Straight Talk on Laser Toner Cartridges

Topic: Cutting Through the Hype to Find Consistency, Dependability, and Value

November 2002

The Intense Battle for Your Toner Cartridge Business

The world market for laser printer and fax toner cartridges is massive, with current estimates of annual retail sales in the range of $US 15 to 20 billion. This market is also mature, with the pace of technological change slowing after 15-plus years of rapid innovation. As a result, the number of companies vying for a piece of this market – and for your toner cartridge business – can make your buying decisions confusing and intimidating.

For the dealer, distributor, retailer, and consumer, this intense competition has at least two positive effects: it means there are plenty of options, and it leads to lower prices. The cost savings available from buying alternatives to new original equipment manufacturer (OEM) toner cartridges is far too significant to ignore. But in order to reap any benefit from the availability of so many choices, the cartridge buyer must be able to sort through them to find solid value. That can be the challenging part.

With So Many Choices, How Do You Find Solid Value?

Searching on “toner cartridge” with your favorite Internet search engine quickly demonstrates the amazing scope of the products available. Along with links to well-known printer OEMs and reputable aftermarket companies, there are thousands of links to other companies offering broad lines of toner cartridges for nearly all common brands of printers and fax machines. Flipping through the “back pages” of an industry publication gives much the same effect.

These companies make an incredibly wide variety of claims intended to win your business, covering the full spectrum from “lowest price anywhere” to “better than OEM quality and performance.” Some focus on the service they provide, some on their recycling or remanufacturing processes, some on the quality of the components they use, some on all these factors and more. It is literally impossible (without experimenting with all these products) to know which claims are true… but it is possible to better understand which claims are meaningful, which must be intently questioned, and which should be disregarded altogether.

The Quality and Savings Are Out There, But So Is The Risk

It is now undeniable that viable, economical alternatives to new OEM toner cartridges are available for many laser printers and fax machines. Unfortunately, it’s equally true that overall quality varies tremendously from one supplier to the next—and that any buyer can get burned by making an uninformed choice.

The equation for success is fairly simple. At or above a certain level of product consistency and dependability, buying remanufactured cartridges is a great decision, resulting in increased profits and customer satisfaction. This is the "sweet spot" where both you and your customers can benefit. Below that acceptable level of consistency and dependability, your buying decision can increase costs and hurt your business. You bear the full risk associated with this decision. How do you cut through the aggressive marketing claims, and ultimately find the best values?

The First Step: Know What You're Buying

The vast majority of OEM-alternative toner cartridges are refilled or remanufactured, using the "core" of an OEM toner cartridge that has been used and reclaimed. This is where the buying confusion can begin, since even the terms used to describe the basic nature of these products are used inconsistently.

The reality is that a company promoting very-low-priced remanufactured or "recycled" cartridges may in fact be a "drill-and-fill" operation. This means that the company simply acquires cores and replenishes the toner, without thoroughly inspecting these cores or any specific critical-to-function parts. "Drill-and-fill" toner cartridges are the lowest-quality option as well as the lowest-priced option, and their use involves sacrifices in both print quality and yields. Although they may function correctly out of the box, they typically will not provide the high print quality necessary to satisfy quality-conscious customers. Further, inconsistent quality from cartridge to cartridge means that the performance and yields of "drill-and-fill" cartridges are unlikely to satisfy other end-users, either.

In contrast, a quality remanufacturing operation will incur higher costs for all components of its process – core supply, toner and parts, labor and overhead – in order to deliver cartridges that do consistently produce end-user satisfaction. These companies' prices, while still offering considerable savings compared to new OEM cartridges, are inherently higher than those charged by "drill-and-fill" suppliers. This means that there is a direct connection between price and quality when it comes to remanufactured cartridges, and prices that seem too good to be true are often just that.

What Makes A Quality Remanufacturer?

What about the many companies claiming to offer extensively remanufactured laser toner cartridges? Most say that they inspect cores and replace parts as necessary, in addition to replenishing toner. A broad quality spectrum still applies, and many legitimate questions should be asked. Let's deal with some of the most important of these questions.

(1) How thorough is the core inspection, and are cores rejected if unsuitable for remanufacture?

Core acquisition is a significant cost for any remanufacturer. This cost increases with greater selectivity in choosing core sources, and with increased diligence in inspecting all cores to ensure that those unsuitable for quality remanufacture are rejected.

