

**OPERATION MANUAL**  
**FOR PEMSERTER® SERIES P3 PRESS**



**PennEngineering®**  
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# Read Manual Before Operating Press!

## FOREWORD

Thank you for purchasing a PEMSERTER® SERIES P3™ PRESS. With the proper care and maintenance, your press will install millions of 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 SERIES P3™ PRESS contact PennEngineering® Service department. 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® SERIES P3™ 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® SERIES P3™ PNEUMATIC PRESS

The PEMSERTER® SERIES P3™ press is shipped ready to operate and complete with the standard tooling accessories.

- **Metric** press kit (*P/N 981820003*) contains punches and anvils to install nuts (S, CLS and CLA) ranging from M2 thru M5 thread sizes and studs (FH, FHS and FHA up to 12mm in length) ranging from M2.5 thru M5 thread sizes.
- **Unified** press kit (*P/N 981820002*) contains punches and anvils to install nuts (S, CLS and CLA) ranging from #2-56 thru #10-32 thread sizes and studs (FH, FHS and FHA up to 1/2" in length) ranging from #2-56 thru #10-32 thread sizes.
- The Series P3™ press can be bench-mounted. The backside of the yoke has two (2) predrilled and tapped holes for bench mounting. Mounting bracket is included (P/N 981820007).

### SPECIFICATIONS:

Ram Force .....	400 to 5,000 lbs. (1.8 to 22.2 kN)
Air Requirements .....	90 to 100 PSI (6 to 7 BAR)
Air Line .....	½" (12mm) I.D. Minimum line flow
Throat Depth .....	3" (7.6 cm)
Weight .....	10 lbs. (4.6 kg)
Length .....	16" (40.6 cm)
Yoke Depth .....	6.2" (15.8 cm)
Air Consumption.....	Approx. 15 cu in (.25 liters) per cycle

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



## **SAFETY PRECAUTIONS**

- ◆ Always use safety goggles when operating or maintaining the press.
- ◆ Ear Protection is recommended.
- ◆ Before using the press, make sure that a shutoff device has been fitted on the air supply line and the location is easily accessible, so that the air supply to the press can be shut off in an emergency.
- ◆ Check the air hose and fittings regularly for wear.
- ◆ Use only approved parts for maintenance and repairs.
- ◆ Do not use chipped, cracked or damaged accessories and tools.
- ◆ Attach air line securely.
- ◆ Keep body parts away from moving parts.
- ◆ Never wear jewelry, loose clothing or anything that could get caught in moving parts.
- ◆ 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.

## **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®'s liability exceed the purchase price of the product.

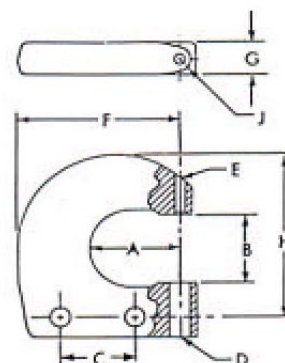
This warranty is exclusive and in lieu of all other warranties. No oral or written information by PennEngineering®, its employees, representatives, distributors or agents shall increase the scope of the above warranty or create any new warranty.

## SPECIFICATIONS

MODEL NO.	CAPACITY COLD RIVET		STANDARD "C" YOKE		CLOSED HEIGHT	SET HOLDER PLUNGER			NET WEIGHT WITH YOKE	LENGTH
	Alum.	Steel	Reach	Gap		Maximum Travel	Max. Force With 90 P.S.I.	Part of Stroke at Max. Force (Final)		
	In.	In.	In.	In.		In.	Pounds	In.		
6000 C	3/16	5/32	1-1/2	1-1/4	11/16	9/16	6000	1/16	5-1/2	14

### C-YOKE NOMENCLATURE

- A Reach
- B Gap
- C Center line between bolt mounting holes
- D Bottom set hole diameter
- E Top set hole diameter
- F Width of yoke from set hole center to end of yoke
- G Thickness of yoke
- H Height of yoke from bolt hole center to top of yoke



Yoke Part No.	A	B	C	D	E	F	G	H	J
981835112	3"	1-3/4"	1-5/16"	3/8"	3/16"	5-1/4"	1	4-3/4"	1/4"

The Series P3™ press is designed to accommodate steel or aluminum workpieces with a thickness range of .4mm to 3.175mm, and studs and threaded inserts from M2.5 through M5.

