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PROCUNIER SAFETY CHUCK CO.

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**Style E
High-Speed
Tapping Heads**

**Series 11000,
12000 and 13000**

INSTRUCTION MANUAL

Introduction

PROCUNIER Series 11000, 12000 and 13000 High-Speed Tapping Heads are precision made for extended machining life **when used within rated capacity limits**. Available with TRU-GRIP™ or Quick Change spindle (11000 or 12000 models only) in either a Morse taper, straight shank, or cover quill clamping style **RECOMMENDED**.

Standard and Optional Equipment:

Style E Tapping Heads include the following standard equipment: one (1) set wrenches; one (1) set of collets; drive adapter or tie rod (where applicable). The following options are also available: collet adapter for external threading, button (Style TRC) Series 57490 dies; and additional PROCUNIER TRU-GRIP or Quick Change Tap Collets to fit all standard inch or metric taps.

Left-Hand Operation: When using left-hand taps, reverse the rotation of the drill press (left to right operation) and modify the cover assembly of the tapper (pin shank, drive shell and internal ring gear).

Lubrication: Tapping Heads should be lubricated with approximately 6 drops of light grade machine oil (SAE 10W) every 4 hours of operation. **Do not flood**, since glazing of the clutch will reduce drive capacity. Under heavy use, remove the clutch and clean it periodically. (See Disassembly Instructions.)

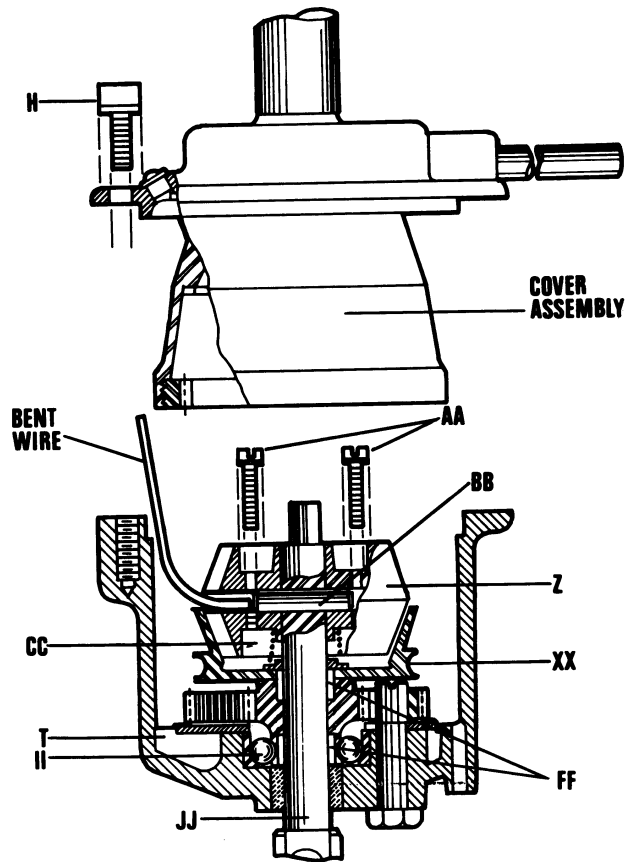
Tapping Recommendations:

1. Never exceed the rated capacity of the Tapping Head. Thread rolling taps require **more** torque than cutting taps. Recommended capacities are:

Series Tapper	Cutting Taps	Forming Taps
11000 (#1-E)	#10 (M5) Mild Steel 1/4" (M6) Aluminum	#6 (M3.5) #8 (M4.5)
12000 (#2E)	5/16" (M8) Mild Steel 1/2" (M12) Aluminum	#10 (M5) 5/16" (M8)
13000 (#3E)	1/2" (M12) Mild Steel 3/4" (M18) Aluminum	3/8" (M9) 9/16" (M14)

2. Maximum Tapping Head speeds:
 - Size #1 — 3,000 RPM — 11000 Series
 - Size #2 — 2,000 RPM — 12000 Series
 - Size #3 — 1,000 RPM — 13000 Series
3. High-Speed Ground Thread Taps are recommended for best results. When tapping thru-holes in steel, or other materials which produce ribbon chips, spiral pointed or gun taps are recommended. For blind holes, use spiral-fluted, standard plug or bottoming taps. Consult the tap manufacturer for the proper type and style of tap that should be used.
4. A good grade oil-base coolant flowed on the tap will assure longer tap life, provide a better finish and reduce **Water soluble without oil is not recommended because it will increase torque and reduce tapping capacity.**
5. Proper feeds and speeds are essential to avoid stripping or damaging the threads in high-speed tapping. NOTE: PROCUNIER Tapping Heads reverse at 2X the forward speed; therefore, reverse feed must be 2X the forward feed.

