AMERICANMARKING, INC.

OWNER'S MANUAL

POROUS
LARGE CAPACITY HAND PRINTERS
ALL MODELS

INSTALLATION - OPERATION - MAINTENANCE

IMPORTANT NOTE

UNIVERSAL products are manufactured to exacting standards and every available step has been taken to assure your complete satisfaction. It is most important, for best results, that you read and carefully follow the instructions contained in this manual. Failure to do so may result in unsatisfactory performance, damage to the equipment and personal injury.

TABLE OF CONTENTS

- LIMITED WARRANTY -

UNIVERSAL Porous Large Capicity Hand Printers are guaranteed to be free from defects in materials and workmanship for a period of 90 days from the date of purchase. Components found to be defective during this time will be repaired free of charge if returned to the factory. Damage resulting from use of improper inks, improper installation, or operation is not covered under the scope of this warranty. For warranty service please contact our Customer Service Department.

PREFACE

The Universal HPL Hand Printer has been designed to print lot numbers, date codes, and text information on cartons, web materials, and other conveyed products. Universal HPL Hand Printers are precision engineered to give years of reliable service under the most demanding conditions.

FEATURES

1- Indexing (spot printing) and non-indexing (continuous printing) models with print areas up to 3-15/16" x 17-1/2".
2- Universal's die system allows text information to be set using individual characters or one piece logo dies.
3 - Custom logo dies can also be produced from camera ready copy.
4 - Precision machined from aircraft grade aluminum alloys and stainless steel for mimimal maintanance and superior long term performance.
5 - Baseplate has a black anodized finish for corrosion resistance.
6 - Permanently lubricated, sealed ball bearings which provide for extremely accurate, low friction drum rotation.
7 - Stainless steel shafts for durability even in harsh environments.
8 - Indexing mechanism with dual compression springs mounted over stainless steel guide rods minimizes spring breakage and provides unsurpassed indexing speed and accuracy.

QUICK START
SEE PAGE 11

This manual was written with a full understanding that very few people like to read manuals or have the time to do so. To accommodate those who have little time to spare we have included a Quick Start section which will get your printer operating in just a few minutes.
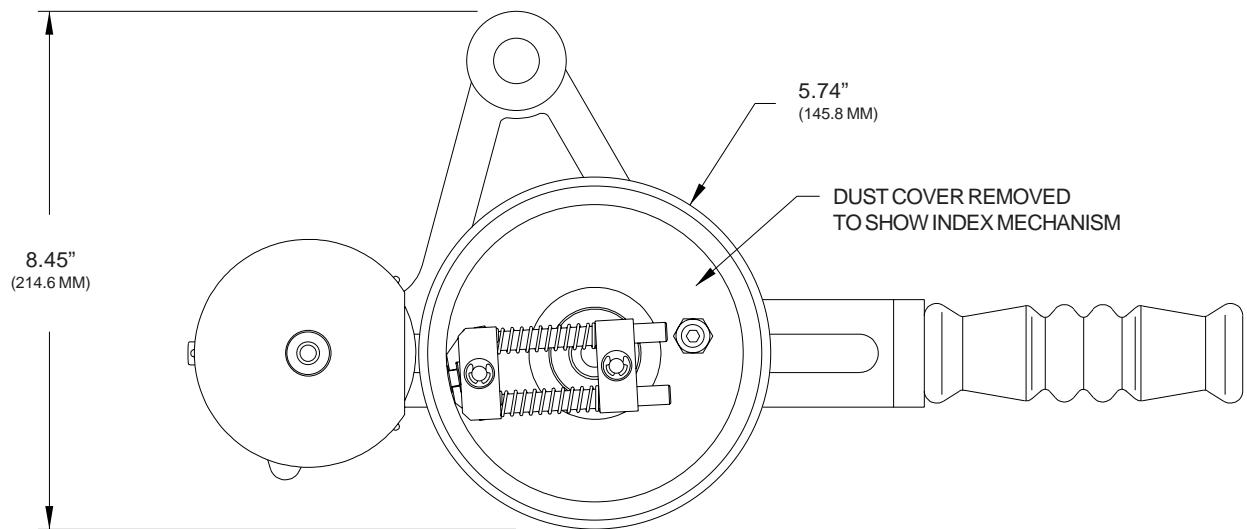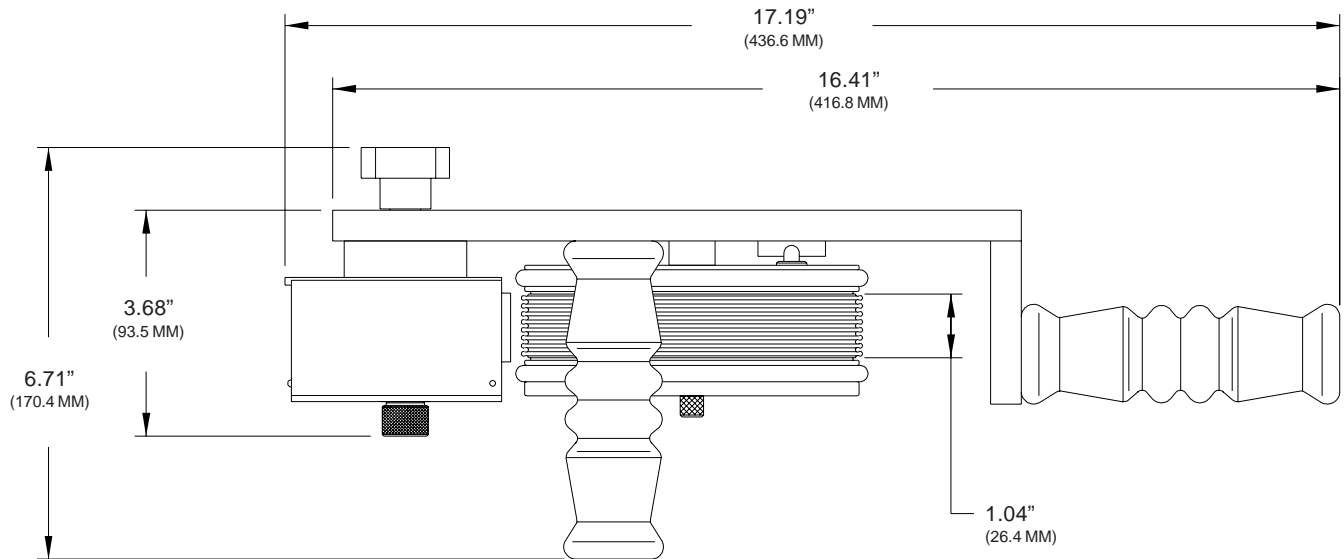
PRINTER SPECIFICATIONS

The specification section includes drawings with the basic dimensions of the printers, the net weights, maximum die capacities, maximum print width and print drum circumferences. This section also lists the specifications for the printing dies and an explanation of the indexing and non-indexing models.

SPECIFICATIONS

HPL PRINTER SPECIFICATIONS
HPL-100 SERIES
Model Shown: HPL-100

17.19"
(436.6 MM)

16.41"
(416.8 MM)

3.68"
(93.5 MM)

6.71"
(170.4 MM)

1.04"
(26.4 MM)

5.74"
(145.8 MM)

DUST COVER REMOVED
TO SHOW INDEX MECHANISM

8.45"
(214.6 MM)

NET WEIGHT: *6.1 LBS. (2.8 KG)*
MAXIMUM DIE SIZE - US STANDARD: *1" (7 RIBS) X 16-15/16" LENGTH*
MAXIMUM DIE SIZE - METRIC CODERS ONLY: *25.4 MM (7 RIBS) X 430.2 MM LENGTH*
PRINT DRUM CIRCUMFERENCE: *APPROXIMATELY 18" (457 MM) MEASURED AT DIE FACE*

