



## **OWNER'S MANUAL**

# **NON-POROUS WPNP-400NI & WPNP-400NI -T WEB PRINTERS**

**INSTALLATION - OPERATION - MAINTENANCE**



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## **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.

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### **- LIMITED WARRANTY -**

UNIVERSAL WPNP-400NI Web 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 WPNP-400NI & WPNP-400NI-T Non-Porous Web Printers meet the requirements for printing on non-porous continuous web materials. A 4" print width capacity and a 19.68" circumference print drum easily accommodates large logos and text messages. These coders are designed for top mount installations and are only available in a non-indexing (continuous print) model.

After many months of design engineering and field testing, these Non-Porous Web Printers are both simplistic in design and extremely effective in operation. Disposable by design, the Type MT Ink Rolls provide fast drying, permanent marks on plastic films, metal, rubber and glass materials. These rolls produce exceptionally dense black marks and yield up to 500,000 impressions in average usage; when the ink is depleted simply dispose of the roll and replace with a new one. A modular version of Universal's patented Non-Porous Inking System effectively eliminates the rapid evaporation of the ink solvents from the ink roll and additionally can be removed from the machine in seconds without the use of tools for off-line ink roll replacement. The relatively low cost of this system makes in-plant printing of all types of non-porous continuous web materials a practical reality.

The following pages of this manual explain the installation, operation and maintenance of the WPNP-400NI & WPNP-400NI-T Non-Porous Web Printers.

### ***QUICK START***

With a full understanding that very few people like to read manuals or have the time to do so, we have created a Quick Start manual which will get your coder operating in just a few minutes.

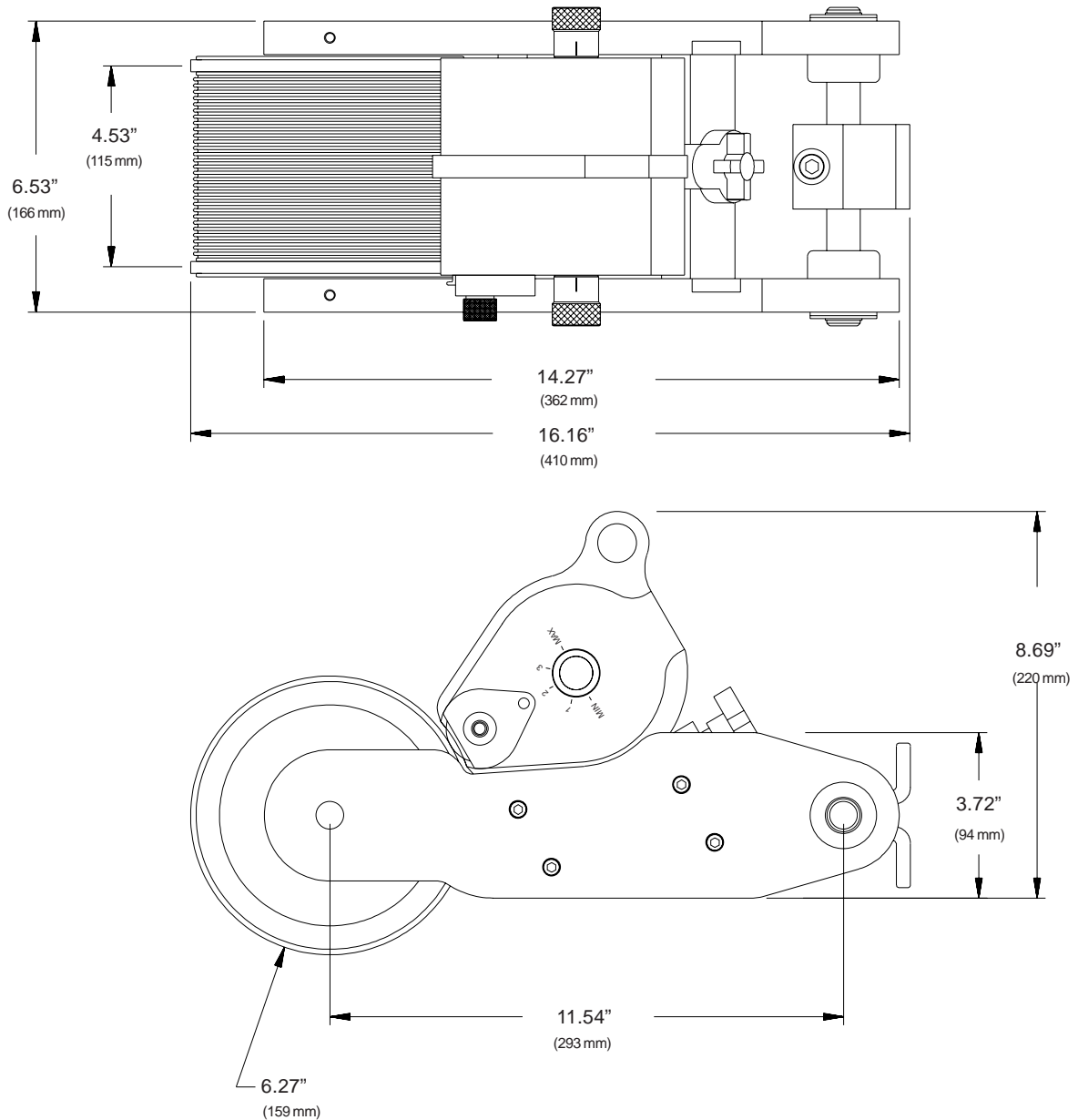
To keep your coder operating properly, it is important to read and understand this manual which explains the basic operation of this coder.

