

procunier
procunier
procunier
procunier
procunier

PROCUNIER SAFETY CHUCK CO.

304 Winston Creek Parkway
Lakeland, Florida 33810-2866
Telephone 863-688-0071
FAX: 863-682-6233

**Style 1-AL and 3-AL
Lead Screw
Tapping Heads**

Series 21000
(Serial Nos. B4870 and Higher)
and 23000
(Serial Nos. B9230 and Higher)

INSTRUCTION MANUAL

Introduction

PROCUNIER's Push-Button Lead Screw Tapping Heads are precision made in Sizes No. 1 (Series 21000) and No. 3 (Series 23000) for extended machining life **when used within rated capacity limits**. Successful operation can only be assured if the Drill Press Spindle is in "running true" condition.

CAPACITY

Series – Tapper	Cutting Taps	Forming Taps
21000 1-AL	#0-#10 (M2 to M5) Mild Steel #0-1/4" (M6) Aluminum	#0-#6 (M2 to M3.5)
23000 3-AL	#8-1/2" (M4.5 to M12) Mild Steel #8-3/4" (M4.5 to M18) 1/8"-3/8" Pipe Aluminum	#8-3/8" (M4.5 to M10)

Standard and Optional Equipment: Style AL Lead Screw Tapping Heads include the following standard equipment: three (3) piece quill clamping cover; 3' air line with fittings; 8' grounded power line with plug; a foot control switch with 8' grounded power line and plug; set of four (4) standard tap collets; and the necessary wrenches. Optional equipment such as an Air Regulator/Filter/Oiler Assembly complete with column mounting bracket; collet adapter for conversion from internal tapping to external threading for Acorn or round button dies; and additional PROCUNIER Tru-Grip Tap Collets to fit all standard inch or metric taps are available – See Catalog Pages 26 and 27, No. 1 (Series 51800) and No. 3 (Series 53800).

Left-Hand Operation: When using left-hand taps, reverse the rotation of the drill press (left to right rotation); modify the cover assembly of the tapper (pin shank, drive shell and internal ring gear) and use left-hand Lead Screw assemblies only. If tapper is not modified for left-hand use and run in the wrong direction, **the tapping head will become damaged**. When not in use, tapping heads should remain in operating position because of their gravity oiling system. **Tappers cannot be used in inverted position.**

Set-Up

Mounting: This Lead Screw Tapper is equipped with a quill clamping type cover consisting of: a) the basic cover casting (mounted to the unit); b) flange to be drilled as required to attach the drill press stop rod; and c) collar (reducing the cover bore to the diameter of the drill press quill). When the quill diameter and cover bore are equal, no collar is necessary.

Attaching the head to a drill press should be done in the following steps:

1. If spindle is not Morse taper type, mount the separate drive adapter (DA) furnished, to drill press chuck taper.
2. Slide the tapping head over spindle onto quill (if M.T. type, engage taper completely — if C.T. type, line up slot with driving dogs on shank (S) and engage), then tighten flange screw (FS) to secure complete head to drill press with nameplate facing front.
3. Lock quill and depth stop rod of the drill press to prevent tapping head movement.

After the tapper is mounted, connect the air hose to the solenoid valve inlet at the rear (No. 1 heads have a 1/8" pipe fitting; No. 3, a 1/4" pipe fitting). Connect the opposite end to the "Out" side of the Regulator/Filter/Oiler Assembly – the "In" side is then connected to the plant air supply.

Although it is **MANDATORY that a Regulator/Filter/Oiler Assembly be used for foolproof operation**, more than one tapper can be operated off the same air control as long as air pressure requirements are equivalent. Proper air pressures for most operations are: 15-70 psi (No. 1); 20-90 psi (No. 3). Minimum air pressure (enough to drive a sharp tap) is more economical and assures tap protection, since the friction clutch will slip rather than causing tap breakdown — excessive pressure will cause a malfunction of the solenoid valve and damage the tapper.

The lubricator unit should be filled according to the instructions on the unit, using a light grade machine oil like SAE 10W. Adjust the regulator on the top of the unit so that **one drop of oil forms in the sight bubble every 2 minutes**. Over-lubrication can clog the air cylinders.

Electrical: Plug the foot control (86) and line cord (93) to the rear of the tapping head and to the power source, grounding it for protection. All circuits are factory tested and require no additional adjustment. **Make sure that the tapper voltage** (indicated on the nameplate) **is the same as the power source**, normally 120 volt, single phase, 60 cycle.

When not in operation, the 3-way toggle switch on the front nameplate should be in the "OFF" position, the power disconnected and the air shut off. **Always** disconnect the power plug when adjusting or replacing electrical components.

Speed: Select the proper speed for the tap (See Catalog Page 29) and adjust the drill press pulleys accordingly. Speed ratios in the tapper are: 1:1 drive, 1:2 reverse (input to output). Speeds in excess of 2000 RPM (No. 1-AL) and 1200 RPM (No. 3-AL) are not recommended. Maximum cycles/hour are: No. 1-AL — 3600; No. 3-AL — 1800. Exceeding these limits will cause excessive component wear and possibly damage the tapper.

Depth Adjustment: Tap feed is accomplished in the head itself, with stroke adjustable up to 3/4" (No. 1-AL); up to 2-1/4" (No. 3-AL). To change the stroke, loosen the depth stop lock nut (47) and adjust the depth nut (46) up or down; then relock the nut. Wrenches are provided for locking the hex jam nut (47) against the depth stop nut to maintain the correct depth. Once set, the lead screw will repeat depth to within 1/3 turn of the lead screw.

Tapping: The one-piece Lead Screw and Tru-Grip tap chuck accommodate the collet which holds the tap. Insert the tap into the collet completely, making certain that the square of the tap is totally engaged in the collet. If the tap is not completely engaged, it will cut out the square in the collet. Insert the entire assembly into the chuck and lock in place using the wrenches provided.

NOTE: Alteration or Modification to unit will void warranty.

Once the drill press is started, the Lead Screw will feed in reverse until it reaches the neutral position and is ready for operation. Be sure the tap is of the correct G.H. number to produce the desired class of fit. Accurate alignment of tap and hole is essential for good threads. The proper oil based lubricant flowed on for the material being tapped will reduce load, assure better quality threads and lengthen tap life. (See Catalog Page 29 for recommended drill press speeds and lubricants.)

Lubrication: Tapping Heads should be lubricated with 6 drops of light grade machine oil (SAE 10W) every 4 hours of operation in oiler at top of housing. Use liberal amounts of lubricant in the split in the Lead Screw nut at bottom of housing and yoke bushing (44). The Tapping Head should be lubricated before using, but **do not flood**, since glazing of the clutch will result and reduce drive capacity. Under heavy use, remove clutch and clean periodically. (See Disassembly.)

