STENCILING & MARKING SYSTEMS

OWNER'S MANUAL

POROUS
MIDSIZE CODERS
ALL MODELS

INSTALLATION - OPERATION - MAINTENANCE

MSP-22080

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, however, that the instructions contained in this manual are read and carefully followed for best results. Failure to do so may result in unsatisfactory performance, damage to the equipment and personal injury.

- LIMITED WARRANTY -

UNIVERSAL Porous Midsize Coders 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 Midsize Coder has been designed to print lot numbers, date codes, and text information on cartons, web materials, and other conveyored products. Universal Midsize Coders are precision engineered to give years of reliable service under the most demanding conditions.

Features Include:

• Indexing (spot printing) and non-indexing (continuous printing) models.

• Inter-changeable print drums provide additional versitility.

      MS-120 print area is 1" x 12"
      MS-150 print area is 1" x 15"
      MS-180 print area is 1" x 18"
      MS-220 print area is 2" x 12"
      MS-250 print area is 2" x 15"
      MS-280 print area is 2" x 18"

• Universal's RIBtype® Die system allows text information to be set using individual characters or one piece logo dies. Custom dies can be produced from camera ready copy. Metric RIBtype® Die models are also available.

• Field convertible mounting configurations for printing on the top, side, or bottom of the product.

• Precision machined, impact resistant 6061-T6 aluminum construction with a black anodized finish for corrosion resistance.

• Permanently lubricated, sealed ball bearings provide extremely fast, low resistance drum rotation.

• Stainless steel mounting columns and shafts for durability even in harsh environments.

• Cam indexing mechanism which provides unsurpassed indexing accuracy.

• Optional reservoir inking system which automatically feeds ink to the ink roll during operation. Patented disposable ink cartridges eliminate liquid ink mess and unnecessary down time.

QUICK START
PAGES 14 THRU 17

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 coder operating in just a few minutes.

CODER SPECIFICATIONS

The specification section includes drawings with the basic dimensions of the coders, 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 and the various mounting configurations.

SPECIFICATIONS

MIDSIZE CODER SPECIFICATIONS
MODEL SHOWN: MS-120NI - LEFT HAND MOUNT
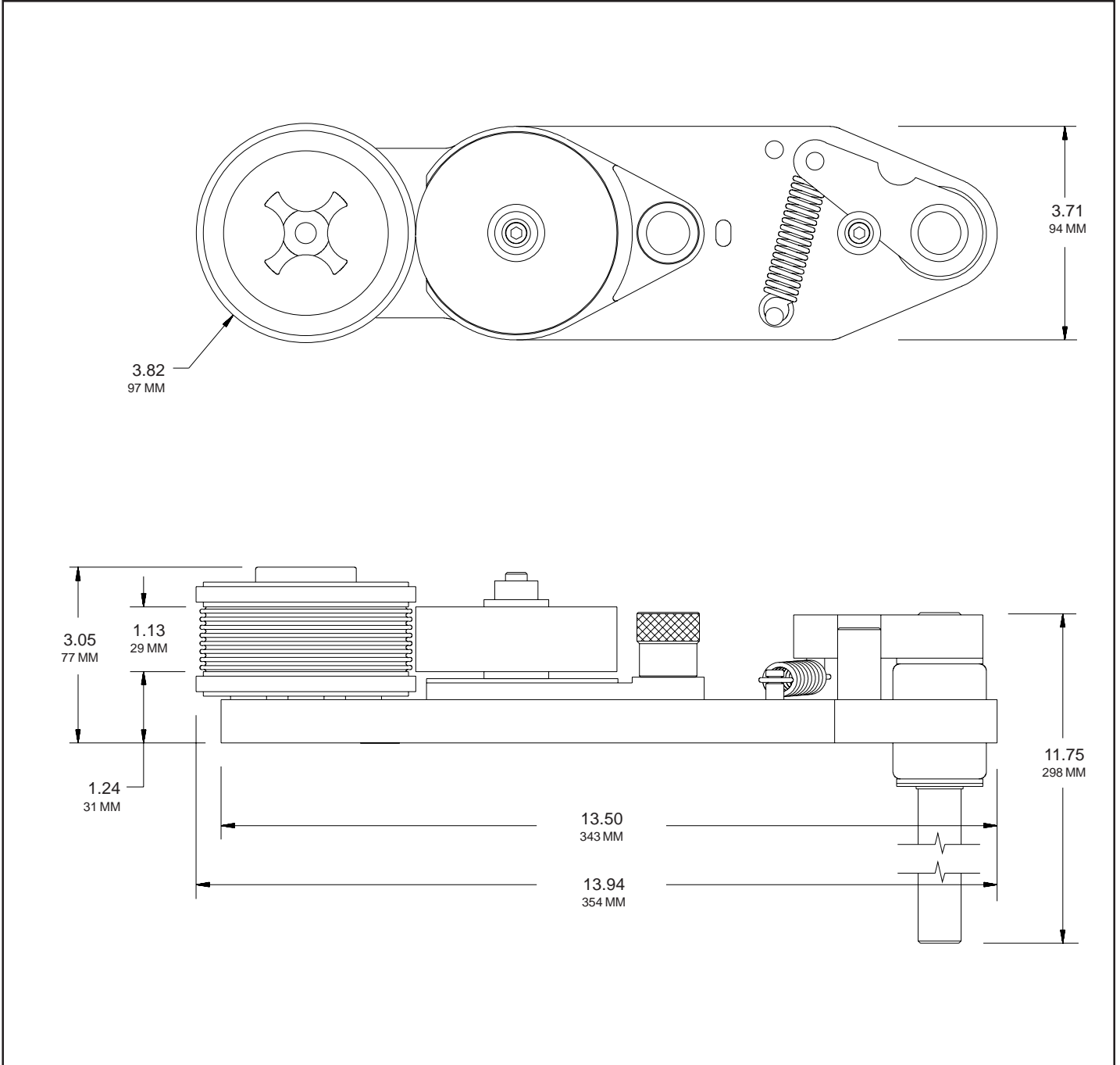
3.71
94 MM

3.82
97 MM

3.05
77 MM

1.13
29 MM

1.24
31 MM

11.75
298 MM

13.50
343 MM

13.94
354 MM

NET WEIGHT:	7 LBS. - 8 OZ. (3.4 KG.)
MAXIMUM DIE SIZE - US STANDARD:	1" (7 RIBS) X 11-3/8" LENGTH
MAXIMUM DIE SIZE - METRIC CODERS ONLY:	25.4 MM (7 RIBS) X 288.9 MM LENGTH
PRINT DRUM CIRCUMFERENCE:	APPROXIMATELY 12.00" (305 MM) MEASURED AT DIE FACE

SPECIFICATIONS

MIDSIZE CODER SPECIFICATIONS
MODEL SHOWN: MS-150NI - LEFT HAND MOUNT

4.78
121 MM

3.71
94 MM

3.05
77 MM

1.13
29 MM

1.24
31 MM

11.75
298 MM

13.50
343 MM

14.41
366 MM

NET WEIGHT: *7 LBS. - 13 OZ. (3.54 KG.)*
MAXIMUM DIE SIZE - US STANDARD: *1" (7 RIBS) X 14-1/4" LENGTH*
MAXIMUM DIE SIZE - METRIC CODERS ONLY: *25.4 MM (7 RIBS) X 362 MM LENGTH*
PRINT DRUM CIRCUMFERENCE: *APPROXIMATELY 15.00" (381 MM) MEASURED AT DIE FACE*

SPECIFICATIONS

MIDSIZE CODER SPECIFICATIONS
MODEL SHOWN: MS-180NI - LEFT HAND MOUNT
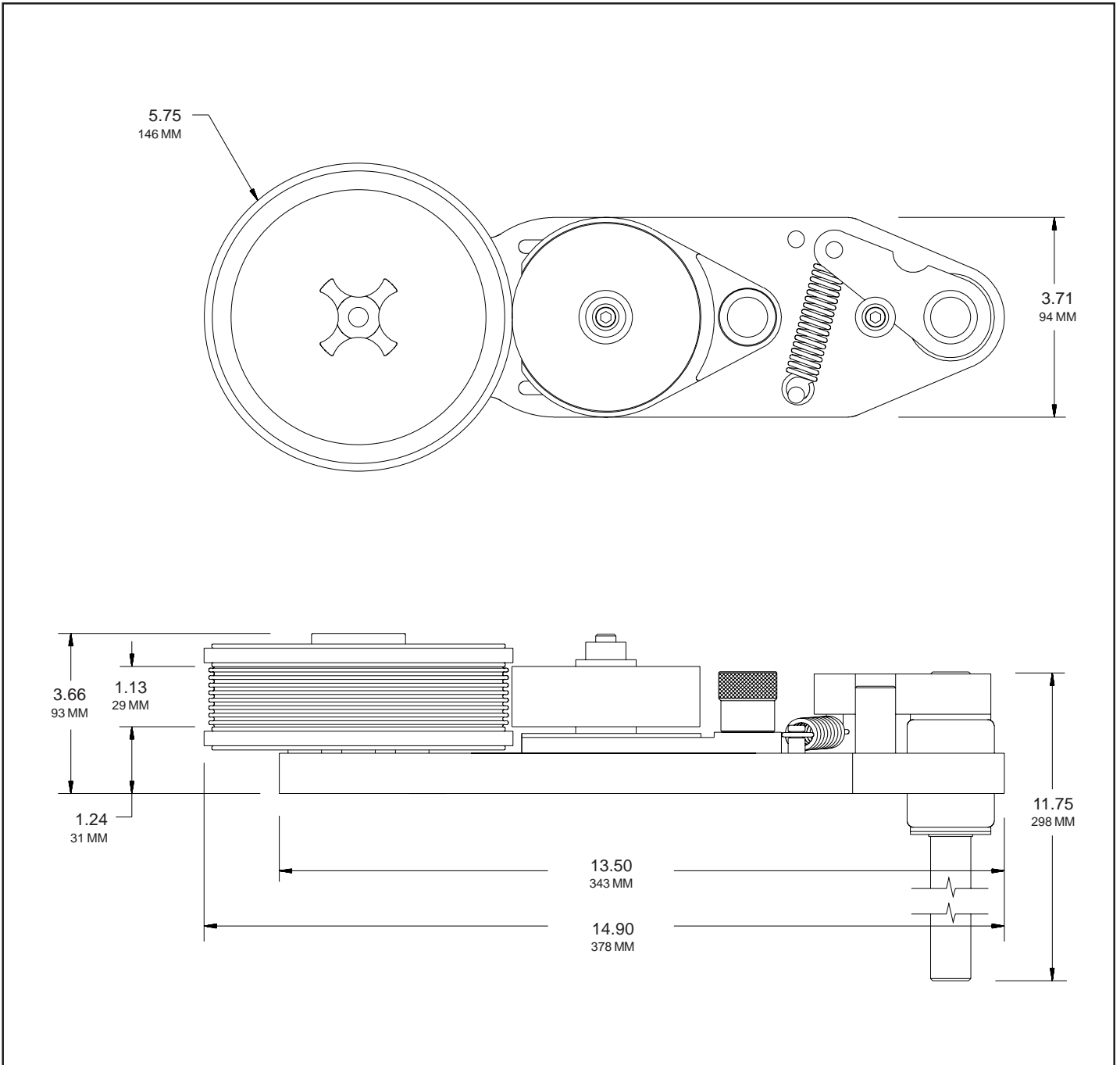
5.75
146 MM

3.71
94 MM

3.66
93 MM

1.13
29 MM

1.24
31 MM

11.75
298 MM

13.50
343 MM

14.90
378 MM

NET WEIGHT: *8 LBS. - 1 OZ. (3.67 KG.)*
MAXIMUM DIE SIZE - US STANDARD: *1" (7 RIBS) X 16-15/16" LENGTH*
MAXIMUM DIE SIZE - METRIC CODERS ONLY: *25.4 MM (13 RIBS) X 430.2 MM LENGTH*
PRINT DRUM CIRCUMFERENCE: *APPROXIMATELY 18.00" (457 MM) MEASURED AT DIE FACE*