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SPECIFICATIONS

HPL PRINTER SPECIFICATIONS
HPL-200 SERIES
Model Shown: HPL-200
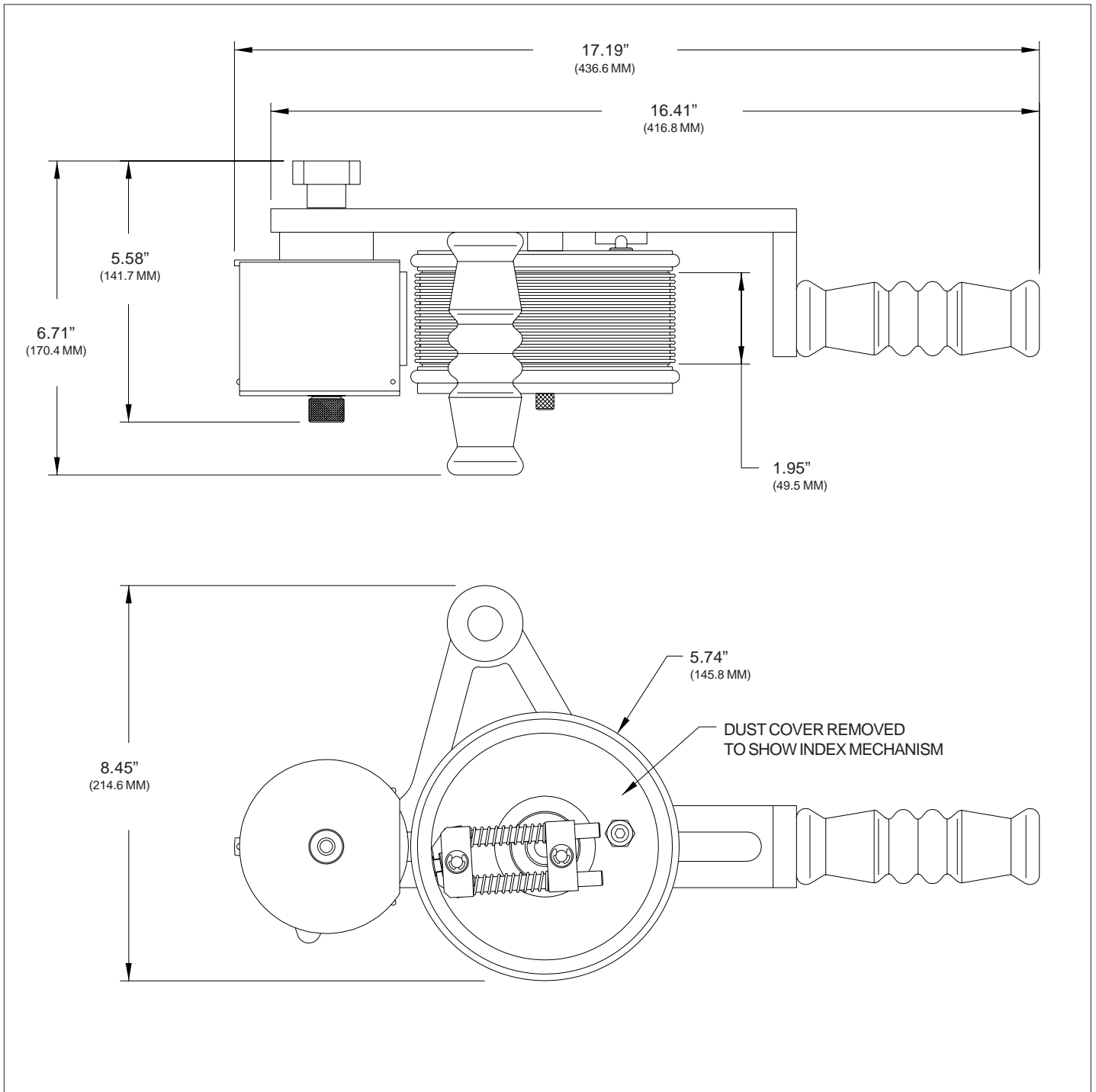
17.19"
(436.6 MM)

16.41"
(416.8 MM)

5.58"
(141.7 MM)

6.71"
(170.4 MM)

1.95"
(49.5 MM)

8.45"
(214.6 MM)

5.74"
(145.8 MM)

DUST COVER REMOVED
TO SHOW INDEX MECHANISM

NET WEIGHT:	6.9 LBS. (3.1 KG.)
MAXIMUM DIE SIZE - US STANDARD:	1-15/16" (14 RIBS) X 16-15/16" LENGTH
MAXIMUM DIE SIZE - METRIC CODERS ONLY:	49.2 MM (13 RIBS) X 430.2 MM LENGTH
PRINT DRUM CIRCUMFERENCE:	APPROXIMATELY 18" (457 MM) MEASURED AT DIE FACE

SPECIFICATIONS

HPL PRINTER SPECIFICATIONS
HPL-300 SERIES
Model Shown: HPL-300
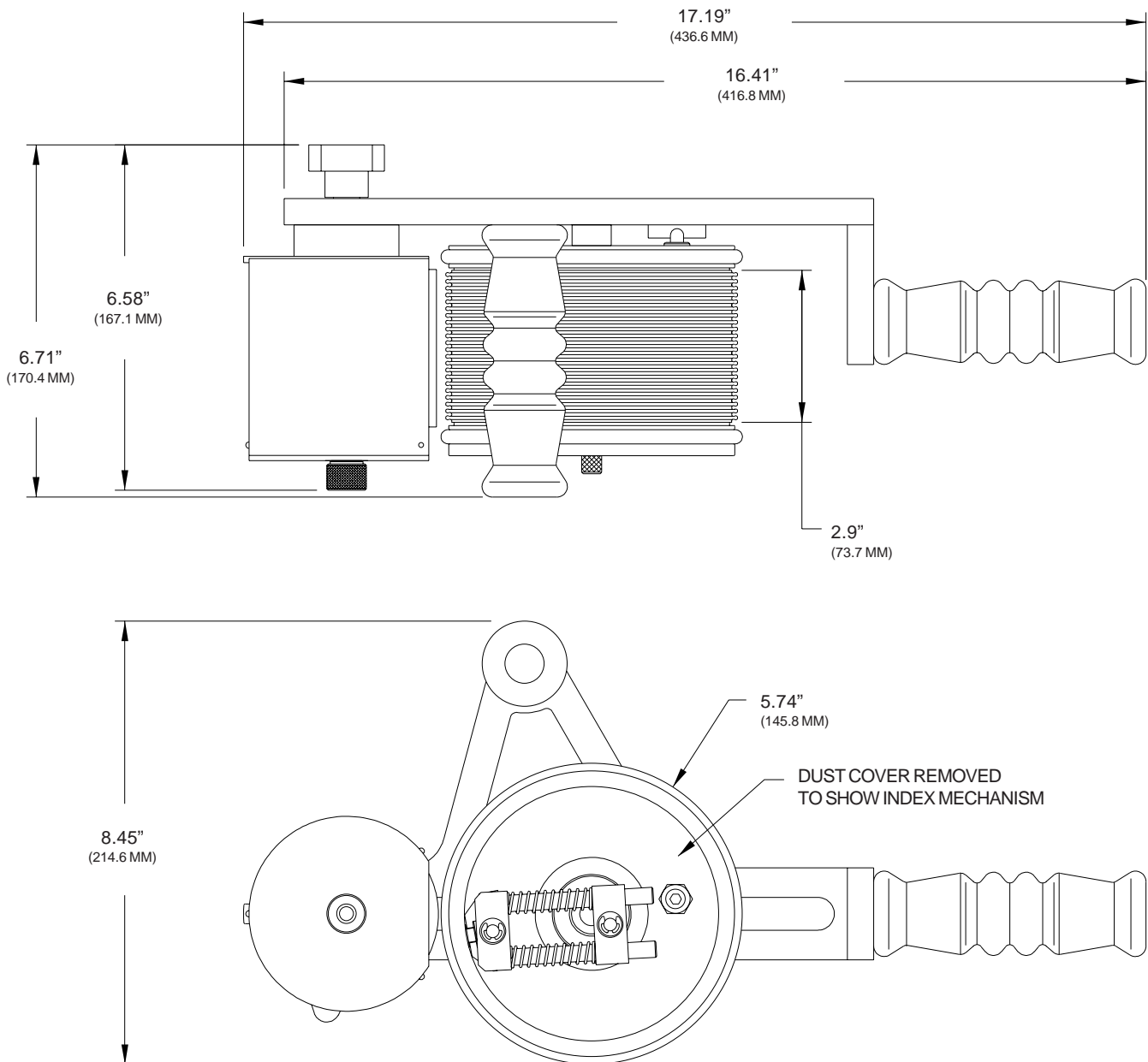
17.19"
(436.6 MM)

16.41"
(416.8 MM)

6.58"
(167.1 MM)

6.71"
(170.4 MM)

2.9"
(73.7 MM)

5.74"
(145.8 MM)

DUST COVER REMOVED
TO SHOW INDEX MECHANISM

8.45"
(214.6 MM)

NET WEIGHT: *8.0 LBS. (3.6 KG.)*
MAXIMUM DIE SIZE - US STANDARD: *2-15/16" (21 RIBS) X 16-15/16" LENGTH*
MAXIMUM DIE SIZE - METRIC CODERS ONLY: *74.6 MM (20 RIBS) X 430.2 MM LENGTH*
PRINT DRUM CIRCUMFERENCE: *APPROXIMATELY 18" (457 MM) MEASURED AT DIE FACE*

