

BUILT UP INK, GREASE AND PAPER DUST CAN CAUSE OPENING AND CLOSING ISSUES AND MAY CAUSE FOREIGN OBJECTS TO BECOME EMBEDDED.

# DON'T GET TRIPPED UP BY TRACK

MACHINE TRACK IS OFTEN OVERLOOKED ON THE MAINTENANCE CHECKLIST.  
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**Fixed architecture rotary diecutters and flexo folder-gluer are becoming more prominent in today's converting market.** Some estimate that the percentage of new machine sales that are 'fixed' to be nearing 50%. However, when you take into account the existing installations, which are opening machines, the percentage tips dramatically in favor of the opening designs. Since so many opening machines exist, and are still being sold, there is still a need to install and maintain track.

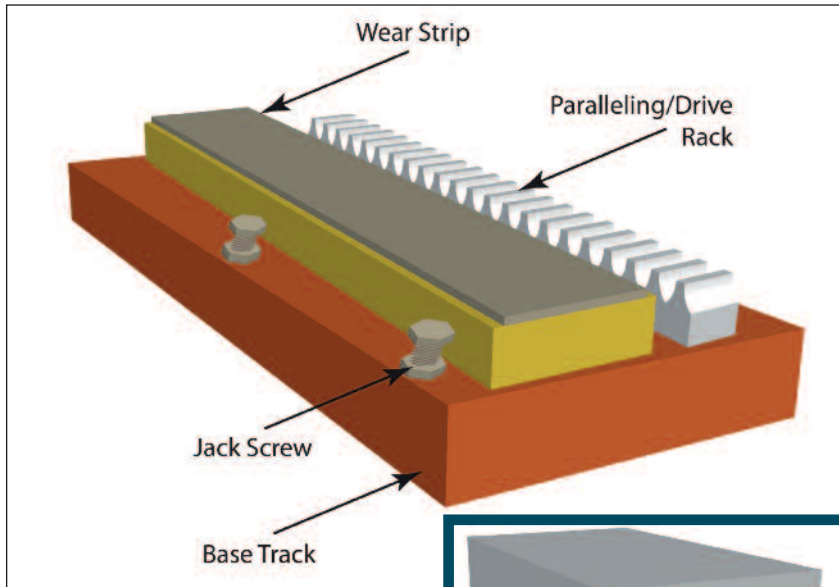
Track is a feature of the opening machine that is often overlooked on the maintenance checklist. There are three main reasons to make sure your track is kept in good operating condition — safety, ease of operation, and of course, quality.

## The Primary Components

While designs will differ from one manufacturer to the next, the primary components of rotary diecutter or flexo folder-gluer track systems are basically the same. They include the base track, wear strips, rack, wheels or rollers (sometimes called cam-followers), guide blocks and some form of the locking mechanism.

The base track is the large segment that gets bolted to the floor (floor mount) or to the foundation flush to the floor surface (flush mount). This typically consists of a base plate onto which a riser is welded for the machine units to ride on. Then other components like the rack, wear strips, locking blocks, etc. are connected.

If the track system includes wear strips or wear plates, they are bolted to the tops of the riser or base track to protect the components from wear as the machine is opened and closed. The rack is used to drive



the sections and keep them squared to the track during opening and closing. Typically, a paralleling shaft connects a rack gear on each side of the section. These gears engage the rack on each side to ensure both sides move in unison.

Guide blocks usually ride over the rack or track to keep the sections aligned with the track laterally and prevent derailment.

The locking mechanism is used to lock the machine section in place during operation.

### What To Check

Let's start with the easiest and most frequent. On a daily basis operators should visually inspect the wear strips and rack. You will be looking for cracked or broken wear strips, loose or broken bolts and a buildup of ink, scrap, etc. On the rack you will want to pay special attention to impacted scrap, debris or foreign objects such as die-bolts, which seem to inevitably find their way into the rack teeth and can cause a section to jam and potentially tip over while being moved.