## ADJUSTMENT PROCEDURES

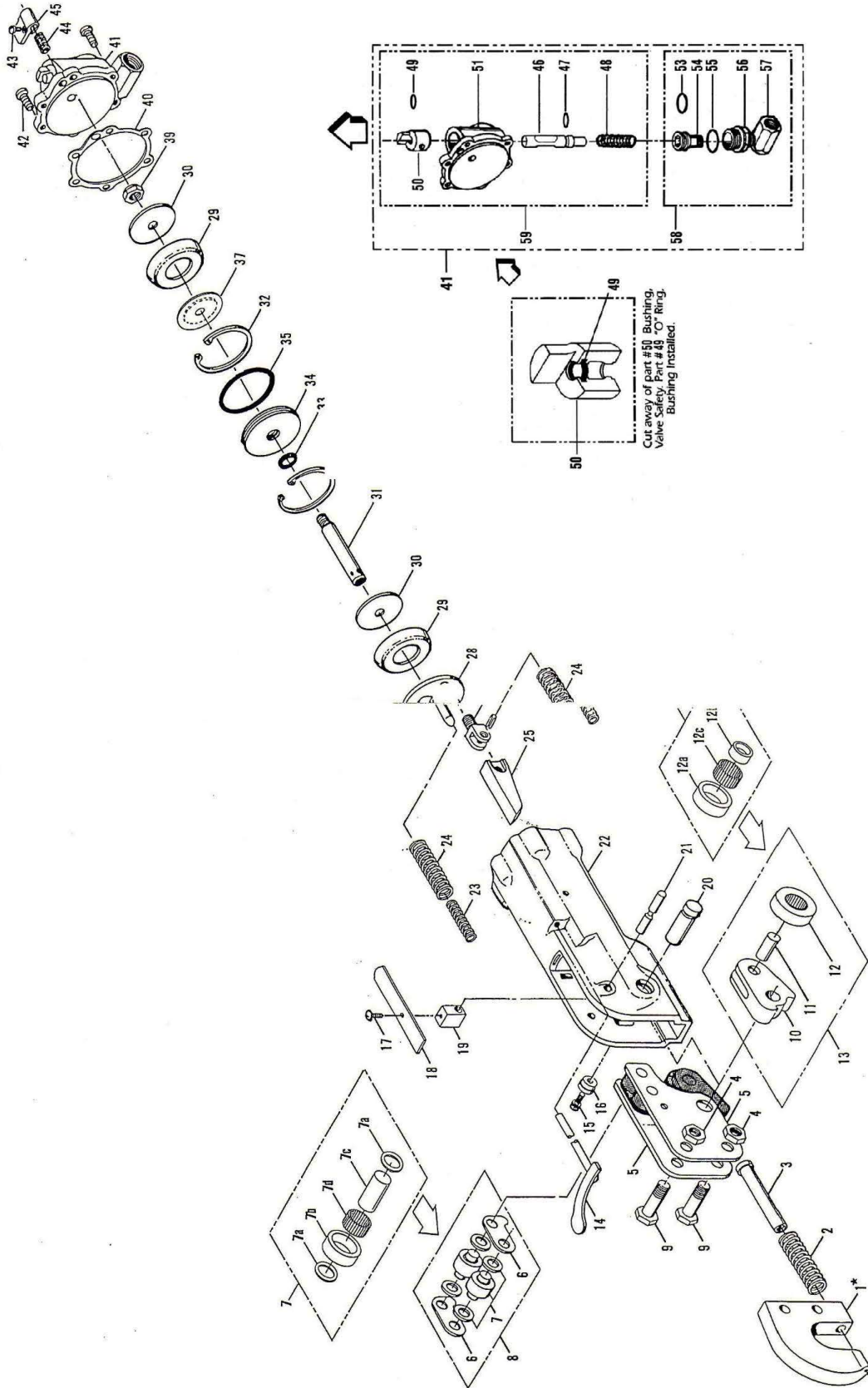
**ADJUSTING THE SQUEEZE:** It should be understood that this tool develops maximum force during the final 1.6mm (.063") of power stroke. The ram must always be allowed to reach its full stroke. **DO NOT ATTEMPT TO CONTROL THE SQUEEZING FORCE BY CHANGING AIR PRESSURE.** The Series P3™ press is designed to operate with an air pressure range of 90-100 PSI (6-7 BAR). Exact squeezing force can be obtained by a combination of flat squeezer set lengths and/or shims. If the squeezing force is excessive, remove shims or use shorter squeezer set. If force is insufficient, add shims and/or use longer squeezer set.