Lead Screw Assembly: To remove the Lead Screw assembly from the tapper, turn lead screw down by hand approximately 1/2" to relieve upward pressure on the lead screw drive collar (61). Slip the drive collar snap ring (62) off without bending or distorting it, push the drive collar pin (63) out of the drive collar (61), then remove both socket head cap screws (66) in the bottom of the cap.

PROCUNIER's Lead Screw assembly is wear-adjustable simply by opening or closing the three (3) set screws located on the black cap. Adjust each until the Lead Screw turns freely without excessive float or runout, making sure the Lead Screw bronze nut is securely in the Lead Screw cap. Always adjust the Lead Screw assembly when it is disassembled from the unit.

Reverse the above procedure for reassembly.

Operating Procedures

General

PROCUNIER Lead Screw Tapping Heads feature three electrical modes: Automatic, Manual Jog Cycle and Manual Single Cycle. Each is explained below.

Color-coded components simplify maintenance and repair. To replace any component, first disconnect the power cord, then replace the component and connect like-colored wires together; e.g., yellow to yellow, blue to blue, etc.

Should the tap stick, bind, hit an obstruction or the bottom of the hole, the Safety Return button immediately interrupts the cycle and returns the tap to the start of its stroke.

Indexing tables or other automatic features can usually be wired to the tapping head through an external switch located on the tapper body and actuated by the yoke. (See Catalog Page 17 for "Interlock Switch") Use this signal to index the table. After the table has indexed, use its signal to cycle the tapper in the Manual Single Cycle mode. The tapper and most indexing tables require an impulse signal in lieu of a steady current. For the correct switches and controls, contact your table manufacturer or representative. PROCUNIER engineers and representatives can also assist you when information is required.

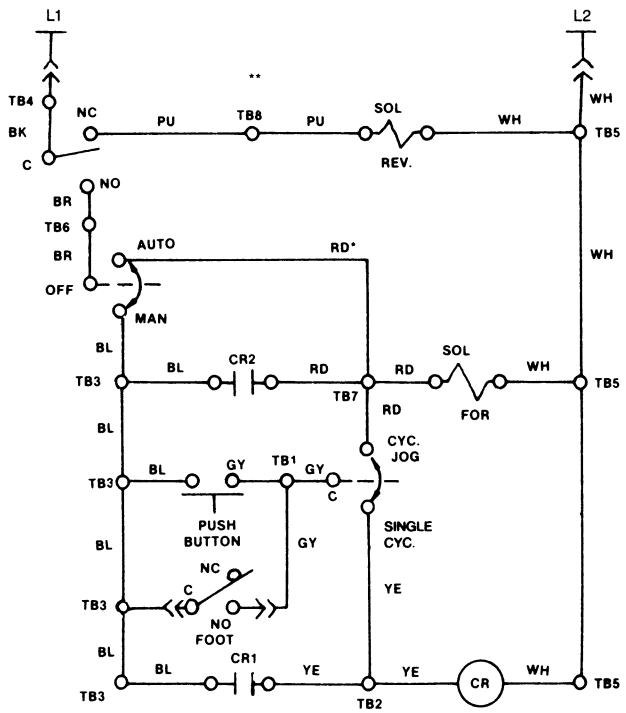
Sequence of Operations (For AL Tappers, refer to Schematic Wiring Diagram on next page.)

Automatic Cycle (Continuous operation): When the "Manual-Off-Automatic" selector switch is set in the "Automatic" mode (all other switches in any position), circuits 1, 2, 3 and 4 on the Wiring Diagram will energize the forward coil of the solenoid valve and cause the Lead Screw to rotate in a forward direction away from the tapper. When the rotating Lead Screw reaches its preset depth, the actuator switch will break, de-energizing the forward coil and energizing the reverse coil of the solenoid (21000 Series uses spring return). This changes the circuits to 1 and 9, reversing the Lead Screw, returning it to its original position and reclosing the actuator switch to repeat the cycle over again until the switch is turned "OFF" The red Safety Return button can be depressed at anytime to interrupt the automatic cycle.

Manual Jog Cycle (Operation only when push button or foot switch is activated): With the "Manual-Off-Automatic" selector switch in the "Manual" mode and the "Single Cycle-Jog Cycle" switch in the "Jog Cycle" mode, circuits 1, 2, 4, 5, 6 and 7 will energize the forward coil of the solenoid valve whenever the push button or foot switch is activated. This causes the Lead Screw to rotate in a forward direction, as in the "Automatic" cycle mode. However, when either the push button or foot switch is released, the circuit will break and cause the Lead Screw to reverse and return to its original position. In the "Jog Cycle" mode, spring reversal is incorporated for the return stroke. When the button is continuously engaged, the cycle will be the same as "Automatic."

