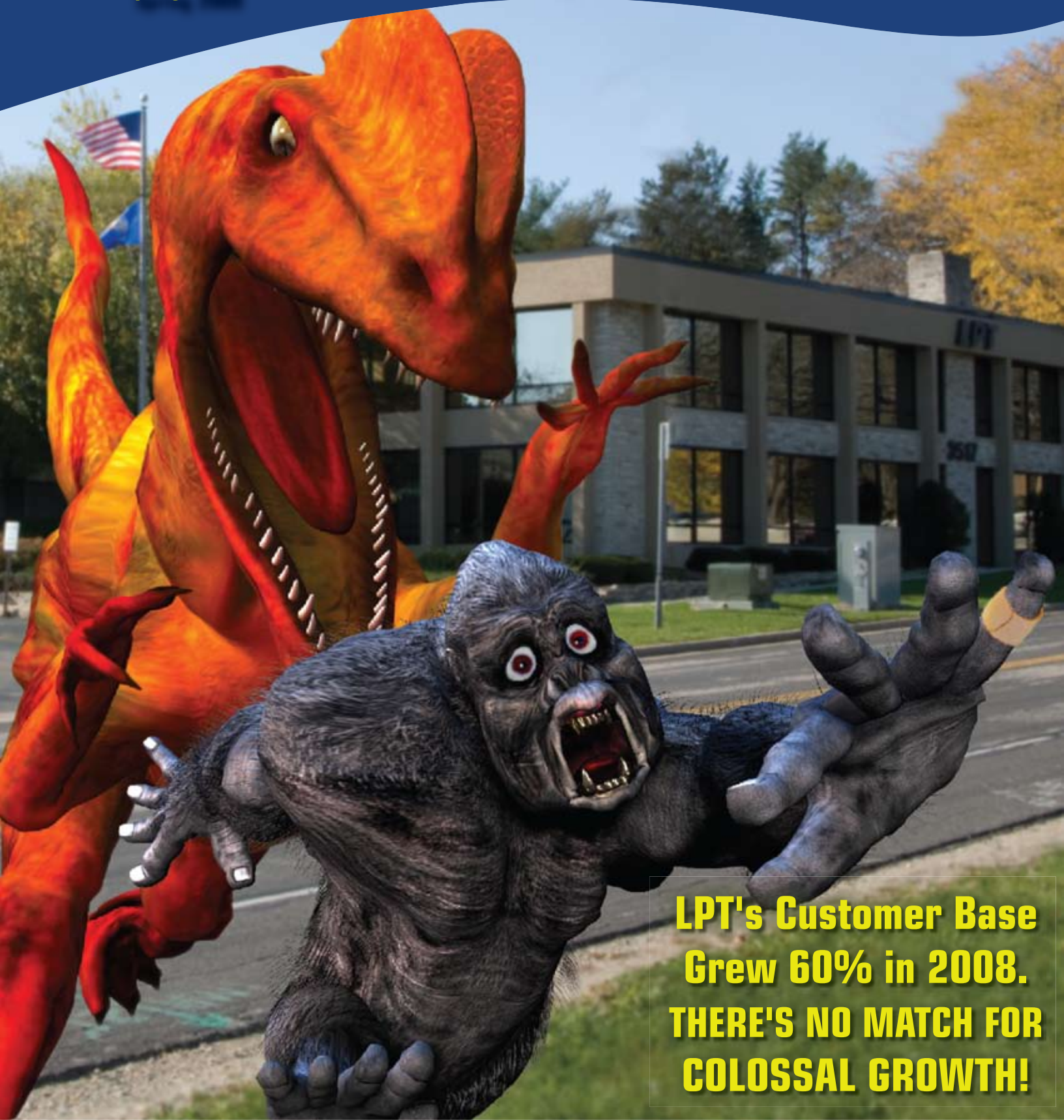


# SERVICE EDGE

The Laser Printer Tech Quarterly  
Spring 2009

## THIS ISSUE!

- OEM HYSTERIA: HOGWASH
- A FIX FOR CLJ 1500/25X0/28X0
- PARTS FOR BUDGET PRINTERS
- \$500 PRINTERS NOT SERVICABLE:  
BALDERDASH!



**LPT's Customer Base  
Grew 60% in 2008.  
THERE'S NO MATCH FOR  
COLOSSAL GROWTH!**



## COMPANY NEWS

# WE CAN DO IT, SO CAN YOU!

We wrote at the beginning of the recession that this is the best time ever for service companies. New printer sales would drop, we said, and they did. HP printer sales declined 19% in the first quarter of 2009. Now we are seeing continuing signs of our invigorated industry.

In March, LPT broke its record of total customers sold for the sixth consecutive month. We also set a new record for total orders. There has been a gush of new clients in 2009.

Don't let the negativity of the media get you down. Lucky for you, you chose an industry that is recession-proof.

—David K. Reinke, CEO

### LIBERTY PARTS TEAM RECORDS BROKEN IN 2009

#### March

- total orders
- total customers (6th-straight mo.)

#### February

- invoices (daily average)
- total customers (5th-straight mo.)

#### January

- total orders
- total customers (4th-straight mo.)
- packages (daily average)

## TECH RIGHT DIRECTIONS



No one is perfect. Not even the distinguished competition, whose *Service Today* has been a useful tool for laser printer professionals since it began in 1992 (with myself as its humble editor in those carefree days).

The maintenance reset instructions given for the LaserJet P4014, P4015, and P4515 in the January 2009 *Service Today* open the wrong menu. The error also occurs in the service manual.

