



How to refill HL-2240, HL 2240d, HL-2250dn

Suitable for cartridge codes TN-2210, TN-2220 and starter cartridge (arrives with new machine) in printers: HL-2240 / 2240D / 2250DN / 2270DW

Before use, familiarise yourself with the safety information on pages 5 and 6.

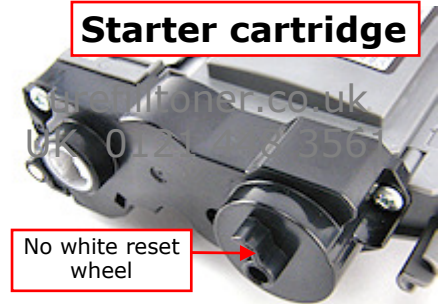
Take maximum precaution when using a screwdriver as a lever: consider safety and protection of eyes and hands from sudden slippage or unexpected freeing of the tool.

Only to be used by a competent risk-aware adult. Not to be used by children.

Consider doing the refill on top of sheets of old newspaper in case of accidental spills.

When refilling "starter cartridges", add a reset wheel

Depending on your exact printer model, the new machine might arrive with a so-called "starter cartridge". It differs from the cartridges you can subsequently buy. Its end panel is different, it bears the letters "TN" on top (rather than the TN-2210 or TN-2220 product code) and it lacks the reset wheel needed to get the machine to accept a cartridge.



Refill at "Replace toner" message, ignore "Toner low" message

Do the refill procedure only in response to the "Replace toner" message below. The machine will refuse to print at this point and the toner LED will be on constant (i.e. not flashing)





How to refill it

Note: you must first take the whole drum unit out of the printer, then take the toner cartridge out of the drum unit by pressing a light green coloured lock-lever.

- 1) Find end of cartridge where sticker covers plug. Tear off or cut off sticker



- 2) Slide tip of 3mm screwdriver between lip of plug and protruded hole wall as shown
- 3) Upend screwdriver and slide all the way down side of plug (10mm, half an inch). If screwdriver doesn't go in at least as far as plug depth any damage will be worse.
- 4) Lever out plug
- 5) Shake unopened bottle vigorously for 5 seconds.
- 6) Open toner bottle and screw on spout
- 7) To avoid leakage of micro fine toner, wrap any kind of tape around join between spout and bottle: selotape, brown parcel tape, gaffa tape etc.
- 8) Hold cartridge at 45 degree angle with one hand. Use other hand for bottle



- 9) Keeping bottle horizontal, put spout into hole and bring cartridge and bottle up to vertical position
- 10) Wait for a count of 10 for toner to flow in
- 11) Return cartridge to 45 degrees. Rotate bottle down to horizontal and disengage from cartridge
- 12) Shake bottle with finger firmly over end of spout
- 13) Repeat "shake and pour" until no toner left in bottle
- 14) Clean around hole and interior surfaces with swab. Allow alcohol to evaporate. Put plug back in, roughly marrying up slightly damaged surface of plug to slightly damaged interior of hole.

Note: Potentially damaged parts of plug are uppermost and so less likely to leak if you followed our instructions. However, occasionally check your plug for leaks. If there are any, clean and seal with bathroom sealant or rubber based glue like Copydex.

If refilling starter cartridge for first time, fit spring, reset wheel and replacement end plate as follows

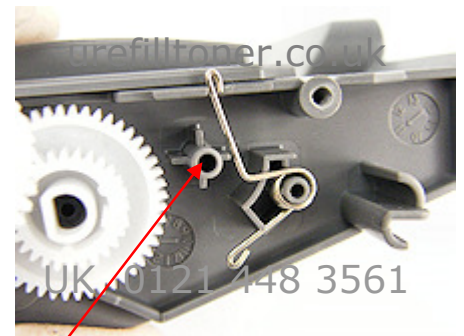
- a) Take out 2 screws



- b) Gently separate end plate from cartridge. Avoid displacing cogs, which are free to drop off. Replace immediately if one does drop off



c) Fit spring onto post as shown lifting up long leg of spring into position.



d) Rear view of wheel showing flange and same area when assembled on this shaft with front view as shown



e) Fit replacement end plate and secure with 2 screws.



f) Check that white reset wheel is in "loaded" position as shown

g) Your starter cartridge is now ready to print. Ignore remaining steps below.

If refilling a bought cartridge (i.e. already has white reset wheel)

a) If you're refilling a bought cartridge (or a starter cartridge that you've previously added a reset wheel and end plate to) follow remaining steps



Because you've just taken the cartridge out of the machine, the reset wheel should look as in the two photos above.



b) Take out 2 screws



c) Gently separate end plate and reset wheel from cartridge. Avoid displacing cogs, which are free to drop off. Replace immediately if one does drop off

d) Lift off white reset wheel. We're going to put it back on its post in a slightly different position

e) Fit wheel onto post. Note rear view of wheel showing flange and same area when assembled on shaft



f) Front view of wheel being assembled onto shaft in loaded position



g) Replace and screw on end plate with 2 screws

h) Check that white reset wheel is in "loaded" position as shown

Three refills, and maybe then some

How many refills can you expect before some kind of "wear and tear" comes into play with a particular cartridge?

