Diablo Supplies Guide

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1.0 DIABLO SUPPLIES - GENERAL

1.1 RIBBONS

Ribbons offered by Diablo fall into two categories, fabric and carbon film. The ribbons are contained in quick-change cartridges which provide ease of handling while avoiding direct contact with the ribbon material itself.

Fabric ribbons are designed as continuous loops stuffed into the ribbon cartridge. The ribbon continuously cycles in front of the printwheel as the cartridge is used. This type of ribbon prints darker and wider when fresh and gradually loses density as it is used until it is time to change the cartridge.

Single and multi-strike carbon film ribbons are wound reel to reel within a cartridge which provides for a single pass of the ribbon in front of the printwheel during the life of the cartridge. The total number of characters printed by a cartridge is determined by ribbon length and pitch of printout. Diablo's new multi-strike cartridges provide significant reductions in cost per character.

The several types of cartridges are depicted below.

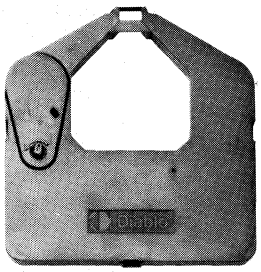
HYTYPE I

Cloth
Black 38000
Red/Black 38004

HYTYPE II/
HYTERM/630

Cloth
Black 40980-00
Red/Black 24160

MATRIX/
MATRIX HYTERM

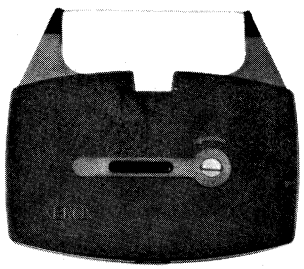


Cloth
Black 24650-02

Multi-strike Film*
Black 38002

Multi-strike Film*
Black (high capacity)
301980-04

620



Carbon Film
Single-strike 8R1655
Multi-strike 8R1654

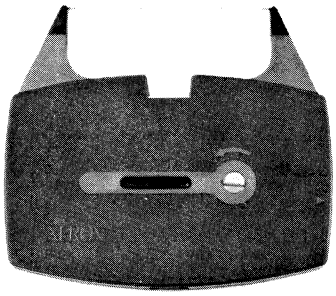
*Being discontinued, replaced by Universal Cartridge 8R01077

For use on Diablo HyType I, HyType II, 630 and also on Xerox 800, 850 and 860.

Universal Multi-strike film 8R01077

620 (XEROX 610)

Multi-strike Film 8R1654



Single-strike Film 8R1655

Ribbons

Universal, multi-strike[1]	360,000	impressions
HyType II, high capacity multi-strike[2]	225,000	impressions
HyType I, multi-strike[2]	105,000	impressions
HyType II, fabric	1,000,000	impressions
HyType I, fabric	1,000,000	impressions
Universal, single-strike[3]	40,000	impressions
620, multi-strike	450,000	impressions
620, single-strike	110,000	impressions
Matrix, fabric	1,000,000	impressions

[1]For use on Diablo HyType I, HyType II, 630 and Xerox Models 800, 850 and 860.

[2]Being replaced by Universal multi-strike cartridge.

[3]New, check for availability.

1.2 PRINTWHEELS

Diablo provides both plastic and metalized printwheels. Plastic wheels are economical and produce good print quality. Metalized wheels have a metal coating that increases their durability and permits designing the type face for the best possible print image. Metalized printwheels, when used with a carbon film ribbon, produce superb print quality.

HyType I, HyType II 1345 and 1355HS printers, and Terminal Models 1610, 1620, 1640 all use the 96-character plastic printwheels. HyType II Model 1355WP printers and Model 1650 terminals use the metalized printwheels. The Model 630 can use both plastic and metalized printwheels. Do not attempt to use a metalized printwheel on a printer designed for plastic wheels only, or a plastic printwheel on a printer designed for metalized wheels only.

The plastic printwheels have either a 96-character set, for use with HyType or Model 630 printers, or a 98-character set for use with Model 620 printers. Metalized wheels come in groups of 88, 92 or two formats of 96 characters. The 1355WP printer is configured to use metalized printwheels from any one of these groups. Model 630 and Series 1650 printers and terminals can use all metalized printwheels; however, special firmware is required to support Rank Xerox (non-domestic) 92 and 96 character wheels. Settings for wheel selection on the Model 630 and the Model 1650 are by program control or manually by switches on the operator control panel.

Character Spacing

Diablo supplies both plastic and metalized printwheels in 10-, 12- and 15-pitch as well as proportional space. Proportional space printwheels are offered in the metalized version. There are also a few new plastic wheel typestyles and the 98-character wheels for the Model 620 come in a variety of PS wheels. The 10-pitch wheels are designed for printing at 10 characters per inch, the 12-pitch wheels at 12 characters per inch, and the 15-pitch wheels at 15 characters per inch. With proportional spacing, the printing system closely adjusts character spacing so that character size and density are carefully balanced with surrounding empty space for maximum aesthetic appearance and readability.

With proportional spacing, since all characters are not alloted the same amount of space, the number of characters per inch will vary.

The character spacing for each printwheel generally is identified within the printwheel title. For example:

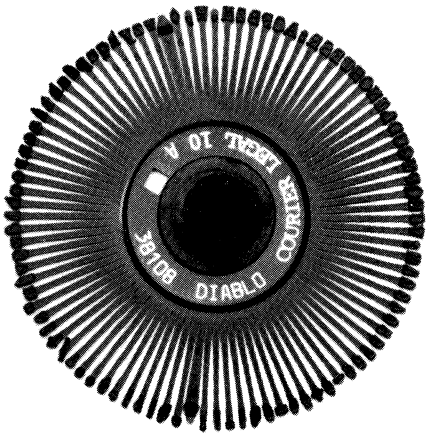
Courier 10 - (10 pitch)
Artisam Legal 12 - (12 pitch)
Gothic PS - (Proportional Spacing)

There are, however, exceptions to this rule (Courier 72, for example, is a 10-pitch wheel).