SPECIFICATIONS

MIDSIZE CODER SPECIFICATIONS
MODEL SHOWN: MS-220NI - LEFT HAND MOUNT

3.71
94 MM

3.82
97 MM

2.05
52 MM

3.66
93 MM

1.24
31 MM

11.75
298 MM

13.50
343 MM

13.94
354 MM

NET WEIGHT: *7 LBS. - 15.5 OZ. (3.61 KG.)*
MAXIMUM DIE SIZE - US STANDARD: *1-15/16" (14 RIBS) X 11-3/8" LENGTH*
MAXIMUM DIE SIZE - METRIC CODERS ONLY: *49.2 MM (13 RIBS) X 288.9 MM LENGTH*
PRINT DRUM CIRCUMFERENCE: *APPROXIMATELY 12.00" (305 MM) MEASURED AT DIE FACE*

SPECIFICATIONS

MIDSIZE CODER SPECIFICATIONS
MODEL SHOWN: MS-250NI - LEFT HAND MOUNT
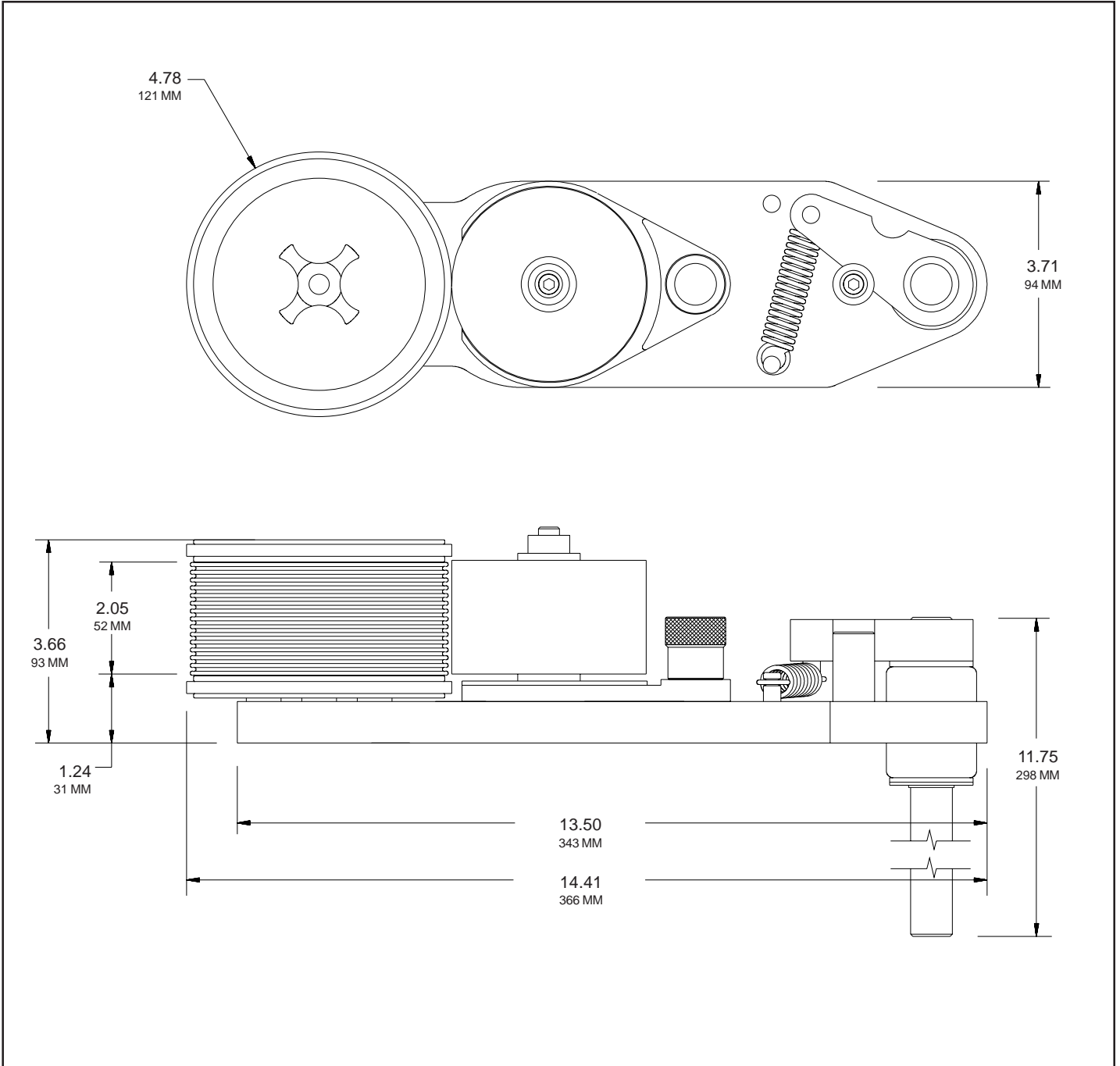
4.78
121 MM

3.71
94 MM

2.05
52 MM

3.66
93 MM

1.24
31 MM

13.50
343 MM

14.41
366 MM

11.75
298 MM

NET WEIGHT: *8 LBS. - 4 OZ. (3.74 KG.)*
MAXIMUM DIE SIZE - US STANDARD: *1-15/16" (14 RIBS) X 14-1/4" LENGTH*
MAXIMUM DIE SIZE - METRIC CODERS ONLY: *49.2 MM (13 RIBS) X 362 MM LENGTH*
PRINT DRUM CIRCUMFERENCE: *APPROXIMATELY 15.00" (381 MM) MEASURED AT DIE FACE*

MIDSIZE CODER SPECIFICATIONS

MODEL SHOWN: MS-280NI - LEFT HAND MOUNT

5.75
146 MM

3.71
94 MM

2.05
52 MM

3.66
93 MM

1.24
31 MM

11.75
298 MM

13.50
343 MM

14.90
379 MM

NET WEIGHT: *8 LBS. - 10 OZ. (3.74 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 MM LENGTH*
PRINT DRUM CIRCUMFERENCE: *APPROXIMATELY 18.00" (457 MM) MEASURED AT DIE FACE*

SPECIFICATIONS

INDEXING AND NON-INDEXING MODELS

Universal Midsize Coders are available in both indexing and non-indexing models.

Indexing coders contain a cam & spring return mechanism (figure 1) which provides print registration capabilities when carton or drum printing. As the trailing edge of a carton passes the coder, the print drum is automatically rotated back to the same starting or "home" position. There must be adequate space between cartons at any given line speed for this mechanism to work properly. Printing with an indexing coder will allow the imprint on each carton to be registered in the same position relative to the leading edge of the carton.
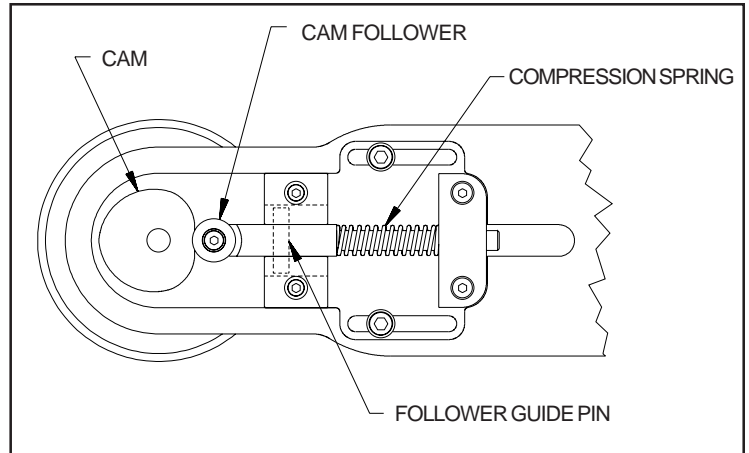

FIGURE 1

Non-indexing coders have print drums which simply rotate on bearings and repeat the print at an interval equal to the circumference of the print drum. If repeat intervals shorter than the print drum circumference are required, duplicate sets of dies can be installed on the print drum. Non-Indexing coders are generally used for web printing applications where the print drum stays in contact with the web at all times.

MOUNTING CONFIGURATION

The mounting configuration of a coder is determined by how the machine is assembled for mounting in relation to the product and its movement. All references to mounting configuration are made as though you are viewing the production line with the product moving away from you. Universal Midsize Coders are available from the factory in either Right Hand and Left Hand configurations as shown in Figures 2 and 3.
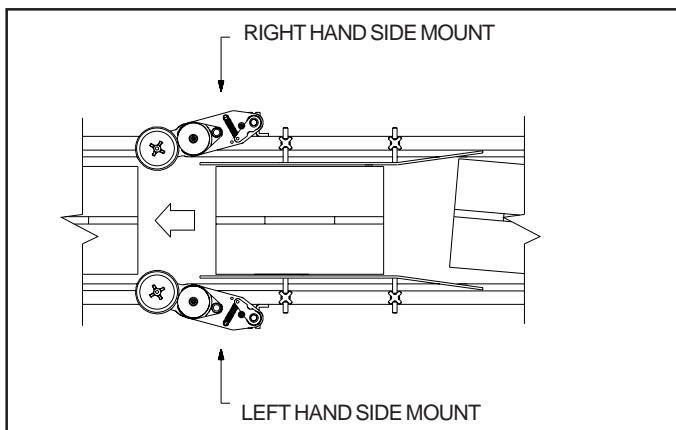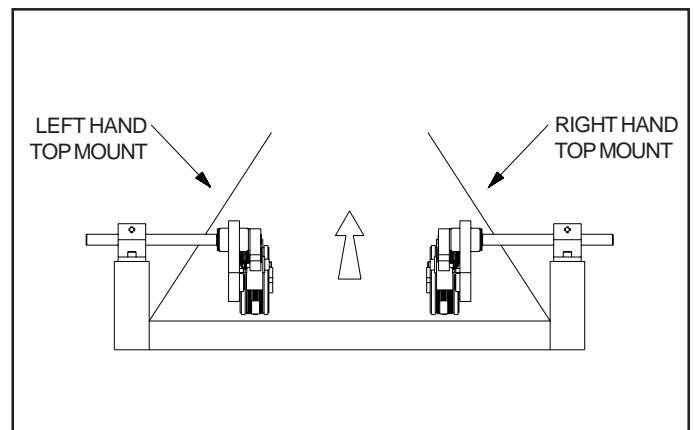

FIGURE 2

FIGURE 3

The mounting configuration is easily field convertable. The Porous Midsize Coders can be installed for Top, Side or Bottom printing without any additional modifications.

RIBtype® PRINTING DIES

Universal Non-Porous Coders 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.
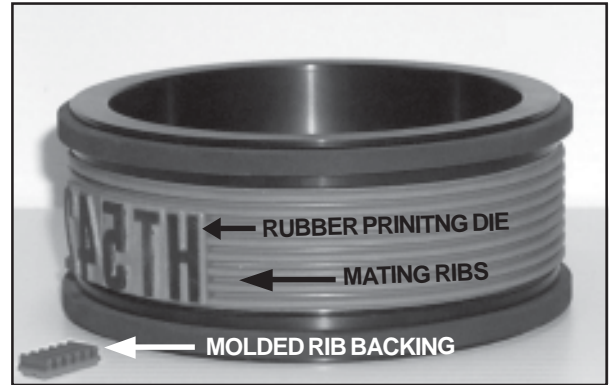

FIGURE 4

Printing dies are also available in "logo" form in which a complete text message, company logo or trademark is photographically reproduced from black and white art work on a single piece of rib backed rubber. These "logo" dies are more dimensionally stable than individual characters when installed on the print drum so they 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.
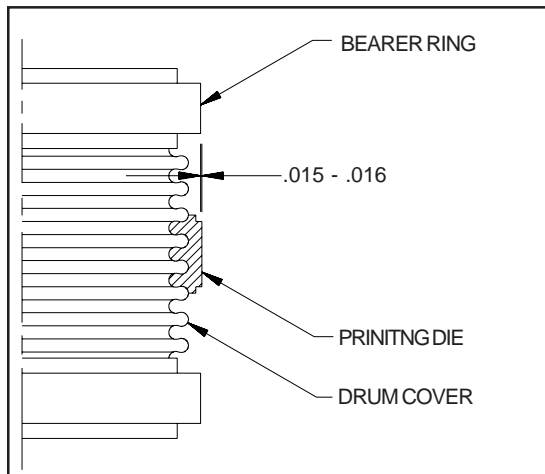

FIGURE 5

The 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 Bearer Rings as shown in Figure 5. 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 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 model numbers on Metric coders will have a "-T" suffix and have a distinct pink color.