### ***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 Non-Indexing models and the mounting configuration.

# SPECIFICATIONS

## WPNP-400NI & WPNP-400NI-T SPECIFICATIONS



NET WEIGHT:	21 LBS. - 9 OZS. (9.78 KG.)
MAXIMUM DIE SIZE STANDARD:	4" (30 RIBS) X 19-1/8" LENGTH
MAXIMUM DIE SIZE METRIC:	100 MM (28 RIBS) X 430 MM LENGTH
PRINT DRUM CIRCUMFERENCE:	APPROXIMATELY 19.68" (500 MM) MEASURED AT THE DIE FACE

## SPECIFICATIONS

### ***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. The printing dies are produced in many standard character styles and sizes and are available in sets containing 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.

Dies are also available in “logo” form in which a complete text message is produced on a single piece of rib backed rubber. Logo dies are much faster to change and generally produce better print quality due to their unitized construction. Custom type styles, company logos, and trademarks can also be photographically reproduced from black and white art work.

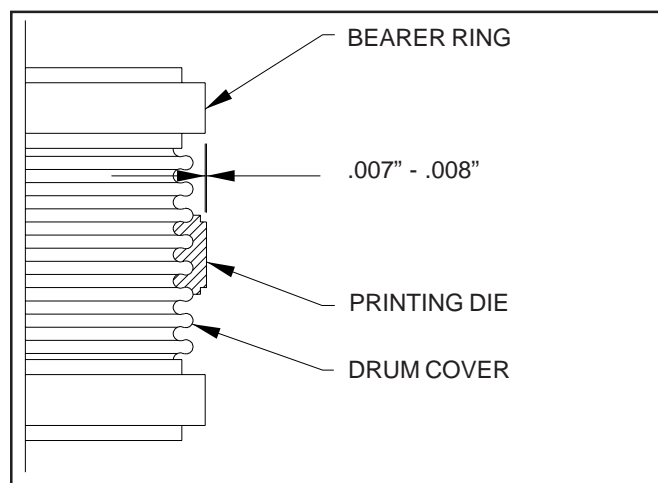


FIGURE 1

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 .007" - .008" beyond the radius of the Bearer Rings as shown in Figure 1. 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 will have a distinct pink color.

### ***TYPE MT INK ROLLS***

Type MT Ink Rolls are **disposable** pre-inked rolls which provide excellent color density and adhesion on most materials. These disposable rolls yield up to 500,000 impressions in average usage and will dry in 4 -7 seconds at 24 degrees C. ambient temperatures on most non-porous surfaces. The roll is simply installed on the coder and replaced when the ink capacity is depleted. The MT Ink Rolls contain a fast drying solvent based ink and are designed for use with our line of Non-Porous Web Coders.



FIGURE 2

## QUICK START

The WPNP-400NI Non-Porous Web Printers are designed for top mount installation to print on continuous non-porous web materials. To prepare the coder for use, the following steps should be followed.

### ***PREPARING THE CODER FOR INSTALLATION OF THE MT INK ROLL***

The WPNP-400NI-T Coders have been designed with an easily removable inking system. The Type MT Ink Rolls can be installed with the inking system on or off the coder. Install the Type MT Ink Roll as follows:

- 1 - Loosen the Inking System Locking Knob by turning the knob counter-clockwise approximately 1 revolution.



FIGURE 3

- 2 - Swing the Inking System Locking Assembly to the left (counter-clockwise) as shown.

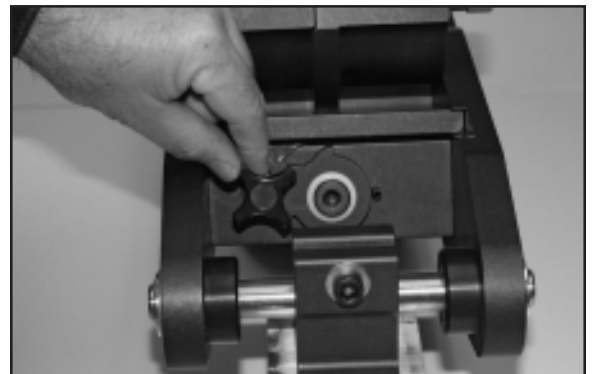


FIGURE 4

- 3 - The Inking System can be removed for off-line installation of the Ink Roll by grasping the Inking System Assembly by the lifting tab and pulling the Inking System out of the machine.



FIGURE 5

## QUICK START

- 4 -Remove the Knurled Retaining Nut by turning it in a counter-clockwise direction.



FIGURE 6

- 5 -Remove the Drive Wheel Cover by lifting it straight off the axle and locating pin.



FIGURE 7

- 6 -Remove the Knurled Drive Wheel.

**Note:** The Knurled Drive Wheel is installed on the top of the Anilox Roll and is engaged by 3 stainless steel drive pins.



FIGURE 8

- 7 -Remove the Inking System Cover by carefully pulling the Cover straight off the axle. Be very careful not to let the cover drag across the surface of the Anilox Roll during removal.