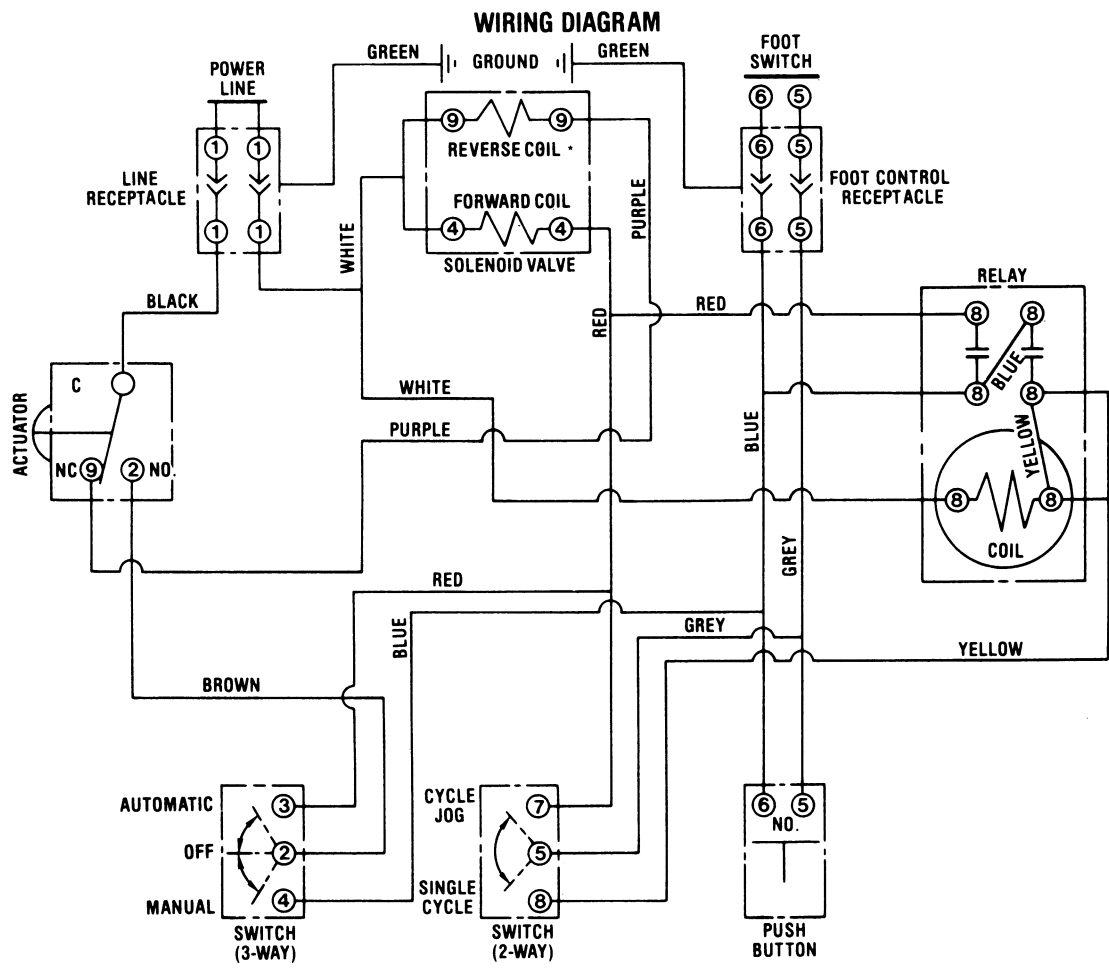
Manual Single Cycle (One complete cycle by pulse activation of either the push button or foot switch): With the "Manual-Off-Automatic" selector switch in the "Manual" mode and the "Single Cycle-Jog Cycle" switch in "Single Cycle" mode, activation of either the push button or foot switch will energize the coil of the relay through circuits 1, 2, 4, 5, 6 and 8 – in turn, energizing the forward coil of the solenoid valve. This causes the Lead Screw to rotate forward until it reaches its preset depth, through the holding relay, and then the actuator switch will break, de-energizing the relay and solenoid, and energizing the reverse coil of the solenoid valve (21000 Series uses spring return). This changes the circuits to 1 and 9, reversing Lead Screw rotation and returning it to its original position where it remains until either the push button or foot switch is activated again. Continuous activation of either switch will cause the Lead Screw to operate as in the "Automatic" mode. The red Safety Return button can be depressed at any time during the forward stroke to interrupt the cycle. This cycle is the most commonly used.

NOTE: When the solenoid valve is energized, air enters the cylinder, engaging the friction clutch. A minimum 15 lbs. to a maximum 90 lbs. ... 3-AL (1-AL maximum 70 lbs.) ... will satisfy all tapping operations within the capacity of these tapping heads. Style No. 1-AL (Series 21000) utilizes a spring return in lieu of circuit 9.



ELECTRICAL SCHEMATIC

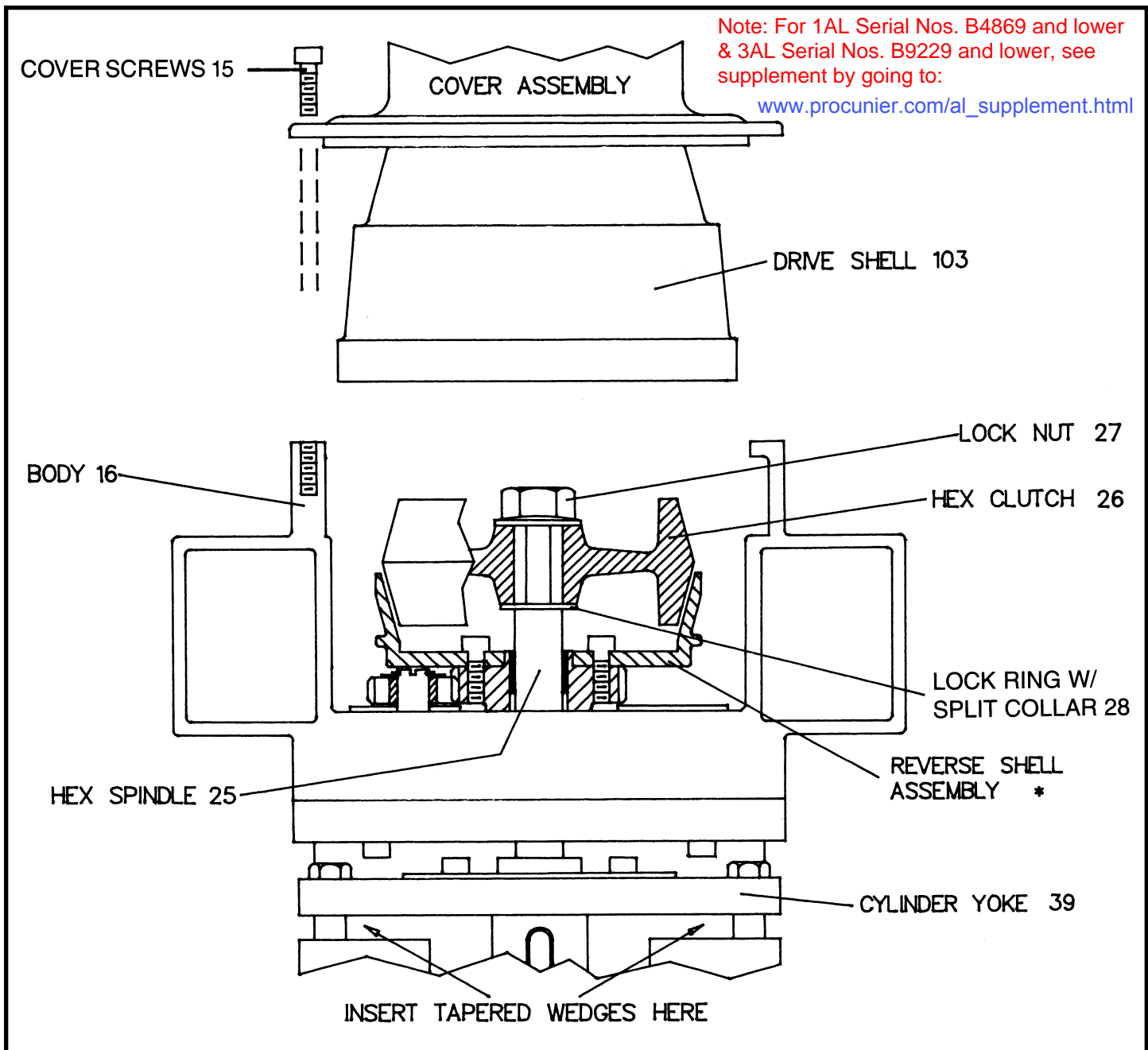
*For dual palm button operation this red wire is removed.
 **For 21000 Series (1-AL), purple wire not used