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SPECIFICATIONS

HPL PRINTER SPECIFICATIONS
HPL-400 SERIES
Model Shown: HPL-400
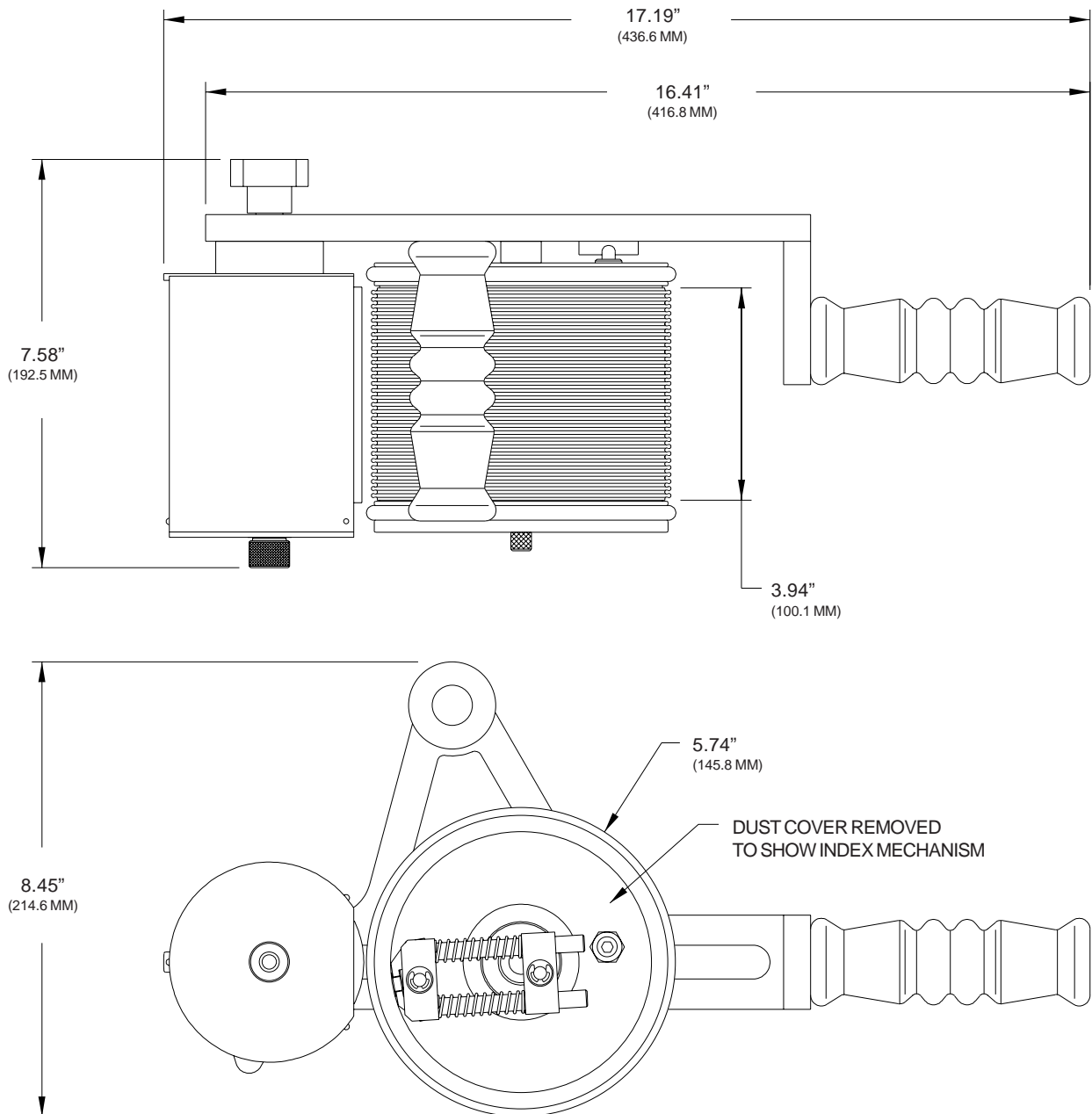
17.19"
(436.6 MM)

16.41"
(416.8 MM)

7.58"
(192.5 MM)

3.94"
(100.1 MM)

5.74"
(145.8 MM)

DUST COVER REMOVED
TO SHOW INDEX MECHANISM

8.45"
(214.6 MM)

NET WEIGHT: 9.1 LBS. (4.1 KG.)
MAXIMUM DIE SIZE - US STANDARD: 3-15/16" (29 RIBS) X 16-15/16" LENGTH
MAXIMUM DIE SIZE - METRIC CODERS ONLY: 100 MM (27 RIBS) X 430.2 MM LENGTH
PRINT DRUM CIRCUMFERENCE: APPROXIMATELY 18" (457 MM) MEASURED AT DIE FACE

SPECIFICATIONS

INDEXING AND NON-INDEXING MODELS

Universal HPL Hand Printers are available in both indexing and non-indexing models.

Indexing printers feature a print drum indexing mechanism which provides print registration capabilities when carton printing. When the printer is lifted off the surface, after the print operation, the print drum automatically rotates back to the same starting or "home" position. Printing with an indexing printer will allow the imprint on each carton to be registered in the same position relative to the position where the print drum first contacts the carton.

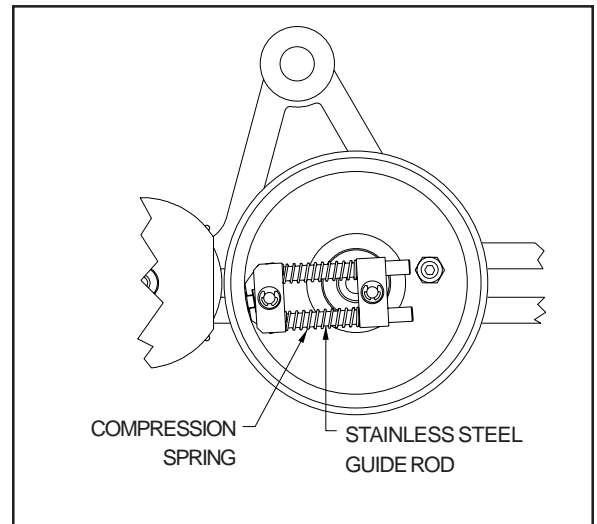COMPRESSION SPRING   STAINLESS STEEL GUIDE ROD

FIGURE 1

Non-indexing printers provide random print registration capabilities. These printers have print drums which simply rotate on bearings and repeat the print at an interval equal to the circumference of the print drum. If your application requires the print to be repeated at shorter intervals than the circumference print drum, duplicate sets of dies can be installed on the print drum. Non-indexing printers are generally used for web printing applications where the print drum stays in contact with the web over long distances.

PRINTING ON NON-POROUS SURFACES

Universal HPL Hand Printers are intended for use on porous surfaces, however, the use of slow drying alcohol base inks is possible with the XF Neoprene Ink Rolls. Slow drying pigmented stencil inks such as Universal Type D Ink and some of those made by other manufacturers will work in these printers. The XF Neoprene Ink Rolls are not compatible with MEK solvent based inks and a number of other non-porous ink solvents. Some of these solvents will casue extreme swelling of the ink rolls.

It is importatnt to note that even compatible alcohol based inks will dry out in the ink rolls if left on the printer for extended periods of time. The ink rolls should be removed from the printer and stored in a sealed container after each use. Regular re-inking of the roll will be necessary when using alcohol base inks in these units and and occassional addition of ink solvent to the roll may be required to keep it working properly.

SPECIFICATIONS

RIBtype® PRINTING DIES

Universal HPL Hand Printers are designed to use RIBtype® printing dies which have a molded rib backing. The ribs on the back of the die snap into mating ribs in the Drum Cover on the print drum as shown in Figure 4.

The standard printing dies are available in sets with many sizes and character styles. The sets are a combination of individual alphabetic and numeric characters or in sets containing numeric characters only. These character sets or "sorts" can be used to make up text messages and code numbers as necessary.

FIGURE 2

Printing dies are also available in "logo" form in which a complete text message, company logos or trademarks are produced on a single piece of rib backed rubber. These "logo" dies are photographically reproduced from black and white art work. Due to their unitized construction, these dies generally produce better print quality and are much faster to change in the field. For details on ordering custom logo dies, please contact our Customer Service Department.

FRICTION BEARER
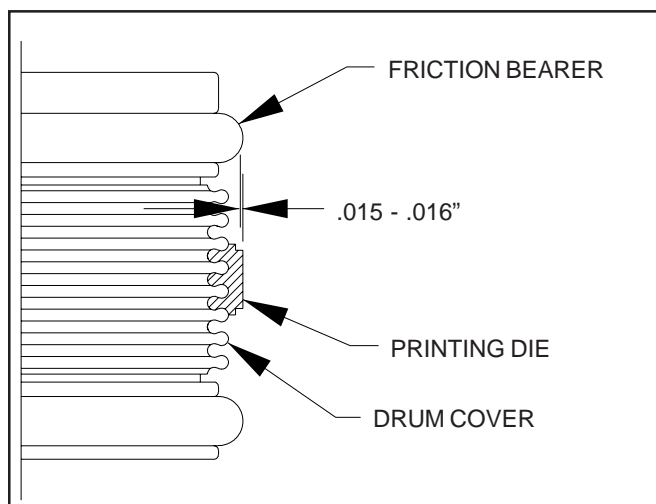
.015 - .016"

PRINTING DIE

DRUM COVER

FIGURE 3

Printing dies are manufactured to precision thickness tolerances which are very critical to the performance of these coders. When installed, the face of the printing die should extend only .015" - .016" beyond the radius of the Friction Bearers as shown in Figure 3. Using dies that do not meet the design specifications will result in poor print quality and possible damage to the transfer roll.