INK ROLLS

Universal offers three ink roll options for the Midsize Coders each with unique characteristics which will help determine the suitability for a specific printing application. The coders are designed to accommodate all three 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. All of these rolls are **re-inkable** for maximum economy.

MICROCELL INK ROLLS

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. Unless otherwise specified, Microcell Rolls are supplied with all new Midsize Coders and are recommended for use with **Universal #1150 Ink** or equivalent for printing on corrugated cartons and other **porous** surface materials.

FIGURE 6

XF NEOPRENE INK ROLLS

Universal's XF Neoprene Ink Rolls are made from an extra firm density neoprene material. While not quite as durable as Microcell, 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.

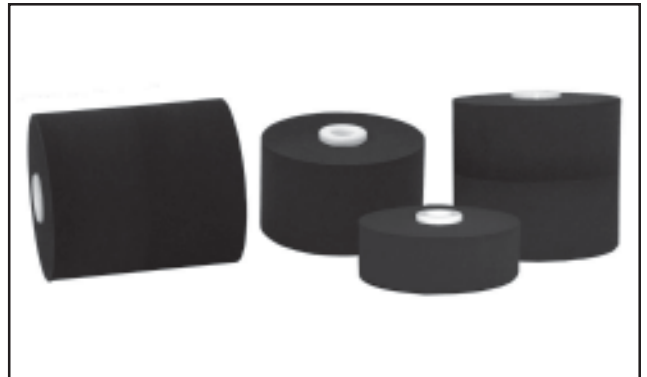FIGURE 7

NEOPRENE INK ROLLS

Universal's Neoprene ink rolls are made from a soft density neoprene material. Because this material has a larger cell structure, it is designed for use with heavily **pigmented inks** for carton printing on **porous** materials**.**
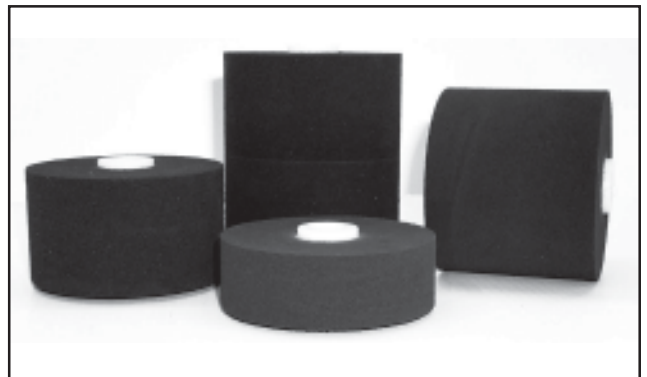
FIGURE 8

RESERVOIR ROLL COVERS
AND 4 OZ. RESERVOIR INK CARTRIDGES

Optional Reservoir Roll Covers are available for both side mount and top mount coder installations. When installed, these covers enable the use of Universal's patented 4 Oz. Reservoir Ink Cartridges which re-ink the ink roll automatically during the printing operation. This system can be installed in the field in a few minutes and can be used with both Microcell and XF Neoprene Ink Rolls.

Unlike gravity fed systems which will allow ink to flow continuously, Universal's Reservoir Ink Cartridges feed ink only during the print cycle. Ink feed stops automatically when the coder is idle.

SIDE MOUNT RESERVOIR ROLL COVERS are available in sizes to fit all models of the Midsize Coders and mount with the standard Axle Cap Screw.

FIGURE 9

TOP MOUNT RESERVOIR ROLL COVERS are also available in sizes to fit all models of the Midsize Coder and mount with the standard Axle Cap Screw.

> **Note:** The Top Mount Reservoir Roll Covers for the Midsize Coders are mounting configuration specific. These covers must be ordered in Right Hand Top Mount or Left Hand Top Mount models to match the mounting configuration of the coder. Figure 10 shows an MS-RRC1-RT Right Hand Top Mount Reservoir Roll Cover.

FIGURE 10

4 OZ. RESERVOIR INK CARTRIDGES are available in all colors of #1150 Ink. When a Reservoir Roll Cover is installed on the coder, a 4 Oz. Reservoir Ink Cartridge can be inserted into the threaded bottle port on the cover. The plastic ball tip of the 4 Oz. Cartridge operates in contact with the face or the side of the Ink Roll. As the Ink Roll rotates during a printing cycle, the plastic ball rotates and meters out a very small volume of ink to re-ink the roll automatically.

> **Note:** It is important that the 4 Oz. Reservoir Ink Cartridges should only be installed on the coder when the pre-inked ink roll becomes depleted of ink. Installing a Reservoir Cartridge on a fully inked Ink Roll can cause over saturation of the roll.

FIGURE 11

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PRE-INKING MICROCELL ROLLS

If you ordered a pre-inked roll, skip to page 15.

(If you ordered an XF Neoprene or Neoprene roll with your coder, go to page 23 for inking instructions.)

Universal Midsize Coders are shipped from the factory fully assembled and, unless otherwise specified, include a **dry Microcell Ink Roll.** *The ink roll must be manually pre-inked prior to use.* Dry ink rolls **cannot** be properly inked using only the 4 Oz. Reservoir Ink Cartridges. The initial inking of any dry roll is a critical process. The following instructions will guide you through the inking and installation process and have your coder ready to use in a few minutes.

Caution: 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 coder. The 4 Oz. Reservoir Ink Cartridges cannot be used to ink any dry roller.

FIGURE 12

2- Carefully place the ink roll into the ink. *Do not force the roll to submerge.* **The top surface of the roll must remain dry during this process to allow air to escape as the ink is absorbed from the bottom.**

> The roll should be allowed to float, undisturbed, in the container of ink. Forcing the roll under the surface of the ink will prevent the roll from absorbing ink properly.
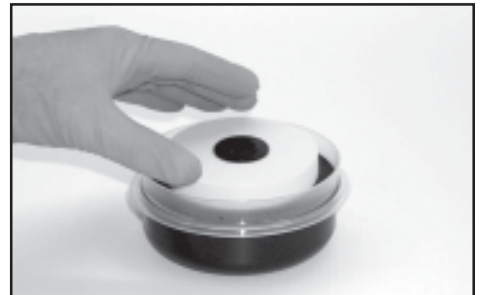

FIGURE 13

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 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. When fully saturated, a 1-1/8" face roll will hold approximately 4 ounces (118 ml.) of ink, a 2" face roll will hold approximately 8 ounces (236 ml) of ink.

FIGURE 14

4- To remove excess ink from the roller, place a round shaft or screw driver through the core and roll the inked roller across a clean piece of paper or cardboard.

> After inking, the roll will be oversaturated with ink. A small volume of ink must be removed or the roller will drip.
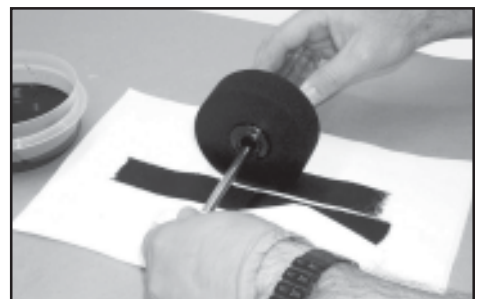

FIGURE 15

INSTALLING THE PRE-INKED ROLL

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

1 -The pre-inked roller that comes with your coder will be slightly oversaturated so you will have to remove the excess ink. Place a round shaft or screw driver through the core and roll the inked roller across a clean piece of paper or cardboard as shown.
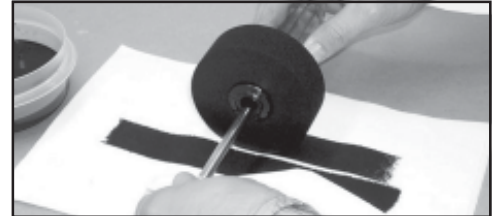
FIGURE 16

2- To install the ink roll, first remove the 1/4-20 Mounting Screw and the Axle Cap from the Ink Roll Axle.

FIGURE 17

3- Rotate the Inking System Eccentric Adjustment Knob in a clockwise direction to move the Ink Roller Axle away from the Print Drum.

Positioning the Ink Roller Axle the away from the Print Drum will enable you to install the pre-inked roll without having it contact the rubber bearer rings on the Print Drum.

FIGURE 18

4- Place the ink roll on the axle. Do not allow the ink roll to contact the Print Drum Bearer Rings during installation.
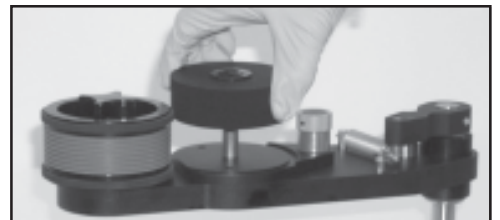
FIGURE 19

5- Replace Axle Cap with the recessed side up and reinstall Mounting Screw.

The counterbored or recessed side of the Axle Cap must be facing away from the ink roll. The Axle Cap is required to keep the Ink Roll on the Axle when the coder is mounted in a top or bottom mount orientation.
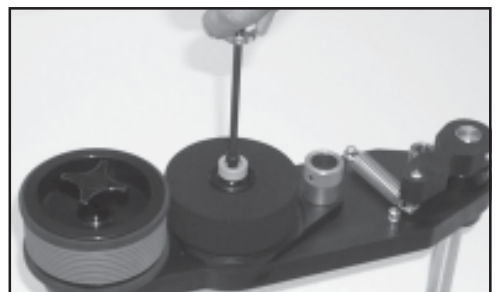
FIGURE 20

INSTALLING THE PRINTING DIES

Although the Printing Dies can be installed with the coder assembled, removing the Print Drum will make die installation more convenient.

1-To remove the Print Drum, grip the Print Drum with one hand and remove the Print Drum Knob by turning it in a counter-clockwise direction.

If the Ink Roll has already been installed on the coder, before removing the Print Drum, rotate the Inking System Eccentric Adjusting Knob and move the Ink Roll away from the Print Drum. This will prevent the Rubber Bearer rings on the Print Drum from contacting the Ink Roll during the removal process. (Refer to Page 14, Step 3 for details.)

FIGURE 21

2- Remove the Print Drum from the coder by lifting it off the Axle.

The dies can now be installed with the Print Drum resting on a workbench. Installing the dies with the Print Drum removed is much more convenient, particularly after the coder is permanently mounted on the production line.

FIGURE 22

3 - 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.

Note: Do not apply too much liquid or the dies will slip during printing. Never apply silicone, oil or any other lubricating agent to the rib backing or the dies will not hold properly during printing.

FIGURE 23

4 - Install the Printing Dies on the Print Drum by aligning the ribbed backing on the dies with the mating drum covering on the Print Drum and pressing firmly until they are completely engaged.

FIGURE 24

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

FIGURE 25

6 - When using the smaller individual characters to make up a code message, an optional Type Blocking Kit can be used to support the leading and trailing ends of the type as shown.

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

FIGURE 26

7 - If the Print Drum was removed for installation of the printing dies, replace the Print Drum and the Print Drum Knob and tighten the knob securely.
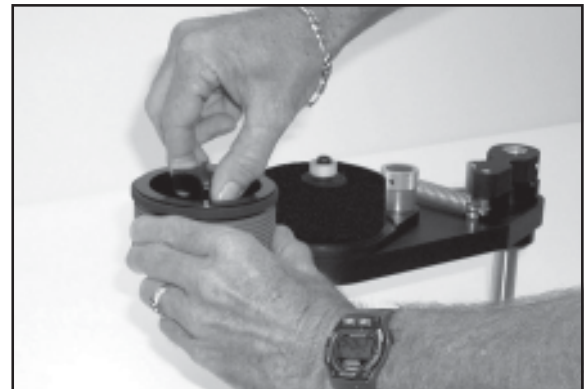
FIGURE 27

ADJUSTING THE INKING SYSTEM

1- While rotating the Print Drum, turn the Inking System Position Adjusting Knob to move the Ink Roll into contact with the face of the Printing Dies.