The correct way is to enter service mode by selecting Service Menu and entering the correct code. The

codes are: 05401408 for the P4014, 05401508 for the P4015 and 05451508 for the P4515. In this menu you will find "Maintenance Count=X." Change the X to zero by pressing zero on the key pad.

—R. Reinke



**Your Laser Printer  
Parts Vendor**

**SERVICE EDGE** is the quarterly laser printer tech bulletin of Liberty Parts Team, Inc.

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# The fight against Hogwash and Balderdash

A great man once said the truth shall make you free. In that spirit, Liberty Parts Team is debunking several false and unprofitable ideas recently brought to our attention. We will thus fulfill our company mission, to promote Liberty — the freedom to succeed — to our clients. **LIBERTY PROMOTES TRUTH!**

## HOGWASH!

That is what we thought at Liberty when we read Parts Now's January *Service Today*. As the hogwash in question could cost you money if taken seriously, we felt we should address it directly.

In "Would the Real OEM Please Stand Up?" technician Jeremy Mueller states that HP makes the parts in its printers, which is flat out wrong: they outsource. Look at a lamp or a fan and you will see the name of the factory that made the part. You won't see HP inscribed anywhere because HP itself does not "make" its parts. Yet the article says: "When you buy a genuine OEM part through an authorized

distributor, the product you get is made by the Original Manufacturer of the printer." What are they driving at?

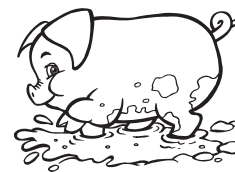
More hogwash follows: "We're aware of your concern that the term 'OEM' gets overused and misrepresented in the marketplace." Thank your lucky stars for authorized resellers, who are "more than likely selling the genuine part." But beware of bargains, because "if the price is too good to be true, it probably isn't the real deal"

The happy reality is that authorized resellers do not have a monopoly on OEM parts. At Liberty, OEM, second-source OEM and aftermarket parts are available for use at your discretion. If paying



HP list price does not seem sensible to you, why not give LPT a try? Your account executive can discuss the options with you.

*Liberty promotes truth, not hogwash.*



## COMPANY NEWS NEW FUSER CHART

LPT mailed to clients in January its 2009 Fuser Identification Chart, and if you haven't checked it out, we'll tell you what you are missing! More than 70 different fusers are covered, including HP, Xerox and Lexmark. For completeness, usefulness and beauty, there is nothing to compare with it.

If you didn't get one, call your LPT rep today!



# EDITORIAL

## BALDERDASH!

We at Liberty Parts Team read with some surprise Steve Geishirt's new printer survey "HP & Lexmark: New Products and Trends," in the January 2009 Service Today. He repeatedly asserts as an "old rule of thumb" something that is untrue: that a printer under \$500 "really isn't serviceable."

Here are some reasons why sub-\$500 printers can and must be serviced in the years ahead.

1. Cost-per-page contracts will force you to service them.

2. For many LPT clients, \$79-\$99 dollar service calls are their bread and butter. If a power supply fails, don't tell the client to buy a new printer — give LPT a call! We may have a better solution.

3 Market buying trends indicate demand for color laser printers at lower prices (marketresearch.com). One popular computer hardware web site publishes a list of its "Top 10 Color Laser Printers." Their average price is \$464. New small businesses will gobble them up and will need your company's help to maintain them.

4 Businesses that rely on personal printers may be unwilling or unable to finance a replacement. They may be content to have a paid-off printer.

5. Chucking printers in the landfill is not a green



approach to business printing.

We would add that PN has offered repair training on these allegedly unserviceable printers from the beginning. What did Steve tell students attending the LJ 1500/2500 repair class? "Congratulations. You have successfully reassembled the printer and have passed the course. By the way, it is not worth servicing."

At Liberty, we will help you service whatever printer you want. This idea of PN's that you can't service under-\$500 printers is just balderdash.

Liberty Promotes Truth!

—David K. Reinke

## SUB-\$500 PRINTER PARTS APPROXIMATE HP LIST PRICE — CALL & SAVE

PART#	NAME	PRICE
1500/25X0		
RG5-6910-N*	CAROUSEL, 2500	\$82.65
RG5-7587-R*	CAROUSEL, 2550	\$95.95
RG5-6960-R	HVPS, 1500/2500	\$142.00
RB3-0160-N	P/U ROLLER, TRAY 1	\$5.70
RF5-4012-N	SEPARATION PAD	\$10.36
C9705-69003-R	PC BOARD, 1500/2500	\$160.00
RF5-4040-R	TRANSFER ROLLER, 1500/2500	\$22.00

\*Referred to in tech article which begins on the facing page

PART#	NAME	PRICE
1600/260x		
RC1-5440-N	P/U ROLLER (D SHAPE)	\$8.03
RM1-1828-N	FUSER, 2605 NEW (SIMPLEX)	\$153.00
RM1-1885-N	ETB ASM, 2600	\$140.00
RM1-1891-N	ETB ASM, 2605 SIMPLEX	\$140.00
RM1-1892-N	ETB ASM, 2605DN/DTN	\$134.00
RM1-1922-N	SEPARATION PAD ASM	\$8.50
RM1-1820-N	FUSER, 2600/1600 NEW	\$129.00
RM1-1975-R	DC CONTROLLER, 2600N	\$120.00

## TECH

# HP COLOR LASERJET 1500/25X0/28X0 CAROUSEL REPLACEMENT

One of the most common problems in these printer models is a broken left carousel bushing, causing the printed image to fade away on the left side of the page. Replacing the bushing requires removal of the carousel. While not difficult or complicated, this can be a time-consuming procedure. The service manual's coverage is marred by omissions, unnecessary steps, and some unclear and mislabeled figures. Therefore, we will take you through the process step by step.