Disassembly for Cleaning and Part Replacement



Disassembly of Tapping Head is easily accomplished by following procedure:

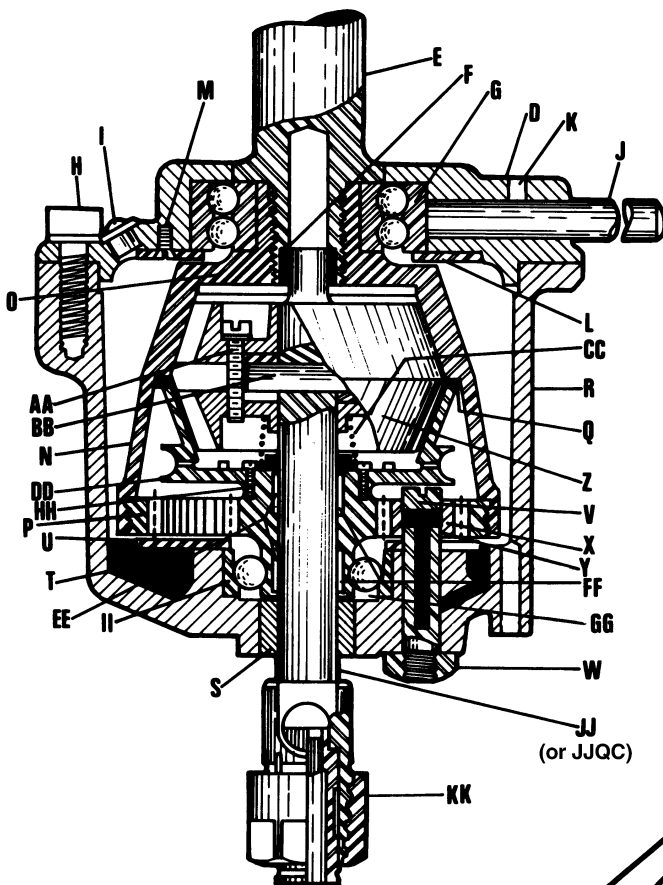
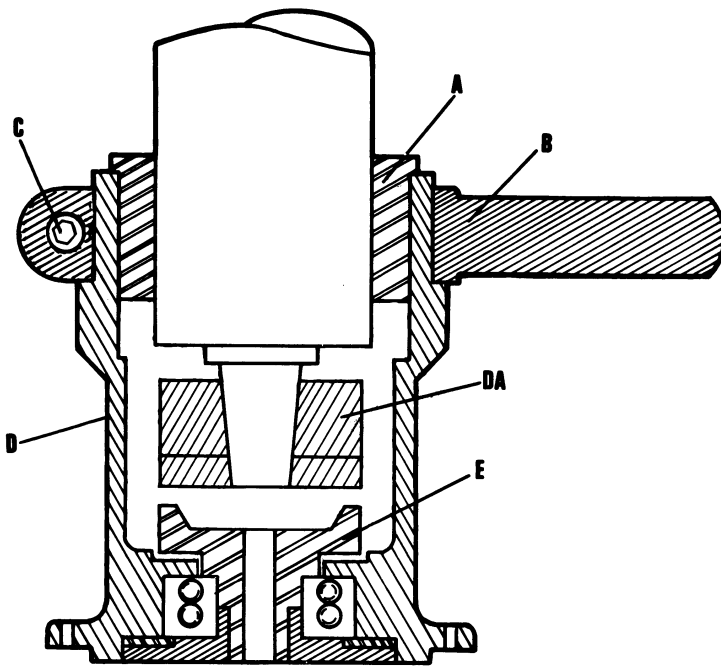
1. Remove cover screws (H) from top of head and remove cover assembly (top) from body.
2. **Shank Removal:** Follow step (1), secure shank (E) in a vise. Using a strap wrench (DO NOT USE PIPE WRENCH), unscrew the drive shell (N) (right hand thread) from the shank. The shank (E), ball bearing (G) and cover (D) are press fit together.
3. **Clutch Removal:** Follow step (1), remove the two clutch screws (AA), use bent wire, slide clutch pin (BB) out of clutch (Z), remove clutch. Reverse process to install new clutch.