Although there are several competitive rib backed die systems available, it is very important to note that they are not all made to the same rib spacing or thickness specifications and they are not interchangeable.

CODER MODELS DESIGNED FOR METRIC RIBtype® PRINTING DIES

Universal also offers Metric RIBtype® die systems for use in countries where metric character sizes are the standard. The Metric dies are thicker and the rib spacing differs slightly from the standard printing dies therefore the two versions are not compatible. To accommodate the differences, the print drums for Metric dies are machined to a slightly different diameter from the U.S. versions.

The coder model numbers on Metric coders will have a "-T" suffix and the Metric Drum Covers have a distinct pink color.

SPECIFICATIONS

INK ROLLS

Universal offers two ink roll options for the HPL Hand Printers. Each has a unique characteristic suitable for a specific printing application. The printers are designed to accommodate both types of ink rolls without modification. A detailed review of your printing requirements will determine the best choice of ink rolls for your particular application.

Unless otherwise specified, XF Neoprene Ink Rolls are supplied with all new HPL Printers.

XF NEOPRENE INK ROLLS

Universal's XF Neoprene Ink Rolls are made from an extra firm density neoprene material. The extremely fine cell structure of these rolls provides exceptionally good print quality particularly when using small character printing dies. Due to their greater ability to compensate for slight die thickness variations, these rolls are also recommended to correct print quality problems when multiple lines of text are required.
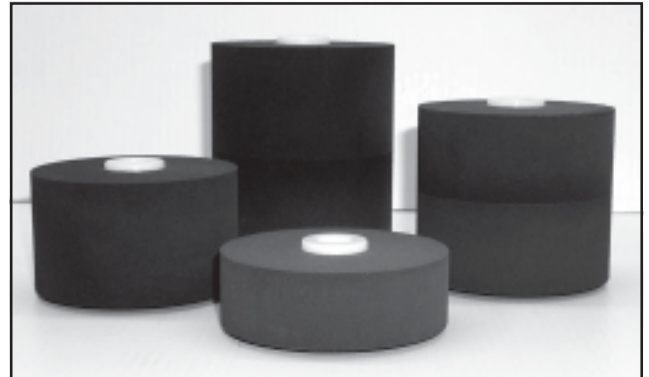
FIGURE 4

MICROCELL INK ROLLS - OPTIONAL

Microcell ink rolls are the most durable rolls available on the market today. This material is an extremely tough, hard density urethane foam which will last up to a year or more under normal conditions. The rolls are **re-inkable** for maximum economy and are recommended for use with **Universal #1150 Ink** for printing on corrugated cartons and other **porous** surface materials.

FIGURE 5

QUICK START

PRE-INKING XF NEOPRENE INK ROLLS

If you received a pre-inked ink roll with your printer, skip this procedure and go to the next page for instructions on roll installation.

Universal HPL Hand Printers are shipped from the factory fully assembled and, unless otherwise specified, includes a **dry XF Neoprene Ink Roll. The ink roll must be manually pre-inked prior to use.** The initial inking of any dry roll is critical to the preformance of the Printer. Follow the inking instructions below to insure that your rolls are properly inked.

Inks will stain clothing, furniture, carpeting and your hands. Rubber gloves should be worn during the following procedures.

1- Remove the dry roll from the plastic bag. Pour ink into a clean container large enough to accommodate the size of the ink roll.

   For a 1-1/8" face roll pour approximately 4 ozs. of ink into the container, for a 2" face - 8 ozs., 3" face - 12 ozs. and 4" face - 16 ozs. The ink rolls must be pre-inked manually prior to installation on the printer.
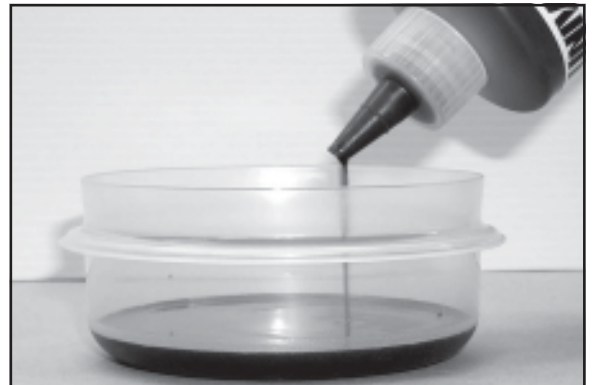

FIGURE 6

2- Place the roll on it's side into the container. Using your finger tips, press down firmly on the side of the roll. Continue to press down on the roll while rotating it in the container. Flip the roll over in the container and repeat the process until all of the ink is absorbed.

   As you press down on the ink roll you are forcing the air out of the roll material which allows the ink to be absorbed.

FIGURE 7

3- Using a round shaft or screwdriver, remove the roll from the container. Roll the ink roll across a clean piece of paper or cardboard to remove the excess ink.

   It is important to the performance of the printer that the ink roll is fully saturated but not dripping wet.
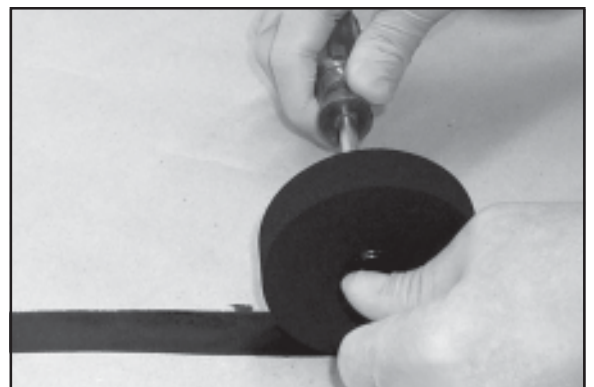

FIGURE 8

INSTALLING THE PRE-INKED ROLL

All pre-inked rolls are shipped oversaturated with ink, before installation the excess ink must be removed. Roll the ink roll across a clean piece of paper or cardboard to remove the excess ink.

Inks will stain clothing, furniture, carpeting and your hands. Rubber gloves should be worn during the following procedures.

1- To install the ink roll, first loosen the 8-32 set screw in the cover retaing knob using a 5/64" hex wrench.

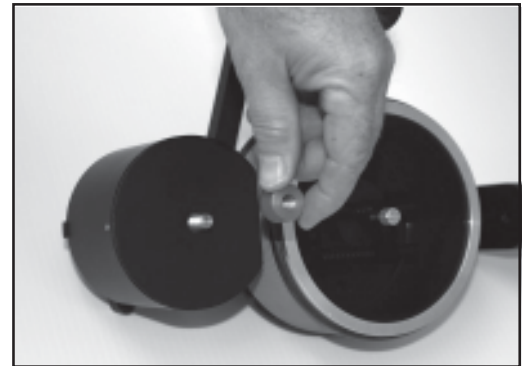

FIGURE 9

2- Remove the cover retaining knob.

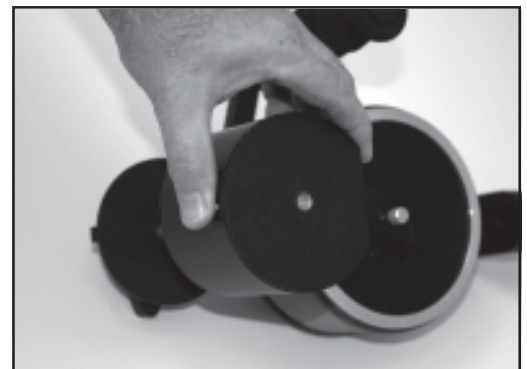**FIGURE 10**

3- Remove the ink roll cover.

FIGURE 11

4- Loosen the plastic knob and slide the ink roll mount away from the print drum.

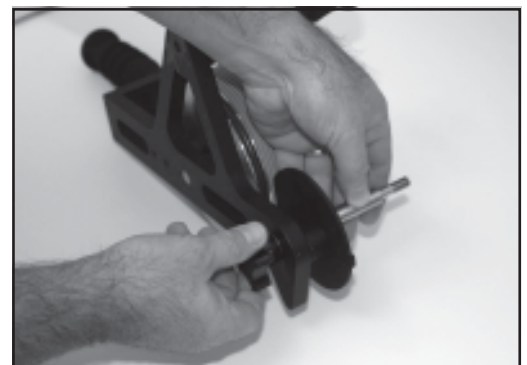**FIGURE 12**

5- Place the ink roll on the Axle. Do not allow the ink roll to contact the Print Drum Friction Bearer Rings during installation.

