

THE TOP
21+ TIPS



For

Troubleshooting ShrinkWrap & Equipment

Clysar

Help for Diagnosing Shrink Packaging's Leading Profit Busters

From bad seals to burn-through, this handy guide helps you address shrink packaging's most common film/equipment issues.

But don't feel like you need to go it alone! Clysar distributors and their trained field service technicians are available 24/7 to support you with unrivaled technical expertise. Call them to:

- **Troubleshoot** reoccurring operating problems and turn them into cost-saving solutions.
- **Transform** profit-eating rejects into beautiful display packages.
- **Fast-track** new brand packages or film/equipment start-ups.
- **Add speed or capabilities** to your existing shrink operation.
- **Improve uptime** with preventive maintenance, training and more.

It's all part of our commitment to deliver shrink packaging's best answers...the best experts...and the best bottom line.

SHRINK HELP HOTLINE: 1-888-4-Clysar

Clysar supports distributors and customers with technical field specialists located throughout the country. These knowledgeable advisors have years of experience troubleshooting in thousands of shrink operations, and are available to provide technical consultations via phone or on-site.



Clysar

WHAT TO CHECK WHEN GOOD SEALS GO BAD

TIP #1:

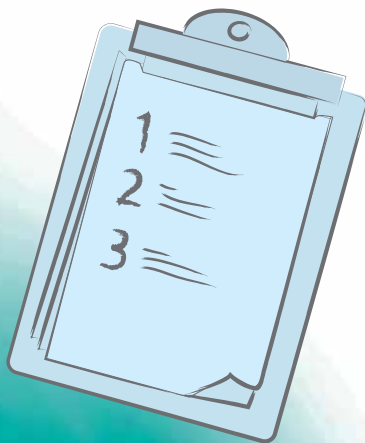
Start with the Big Three

■ 99% of all shrink packaging problems come down to three basic issues:

1. Temperature (too hot/cool)
2. Time (too much/little)
3. Pressure (incorrect seal pressure and tension)

If you can correct these shrink fundamentals, you're on your way to beautiful, trouble-free packages.

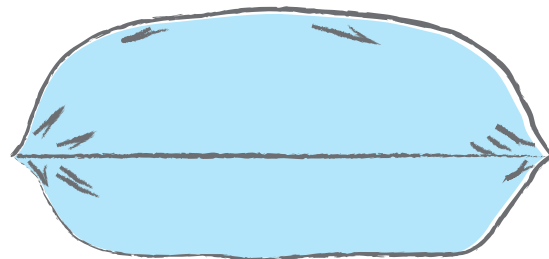
The following tips give you more details on specific actions you can take.



IS THE PROBLEM THE MACHINE OR THE PACKAGE?

TIP #2:

Do the One-Minute Seal Test



■ Here's a quick test to help you determine if a bad seal is due to equipment issues or shrink film size:

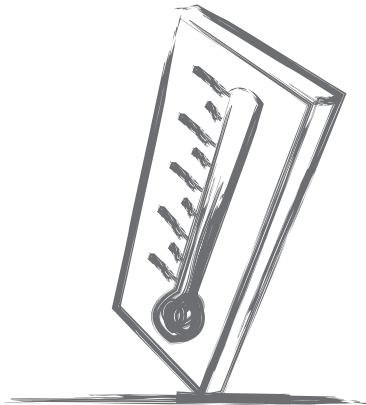
1. Make an empty shrink bag, using existing time, temperature and pressure settings.
2. If the bag seals are good, the shrink film may be sized incorrectly for the product.
3. If the bag seals are bad, it's a mechanical issue. You will need to evaluate the time, temperature and pressure used to make the seal. Since too much heat is the leading source of most seal problems, that's a good place to start.

FINDING THE BEST SEALING TEMPERATURE

TIP #3:

Try the “Sweet Spot” Technique

- For the most trouble-free packages and longer equipment life, always run your sealer at the lowest possible temperature to allow repeatable strong seals. To find this sweet spot, incrementally step down the temperature until the film will not cut, then raise the temperature 5°F-20°F until you are achieving consistent seals at the desired line speed.