If you've delved into our website, you might know that we "put our corporate neck on the chopping block and say that the rule of thumb is **three refills, and maybe then some**".

As far as problems due to "wear and tear" go, the TN-2210 and 2220 is an "and then some" cartridge.

Of course, some cartridges inexplicably give up the ghost early, probably due to small manufacturing imperfections. Others perform above and beyond the call of duty.

Clean corona wire to cure black and grey vertical streaks

Be aware that this machine uses a drum unit – DR-2200 - which is independent of the toner cartridge and has its own maintenance cycle.

We found that regular cleaning of the corona wire was necessary to cure black and grey vertical streaks down the page from time to time. See pages 107 and 108 of the PDF User Guide to see how to clean the corona wire.



Safety Data Brother HL-2240 type toner

Take maximum precaution when using a screwdriver as a lever: consider safety and protection of eyes and hands from sudden slippage or unexpected freeing of the tool.

Only to be used by a competent risk-aware adult. Not to be used by children. Avoid inhalation of product. Avoid eye and skin contact. Do not ingest. Avoid sources of ignition while pouring and at all times.

1 Identification of the substance and the company

Product name	Brother HL-2240 type refill toner
Part no.	BR2240BOT
Supplier	U Refill Toner Ltd. Contact details as per page header

2 Hazards identification

Classification	Not believed to be classified as hazardous according to OSHA CFR 1910.1200 or EU Directive 1999/45/EC, as amended.
Acute health effects	
Skin contact	Unlikely to cause skin irritation
Eye contact	May cause irritation
Inhalation	Irritation to respiratory tract if exposed to large amounts of toner dust
Ingestion	Unlikely when used as intended. Acute oral toxicity is believed to be low
Potential health effects	
Routes of exposure	Skin contact, eye contact and inhalation. Ingestion unlikely.
Chronic health effects	Prolonged inhalation of excessive amounts of any dust may cause lung damage
Carcinogenicity	Carbon black is classified by IARC as group 2B (possible human carcinogen). Carbon black in this preparation, due to its bound form, is not believed to present this risk.

3 First aid measures

Inhalation	Move person to fresh air. If breathing is difficult, obtain medical assistance
Eye contact	Flush with plenty of low pressure water for at least 15 minutes. Do not rub eyes. Remove contact lenses to ensure thorough flushing.
Skin	Wash with water, obtain medical attention if ill effects occur
Ingestion	Rinse out mouth with water. Drink one or two glasses of water. If large quantity swallowed seek medical advice

4 Fire fighting measures

Hazardous combustion products	Carbon monoxide and carbon dioxide
Extinguishing media	Water, dry chemical, carbon dioxide or foam
Special fire fighting procedures	Avoid inhalation of smoke. A self contained breathing apparatus and suitable protective clothing should be worn.
Unusual fire & explosion hazards	Toner is a combustible powder; formation of an explosive dust-air mixture is possible. Avoid all ignition sources if toner has been dispersed in air.

5 Accidental release measures

Spill/leak procedure	Sweep up or vacuum spilled toner and transfer into sealable waste container. Sweep slowly to minimize generation of dust. If vacuum is used, the motor must be rated as dust tight and safely applicable to the vacuuming of toner dust. Residue can be removed with soap and cold water. Garments may be washed or dry-cleaned after removal of loose toner.
Environmental precautions	Do not flush into surface water or sanitary sewer systems. Dispose of waste material in accordance with all applicable laws.

6 Handling and storage

Handling	Keep containers closed when not in use. Handle and open containers with care. Use with adequate ventilation. Avoid inhalation of dust and contact with skin and eyes. Keep away from sources of heat, sparks and open flames.
Storage	Store at room temperature in the original container. Keep container tightly closed and dry. Do not store with strong oxidizers.

7 Exposure controls and personal protection

UK exposure guidelines	WEL: 10mg/m ³ (inhalable dust), 3mg/m ³ (respirable dust)
Personal protective equipment	
Eye / face	Wear dust resistant safety goggles if there is danger of eye contact
Hands / skin	Wear protective gloves
Respiratory protection	Wear approved respirator for dust when exposure exceeds permissible limits
Additional measures	Use in a well ventilated area. Use engineering controls to reduce air contaminants to permissible limits. Wash hands after use.