FIGURE 13

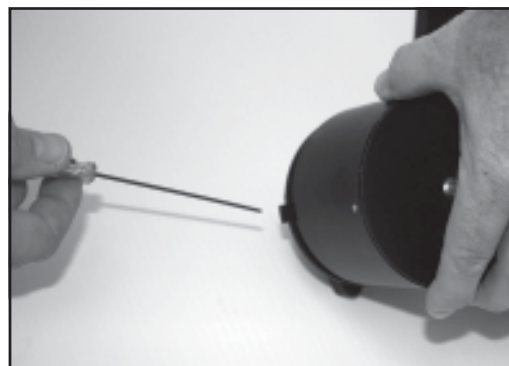6- Replace the roll cover. Note that the notch in the cover must be aligned with the tab on the base plate.
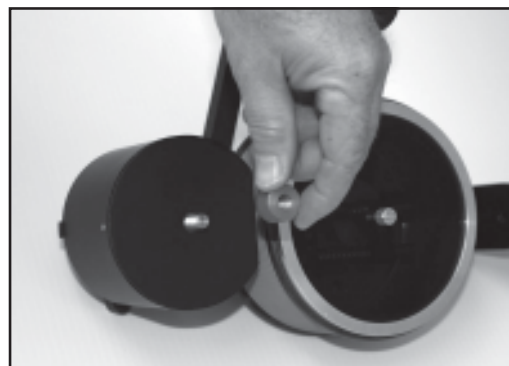

FIGURE 14

7- Replace the cover retaining knob.

FIGURE 15

8- *Lightly* tighten the 8-32 set screw in the cover retaining knob using a 5/64" hex wrench.

FIGURE 16

PRINTING DIE POSITIONING FOR INDEXING APPLICATIONS

Non-indexing models of the HPL Hand Printer do not offer print registration capabilities, therefore mounting the printing dies at a specific location on the print drum is not important. On indexing machines, the position of the die on the print drum will determine the location of the print on the carton.

The drawing illustrates the best die position for carton printing. Note that the leading edge of the printing die should be positioned, rotationally, up-stream of the ink roll. When the print drum is placed against the susface of the carton and pushed forward, the drum begins to rotate in a counter-clockwise direction. The printing die travels a short distance and then contacts the ink roll where ink is applied to the die face. When the die contacts the carton, the mark is applied. The printer should remain in contact with the surface of the product and be pushed forward through one complete revolution of the print drum. When it is lifted off the surface of the product, the print drum will automatically return to the same starting position.
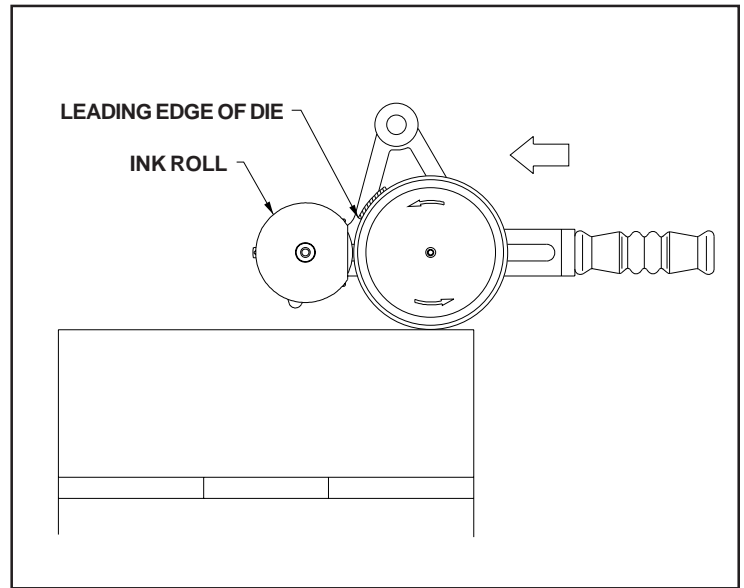

LEADING EDGE OF DIE

INK ROLL

FIGURE 17

INSTALLING THE PRINTING DIES

To make die installation easier, moisten a sponge with water containing a **small** amount of liquid dish detergent. Lightly moisten the back of the printing die and then immediately press the die into the drum cover.
Note: Do not apply too much liquid or the dies will slip during printing.

Install the Printing Die on the Print Drum by aligning the ribbed backing on the die with the mating drum cover on the Print Drum. Press firmly until they are completely engaged.

Individual character codes or text messages are installed in a mirror image of normal written text. In other words install in a right to left direction as shown. When printed, codes or text installed in this orientation will print in normal left to right order.

PRINTING DIES

DRUM COVER

FIGURE 18

OPTIONAL TYPE BLOCKING KIT

When using small individual characters with only a two or three rib backing, an optional Type Blocking Kit (Stock No. UR-BK) should be used to support the leading and trailing ends of the type as shown.

Characters which have only a 2 or 3 rib backing do not have the stability of the larger character sizes when snapped into the drum cover. Adding the rib backed type blocks on either side of the code will provide added stability and prevent the characters from shifting during printing. The Type Blocks are not as thick as the Type and will not pick up ink from the Ink Roll.

FIGURE 19

ADJUSTING THE INK ROLL / DIE FACE CONTACT PRESSURE

The pressure the ink roll exerts on the face of the printing dies should be just enough to rotate the ink roll and completely ink the face of the dies as they pass during printing. Excessive contact pressure will cause smudging of the impression, premature failure of the ink roll, and restriction of the print drum rotation.

1- With the Dies installed on the print drum, rotate the print drum to a position where the printing dies will contact the ink roll. Then loosen the position adjusting knob and move the ink roll into contact with the face of the printing dies. Tighten the position adjusting knob when the ink roll contacts the face of the printing die with just enough pressure to fully ink the die face.

> The ink roll should never be positioned so close that it contacts the Drum Covering on the Print Drum or the relief areas of the printing die.

FIGURE 20

CLEANING THE PRINTER / CLEANING THE PRINTING DIES

If proper installation procedures are followed, the maintenance of your new printer will be limited to periodic cleaning to remove dust and any ink residue which may accumulate during operation. The frequency of this maintenance procedure is dependent upon the environmental conditions and proper inking of the printer. To remove ink contamination from the surface of the printer, moisten a soft cloth with a light solution of detergent and water and wipe away any contamination. During printing, the dies will tend to pick up both airborne dust and any dust or dirt on the surface of the material being printed. After some period of use, the accumulation of contaminates on the dies will cause degradation of the print quality. When this happens, the dies should be cleaned or replaced. Cleaning the dies is a very easy process and, excluding excessive wear to the die face, will restore the print quality of the die to like new condition.

Universal #1150 Ink is a glycol base ink which can be easily cleaned from the dies without the use of solvents. The easiest method of cleaning dies is to scrub the die face with a toothbrush using liquid dish detergent and water. Since the ink residue will stain, it is highly recommended that you wear a pair of rubber gloves, safety glasses and an apron to protect your clothing. (Naturally, the toothbrush will never be suitable for oral hygiene use after this process.)

1- Place the contaminated die on top of several layers of paper towels to absorb the excess liquid. Pour just enough soapy water on the face of the printing die to cover the die face.

FIGURE 21

2- Using the toothbrush, carefully scrub the face of the die to remove the contamination and old ink as shown in Figure 31. Add more soapy water as necessary and repeat the process until the die is clean. Rinse the dies in clean water.
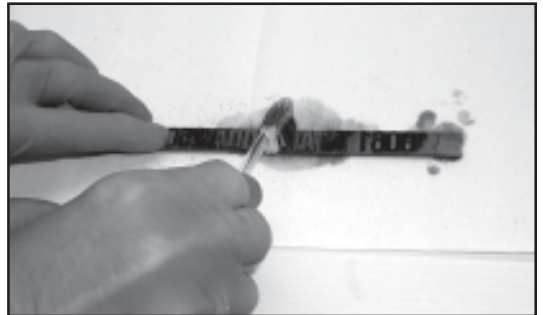

FIGURE 22

3- Blot the surface of the die with a clean paper towel to dry and reinstall the clean dies on the printer.

FIGURE 23

MAINTENANCE

PRE-INKING MICROCELL ROLLS

The optional Microcell Ink Roll is available for specific applications. Because of the harder density of this material the inking process of the roller must be done slowly. The following instructions will guide you through the proper inking process to insure maximum performance of your printer.

Inks will stain clothing, furniture, carpeting and your hands. Rubber gloves should be worn during the following procedures.

1- Remove the ink roll from the plastic bag. Fill a clean dry container with enough ink to allow the ink roll to fully submerge.

    Microcell Ink Rolls are designed for use with Universal #1150 Ink for marking on porous surfaces. The ink rolls must be pre-inked manually prior to installation on the printer.

FIGURE 24

2- Carefully place the ink roll into the ink. <u>Do not force the roll to submerge.</u> The top surface of the roll must remain dry during this process.