The 28x0, which has a document scanner on top, requires many additional steps, the headings of which we put in red. All indications of "right," "left," "back," and so on refer to standing in front of the printer; much of the work will be done from the rear.

**1. Remove the paper cassette, imaging drum, and toner cartridges.** After removing the imaging drum, make sure to put it in a dark place or cover it, since it can be damaged by ambient light. If the printer is still capable of turning the carousel, the easiest way to remove the cartridges is to have the printer powered up and use the carousel rotation button to move each cartridge into position for removal. Otherwise, it is



simplest to leave the cartridges in the carousel until its removal.

**2. Remove the ADF (28x0 only).** Open the ADF, disconnect the connector in the rear (Fig. 1) by squeezing the tabs together and lifting upward, then remove the ADF by lifting it upward.

**3. Left and Right Covers. 1500/25x0:** Remove one screw from bottom. Grasping by handle and top, gently lift the cover up and away. **28x0.** Open the document scanner and top cover. For the right cover, remove two screws and lift the cover up and away from the printer (pull the lower edge out first). For the left, remove one screw at the lower edge, disen-

## SUB-\$500 PRINTER PARTS APPROXIMATE HP LIST PRICE — CALL & SAVE

PART#	NAME	PRICE
1160/1320		
RM1-1298-N	SEPARATION PAD	\$13.00
RK2-0418-R	MOTOR	\$57.00
RM1-1281-R	REGISTRATION ASM	\$31.50
RM1-1289-R	FUSER, REMAN.	\$135.00
305x		
RL1-0266-N	P/U ROLLER	\$10.36
RM1-2048-N	SEP PAD ASM	\$9.75
RM1-3044-N	FUSER, NEW	\$111.00

PART#	NAME	PRICE
Q3948-60214-N	ADF PPR INPUT TRAY	\$18.50
5851-3580-N	ADF	\$14.25
P2015		
RL1-1525-N	MP TRAY P/U ROLLER	\$9.50
RM1-4279-A	TRANSFER ROLLER	\$14.25
RL1-0540-N	P/U ROLLER	\$9.80
RL1-1524-N	MP SEP PAD	\$9.80
Q7805-69003-N	FORMATTER NETWORK	\$80.35
Q5931A-ETN-N	TRAY, 250-SHEET	\$152.00



**3. RIGHT REAR COVER:  
REAR LATCH**



**4. RIGHT REAR COVER ORIENTATION**



**5. SCANNER: RETAINING TAB**

gage the latch at the front of the left cover (Fig. 6); finally, pull the bottom of the cover slightly up and out, and then lift it off of the printer.

**4. Right Rear Cover (28x0 only).** Disengage latches on the left (Fig. 2) and rear (Fig. 3), and pull the cover off from the rear. Fig. 4 should help you to remember the correct orientation of this piece during re-assembly.

**5. I/O cover (in the right rear of the printer).** Open the rear door, disengage the latch at the top of the I/O cover, and pull it away from the printer.

**6. Scanner Cables (28x0 only).** Now you can unplug the four scanner cables from the top of the formatter and unroute them from the cable guide so that they hang free at the rear of the printer. Note the layering of the cables in the cable guide, and make sure they are reassembled in the proper order: the long narrow flat cable goes in first, then the short wide flat cable, then the wire bundles. In the same bundle with these cables is a ground wire, which you will need to disconnect at the rear of the printer.

**7. Document Scanner (28x0 only).** Open the scanner, disconnect it from the links on each side by disengaging the retaining tab at the top of each link (Fig. 5), raise the scanner until it is vertical, and lift it off of the printer. Note that the scanner is not secured once the links have been disengaged, so be careful not to drop it, and when re-assembling, make sure to re-connect the links before mounting the



**6. LEFT COVER**

ADF onto the scanner.

**8. Formatter Cage. 1500:** remove five screws and two cables, lift cage off. **25x0, 28x0:** Open the memory door and unplug one cable (you will need to use a tool to release the retaining tab on the connector), then unplug any remaining cables from the top (some of these may be easier to unplug later, as you are removing the cage), then remove four screws along the edges of the cage, two on each side, and possibly one screw at the bottom. Finally, lift the cage to disengage it from the hooks at the top, and pull it away from the printer. When re-assembling, make sure to re-engage the hooks.

**9. Left Rear Cover (28x0 only).** To remove the left rear cover, disengage one latch (Fig. 7) and pull the cover away from the rear. Keep the top cover open to access the screws for the next two covers.

**10. Left and Right Upper Covers (28x0 only).** To remove the left upper cover (in the front), remove one screw at the front and then pull the cover up and back. Removal of the right upper cover is similar, except that there are two screws. On the 2840 only you will have to detach two grounding wires. Also, you will need to press the scanner release button while pulling the cover off.

**11. (Upper) Back Cover.** Use a flat-blade screwdriver to loosen two internal tabs, one on either side. Then rotate the cover away and downward to release the tabs.

## 12. Remove the top cover.

**a. Screws.** With the cartridge door open, remove two screws at the front, and possibly a third screw on the right.

**b. Observe Link Gear and Lever.** Observe the correct orientation of the gear and link lever, comparing these with Fig. 8. It will speed up reassembly. The front most gear tooth on the link lever should fit into the notch on the link gear.