*Reverse coil not used in 21000 Series (1-AL)

Note: For 1AL Serial Nos. B4869 and lower & 3AL Serial Nos. B9229 and lower, see supplement by going to:

www.proconier.com/al_supplement.html



Disassembly

Disassembly of the Tapping Head is easily accomplished by following the proper sequence:

1. Remove the top cover screws (15) and raise the cover assembly clear of body.
2. Remove the friction clutch (26) by first inserting wedges between the bottom of the cylinder yoke (39) and the top of the cylinders (36) to remove pressure from the clutch, as per diagram.
3. Place a 3/16" dia. rod through the splined spindle (25) to secure it from rotating. Remove the locknut (27) from the spindle (right hand thread). Pull the hex clutch (26) completely off the spindle.

Clean the clutch by wiping with a cloth dipped in a good non-residue cleaning solution, such as alcohol or acetone. (Do not use paint thinner.) If the clutch is swollen, out of shape or will not clean thoroughly, replace the clutch. **Do not sand, file or rough up clutch surfaces.**

Remove the reverse shell assembly (*) and wipe the inside of both the reverse shell and the drive shell (103), using a clean cloth or a fine (000) emery paper. Drain out all excess oil in the head; then place a drop of oil on the top of the three studs (17). Grease the inside of the reverse shell between the two bushings (32) and on the body bearing (23) with a good grade TEFLON impregnated grease and saturate the oil felt with #10 oil.

When reassembling the taper, insert the 2-piece split collar (28S) tapered side up, into the groove on the hex spindle (25), then place the lock ring (28L) over the split collar, then the clutch (26) making sure it is seated on the lock ring. Assemble the hex locknut (27) on the spindle threads and lock the assembly by torquing the nut to 12-15 ft.-lbs. (21000 1-AL) and 35-38 ft.-lbs. (23000 3-AL). Reposition the cover assembly (C) making sure the separator ring (29) is not jammed and tighten the screws (15).

Before actual operation, test the head in all three cycles for a few minutes for correct operation.

Troubleshooting

Problem

1. Tapper does not tap to rated capacity or has lost its driving power.

Cause

(A) Clutch is glazed, oil soaked or swollen — disassemble tapper, clean or replace clutch as described under "Disassembly."
(B) Check alignment of tap and hole, drill press speed, improper lubrication, dull or loaded tap, or part being tapped having undersized hole.
(C) Air pressure too low — increase pressure.
(D) Yoke bearing lock nut (37) has loosened.
(E) Drill press belts slipping.
(F) Driver (DA) is loose, or shank (S) not fully engaged.

2. Lead Screw does not complete a full cycle, going down about 1/2", then reversing to original start position.

A) Actuator cam (13) not set correctly — adjust upper cam with set screw and lock in place.

3. Tap runout.

(A) Check that tap shank is into collet completely. Check that collet is into chuck completely (Collet should protrude into hole in Tru-Grip chuck). Remove Lead Screw assembly and check that it runs free without excessive radial play. Readjust where necessary.
(B) Remove collet — rotate 180° — and replace. Remove tap — rotate 180° — and replace

4. Lead Screw feeds forward to a end of stroke but does not return.

(A) Actuator switch (5) may be stuck in "normally closed" position (switch normally functions properly if a crisp click is heard when button is depressed). If necessary, replace actuator switch as in No. 5 below. Check new switch to assure that cam assembly (9) is in upper position when switch is depressed.
(B) If actuator switch is not the cause, remove solenoid valve assembly (70) and

Problem

Cause

check for coil burnout (smell). If detective, replace.
(C) If depth stop nut (46) is set too low, tap will bottom in hole, or drive collar pin (63) is bottoming on splined spindle before depth stop nut engages.
(D) Check tap for dullness, or if it is jammed in bottom Of hole with chips — change style of tap and/or lubrication method.
(E) Heavy springs may be necessary for air cylinders to raise tap out of hole (No. 1-AL [Series 21000] only).
(F) Readjust bottom section of cam assembly (9) so that spring pressure holds the cam shaft (13) up.
(G) Check belts on drill press for tightness or slippage.
(H) Check that bottom threaded rod of depth stop yoke assembly (43) is not hitting cylinder housing casting (36).
(I) Check that oiler in Filter/Regulator/Oiler Assembly (105) is set properly, causing excessive oil buildup in air cylinders, clogging the air ports. **Clean out.**

5. Lead Screw does not start cycle and there is no unusual noise when tapper is in "Automatic" or "Manual Jog Cycle" mode.

(A) Check that actuator switch (5) is closed by actuator cam (9) — adjust.
(B) Usual cause is lack of air pressure reaching cylinders Check for broken actuator switch. To replace, disconnect power line, remove front and rear nameplates, and unhook actuator switch wires at rear of tapper. Remove the two actuator switch mounting screws (6) and pull out switch.
NOTE: To check actuator switch, listen for sharp "click when button is depressed or use test lamp. Install new switch, if needed, checking that it is engaged by actuator cam. Adjust upper cam by set-screw (10), if necessary, so that when Lead Screw is in "up" position, switch is depressed. Re-install nameplates.

Problem

Cause

(C) If actuator switch is not malfunctioning, remove solenoid valve assembly (70) and check for burned coil, replacing if necessary.
(D) Check that proper 115V power is getting to tapper.
(E) Check 2- and 3-way switches (91 and 92) for proper operation.
(F) Make sure air pressure is getting to the valve.

6. Lead Screw does not start cycle and there is no unusual noise when run in "Manual Single Cycle" mode only.

(A) Set selector switch on "Automatic" mode. (If unit does not work, see No. 5 above.) If tapper responds normally in this mode, check relay (85). To replace relay, remove front and rear nameplates, unhook all four relay wires and remove relay by unscrewing the mounting screws. Check relay contacts and coil for dirt or burns. When replacing relay, keep wires and terminals clear of casting.