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.) **Clutch surface should never be sanded, filed or roughed up. Do not dip the head in cleaning fluid, since this could wash dirt or grit into the ball bearings.** Regrease body bearings (11) and reverse gear bushings (FF) with a good grade Teflon bearing grease and saturate the oil felt (T) with #10 oil.

When reassembling, make sure clutch spring is properly positioned with the fiber washer on reverse shell assembly. Secure clutch pin (BB) in operating position by locking the clutch screws (AA) tight.

NOTE: Alteration or Modification to unit will void warranty.

Parts List



Code No.	Item	Qty.	1E 11000	2E 12000	3E 13000
A	Split Collar	1		SEE UNIT LIST	
B	Flange	1	42400	42400	42400
C	Screw 5/16"-18x2 S.H.C.	1	42401	42401	42401
D	Cover	1		SEE UNIT LIST	
DA	Drive Adapter			SEE UNIT LIST	
E	Shank	1		SEE UNIT LIST	
F	Shank Bushing	1	11220	12220	13220
G	Cover Ball Bearing	1	11221	12221	13221
H	Cover Screw	4-5-6	11223	11223	14223
I	Oiler	1	11224	11224	11224
J	Tie Rod	1	11226	12226	13226
K	Tie Rod Screw	1	11227	12227	12227
L	Cover Bearing Retainer	1	11228	12228	13228
M	Retainer Screw	4	11229	12229	12229
N	Drive Shell	1	11231	12231	13231
O	Drive Shell Adapter	1	—	—	13232
P	Ring Gear	1	11233	12233	13233
Q	Separator Ring	1	11234	12234	13234
R	Body	1	11245	12245	13245
S	Body Bushing	1	11246	12246	13246
T	Oil Felt	1	11247	12247	13247
U	Stud Plate	1	11248	12248	13248
V	Stud w/Washer & Snap Ring	3	11249	12249	13249
W	Stud Nut	3	11252	12252	12252
X	Pinion Gear	3	11254	12253	13253
Y	Pinion Gear Bushing	3	—	12255	13220
Z	Clutch Assembly	1	11256	12256	13256
AA	Clutch Screw	2	11257	12257	13257
BB	Clutch Pin	1	11260	12260	13260
CC	Clutch Spring Assembly	1	11263	12263	13263
*	Reverse Shell Assembly (includes DD thru HH)	1	11266	12266	13266
DD	Reverse Shell Only	1	11267	12267	13267
EE	Reverse Gear & Bushing	1	11268	12268	13268
FF	Reverse Gear Bushing	2	11270	12270	13270
GG	Reverse Gear Lock Nut	1	—	12272	13271
HH	Reverse Gear Screw	4-4-6	16272	11223	11223
II	Body Ball Bearing	1	11273	12273	23229
JJ	Tru-Grip Spindle	1	11286	12286	13286
JJQC	QC Spindle Assembly	1	11290	12290	—
KK	Tru-Grip Nut	1	11287	12287	13287
LL	Spindle Wrench	1	11288	12288	13288
MM	Nut Wrench	1	11288	12288	13289

Collets

Size	Range
#1E	Tap: #0 to 1/4" (M2 to M6)
#2E	Tap: #8 to 1/2" (M5 to M 12)
#3E	Tap: 1/4 " to 3/4" (M6 to M18) (1/4- NPT)

When ordering, specify both tapper model and tap size. See Catalog Series 51800 or 58800 (#1E), 52800 or 59800 (#2E) and 53800 (#3E) for part numbers.

CAUTION: All Tapping Heads with a Tie Rod "J" (torque bar) must have these bars secured between two parallel fixed members to insure no clockwise or counterclockwise movement. Any malfunction in the operation may cause the bar to reverse direction. Use of Quill Clamp Tappers eliminates the need of these fixed members.

