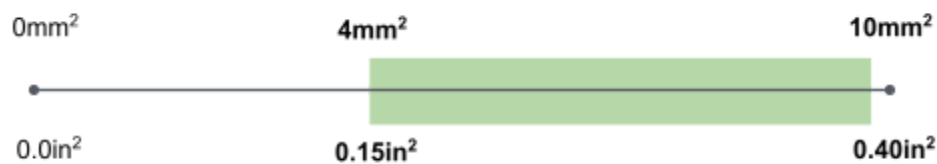
Payout Tube Design:



Box Loading:



Recommended Product OD Range:



Reference: <https://www.reelex.com/packaging/reelexair/>

Alternative Package Types

Reuser Case

The Reuser Case is a reusable REELEX container which is made from injection-molded polyethylene. This container is extremely durable, weather-resistant and features convenient carrying handles.

With the Reuser Case, the cable manufacturer ships a stretch-wrapped REELEX coil directly to the end-user, who in turn places the coil into the Reuser Case for easy on-site handling. The coils are either stretch-wrapped manually, or are wrapped via an automated module mounted to the D-750 or D-1500 (available from REELEX).



The Reuser Case can be molded with any company logo on the side while the eye-catching design makes for a highly visible display of high-tech cable packaging.

- In current design, supports coil diameters from ø 15in to ø 16.5in (38cm to 42cm)
- Can use REELEX II, or REELEX I tubes, others with modifications.
- Typical package examples: 750 ft (230m): RG6 and other Coaxial or Drop Cables, 1500 ft (500m): Category 5e and other low-voltage cables.

Reference: <https://www.reelex.com/packaging/reuser-case/>

ProFlex™

ProFlex is the a versatile, flexible, low-cost, low-waste package available to manufacturers of flexible linear products. Ideal for end-user lengths of cable, tubing, fiber optics and more, ProFlex is an innovative shrink-wrap package that incorporates a heavy-duty handle into a single piece shrink bag. The unique heat-shrink process isolates the handle from the rest of the package while in the heat tunnel, allowing the handle to remain intact while the rest of the package shrinks around the coil.



A ProFlex machine is required to produce ProFlex packages.

- Requires plastic bag vendor that supplies heat-shrink capable bags with reinforced handles.
- Supports coil diameters from Ø 9in to Ø 16in (23cm to 41cm)
- Can use any tube type, may require cardboard support plate.
- Typical package examples: 250 ft (75m): Single-conductor building wires, flexible low-voltage products and fiber optic cables. 500 to 1000 ft (150-305m): Smaller flexible low-voltage products and fiber optic cables.

Reference: <https://www.reelex.com/packaging/proflex/>

Stretch/Shrink Wrap

REELEX coils lend themselves perfectly to stretch and shrink-wrap packaging methods. For low-margin products, shrink and stretch-wrapping options can significantly reduce packaging costs while introducing a fully disposable, lightweight and low-waste package.

REELEX Packaging Solutions has developed a new patented Stretch-Wrapping module that can be retrofitted to existing D-750, and D-1500 coiling machines as an add-on. This module has been custom-designed for use with the REELEX coiling process and is operated by the REELEX machine controller. Please contact REELEX for more information.



Reference: <https://www.reelex.com/packaging/plastic-wrap/>

Packaging Consultation

Diagrams / Graphics:

Diagrams similar to the ones used in this manual are available free of charge from REELEX Packaging Solutions. Custom diagrams may also be requested. Please contact Support@REELEX.com for more information.

Marketing Materials:

Marketing materials such as photographs, diagrams and logos are also available free of charge.

Box Design Assistance:

REELEX Packaging Solutions has much experience in packaging methods, box designs and material testing. REELEX encourages all licensees to take advantage of design assistance and knowledge which is free of charge. Please feel free to contact REELEX Packaging Solutions with all suggestions, recommendations or questions relating to REELEX package design.

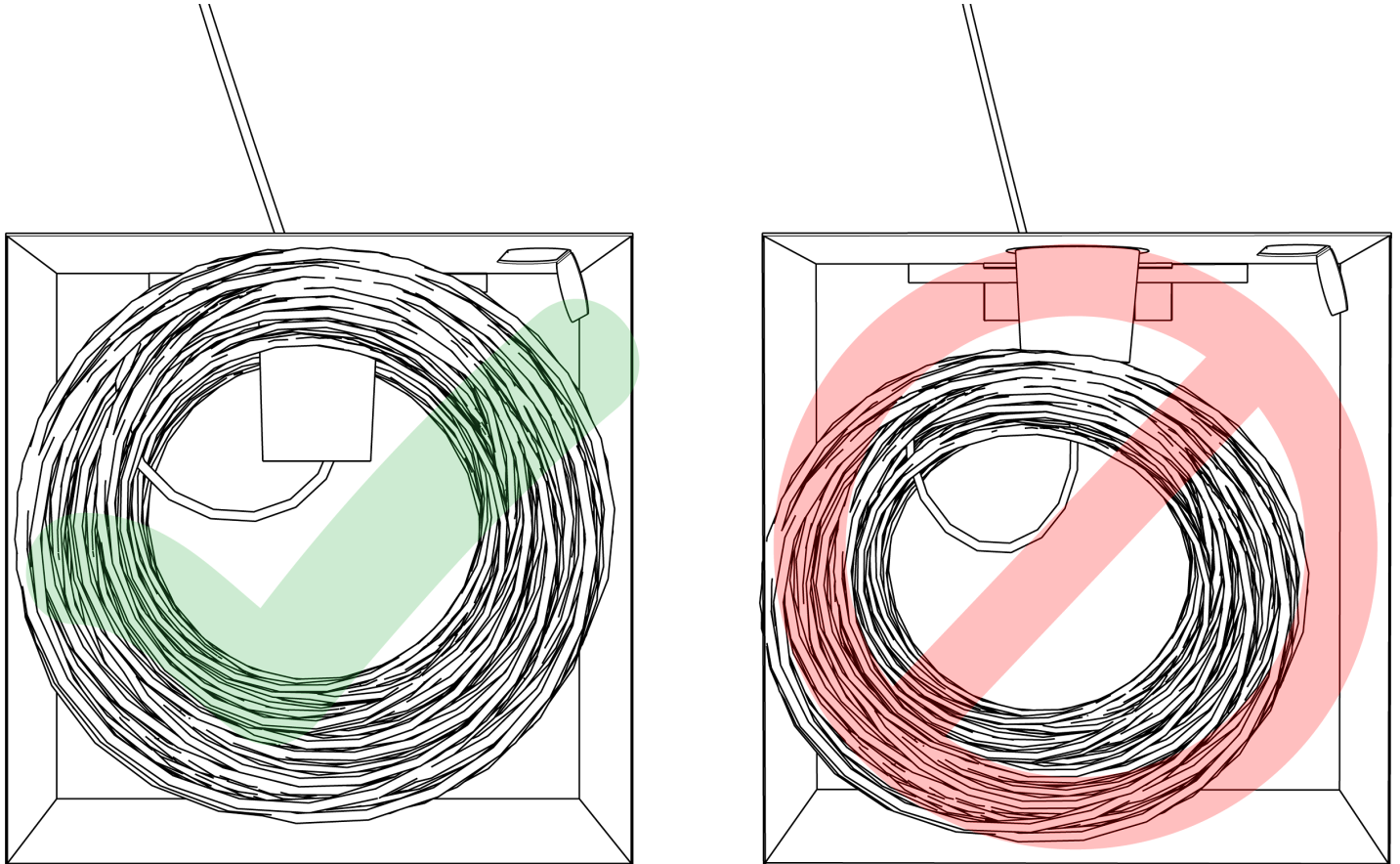
Samples:

Samples are always available at no charge. Please contact Support@REELEX.com for more information.

Box Design Guidelines

Dimensions and Proportions

Box drawings are supplied with samples made by REELEX of your products.



