

# OPERATION MANUAL FOR PEMSERTER<sup>®</sup> MICRO-MATE<sup>®</sup> PRESS



**PennEngineering<sup>®</sup>**  
5190 OLD EASTON ROAD  
DANBORO, PENNSYLVANIA 18916  
1-800-523-5321 • 1-215-766-3801

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# Read Manual Before Operating Press!

## FOREWORD

Thank you for purchasing a PEMSERTER® MICRO-MATE® PRESS. With the proper care and maintenance, your press will install fasteners safely, quickly and with consistent quality.

The PRESS is covered with a one (1) year warranty.

Should any questions or problems arise concerning your MICRO-MATE® PRESS contact PennEngineering®. The toll free number is 800-523-5321 (in North America) or 215-766-8853.

Set-up, Training and Repair Service is available to you as long as you are the owner of the press. Free telephone instruction and service are also available for the lifetime of your press by calling the PennEngineering® Service Department.

### SHIPPING DAMAGE

The PEMSERTER® MICRO-MATE® press has been shipped to you packaged to withstand normal handling during transit. Upon receipt, the unit should be checked for any damage that may have occurred during shipment due to improper handling. Should any damage be found, immediately notify the PennEngineering® Service Department.

### PEMSERTER® MICRO-MATE® HAND TOOL

The PEMSERTER® MICRO-MATE® press is shipped ready to operate and complete with the standard tooling accessories.

- **Metric** press kit (*P/N 981820001*) contains one hand tool, one flat punch, seven punches and dies, one punch adapter bushing, one edge-depth guide, five fastener anvils to install nuts (S, CLS and CLA) ranging from M2 thru M5 thread sizes.
- **Unified** press kit (*P/N 981820000*) contains one hand tool, one flat punch, seven punches and dies, one punch adapter bushing, one edge-depth guide, five fastener anvils to install nuts (S, CLS and CLA) ranging from #2-56 thru #10-32 thread sizes.

### SPECIFICATIONS:

Force..... 2,500 lbs. (1.134 kg)  
 Throat Depth ..... 1.75" (4.45 cm)  
 Weight..... 2.75 lbs. (1.25 kg)  
 Length ..... 8.25" (20.9 cm)  
 Width..... 1.41" (3.6 cm)

Reference	Inches	Centimeters
<b>A</b>	8.25	20.95
<b>B</b>	3.75	9.68
<b>C</b>	1.75	4.45
<b>D</b>	.437	1.11
<b>E</b>	.312	.792
<b>F</b>	.281	.714
<b>G</b>	1.406	3.57

**Please read and follow the safety precautions listed below.**



## **SAFETY PRECAUTIONS**

- ◆ Always use safety goggles when operating or maintaining the press.
- ◆ Do not use chipped, cracked or damaged accessories and tools.
- ◆ Keep body parts away from moving parts.
- ◆ Never wear jewelry, loose clothing or anything that could get caught in press.
- ◆ If a new user is operating the press, be sure these instructions are readily available.
- ◆ Do not use the press in any way other than for its intended purposes.
- ◆ Do not modify the press.



**CAUTION: The hand punch/press is a hand tool developing over one ton pressure. Tool capacity is 2,500 lbs. (1.134 kg). Do not use a vise, handle cheater bars or other devices to operate the tool. Failure to comply may result in tool damage or personal injury.**

## **WARRANTY**

PennEngineering® warrants that this product, when correctly used according to directions and under normal operating conditions, will be free from defects in material and workmanship for a period of one (1) year from the date of purchase.

This warranty shall not apply to any product which has been altered, changed or repaired, normal maintenance excluded, except as authorized by PennEngineering®. This warranty shall not apply to any product that has been subject to misuse, negligence or accident.

The purchaser's exclusive and sole remedy shall be limited to repair, modification or replacement at the discretion of PennEngineering®. In no event shall PennEngineering® be liable for the cost of any indirect or consequential damage. In no case shall PennEngineering® liability exceed the purchase price of the product.

This warranty is exclusive and in lieu of all other warranties. No oral or written information by PennEngineering®, its employees, representatives, distributors or agents shall increase the scope of the above warranty or create any new warranty.

## TOOL OPERATON

- To remove upper anvil or hole punch, remove knurled screw from the eccentric arm. Use key provided to remove the screw on the eccentric arm.



Key

- Pull upper handle assembly back to release anvil or hole punch from the eccentric arm slot.