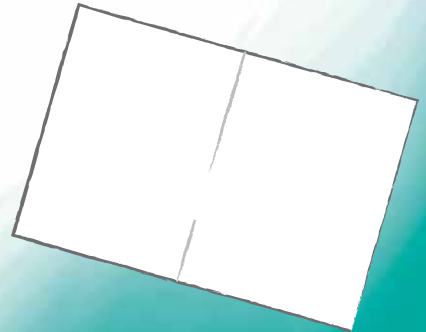


SEALS ARE UNEVEN OR HAVE VOIDS

TIP #4:

Give Seal Jaws the Paper Test

- Seal jaw pressure is determined when machines are built, but can change due to worn parts and misaligned jaws. To determine if jaws and clamps are working correctly, insert a white piece of paper in the seal area and engage the jaws to lower and seal. A uniform line should be formed on the paper from the jaws, indicating even pressure. If this line is dotted or has gaps, check the jaws for maintenance issues. If lines in film clamp area are not parallel, it means one of the film clamps may be hitting off the pad, another possible source for bad seals.

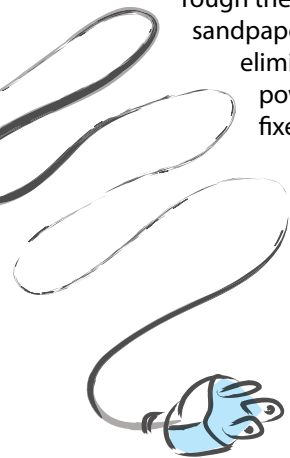


THE MACHINE PRODUCES SHOCKS

TIP #5: **Get Grounded**

- **Shocks from equipment are a sure sign of static electricity.** Other tip-offs to static are matted film, film tracking and tension issues. Make sure your machine is grounded by using proper three-prong plugs. Also, double-check that the machine frame is connected to a grounding source like a metal pipe or drain.

Look for shiny, static-producing, polished film contact surfaces that create film drag—then just rough them up with a few swipes of sandpaper. And consider adding static eliminators, like electronically powered static eliminators or quick fixes such as tinsel or static string.



FLAT FILM WON'T COME OFF THE ROLL

TIP #6: **Stay Cool to Get Unblocked**

- **When layers of flat film stick together, it indicates a condition called “blocking.”** Commonly, the film has been exposed to high storage temperatures, causing layers to fuse together. To prevent blocking, store Clysar® film at 90°F or less. If film is more difficult to run towards the end of the roll, the cause is most likely unwind parameters, which may need to be adjusted for the stub roll's lower weight.



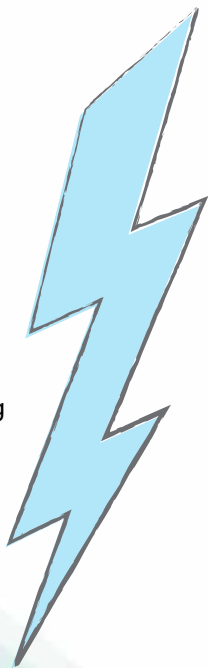
FOLDED FILM CLINGS TOGETHER

TIP #7:

Eliminate Static Build-up, Add Separators

- When folded film does not open easily across the separator bar, the film may be affected by a high-static charge transferred from the equipment. Edges will cling together and layers will want to close back once opened. To check for static, hold a small piece of film about 1" from a conductive surface, such as the machine frame. If film is attracted to the surface, it is charged. Proper machine grounding and static eliminators can easily solve the problem. (See tip 5)

If the film is matted, it will be difficult to open, but will not try to close itself. High storage temps are likely the cause, just as in blocked film. Use of the machine's film separator bar can help. For chronic cases, try an air-assisted film separator.



PACKAGE HAS SMALL, WEAK SEALS & PINHOLES

TIP #8:

Cool It!

- Small brittle seals, often with pinholes and open areas, indicate the seal temperature is too hot. In this situation, film will often crystallize by the seal area: look for one or more parallel white lines running along the seal about 1/16" from the seal. Too much heat is the leading cause of seal failure, so it's always the first culprit to address.

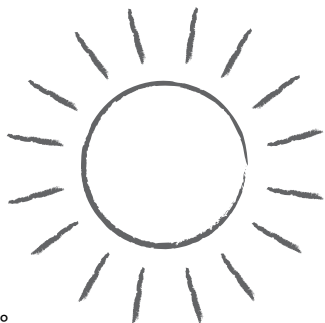


JAGGED SEALS & INCOMPLETE CUT-OFFS

TIP #9:

Turn Up the Heat

- Seals that have a very jagged appearance—or look like they were torn apart from the film—indicate seal temperatures are too cold. You may also see incomplete film cut off between seals. Try turning your heat up in 25° increments until you get a clean seal and crisp cut-off.