The dimensions of the coil should fit the inside dimensions of the box. The box should always fit the finished REELEX coil **snugly**.

- *If the box is too **small** for the coil, the box will bulge and either cause problems stacking, or threaten the structural integrity of the box itself.*
- *If the box is too **big** for the coil, the coil could slide or rotate within the package and cause unraveling and tangling issues. Many tangling problems in the field are caused by too large a box.*

Handle Location

Handle location recommendations are made in the box diagrams. However, if the handle location must be changed, it should always be placed so that the handle folds in towards the closest corner of the box and away from the coil. REELEX also recommends that the handle be placed on the side with the most layers of material for strength.

REELEX Packaging Solutions recommends that **two handles** be placed on the small panels on either side of the payout hole when packaging **heavy products such as coaxial cable** or when packaging coils greater than **17-inches** in diameter. Some designs have also included a reinforcing strip around the box so as to provide strength when carrying heavy coils. Please contact REELEX Packaging Solutions for suggestions.

Materials

Consult with your box provider for materials advice regarding waterproofing options and printing. REELEX Packaging Solutions recommends that paperboard used for the package should have a burst test rating of **275 lbs per sq inch (1896 kPa) minimum and C-Flute construction. Double-wall materials may also be used.**

Important: REELEX Packaging Solutions has found that ECT-equivalent materials are not advised, as many materials meeting the ECT equivalent of 275 lbs per sq. inch burst test rating do not have the same durability as the recommended board. ECT materials have been found to rip, tear and crush more easily and are thus not recommended.

Flute Direction

The flutes or “grooves” in the paperboard should be oriented so that when the carton is palletized the **flutes run VERTICALLY to prevent crushing.**

REELEX Trademark

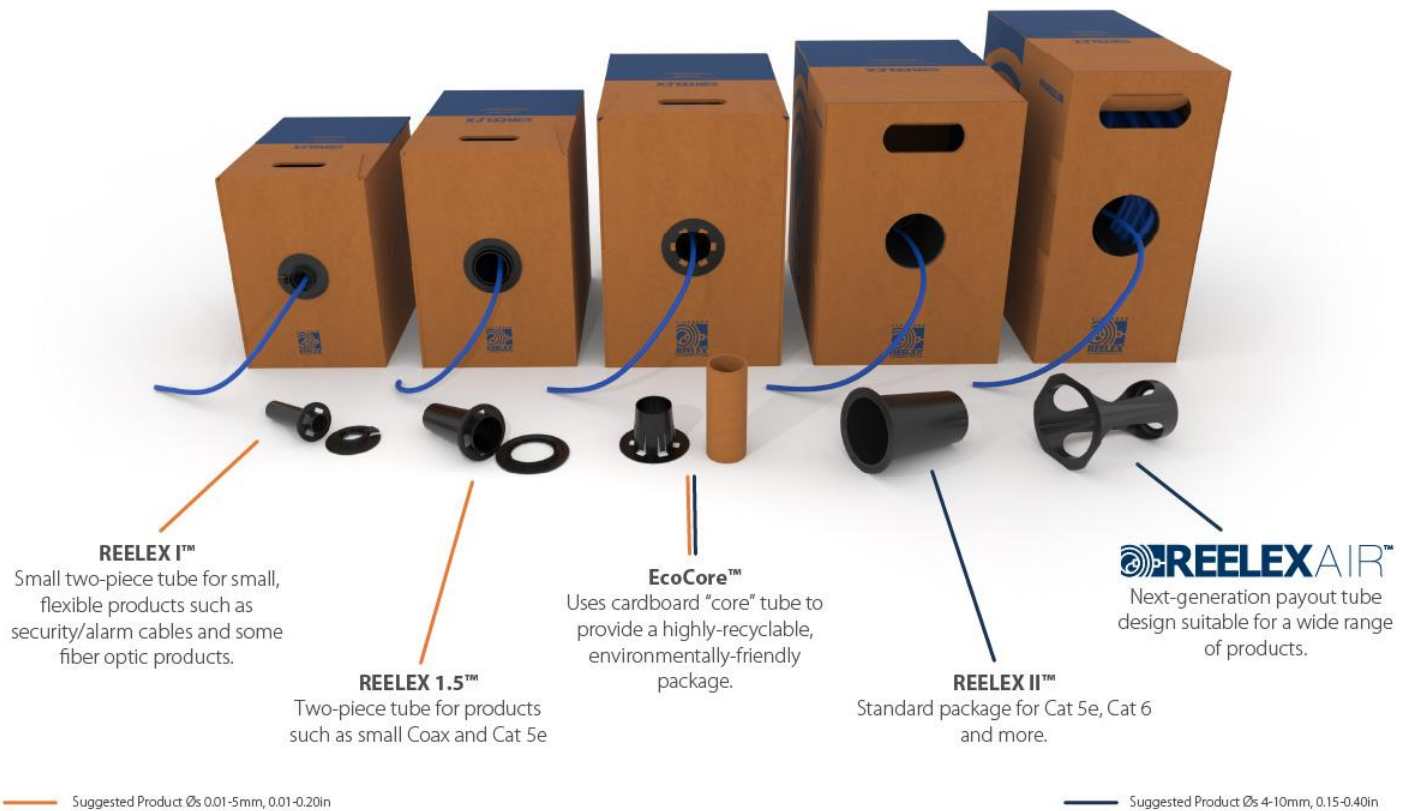
As described at the [beginning of this guide](#), all packages containing REELEX coils must have the REELEX trademark logo visible. This logo serves to identify to the end user that the package is a genuine REELEX package and will behave as such. The size and placement of the logo is unrestricted.



To obtain the REELEX trademark logo, please visit:

<https://www.reelex.com/contact/#trademarkform>

Payout Tubes



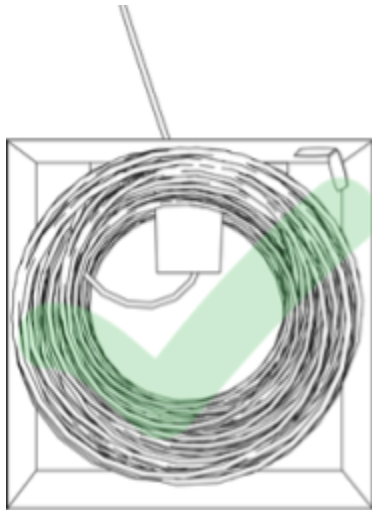
Selecting a Payout Tube

Reference: See [Payout Tube Selection Chart](#) document.

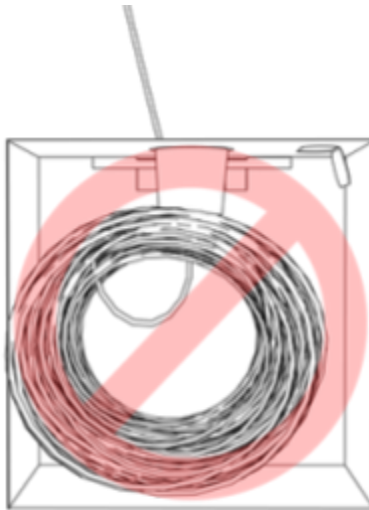
Tube Size

The payout tube should always **protrude as close as possible into the center of the coil** for proper payout, or at least 1.00-inch (25mm) beyond the inside wall of the coil.

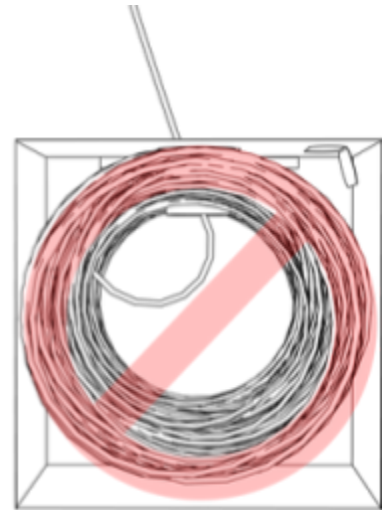
Using a tube that is too long or too short can cause tangling, kinking or other undesirable payout effects.