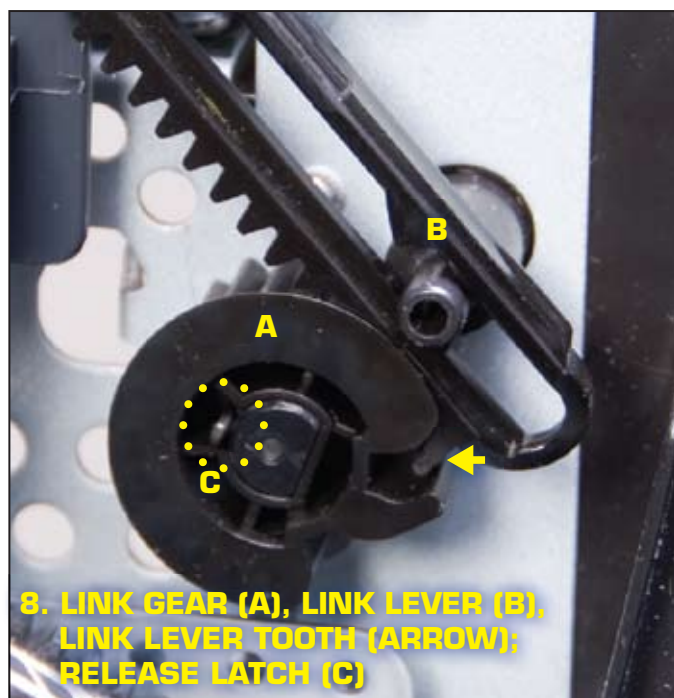
**c. Remove Link Gear.** Press the latch at the center of the link gear and pull it off the shaft (Fig. 8). Then disengage the link lever from the post at its forward end, and lift the cover off of the printer. Now remove the gear shaft, to which the link gear was attached. It will come out only when aligned properly, so rotate it while pulling it until it comes free from the vertical

white rod (Fig. 9). [Both the gear and the rod have lips on them that prevent the gear teeth from completely disengaging. Each piece has one section where the lip is cut away. See Fig. 9 inset. We suggest you try reinstalling it immediately to avoid delays later.]

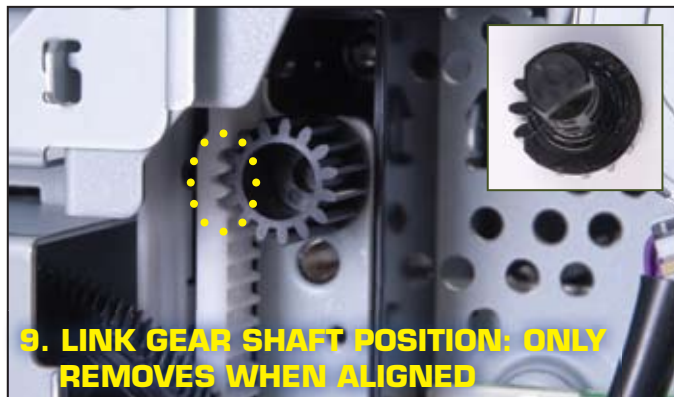
Reinstall: Pull the white rod all the way up and



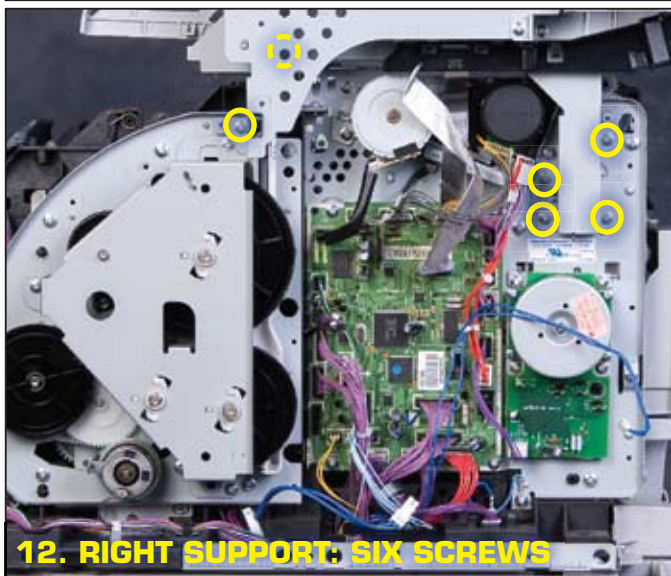
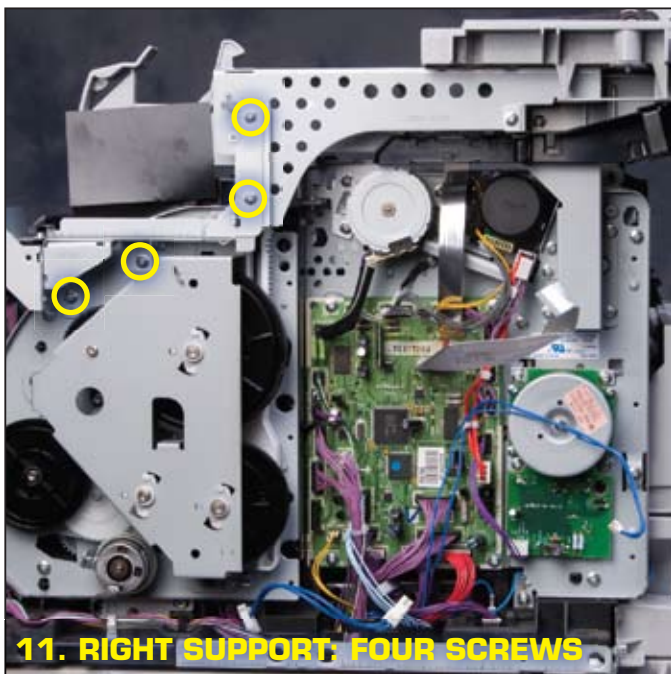
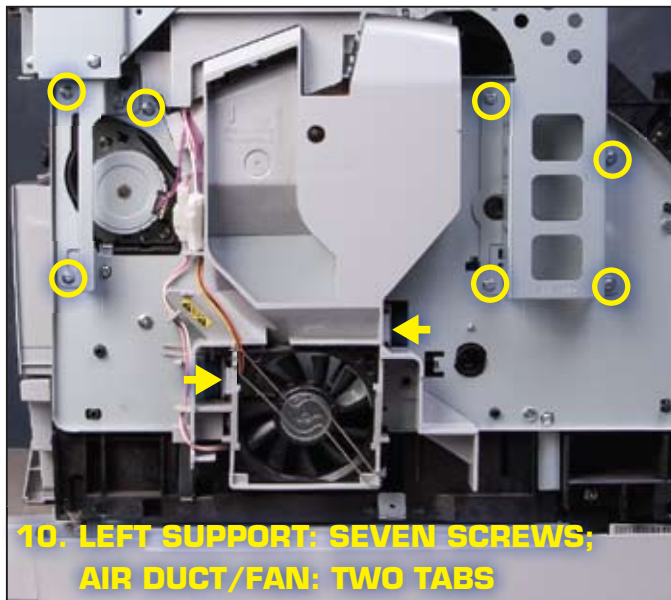
**7. LEFT REAR COVER: ONE LATCH**