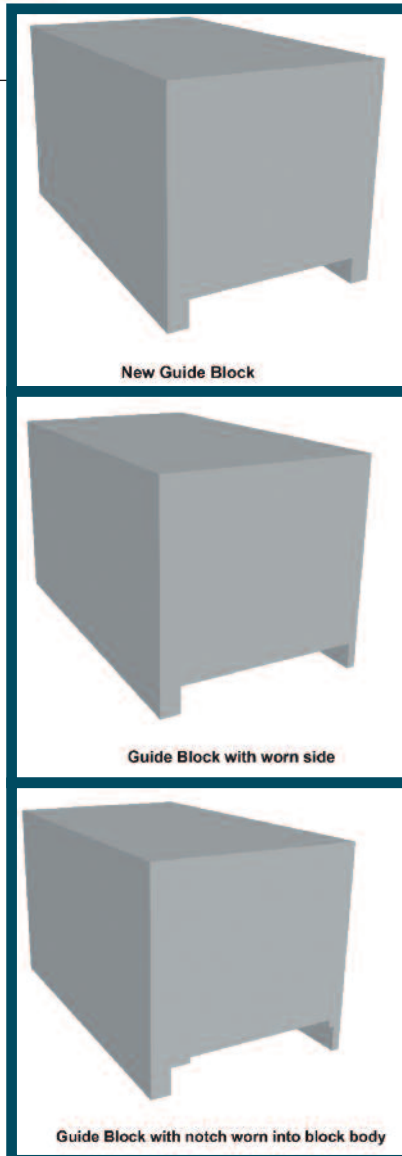
It never hurts during a setup, or whenever the machine sections are open, to spray the track off with a hose just to keep ink and other build-up rinsed away. If necessary, wipe or scrape heavy buildup off of the track and rack.

On a less frequent basis, perhaps monthly, check the guide blocks. These are typically located at the bottom of the section frames and straddle the rack, or track in some fashion to keep the sections aligned to the track laterally. They are not rapid wear items, but will experience wear over time. The guide shoulders are typically about .250" wide.

(This will vary depending on OEM specs.) If you notice the shoulders getting thin you'll want to replace them. If the frame rollers, or wheels, fail they may allow the guide blocks to ride on top of the rack. If this happens, you'll notice a step wearing into the valley of the guide block. This is the sign that you have an issue bigger than just a worn guide block and should be fixed immediately. In addition to checking for wear, you will want to make sure the guide blocks remain tightly secured to the frame. If they become loose it can result in frame-to-track misalignment and may lead to a very dangerous section derailment.

Also on your monthly schedule should be the lock block and locking mechanism. If you have a manual system it's pretty easy to tell if it's adjusted and working properly. If it closes with virtually no effort, or on the other hand, requires Andre the Giant to close it, then it needs adjustment or repair. If it will "cam-over" and lock with a firm one handed shove, then you're in the right ball park.

Another quick visual observation that will tell you if your locking mechanism is properly adjusted is frame "breathing" at the splitlines. Breathing refers to the



## Maintaining Machine Track

slight opening and closing of the frame splitlines when the machine is running and typically in unison with each feed or revolution. This is typically a sign that the machine lock(s), either main or individual sections, are not properly adjusted and therefore not keeping the sections securely closed. However, it can also be an indication of track leveling issues or contamination of the frame edges. The machine manufacturer should be able to provide the proper instructions for checking and adjusting the locking mechanism.

On your annual or semi-annual checklist it's a good idea to add the wheels, or rollers the sections ride on. A quick check for a bad roller is to carefully push the section by hand. If you can feel, or hear, a roughness or "grinding," chances are you have a bad roller. A further visual inspection can typically be done rather easily depending on roller type. Look for signs of damage to the rollers. Check to see if one section of the frame is setting closer to the track than another. In severe cases you may see the bottom of the frame floating up and down as the section opens or closes. You can also use a screwdriver or paint stick to try to

move the individual rollers. If a roller can be moved or "jiggled" with the screwdriver then you'll probably want to take a closer look at all the rollers and it's very likely you'll be replacing at least one.

Short of coming out of level, or an overly zealous forklift operator, there isn't much that can go wrong with base track. On a daily basis the operator can visually inspect the track and look for any up and down movement as the sections travel over them. Otherwise, once a year should be sufficient for inspecting and checking the level of the base track unless, of course, you are experiencing issues you feel may be associated with the base.

The process of checking the track level and leveling the track require personnel with the skill to properly use a transit. This can be a tedious process, especially if space is limited, and may take from a couple hours to a full day or even longer depending on the size, condition and accessibility of the installation. This is a service that is often offered by the OEM or a third party maintenance company or millwright.