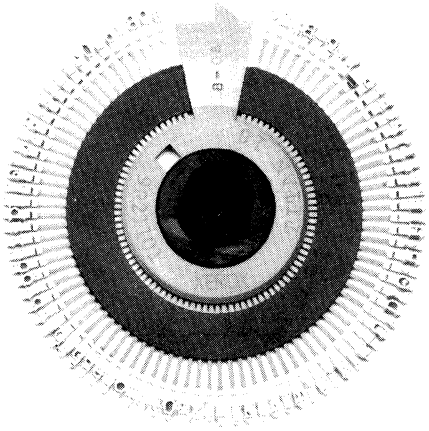
The character spacing for each of the metalized printwheels is easily distinguished by color coding of the printwheel lettering:

10-Pitch - Blue 12-Pitch - Green 15-Pitch - Black Proportional - Red

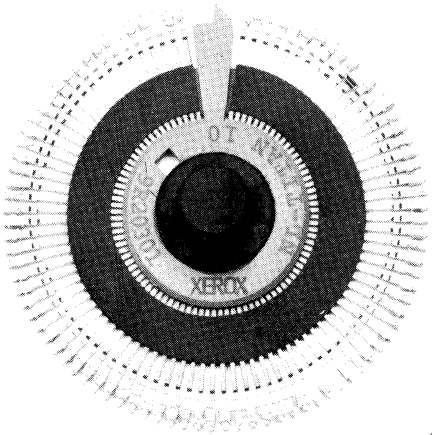
These printwheels are depicted below:



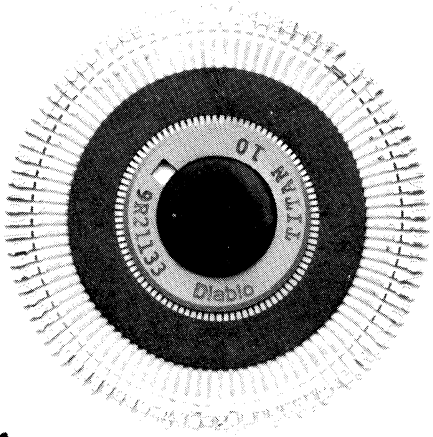
Plastic - 96 Character



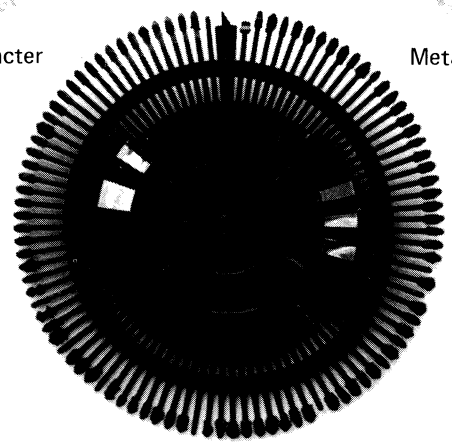
Metalized - 88 Character



Metalized -92 Character



Metalized - 96 Character



620 (Xerox 610) Plastic - 98 Character

Diablo printwheels are characterized for specific applications, providing alternative sorts for communications, word processing, etc. Printwheel sorts are a separate addendum to this document. For in-depth operational information, refer to the Printwheel Data Book, Diablo Publication Number 90044-XX, price $10.00.

2.0 THE RIGHT SUPPLIES FOR THE APPLICATION

2.1 USING THE CORRECT PRINTWHEEL FOR THE PRINTER

This table identifies the type of printwheel to be used on each of the various models of Diablo printers and terminals. Consult your Operators Guide for the location of the machine identification label.

PRINTWHEEL	PRINTER: Diablo Model	620*	630	1200	1345A	1355HS	1355WP	1380WB	1640	1650	TERMINAL: Xerox Model	1730	1710	1700	1740	1720	1750
	Diablo Model	620	630	1610	1620	1640	1641	1650									
Standard Plastic			•	•	•	•			•			•	•	•	•	•	
620 Plastic		•									•						
Metal			•				•	•		•		•					•

*Same as Xerox Memorywriter

2.2 THE RIBBON

Ribbons can be a major contributor to print quality excellence - or problems. Single or multi-strike film ribbons are best for jobs that require maximum crispness of impression. Fabric ribbons, because they are textured and have ink wetness, tend to splay characters. Use them where fine quality isn't paramount.

2.3 THE PAPER

Paper quality is critical to the quality of reproduction you can obtain. Most manifold forms are of poor quality sulfite paper, and will deliver poor quality reproduction consistently. High quality bond paper, conversely, improves the appearance of all output. Where multilith or other printing reproduction is planned, use a repro master for maximum black and white contrast and image crispness. Never use erasable paper with film ribbons, as they are not compatible.

2.4 MATCHING SUPPLIES FOR RESULTS

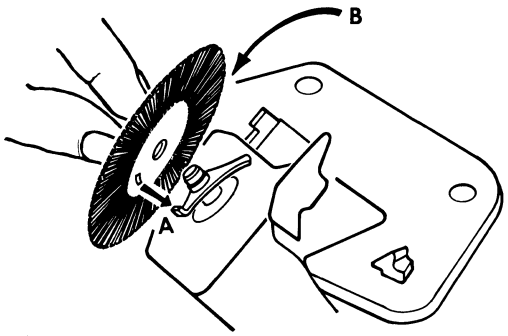
Daisy printwheels are either plastic or metalized. They come in a variety of type styles and character sizes, including proportional space and fixed pitch, and serif and sans-serif fonts. An executive letter prepared with a metalized proportionally spaced wheel with a serif type style - using film ribbon and a good grade of 100% rag bond paper - provides exceptional print quality. Change one or more of those elements, and quality begins to degrade. (The following listing summarizes the best combinations of wheels, ribbons and paper to use.)