**8. LINK GEAR (A), LINK LEVER (B), LINK LEVER TOOTH (ARROW); RELEASE LATCH (C)**



**9. LINK GEAR SHAFT POSITION: ONLY REMOVES WHEN ALIGNED**



make sure the top door is all the way open. Attach the link lever, then the link gear and shaft to match Fig. 8. There may be some resistance as you push the gear onto the shaft.

**13. Remove the left and right supports (CLJ 28x0 only).** The left support is easy: remove seven screws (Fig. 10) and then pull the support up and away from the printer. The right support comes off in two pieces. To remove the front piece, remove four screws (Fig. 11) and lift the piece away from the printer. Although it isn't mentioned in the service manual, there was also a piece of thick black tape on our printer that was securing this piece, and had to be partially peeled away. Then remove six screws from the main section of the support (Fig. 12) and lift it off the printer.

**14. Remove the air duct and fan.** These are on the left side of the printer. Unplug the fan cable (black connector about halfway up the left side of the air duct) and then unroute this and other cables (with white connectors) from the air duct. Then release two retaining tabs near the bottom (Fig. 10) and lift the air duct and fan assembly straight to release two other hidden tabs at the top.

**15. Remove the face-down cover.** Behind the scanner is a gray plastic piece (the face-down cover) with two gray levers (forming holders) resting on top of it (Fig. 13). Raise these, rotate the lower part of the cover toward the front of the printer, and remove it.