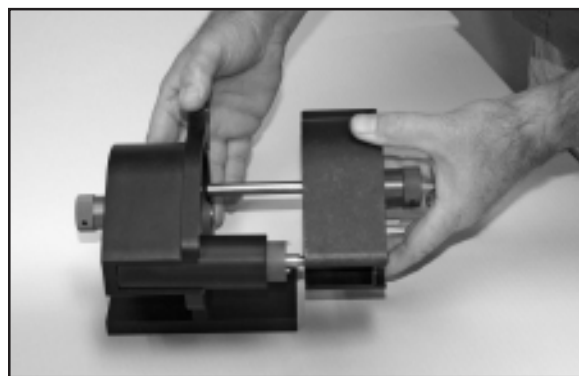


FIGURE 9

## QUICK START

### PREPARING THE TYPE MT INK ROLLS FOR INSTALLATION

The Type MT Ink Rolls are pre-inked at the factory and are packaged in heat sealed bags. Do not open the bags until you are ready to use the ink roll.

Please note that the Type MT Ink Rolls are normally packaged in a very wet condition. Although the shelf life of the ink roll is extended by packaging them in this manner, the excess ink must be removed before installation on the coder to prevent dripping inside the Inking System Assembly. Rubber gloves should be worn during this process and be aware that some liquid ink may drip out of the bags when the rolls are removed.

- 1 -Remove the Ink Roll from the package by carefully cutting the top and one side of the bag with scissors.



FIGURE 10

- 2 -Using a small diameter rod (a screwdriver with a round shaft works nicely) insert the rod through the center holes of the roller bushings and lift the roll out of the bag.

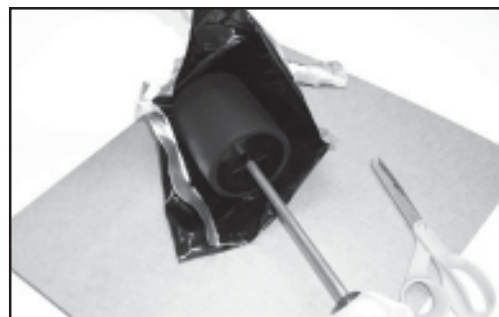


FIGURE 11

- 3 -Roll the Ink Roll several times across a scrap piece of cardboard while applying light pressure. Continue this process as necessary until the surface of the roll no longer looks wet with ink.

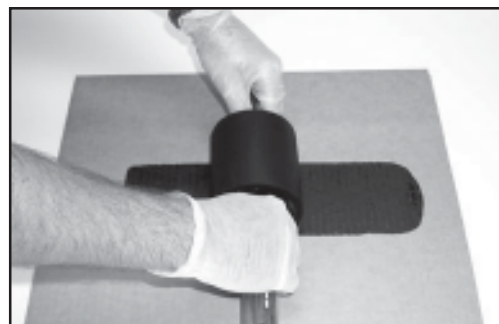


FIGURE 12

- 4 -Inspect the ends of the roll and if necessary, use a paper towel to blot off any excess ink.



FIGURE 13



## QUICK START

### INSTALLING THE TYPE MT INK ROLL

**1 -Rotate the Ink Roll Eccentric Knob on the Inking System Cover to the “MIN” position.**

In this position, the ink roll will not touch the Anilox Roll when the cover is reinstalled.

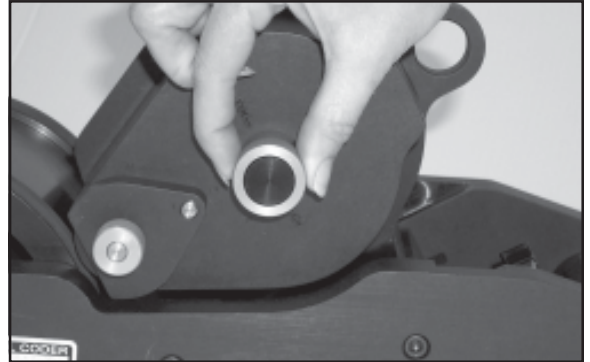


FIGURE 14

**2 -While holding the Inking System Cover in one hand, slide the Ink Roll onto the Ink Roll Axle.**

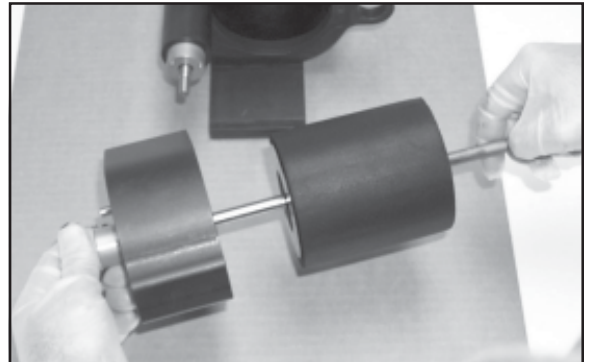


FIGURE 15

**3 -Carefully guide the Cover Assembly onto the Inking System being careful not to scratch the surface of the Anilox roll in the process.**

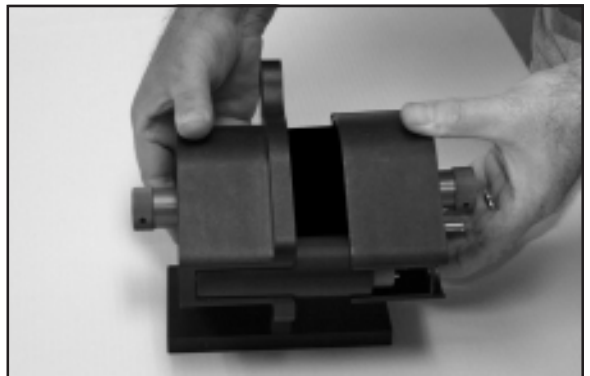


FIGURE 16

## QUICK START

- 4 -When the cover assembly is properly positioned against the Inking System Assembly, replace the Knurled Drive Wheel.**

Carefully align the 3 stainless steel pins on the top of the Anilox Roll with the 3 holes in the Knurled Drive Wheel. When the Knurled Drive Wheel is properly engaged, the top of the stainless steel pins will be approximately even with the top surface of the Knurled Drive Wheel.