**Coil Fits Box
Tube Correct Depth**



**Coil Does NOT FIT Box
Tube Cannot Function Properly**



**Coil Fits Box
Tube INCORRECT Depth**

Tube and Coil Types

Coil Type	REELEX I	EcoCore and REELEX 1.5	REELEX II and REELEX AIR
Payout Hole Size	40 to 60 Degrees	60 to 90 Degrees	70 Degrees and Higher
Payout Tube	Two-piece plastic tube comprised of a payout tube and a snap-on locking ring with wire clip. Length: 2in to 6in length (5cm to 15cm) Diameter: ø 0.75in (2cm)	Two-piece tube systems use either plastic or a combines readily available paper “cores” with unique plastic locking ring. Length: 2in to 8in length (5cm to 20cm) Diameter: ø 2in (5cm)	Single-piece funnel-shaped payout tube that “drops in” to the coil. Uses box design to capture payout tube (no locking ring). Length: 6in length (15cm) Diameter: ø 2.50in (6.35cm) at product entry
Product Diameter Range	Minimum: ø 0.01in (0.25mm) Maximum: ø 0.15in (4mm)	Minimum: ø 0.05in (1mm) Maximum: ø 0.20in (5mm)	Minimum: ø 0.15in (4mm) Maximum: ø 0.40in (10mm)
Coil Diameters	ø 9in to ø 16in (23cm to 41cm)	ø 9in to ø 22in (23cm to 56cm)	ø 12in to ø 22in (30.5cm to 56cm)
Typical Product Examples	Security/alarm wire, audio cables, THHN, small single-conductor building wires, small fiber optic cables, hookup wires, plastic tubing.	With the exception of very small products, most products from building wire to twisted-pair cables are supported by EcoCore.	High-performance structured cabling (Cat 5e, Cat 6 and up), shielded cables including coaxial cables, less flexible products such as some drop wires.

REELEX I (EZ-Tubes)

The EZ-Tube has been in use for decades and is still used for many products today. Every EZ-Tube includes a locking ring which snaps onto the outside end of the tube and fastens it securely to the wall of the package. EZ-Tubes are also known as REELEX "I" tubes.

If the product has difficulty exiting the package, a Sherguide can be attached to the inside end of the tube to increase the bending radius of the product and smooth dispensing.

The locking ring features a molded **clip** which can be used to secure the cable when not in use.

The **EZ-Tube** is available in 3-inch, 4-inch, 5-inch and 6-inch lengths and is normally shipped with the **Locking Ring** included.

The **Locking Ring** snaps onto EZ-Tube, sandwiching a layer of cardboard between ring and collar, securing the tube in place.

REELEX I Tubes (EZ-Tubes) are defined by less than 1-inch openings and are thus best suited for products less than 0.20-inches in diameter (5mm²)

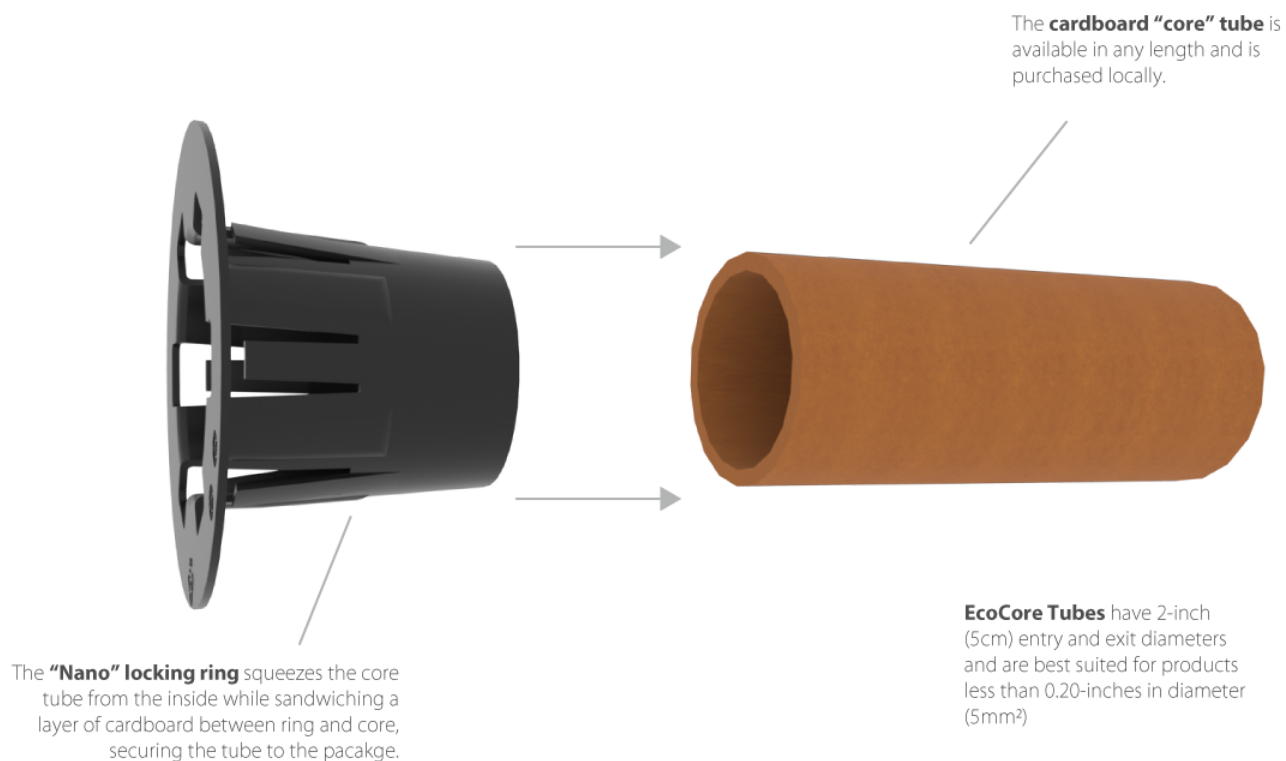
REELEX 1.5™

REELEX 1.5 offers a side-load box solution but a larger diameter payout tube.



EcoCore

EcoCore tubes are cardboard “cores” attached to the package via a plastic locking ring.

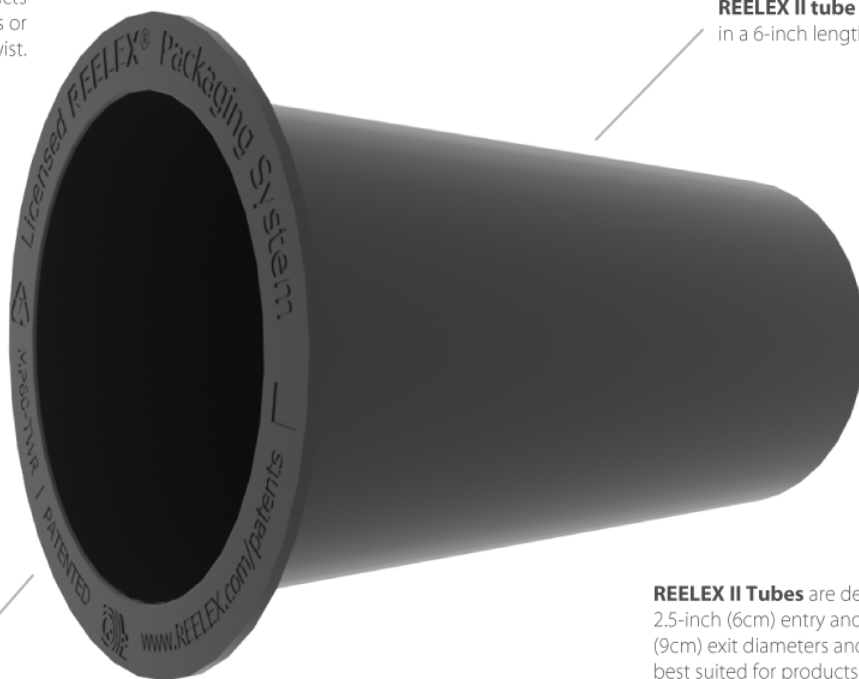


REELEX II

REELEX II™ is a term which incorporates both the tube design and the coiling process itself. REELEX II coils are made by creating a much larger payout hole in the coil and thus require a larger diameter tube. This winding method was developed in 1999 to improve payout performance of stiffer products and twisted-pair products, especially when cold. Today it is the most commonly used REELEX tube, as it vastly improves payout performance of all products with minimal sacrifice in package size.