Some better-designed cartridge types are much more likely than other types to remain in remanufacturable condition after one or more life cycles. Even when acquiring cores from the best available sources, a remanufacturer striving to consistently ship reliable toner cartridges may reject 10 percent of some durably designed cartridge cores, and up to nearly 50 percent of other types. These surprising figures apply to "virgin" (once-used) cores, which means that a company's claim that they use only virgin cores is actually less important than the diligence of their inspection process. Even more important is the company's willingness to incur higher costs by rejecting those that cannot be remanufactured to a high quality standard. Clearly, a company remanufacturing nearly all cores it receives, regardless of condition, will incur lower costs and be able to offer lower prices. They will also deliver much less dependable toner cartridges, passing on the risk of customer complaints to your business.

(2) Which parts are inspected or tested, and are those that fail replaced with high-quality parts?

Many toner cartridge cores can be remanufactured successfully if certain critical-to-function parts are replaced when necessary. At a minimum, most cartridge types require inspection and/or testing of the OPC drum, drum cleaning blade, charge roller, and magnetic developer roller. Again, taking these steps adds many additional costs to the remanufacturing process, requiring expenditures for quality replacement parts as well as inspection/testing equipment, time, and materials. This is another major reason why extremely low prices may indicate seriously reduced quality and dependability.

(3) Is the OPC drum replaced for each cartridge, replaced selectively based on the need to meet consistent quality targets, or never replaced?

Without question, replacing the used OPC drum with a new, quality drum will increase the likelihood of a remanufactured toner cartridge fully satisfying its end-users expectations, provided other key remanufacturing steps are also taken. A "drill-and-fill" approach never includes this step, and some remanufacturers replace OPC drums only when it is obviously and absolutely necessary, while keeping a close eye on their cost and price targets. The best option for you is generally a company with the technical capabilities to determine OPC drums' condition and viability, so that they can make informed choices based on those

factors without unnecessarily increasing costs. For quality-oriented customers, it is often best to choose a "premium"-level remanufactured cartridge guaranteed to contain a new drum, from a company whose drum quality you have reason to trust.

(4) Is the toner capable of providing OEM-equivalent performance?

Toner quality is another fairly obvious factor in the overall quality and dependability of remanufactured toner cartridges. Perhaps to an even greater extent than with drums and parts, because of the sensitivity and complexity of many toners, a reliable remanufacturer must have the sophistication and equipment to thoroughly evaluate toner quality and suitability for its intended application. Only a select few sources of remanufactured toner cartridges fit this category.

(5) Does the remanufacturer account for the major differences between different cartridge types, or are all cartridges basically treated the same way?

Most remanufacturers provide many toner cartridge types for several major brands of printers. However, some treat all these cartridge types about the same… failing to account for the major differences in design, or other factors that create different, highly specific remanufacturing requirements for each cartridge type. This is yet another practice that can seriously impact the dependability of a company's remanufactured toner cartridges.

Evaluating Toner Cartridge Yields

To be acceptable, the toner cartridges you purchase must first function correctly out of the box, and they must provide print quality high enough to satisfy your customers. Although neither is automatic, especially when it comes to more complex cartridges and toners, let's assume you've identified a remanufactured cartridge source that satisfies these criteria. The next big area of concern is yield: will your customers receive approximately as many prints from these remanufactured toner cartridges as they expect from OEM toner cartridges?

For any toner cartridge, the OEM estimated yield is just that: an estimate, and a rough one at that. *There is no accepted industry standard for measuring toner cartridge yield.* The variations in how different OEMs calculate and present estimated yields for their toner cartridges not only make it difficult to compare one product to another, they can also encourage end-users to form unrealistic expectations. Although having estimated yields for each cartridge amounts to an implied standard, there is no real, official standard to rely upon.

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Most printer OEMs provide estimated yields based on 4% or 5% toner coverage per page, because this is said to reflect the amount of coverage on a "typical business letter." Because this is the single greatest, most straightforward factor influencing cartridge yield, any end-user who prints graphics, web pages, presentations, or anything else with greater toner coverage should anticipate receiving much lower page yields than estimated – even with a new OEM toner cartridge.