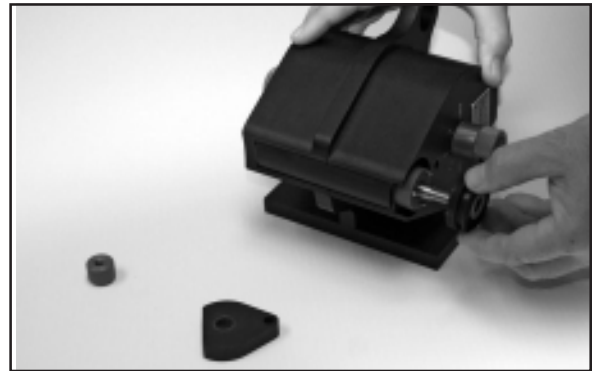


FIGURE 17

- 5 -Replace the Drive Wheel Cover by aligning the two holes in the cover with the Anilox Roll Axle and the Stainless Steel Locating Pin. Ensure that the cover is positioned completely against the Inking System Cover.**



FIGURE 18

- 6 -While holding the Drive Wheel Cover in position, replace the Knurled Retaining Nut. The Knurled Nut should be just tight enough to hold the Drive Wheel in place. Do not over tighten this nut.**

The inking system is now ready for final adjustment and use.

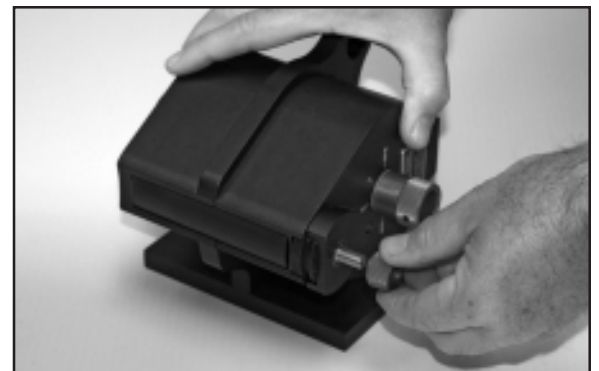


FIGURE 19

## QUICK START

### ***REINSTALLING THE INKING SYSTEM ON THE CODER***

- 1 -Align the Inking System baseplate with the two slots on the inside of the Coder Side Frames and slide the Inking System into the coder.



FIGURE 20

- 2 - Rotate the Inking System Locking Assembly to the vertical position and lightly tighten the Locking Knob.



FIGURE 21

## QUICK START

### INSTALLING THE PRINTING DIES

**1-To install Printing Dies on the Print Drum, first mix a solution of water with a small amount of liquid dishwashing detergent to serve as a lubricant. This will make the installation of the die much easier. Using a sponge saturated with this mixture, moisten the ribs on the back of the die.**

Do not use any other lubricants such as silicone or oil on the printing dies.



FIGURE 22

**2 -Align the ribs on the back of the printing die with the grooves in the Drum Cover. Starting with one end, firmly press the die into the drum cover until fully engaged. Continue pressing the ribs together, working from one end of the die towards the other.**

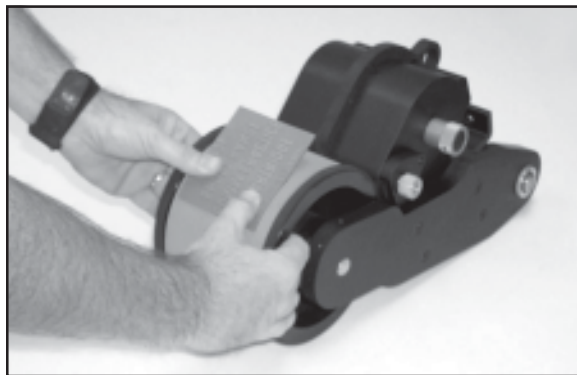


FIGURE 23

**3 - While rotating the Print Drum by hand or under power, slowly rotate the Ink Roller Eccentric Knob from the "MIN" towards the "MAX" position and observe the face of the printing dies for ink. Proper adjustment should be reached at a position between the "2" and "3" reference numbers.**

The Ink Roller Eccentric moves the Ink Roll into contact with the Anilox Roll. The Eccentric should not be turned any more than necessary to apply a uniform coating of ink to the die face.

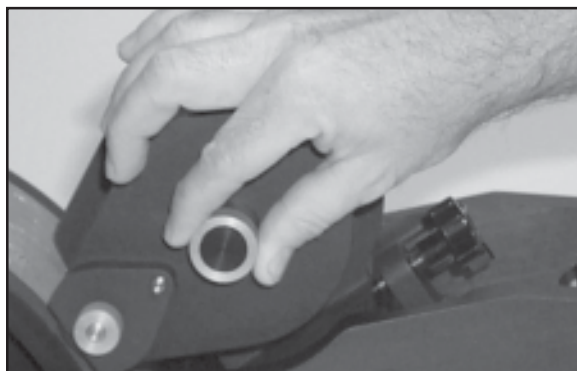


FIGURE 24

## QUICK START

### INKING SYSTEM POSITION ADJUSTING KNOBS

- 1 -There are 2 Position Adjustment Knobs on the Joining Bar at the bottom of the slots with threaded shafts which contact the front of the Inking System Baseplate. These knobs have been roughly set at the factory but may require fine adjustment when the system is first used.