When properly adjusted, the Ink Roll will rotate when contacted by the face of the printing dies. You want just enough contact engagement to transfer ink to the entire face of the printing dies. Moving the Inking System too far forward will cause an excess amount of ink transfer and result in a poor imprint quality and can restrict the free rotation of the print drum.

FIGURE 28

CODER INSTALLATION

The selection of an appropriate place for installation on your conveyor line or other packaging equipment is a very important c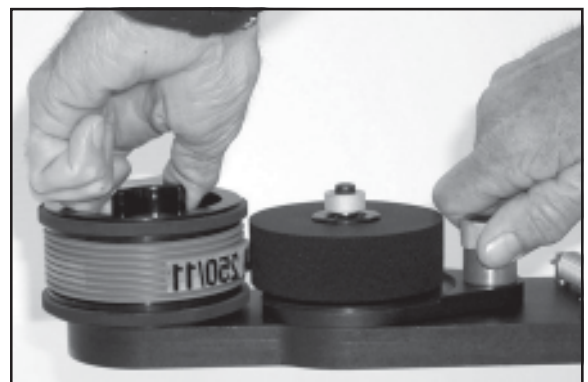onsideration in the performance of your coder. The most important factor to consider is carton alignment. To ensure print reliability and prevent damage to your coders, the cartons must be accurately guided through the printing station by guide rails. If your conveyor is not equipped with guide rails - they must be installed before proceeding with coder installation.

CARTON ALIGNMENT

Proper alignment of the cartons as they pass the printing station is imperative as shown. Improper alignment will produce poor print quality, poor print registration, and in extreme cases, could damage the machine.

GUIDE RAILS

IMPROPER ALIGNMENT

PROPER ALIGNMENT
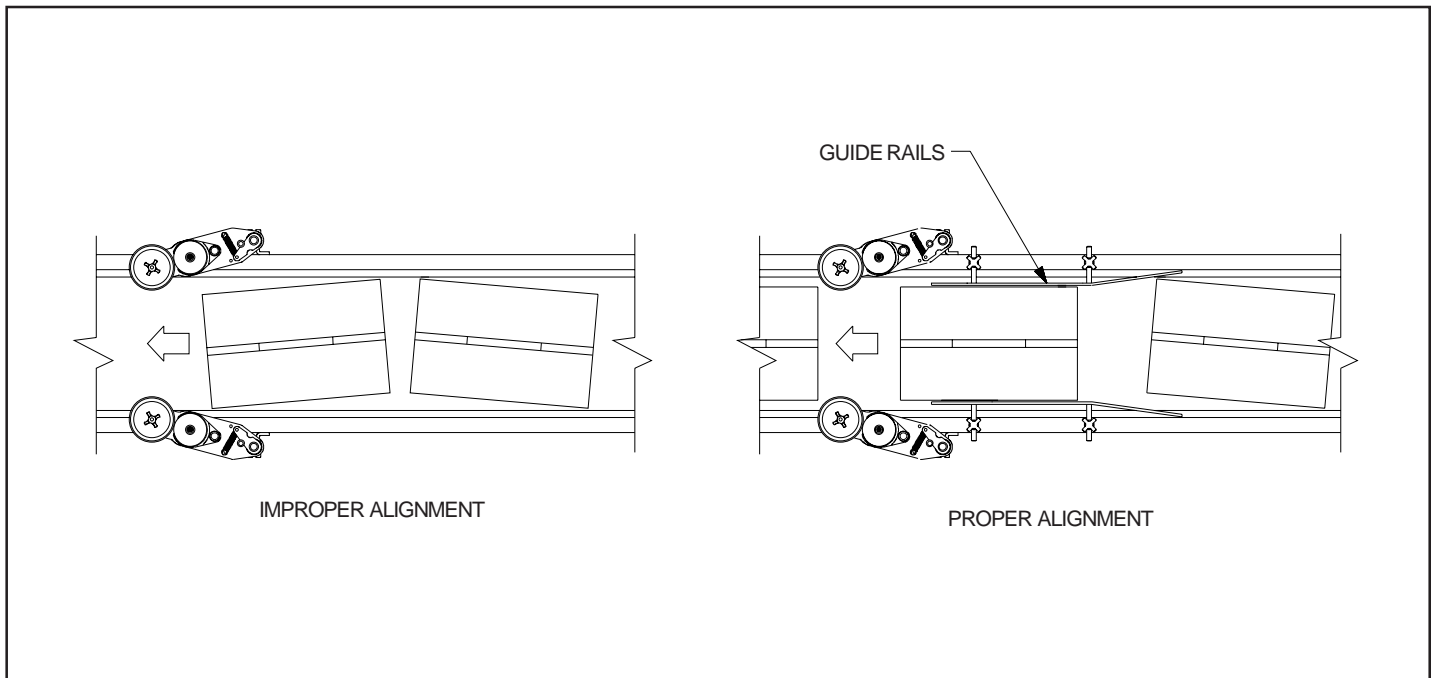
FIGURE 29

The Midsize Coders have a spring tension mechanism that presses the print drum against the carton surface on contact. This pressure is necessary to accomplish the friction drive rotation of the print drum and ensure enough printing pressure to give you a sharp impression. The spring tension mechanism on the coder will also compensate for slight variations in the width of the cartons without jamming the conveyor line. Excessive pressure, caused by improperly guided cartons, will result in smudged impressions and could cause damage to the extension spring that provides this printing pressure.

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CODER INSTALLATION

Universal Midsize coders are designed so the frame of the machine will pivot on the mounting column. This allows the print drum to deflect, or swing, on contact with the leading edge of the carton a maximum of 3". It is recommended that cartons be aligned between guide rails with no more than 1/4" clearance on each side as shown. This should allow ample clearance for cartons and protect your printer from damage.
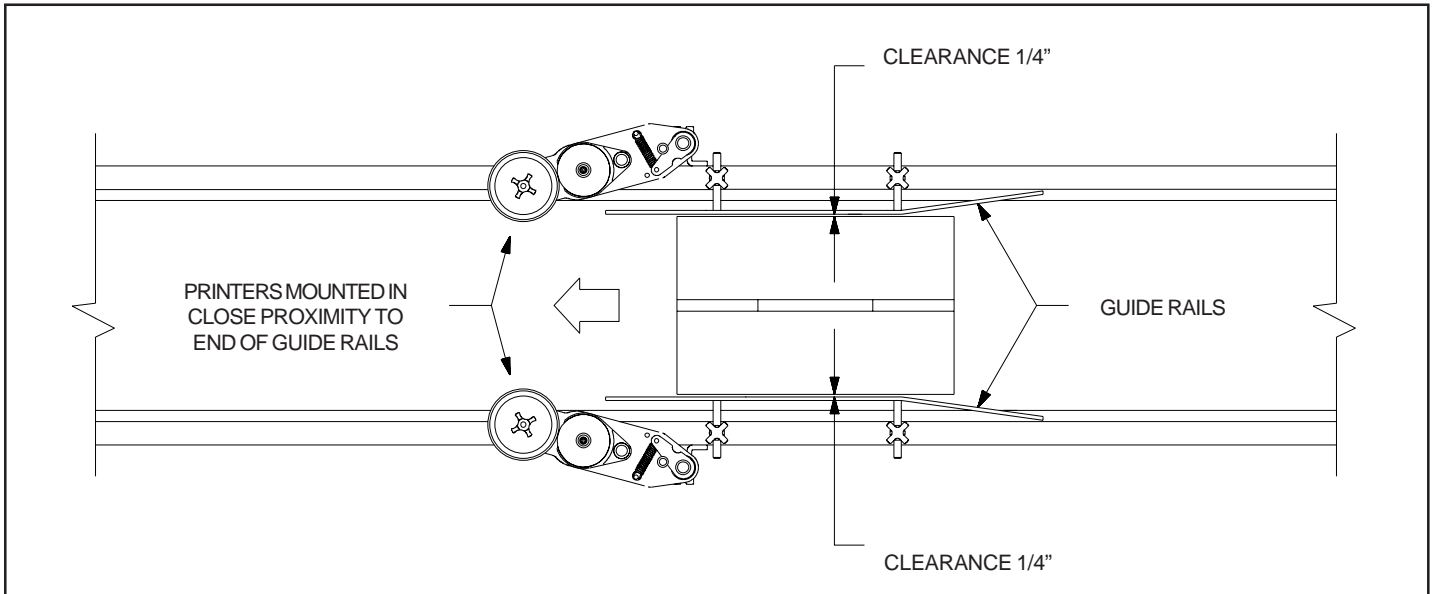

FIGURE 30

In most applications, installation of the printer can be accomplished by attaching the mounting bracket to the side rails of the powered conveyor using two 3/8" machine bolts. The printers should be mounted as close as possible to the end of the guide rails to insure that proper carton alignment is maintained at the printing station as shown in Figure 30.

Before tightening the mounting bolts, check alignment of the print drum. It is very important for proper tracking, that the top of the print drum is parallel to the top of the conveyor (see Figure 31) and the side of the print drum is parallel to the side of the carton (see Figure 32). If necessary, thin shims should be installed under the Mounting Bracket to achieve proper side alignment. Once this alignment has been achieved, tighten the mounting bolts.
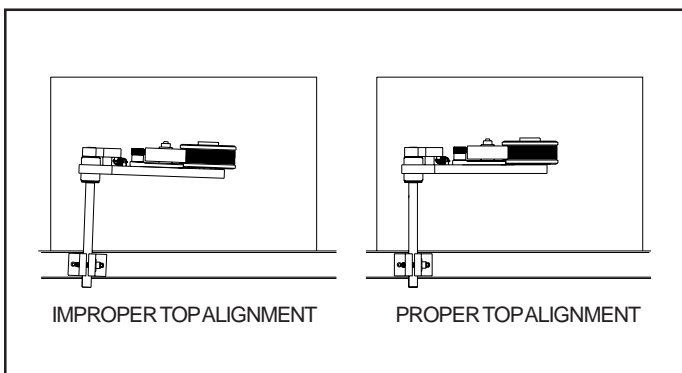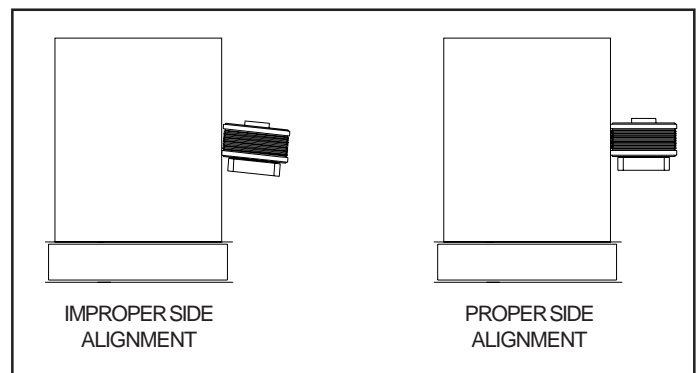

FIGURE 31

FIGURE 32

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CODER INSTALLATION

1 - Loosen the Mounting Column Clamping Screw and position the coder to the required height for printing. Next, pivot the coder into position so the print drum will lightly contact the side of the cartons as they emerge from between the guide rails and tighten the Clamping Screw.
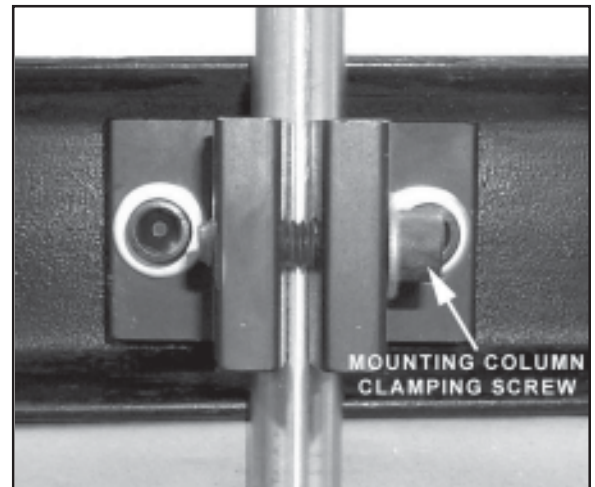
FIGURE 33