SHRINK BAGS REQUIRE A LONG TIME TO SEAL

TIP #10:

Temp Checks Fix Dawdling Dwells

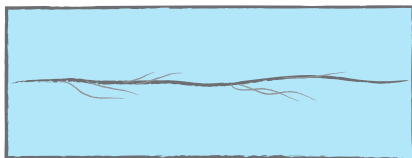
- Dwell time—or how long it takes for film to seal when the seal jaws are closed—will vary depending on the application. Increasing dwell time indicates temperature is too low, and vice versa. Tweak dwell time for maximum productivity. In most applications, dwell times range from about 0.3 seconds to 3 seconds, depending on the machine. Longer dwell times indicate temperature or pressure issues and can reduce productivity.



"HAIRLIKE" STRANDS APPEAR BY THE SEAL

TIP #11:

Stop Running Hot or Cold



- **"Angel hair" is fine strands of film found between the sealed shrink film and the sealing mechanism.** It indicates sealing temperatures are too hot for polyethylene films or too cold for polypropylene films. Simple temperature adjustments solve the problem.

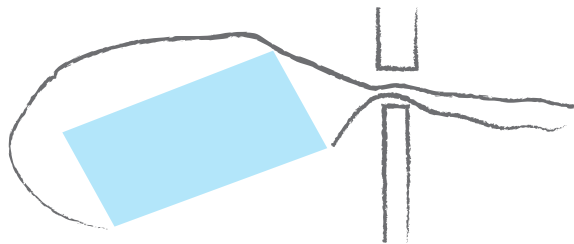
SEALS PULL APART (L-BAR)

TIP #12:

Go Halfway to Avoid Tension

- **Film tension can literally pull seals apart.** If you seal products on an L-bar table and either end of the product is lifted up when the seal bar closes, you are creating tension by sealing above or below the package's center line.

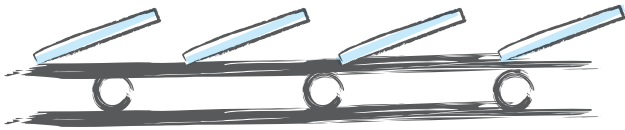
Make sure your table is adjusted properly up or down. The seal should be formed at the halfway point of the package. Operators can also create tension in manual operations if the film is not slack when lowering the seal jaw. Place the package on the table behind the L-bar, allowing at least one-half the package height spacing.



BAD CROSS-SEALS (Semi-Automatic & Automated L-Bar)

TIP #13:

Give 'Em Some Space!



- In semi-automatic and automatic machines, increase bag length or allow more spacing between packages so the cross-seal is tension-free. Note that the taller the package, the longer the distance required.

STILL EXPERIENCING TENSION

TIP #14:

Check the Clamps

- Missing or damaged machine clamps are a leading culprit for tension problems. Ensure machine clamps (and springs) are installed and in proper working order. See your Clysar distributor for replacement parts if needed.

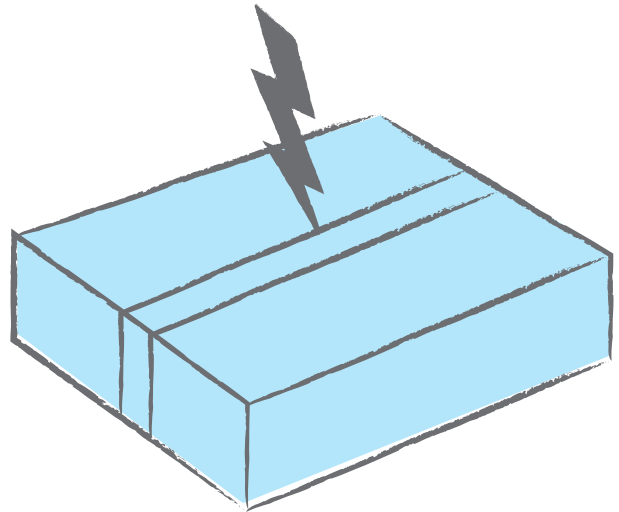


TIP #15:

Do the High 5

■ Try our five easy fixes for common static sealer problems:

1. If you hear audible snaps, static is discharging and your system is not working correctly. A stable supply of 15-19 kV is ideal. Ground your machine or call your Clysar distributor for static eliminator options.
2. Make sure the probe is centered, not dull, nicked or dirty, and pointed $\frac{1}{2}$ " to $\frac{3}{4}$ " away from the grounding plate. Dull probes can be sharpened with a file.
3. Make sure grounding plates are not shiny; roughen them gently with sandpaper.
4. Check the unwind tension. Too much tension will automatically pull seals apart. Also, make sure you are allowing enough film for the overwrap.
5. Ensure the static probe is not arcing to the ground plate. You should not see a lighting show coming from the static probe. At most, you should see a faint purple haze.