Most major printer OEMs also qualify their yield estimates with acknowledgments that "yields vary widely" due to a wide range of factors. Many also list these factors, which include environmental conditions, machine age and condition, paper/media types run, and many others in addition to the types of prints the user requires. For obvious reasons, however, no printer manufacturer puts great emphasis on a critical fact: *most published yield estimates are overly optimistic, and not truly indicative of the actual yields most customers will receive.* In addition, the test conditions used to estimate yields may be altered from model to model, and the published estimated yields may even be different from market to market.

"So what?" you may respond. "Everyone knows that you can't take advertising claims too literally." True, but this is a case where the claims are especially far from reality. Consider that if even 25% of an end-user's printed pages are in the range of 30% toner coverage - a conservative figure for web pages, presentations, and other graphics-heavy prints - the OEM toner cartridge is likely to provide only *half* of its estimated yield. This doesn't even take into account the many other factors that can reduce actual toner cartridge yield.

Few dealers, distributors, retailers, or end-users track the actual yields they receive from OEM toner cartridges. They may, however, pay close attention after switching to an alternative, remanufactured cartridge. *It is absolutely essential to judge remanufactured cartridges against what the same-type new OEM cartridge would provide under the same conditions* – not against the highly optimistic "estimated yield" that the OEM publishes. Simply stated, a remanufactured cartridge is unlikely to provide an actual yield equal to the OEM-estimated yield… because new OEM cartridges often don't reach that estimate, either.

What, then, is a realistic yield expectation for a remanufactured cartridge? If the remanufacturer truly has a process that includes thorough inspection (and sometimes rejection) of cores, replacement of critical-to-function parts as necessary, and the use of high-quality toner, the *actual* yield of the OEM cartridge is definitely within reach. Still, these claims must be clear, and they should be expressed in ranges, not in specific numbers or absolutes, because there is so much variation between cartridges, machines, and printer/fax usage conditions.

Six Key Buyer Advisories

Advisory #1: Beware of the lowest prices.

Some deals seem too good to pass up, but when it comes to toner cartridges, it really pays to look beyond the price. After all, you are considering remanufactured toner cartridges as a way to cut costs - but not at the expense of disappointing or even losing customers.

For many printer models, "drill-and-fill" cartridges will meet only the absolute lowest end-user expectations. In many cases, they certainly won't satisfy customers who need high-quality graphic images. Since even severely worn or failed parts can make it through a drill-and-fill production process, consistency and dependability from cartridge to cartridge can be very low.

If a remanufacturing operation's first duty is to its price target, there are many ways to "cut corners" and let the customer suffer the consequences. Many of these remanufacturing shortcuts may not show up "out of box," but they definitely take their toll on the percentage of products that will meet end-user expectations for print quality, yield, and overall performance.

Some of the most common cost-cutting shortcuts employed by remanufacturers are:

a. Acquisition of cores from the cheapest available sources, and the failure to thoroughly inspect those cores in order to cull out those that are not remanufacturable to a high quality level.

b. Use of poor-quality toner or parts.

c. Attempting to get multiple "extra cycles" from the OPC drum and critical parts.

d. Treating all cartridge types essentially the same, without recognizing the unique aspects of different cartridges that create special remanufacturing requirements.

e. Failure to "print test" cartridges before shipment, or performing such tests without well-defined print quality specifications.

A proven, reputable source of remanufactured cartridges will be open and honest about the steps they do—and do not—take in order to deliver the best value to you. Other companies may engage in the types of marketing hype and meaningless claims that can hurt your business if you accept them as facts.

Advisory #2: Be wary of the boldest marketing claims.

Generally speaking, remanufactured toner cartridges will not provide "better than OEM" performance. First of all, this implies that OEM performance can be pinpointed, when, in fact, a host of variables exist. Machines differ, cartridge quality varies, but most of all… usage conditions such as typical page coverage, print run length, and others vary almost infinitely.

A remanufactured toner cartridge is limited to equaling OEM performance, at best, by the limitations inherent in the design of the machine and the OEM toner cartridge itself. Although some aftermarket parts, components, and even toner may be better designed or manufactured than those in the new OEM cartridge, so many other factors influence print quality and yield that it is virtually impossible to claim "better than OEM" performance with any reasonable level of confidence.