Type of Document	Ribbon	Paper	Printwheel
Executive letter or memorandum	Multi-strike or single-strike film	Fine quality rag bond	Metalized with proportional spacing
Draft documents, limited reproduction	Fabric	Fanfold	Plastic
Draft documents, extensive reproduction	Multi-strike	Fine quality rag bond	Metalized or plastic
Offset Masters	Single-strike film	Offset master plate	Metalized with or without proportional spacing, or plastic
Multi-part forms	Multi-strike or fabric depending on number of parts	Carbonless or carbon pack	Metalized or plastic depending on number of parts
Magnetic ink character recognition	Single-strike MICR	Fine quality bond with a minimum of ferro magnetic particles	Metalized MICR

3.0 INSTALLING THE PRINTWHEEL

3.1 HYTYPE/630

With the carriage in the open position, hold the printwheel over the printwheel motor shaft, align the slot in the printwheel with the tab marked "A", and push on the printwheel hub to seat the printwheel on the motor shaft. Ensure the printwheel is firmly seated.

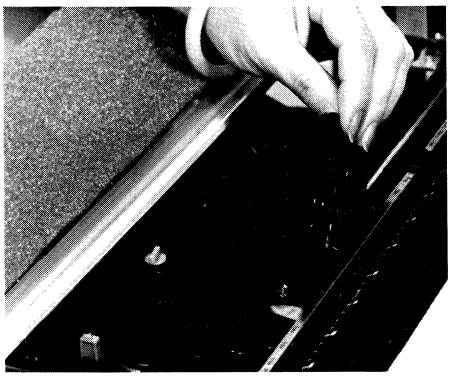


The printwheel should be handled only by the center hub and be installed or removed from the printer in a straight motion.

In moving the carriage to a "closed position", "B", ensure the mechanism is not "snapped" shut. Doing so could cause petal breakage due to contact with the card guide.

3.2 620

Printwheel alignment or "homing" with the Model 620 is achieved by a system which electronically senses wheel position and data, after it has been placed into an envelope-like enclosure and this holding mechanism has been pushed closed and latched.



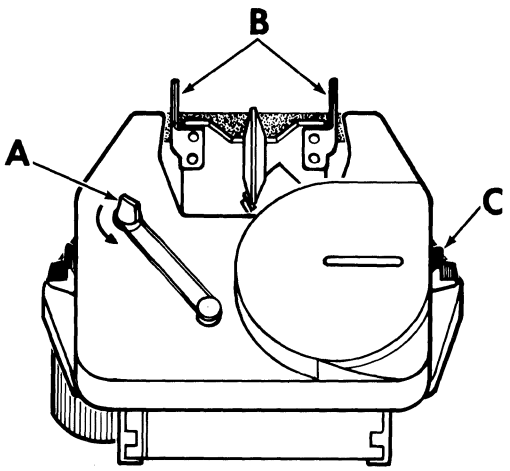
Because the printer's plastic printwheels are notchless and hubless, users are not required to position the printwheels over a drive shaft or to align the corresponding drive shaft and printwheel notches or other markings.

Each printwheel is encoded with language and pitch information which the printer automatically reads to determine proper carriage motion and hammer energy. The system, in turn, may check the printwheel for language and pitch, and prompt the system operator to continue or change printwheels. Model 620 daisy-wheels offer an average two-year life.

4.0 INSTALLING THE RIBBON

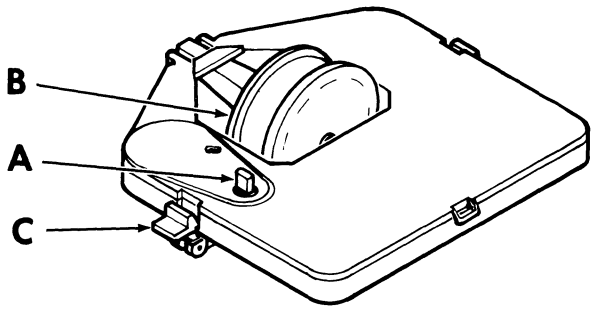
4.1 HYTYPE/630

CAUTION: Printers equipped with ribbon out sensors stop automatically whenever the ribbon supply is depleted in a film ribbon cartridge. Make sure the system "Pause" command (control panel action on all but HyType) has been sent or the system turned OFF **before** installing a new ribbon. The act of inserting the ribbon cartridge may enable a restart of the printer even though the cartridge may not be fully installed.



With the carriage in closed position, tighten the exposed ribbon by turning capstan "A" in the direction indicated; push back ribbon latches "C", and install cartridge, ensuring that the ribbon slips tautly over the ribbon guides "B"; release the latches, ensuring that they are firmly positioned over the cartridge lips; retighten the ribbon. Ensure that the ribbon does not bend or fold exiting or reentering the cartridge.

4.2 MATRIX



Remove ribbon slack by turning the knob "A" counterclockwise.

Lower the cartridge in place with the ribbon over print head "B" until both side latches "C" snap into place in cartridge side notches.

4.3 620

CAUTION: Be sure to press the PAUSE switch first!