2 - Check the print drum contact with the cartons while the conveyor is under power and adjust the print drum position to obtain approximately 1/4" - 3/8" deflection as shown in Figure 34
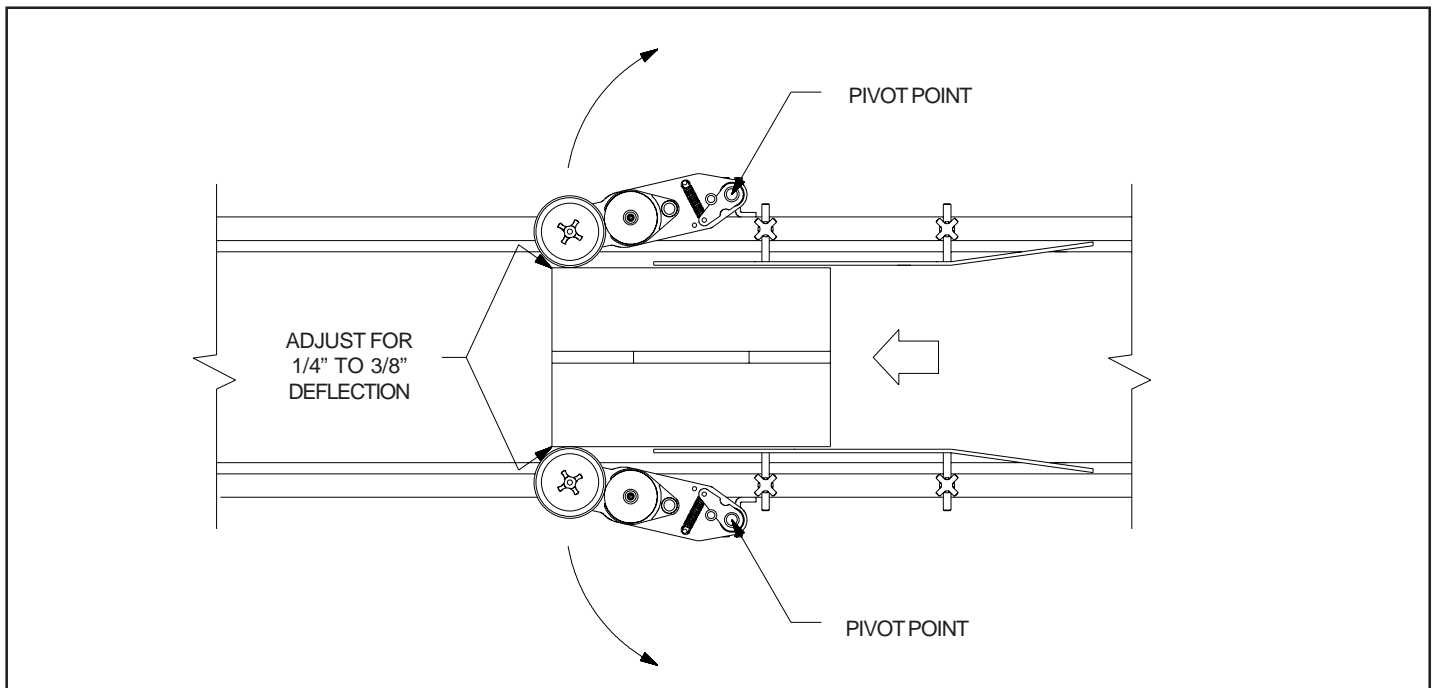
FIGURE 34

DIE POSITIONING FOR INDEXING CODER MODELS

Non-Indexing models of the coder do not offer print registration capabilities, therefore mounting the printing dies at a specific location on the print drum is not important. On Non-Indexing models, codes will be applied at random positions down the side of the cartons.

Indexing models of the coder have a spring indexing mechanism which returns the Print Drum to the same rotational position after printing each carton. The position of the printing dies on the Print Drum will determine the registration of the print, relative to the leading edge of each carton.

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CODER INSTALLATION

When the leading edge of the carton contacts the print drum, the drum begins to rotate in a clockwise direction as shown in Figure 35. The 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 print drum will continue to rotate until the trailing edge of the carton passes the coder. As soon as the Print Drum disengages from the carton, the spring return mechanism will automatically return the Print Drum to the same relative starting position.

LEADING EDGE OF DIE

INK ROLL

LEADING EDGE OF CARTON
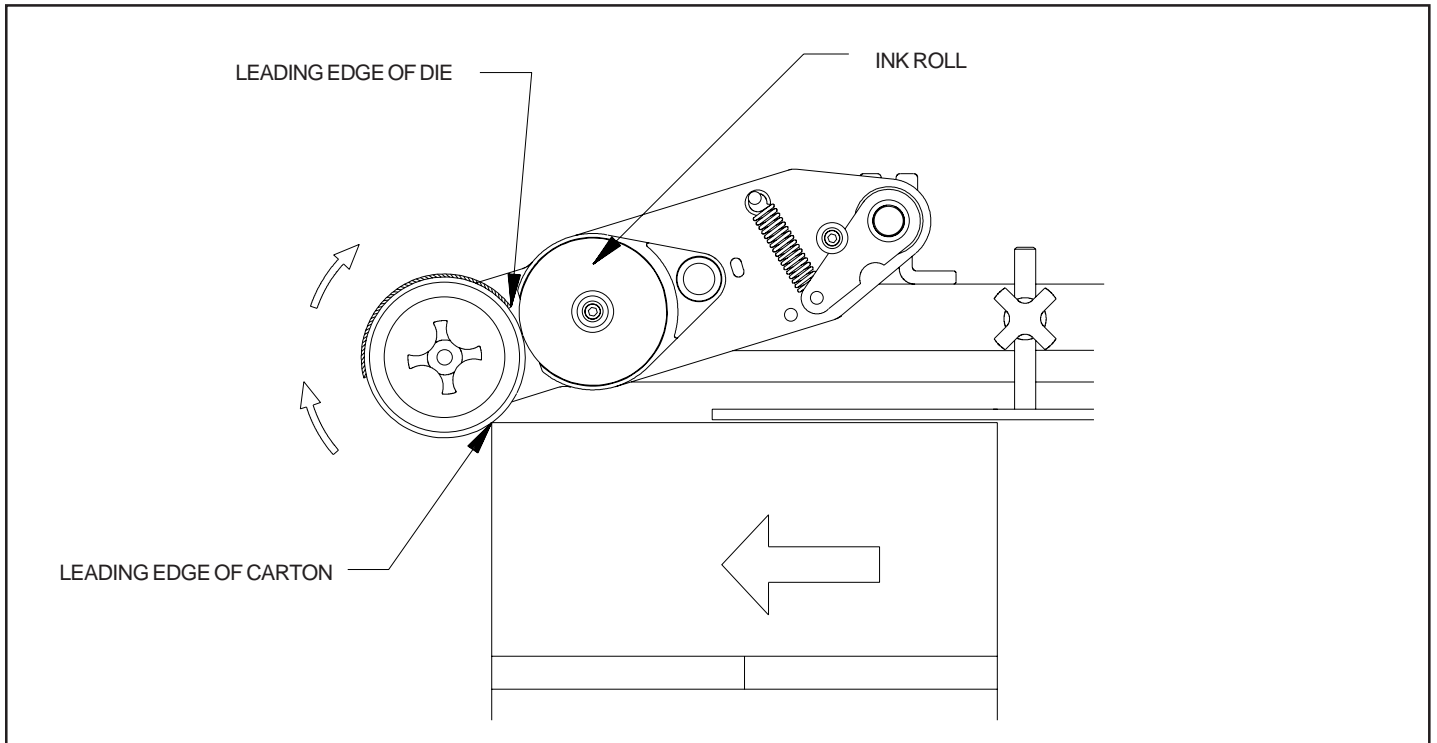
FIGURE 35

To adjust the position or registration of the code imprint on the side of the carton, loosen the Print Drum Knob and rotate the Print Drum to move the leading edge of the printing die in the appropriate direction and re-tighten the Print Drum Knob. Moving the leading edge of the printing die rotationally away from the leading edge of the carton will result in the code being printed more towards the trailing edge of the carton.

MAINTENANCE

INSTALLING THE OPTIONAL RESERVOIR ROLL COVERS

Note: Universal coders are designed to receive the ink required for printing from the capacity of a pre-saturated ink roll. The optional 4 oz. Reservoir Ink Cartridges are intended to be used only for the purpose of automatic re-inking when the ink roll becomes depleted of ink. Always allow the coder to run without a 4 Oz. Reservoir Cartridge installed until the print quality indicates a need for additional ink. *Do not install a Reservoir Cartridge when the Ink Roll is fully saturated or over saturation and dripping will result.*

1- To install the Reservoir Roll Cover, remove the Ink Roll Mounting Screw and Axle Cap.

FIGURE 36

2- Place the Reservoir Roll Cover over the ink roll with the open side facing the Print Drum.

FIGURE37

3- Install and tighten the Mounting Screw.

Note: The standard Axle Cap is not used when a Reservoir Roll Cover is installed on the coder. Use only the flat washer supplied with the cover.

FIGURE 38

INSTALLING THE 4 OZ. RESERVOIR INK CARTRIDGES

1- When the ink roll requires more ink, remove the white cap from the 4oz. bottle and screw it into the threaded port on the Reservoir Roll Cover. Hold the bottle straight during installation and be careful not to cross the threads. The bottle must be threaded into the port until it stops.

When fully seated in the port, the plastic ball in the tip of the 4 Oz. Ink Cartridge will contact the surface of the Ink Roll. After installing the 4 Oz. Cartridge, the print quality should return to normal within a few seconds on top mount machines, slightly longer on side mount machines.

FIGURE 39

When the reservoir ink cartridge is empty, *do not* immediately install a new cartridge. Remove the empty cartridge and wait until the print quality begins to show signs of needing ink before installing a new one. This will prevent the ink roll from becoming over saturated.

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PRE-INKING NEOPRENE & XF NEOPRENE FOAM ROLLS

Ink Rolls made from Neoprene materials are inked using a different procedure than inking the Microcell Ink Rolls.

Caution: 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 3 ozs. of ink into the container, for a 2" face - 6 ozs. The ink rolls must be pre-inked manually prior to installation on the coder. The 4 Oz. Reservoir Ink Cartridges **cannot** be used to ink a dry roller.
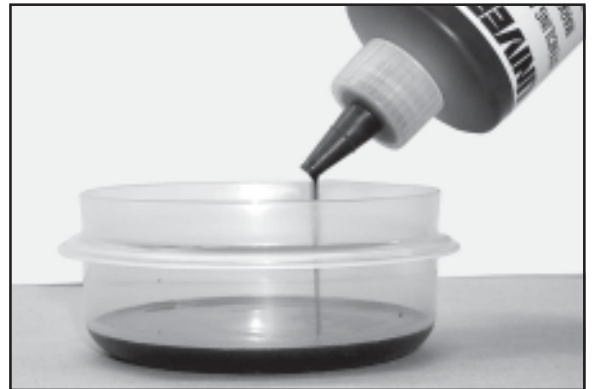
FIGURE 40

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. Carefully turn the roll over in the container and repeat the process until the all of the ink is absorbed.

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

FIGURE 41

3- Using a 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 coder that the ink roll is fully saturated with ink but not dripping wet. When fully saturated, a 1-1/8" face roll will hold approximately 3 ounces (89 ml.) of ink, a 2" face roll will hold approximately 6 ounces (177 ml.) of ink.