7. Squealing noise in tapper. Lead Screw may or may not act erratically.

(A) Glazed clutch or frozen reverse shell assembly bushing is usual cause. Remove cover assembly clutch and reverse shell assembly (see "Disassembly.") Check gears for excessive wear or broken teeth. Check that pinion gears (20) are running free and not frozen. Check splined spindle shaft (25) for wear or ridges. Replace worn parts as necessary; remove excess oil; clean drive shell, reverse shell and clutch. Remove cylinder caps (60) from housing and clean. If piston assemblies (51) are removed, do not cut seals (55) or cups (52).

Problem

Cause

(B) Check that depth Stop yoke bushing (44) has not frozen to splined spindle or yoke.
(C) Jammed tap, causing clutch (26) to slip. Turn off motor — free tap.

8. Lead Screw not maintaining proper depth control.

(A) Depth stop yoke bushing (44) may be frozen to splined spindle. Replace bushing and check all related parts for brass chips and worn or sharp edges. Check depth stop yoke assembly (43) for squareness between threaded rod and plate; check drive collar (61) for smoothness on flat surfaces.
(B) Check actuator switch (5) for erratic operation — replace if necessary.
(C) Solenoid valve (70) may be clogged with oil or dirt, causing sluggish or erratic operation disassemble and clean.
(D) Clutch may be glazed — clean or replace.

9. Flutters at bottom of stroke.

(A) Actuator switch (5) malfunctioning — reset switch by moving upper actuator cam (9) downward toward tap.

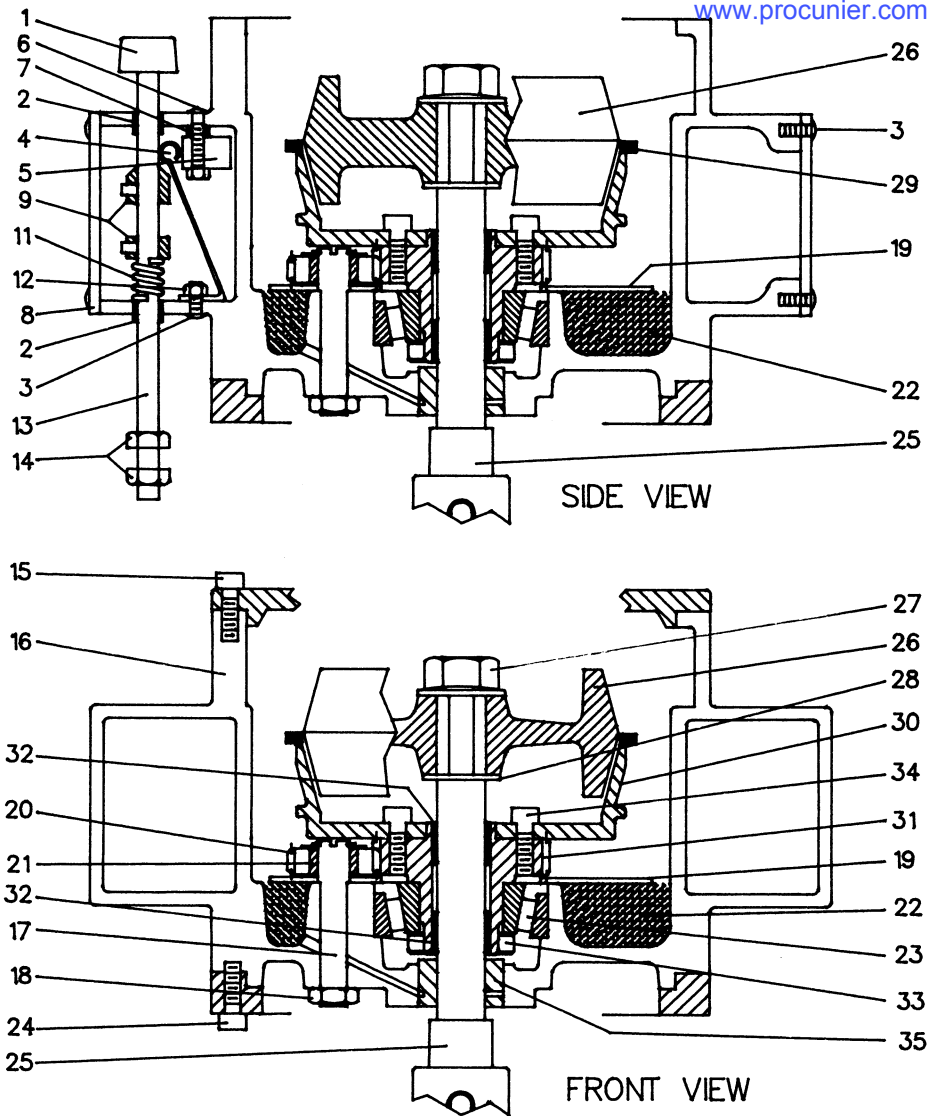
10. Tru-Grip Nut (68) becomes loose during operation.

(A) Check that the tap and collet size are the same.
(B) Clean clutch (26).
(C) Check threads on lead screw chuck for wear — also nut (68).

CAUTION: Always disconnect power and air lines to the tapper before removing nameplates or working on tapper head. Make sure that motor is not operating.