*Make preliminary setups and tests on scrap material.*

**FLUSH HEAD STUDS:** The final gap between tools, at end of stroke, should be very close to thickness of workpiece. If, after initial test, more squeeze is needed, add shims. If force is excessive, increase gap between anvils by switching to a shorter length flat squeezer set.

**THREADED INSERTS:** The final gap between tools, at end of stroke, should be equal to thickness of workpiece plus .635mm (.025") – regardless of fastener size.

# IDENTIFICATION DRAWING

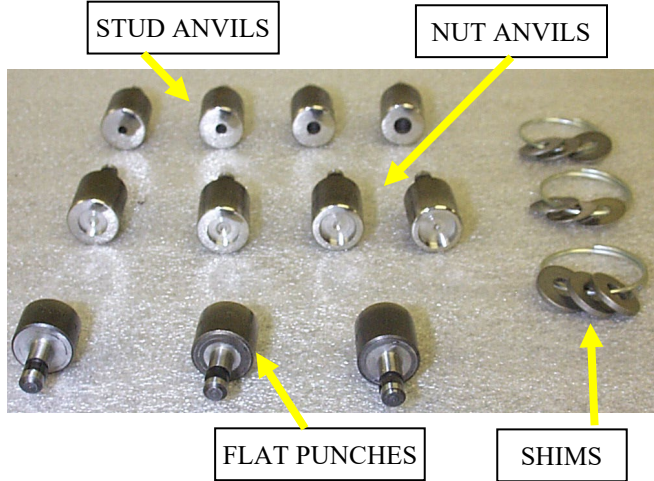


## IDENTIFICATION DRAWING BOM:

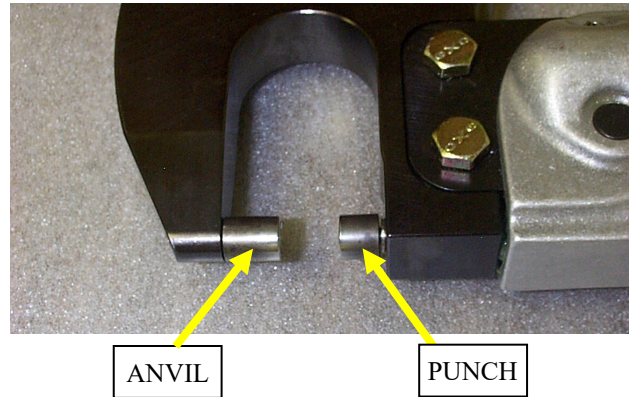
ITEM	Qty	PEM Part No.	Description	ITEM	Qty	PEM Part No.	Description
1	1	981835112	YOKE, STANDARD	27	1	982035103	FORK,6000A/6000C 05
2	1	982035142	SPRING,SET HOLDER 2	28	1	982035126	ASM,PISTON
3	1	982035119	SET HOLDER STANDARD	29	2	9800391924	PISTON CUP G/P
4	2	9800392003	NUT,YOKE BOLT	30	2	982035141	PLATE, PISTON LEATH
5	2	982035107	YOKE, PLATE 3C/6C 0	31	1	982035111	SHAFT, PISTON 6000C
6	2	982035121	WEDGE, GUIDE	32	2	982035149	SNAP RING 6A/6C 230
7	2	982035125	ASM,PLATE ROLLER	33	1	982035134	ORING,SPACER INNER
7a	4	8025104	THRUST WASHER	34	1	982035108	SPACER, CLYINDER 05
7b	2	8025105	ROLLER, OUTER	35	1	982035135	ORING,SPACER OUTER
7c	2	982035162	SHAFT, ROLLER	36			
7d	40	8025106	NEEDLE ROLLERS	37	1	982035155	PISTON REAR
8	1	982035100	ASM, PLATE ROLLER 1	38	1		
9	2	9800392002	BOLT,YOKE 6C	39	1	982035140	NUT, LOCK 3/8-24 18
10	1	982035115	SET LEVER 3C/6C	40	1	9800391925	GASKET CYL HD G/P 1
11	1	982035147	SHAFT, LEVER BEARING	41	1	982035130	ASM,CYLINDER HD SAF
12	1	982035127	ASM,LEVER BEARING	42	6	982035136	SCREW, CLYINDER HEA
12a	1	982035164	OUTER ROLLER	43	1	982035138	SCREW, LEVER ARM
12b	1	982035165	INNER ROLLER	44	1	982035145	SPRING,THROTTLE LEV
12c	25	982035166	NEEDLE ROLLERS	45	1	982035123	LEVER, ARM
13	1	982035129	ASM,LEVER COMPLETE	46	1	982035109	VALVE
14	1	982035124	THROTTLE, LEVER G.P	47	1	982035131	ORING,VALVE
15	1	982035132	ORING,SWIVEL BOLT 1	48	1	982035146	SPRING,VALVETLE LEV