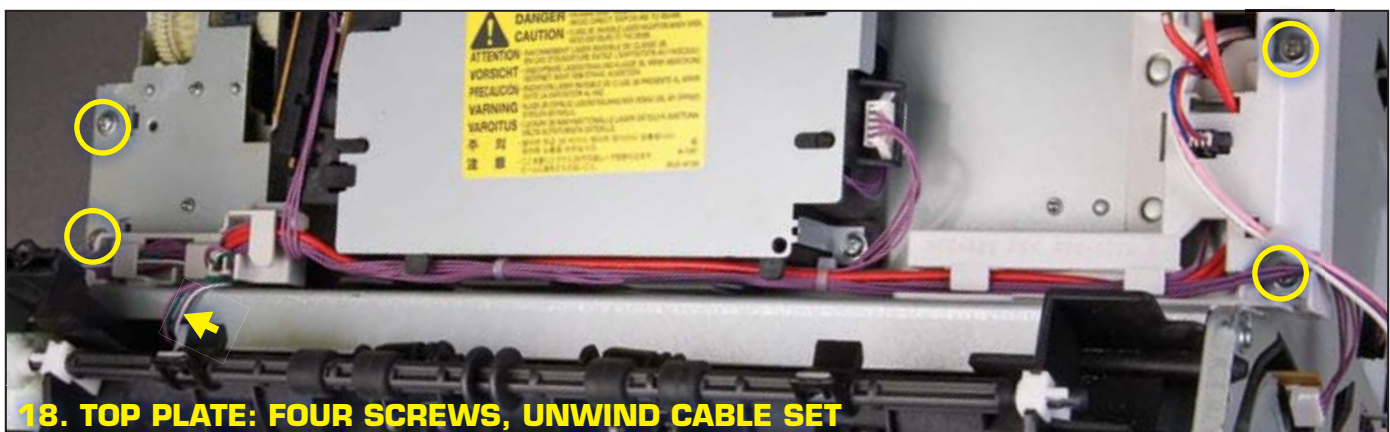
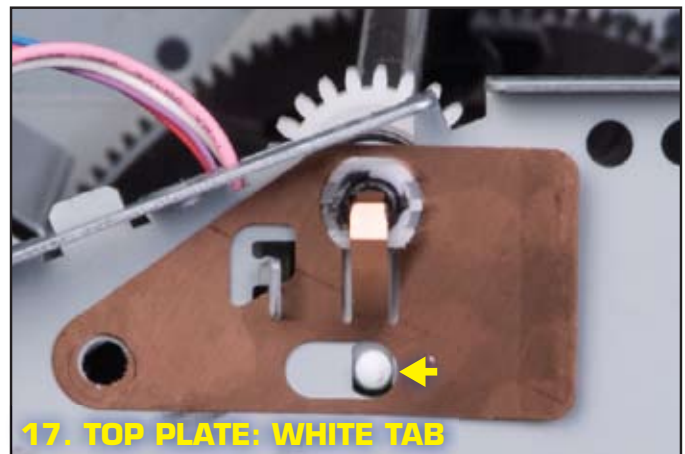
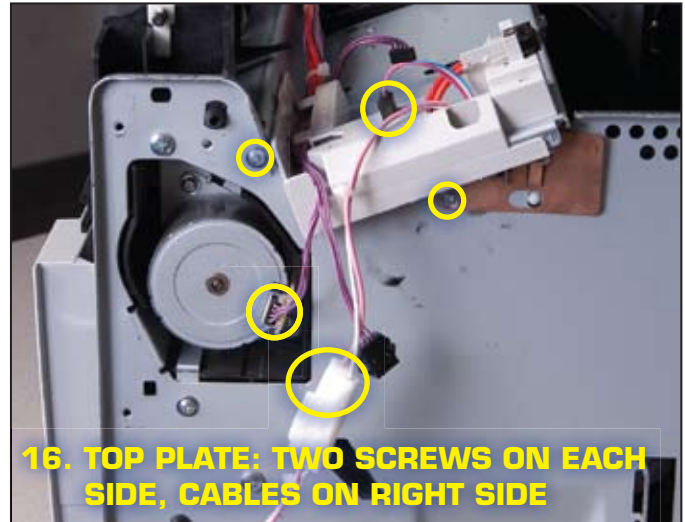
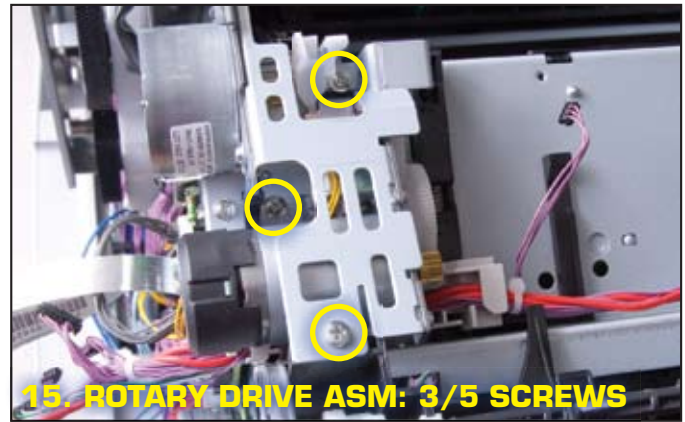
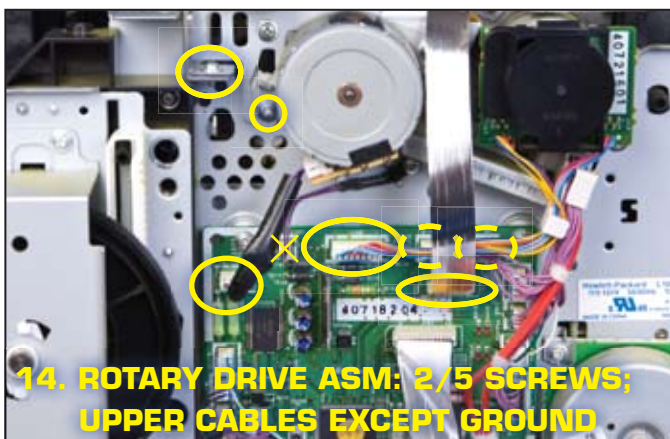
**16. Remove the rotary-drive assembly.** Unplug all remaining cables from the top edge of the DC Controller, then remove five screws. Two of these are shown in Fig. 14 (side view), and the other three in Fig. 15 (top view). Now you can lift the assembly out of the printer. When re-installing it later, first insert the metal protrusion at the back into the slot in the printer frame, and then lower the assembly into position over the alignment pins.

**17. Remove the top plate.** Unplug and unroute all remaining cables from the right edge of the DC Controller. On the bottom connector, you will need to press a tab on the side of the connector while unplugging it. You will also need to unroute a small cable set (Fig. 18). Also unplug four cables on the left side of the printer and remove two screws from the

left side (Fig. 16) and then remove the corresponding two screws from the right side. Note that one of the screws on the left side secures a small copper grounding plate. This plate will need to be removed, but before doing so, note its orientation (Fig. 17). Finally, remove four screws from the top (Fig. 18) and lift the plate off of the printer, letting a cable set pass through.

#### 18. Remove the carousel.

- a. Open the rear door and remove two screws (Fig. 19).
- b. Press the white plastic tab (visible in Fig. 17) on the left side of the printer to release the left swing-

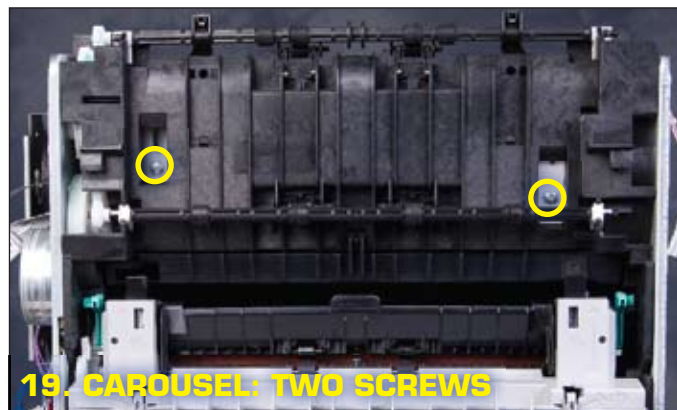


shaft bushing and then rotate the bushing to a vertical position (Fig. 20). *Note: This is the bushing mentioned earlier that commonly breaks.* Repeat the same process for the right swing-shaft bushing.