FIGURE 42

CLEANING THE CODER / CLEANING PRINTING DIES

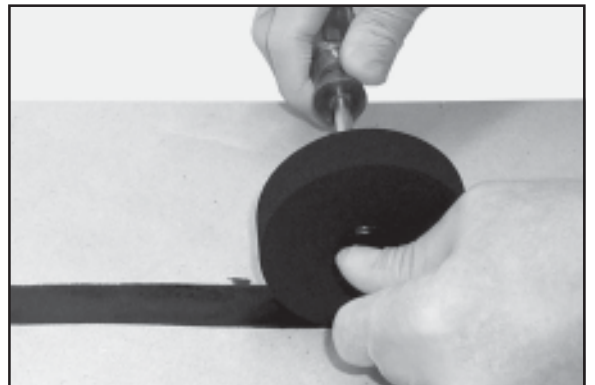If proper installation procedures are followed, the maintenance of your new coder will be limited to periodic cleaning to remove dust and any ink residue which may accumulate during operation. The frequency of this maintenance procedure is dependent upon the environmental conditions and proper inking of the coder. To remove ink contamination from the surface of the coder, 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 printing 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 the 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 printing 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 as shown.**
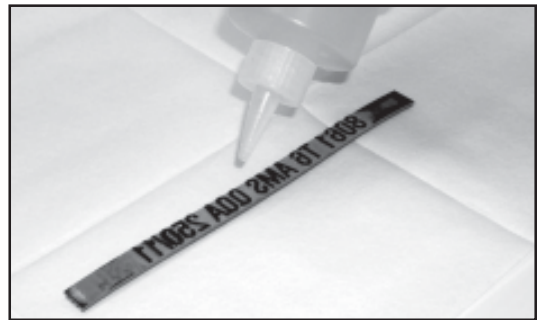
FIGURE 43

2- **Using the toothbrush, carefully scrub the face of the die to remove the contamination and old ink as shown. Add more soapy water as necessary and repeat the process until the die is clean. Rinse the dies in clean water.**
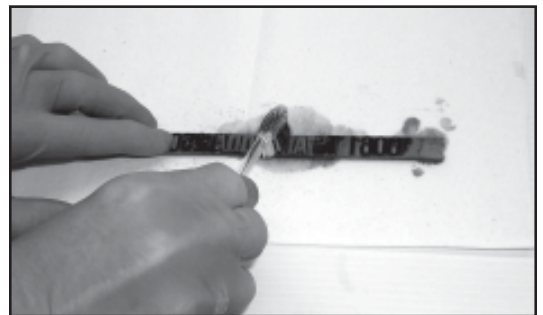
FIGURE 44

3- **Blot the surface of the die with a clean paper towel to dry and reinstall the clean dies on the coder.**
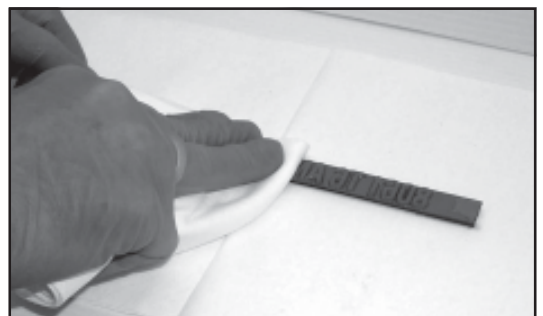
FIGURE 45

MOUNTING CONFIGURATION CONVERSION

RIGHT-HAND & LEFT-HAND FIELD CONVERSION

When ordering, right-hand or left-hand mounting configuration should be specified, however, the Midsize coder can be easily field converted.

RIGHT-HAND/LEFT-HAND FIELD CONVERSION: Universal Midsize Coders are assembled at the factory for either right-hand or left-hand mounting. If field conversion is required, the following steps will guide you through the conversion process:

1 - The coder should be installed and securely fastened in the mounting bracket during this process.

2 - Swing coder in the direction shown in Figure 46 to move the Spring Tension Arm Stop away from the Spring Tension Arm. Remove the socket head screw and the Spring Tension Arm Stop.

3 - Detach one end of the spring from the groove pin in the coder baseplate. Rotate coder to reposition the spring tension arm to the opposite side. Re-attach the spring to the other groove pin.

4 - Be sure both ends of the spring are properly seated in the grooves of the pins and swing coder outward and replace the spring tension arm stop and 1/4-20 socket head screw. Tighten the screw securely.

LEFT-HAND CONFIGURATION **RIGHT-HAND CONFIGURATION**

SWING CODER IN THIS DIRECTION TO RELEASE PRESSURE FROM THE SPRING TENSION ARM STOP

SWING CODER IN THIS DIRECTION TO RELEASE PRESSURE FROM THE SPRING TENSION ARM STOP

SPRING PIN

EXTENSION SPRING

SPRING TENSION ARM STOP

SPRING TENSION ARM

SPRING PIN

EXTENSION SPRING
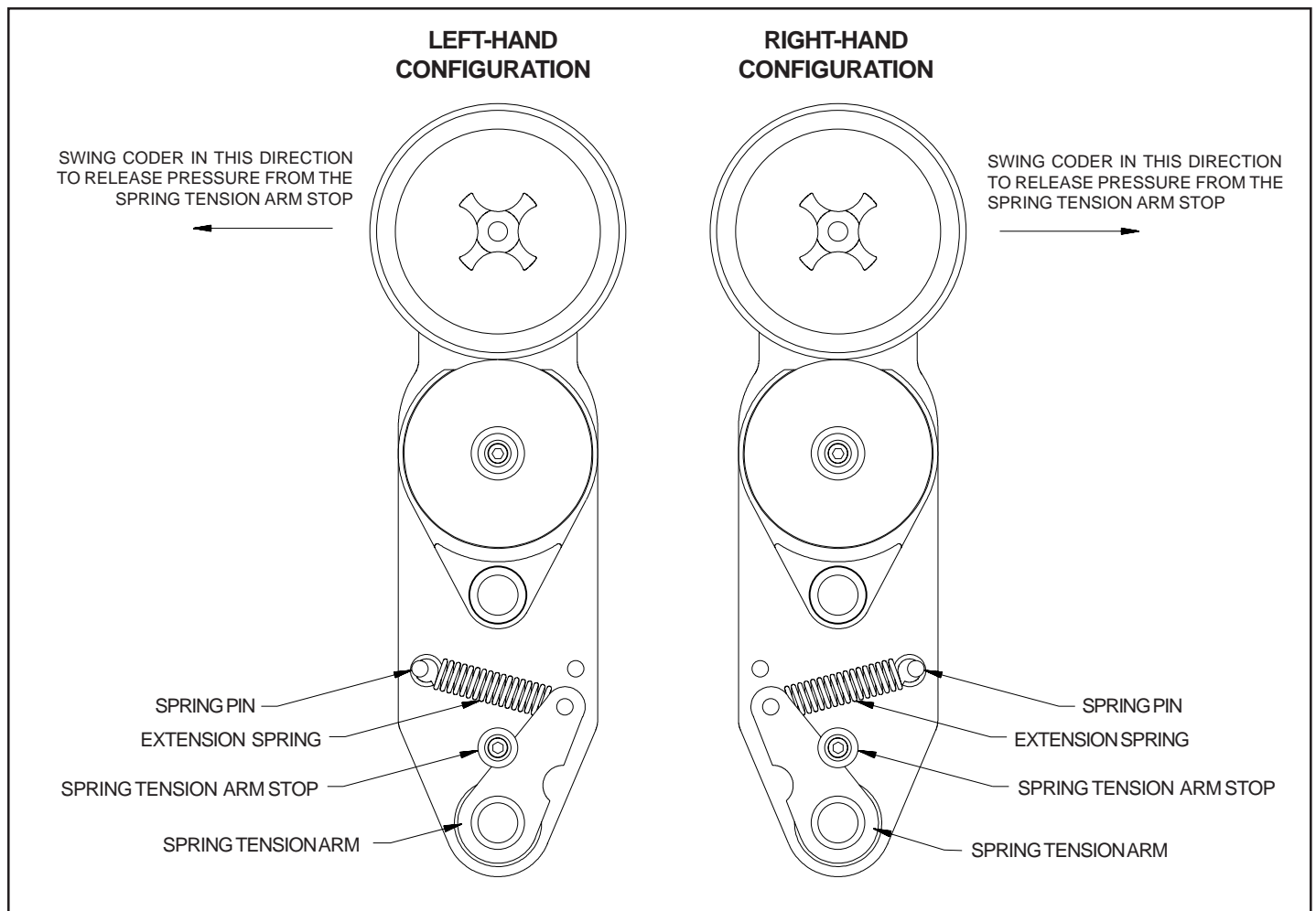
SPRING TENSION ARM STOP

SPRING TENSION ARM

FIGURE 46

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MOUNTING CONFIGURATION CONVERSION

CHANGING PRINT DRUM SIZES

The Universal Midsize Coders have been designed to accommodate three different print drum diameters. Models MS-120/MS-220 have a 12" circumference print drum, models MS-150/MS-250 have a 15" circumference print drum and models MS-180/MS-280 have a 18" circumference print drum. The Field converting from one model to the other is very quick and easy (See Figure 47).

NOTE: Models prior to January 1, 2011, cannot convert to the MS-180 or the MS-280, 18" print drum because the baseplates don't have slot #3.

1-**Remove the two mounting screws and delrin washers from the inking system baseplate. These items are located on either side of the bottom of the coder.**

2-**Lift the inking system assembly away from the coder baseplate and reposition the eccentric pin in the appropriate slot. 12" circumference print drums are positioned in slot # 1, 15" circumference print drums are positioned in slot # 2 and the 18" circumference print drums are positioned in slot # 3. Ensure the rectangular guide tab, on the bottom of the inking system, is seated in the guide slot on the coder baseplate.**

3-**Replace the two mounting screws and delrin washers in the inking system baseplate. Tighten screws just enough to allow the inking system to move by turning the inking system eccentric knob. If screws are over-tightened, adjustment of the transfer roll pressure will not be possible.**

4-**Unscrew the print drum knob and remove the print drum. Replace with the appropriate print drum and tighten the print drum knob.**

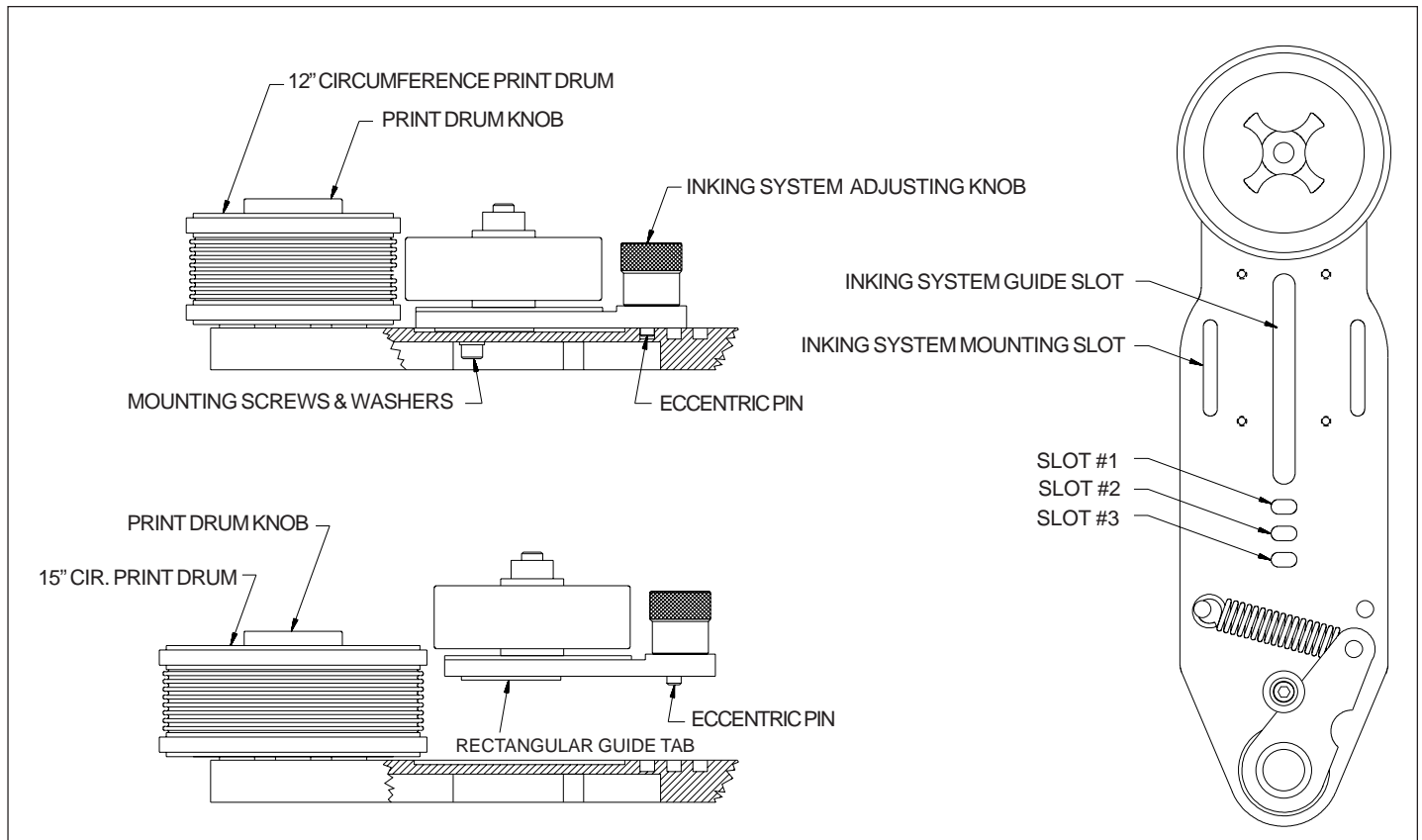5-**Re-adjust the transfer roll pressure, tighten mounting screws and begin printing.**

FIGURE 47

MIDSIZE RESERVOIR ROLL COVERS

TOP MOUNT RESERVOIR ROLL COVER

Top Mount Reservoir Roll Covers are mounting configuration specific. Top Mount Covers are available in both Right Hand & Left Hand versions.