*Do not adjust these Knobs unless the print quality indicates a need to do so.*

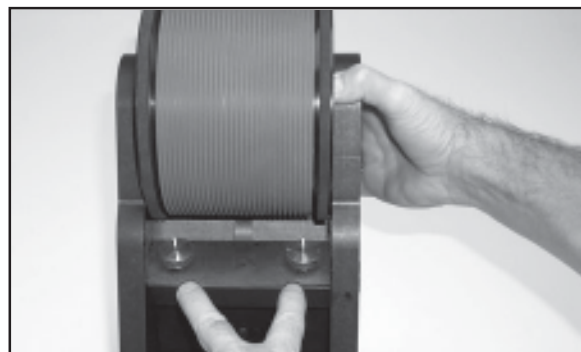


FIGURE 26

The Position Adjusting Knobs serve two functions. First, they provide adjustment for the contact pressure between the Anilox Roll and the face of the Printing Dies. The Anilox Roll should contact the face of the printing dies with just enough contact pressure to properly transfer ink. Secondly, the Adjusting Knobs allow for a small degree of angular alignment between the Anilox Roll and the face of the printing dies. The surface of the Anilox Roll must be adjusted exactly parallel with the face of the Printing Dies in order to ensure uniform transfer of ink across the full width of the Print Drum. If adjustment is required, loosen the Inking System Locking Knob and make small adjustments to the Position Adjusting Knobs. Re-tighten the Inking System Locking Knob and check the print quality. After the correct adjustment has been made, the Position Adjusting Knobs should require no further adjustment.

### INSTALLING THE CODER

The WPNP-400NI Coder should be installed in the approximate orientation above the moving web of material as indicated in the drawing below. Use two 3/8" diameter bolts to attach the coder's mounting bracket to a rigid mounting plate. Ensure that the coder is aligned to track parallel with the web material and that both Rubber Bearer Rings on the Print Drum contact the web with equal pressure.

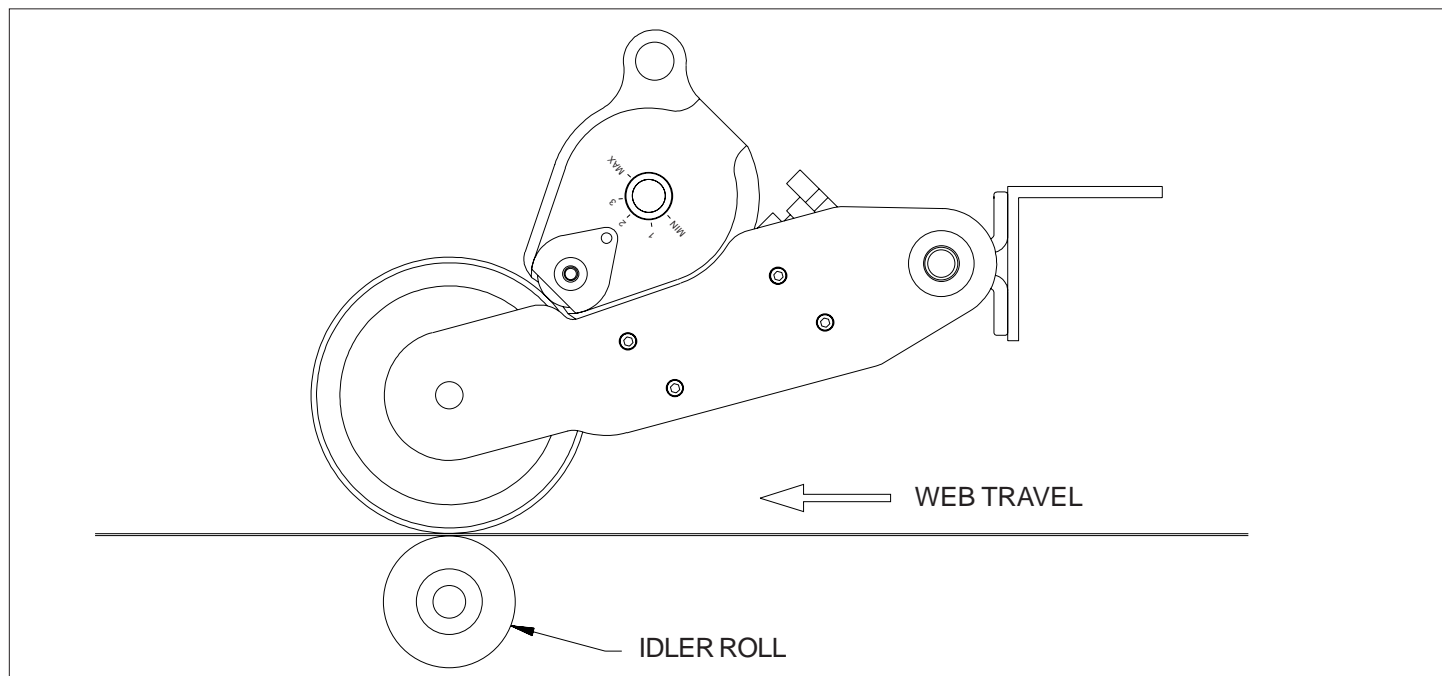


FIGURE 25

## MAINTENANCE

### CLEANING THE CODER

The surface of the transfer roll is made from DuPont Delrin material and the O.D. of the roll is finely engraved which enables it to hold a uniform film of ink. This surface material is very fragile and under no circumstances should you attempt to clean it with anything abrasive.