Some companies claim that their cartridges deliver "better than OEM" yields because they put more toner into the cartridge than the OEM does. This is logical at first glance, but it's important to remember that this "overfilling" practice can disrupt the integrity of the cartridge design: seals may be overstressed, and the waste toner receptacle may not be designed to handle the greater amount of toner. Another way to "stretch" yields would be to install OPC drums that transfer less toner than the OEM drum, and consequently provide lesser print quality. Again, any such bold claim should be considered carefully for its validity and consequences.

Advisory #3: Question claims that a company maintains a specific, very low failure rate.

When a toner cartridge remanufacturer or distributor states that it maintains a failure rate of, for example, "less than one-half of 1%," it's wise to be skeptical. You may first ask what qualifies as a failure in the calculation of this figure: Only those cartridges actually returned on warranty claims? Only those for which the company can precisely define the cause of the failure? You should also inquire how "clean" this figure is, or if the company has chosen a favorable sample that does not include the cartridge types known to have performance issues.

A failure rate claim is meaningful only if accompanied by extensive explanation of how the percentage is calculated, primarily because the variables are so numerous. Remember that actual yields for OEM cartridges vary widely, so such a claim should never be interpreted as a guarantee that 99 percent or more of the toner cartridges purchased will approach or produce the estimated yield of the OEM cartridge.

Advisory #4: Know your customers' requirements, and consider remanufacturers that offer well-defined quality "tiers."

At the consumer level, we are often reluctant to pay more for premium products (such as gasoline, batteries, etc.) unless we clearly understand their benefits. Even when the benefit is stated simply as "lasts longer," the consumer is unlikely to track performance carefully and verify the claim. When it comes to toner cartridges, however, it would be a mistake to believe that quality distinctions of this type have no legitimacy.

In fact, a remanufacturer with a high level of technical knowledge and advanced capabilities can vary its procedures to produce "tiered" products that fulfill different customer requirements. This is primarily due to the fact that some end-users use their printers almost exclusively for text-only pages, but others frequently print graphics containing half-tone images and solid areas. Those with graphic requirements are more demanding in terms of print quality, and unwilling to accept many typical remanufactured cartridges available at very low prices.

It is important to remember, however, that even a premium-quality remanufactured toner cartridge contains used components, and may not equal the performance of a typical costlier, new OEM cartridge in every respect. For the most print-quality-sensitive end-users, using printers in applications such as graphic arts and executive presentations, the safest choice is almost always the new OEM cartridge. Many end-users in other categories will be fully satisfied with the performance of a quality remanufactured cartridge chosen with their needs in mind.

Advisory #5: Be as confident as you can that your supplier uses only high-quality toner.

We're talking about *toner* cartridges here, after all, and many toners are sensitive and highly complex. Because so many competitors want to sell the "fuel" for the machines, quality varies widely here as well. Does the source you are considering possess the substantial technical capabilities necessary to accurately evaluate a toner's chemical, thermal, and electrical properties? Do they have the experience necessary to understand the consequences of using a toner that does not fit the requirements of the intended machine?

These are critical questions overall, but especially for any newer or more technically sophisticated printing device. As anyone who tried one of numerous "quickest to market" remanufactured cartridges for the HP-4500 color laser printer (to cite just one prominent example) can attest, unproven, poor-quality toner can have disastrous consequences, such as severe dusting that adversely affects many other machine components as well as print quality and yields.

Advisory #6: Remember the Value of Experience and Pride in Quality

It is common practice in the toner cartridge remanufacturing industry to utilize plain packaging that de-emphasizes the name of the company distributing the product. This is often chalked up to practicality and end-user sensitivity, and there is some validity to those considerations. Still, it's important to ask: Will they put their name on it, and how much is that name worth? Although there are many smaller-sized remanufacturing operations that do solid work with pride, many others are willing to target price, deal with significant customer turnover, and get what business they can for as long as they can get it.

An established, experienced company with a broad investment in the business equipment industry is much more likely to maintain quality targets for its remanufactured cartridges than a company that enters the business primarily because the market is very large and startup costs are relatively low. If competing on price would require cutting too many corners on quality, the more established company with a valuable name to protect is much more likely to identify a way to provide good choices and solid value to its customers. In a market where you can save a lot of money, you can also minimize risk by choosing a supplier with a good name to protect.