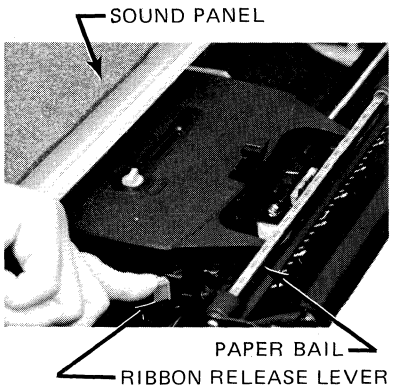
1. Open the sound panel. If necessary gently **push** the carriage away from the side. Swing the Paper Bail up and to the rear.

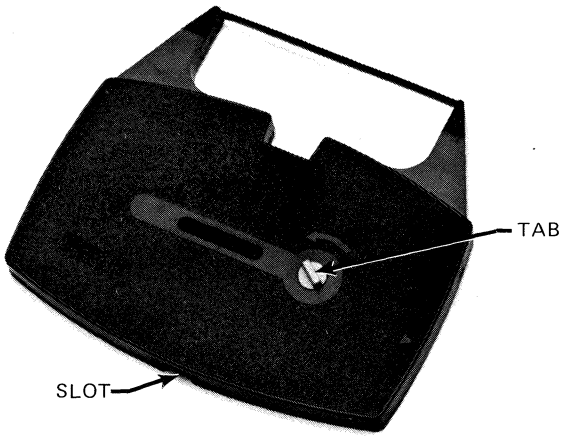
2. Locate the red Ribbon Release Lever on the right side of the carriage. Push this lever toward the rear as far as it will go.

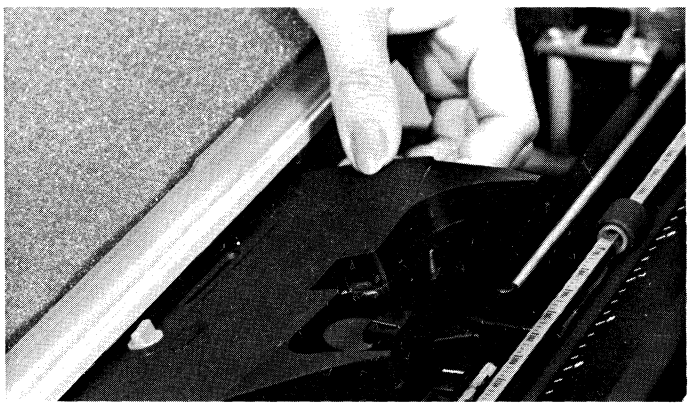
3. Study the ribbon cartridge carefully. Note the bright colored tab on its upper surface, and the associated "arrow" indicator molded on the top surface. This tab is used to establish tension in the exposed portion of the film ribbon strip. Turn this tab counterclockwise as indicated by the arrow to ensure the ribbon is taught and straight. Locate the slot molded into the lower front edge of the cartridge. This slot engages a pin on the front surface of the Model 620's carriage platform.
4. Hold the ribbon cartridge as shown, and carefully lower it down on the carriage platform. Note that the forward edge of the cartridge (opposite the exposed ribbon part) must pass down **under** the rear edge of the front access cover to engage the pin on the platform. Continue to lower the cartridge down and slightly rearward to pass the exposed ribbon over and behind the two "ears" (ribbon guides) on the printwheel compartment cover, and until the cartridge is resting on the carriage platform.

5. When the ribbon cartridge has been inserted as described, move the red Ribbon Release Lever forward toward the front of the printer to lock the ribbon cartridge in place and complete the installation. If the PAUSE switch was used to stop printer operation for a ribbon change, press the RESET switch to resume operation.

Model 620 Ribbon Cartridge Installation







5.0 PRINTWHEEL MAINTENANCE

The majority of problems encountered with printwheels result from improper care. If treated as the fine, precision component that it is, the printwheel will provide higher quality service for a longer period of time.

Except for Model 620 printwheels, a printwheel should be handled, installed and removed from printers by means of its hub. The printwheel should not be handled by its petals. Model 620 print-wheels are hubless and must be handled **carefully** by their petals during installation and removal **only.**

When not in use, the printwheel should be stored in a protective container that will prevent inadvertant bending of spokes and the possible gathering of dust or other contaminants.

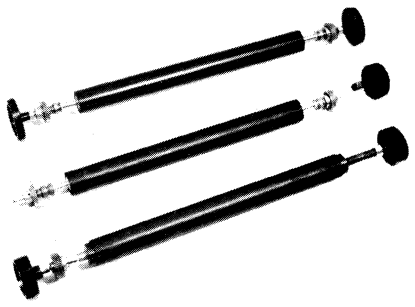
In addition to proper storage and handling, printwheels should be cleaned periodically, especially those used with fabric ribbons. Washing of wheels in methyl-ethyl-ketone (MEK) or acetone (both available in major hardware stores) will preclude the problem of ribbon contaminants filling in lower case rounded letters.

Water or alcohol **should not** be used to clean printwheels. Cleaning materials must be kept away from the printwheel damper (reinforced rubber ring) on the metal wheels or damage may result.

6.0 RIBBON MAINTENANCE

When not in use, ribbon cartridges should be stored in a cool, dry and clean area. Though requiring very little special handling, like the printwheel, ribbons should be handled as fine precision components. Improper storage and handling could result in fading impressions, jams or breaks.