REELEX II's **large mouth** design is ideal for larger products, products that require a bigger bend radius or products with inherent twist.

Commonly called the "MP60", the **REELEX II tube** is only available in a 6-inch length.



The single-piece design of the MP60 means the package must be designed to capture the tube around the collar.

REELEX II Tubes are defined by 2.5-inch (6cm) entry and 3.5-inch (9cm) exit diameters and are thus best suited for products larger than 0.20-inches in diameter (5mm²)

REELEX AIR®



REELEX AIR™ is an evolution of the ubiquitous REELEX II payout tube used in the majority of REELEX® packaging of low voltage cables. This new design offers a significantly narrower package size, lower cost and improves payout performance compared to the MP60 REELEX II tube. REELEX AIR is backwards compatible with the MP60.

What makes it different?

- **Unique design reduces package size.** The REELEX AIR tube design removes the sides of the payout tube, allowing the cable to fit inside the recesses. This design allows the box size width to be reduced by up to 30%.
- **Less material, less weight, less cost.** REELEX AIR weighs 45% less than equivalent REELEX II tubes. Less material and less weight translates to cost savings in shipping and material costs while offering an improved environmental profile.
- **Improved payout performance.** REELEX AIR's design features improve payout performance for many products. These features include a smooth, rounded entry, which reduces friction and increases the bend radius of the product as it exits the package.

Setting Up a New Product

IMPORTANT: It is **essential** before ordering packaging materials (boxes, etc.) that all products intended for REELEX be wound, tested and verified.

In order to determine optimal coil diameter and thus package sizes, optimal coil parameters must be first determined. Generally, these include [Ratios, Hole Size and Density settings](#).

Packaging Calculator

The primary method for determining coil size and optimal parameters is to use the packaging calculator.

NOTE: The packaging calculator can be found on REELEX's website:
www.reelex.com/support/packaging-calculator

Machine Configuration Guidelines:

- Typical Mandrel Diameters - 6, 8, 10
- Typical Endform Diameters - 12, 18, 21
- Traverse Stroke is almost always 12 inches on standard REELEX machines.

IMPORTANT: Neither the calculator nor the formulas below take into account several important factors in determining coil size, including:

- Line tension (higher = smaller coil)
- Product stiffness (stiff = larger coil, and larger mandrel size required)
- Jacket slipperiness (slippery = larger coil, and more attention paid to tension and hole size)
- Cross-section
- Inherent twist
- Jacket thickness variations

Selecting Ratios

Minimum and maximum ratios are calculated based on product OD, mandrel, hole and endform size as well as traverse width. Use the REELEX calculator in the link above to calculate ratios for your product.

Selecting a Hole Size

Select a hole size based on what type of payout tube you intend to use, and the bending radius of your product. The hole size should be set so that the operator does not have difficulty inserting the payout tube.

Hole Size Guidelines:

- REELEX I - 40 to 60°
- EcoCore and REELEX 1.5 - 60 to 80°
- REELEX II and REELEX AIR - 70 to 110°
- All twisted-pair, LAN, fiber optic and coaxial cables should use REELEX II or REELEX AIR tubes (70°+)

Selecting Mandrels & Endforms

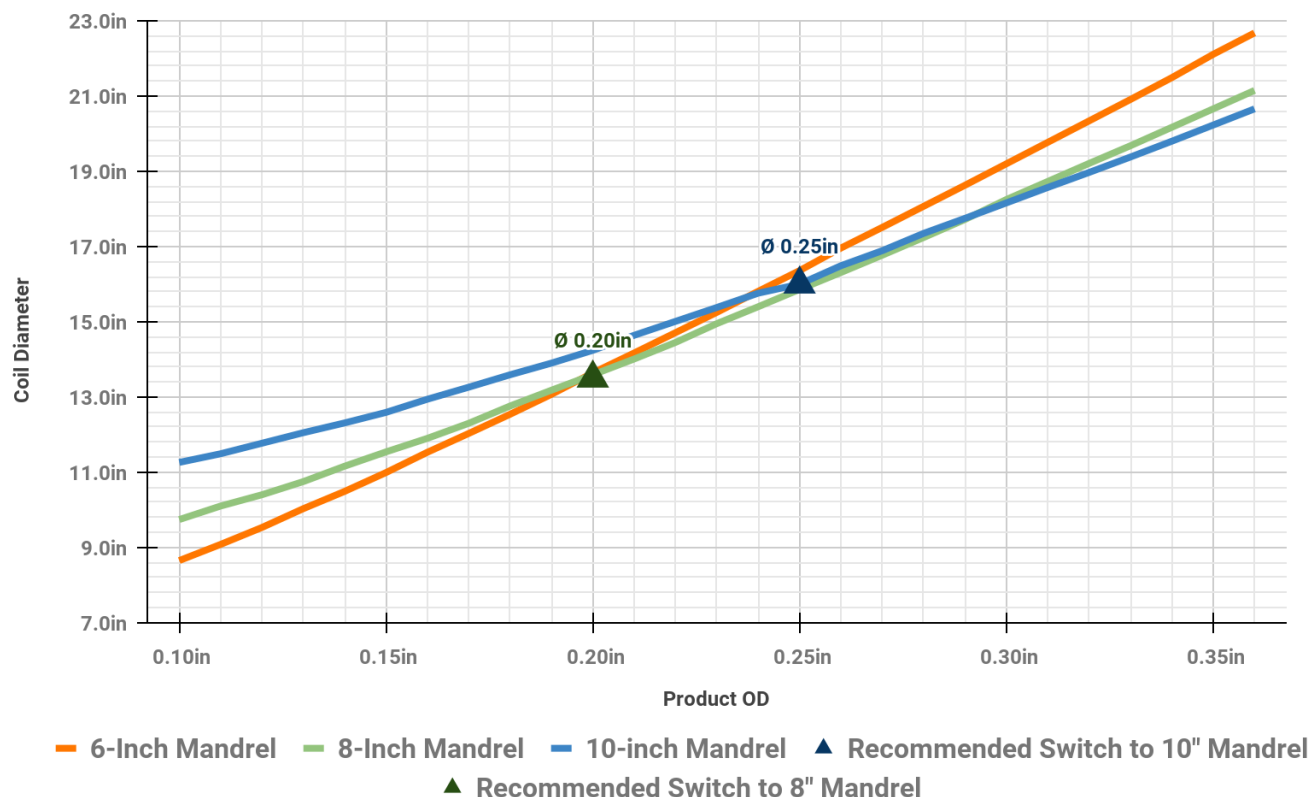
About 80% of REELEX machines are equipped with 8" mandrels with 18" endforms. This is the typical setup for most low voltage products.

For manufacturers winding cable larger than 0.25 inches (~6.5mm) OD, or are packaging high-performance twisted-pair products like Category 6A, 10" mandrels with 21" endforms are recommended.

Does a Bigger Mandrel Mean a Bigger Coil?

Not necessarily! Products larger than about 0.27 inches (~7mm) actually produce a smaller diameter coil on a 10" mandrel than an 8" mandrel. In addition, the thinner coil wall on the 10" mandrel offers improved payout performance, increased payout tube effectiveness and can show improved electrical performance characteristics of twisted-pair cables.

Coil Diameter (1,000ft) by Product OD and Mandrel Size



Basic Coil Calculations

The following formulas are based on rudimentary physics and do not take into account the actual REELEX algorithm. Thus, they should only be used as **very** basic and abstract guides.