Unit List

11000 UNIT			12000 UNIT			13000 UNIT			11000	12000	13000
Unit	Cover D	Shank E	Unit	Cover D	Shank E	Unit	Cover D	Shank E	Collar A	Drive Adapter DA	
11001	11122	11201	12001	12222	12001	—	—	—	—	—	
11002	11222	11202	12002	12222	12202	13002	13222	13202	—	—	
11003	11222	11203	12003	12222	12203	13003	13222	13203	—	—	
—	—	—	—	—	—	13004	13222	13204	—	—	
11006	11222	11206	12006	12222	12206	13006	13222	13206	—	—	
11035	11140	11207	12035	12140	12207	13035	13140	13207	42424	42531	
11036	11140	11207	12036	12140	12207	13036	13140	13207	42425	42531	
11037	11140	11207	12037	12140	12207	13037	13140	13207	42423	42531	
11038	11140	11207	12038	12140	12207	13038	13140	13207	42427	42540	
11039	11140	11207	12039	12140	12207	13039	13140	13207	42421	42531	
11041	11140	11207	12041	12140	12207	13041	13140	13207	42426	42531	
11042	11140	11207	12042	12140	12207	13042	13140	13207	42423	42520	
11043	11140	11207	12043	12140	12207	13043	13140	13207	42429	42524	
11044	11140	11207	12044	12140	12207	—	—	—	42421	42526	
11045	11140	11207	12045	12140	12207	13045	13140	13207	42423	42526	
11046	11146	11207	12046	12146	12207	13046	13146	13207	—	42520	
11047	11140	11207	12047	12140	12207	13047	13140	13207	42434	42540	
11048	11140	11207	12048	12140	12207	13048	13140	13207	42429	42540	
11049	11140	11207	12049	12140	12207	13049	13140	13207	42435	42531	
11050	11140	11207	12050	12140	12207	13050	13140	13207	42423	42516	
11051	11151	11207	12051	12151	12207	13051	13151	13207	42433	42522	
11052	11140	11207	12052	12140	12207	13052	13140	13207	42435	42522	
11053	11140	11207	12053	12140	12207	13053	13140	13207	42435	42520	
11054	11154	11209	12054	12154	12209	—	—	—	—	42506	
11055	11154	11210	12055	12154	12210	—	—	—	—	42508	
11059	11159	11207	12059	12159	12207	—	—	—	42411	42527	
11061	11140	11207	12061	12140	12207	13061	13140	13207	42424	42516	
11063	11162	11202	12063	12162	12202	13063	13162	13202	—	—	
11064	11162	11202	12064	12162	12202	13064	13162	13202	42427	—	
11065	11165	11202	12065	12165	12202	13065	13165	13202	—	—	
—	—	—	12066	12188	12202	13066	13188	13202	SPECIAL	—	
11067	11167	11202	12067	12167	12202	13067	13167	13202	—	—	
11068	11162	11202	12068	12162	12202	13068	13162	13202	42434	—	
11069	11162	11202	12069	12162	12202	13069	13162	13202	42435	—	
11070	11162	11202	12070	12162	12202	13070	13162	13202	42424	—	
11071	11171	11202	12071	12171	12202	13071	13171	13202	—	—	
—	—	—	12072	12188	12202	13072	13188	13202	—	—	
11073	11173	11202	12073	12173	12202	13073	13173	13202	—	—	
—	—	—	12075	14199	12202	13075	14199	13202	—	—	
—	—	—	12076	14199	12202	13076	14199	13202	—	—	
11077	11162	11202	12077	12162	12202	13077	13162	13202	42425	—	
11078	11162	11202	12078	12162	12202	13078	13162	13202	42423	—	
—	—	—	12084	12183	12203	13084	13183	13203	—	—	
—	—	—	12085	12185	12203	13085	13185	13203	—	—	
—	—	—	12088	12188	12203	13088	13188	13203	—	—	
—	—	—	12090	12183	12203	13090	13183	13203	42435	—	
—	—	—	12091	12191	12203	13091	13191	13203	—	—	

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