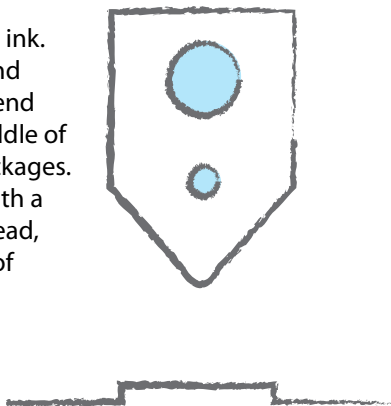
SEALING ISSUES WITH KNIFE SYSTEMS

TIP #16:

Run Clean, Lean & Well Adjusted

- **Run knife sealers at the lowest possible temperature**, as high temps will warp seal bars and burn the coating off knives. Make sure knives are not nicked, burred or dirty. If your knife has excess polymer buildup, you are running too cool. Knife blades can be cleaned with scrap film—never use an abrasive cleaner!

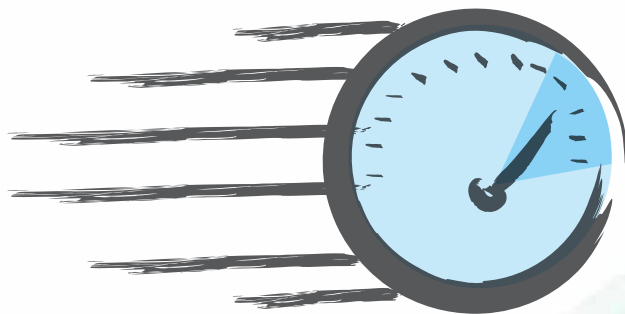
Also, clean sealers of polymer buildup and ink. Replace worn tape and pads. Make sure the end seal is hitting the middle of the gap between packages. Avoid knife blades with a sharp fine point; instead, use radiused blades of 0.020.



TRACKING PROBLEMS WITH OPAQUE FILMS

TIP #17:

Fine-Tune with Timed Infeed & Sensors



- **Opaque films like ShrinkBox® Confidential can be challenging to track through the sealer.** One solution is to use lugged infeed conveyors that are set/activated in conjunction with each package's end seal. Relocate existing seal sensors to allow product identification prior to film closing, and set end seal timing so that it matches the product spacing. Or, add special sensors with the ability to "see" through opaque films. Since getting the timing can be tricky, rely on your Clysar distributors to configure and test.

SMOKING FILM & BUILDUP

TIP #18:

Turn Down the Heat, Check the Pressure

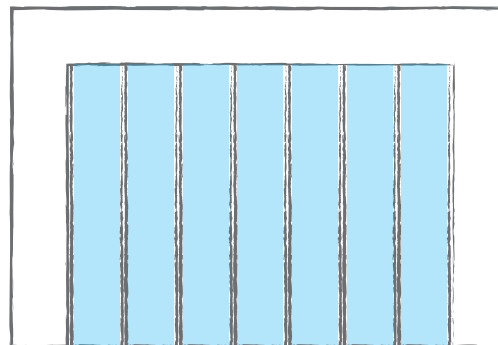
- Smoking and polymer buildup on a pad are sure signs of excessive heat. Reduce the heat! Worn pads can also create polymer buildup and smoking: make sure there's not excessive sealing head pressure and that sealing heads are aligned.



SHRINK TUNNEL IS NOT WORKING CORRECTLY

TIP #19:

Close the Curtains



- Most tunnels are manufactured with curtains at the entrance and exit of the tunnel. Too often, they are cut off or folded back. This can indicate that the tunnel is not sized appropriately for the packages being run or there are maintenance issues with the tunnel. Curtains are there to maintain consistent heat and should aid in creating consistent, high-quality packages.

Your Clysar shrink professional will be able to determine if your issues are due to size vs. maintenance concerns.

