Variable Data Printing (VDP) is a powerful tool that allows you to customize printed materials with unique information for each piece in a print run. This technology not only enables you to alter text, images, graphics, and other elements within the art, but it also does so without halting or slowing down the printing process, providing you with a seamless and efficient solution.

Empire's digital capabilities can produce variable data on rolls and sheets, providing flexibility to meet our diverse customer needs. Variable data has become integral to OEM and POP marketing needs. It is used to create highly personalized and targeted communications, including custom product labels with unique barcodes, QR codes, serializing, images, or product information. Some examples of uses include warehouse labels, equipment ID, parking passes, event and ticket passes, and instructional materials.

This versatility ensures that businesses in the OEM and POP markets can receive tailored solutions that enhance their operations and customer engagement efforts.

DIFFERENT TYPES OF VARIABLE DATA:

- **Serializing numbers**
- **Linear Barcodes**
- **2D Barcodes (Ex: QR Codes, Datamatrix Codes)**
- **Images**
- **Variable Data that is not sequential:**
  names, titles, addresses, descriptions, numbers, letters, etc.

BARCODES AT A GLANCE

LINEAR BARCODES:
- There are many types of linear barcodes, but the most commonly used are: Code 39, Code128 and UPC12.

QR CODES:
- The smallest QR Code (for a smartphone to read) is .4" x .4", but .8" x .8" (2 x 2 cm) is recommended.
- The smallest printable QR Code MODULE (the individual squares in the QR code) is .001" (.03 mm)

DATA MATRIX CODES:
- The smallest printable Data Matrix Code is .494" x .494" (10 x 10 modules).

QUIET ZONES
- Quiet Zones are needed for barcode readability. This is a white space around the code (if on a color background) or an area free of other graphics. Zones are based on the smallest element within the barcode - usually one data square (module) or one stripe:
  - ▶ **QR BARCODES:** 4x (per side) the width of one module (min. 2x)
  - ▶ **DATA MATRIX BARCODES:** 2-4x (per side) the width of one module (min. 1x)
  - ▶ **LINEAR BARCODES:** 10x (per side) of the smallest stripe

Datamatrix

ONE KEY
10000014
48-21-0001

Serializing

Patent information:
seasucker.com/pages/patents

Variable Data   *Image*

S-1901A
0001
0002
0003
BOLT, SQHB, FRT METRIC
001
USAGE: LINE 2 – OP 100

QR Code

PAY WITH YOUR PHONE
See room poster for details. To start the machine, follow the prompt in the app to:
Scan QR Code OR Enter Number
01
CLEAN CASH
Download the Clean Cash app to get started

QR Code

MCKESSON
Serial No. 17031001
McKL261211

MADE IN THE USA

(01)00855887006863
(21)00000001
DIAL FLOWMETER
NO FLOW BETWEEN SETTING
O₂   50 PSIG
PRECISION
300 Held Drive
Made in

OPERATING PRESSURE:
0-300 PSI (20 BAR)
TFT.com/ 123456
OPEN
CLOSED
REF   7MFA
Y7319
MADE IN USA • tft.com

Property of
CHRISTUS Southeast Texas
Hospital - Orange
CHRISTUS Health
CH8212750
409-792-6500

Linear Barcode

ISO 9001 CERTIFIED
GREEN TIER

CHECKLIST FOR SENDING VARIABLE DATA:

DATA INFORMATION (Data is required to be able to create ALL variable art)

☐ **SEQUENTIAL DATA** (numbers in order): provide the starting number and quantity. Any prefix or suffix information (Ex: **CH-**001, **CH-**002, **CH-**003) should be provided.

☐ **NON-SEQUENTIAL DATA** (data is random): send a **.csv or .xls file** with all information needed. This could include numbers, names, descriptions, images, barcodes, etc.

☐ **WHEN SENDING A DATA FILE:**
ROWS represent all the variable data needed on just one decal.
The 1st row will always be your header information and will not print on the decal.
COLUMNS represent a particular area (field) of data used on each decal.