8 Toxicological information

Oral toxicity	Tests on toners have indicated there is no evidence of acute oral toxicity. Not classified for acute oral toxicity according to EU Directive 67/458/EEC and 1999/45/EC
Inhalation toxicity	No data
Eye irritation	Not classified as irritant according to OSHA HCS and EU 67/548/EEC as amended
Sensitization	Not classified as sensitizer according to OSHA HCS and EU 67/548/EEC as amended
Chronic toxicity	No data
Carcinogenicity	Carbon black is classified as a group 2B by IARC, but carbon black is present only in bound form in this preparation.
Mutagenicity	Negative (AMES test)
Reproductive toxicity	Not classified as toxic according to EU 67/548/EEC as amended

9 Ecological information

Not tested for ecological effects

10 Disposal considerations

Collect into tightly sealed containers. Dispose of waste in accordance with all local laws. Do not throw in open fires in order to prevent risk of dust explosion.
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11 Transport information

General	Not regulated
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12 Other information

Labelling EU 67/458/EEC	
R & S phrases	Not required
Hazard symbol	Not required



Notice. All safety information is given to help facilitate the safe use of this product and is based on information obtained from the manufacturer. This information is believed to be correct, but does not purport to be all-inclusive and shall only be used as a guide. U Refill Toner Ltd makes no warranty, express or implied, as to the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions and / or compliance with local laws and regulations.

All information offered is believed to be true and is offered for consideration in good faith. However, U Refill Toner Ltd gives no warranties, neither explicit nor implicit as to the completeness or accuracy of any information offered nor the ultimate safety of refilling toner cartridges in any manner described or suggested nor the ultimate safety or hazardousness of products supplied by U Refill Toner Ltd. The onus is on the purchaser to evaluate all possible risk, including the possible incompleteness or inaccuracy of currently available information, and by proceeding to use the refill product or products, the purchaser thereby assumes all risk of peril or injury howsoever arising.

If you the purchaser decide not to go ahead with refilling for whatever reason, simply return the product or products to U Refill Toner Ltd and we will cheerfully refund your money. Your statutory rights are unaffected.





Please, tell three people what you've done



HP, we admit it. This is our begging act. Have you saved money by using our DIY kit? Did you feel a touch of pride as your cartridge *did* print again? Maybe you found some environmental satisfaction? Or perhaps you feel it should be refilled "because it's there".

We sincerely hope we've helped float your boat in some way. And if so, then please help our voice in the wilderness and tell at least three people about what you did with your empty cartridge. Why not send a link to urefilltoner.co.uk to some friends you know have printers?

The phrase "carbon footprint" hadn't been coined in 1992 when we started selling our trend-bucking "guerrilla re-cycling" products. Refilling with just toner **more or less halves CO²** compared with making the toner plus the whole structure of a cartridge to put it in*.



We're asking for your support to create a kind of benign chain-reaction effect. Yes, we stand to make money from that, but we believe that the battle to reduce CO² output does have to be commercialised. That's to say, when the capacity of individuals to make voluntary self-sacrifice reaches a limit, what will take up the slack? In the same way that carbon big-foot companies need money to keep doing what they do, so does a carbon twinkle-toes.



Environmental organisations make us aware of a pyramid of priorities. **Re-use**, in the sense of directly using a resource again, is more beneficial than re-cycling (normally taken to

imply an industrial process such as re-pulping paper fibre).

So, one last time for the planet, please advocate urefilltoner.co.uk if you feel our existence is preferable to our non-existence. Keep refilling in the free world.

*Sources:

Dr. M. Gell, "Carbon Footprints and Ecodesign of Toner Printer Cartridges", Xanfeon Energy & Environmental Services, UK, 2008. Dr. Gell calculates a 52% reduction in carbon footprint by refilling a cartridge 3 times and replacing the OPC drum once. We think the DIY refill case is even more favourable because the following carbon loads included in Dr. Gell's assumptions don't apply: manufacture/transport of replacement OPC drum, triple transport of empty cartridge to remanufacturing facility and energy consumed during remanufacturing at facility. In addition, the footprint of the delivery transport is smaller because toner weighs only a fraction of a whole cartridge.

Centre For Remanufacturing & Reuse (commissioning body), "The Carbon Footprint of Remanufactured Versus New Mono-toner Printer Cartridges". The authors conclude that, based on their data, a remanufactured mono (i.e. black & white laser printer) cartridge has a "46% lower carbon footprint than a corresponding new cartridge".

Berglind & Eriksson, "Life Cycle Assessment of Toner Cartridge HP C4127X", University of Kalmar, Sweden, 2002. The authors state (Abstract page I) that from the point of view of environmental load, "the re-use alternative is full measured two times better ...". Although they point out that the main environmental load is, in fact, associated with paper.

Refills by you ... thanks to you

Thanks for refilling the toner cartridges in your printer. We invented "do-it-yourself" toner refills in 1992, "melt & pour" in 1996 and put "unplug & pour" into internet-speak in 2002. We've never tried to patent or otherwise restrict the use of these ideas.

If you liked our product, please recommend us to friends and colleagues. We've survived for over 20 years – fighting giant corporations that dwarf us – thanks to your custom and recommendation. No one here takes that, or you, for granted.

U Refill Toner. Now needed more than ever. Now refined more than ever.

- ✓ more than halve the cost
- ✓ halve CO₂
- ✓ defend your consumer choices and right to reuse

URefillToner
.co.uk



Original and largest selling
do-it-yourself toner refill

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