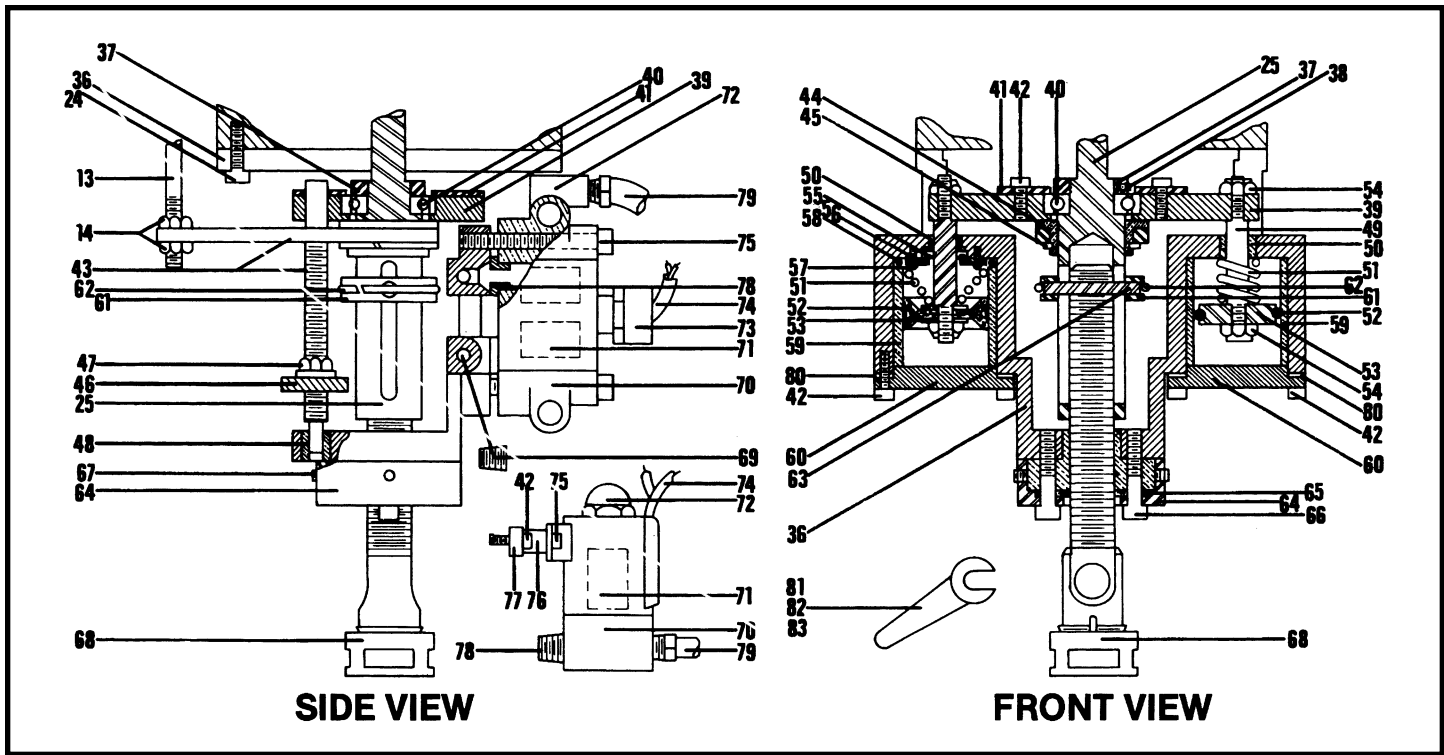
Note: For 1AL Serial Nos. B4869 and lower & 3AL Serial Nos. B9229 and lower, see supplement by going to:

www.proconier.com/al_supplement.html



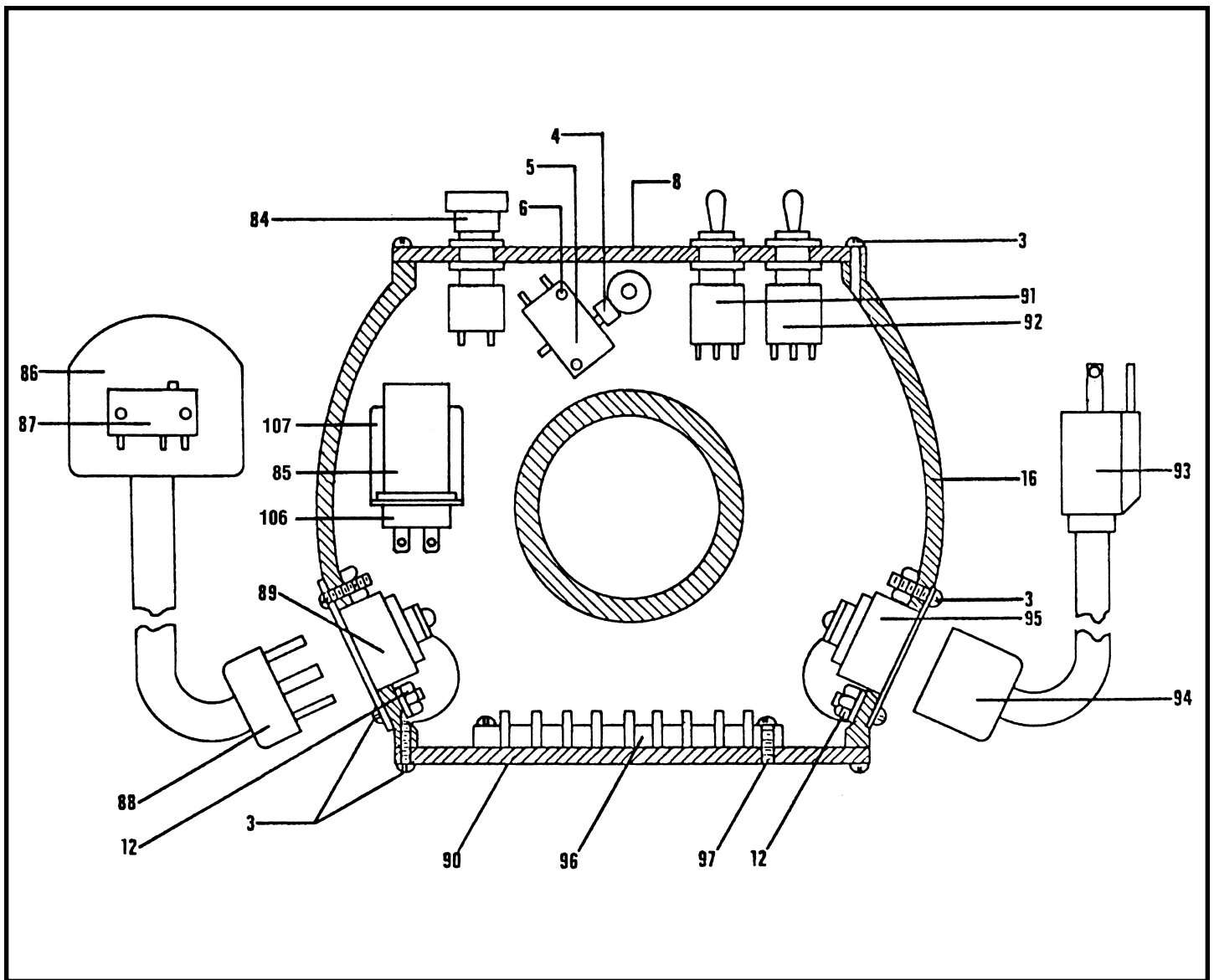
BODY ASSEMBLY

Code No.	Description	Qty.	Series 21000	Series 23000	Code No.	Description	Qty.	Series 21000	Series 23000
1.	Cam Shaft Button		21216	21216	21.	Pinion Bearing	3	—	13255
2.	Shank Bushing	2	11220	11220	22.	Oiler Felt		11247	13247
3.	Screw	15	21207	21207	23.	Body Ball Bearing		11273	23229
4.	Switch Arm		21214	23214	24.	Screw	4-6	14223	14223
5.	Actuator Switch		21211	23211	25.	Hex Splined Spindle		21288	23288
6.	Actuator Mounting Screw & Nut	2	21213	21213	26.	Hex Clutch		21285	23285
7.	Actuator Switch Spacer	2	21212	23212	27.	Lock Nut		21286	23286
8.	Front Name Plate		21206	23206	28.	Lock Ring W/Split Collar		21277	23277
9.	Actuator Cam W/Screw (2 pc.)		21218	21218	28L.	Lock Ring Only		21278	23278
11.	Actuator Cam Spring		21219	23219	28S.	Split Collar Only		21279	23279
12.	Ground Nut	6	21224	21224	29.	Separator Ring		11234	13234
13.	Actuator Cam Shaft		21215	23215	*	Reverse Shell Assembly (includes 30, 31, 32, 33 & 34)		11266	13266
14.	Cam Shaft Nut	2	21217	21217	30.	Reverse Shell Only		11267	13267
15.	Screw	4-6	11223	14223	31.	Reverse Gear W/Bushing (32)		11268	13268
16.	Body W/Bushing (2)		21205	23205	32.	Reverse Gear Bushing Only	2	11270	13270
17.	Stud	3	11249	13249	33.	Reverse Gear Lock Nut		—	13271
18.	Stud Nut	3	11252	12252	34.	Screw	4-6	16272	11223
19.	Stud Plate		11248	13248	35.	Body Bushing		11246	13246
20.	Pinion Gear W/Bearing (21)	3	11254	13253					