    The roll should be allowed to float, undisturbed, in the container of ink. Leaving the top surface of the roll dry allows air to escape as the ink is absorbed from the bottom. Forcing the roll under the surface of the ink will prevent the roll from absorbing ink properly.
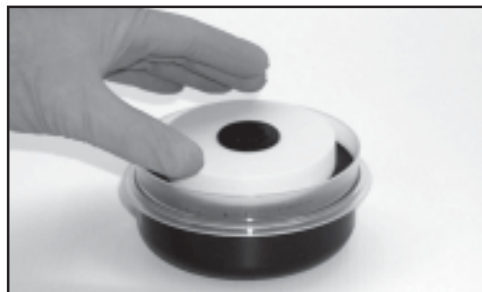

FIGURE 25

3- As the roll absorbs ink it will begin to sink into the container. When the top surface becomes fully saturated the roll has absorbed as much ink as possible. Using a round shaft or screwdriver, remove the roll from the container.

    This process normally takes 20-25 minutes for a 1-1/8" face roll, longer for the larger rolls. Proper inking of a dry roll is critical to ensure good performance of the roll.

FIGURE 26

4- To remove excess ink from the roller, use a round shaft or screwdriver, and roll the inked roller across a clean piece of paper or cardboard.

    Approximate roll capicity when fully saturated:

    1-1/8" face roll will hold approximately 4 ounces (118 ml.).
    2" face roll will hold approximately 8 ounces (236 ml).
    3" face roll will hold approximately 12 ounces (354 ml).
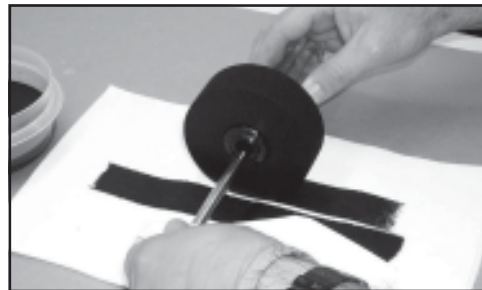   4" face roll will hold approximately 16 ounces (473 ml).

FIGURE 27

PRINT DRUM INDEX MECHANISM DISASSEMBLY / ASSEMBLY

1- Using a 5/64" hex wrench, loosen the Nylon Tip Set Screw located in the top rim of the Print Drum and remove the dust cover.
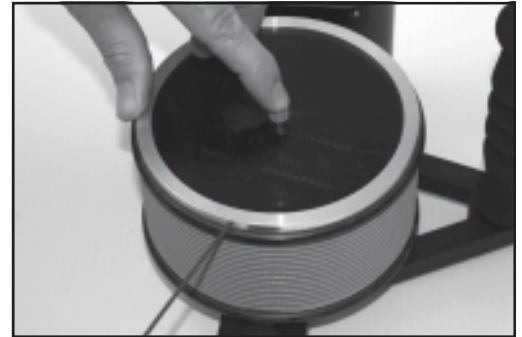

FIGURE 28

2- To relieve the spring tension on the index mechanism, rotate the Print Drum approximately 3/4 turn. The Index Compression Springs will now be in the fully extended (relaxed) position.
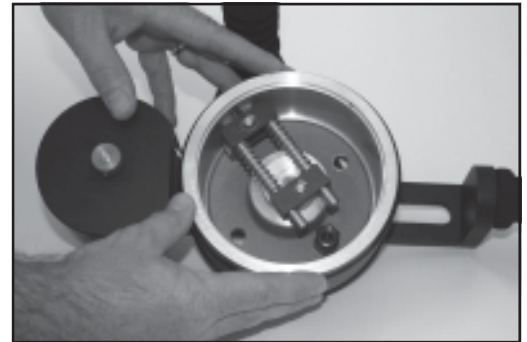

FIGURE 29

3- Using a small screwdriver, remove the two E-Rings from the stainless steel posts to enable removal of the spring block assembly.

FIGURE 30

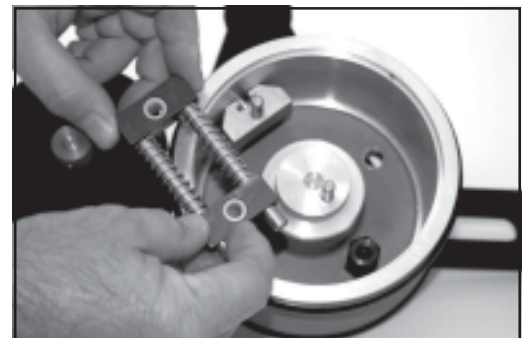4- Lift the spring block assembly straight up off the stainless steel posts.

FIGURE 31

PRINT DRUM AXLE
RECESS AREA
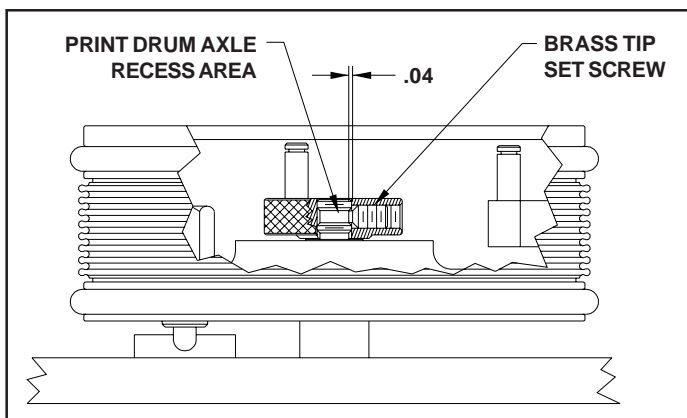
.04

BRASS TIP
SET SCREW

FIGURE 32

Important Note: The Print Drum Axle is machined with thread relief so the tip of the set screw will not damage the threads. To completely remove the Index Ring from the Axle, the Brass Tip Set Screw must be loosened at least 2 full turns to prevent damage to the threads.

5- Using a 1/8" hex wrench, loosen the Brass Tipped Set Screw located in the side of the Index Ring. This screw must be turned counterclockwise at least two full revolutions.

FIGURE 33

6- Remove the Index Ring from the axle by turing it in a Counter-Clockwise direction. If the Index Ring does not turn freely, loosen the set screw an additional turn as indicated in Step 5 above.

FIGURE 34

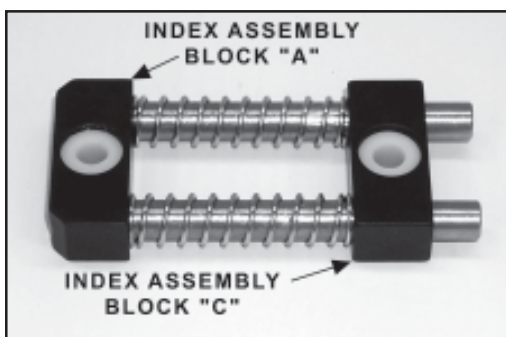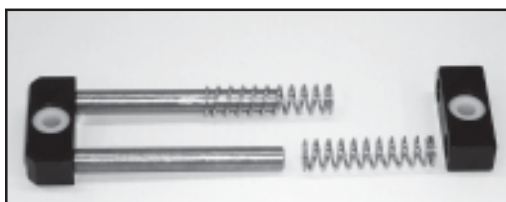7- The print drum can now be lifted off the axle.

FIGURE 35

FIGURE 36

REPLACING PRINT DRUM INDEX SPRINGS

1- Holding onto the Index Assembly Block "A", pull the Index Assembly Block "C" off the guide shafts. Remove the Drum Index Springs

2- Install new Index Springs over the stainless steel guide shafts and replace Index Block "C".

3- Reinstall the Index Spring Assembly in the Print Drum with the large end of the white bushings facing up towards the open end of the Print Drum.

4- Reinstall the two Snap Rings.

FIGURE 37

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REMOVING AND REPLACING INDEX BLOCK "B"

If the Indexing Assembly Block "B" is removed during disassembly it must be realigned using the following procedure.

1- To remove Index Block "B" from the Print Drum, roll down the Drum Cover directly behind the Index Block to expose the Index Assembly Mounting Screw. Using a screw driver, turn the Mounting Screw in a clockwise direction until the Index Block becomes loose and can be removed.

FIGURE 38

2- Lift Index Block "B" straight up to remove.

The head of the Index Assembly Mounting Screw engages the T-Slot in Index Block "B". This mounting design facillitates height adjustment of the Index Block during reassembly.

FIGURE 39

Before replacing Index Block "B", ensure that the Index Ring is properly adjusted.

3- Install the Index Ring by threading it onto the axle (turning it in a Clockwise direction) until it contacts the shoulder of the axle.
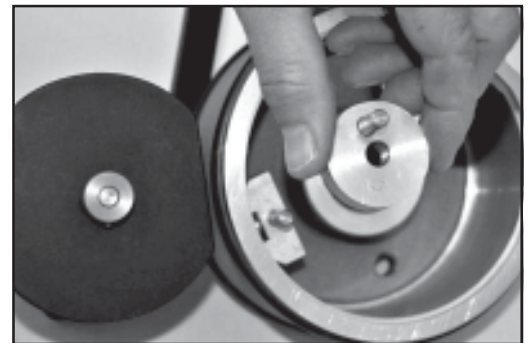

FIGURE 40

4- If the Brass Tip Set Screw is not pointing in the direction shown in Figure 41, rotate the Index Ring in a Counter-Clockwise Direction until it points in the direction shown.
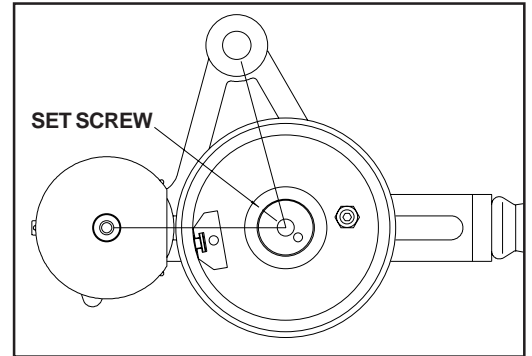

SET SCREW

FIGURE 41

5- Tighten the Brass tip Set Screw securely to prevent the Index Ring from rotating when under spring tension.