7.0 PLATEN MAINTENANCE



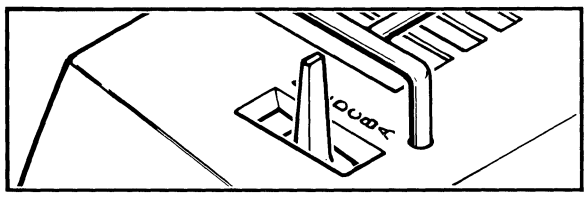
Typical Friction Platens
A = HyType B = 630 C = 620

A daisywheel printer platen is a consumable supply, like paper, ribbons and printwheels. But it should last for two years or more in normal applications. Protecting it from scratches, mars and abrasions is a common sense rule for good print quality. There have been many instances, however, where operators have inserted stapled forms, or printed directly on the platen surface. This severely degrades print quality potential under every output combination.

8.0 PRINTER SWITCH SETTINGS AND ADJUSTMENTS

8.1 SETTING THE MANIFOLD (Platen) LEVER

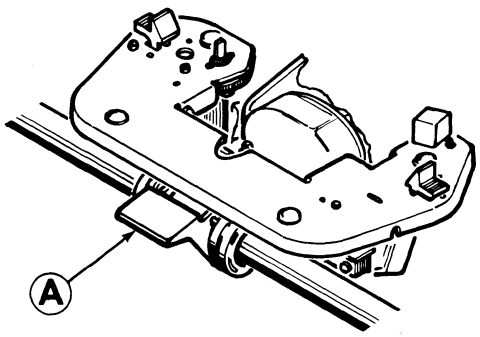
1. HyType II Series



When running single copy printing, set the manifold lever to its full forward position, and one step back for each additional set of carbon and blank paper. That is, for a top sheet with three carbon sets, it should be set at the level three steps back. This will assure the best possible print uniformity.

Setting the platen too far forward may cause binding or tearing of the form and ink smearing. Setting the platen too far back may cause light printing and undue bending or stress of the printwheel spokes.

2. Model 630



With the Model 630, the platen position or paper thickness adjustment and the print intensity or hammer energy switch are a combined function.

The 2-position multicopy lever "A" located at the front of the carriage assembly adjusts for paper thickness and print intensity. Setting the lever to its upper position moves the carriage close to the platen, and actuates a microswitch that sets the print intensity to a moderate level.

This is the proper setting for light and medium weight paper and form sets of up to two carbon copies. For heavier paper or form sets of up to five carbon copies, the multicopy lever is set to its lower position. This rocks the carriage away from the platen slightly. It also deactuates the microswitch, resulting in increased print intensity.

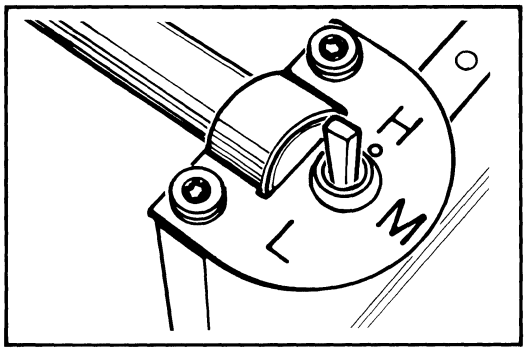
To avoid the possibility of ribbon damage, the multicopy adjust lever should always be set to its upper position when printing on single sheets of paper using carbon film ribbons.

3. Model 620

The Model 620 features a spring loaded carriage, and does not have a manual means of adjusting for thick copy sets.

8.2 SETTING HAMMER (Impact) ENERGY

A reliable source of poor print quality can be inappropriate settings of the hammer energy switch. In addition to automatic energy levels for the print hammer to assure smooth impact for various weight characters, HyType printers have three operator adjustable hammer energy settings. Use the LOW setting for 12-pitch, MEDIUM for 10-pitch, and HIGH only for multi-part forms or "special" large typefaces.



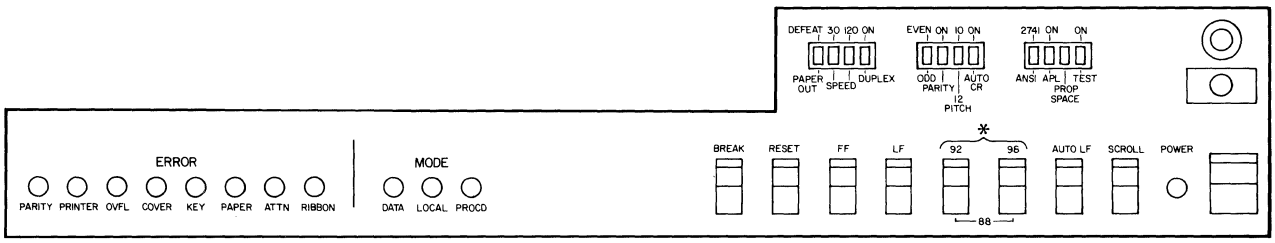
Using "HIGH" for single sheet printing may cause premature wear on printwheels.

8.3 SETTING FOR PROPER PITCH SPACING

HyType printers operate in 10- or 12-pitch character sizes, and proportional spacing, which require the proper adjustment in the horizontal path. Unless the pitch (space) setting is matched to the printwheel being used, the result will be either crammed or too open letter spacing in the horizontal plane. It takes about three seconds to set the spacing switches properly.

If incorrectly set, use of 12-pitch printwheels in 10-pitch or PS mode will cause excessive spacing between characters; use of 10-pitch printwheels in 12-pitch or PS mode will cause crowding of characters; and results with PS printwheels used in 10- or 12-pitch mode will vary widley depending on characters. Similar incorrect spacing will occur if 15-pitch printwheel is used with improper setting.