- Lift anvil or hole punch from guide hole and insert new anvil or hole punch.



- Reverse above procedure to install new anvil/hole punch. Align the groove in the tool as shown in picture



- NOTE: When using hole punches it is necessary to insert adapter guide bushing. (Remove guide bushing to use upper anvil.)
- Lower anvils and dies are threaded into lower handle.



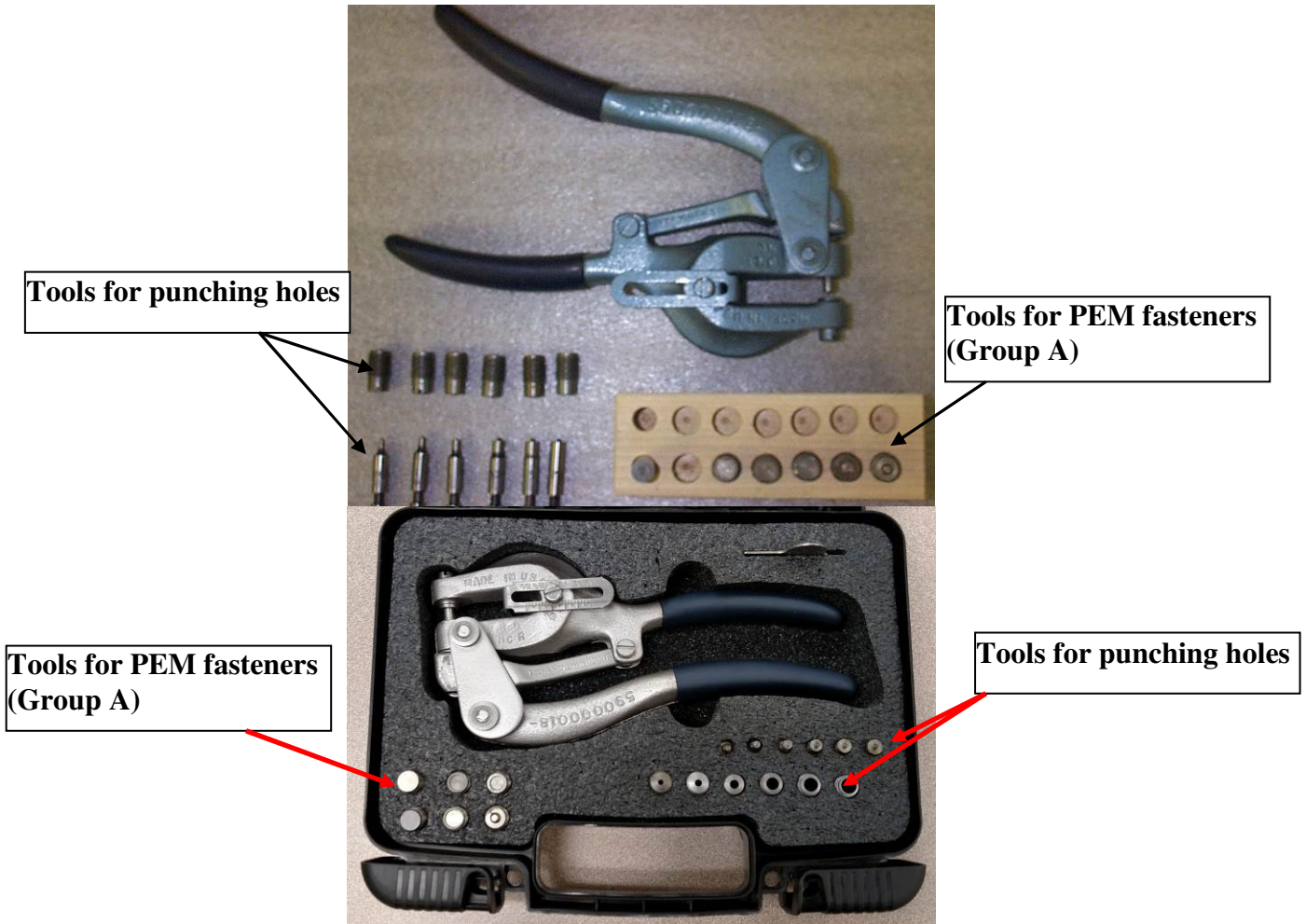
- When installing self-clinch fasteners, set anvil high enough to properly “set” self-clinching hardware.
- When punching holes, set dies high enough so punch can remove slug from material being punched.