16	1	982035105	WASHER, SHAFT	49	1	982035168	O' RING BUSHING
17	1	982035139	SCREW, ROLLER GUARD	50	1	982035117	BUSHING, VALVE SAFE
18	1	982035122	GUARD, ROLLER 3C/6C	51	1	982035102	CYLINDER HEAD BARE
19	1	982035106	SPACER,GUARD BLOCK	52			
20	1	9800392004	SHAFT,LEVER ECCENTR	53	1	982035132	ORING,SWIVEL BOLT
21	1	982035103	FORK,6000A/6000C	54	1	982035113	SWIVEL
22	1	982035167	HOUSING, CYLINDER, BARE	55	1	982035133	ORING,SWIVEL NUT
23	2	982035143	SPRING,INNER	56	1	982035110	NUT,SWIVEL
24	2	982035144	SPRING,OUTER	57	1	982035112	ELBOW, INLET 1/4 PI
25	1	982035114	WEDGE /6000C	58	1	982035099	ASM, SWIVEL
26	1	982035148	PIN, FORK 3000A/300	59	1	982035128	ASSY, CYL HEAD W/O SWIVEL



**TOOLING SET "C" - PART NO. 981820005  
(UNIFIED) & 981820006 (METRIC)**



**"C" TOOLING SET-UP ON PRESS**



**TOOLING SET "C" - PART NO. 981820005 (UNIFIED) – Included in P3 Tool Kit  
(981820002-Unified)**

PennEngineering P/N	Description	Fastener / Size
981835080	ANVIL	S CLS-440
981835081	ANVIL	S CLS-632
981835082	ANVIL	S CLS-832
981835083	ANVIL	S CLS-032
981835084	ANVIL	FH FHA FHS-256
981835085	ANVIL	FH FHA FHS-440
981835086	ANVIL	FH,FHA,FHS-632
981835087	ANVIL	FH FHA FHS-832
981835088	ANVIL	FH FHA FHS-032
981835093	SHIM	1/64"THK
981835094	SHIM	1/32"THK
981835095	SHIM	1/16"THK
981835097	PUNCH	3/8-9.5MM LG
981835098	PUNCH	7/16,11MM LG
981835099	PUNCH	1/2-12.5lg.

**TOOLING SET "C" - PART NO. 981820006 (METRIC) – Included in P3 Tool Kit (981820003-Metric)**

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener / Size</b>
981835080	ANVIL	S CLS-M3
981835081	ANVIL	S CLS-M3.5
981835082	ANVIL	S CLS-M4
981835083	ANVIL	S CLS-M5
981835089	ANVIL	FH FHA FHS-M2.5 -12 MAX LG
981835090	ANVIL	FH FHA FHS- M3 -12 MAX LG
981835086	ANVIL	FH,FHA,FHS- M3.5 -12 MAX LG
981835091	ANVIL	FH FHA FHS- M4 -12 MAX LG
981835092	ANVIL	FH FHA FHS-(.199) -12 MAX LG
981835093	SHIM	1/64"THK
981835094	SHIM	1/32"THK
981835095	SHIM	1/16"THK
981835097	PUNCH	3/8-9.5MM LG
981835098	PUNCH	7/16,11MM LG
981835099	PUNCH	1/2-12.5lg.