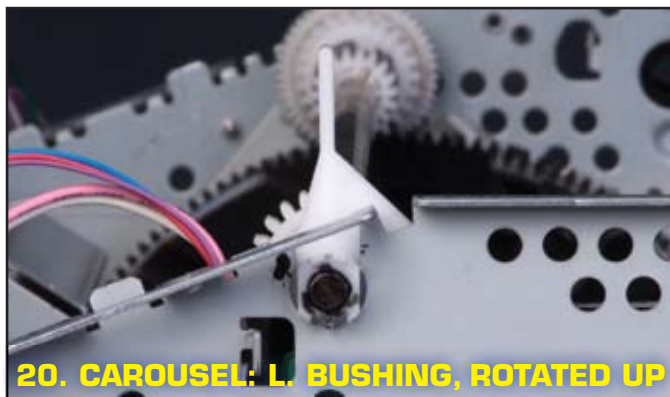
c. *Before proceeding further, observe from the front of the printer the position and orientation of the left and right pressure-shaft holders, comparing with Fig. 24. These white plastic pieces at the rear of the carousel attach the carousel to the printer frame. The feet of the pressure-shaft holders should be inserted into, NOT COVERING, the slots in the printer's chassis (see Fig. 24). It is very important to re-create this orientation on re-installation.* To remove the carousel, use a flat-blade screwdriver to pry out the pressure-shaft holders (Fig. 21) from their niches in the rear frame. Carefully remove the carousel.

**19. Replace one or both swing-shaft bushings if necessary.** The right bushing just slides out of the carousel assembly (in fact, it will fall out all by itself if the carousel is tilted that way). The left bushing, which is more likely to need replacement, is held in by a small retaining clip next to the gear – just press this tab and the bushing slides off.

**20. Realign and Reinstall the Carousel.**



**19. CAROUSEL: TWO SCREWS**



**20. CAROUSEL: L. BUSHING, ROTATED UP**

**a. Align gears, both sides.** *This step is particularly important if either or both of the swing-shaft bushings have been removed or replaced because their removal allows misalignment.* Using Fig. 22 as a reference, locate the alignment line on the black gear on right side of the black toner compartment. This mark should line up with the double alignment bumps on the small white gear. If they do not align, remove the right bushing and align them. *The left side also has an alignment line, but there are additional lines there that create confusion, so work with the right one.*

**b. Reinstall Carousel with gear knob positioned downward.** Put the carousel back in the printer with the knob positioned downward, as in Fig. 23, and the Black toner compartment on top, Yellow facing forward.

**c. Lock in the white tabs and feet.** Again, make sure the feet, visible from the front of the printer are inserted correctly (Fig. 24).

**d. Rotate Bushings down and snap into place.** Re-check Step 20a and 20c.

**21. Reverse steps 1-19 to reassemble.**

*Tester's Note.* The first time you try this, we suggest you allow one hour for the 1500 and 25x0, and two hours for the 28x0. One you have done it, it takes half the time.

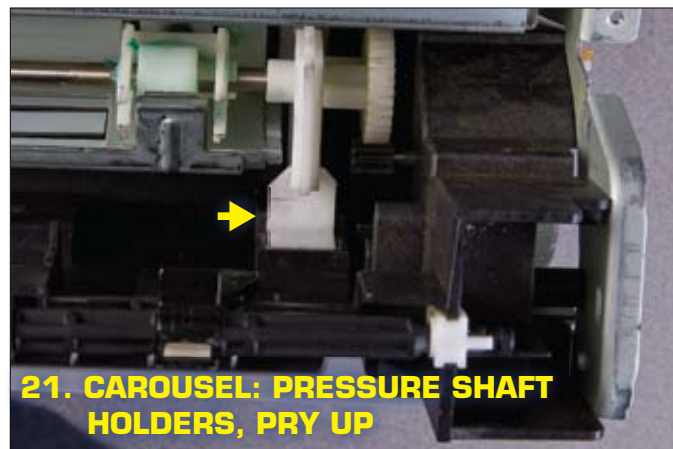
#### PART NUMBERS:

RB2-9808 Right swing-shaft bushing

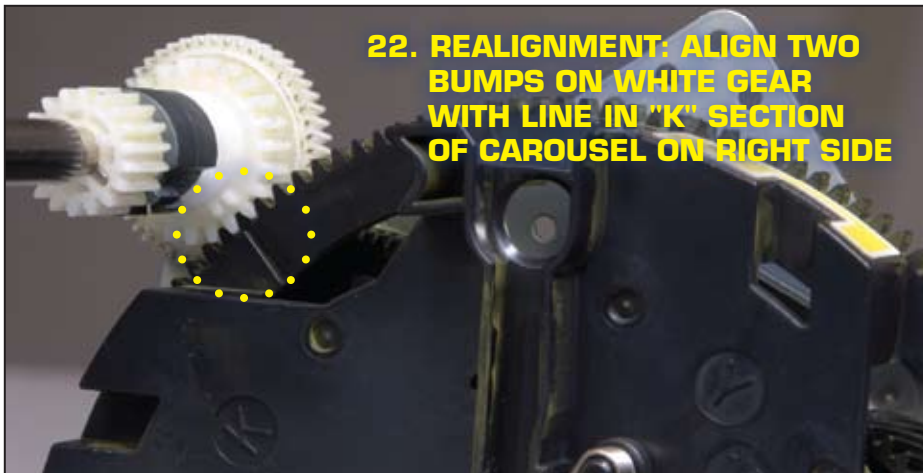
RB2-9809 Left swing-shaft bushing

RG5-6910 Carousel (1500/2500)