IMPORTANT: The following formulas should NOT be used to determine actual coil size, but may be helpful in achieving “ballpark” figures.

The REELEX calculator is more accurate, but again should only be used for determining general data. ALWAYS test and confirm coil sizes before ordering packaging materials.

Formula Guide

NOTE: The below information should only be used as a guide. It does NOT include important parameters such as hole size or density!

The following equations have been derived to help in predicting packaging information for the REELEX system.

Below are 3 equations:

- The first equation will provide the average ratio by relating the mandrel diameter, traverse width, and wire diameter. This ratio is used in determining coil size.
- The second equation will give the basic diameter of a coil knowing the mandrel diameter, ratio, footage and wire diameter.
 - The equations 2a, and 2b are to be used if the variables on the right are known and the left member is to be calculated.
- Equation 3 is used to find the winding time knowing mandrel diameter, wind diameter, ratio, footage, machine RPM and ramp time.

Formulas

1. Formula for Determining Average Ratio

This formula provides the average ratio that will, in theory, leave no space between strands. The G in the formula should be multiplied by 3 to determine minimum ratio for a given product and multiplied by 4 for maximum ratio.

Where: G = Ratio (average of upper and lower ratio)

d = Wire diameter (in inches)

M_d = Mandrel diameter at its center

W_T = Traverse width

E_d = Endform Diameter

$$G = \frac{d}{2\pi M_D \sin \left[\text{atan} \left(\frac{W_T}{1 + E_d + M_d} \right) \right]}$$

2. Formula for Determining Coil Diameter

Where: G = Ratio (average of upper and lower ratio divided by 1,000. If 45, use 0.045)

d = Wire diameter (in feet)

R_M = Radius of mandrel plus 1 wire diameter (feet). If 8" diameter, radius is (8/2)/12

D_w = Diameter of coil (inches)

S = Footage (feet)

R_w = Radius of wind (feet)

$$D_w = 24 \sqrt{R_m^2 + SdG/\pi}$$

2a - Formula for Determining Ratio if Others are Known

$$G = \frac{\pi(R_w^2 - R_m^2)}{S_d}$$

2b - Formula for Determining Length if Others are Known

$$S = \frac{\pi(R_w^2 - R_m^2)}{G_d}$$

3. Formula for Determining Wind Time

Where: T = Winding time (in seconds)

S = Footage (feet)

M_D = Mandrel diameter at its center (feet)

t_R = Ramp time (seconds)

D_W = Diameter of coil (inches)

W_S = Spindle speed (Revolutions per Second)

$$T = \frac{2 (S - \pi M_D \frac{W_S}{2} t_R)}{\pi W_S (M_D + D_w)}$$

Examples

The use of the equations will be illustrated in the following example .

One thousand feet of fiber optic cable is to be packaged in REELEX. The material is .235 inches OD.

Predict box size and winding time.

From experience this material (because of its minimum bend radius and OD) is best to be wound on the 8-inch mandrel with 18-inch endforms. The 18-inch endforms call for a traverse width of approximately 12-inches (Max). From equation 1 the ballpark average ratio can be found.

Working in inches:

$$d = 0.235''$$

$$W_T = 12.0''$$

$$M_D = 8.0''$$

$$\text{Therefore, } G = 0.04495 \approx 0.045$$

The average ratio setting of the machine should be 45. If one chooses 46 for upper ratio and 44 for lower ratio this will satisfy the condition. The setting of .045 can be lowered by 25% and still remain within the limits of the equation.

If a ratio of lower than 25% of the calculated ratio ($0.045 - 25\% \sim 0.034$) is used the crossover hump and end build up will cause increase error in the other equations.

Once the ratio is known the wind diameter is the next to be found. Using equation 2 the wind diameter is found.

Where: $G = 0.045$

$$d = 0.235'' = 0.01958'$$

$$R_M = \frac{4'' + .235''}{12} = 0.3529'$$

$$D_W = \text{Diameter of coil (inches)}$$

$$S = 1,000'$$

$$R_W = \text{Radius of wind (feet)}$$

$$D_w = 24\sqrt{0.3529^2 + 1000 * .01958 * .045/\pi}$$

$$\text{Therefore, } D_w = 15.27"$$

Suppose that the nearest box diameter in stock is 15 inches square and noticing how close the diameter of the coil is to this size, we wish to calculate the ratios for fitting this material in this box. By using equation 2a and winding for a wind diameter of 14.5" (to allow ease in packaging and oversized wire, as well as compensating for the crossover hump) we have:

Where: $R_w = 14.5/2 = 7.25" = 0.6042'$

$$S = 1,000'$$

$$R_M = \frac{4" + .235"}{12} = 0.3529'$$

$$d = 0.235" = 0.01958'$$

$$G = \frac{\pi(0.6042^2 - 0.3529^2)}{1,000}$$

$$\text{Therefore, } G = 0.0386 \sim 0.039$$

A setting of the upper ratio of about 39 to 40 and a lower of 38 to 39 will theoretically create a coil to fit a box 15-inches square. Care must be taken not to allow G to drop below the 25% mentioned earlier. (G should not drop below 0.034).

The winding time can be found from equation 3. (Assume a winding speed of 350 rpm and a ramp time of 7 seconds).

Where: $W_s = 350rpm = 5.833rps$

$$\text{Therefore, } T = 54.5sec$$

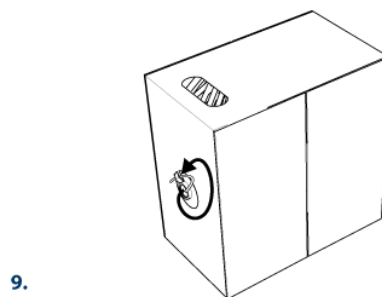
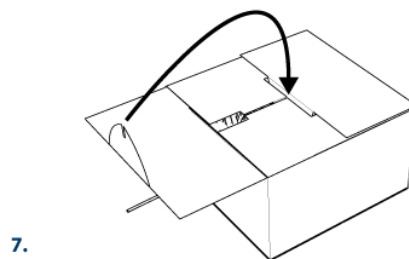
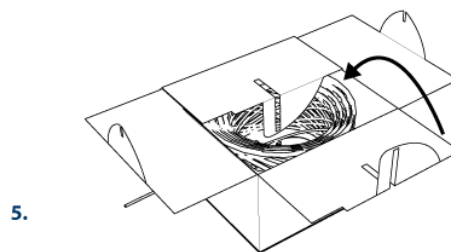
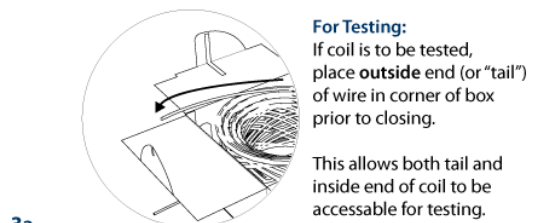
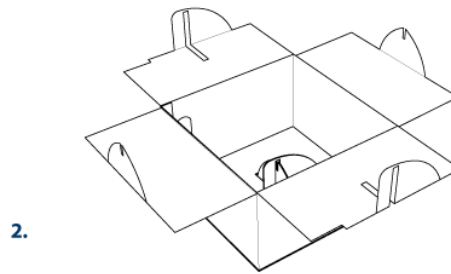
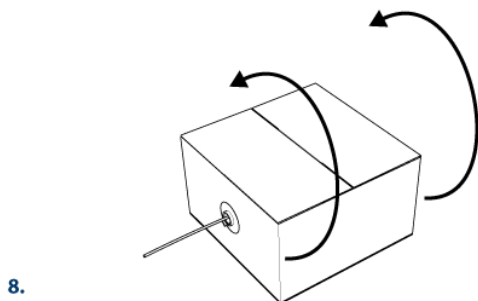
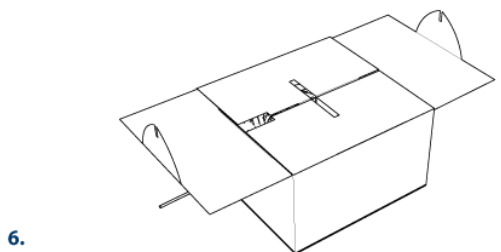
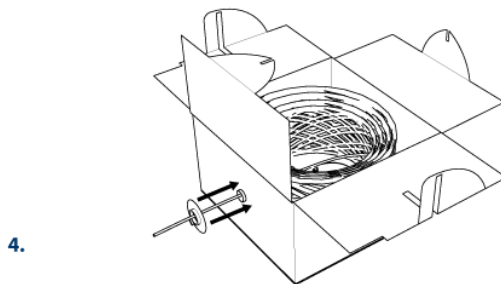
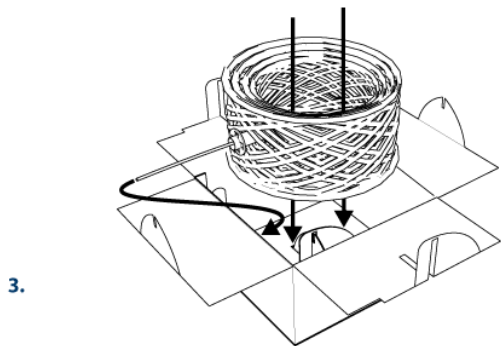
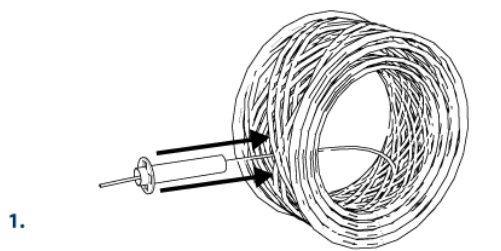
Assembly and Shipping