RIGHT HAND TOP MOUNT ROLL COVER

PART NUMBER	QTY. REQD.	DESCRIPTION
MS-RRC1-RT	1	RIGHT TOP MOUNT RESERVOIR ROLL COVER - FOR MS-120, MS-150 & MS-180
MS-RRC1-LT		LEFT TOP MOUNT RESERVOIR ROLL COVER - FOR MS-120, MS-150 & MS-180
MS-RRC2-RT	1	RIGHT TOP MOUNT RESERVOIR ROLL COVER - FOR MS-220, MS-250 & MS-280
MS-RRC2-LT		LEFT TOP MOUNT RESERVOIR ROLL COVER - FOR MS-220, MS-250 & MS-280

SIDE MOUNT RESERVOIR ROLL COVER

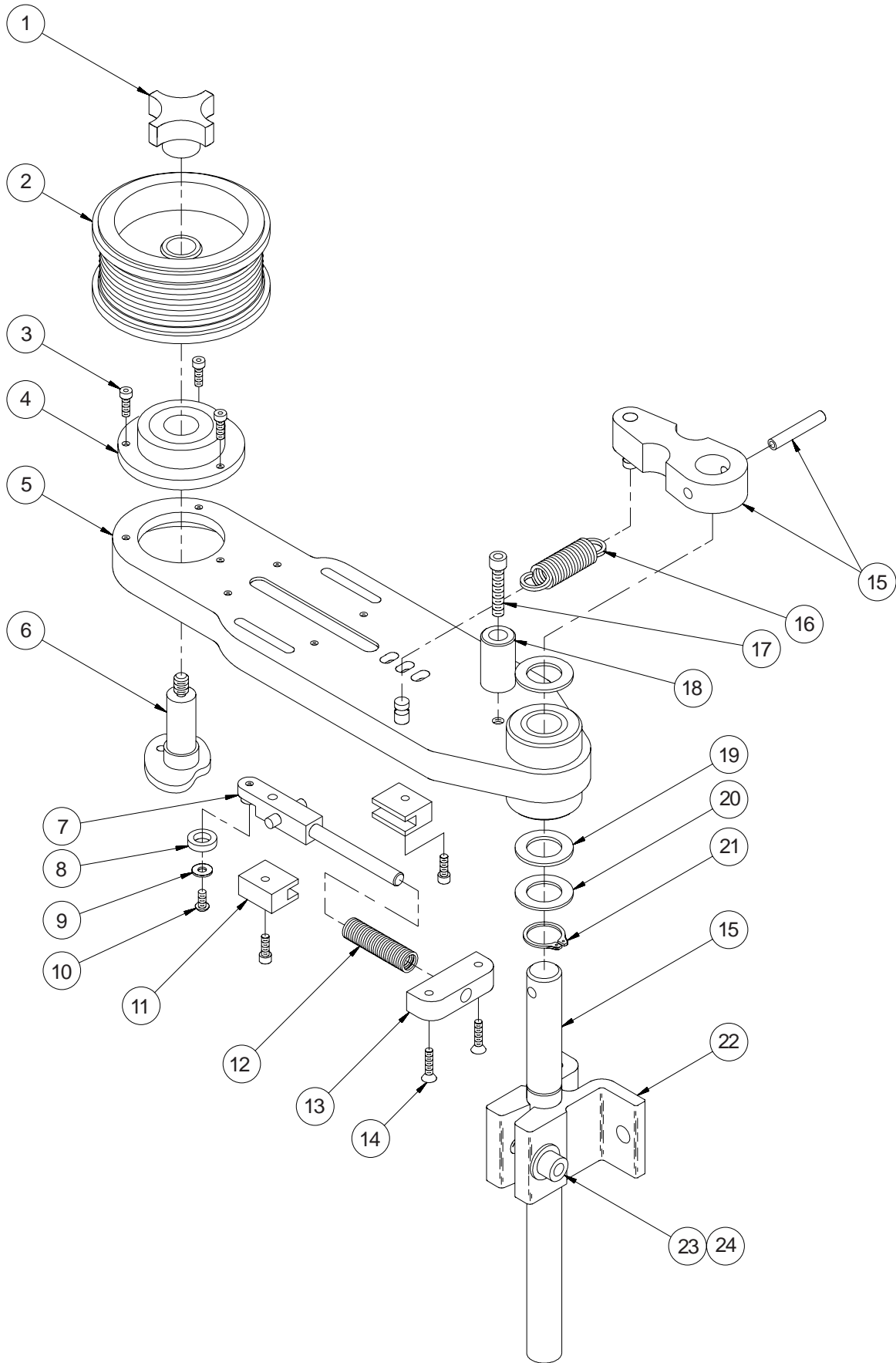Side Mount Reservoir Roll Covers are _not_ mounting configuration specific. The same Side Mount Covers can be used for both Right Hand & Left Hand coder models.

SIDE MOUNT ROLL COVER

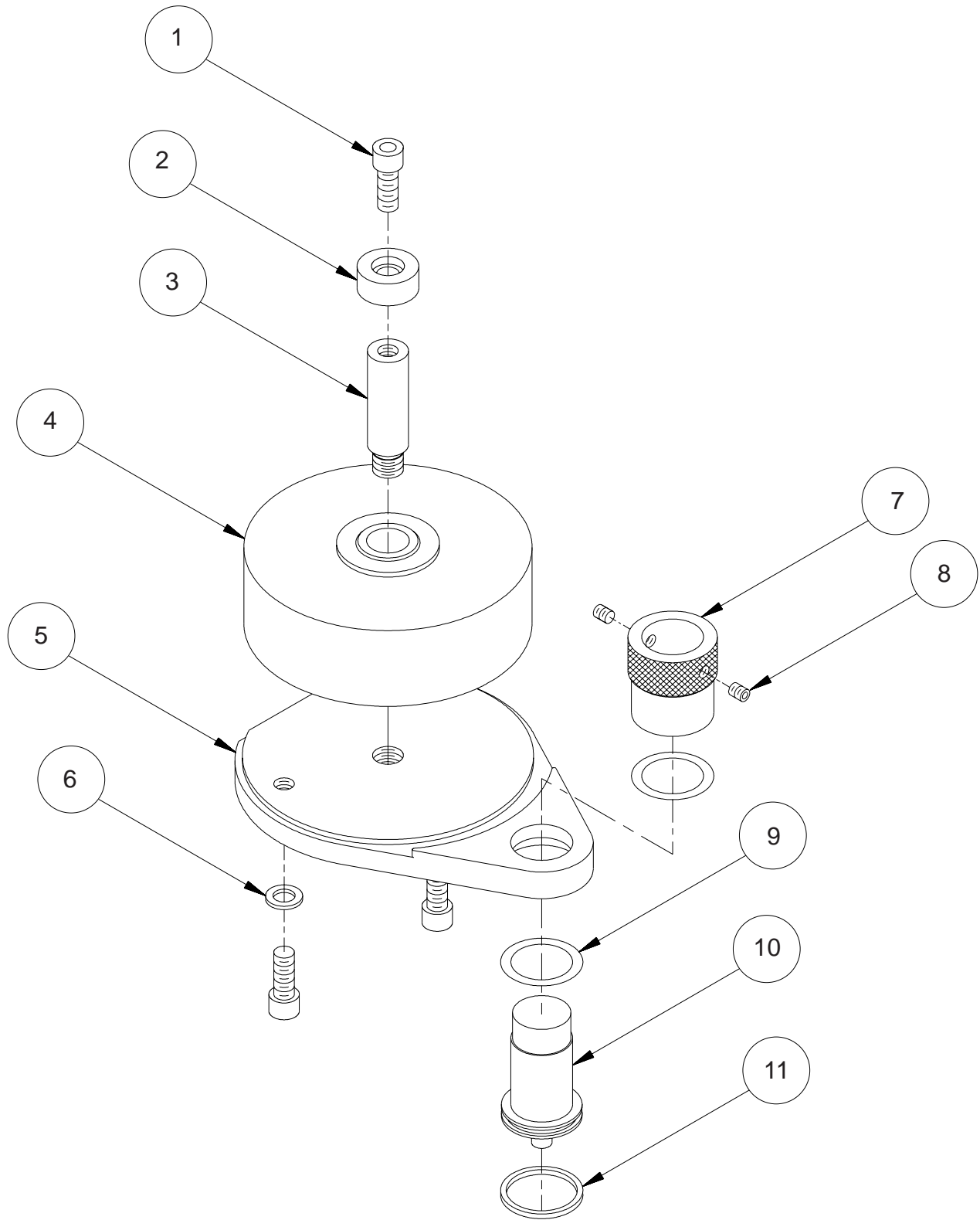| PART NUMBER	QTY. REQD.	DESCRIPTION
MS-RRC1	1	SIDE MOUNT RESERVOIR ROLL COVER - FOR MS-120, MS-150 & MS-180
MS-RRC2	1	SIDE MOUNT RESERVOIR ROLL COVER - FOR MS-220, MS-250 & MS-280

POROUS MIDSIZE CODER

KEY NO.	PART NUMBER	QTY. REQD.	DESCRIPTION
1	MRM-CL20	1	KNOB, PRINT DRUM
2	MSC-120-PDA	1	MS-120 POROUS PRINT DRUM ASSEMBLY
	MSC-150-PDA		MS-150 POROUS PRINT DRUM ASSEMBLY
	MSC-180-PDA		MS-180 POROUS PRINT DRUM ASSEMBLY
	MSC-220-PDA		MS-220 POROUS PRINT DRUM ASSEMBLY
	MSC-250-PDA		MS-250 POROUS PRINT DRUM ASSEMBLY
	MSC-280-PDA		MS-280 POROUS PRINT DRUM ASSEMBLY
	MSC-120-PDA-T		MS-120 POROUS PRINT DRUM ASSEMBLY, METRIC
	MSC-150-PDA-T		MS-150 POROUS PRINT DRUM ASSEMBLY, METRIC
	MSC-180-PDA-T		MS-180 POROUS PRINT DRUM ASSEMBLY, METRIC
	MSC-220-PDA-T		MS-220 POROUS PRINT DRUM ASSEMBLY, METRIC
	MSC-250-PDA-T		MS-250 POROUS PRINT DRUM ASSEMBLY, METRIC
	MSC-280-PDA-T		MS-280 POROUS PRINT DRUM ASSEMBLY, METRIC
3	MS-36	5	SCREW, 8-32 X 1/2" SHC (FOR INDEXING MODELS)
		3	SCREW, 8-32 X 1/2" SHC (FOR NON-INDEXING MODELS)
4	MSC-BHA	1	BEARING & HUB ASSEMBLY
5	MSC-BPA	1	BASEPLATE ASSEMBLY
6	MSC-ACA	1	AXLE & CAM ASSEMBLY (FOR INDEXING MODELS)
	MS-28		AXLE, PRINT DRUM (FOR NON-INDEXING MODELS)
7	MSC-CFA	1	CAM FOLLOWER ASSEMBLY
8	MS-18	1	BEARING, CAM FOLLOWER
9	MS-32	1	#8 FLAT WASHER
10	MS-33	1	SCREW, 8-32 X 3/8" BHS
11	MS-04	2	GUIDE, CAM FOLLOWER
12	MS-30	1	COMPRESSION SPRING
	MC-36	1	COMPRESSION SPRING - FOR MS-180 & MS-280 CODERS ONLY
13	MS-01	1	GUIDE, COMPRESSION SPRING SHAFT
14	MS-35	2	SCREW, 8-32 X 3/4" FHS
15	MSC-MCA	1	MOUNTING COLUMN ASSEMBLY
16	MS-31	1	TENSION ARM SPRING
17	CF-02	1	SCREW, 1/4-20 X 1-1/4" SHC
18	MS-15	1	STOP, SPRING TENSION ARM
19	CW-05	2	3/4" NYLON FLAT WASHER
20	CW-01	1	3/4" STEEL FLAT WASHER
21	CF-13	1	SNAP RING, 3/4" DIAMETER
22	CM-17	1	MOUNTING BRACKET
23	CF-09	1	SCREW, 3/8-16 X 1-1/2" SHC
24	CW-02	1	3/8" STEEL FLAT WASHER

