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**Style F  
Heavy-Duty  
Tapping Heads  
Series 14000**

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**INSTRUCTION MANUAL**

## Introduction

PROCUNIER Series 14000 Heavy-Duty Tapping Heads are precision made for extended machining life **when used within its rated capacity limits**. They are available in either a Morse taper or cover quill clamping style (recommended where increased rigidity and accuracy are essential).

## Mounting

**Standard and Optional Equipment:** Style F Tapping Heads include the following standard equipment: one (1) set wrenches; one (1) set of four (4) collets; and tie rod (where applicable). A collet adapter for external threading and additional PROCUNIER Tru-Grip Tap Collets to fit all standard inch or metric taps are available.

**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 to drive shell adapter).

**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:

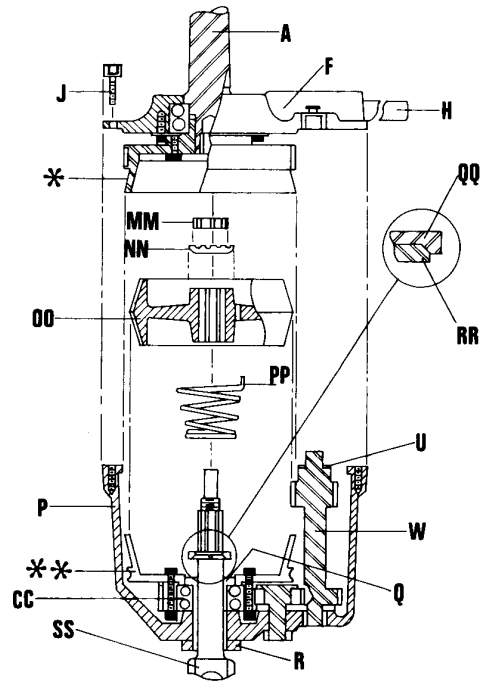
1. Never exceed the rated capacity of the Tapping Head. Recommended capacities are:

Cutting Taps	Forming Taps	Material
1" (M24)	5/8" (M16)	Mild Steel
1-1/8" (M27)	3/4" (M20)	Aluminum
1/2" NPT		Mild Steel
3/4" NPT		Aluminum

2. Maximum Tapping Head speed: 800 RPM
3. High-Speed Ground 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 based coolant flowed on the tap will assure longer tap life, provide a better finish and reduce downtime. **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. For best clutch life, the tapper feed should be such that the spindle (SS) does not hesitate or slow up when tap is engaged in piece part. NOTE: PROCUNIER Tapping Heads reverse at 2X the forward speed; therefore, reverse feed must be 2X the forward speed. (See Catalog Page 29 for recommended drill press speeds.)

**NOTE: Alteration or Modification to unit will void warranty.**

## Disassembly for Cleaning and Parts



## Replacement

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

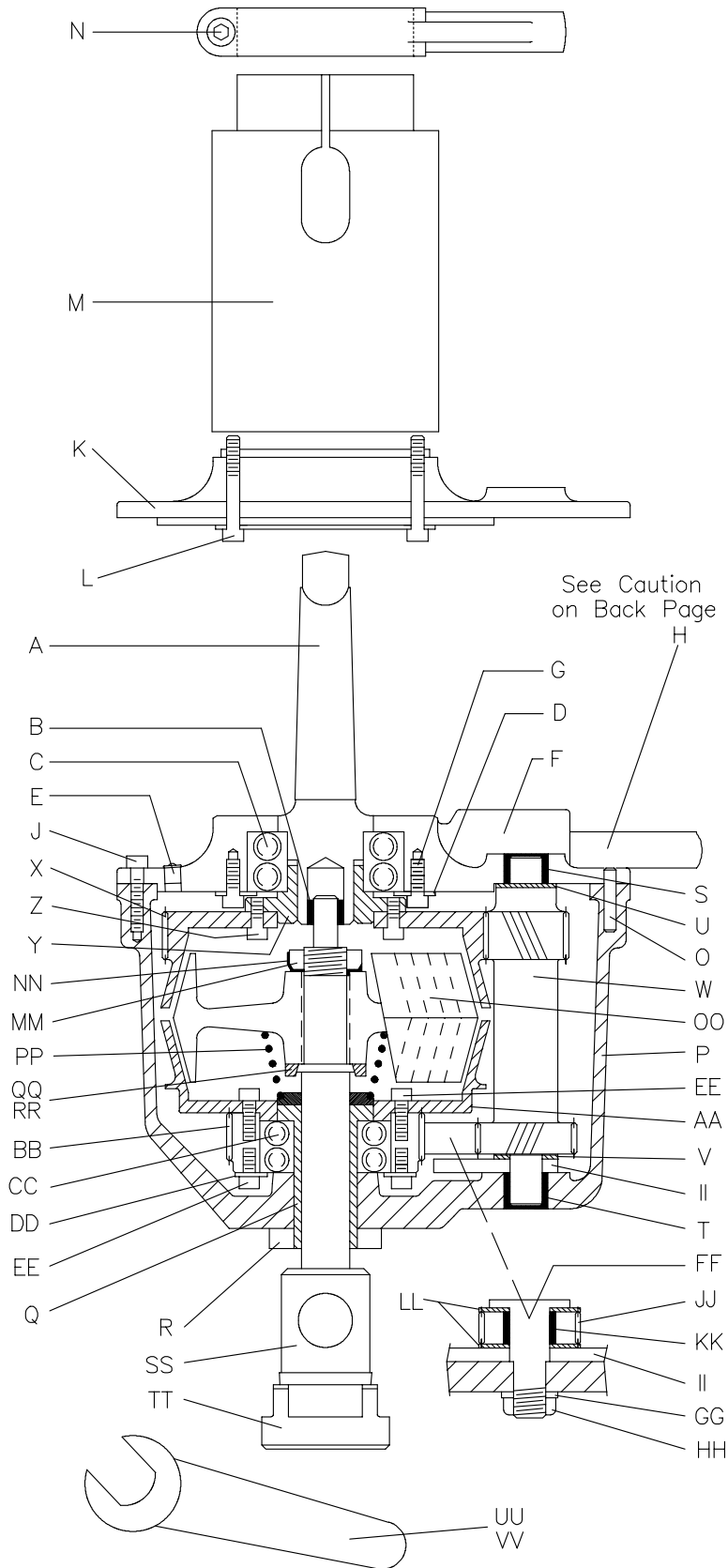
1. Remove the cover screws (J) from top of head and remove cover assembly from body.
2. Straighten bent lock fin on clutch lock nut washer (NN), then remove clutch lock nut (MM) and washer (NN).
3. Remove the clutch (OO), clutch lock ring (QQ), split collar (RR) and clutch spring (PP), allowing Tru-Grip spindle (SS) to drop out.
4. Remove body bushing nut (R) and lift out back gear (W) and reverse shell assembly (\*\*).