**CAUTION:** The hand punch/press is a hand tool developing over one ton pressure. Tool capacity is 2,500 lbs. (1.134 kg). Do not use a vise, handle cheater bars or other devices to operate the tool. Failure to comply may result in tool damage or personal injury.



**TOOLING:**



Lower anvils are classified into groups (A,B,C,D & F) for installation of corresponding fasteners. The types listed are PEM<sup>®</sup> self-clinching nuts. All types and sizes listed below can be installed in 5052-H32 aluminum. For installation in steel, some of the larger sizes may have been omitted depending on recommended installation pressure.

Upper anvil is manufactured with 1-1/2° relief to compensate for initial “spring back” of tool frame. Be sure to install upper anvil with identification mark “F” to front of tool!

**Tools provided with the kit**

Tooling for PEM Fastener Types: S, SS, CLS, CLA, CL, CLL/ KF2 KFS2 – Group A				
PennEngineering P/N	Description	Fastener Size	C'bore Dia	Identification
981835010	PUNCH - FLAT	N/A	N/A	N/A
981835014	ANVIL	256/M2,348/M2.5,440/M3	0.261"	A261 or A4
981835013	ANVIL	632/M3.5	0.285"	A6
981835012	ANVIL	832/M4	0.323"	A323 or A8
981835011	ANVIL	032/M5	Raised Center	A10

<b>HOLE PUNCHES &amp; DIES FOR UNIFIED KIT 981820000</b>			
<b>Hole Punches</b>		<b>Dies for Use with Hole Punches</b>	
<b>PennEngineering P/N</b>	<b>Description</b>	<b>PennEngineering P/N</b>	<b>Description</b>
981835003	Punch Micro-Mate 3/32 (.094)	981835017	Die Micro-Mate 3/32 (.094)
981835004	Punch Micro-Mate 1/8 (.125)	981835018	Die Micro-Mate 1/8 (.125)
981835005	Punch Micro-Mate 5/32 (.156)	981835019	Die Micro-Mate 5/32 (.156)
981835006	Punch Micro-Mate 3/16 (.187)	981835020	Die Micro-Mate 3/16 (.187)
981835007	Punch Micro-Mate 7/32 (.218)	981835021	Die Micro-Mate 7/32 (.218)
981835008	Punch Micro-Mate ¼ (.250)	981835022	Die Micro-Mate ¼ (.250)
981835009	Punch Micro-Mate 9/32 (.281)	981835023	Die Micro-Mate 9/32 (.281)

<b>HOLE PUNCHES &amp; DIES FOR METRIC KIT 981820001</b>			
<b>Hole Punches</b>		<b>Dies for Use with Hole Punches</b>	
<b>PennEngineering P/N</b>	<b>Description</b>	<b>PennEngineering P/N</b>	<b>Description</b>
981835064	Punch Micro-Mate 4.25mm	981835071	Die Micro-Mate 4.25mm
981835065	Punch Micro-Mate 4.40mm	981835072	Die Micro-Mate 4.40mm
981835066	Punch Micro-Mate 4.75mm	981835073	Die Micro-Mate 4.75mm
981835067	Punch Micro-Mate 5.40mm	981835074	Die Micro-Mate 5.40mm
981835068	Punch Micro-Mate 6.40mm	981835075	Die Micro-Mate 6.40mm
981835069	Punch Micro-Mate 6.75mm	981835076	Die Micro-Mate E 6.75mm
981835070	Punch Micro-Mate 7.15mm	981835077	Die Micro-Mate 7.15mm

**ADDITIONAL TOOLS AVAILABLE**

<b>"C" GROUP for Fastener Types: LK, LKS, LKA</b>		
981835029	ANVIL	256/M2
981835030	ANVIL	348/M2.5,440/M3
981835031	ANVIL	632/M3.5
981835032	ANVIL	832/M4
981835033	ANVIL	032/M5
<b>"D" GROUP for Fastener Types: FEX, FEOX, FE, FEO, U, UL</b>		
981835034	ANVIL #0,1	U, UL-080,164
981835035	ANVIL #2	U, UL-256/M2
981835036	ANVIL #4	FEX, FEOX, FE, FEO-440/M3
981835037	ANVIL #6	FEX, FEOX, FE, FEO-632/M3.5
981835038	ANVIL #8	FEX, FEOX, FE, FEO-832/M4
981835039	ANVIL #10	FEX, FEOX, FE, FEO-032/M5