HEADER INFO
ONE DECAL

	A	B	C	D
1	Component	Description	Barcode	Usage
2	S-1901A	BOLT, SQHB, FRT METRIC	S-1901A	L010
3	G-9878A	WASTER, .312 EXT STAR	G-9878A	L033
4	C-0679B	CLAMP, TUBING - .500	C-0679B	L435

Data Field (different info but same location on each decal)

SERIALIZING NUMBERS ONLY

☐ **DATA:** provide sequence/quantity needed or send a .csv/.xls file as stated above.

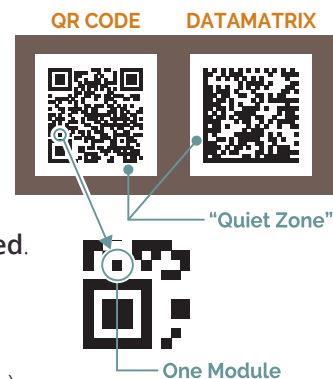☐ Provide font style and size needed for the serializing.

LINEAR BARCODES

☐ **DATA:** provide sequence/quantity needed or send a .csv/.xls file as stated above.

☐ Supply **type of barcode** needed (Ex: Code39, UPC12). If not sure, provide a sample.

☐ Indicate if the barcode information should also print with the barcode.

BARCODE ONLY   BARCODE & INFO
654321
"Quiet Zone"

2D CODES

☐ **DATA:** provide sequence/quantity needed or send a .csv/.xls file as stated above.

☐ Supply **type of barcode** needed (Ex: QR Code or Datamatrix). If not sure, provide a sample.

☐ **Websites:** provide entire website links in the .csv or .xls file.

QR CODE   DATAMATRIX
"Quiet Zone"
One Module

VARIABLE DATA (Ex: Names, Titles, Descriptions, Addresses, etc.)

☐ **DATA:** send a .csv or .xls spreadsheet file with all variable data, **exactly as you want it printed**.

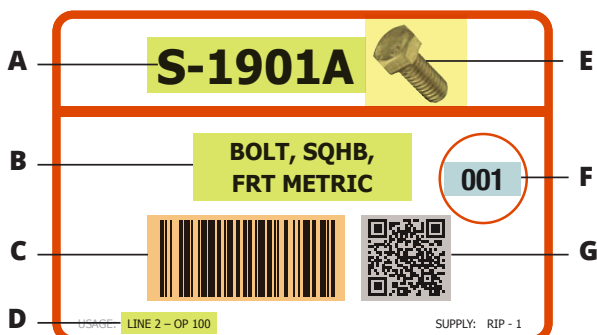☐ Each variable data field on a decal should be listed in separate columns (see example below).

IMAGES

☐ **DATA:** send a .cxv or .xls spreadsheet file with exact filenames and extensions (Ex: Sunrise.jpg)

☐ Image files must be provided (CMYK, 300 resolution).

ADDITIONAL INFORMATION

☐ **Size/Shape** of overall decal must stay the same within the run.

☐ **Location** of any variable data, barcodes, or serializing must be consistent from decal to decal, within the run.

VARIABLE DATA AREAS HIGHLIGHTED

A — S-1901A — E
B — BOLT, SQHB, FRT METRIC — 001 — F
C — barcode — G — QR code
D — USAGE: LINE 2 – OP 100   SUPPLY: RIP - 1

DATA SPREADSHEET EXAMPLE (.csv file)

	A	B	C	D	E	F	G
1	Component	Description	Barcode	Usage	Image	Serial	QR-Code
2	S-1901A	BOLT, SQHB, FRT METRIC	S-1901A	L010	Bolt.jpg	001	https://www.empirescreen.com/
3	G-9878A	WASTER, .312 EXT STAR	G-9878A	L033	Washer.tif	002	https://www.empirescreen.com/screen_printing
4	C-0679B	CLAMP, TUBING - .500	C-0679B	L435	Clamp.jpg	003	https://www.empirescreen.com/
5	C-4483B	CLAMP, TUBING - .495	C-4483B	L438	Clamp.jpg	004	https://www.empirescreen.com/digital_printing
6	C-6893B	CLAMP, TUBING - .400	C-6893B	L678	Clamp.jpb	005	https://www.empirescreen.com/markets

VARIABLE DATA COLOR KEY
VARIABLE DATA   2D CODES
SERIALIZING   LINEAR BARCODE   IMAGES

P/N: 100066 VARIABLE DATA INSERT_2024

ISO 9001 CERTIFIED   GREEN TIER