8.4 SETTING THE 1640/50 PRINTWHEEL SELECT SWITCHES



* BLANK SWITCHES SERIES 1640 ONLY

1. The PITCH and APL Switches

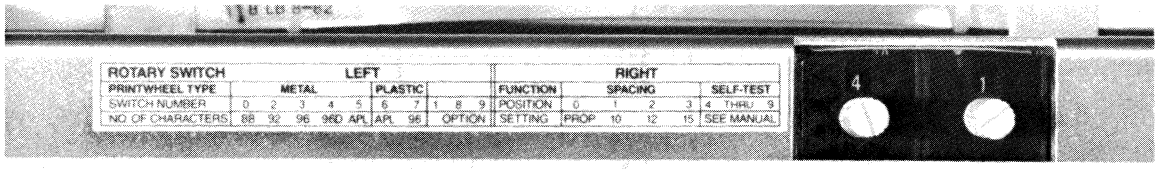
The PITCH and APL switches are located under the access cover. The PITCH switch allows the operator to select either 10- or 12-pitch printing. The APL switch allows use of APL printwheels. Model 1650 also includes a PROP SPACE switch to select proportional space printing when that option is installed.

These two front panel switches (inactive on Model 1640) allow the operator to set the Model 1650 for operation with the type of printwheel to be used.

92	96	Printwheel Selected
Off	Off	88 Character Xerox Metal WP
On	Off	92 Character Rank Xerox Metal WP
Off	On	96 Character Xerox Metal WP
On	On	96 Character Diablo Metal WP

If the APL switch is on, then APL versions of the above may be used if the APL option is installed

8.5 SETTING THE MODEL 630 PRINTWHEEL SELECT SWITCHES



1. The PRINTWHEEL SELECT Switch

IMPORTANT - This switch must be set to match the particular type of printwheel being used, to prevent possible printwheel damage or excessive wear.

Position	
0	88-character metal wheels - Xerox
2	92-character metal wheels - Rank Xerox
3	96-character metal wheels - Rank Xerox
4	96-character metal wheels - Diablo
5	APL metal wheels
6	APL plastic wheels
7	96-character plastic wheels
1,8,9	(defaults to 88-character metal wheel)

2. The SPACING SELECT Switch

This switch selects the horizontal spacing for character printout, or selects the printer self-test mode.

Position	
0	Proportional Space (used with PS printwheels)
1	10-pitch character spacing
2	12-pitch character spacing
3	15-pitch character spacing
4-9	Self Test - Printer enters Internal Diagnostics mode if this setting is selected at power on.

9.0 TROUBLESHOOTING SUPPLY PROBLEMS

Assuming that the printer in use is well maintained and in good condition, 90% of all problems encountered with ribbons and printwheels result from improper use, handling or storage, and can be remedied at the user side.

The following chart lists common problem symptoms and checks for correction including printer or system related items that may have to be referred to a service organization for correction.

HYTYPE/630

Troubleshooting Chart

♦ Using Defect Free, "Genuine Diablo Supplies" ♦

VERIFY ➡

IF SYMPTOMS ARE ⬇

IF SYMPTOMS ARE	Supply Conditions	Correct printwheel is used	Correct ribbon is used	Printwheel is properly installed	Ribbon is properly installed	Printwheel is properly maintained	Ribbon is properly maintained	Platen is in good condition	Proper paper is be used	**Printer Conditions**	Printwheel switch settings are correct	Hammer energy is properly set	Platen is correctly installed & fully latched	Platen depth is correctly set (Service Adjustments Only)	Ribbon height is properly adjusted*	Hammer is properly aligned*	Platen height is correctly set*	Hammer to platen gap is correctly set*	Platen to printwheel gap is correctly set*	Ribbon gap is correctly set*	Carriage cable tension is properly set*	**System Conditions**	Host system coding correlates with code for Diablo PW character positioning**
	Section	2.1	2.2	3.0	4.0	5.0	6.0	7.0	2.3		8.3-8.5	8.2		8.1									
Nothing is being printed				•	•								•					•	•				
Incorrect characters or garbage is being printed		•		•							•												•
The printwheel is breaking		•		•							•					•							
The printwheel is not lasting very long		•	•	•		•					•	•				•		•	•				
The ribbon is breaking				•	•		•													•			
The ribbon is jamming					•															•			
The printed characters are too light and not sharp				•	•	•	•					•	•	•		•		•	•				
The printed characters are too light on one side, top or bottom				•									•		•	•	•						
The top or bottom of the characters are not printed			•		•								•		•		•						
The printed characters have voids or varying shades								•	•			•		•		•		•	•				
Spacing between the characters printed is excessive, or they are crowded together											•										•		•
The printed characters look "blotchy"			•			•																	

*Check your Operator's Manual for instructions.
**Check with your Systems representative.

10.0 NOTES ON PRINT QUALITY

Why Be Concerned About Print Quality?

Twenty years ago, typewriters used fabric ribbons, barlever print mechanisms and unassisted manual keystroking. Small computer output writers consisted principally of teleprinter mechanisms. Both were slow, and both lacked quality.

Somewhat later, technology brought electric typing and a variety of speed options to office printers. But the typewriter sacrificed speed for quality, and the output writers delivered speed without quality. Thus, the office staff still had little choice; typewriter quality at 15 characters per second, or faster output with poor print images.

Why Be Concerned About Print Quality? (cont'd)

Today, there is a choice. Modern office output printers can produce copy at speeds more than three times faster than electronic typewriters, while providing impeccable printing quality. The principle product that made this combination of speed and quality possible is the daisywheel printer.

Daisywheel printers have become mainstays in tens of thousands of office typing pools, word processing centers, terminal sites and small computer operations in just the past few years. Many users of daisywheel printers appreciate the speed with which they operate, but are unaware of the very excellent print quality they can produce if properly used.

And "looking good" in your letters, memoranda, manuals, inter-office drafts, and other materials produced by your output writers has a great deal to say about your organization's standards of excellence.