**Warning:** *Most of the ink solvents used for cleaning are flammable liquids. Follow all safety precautions recommended by the manufacturer during this process.*

- 1 -Periodically, the inking system should be disassembled and inspected for ink residue and dust contamination. To remove ink contamination from the surface of the machine, moisten a soft cotton cloth with the appropriate ink solvent and rub it across the contaminated area.

The frequency of required cleaning can be greatly reduced if the inking system is kept in proper adjustment during normal operation and if the ink roll does not become over saturated with ink.

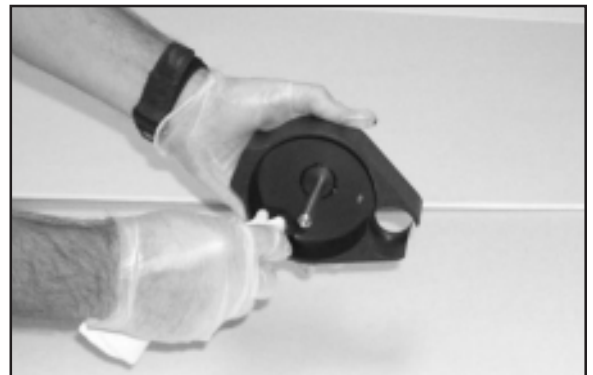


FIGURE 27

### CLEANING THE TRANSFER ROLL

**DO NOT SUBMERGE THE TRANSFER ROLL IN SOLVENT!**

- 1 -To clean dust and ink residue from the surface of the transfer roll, first remove it from the coder. Lightly saturate a soft cotton cloth with the appropriate ink solvent and gently rub the surface of the roll until it is clean.

If the transfer roll is submerged in solvent, the bearings will be permanently damaged.



FIGURE 28

# MAINTENANCE

## CLEANING THE PRINTING DIES

All inks which are formulated for printing on non-porous surfaces contain a resin binder which bonds the dye or pigment in the ink to the surface of the material being printed. As the ink begins to dry, this binder becomes “tacky” or “sticky”. While in this stage of the drying process, the tack on the dies will tend to pick up both airborne dust and any dust or dirt on the surface of the material being printed. When this happens, the dies should be cleaned or replaced. The easiest method of cleaning the dies requires the appropriate solvent for the ink being used, a pair of rubber gloves, safety glasses, an apron to protect your clothing is recommended, a toothbrush, some clean paper towels and a plastic bag to protect your workbench from staining. (Naturally, the toothbrush will never be suitable for oral hygiene use after this process.)

After some period of use, the accumulation of contaminants on the dies will cause degradation of the print quality; cleaning the printing dies, excluding excessive wear to the die face, will restore the print quality of the coder.

- 1 - Place the contaminated Printing Die on top of several layers of paper towels to absorb the excess solvent. Pour just enough solvent on the face of the printing die to cover the die face.**

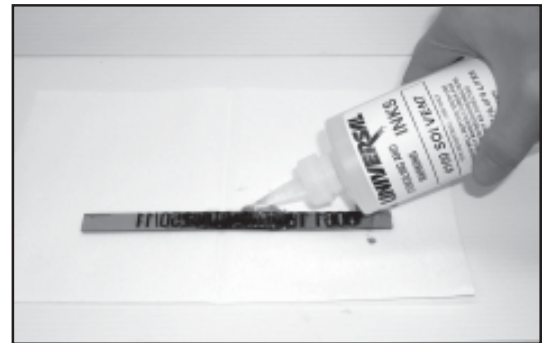


FIGURE 29

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

Do not submerge or soak the dies in solvent as this may cause swelling of the rubber compound.