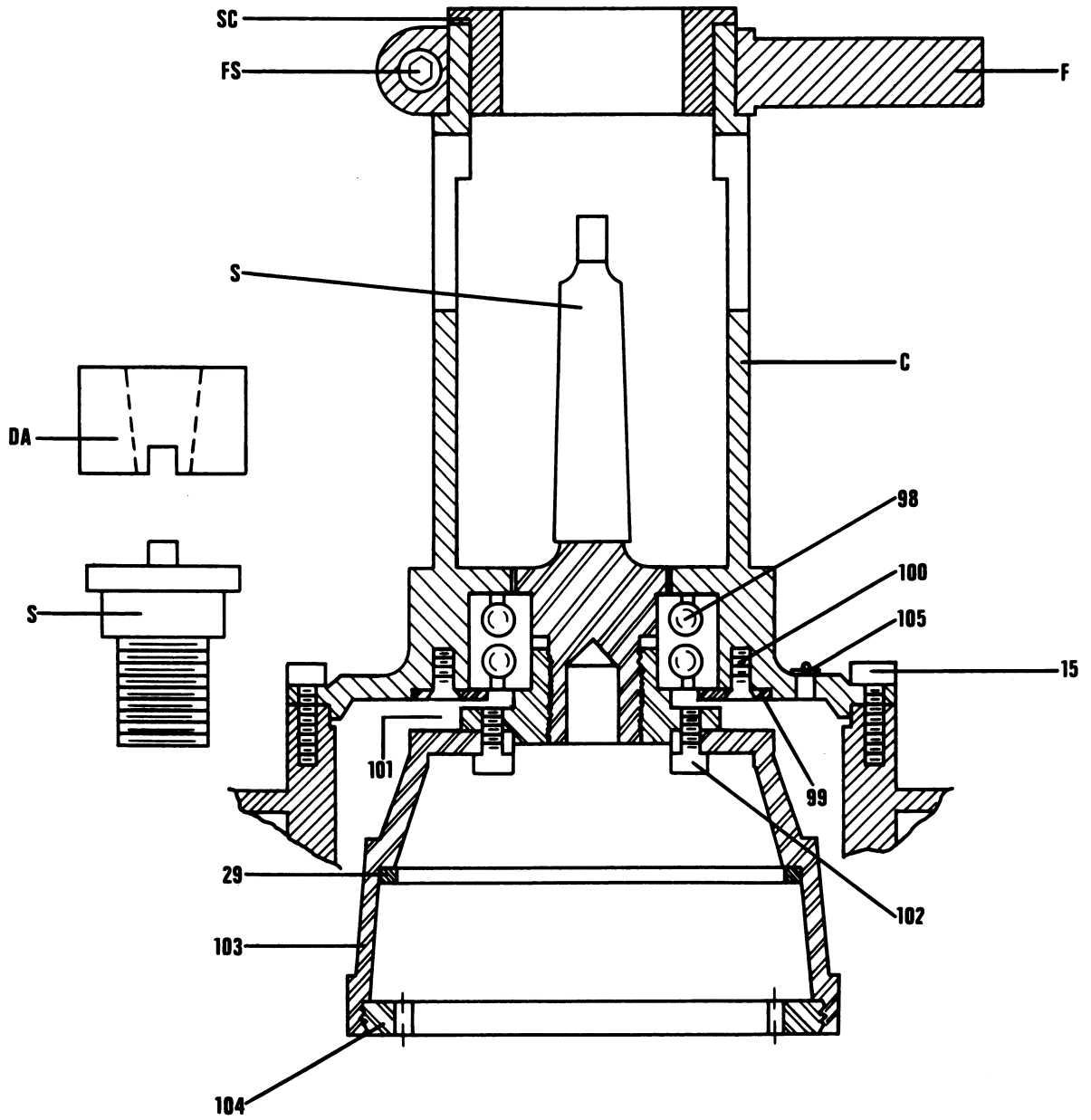
HOUSING ASSEMBLY

Code No.	Description	Qty.	Series 21000	Series 23000	Code No.	Description	Qty.	Series 21000	Series 23000
13.	Actuator Cam Shaft		21215	29218	59.	Cylinder Sleeve	2	21250	23250
14.	Cam Shaft Nut	2	21217	21217	60.	Cylinder Cap	2	21263	23263
24.	Screw	6	14223	14223	61.	Drive Collar		21249	23249
25.	Hex Splined Spindle		21288	23288	62.	Drive Collar Snap Ring		21248	23248
36.	Cylinder Housing W/Sleeve (59)		21230	23230	63.	Drive Collar Pin		12260	23247
37.	Lock Nut (includes 38)		21233	21233	64.	Lead Screw Cap		21280	23280
38.	Yoke Pin Screw		20226	20226	65.	Oiler Felt		21283	23283
39.	Cylinder Yoke		21236	23236	66.	Screw	2	21284	21284
40.	Yoke Ball Bearing		21235	21235	67.	Screw		21282	21281
41.	Retainer Plate		21237	23237	68.	Tru-Grip Nut		11287	13287
42.	Screw	12-14	11223	11223	69.	Pipe Plug	3-6	21276	21276
43.	Depth Stop Yoke Ass'y (Includes 44, 45)		21238	23238	70.	Solenoid Valve Ass'y 120V (includes 71, 72, 73 & 74)		21264	23264
44.	Yoke Bushing		21242	23242	70.	Solenoid Valve Ass'y 12V (includes 71, 72, 73 & 74)		21265	23265
45.	Snap Ring		21243	23243	71.	Solenoid Coil 120V	1-2	21266	23266
46.	Depth Stop Nut		21245	23245	71.	Solenoid Coil 12V	1-2	21267	23267
47.	Depth Stop Lock Nut		12252	23244	72.	Solenoid Adapter		21270	23270
48.	Shank Bushing		—	12220	73.	Solenoid Connector		—	23268
49.	Cylinder Shaft	2	21255	21255	74.	Solenoid Wire Insulator		21269	23269
50.	Cylinder Bronze Bushing	2	21251	23251	75.	Valve Mounting Screw	2-4	14223	23274
51.	Piston Spring REGULAR	2	21256	23256	76.	Solenoid Mounting Spacer		21273	—
51.	Piston Spring HEAVY DUTY	2	21257	—	77.	Solenoid Mounting Strap		21272	—
52.	Cylinder Piston Cup	2	21259	23259	78.	Solenoid Nipple or Seal	1-2	21275	23271
53.	Piston Cup Washer	2-4	21258	23258	79.	3' Air Line		21295	23295
54.	Cylinder Shaft Yoke Nut	4	21260	21260	80.	Cylinder Cap Gasket	2	21262	23262
55.	Cylinder Shaft Seal	2	—	23252	81.	Tru-Grip Spindle Wrench		11288	13288
56.	Cylinder Seal Retainer	2	—	23253	82.	Tru-Grip Nut Wrench		11288	13289
57.	Seal Retainer Screw	4	—	23254	83.	Depth Nut Wrench 1/2"-9/16"		21297	21297
58.	Cylinder "O" Ring Seal	2	—	23261					



TAPPER ELECTRICAL COMPONENTS

Code No.	Description	Qty.	Series 21000	Series 23000	Code No.	Description	Qty.	Series 21000	Series 23000
3.	Screw	15	21207	21207	88.	Foot Control Plug		21293	21293
4.	Switch Arm		21214	23214	89.	Foot Control Receptacle		21223	21223
5.	Actuator Switch		21211	23211	90.	Rear Name Plate		21225	23225
6.	Actuator Mounting Screw	2	21213	21213	91.	Toggle Switch (2-Way)		21209	21209
8.	Front Name Plate		21206	23206	92.	Toggle Switch (3-Way)		21208	21208
12.	Ground Nut	6	21224	21224	93.	Power Line Cord W/Plug		21289	21289
16.	Body W/Bushing (2)		21205	23205	94.	Power Line Plug Only		21290	21290
84.	Push Button Switch		21210	21210	95.	Power Line Receptacle		21222	21222
85.	Relay 120V		21228	21228	96.	Terminal Board		—	23226
85.	Relay 10V		21229	21229	97.	Terminal Board Screw	2	—	23227
86.	Foot Control Assembly		21291	21291	106.	Relay Socket	1	21226	21226
87.	Foot Control Switch		21292	21292	107.	Relay Bracket	1	21227	21227



COVER ASSEMBLY

Code No.	Description	Qty.	Series 21000	Series 23000	Code No.	Description	Qty.	Series 21000	Series 23000
C	Cover		SEE UNIT LIST		99.	Cover Bearing Retainer		11228	13228
DA	Drive Adapter		SEE UNIT LIST		100.	Retainer Screw	4	11229	12229
F	Flange		42400	42400	101.	Drive Shell Adapter		—	13232
FS	Flange Bolt		42401	42401	102.	Drive Shell Adapter Screw	6	—	14235
S	Shank		SEE UNIT LIST		103.	Drive Shell (Includes 101-102)		11231	13230
SC	Split Collar		SEE UNIT LIST		103.	Drive Shell Only		11231	13231
15.	Cover Screw	4-6	11223	14223	104.	Ring Gear		11233	13233
29.	Separator Ring		11234	13234	105.	Oiler		11224	11224
98.	Cover Ball Bearing		11221	13221					

UNIT LIST

Series 21000			Series 23000			Series 21000 & 23000	
UNIT	COVER	SHANK	UNIT	COVER	SHANK	COLLAR	DRIVE ADAPTER
21035	11140	11207	23035	13140	13207	42424	42531
21036	11140	11207	23036	13140	13207	42425	42531
21037	11140	11207	23037	13140	13207	42423	42531
21038	11140	11207	23038	13140	13207	42427	42540
21039	11140	11207	23039	13140	13207	42421	42531
21041	11140	11207	23041	13140	13207	42426	42531
21046	11146	11207	23046	13140	13207	—	42520
21047	11140	11207	23047	13140	13207	42434	42540
21048	11140	11207	23048	13140	13207	42429	42540
21049	11140	11207	23049	13140	13207	42435	42531
21050	11140	11207	23050	13140	13207	42423	42516
21051	11151	11207	23151	13151	13207	42433	42522
21053	11140	11207	23053	13140	13207	42435	42520
21056	11156	11207	—	—	—	—	—
21061	11140	11207	23061	13140	13207	42424	42516
21063	11162	11202	23063	13162	13202	—	—
21064	11162	11202	23064	13162	13202	42427	—
21065	11165	11202	23065	13165	13202	—	—
—	—	—	23066	13183	13202	—	—
21067	11167	11202	23067	13167	13202	—	—
21068	11162	11202	23068	13162	13202	42434	—
21069	11162	11202	23069	13162	13202	42435	—
21070	11162	11202	23070	13162	13202	42424	—
21071	11171	11202	23071	13171	13202	—	—
—	—	—	23072	13188	13202	—	—
21073	11173	11202	23073	13173	13202	—	—
—	—	—	23075	13175	13202	—	—
—	—	—	23076	13176	13202	—	—
21077	11162	11202	23077	13162	13202	42425	—
21078	11162	11202	23078	13162	13202	42423	—
—	—	—	23084	13183	13203	—	—
—	—	—	23085	13185	13203	—	—
—	—	—	23088	13188	13203	—	—
—	—	—	23090	13183	13203	42435	—
—	—	—	23091	13191	13203	—	—
—	—	—	23092	13192	13203	—	—



PROCUNIER SAFETY CHUCK CO.
 304 Winston Creek Parkway
 Lakeland, Florida 33810-2866
 Telephone: 863-688-0071
 FAX: 863-682-6233
 E-Mail: info@procunier.com