FIGURE 42

6- When replacing Index Block "B" it is very important to align the top surface of the Index Block with the top surface of the Index Ring.

The easiest way to accomplish this is to hold a flat block of metal or wood across the top of the Index Ring. While holding the block in place, raise Index Block "B" up to contact the bottom of the alignment block.
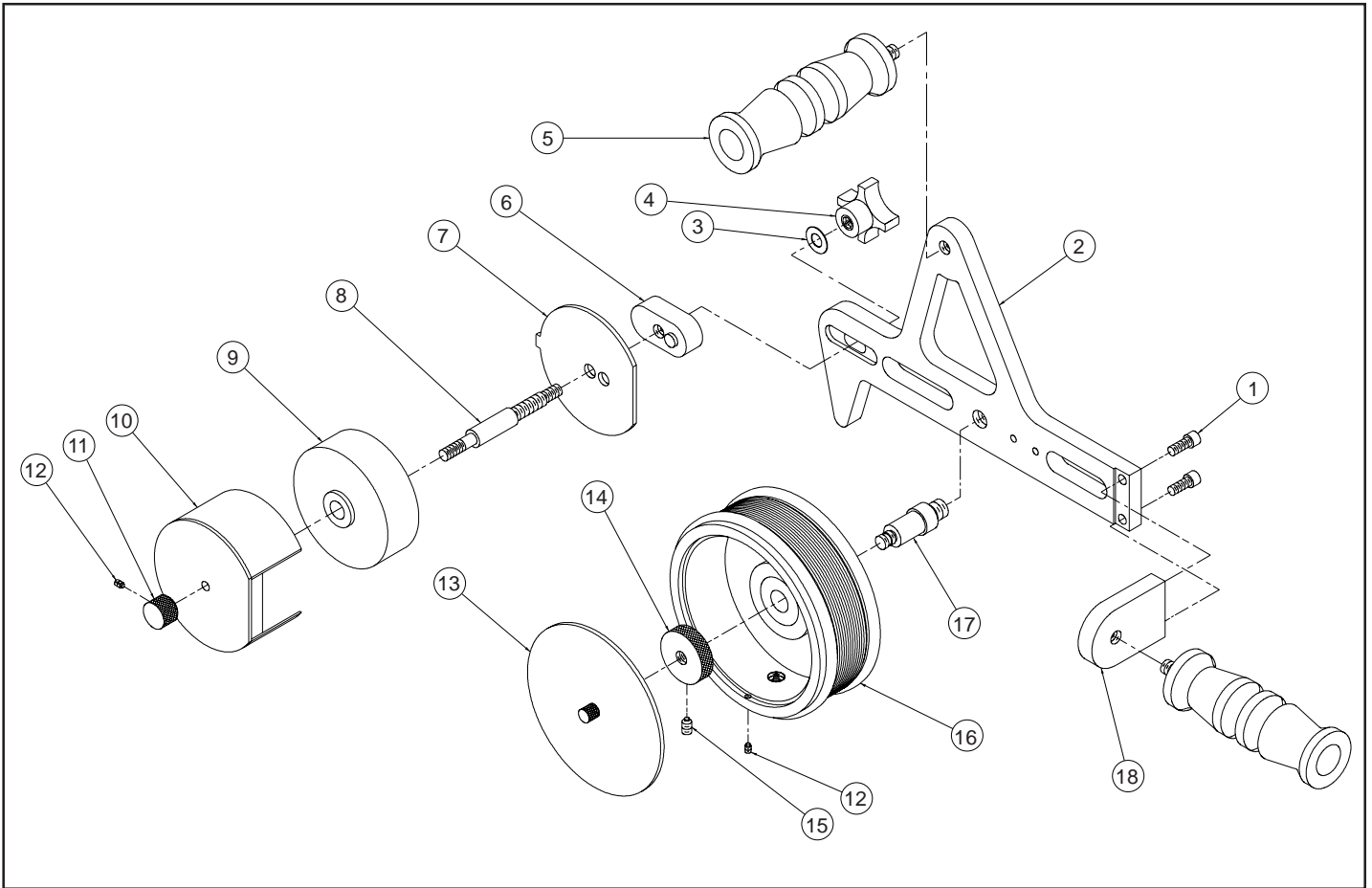

FIGURE 43

7- While holding Index Block "B" in this position, tighten the Index Assembly Mounting Screw by turning it counter-clockwise until tight.


FIGURE 44

HPL PRINTER ASSEMBLY

HPL PRINTER ASSEMBLY PARTS LIST

KEY NO.	PART NUMBER	QTY. REQUIRED	DESCRIPTION
1	MC-02	2	SCREW, 1/4-20 X 5/8 LG SOC HD CAP
2	HPL-002	1	SIDE FRAME
3	HP-04	1	3/8" BRASS FLAT WASHER
4	MRM-CL20	1	KNOB
5	HPL-HA	2	HANDLE ASSEMBLY
6	HPL-003	1	INKING SYSTEM MOUNTING PAD
7	HPL-004	1	INK ROLL BASE PLATE
8	HPL-008	1	1-1/8" INK ROLL AXLE
	HPL-009		2" INK ROLL AXLE
	HPL-010		3" & 4" INK ROLL AXLE
9	HPL-XC1	1	1-1/8" XF NEOPRENE INK ROLL - DRY
	HPL-XC2		2" XF NEOPRENE INK ROLL - DRY
	HPL-XC3		3" XF NEOPRENE INK ROLL - DRY
	HPL-XC4		4" XF NEOPRENE INK ROLL - DRY