Modern daisywheel printers are able to deliver to users an exceptionally fine print quality for almost every office application. By substituting electronic precision for many of the mechanical functions previously required in typewriters and small office printers, the daisywheel can operate within a tolerance level that provides excellent print reproduction.

However, there are many little environmental or consumable resources that can detract from the ultimate quality you obtain. Here are a few suggestions that can help you keep your daisywheel printer producing at its peak of print impressions.

Establish Realistic Quality Standards

The first step in preserving quality is to define what it means to you in various situations. An executive letter requires better quality than a first draft of an internal manual. Produce a sample of every type of document your office turns out at the quality level you want each to have. Save copies as a visual standard.

Measure Production Work Against the Standard

Once you have a sample of the quality you want in each type of document, compare production samples against them on a periodic basis. The production comparisons will illustrate major deviations from the standard.

Train Your Staff to Spot Problems Early

Users are often not sensitive to minor variations in print quality. But these are early telltales of major problems. A ribbon that has dried out, the wrong type of paper, a wear spot on a character, miniscule misalignments . . . all of these conditions will initially cause barely perceptible changes in production copy. Catch them and correct them early.

10.0 NOTES ON PRINT QUALITY (cont'd)

Maintain A Weekly Sample Log

Once you have begun comparing weekly samples with your master quality printout, go a step further. Begin to maintain a log on a weekly basis of documents printed on different papers, with different printwheels, and with different types of ribbons. You'll not only help preserve quality, but you'll also discover some optional combinations that work well too.

Insert and "Start" Your Ribbon Properly

It is a very simple task to insert a new ribbon into a daisywheel printer -insert the cartridge and snap it into position. Right? Right. But unless you also add a third step, you will likely lose the first four or five printed characters. So after the ribbon is snapped down, rotate the little knob on the top center of the ribbon box in the direction of the arrow, so it moves the film or fabric into the right position to deliver ink to the system.

Understand Character Positioning

Characters are printed on a page in a form that is intended to provide the most legibility. However, since characters have many different shapes, the printing system must compensate for their different geometry by actually positioning some characters "off line". Rounded characters, for example, are actually made to print slightly below the baseline and above the cap line, so they will appear aligned when compared with square or straight adjacent characters. When you understand the aesthetic goals of the printing system, you will be able to make better subjective judgements about print quality.

A Subjective Art . . .

Judging print quality is really a subjective measurement. While there are absolute objective tests that manufacturers such as Diablo conduct, the real test is how pleasing the print looks to you. Thet's one reason why these tips can be helpful: you'll hone your subjective evaluation skills.

Paper Feed Tension - A Major Problem

One of the more common problems in obtaining good quality - especially when continuous form paper is used - is improper set up and tensioning of the paper as it passes across the platen. Paper that is misaligned by an operator, or inserted too loosely, will tend to jam or slip, and cause lines to be crammed or wrinkled. This is a simple set up problem that any operator can overcome.

Dappling Causes Gray Scales to Appear

When your print image appears in varying shades of gray and black, the problem is almost always a worn or dried out ribbon, or a ribbon box that is malfunctioning and not feeding ribbon at the proper rate. A simple fix: Change the ribbon. Poor grade paper causes dappling too. Often in fanfold applications, gray scales or dappling will occur because the paper is often recycled and of inferior quality. Upgrade the paper quality.

How to Eliminate Voids

A void is simply a part of a character or line that is missing after printing. Most often, the corrective process requires one of two actions; remove the erasable paper you are using (it is a major cause of voiding), or replace the printwheel, which may have a broken typeface. Consider the ribbon/paper combination. Are they compatible?

Puncturing Is Easily Avoided

A common problem with printing mechanisms of all types is to find holes, usually periods, punched through the paper after printing impact. This puncturing need never occur. It is almost always the result of hammer energy settings that are too high, or very poor quality paper combined with slightly overenergized hammer settings.

Proportional Spacing is Easier Than Ever

Modern word processing systems now make it possible for printed material to be generated using proportional spacing, in which each character's size and density is carefully balanced with surrounding white space for maximum aesthetic appearance and readability. Previously, only bar link typewriters with cumbersome correcting and backspacing features could produce proportionally spaced output on an impact printing device. Now, many of Diablo's metalized wheels offer the same capability, along with the automatic correction and justification circuitry that is built into most word processors.

Fading Impressions? Poor Ribbon

Often you may encounter output in which the entire copy is a consistent scale of gray, rather than crisp and black. The cause is almost always a dried out ribbon (never store consumables in an area that is too hot, too cold, or too humid!) or a ribbon that has been in service too long. Drying fabric ribbons are most often the cause of fading. Film ribbons are not susceptible to fading, and give excellent results from beginning to end.

10.0 NOTES ON PRINT QUALITY (cont'd)

Special Fonts for Special Needs

Often users require special printing capabilities not normally available through their printer suppliers. Printer manufacturers like Diablo specialize in developing type faces and modifying printer electronics to meet such needs. For one user, Diablo built a type style capable of printing through an eight part form in which the top sheet was cardboard. Many printing requirements can be met with today's technology.

What's in a proportionally spaced word? Symmetry, right down to each individual character on the printed page. Shown below are the aesthetic differences between a proportionally spaced word and a fixed pitch word.

Proportionally spaced - and non-proportionally spaced

Develop Your Own Personality

There are dozens of type styles available for use on daisywheel printers, and special ones are fabricable at reasonable costs. Consider daisywheel printers as a tool that can extend the individual personality of your organization through improved quality graphics. Develop a system and a set of graphic standards that go into formatting, type styles, spacing, paper stock, as well as print quality itself.