REELEX Box Loading

REELEX boxes are designed to be rapidly packaged without difficulty. However, there are some unique characteristics of packaging REELEX coils that operators should be mindful of.

- Keep track of the hole in the coil.
- Do not lose track of where the hole is when taking the coil off the machine.
- It sometimes helps to place one hand inside the payout hole to make sure all strands are where they should be.
- Make sure that the payout tube can be easily inserted into the coil without snagging on any strands.
- If one of the strands of cable on the inside of the coil is accidentally on the wrong side of the payout hole, the cable can snag, knot or twist within the first 10 feet of payout.
- If a strand of cable is in the way, move it away from the payout tube.
- Find the inside end of the coil and thread through payout tube.
- The inside end of the coil should be where the cable was first attached to the mandrel prior to winding.
- Make sure the outside end (where the cable was cut after winding the coil) is not accidentally threaded through the payout tube.
- If coil is to be tested for quality control, place outside end (tail) of coil in one corner of the box just after inserting the coil.
- Make sure the end of the coil coming through the tube is secured prior to palletizing so that it does not fall back into the coil.

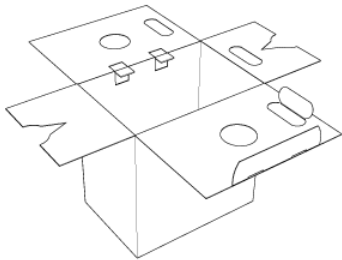
Side-Loaded Boxes (EZ-Tubes, REELEX 1.5 and EcoCore)



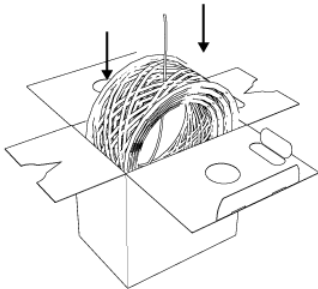
Top Load Boxes

(REELEX II and REELEX AIR)

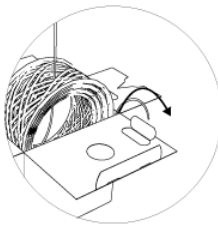
1.



2.



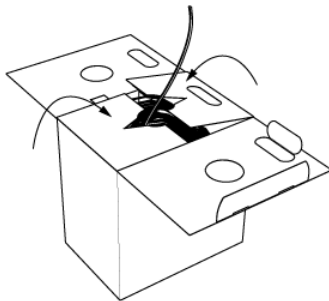
2a.



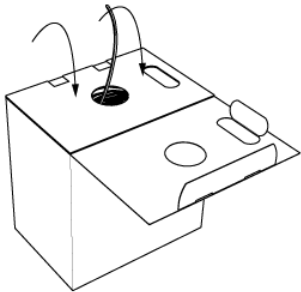
For Testing:
If coil is to be tested,
place **outside** end (or "tail")
of wire in corner of box
prior to closing.

This allows both tail and
inside end of coil to be
accessible for testing.

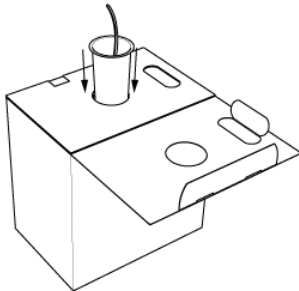
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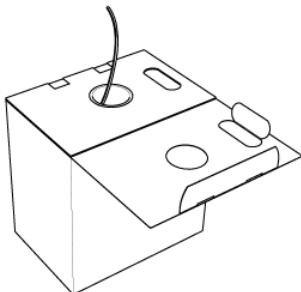
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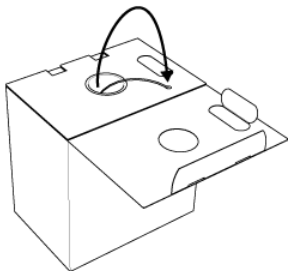
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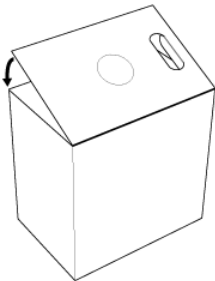
6.



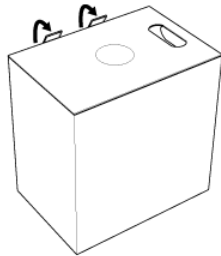
7.



8.



9.



Handling, Palletizing and Shipping

Palletizing

Orientation:

Packages should be placed on a pallet with the coils **upright**. If the packages are placed horizontally, the product inside can come out of place and cause knots or tangling.

NOTE: One exception to this is REELEX AIR packages. The design of the REELEX AIR tube will help secure the cable in place so that the packages may be placed on their side.

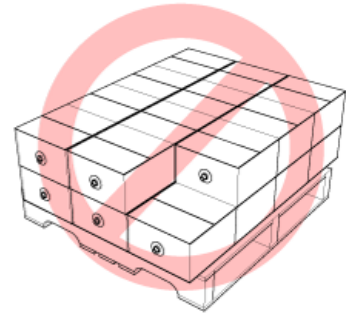
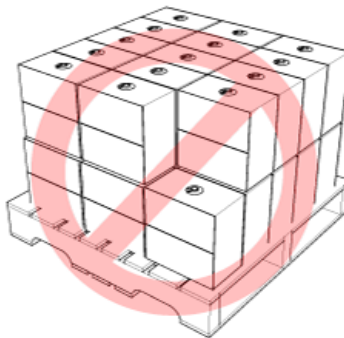
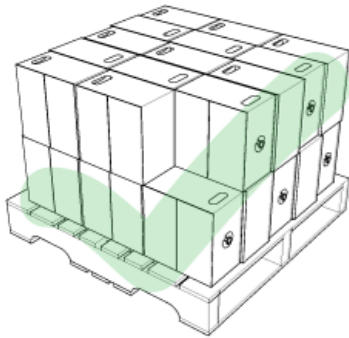
When stacking packages on the pallet, take a look at which direction the flutes (or grooves) in the cardboard go. To prevent crushing, these **flutes must be vertical** to provide support for the next layer.