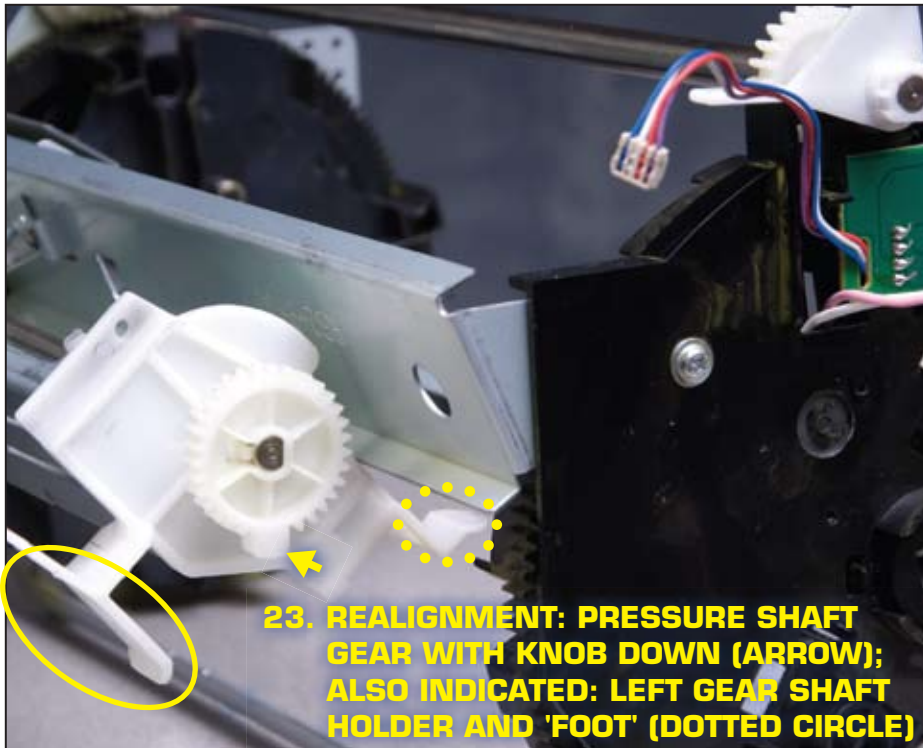
RG5-7587 Carousel (2550/28x0)



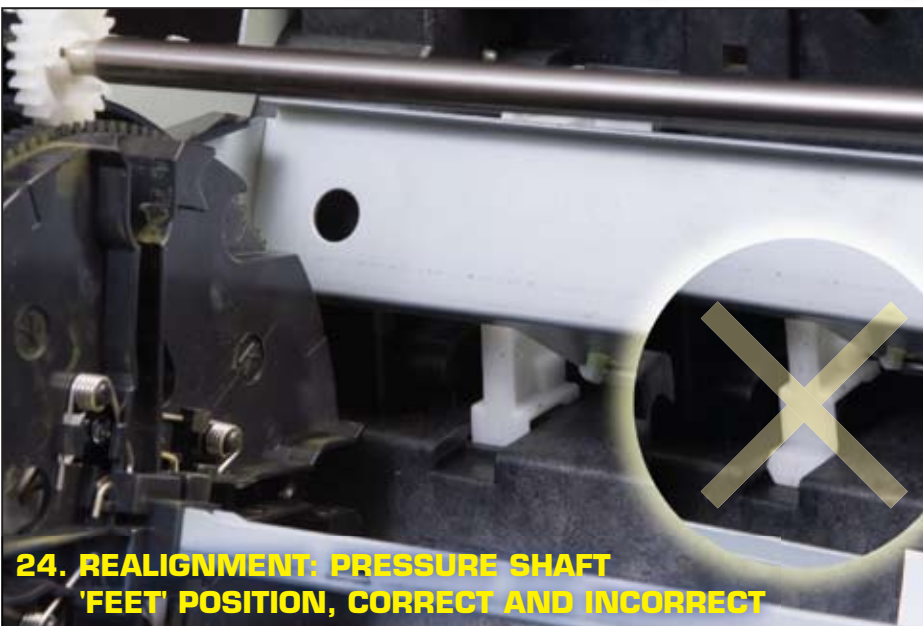
**21. CAROUSEL: PRESSURE SHAFT HOLDERS, PRY UP**



**22. REALIGNMENT: ALIGN TWO BUMPS ON WHITE GEAR WITH LINE IN "K" SECTION OF CAROUSEL ON RIGHT SIDE**



**23. REALIGNMENT: PRESSURE SHAFT GEAR WITH KNOB DOWN (ARROW); ALSO INDICATED: LEFT GEAR SHAFT HOLDER AND 'FOOT' (DOTTED CIRCLE)**



**24. REALIGNMENT: PRESSURE SHAFT 'FEET' POSITION, CORRECT AND INCORRECT**



## ATRIX TONER VACUUMS

Liberty Parts Team, printer parts company famous for its quality remanufactured fusers, offers Atrix International's Omega Supreme Toner Vacuum and its standard filters.

Atrix vacuums and filters are used and approved in companies such as Xerox, HP and Lexmark.

For pricing, contact your rep.

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killed the beast!**

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