FIGURE 30

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

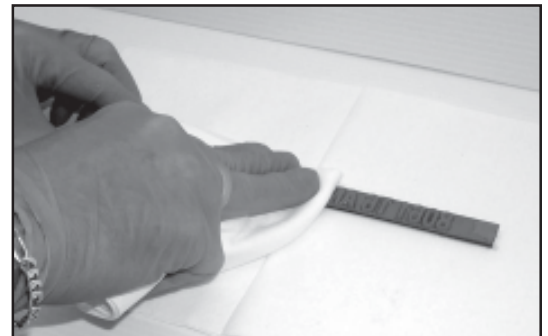
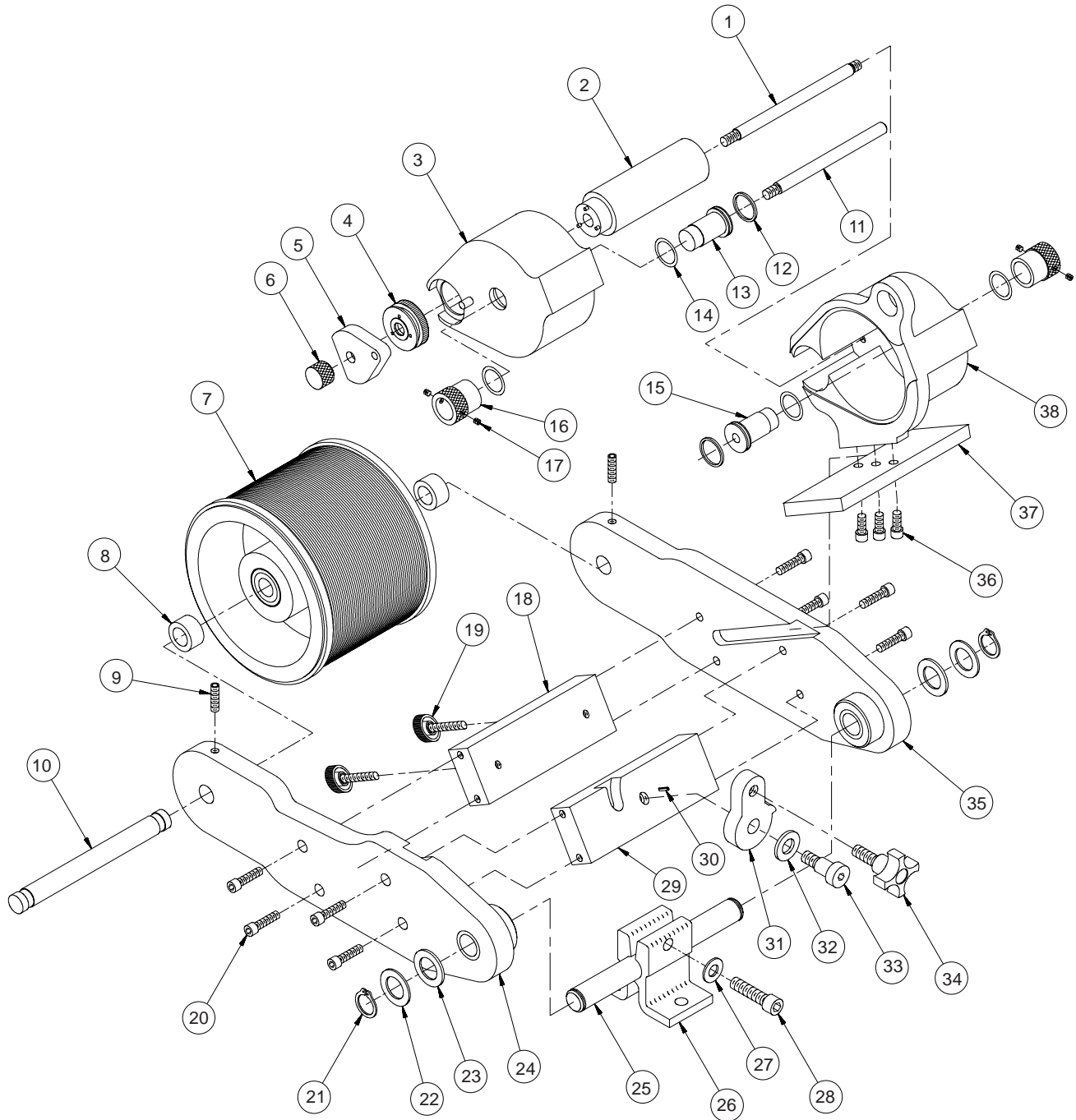


FIGURE 31



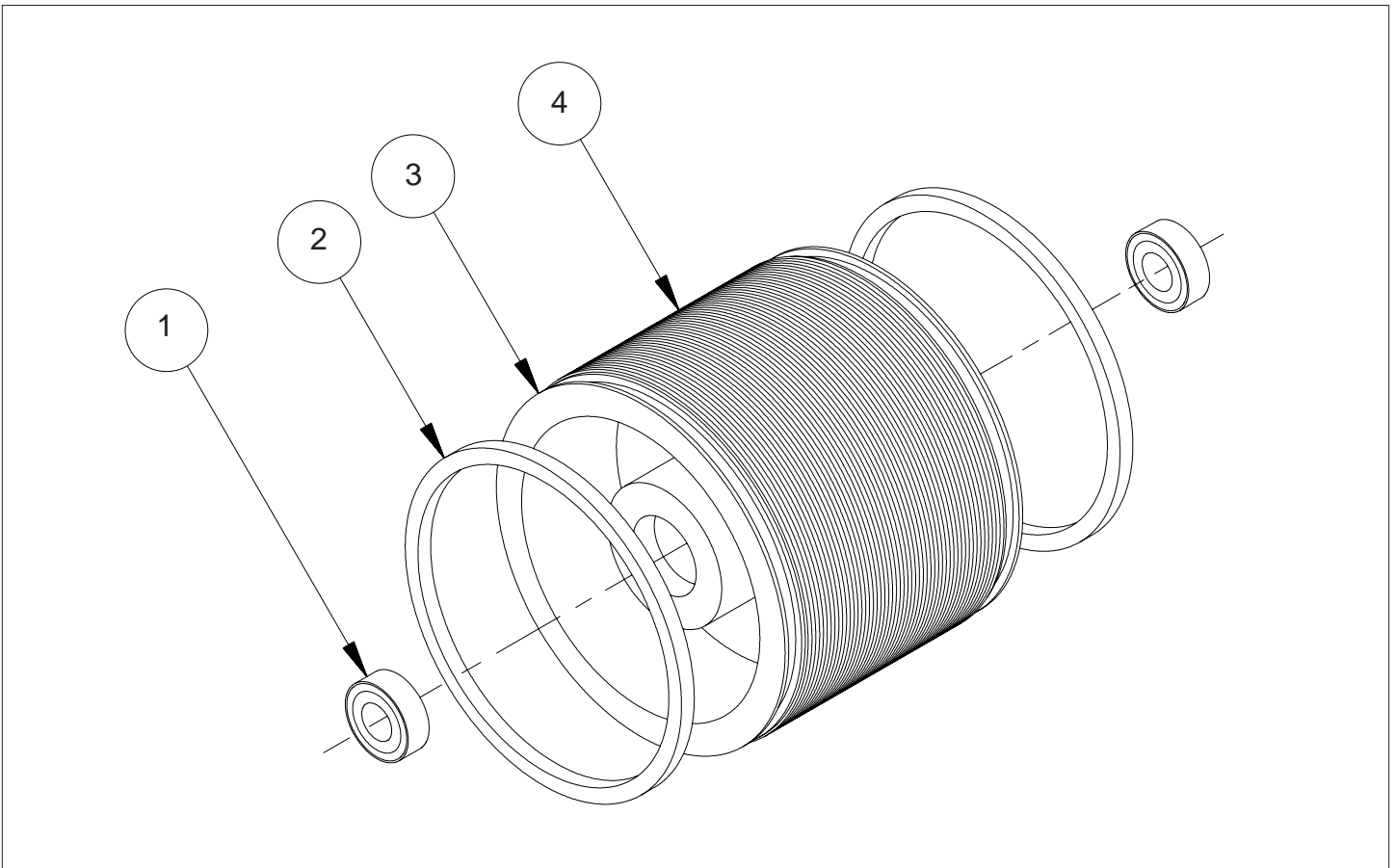
# WPNP-400NI & WPNP-400NI-T NON-POROUS WEB PRINTER