Also with floor mounted track you'll want to check for loose jackscrews and

locking nuts if they are accessible. This can be done by hand. Try turning them with your fingers. DO NOT use a wrench. You could accidentally change the position of the screw. If your base track is grouted, check the grouting at this time too. Any deteriorating, broken or loose grout should be removed and replaced. (Before replacing grout ensure the track is level.)

If you have flush mounted track and it has gone out of level, you might want to bring your lunch. Chances are you have significantly more work ahead of you.

## Why Check Your Track

### Safety

- **Tip Hazards.** Broken or worn wear strips can cause a section to hang up when being opened or closed. While this isn't as much of an issue if the machine is being opened automatically, it can cause a very dangerous tip hazard if a unit is being moved manually.

- **Drifting.** Unlevel track can cause drifting. Again, this can be very dangerous, especially when people are working between sections for maintenance, setup, housekeeping, etc.

### Ease of use

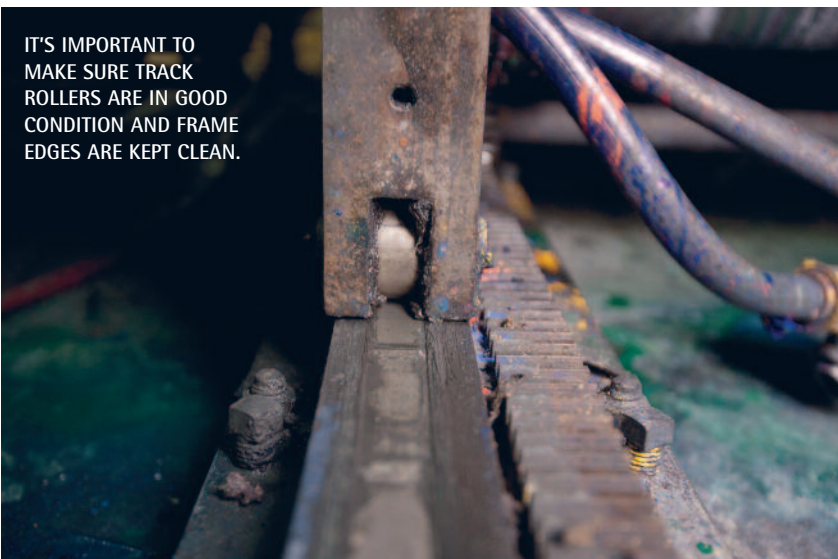
- Clean, level tracks make it much easier to move a unit automatically or by hand. A machine that opens and closes easily also puts less strain, and therefore, less wear and tear on the opening/closing components including gears and motors.

### Quality

- Track that is out of level or loose can cause misalignment of the sections, which has the potential to cause registration issues.

- Premature or excessive gear train wear caused by track misalignment or damage. This can lead to registration issues as well.

IT'S IMPORTANT TO MAKE SURE TRACK ROLLERS ARE IN GOOD CONDITION AND FRAME EDGES ARE KEPT CLEAN.



## Repair and Replace

Track repairs run the gamut from rather simple tasks that can easily be done by in-house maintenance personnel to more complicated procedures that should only be attempted by trained personnel. In most cases wear strips, if your track has them, can be replaced by the maintenance department. It's important to make sure the surface under the wear strip is clean and smooth prior to installing new strips. Contamination between the track and the wear strip can cause premature failure of the wear strip.

Locking mechanisms are usually a simple stop bolt adjustment and/or shimming procedure. Your OEM should be able to provide the proper instructions for these procedures.

Replacing frame rollers is a notch or two up on the difficulty scale. This will usually require the machine section to

be slightly raised, at least enough to take the pressure off of the rollers/wheels, and then safely and securely supported for the duration of the operation. Again, your OEM can provide the proper instruction for the procedure.

Don't try to be penny-wise and end up dollar-poor. If you have to replace a roller on a frame, you might want to consider replacing all of them on that frame at the same time. Take a close look at your hardware too. It will cost a lot more to replace just a roller and then in a month or so go through the procedure again to replace the axle pin or another roller on that same frame. The actual leveling of the track is the most difficult, tedious and time consuming. As mentioned before, to do it properly requires a transit and someone that is qualified to use it. It also requires an in-depth knowledge of the leveling process. Bring your lunch...

and maybe your dinner too... it takes time, patience and skill to do it properly.

Whether you perform these procedures yourself or look to outside help depends on your skill level and resources. For the more complicated procedures, if you have any doubt, turn to the outside resources that specialize in this type of work. It will be safer and likely more cost effective in the long run. ■

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