D-2000 boxes are slightly different in design compared with standard REELEX II boxes. Boxes designed for the D-2000 have exposed flaps where the panels are glued together. When stacking these boxes on a pallet, stack each layer 180-degrees from the layer below so that the glue flaps interlock (below left). This method adds stability during shipping.

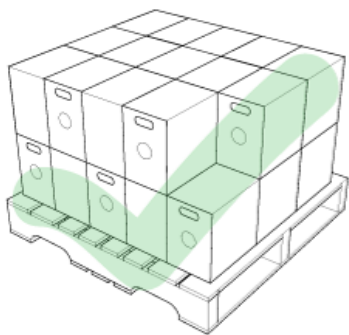
Overhang:

Do not allow the packages to overhang the pallet as the product could become damaged.

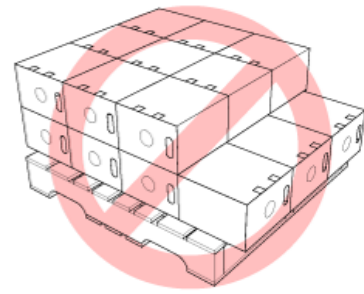
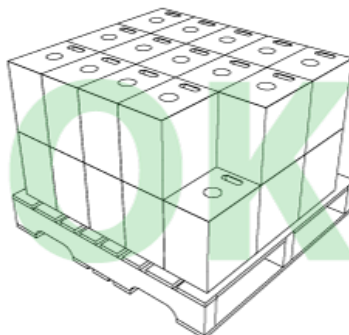
Side-Load Box Palletizing



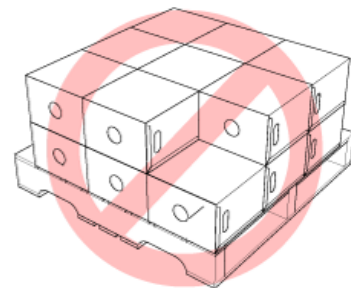
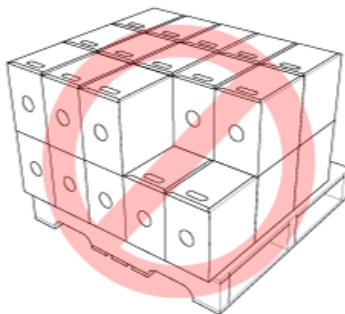
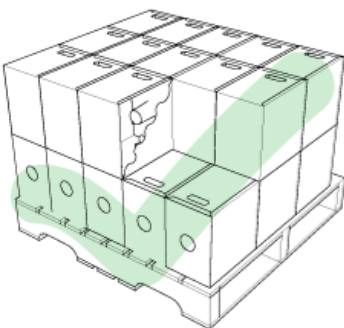
Top-Load Box Palletizing



Paperboard
flute
direction
must be
vertical
when
stacked:



Glued Boxes (Assembled on D-2000 or D-2050):



Handling, Payout and Use

Using a REELEX Package:



1. Insert finger into perforated access tab of the circular payout hole covering (if equipped).



2. Completely remove perforated panel. Product should be visible. If not, see "Losing the End".



3. Pull product from package. Box should be oriented so that product dispenses vertically or with a rectangular panel facing downward. Do not place box on its side (square panel).



4. You should now be able to pull the product out of the box without snagging and under low tension. Note that stiffer products may require some effort to begin payout. Payout performance will improve as more of the product is dispensed.



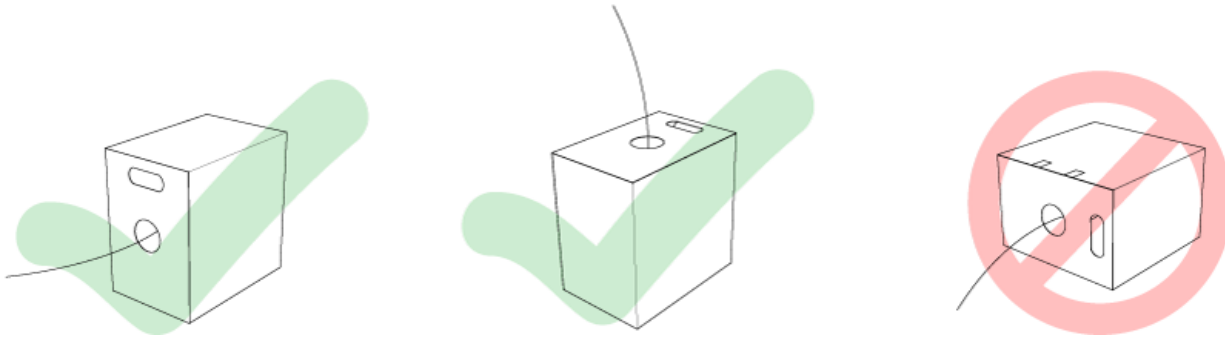
5. When finished pulling, cut the product. Do not allow the end to fall back into the hole. If it does, see "Losing the End".



6. Secure the loose end of the product to the "x" cutout in the box or via other provided method.

Orientation

Packages should be orientated so that the payout hole faces the direction the product is being pulled from.



DO NOT dispense the product with the coil in the horizontal position (square panel facing down) as this may cause tangling.

Make sure the coil is always upright (rectangular panel facing down). Exception: ProFlex packages contain the coil tightly enough to allow for horizontal payout.

Common Issues

NOTE: For more detailed information, please see [Troubleshooting Common REELEX Issues](#).

Package Issues

Losing the End

If the product falls back into the hole, the installer should access the inside diameter of the coil either through the access panel, or by opening the package and thread the inside end back through the payout tube.



1. Open box or push perforated access panel to access inside of coil.

2. Reach into coil and find loose end.

3. Push inside back through tube and continue pulling.

Resolving Tangles:

If a tangle or snag does occur, often it is caused by **improper box size**, **improper tube size**, or **operator error** when packaging. Most tangles can be resolved by accessing the inside of the coil through the access panel or by opening the package. Make sure the inside layers of the coil are not getting in the way of the product paying out. If a knot does occur, either resolve it inside of the package, or try to pull it through (only on REELEX II).

Coil Winding Issues

Sloppy Coil, Payout Hole Disappears, Coil Falls Apart

The coil looks messy, the hole is being covered up or loops fall off the sides of the coil when the endforms are removed. These issues are usually related to incorrect line tension caused by improper settings or mechanical malfunction.

1. **Ensure the encoders count properly** via troubleshooting program.
 - See the troubleshooting [manual](#) appropriate for your machine.
2. **Ensure motor to encoder couplings and rubber gear are snug** and do not have excessive play.
3. **Check/Swap W600 cards** to ensure proper counting and operation.
4. **Ensure the control boards (W90A,W900) are tuned properly** in accordance with REELEX manuals.
 - See [Tune Up Procedures - REELEX Drives and Boards](#)
5. **Observe if hole issues change with machine speed** to rule out certain mechanical failures.
 - If the hole is good at speed 3 but lost at speed 8, check for slippage on the belts and pulleys.
6. **Guide tube is too far away from mandrel**, leading to poor winding control.
 - *Adjust guide tube so it is 1/2 to 3/4-inches away from the outer edge of the endform.*
7. **Cable not correctly fed through guide tube** and bearings.
 - *Buffer action is compromised by miss-feed, resulting in increased tension.*
 - *Correct wire path to resolve.*
8. **Coil or PID Parameters have been changed** (D-2000/2050, G2 and G3 Equipment)
 - *Revert to known reliable values.*
 - *Lockout screens to prevent accidental or unauthorized changes.*
9. **Irregular or excessive tension** due to improper air pressure regulation at the Dancer.