Learn to Rely on Your Own Staff

The facts of modern printing systems are that they are exceedingly reliable and consistent. And they have sufficient built in corrective techniques that every user - regardless of skill level - can tune the output to a high level of quality. So the last tip is perhaps the most significant: It is easier, faster, and less costly if you learn to be responsible for assuring your own high quality of printer output.

A Daisywheel Printer Fact: 90% of all quality problems in a daisywheel printer are traceable to operator inefficiencies with one or more of the four major consumables - wheels, ribbons, paper or platens. Daisywheel printers require few service calls.

About Diablo

Diablo Systems, a Xerox Company, is the world's leading supplier of daisywheel printers.

It was Diablo that introduced the first daisywheel printer in 1972 - a product that not only doubled the output rate then available on impact printers and typewriters, but also introduced new levels of reliability, thru substitution of electronic for mechanical operation, as well as adding functions to the office output writer market.

10.0 NOTES ON PRINT QUALITY (cont'd)

About Diablo (cont'd)

The original daisywheel printer, HyType I, operated at 30 characters a second. Today's HyType II second generation printer operates at up to 55 characters per second. Various models are available in both plastic wheels and metal plated wheels, with over 200 wheels to select from. The Diablo 630 is the only daisywheel printer which can use metal and plastic wheels interchangeably. The 630 prints at up to 40 cps. The Model 620 is a third generation 25 cps fully formed character serial printer designed for the low speed, low-to-moderate output requirements of stand alone word and data processing business systems.

Diablo also supplies word processing quality matrix printers.

Diablo products are the choice of hundreds of the world's best known suppliers of office automation products that include computers, terminals, word processing systems, small business systems and specialized information handling systems.

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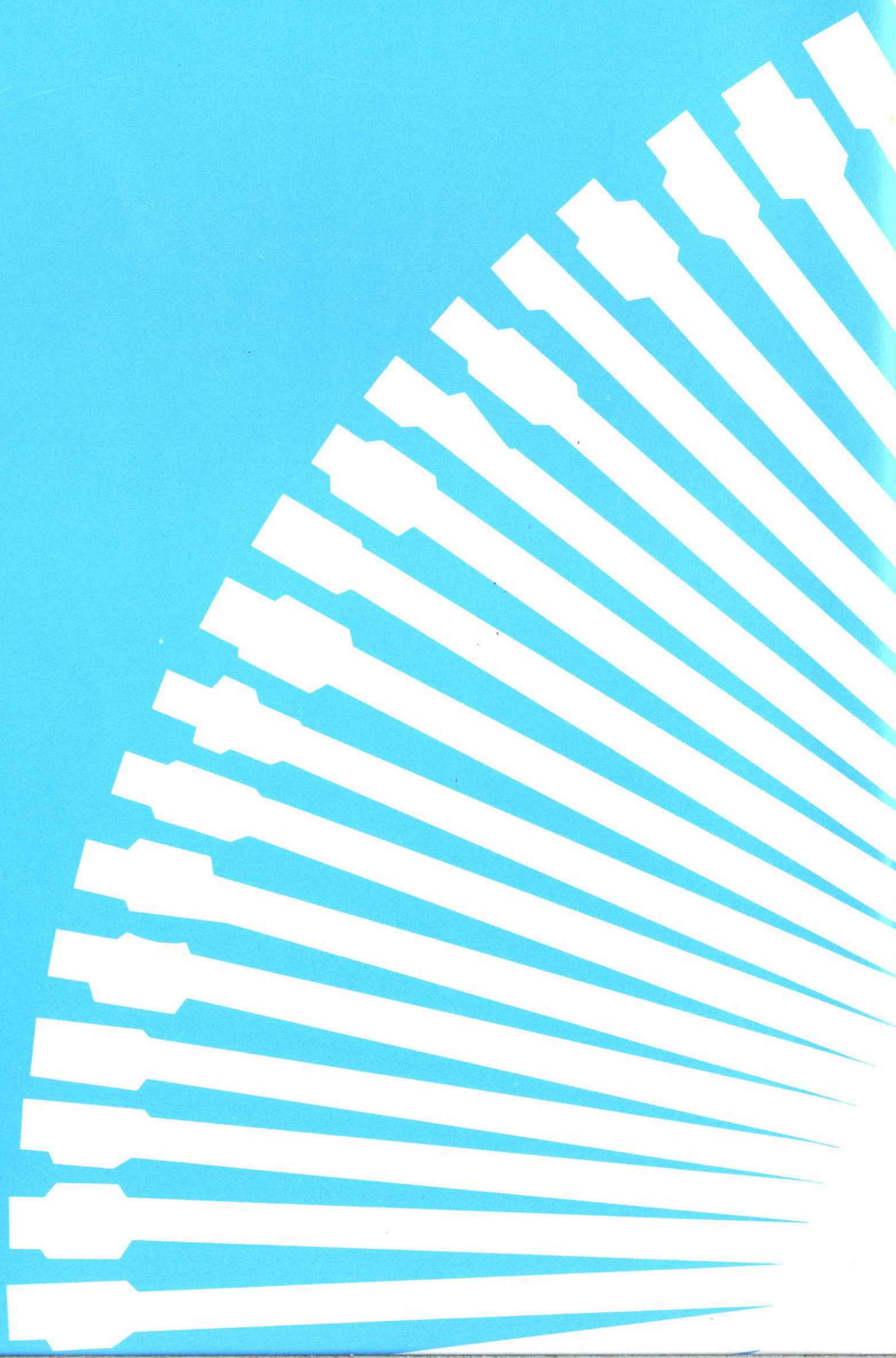

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