KEY NO.	PART NUMBER	QTY. REQD.	DESCRIPTION
1	WPNP-009	1	4" TRANSFER ROLL AXLE
2	WPNP-TRA-4	1	4" TRANSFER ROLL ASSEMBLY
3	WPNP-CA2	1	NP COVER ASSEMBLY
4	NP-14	1	KNURLED DRIVE WHEEL W/DEL RIN WASHER
5	WPNP-011	1	DRIVE WHEEL COVER
6	NP-17	1	COVER RETAINING KNOB
7	WPNP-400NI-PDA	1	PRINT DRUM ASSEMBLY - STANDARD
	WPNP-400NI-PDA-T		PRINT DRUM ASSEMBLY - METRIC
8	WPNP-022	2	PRINT DRUM DEL RIN AXLE SPACER
9	WPNP-020	2	SET SCREW - 1/4-20 X 1.00" LG.
10	WPNP-021	1	4" PRINT DRUM AXLE
11	WPNP-038	1	4" INK ROLL AXLE
12	NP-21	2	O-RING, ECCENTRIC
13	NP-20C	1	ECCENTRIC, INK ROLL
14	HP-42	4	DEL RIN WASHER
15	WPNP-039	1	ECCENTRIC, INK ROLL (MODIFIED)
16	NP-19	2	ECCENTRIC KNURLED KNOB
17	HP-06	4	SET SCREW, 8-32 X 3/16"
18	WPNP-014	1	JOINING BAR "A"
19	WPNP-PAK	2	POSITION ADJUSTING KNOB
20	CR-13	8	SCREW, 1/4-20 X 1.0" SHC
21	CF-13	2	SNAP RING FOR 3/4" SHAFT
22	CW-01	2	3/4" STEEL FLAT WASHER
23	CW-05	2	3/4" NYLON FLAT WASHER
24	WPNP-SFA	1	SIDE FRAME "A"
25	WPNP-025	1	MOUNTING SHAFT
26	CM-17	1	BRACKET, MOUNTING COLUMN
27	CW-02	1	3/8" STEEL FLAT WASHER
28	CF-09	1	SCREW, 3/8-16 X 1-1/2" SHC
29	WPNP-015	1	JOINING BAR "B"
30	CR-16	1	COMPRESSION PIN
31	WPNP-016	1	PIVOT LOCK
32	WPNP-032	1	DEL RIN LATCH WASHER
33	WPNP-019	1	PIVOT LOCK SHOULDER SCREW
34	WPNP-LKA	1	LOCK KNOB ASSEMBLY
35	WPNP-SFB	1	SIDE FRAME "B"
36	MC-02	3	SCREW, 1/4-20 X 5/8" LG. SHC
37	WPNP-029	1	INKING SYSTEM MOUNTING PLATE
38	WPNP-040	1	NP COVER, STATIONARY

**WPNP-400NI -PDA & WPNP-400NI-PDA-T  
NON-POROUS WEB PRINTER PRINT DRUM**



KEY NO.	PART NUMBER	QTY. REQD.	DESCRIPTION
1	CB-04	2	BEARING, PRINT DRUM
2	WPNP-024	2	RUBBER BEARER RING , PRINT DRUM (SQUARE CUT)
3	WPNP-004	1	PRINT DRUM FOR STANDARD RIBtype®
	WPNP-004T		PRINT DRUM FOR METRIC RIBtype®
4	WPNP-023	1	RIBtype® DRUM COVER - STANDARD
	WPNP-023T		RIBtype® DRUM COVER - METRIC