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POROUS MIDSIZE CODER INKING SYSTEM

KEY NO.	PART NUMBER	QTY. REQD.	DESCRIPTION
1	MC-02	3	SCREW, 1/4-20 X 5/8" SHC
2	CM-01	1	AXLE CAP
3	MS-09	1	AXLE, 1-1/8" INK ROLL
	MS-55		AXLE, 2" INK ROLL
4	MS-MC1	1	1-1/8" MICROCELL INK ROLL
	MS-XC1		1-1/8" XF NEOPRENE INK ROLL
	MS-MC2		2" MICROCELL INK ROLL
	MS-XC2		2" XF NEOPRENE INK ROLL
5	MS-07	1	BASEPLATE, POROUS INKING SYSTEM
6	MS-29	2	DELRIN WASHER, MS INKING SYSTEM
7	NP-19	1	ECCENTRIC KNURLED KNOB
8	HP-06	2	SET SCREW, 8-32 X 3/16" CPS
9	HP-42	2	DELRIN WASHER
10	MSC-ISEA	1	ECCENTRIC ASSEMBLY
11	NP-21	1	O-RING, ECCENTRIC

POROUS MIDSIZE CODER 1-1/8" PRINT DRUM
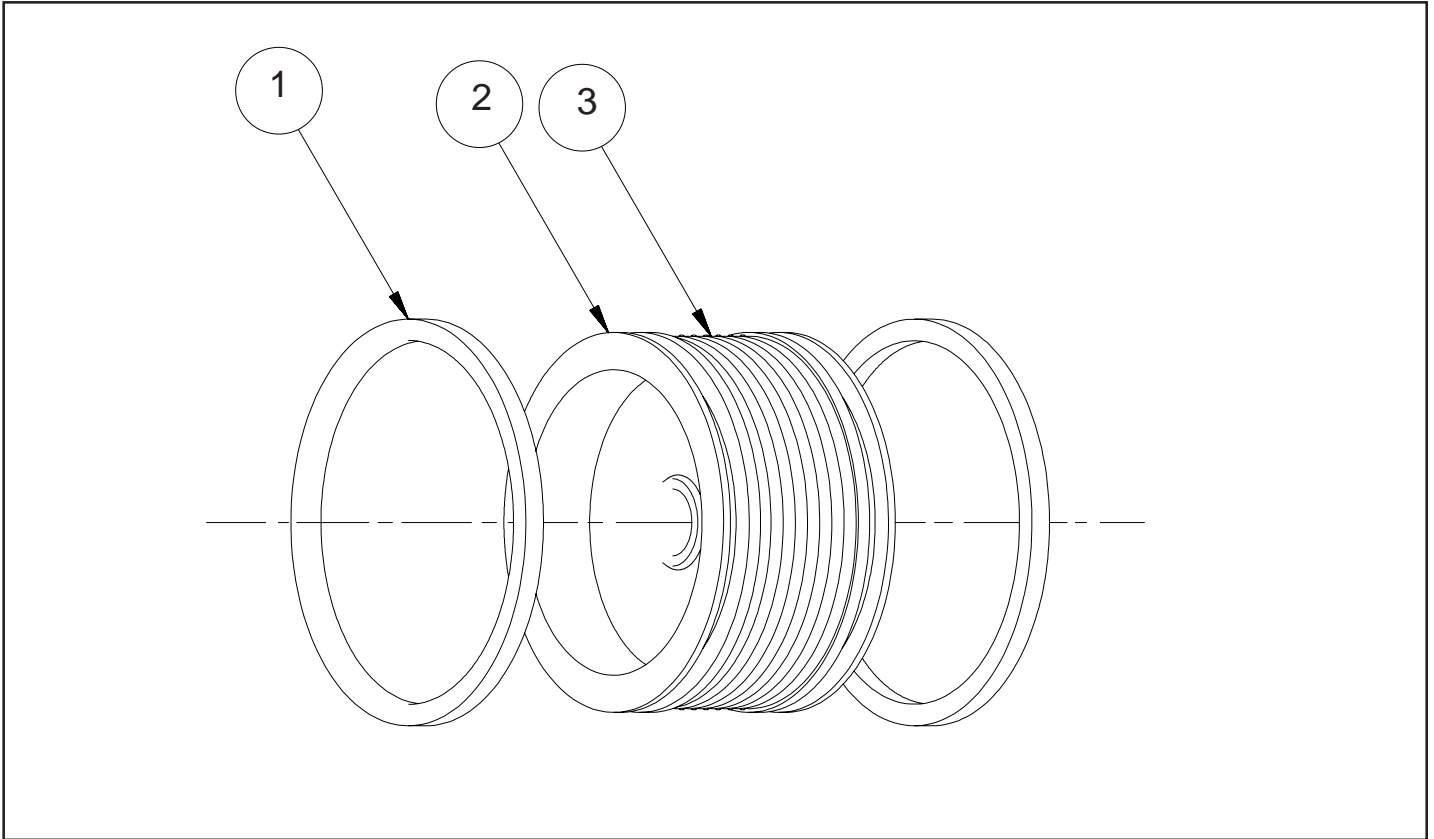
KEY NO.	PART NUMBER	QTY. REQD.	DESCRIPTION
1	MS-20	2	BEARER RING, MS-120
	MS-21		BEARER RING, MS-150
	CO-02S		BEARER RING, MS-180
2	PRINT DRUMS ONLY AVAILABLE IN COMPLETE PRINT DRUM ASSEMBLIES. SEE PAGES 28 & 29 (KEY 2)		
3	MS-11	1	RIBtype® RING, NON-POROUS MS-120
	MS-12		RIBtype® RING, NON-POROUS MS-150
	CLP-BL1		RIBtype® RING, NON-POROUS MS-180
	MS-11T		RIBtype® RING, NON-POROUS MS-120 - METRIC
	MS-12T		RIBtype® RING, NON-POROUS MS-150 - METRIC
	CLP-BL1T		RIBtype® RING, NON-POROUS MS-180 - METRIC

POROUS MIDSIZE CODER 2" PRINT DRUM
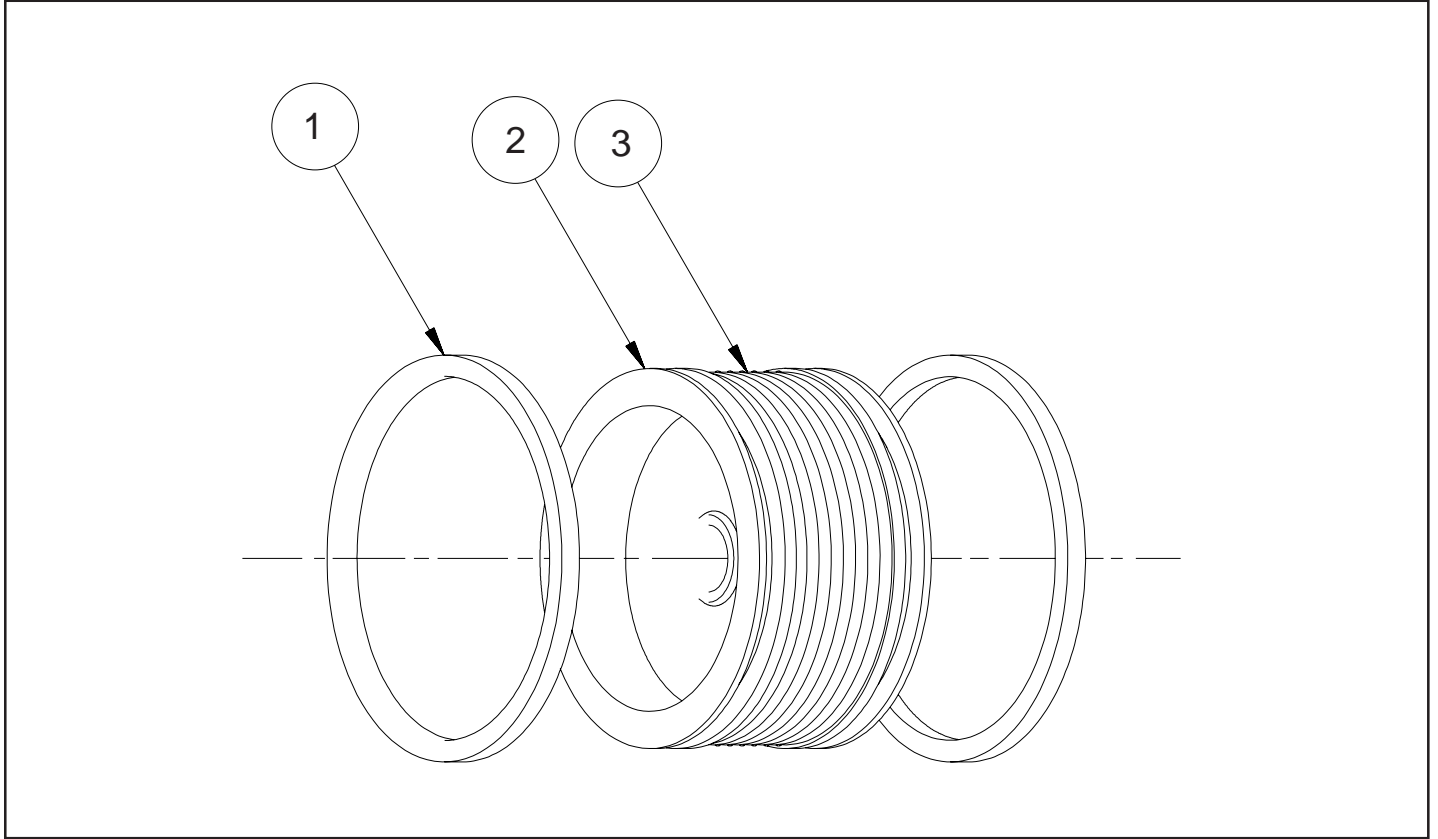
KEY NO.	PART NUMBER	QTY. REQD.	DESCRIPTION
1	MS-20	2	BEARER RING, MS-220
	MS-21		BEARER RING, MS-250
	CO-02S		BEARER RING, MS-280
2	PRINT DRUMS ONLY AVAILABLE IN COMPLETE PRINT DRUM ASSEMBLIES. SEE PAGES 28 & 29 (KEY 2)		
3	MS-47	1	RIBtype® RING, NON-POROUS MS-220
	MS-50		RIBtype® RING, NON-POROUS MS-250
	CLP-BL2		RIBtype® RING, NON-POROUS MS-280
	MS-47T		RIBtype® RING, NON-POROUS MS-220 - METRIC
	MS-50T		RIBtype® RING, NON-POROUS MS-250 - METRIC
	CLP-BL2T		RIBtype® RING, NON-POROUS MS-280 - METRIC