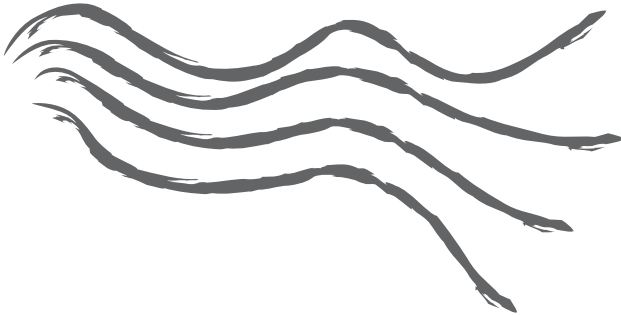
SEALS FAIL IN THE TUNNEL

TIP #20:

Tweak Package & Tunnel Parameters

- Check the package to reduce the film tension in the seal area; increase air evacuation through the placement and number of perforations; or increase the size of the shrink bag.

Then, evaluate the tunnel. Clysar® films prefer high air velocity. Check to make sure all air intake screens are clear of melted polymer; heater banks are operating correctly; blowers are turned in the right direction; and the temperature control is operating. Time and temp should be set so that the package balloons in the main body of the tunnel and collapses $\frac{3}{4}$ of the way through, with the remaining $\frac{1}{4}$ of the tunnel used for cleanup.

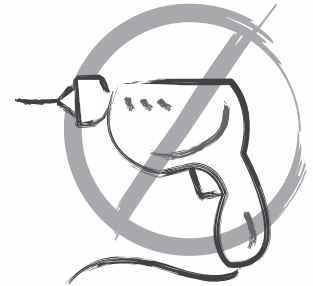


BAD BALLOONS & AIR EVACUATION

TIP #21:

Perfect Those Perforations

- Do not hand-perforate film with drills, soldering irons or other tools for air evacuation—these methods typically fuse the film together and create improper air evacuation. Instead, order pre-perforated film from Clysar—it's the same cost as standard film.



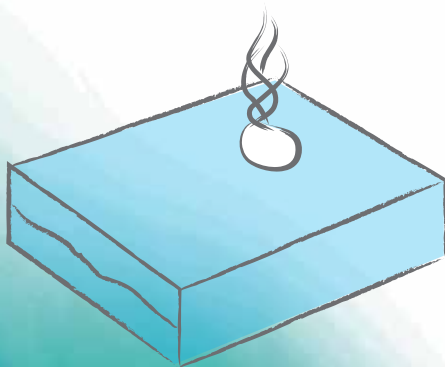
Alternatively, your distributor can install a machine perforator, and create special air evacuation patterns for hard-to-wrap products. Note worn or damaged perforating rolls are also a leading cause of packaging rejects, an issue easily solved with regular maintenance.

BURN-THROUGH

TIP #22:

Less Heat, More Speed

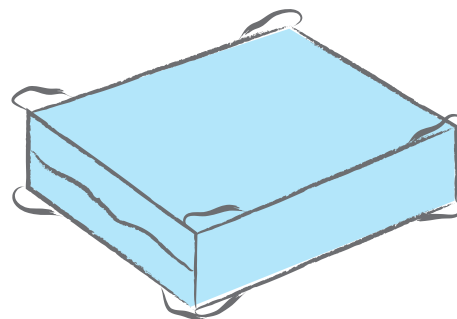
- **Overheated film is the leading cause of whitened film and burn holes on the package.** To resolve, increase conveyor speeds and reduce your tunnel temps. Undetected air flow problems in the shrink tunnel are also leading culprits for package rejects, so check for too much air velocity, improperly directed air flow or clogged screens—easy fixes that solve a multitude of packaging issues. Also, make sure the film does not touch the walls or ceiling of the tunnel.



DOG-EARS

TIP #23:

Go Small, Slow & Redirect the Flow



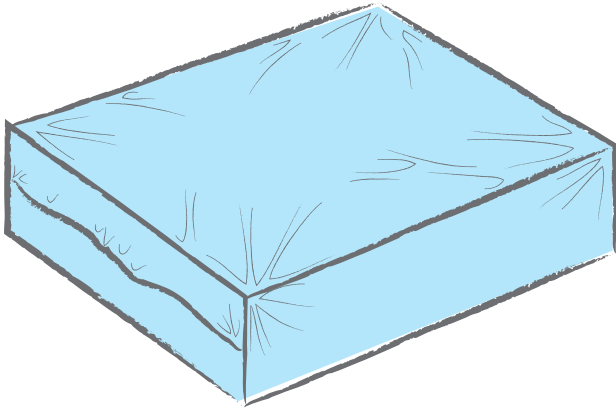
- **There's several ways to do away with dog-ears—**those unsightly unshrunk flaps of film that protrude along the seal in the corners. First, increase air evacuation by strategically placed perforations and reduce the bag size. Then, slow down the conveyor while increasing the air velocity and increase the tunnel temp. Redirect the tunnel's air flow to the ends of the package to target the cleanup points.