- *Check gauge at the Dancer air pressure regulator for consistent pressure. Standard REELEX Dancer with 5 over 4 (15 inch) sheaves should have no more than 15 PSI and vary no more than 2 PSI while running.*
- *Adjust or replace regulator as needed. The regulator must be REELEX part # FRL-REG/NU10060 (relieving type regulator) or equivalent.*
- *Lower sheave shaft bearing may be worn causing extra friction. Replace as needed.*

10. Mechanical failure of Buffer due to broken or worn parts.

- *Check Buffer for worn or broken bearings and springs.*
- *Sliding assembly must not be limited by friction due to buildup on rails or sticking bearings. (D-2000)*
- *Replace parts as required. Use OEM REELEX parts.*

11. Electrical component related problem.

- *Check graphs on screen 14. See manual for specific drive adjustment. (D-2000)*
- *Check encoder and drive function. See manual or consult REELEX as needed.*

12. Cable OD is less than 0.10 inch (2.54 mm) and /or the cable is slippery or highly flexible.

- *The coil may need to be stretch wrapped. One symptom is the coil will tangle at the end of the payout. (Only a few feet left in the box.)*
- *A smaller diameter mandrel should be used. Coil Too Large*

1. Ratios set too high, causing low wind density.

- *Lower ratio settings to decrease negative space in the coil.*
- *Ratios are too low, causing layers to sit atop one another. Consult packaging charts for minimum and maximum ratios per product OD.*

2. Tension too low, causing the layers of the coil to be loose.

- *Increase tension settings to recommended pressures. Check gauge at the Dancer air pressure regulator for consistent pressure. Standard REELEX Dancer with 5 over 4 (15 inch) sheaves should have **no more than 15 PSI** and vary no more than 2 PSI while running.*
- *Adjust or replace regulator as needed. The regulator must be REELEX part # FRL-REG/NU10060 (relieving type regulator) or equivalent.*

3. Hole Size setting too large, causing the coil to be irregularly shaped.

- *Adjust the Hole Size setting so that the coil produces a hole that is only slightly larger*

than the payout tube diameter. This setting may vary depending on product type, diameter and coiling conditions.

4. **Use Density Program**

- *The Density Program works by gradually lowering the upper and lower ratios as the product winds, thereby increasing weave density. This program is available as a software upgrade and can lower coil size by as much as 10%.*

Coil Too Large

1. **Ratios set too high**, causing low wind density.

- *Lower ratio settings to decrease negative space in the coil. **Try decreasing both upper and lower ratio by 10.***
- *Ratios are too low, causing layers to sit atop one another. Consult packaging charts for minimum and maximum ratios per product OD.*

2. **Tension too low**, causing the layers of the coil to be loose.

- *Increase tension settings to recommended pressures. Check gauge at the Dancer air pressure regulator for consistent pressure. Standard REELEX Dancer with 5 over 4 (15 inch) sheaves should have **no more than 15 PSI** and vary no more than 2 PSI while running.*
- *Adjust or replace regulator as needed. The regulator must be REELEX part # FRL-REG/NU10060 (relieving type regulator) or equivalent.*

3. **Hole Size setting too large**, causing the coil to be irregularly shaped.

- *Adjust the Hole Size setting so that the coil produces a hole that is only slightly larger than the payout tube diameter. This setting may vary depending on product type, diameter and coiling conditions.*

4. **Use Density Program** (available for D-750, D-1500, D-2000 machines).

- *The Density Program works by gradually lowering the upper and lower ratios as the product winds, thereby increasing weave density. This program is available as a software upgrade and can lower coil size by as much as 10%.*

Coil Too Small for Box

Important: Coils that are too small for the box or tubes that are too short are leading causes of tangles. If the coil is too small for the box, follow the suggestions below so that the coil fits snugly into the package.

1. **Ratios set too low**, causing high wind density.
 - *Increase ratio settings to increase negative space in the coil. **Try increasing both upper and lower ratio by 20.***
2. **Tension too high**, causing the layers of the coil to be tight.
 - *Check potential pinch points in the line, including wire guides, sharp bends or worn bearings.*
 - *Decrease tension settings to recommended pressures. Check gauge at the Dancer air pressure regulator for consistent pressure. Standard REELEX Dancer with 5 over 4 (15 inch) sheaves should have **no more than 15 PSI** and vary no more than 2 PSI while running.*
 - *Adjust or replace regulator as needed. The regulator must be REELEX part # FRL-REG/NU10060 (relieving type regulator) or equivalent.*

Poor Electrical Test Performance

Twisted-Pair LAN cable products including Category 6 and higher

While many manufacturers have no issues packaging Category 6 (and higher) products in REELEX, some companies have reported electrical testing issues and performance degradation when using REELEX. These issues are caused by the frequency of the cross-overs in the REELEX coil leading to “dents” or deformation of the product. Over long lengths, these “dents” add up to signal errors and transmission problems. Many of these issues can be mitigated or eliminated. Please refer to the “Best Practices - LAN Cable” for reference.

Documentation



NOTE: A separate document exists for addressing twisted-pair cable packaging in REELEX. Please see: [Best Practices - LAN Cable](#)

Payout Issues

Tangles and Snags During Payout

1. **Hole is not clear.** Make sure the machine is making a clear hole in the coil for the operator to insert a payout tube. In general, coils without holes have a 40 percent chance of tangling. Many Non-REELEX machinery and “counterfeit” machines do not have the necessary algorithms that are built into REELEX machines and thus produce this “scramble wind”.
2. **Twist in cable ahead of REELEX machine.** Try to minimize twisting in the cable prior to reaching the REELEX machine. In general, the REELEX package can tolerate one twist every 20 feet. (6 meters). Some complex cables including enhanced Category 5 cables, Cat 6 and higher can have localized (residual) twist in the cable. These issues can be resolved by utilizing REELEX II settings, boxes and tubes. Contact REELEX Packaging Solutions if these issues arise.
3. **Operator loses ends of coil.** The operator is creating a problem while putting the coil in the box. The outer end of the coil is moving to the inside and causing tangles. Be sure to properly train the operator in proper REELEX packaging and in preventing tangles. The operator could be poking the outer end of the coil into the coil prior to packaging.
4. **Operator creates knot.** If a tangle occurs in the first 10 feet (3 meters), the operator is not threading the cable through the tube properly. Be sure the operator is placing the tube directly in the hole produced within the coil and is not creating a knot by threading the cable through one of the winds.
5. **Incorrect package size.** The box is too large for the coil and shaking around during shipment. The coil should fit snugly inside the box with minimal room to move, rotate or change shape.
6. **Incorrect payout tube length.** Make sure the correct tube length is used. In general, the best payout performance comes from the inside end of the tube being as close to the center of the coil as possible.
7. **Incorrect payout tube size.** For some products, REELEX II or EcoCore payout tubes are required for proper payout. This is particularly true of cables that have inherent twist, or are so flexible that they easily loop on themselves.

Kinks, Indentations and Twists in Cable

1. **Payout tube too short.** The payout tube should extend at least 1.00-inch (25mm) beyond the inside wall of the coil, or as close to the center of the coil as possible. Too short of a tube causes undue stress on the cable during payout.
2. **Tension too high.** High tension on the line can cause the cable to indent at the crossovers. This leads to a weakened area which will increase the chances of kinking at that the weakened point. These indentations also can cause electrical performance issues on twisted-pair cables.
3. **Hole Size setting too low.** A small hole size results in the cable requiring a very sharp bend in order to exit from either side of the payout tube. Increasing the hole size places the cable further away from the payout tube, which decreases the bend required to reach the payout tube.
4. **Thin jacketing.** Thin cable jacketing makes the cable vulnerable to denting and deformation even prior to reaching the REELEX machine, which the creates a point of resistance when the cable rolls over the edge of the tube. This dent then can create a "kink" under the right circumstances.

Packaging Assistance and Consultation

All Licensees have full access to REELEX expertise and packaging consultation free of charge. We at REELEX encourage all licensees to consult directly with us when putting a new product into REELEX, reviewing current packaging or altering packaging settings or designs. Typically, the best way we can assist in optimizing your packaging is to make sample packages using your products. Our sample program includes all labor, materials and consultation free of charge - everything except shipping.

To get started, please visit: <http://www.reelex.com/contact/>