**Other Available Tooling:**

**AC/AS/LAC/LAS** PEM® SELF-CLINCHING FLOATING– BULLETIN ALA

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
8020382	ANVIL	440/M3
8023228	ANVIL	632/M3.5
8023194	ANVIL	832/M4
981835150	ANVIL	032/M5
981835156	ANVIL	0420/M6

**B/BS** PEM® BLIND NUT– BULLETIN B

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
8027079	ANVIL	440/M3
8027080	ANVIL	632/M3.5
8024801	ANVIL	032/M5

**CFN** PEM® SELF-LOCKING FLARE-MOUNTED NUTS FOR CONNECTORS– BULLETIN CW

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
981835135	ANVIL	440
981835132	PUNCH	440



**CLS, S** PEM® SELF-CLINCHING NUTS – BULLETIN CL

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
981835100	ANVIL	0420/M6
9818351477	ANVIL	1224

**LKS** PEM® SELF-LOCKING FASTENERS – BULLETIN LN

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
975351142	ANVIL	440/M3
8023183	ANVIL	632/M3.5
8023184	ANVIL	032/M5

**SO** PEM® SELF-CLINCHING STANDOFF BULLETIN SO

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
8014954	ANVIL	632/M3.5
8021018	PUNCH	440/M3

**CSOS, CSS PEM® CONCEALED HEAD STANDOFFS – BULLETIN SO**

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
8017348	ANVIL	632/M3.5

**F PEM® FLUSH NUTS – BULLETIN F**

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
8025299	ANVIL	632

**FHL, FHLS PEM® FLUSH STUDS FOR CLOSE-TO-EDGE & MINIMAL SPACE APPLICATIONS  
BULLETIN FH**

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
8025195	ANVIL	032 (For material <= 059"/1.5mm)

**KFE, KFSE PEM® BROACHING STANDOFF – BULLETIN K**

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
975351075	ANVIL	KFE-440116-4
8020351	ANVIL	KFE-440/116 -4TO-8/M3-3
975351139	ANVIL	KFE-440/116-16
975351074	ANVIL	KFE-632/143-4
975351138	ANVIL	KFSE-M4-8

**KFH PEM® BROACHING STUDS– BULLETIN LK**

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
981835085	ANVIL	440
981835086	ANVIL	632
981835087	ANVIL	832
981835088	ANVIL	032
981835090	ANVIL	M3
981835091	ANVIL	M4
981835092	ANVIL	M5

**LK, LKS, LKA PEM® SELF-LOCKING NUTS– BULLETIN LK**

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
975351142	ANVIL	440
8023183	ANVIL	632
8023184	ANVIL	832
981835148	ANVIL	032

**N10 PEM® - SELF-CLINCHING RECEPTACLE NUTS**

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
8023413	ANVIL	440/M3
8020811	ANVIL	832

**PL, PLC PEM® -HEX SELF-LOCKING NUTS– BULLETIN PL**

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
981835158	ANVIL	632/M3.5
981835159	ANVIL	832/M4

**SO,SOA,SOS,SOAG,SOSG,BSO,BSOA,BSOS** PEM® STANDOFFS – BULLETIN SO

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
8021018	ANVIL	440/M3
975351136	ANVIL	632/M3.5
981835125	ANVIL	832/032-4 TO -16 / M4/M5 -3 to -12

**SSA, SSS, SSC, KSSB** PEM® SNAP-TOP STANDOFFS – BULLETIN SSA

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
975351137	ANVIL	156 -8 to -16 / 4MM -8 to -12

**U, UL** PEM® MINIATURE SELF-CLINCHING FASTENERS – BULLETIN PF

<b>PennEngineering P/N</b>	<b>Description</b>	<b>Fastener Size</b>
8017679	ANVIL	080

**OPTIONS:**

<b>PennEngineering P/N</b>	<b>Description</b>	
981820011	FOOTSWITCH ASSEMBLY	MUST BE USED WITH KIT P/N 981820013
981820013	QUICK EXHAUST VALVE KIT	TO BE USED WITH FOOTSWITCH P/N 981820011