HPL PRINTER ASSEMBLY PARTS LIST

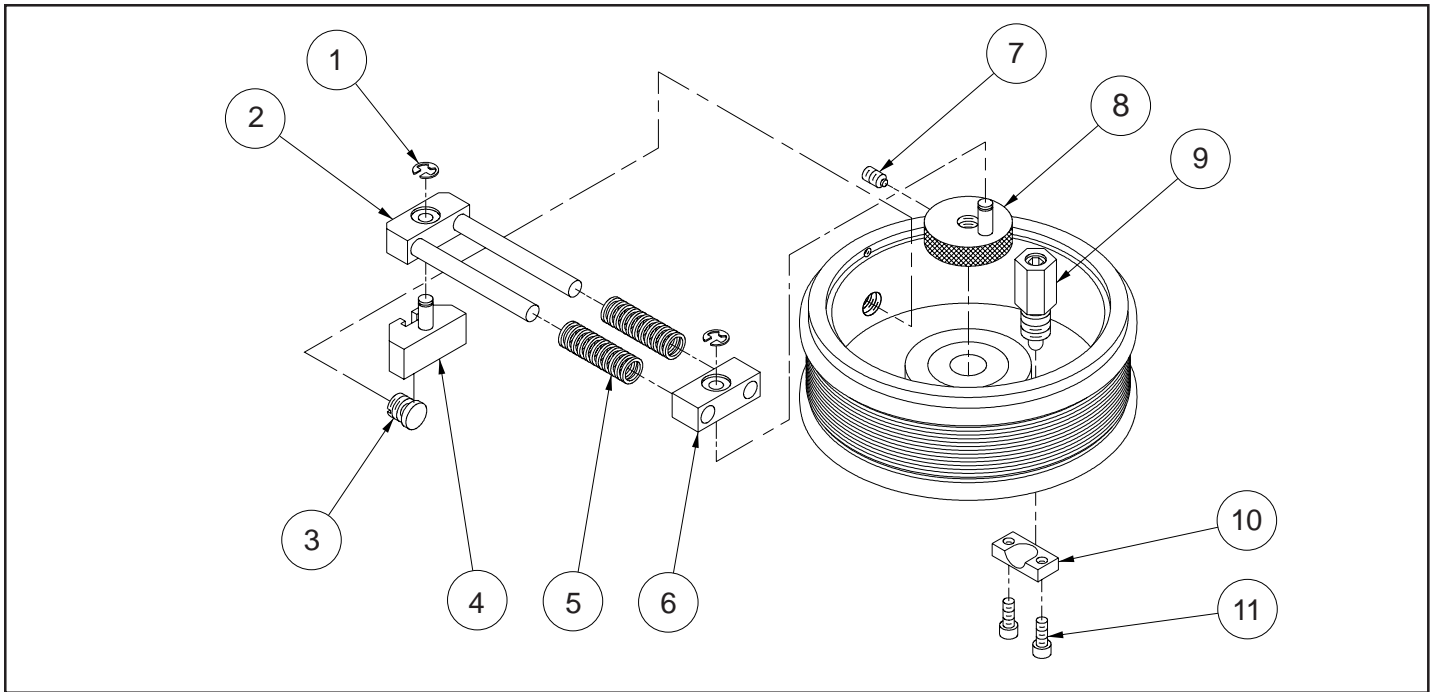| KEY NO.	PART NUMBER	QTY. REQUIRED	DESCRIPTION
10	HPL-RC1	1	1-1/8" ROLL COVER ASSEMBLY
	HPL-RC2		2" ROLL COVER ASSEMBLY
	HPL-RC3		3" ROLL COVER ASSEMBLY
	HPL-RC4		4" ROLL COVER ASSEMBLY
11	HPL-018	1	COVER RETAINING KNOB
12	CF-05	2	SET SCREW, 8-32 X 3/16" LG N.T.S.
13	CM-13	1	DUST COVER W/ KNURLED KNOB
14	CM-04	1	KNURLED RETAINING KNOB
15	CF-04	1	SET SCREW, 1/4-20 X 3/8" LG B.T.S.
16	CLP-100NI-PDA	1	HPL-100 NON-INDEXING PRINT DRUM ASSEMBLY
	CLP-100-PDA		HPL-100 INDEXING PRINT DRUM ASSEMBLY
	CLP-200NI-PDA		HPL-200 NON-INDEXING PRINT DRUM ASSEMBLY
	CLP-200-PDA		HPL-200 INDEXING PRINT DRUM ASSEMBLY
	CLP-300NI-PDA		HPL-300 NON-INDEXING PRINT DRUM ASSEMBLY
	CLP-300-PDA		HPL-300 INDEXING PRINT DRUM ASSEMBLY
	CLP-400NI-PDA		HPL-400 NON-INDEXING PRINT DRUM ASSEMBLY
	CLP-400-PDA		HPL-400 INDEXING PRINT DRUM ASSEMBLY
	CLP-100NI-PDA-T		HPL-100 NON-INDEXING PRINT DRUM ASSEMBLY - METRIC
	CLP-100-PDA-T		HPL-100 INDEXING PRINT DRUM ASSEMBLY - METRIC
	CLP-200NI-PDA-T		HPL-200 NON-INDEXING PRINT DRUM ASSEMBLY - METRIC
	CLP-200-PDA-T		HPL-200 INDEXING PRINT DRUM ASSEMBLY - METRIC
	CLP-300NI-PDA-T		HPL-300 NON-INDEXING PRINT DRUM ASSEMBLY - METRIC
	CLP-300-PDA-T		HPL-300 INDEXING PRINT DRUM ASSEMBLY - METRIC
	CLP-400NI-PDA-T		HPL-400 NON-INDEXING PRINT DRUM ASSEMBLY - METRIC
	CLP-400-PDA-T		HPL-400 INDEXING PRINT DRUM ASSEMBLY - METRIC
17	HPL-005	1	1-1/8" PRINT DRUM AXLE
	HPL-006		2" PRINT DRUM AXLE
	HPL-007		3" & 4" PRINT DRUM AXLE
18	HPL-002	1	BACK FRAME

HPL PRINT DRUM ASSEMBLY
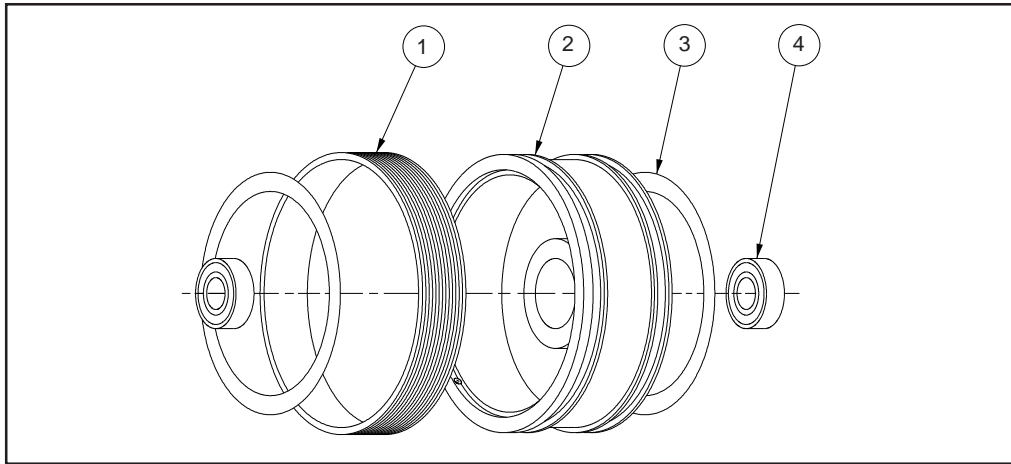
HPL PRINT DRUM ASSEMBLY PARTS LIST

KEY NO.	PART NUMBER	QTY. REQD.	DESCRIPTION
1	CLP-BL1	1	CLP/HPL-100-RIBtype® DRUM COVER
	CLP-BL2		CLP/HPL-200-RIBtype® DRUM COVER
	CLP-BL3		CLP/HPL-300-RIBtype® DRUM COVER
	CLP-BL4		CLP/HPL-400-RIBtype® DRUM COVER
	CLP-BL1T		CLP/HPL-100-RIBtype® DRUM COVER - METRIC
	CLP-BL2T		CLP/HPL-200-RIBtype® DRUM COVER - METRIC
	CLP-BL3T		CLP/HPL-300-RIBtype® DRUM COVER - METRIC
	CLP-BL4T		CLP/HPL-400-RIBtype® DRUM COVER - METRIC
2	CLP-PD1	1	CLP/HPL-100 NON-INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS
	CLP-PD1I		CLP/HPL-100 INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS
	CLP-PD2		CLP/HPL-200 NON-INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS
	CLP-PD2I		CLP/HPL-200 INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS
	CLP-PD3		CLP/HPL-300 NON-INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS
	CLP-PD3I		CLP/HPL-300 INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS
	CLP-PD4		CLP/HPL-400 NON-INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS
	CLP-PD4I		CLP/HPL-400 INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS
	CLP-PD1T		CLP/HPL-100 NON-INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS - METRIC
	CLP-PD1IT		CLP/HPL-100 INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS - METRIC
	CLP-PD2T		CLP/HPL-200 NON-INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS - METRIC
	CLP-PD2IT		CLP/HPL-200 INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS - METRIC
	CLP-PD3T		CLP/HPL-300 NON-INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS - METRIC
	CLP-PD3IT		CLP/HPL-300 INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS - METRIC
	CLP-PD4T		CLP/HPL-400 NON-INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS - METRIC
	CLP-PD4IT		CLP/HPL-400 INDEXING PRINT DRUM W/CB-04 PRINT DRUM BEARINGS - METRIC
3	CO-02	2	BEARER RING
4	CB-04	2	PRINT DRUM BEARING

HPL INDEXING ASSEMBLY

HPL INDEXING ASSEMBLY PARTS LIST

KEY NO.	PART NUMBER	QTY. REQUIRED	DESCRIPTION
1	CF-28	2	SNAP RING
2	CLP-IA	1	INDEX ASSEMBLY BLOCK "A"
3	CF-27	1	INDEX ASSEMBLY MOUNTING SCREW
4	CLP-IB	1	INDEX ASSEMBLY BLOCK "B"
5	CS-07	2	DRUM INDEX SPRING
6	CLP-IC	1	INDEX ASSEMBLY BLOCK "C"
7	CF-04	1	1/4-20 BRASS TIP SET SCREW
8	CLP-IR2	1	INDEX RING ASSEMBLY
9	CLP-IP	1	INDEX PLUNGER ASSEMBLY
10	CM-34	1	INDEX RAMP
11	CF-29	2	SCREW, 10-32 X 1/2" SHC

HPL-PRINTER SERIES REPLACEMENT INK ROLLS - DRY

CLP-SERIES	PART NUMBER	DESCRIPTION
CLP-100 SERIES	HPL-XC1	1-1/8" XF NEOPRENE INK ROLL - DRY
	HPL-MC1	1-1/8" MICROCELL INK ROLL - DRY
CLP-200 SERIES	HPL-XC2	2" XF NEOPRENE INK ROLL - DRY
	HPL-MC2	2" MICROCELL INK ROLL - DRY
CLP-300 SERIES	HPL-XC3	3" XF NEOPRENE INK ROLL - DRY
	HPL-MC3	3" MICROCELL INK ROLL - DRY
CLP-400 SERIES	HPL-XC4	4" XF NEOPRENE INK ROLL - DRY
	HPL-MC4	4" MICROCELL INK ROLL - DRY