CROW'S FEET & WRINKLES

TIP #24:

Clean Up with Higher Tunnel Temps, Air Flow

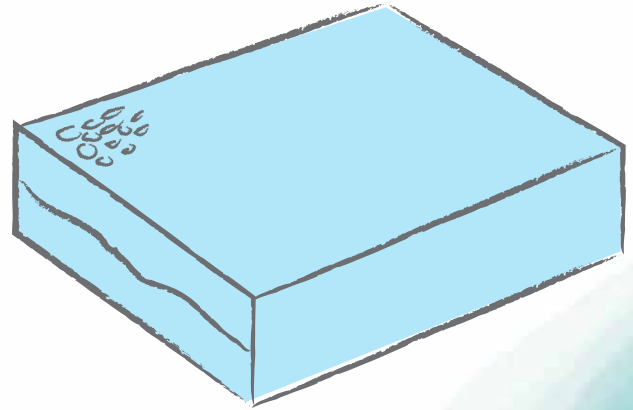
- **Wrinkled, sagging film at the corners of package can be fixed** by slowing down the conveyor, increasing the tunnel temperatures, decreasing air evacuation and redirecting the air flow to the areas with the wrinkles. You can also try using fewer perforations, or placing them in different areas of the package for a tighter shrink.



FISH EYES

TIP #25:

***More Heat,
More Shrink***



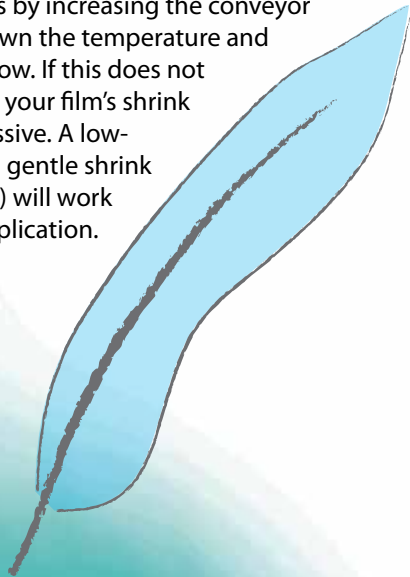
- **Fish eyes are areas of small, under-shrunk film on the surface of the package.** Often appearing in a pattern, these fishy flaws are caused when areas of the film come in contact with the product too early and are cooled while the rest of the film is still being heated. Turn up the tunnel heat and speed up the conveyor slightly. You may also need to reduce air flow, and use a little less film around the package.

CURLED OR DAMAGED PRODUCTS

TIP #26:

Check Size, Speed, Shrink Force

- **Are you shrinkwrapping flexible or delicate products?** If the film is collapsing the package, there are two courses you can take. First, allow more film around the package, then adjust the tunnel parameters by increasing the conveyor speed, turning down the temperature and reducing the air flow. If this does not work, chances are your film's shrink force is too aggressive. A low-energy film with a gentle shrink force (like LE Gold) will work better for your application.

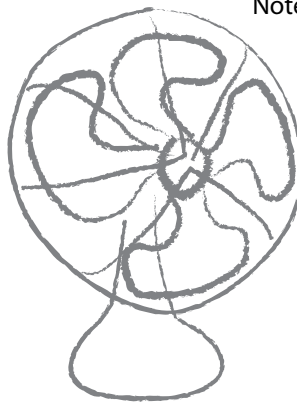


STICKY PACK-OUT

TIP #27:

Give It the Hot Slip (or a Fan)

- **If you're experiencing film damage and tears during pack-out, or are having problems getting hot sticky packages into the carton as quickly as you'd like, add a hot-slip treatment to your shrink film.** It costs nothing extra and products slide right in, without cooling. Simply adding a fan at the pack-out station can also cool packages for faster cartoning.



Note that hot-slip film may be harder to seal through, but equipment can be easily adjusted to accommodate it with no loss of line speed.

Beautifully wrapped packages, produced for the lowest total cost, aren't the job of a generalist!

Clysar distributors are true shrinkwrap specialists. They have the expertise to marry the right films, processes and equipment for the best value...and the best bottom line.

Ask Your Distributor for More FREE Clysar 21 Tips Guides

The Top 21 Tips for Reducing Shrinkwrap Packaging Costs

The Top 21 Tips to Improve Shrink Packaging Sustainability

The Top 21 Tips for Beautiful Shrinkwrapped Packages

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