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.

Check that the ball bearing (CC) in the reverse shell assembly (\*\*) is well greased, then reassemble with the back gear (W) and lock in place with body bushing nut (R).

Insert Tru-Grip spindle (SS) and slide clutch spring (PP) with washer in place on reverse shell assembly. Holding the spring down, insert the two-piece split collar (RR), tapered side up, into the groove on the spindle below spline, then place the tapered clutch lock ring (QQ), tapered side down, over the split collar. Replace clutch (OO), clutch lock nut washer (NN), clutch lock nut (MM) and lock in place. Set upper back gear thrust washer (U) with flat side **toward** the clutch and remount cover assembly.

# Parts List



Code	Description	Qty.	Part Number
A	Shank with Bushing	1	See Unit List
B	Shank Bushing only	1	13220
C	Cover Ball Bearing	1	13221
D	Cover Bearing Retainer	1	14228
E	Oiler	1	11224
F	Cover — with Tie Rod Boss (Quill includes S and E)	1	See Unit List
G	Retainer Screws — 10-32 x 7/16" (used with F)	6	11223
H	Tie Rod	1	14226
J	Cover Screws — 10-32 x 3/4"	8	14223
K	Cover for Quill Clamp (Includes S and E)	1	See Unit List
L	Retainer Screws — 10-32 x 1-1/2" (used with K)	6	14237
M	Quill Clamp (includes N)	1	See Unit List
N	Flange	1	42400
O	Body Dowel Pin	1	14246
P	Body	1	14245
Q	Body Bushing	1	14272
R	Body Bushing Nut	1	14273
S	Upper Back Gear Needle Bearing	1	14282
T	Lower Back Gear Needle Bearing	1	14282
U	Upper Back Gear Thrust Washer	1	14276
V	Lower Back Gear Thrust Washer	1	14281
W	Back Gear	1	14277
*	Drive Shell Assembly (includes X, Y and Z)	1	14230
X	Drive Shell only	1	14231
Y	Drive Shell Adapter	1	13232
Z	Drive Shell Screws — 10-32 x 1/2"	6	11223
**	Reverse Shell Assembly (includes AA-EE)	1	14267
AA	Reverse Shell only	1	14268
BB	Reverse Gear only	1	14269
CC	Reverse Gear Ball Bearing	1	12221
DD	Reverse Gear Bearing Retainer	1	14270
EE	Reverse Gear Screws 10-32 x 7/16"	12	11223
FF	Stud	1	14249
GG	Stud Washer	1	14250
HH	Stud Nut	1	14252
II	Stud Plate	1	14248
JJ	Pinion Gear	1	14253
KK	Pinion Gear Needle Bearing	1	14254
LL	Pinion Gear Thrust Washers	2	14255
MM	Clutch Lock Nut	1	14260
NN	Clutch Lock Nut Washer	1	14259
OO	Clutch	1	14256
PP	Clutch Spring with Fiber Washer	1	14264
QQ	Clutch Lock Ring	1	14262
RR	Split Collar	1	14263
SS	Tru-Grip Tap Holder Spindle	1	14288
TT	Tru-Grip Nut	1	14289
UU	Tru-Grip Nut Wrench	1	14291
VV	Tru-Grip Spindle Wrench	1	14290

## Unit List

Unit	Shank A	Cover F	Cover for Quill Clamp K	Quill Clamp M	Collar
14002	13202	14222	—	—	—
14003	13203	14222	—	—	—
14004	13204	14222	—	—	—
14005	14205	14222	—	—	—
14006	13206	14222	—	—	—
14063	13202	—	14110	14162*	—
14064	13202	—	14110	14162*	42427
14065	13202	—	14110	14165	—
14066	13202	—	14110	14162	42435
14067	13202	—	14110	14167	—
14068	13202	—	14110	14162*	42434
14069	13202	—	14110	14162*	42435
14071	13202	—	14110	14171*	—
14072	13202	—	14110	14188	—
14084	13203	—	14110	14183*	—
14085	13203	—	14110	14185*	—
14087	13203	—	14110	14183*	—
14088	13203	—	14110	14188	—
14090	13203	—	14110	14183*	42435
14091	13203	—	14110	14191*	—
14092	13203	—	14110	14192*	—
14099	SPECIAL—CONTACT FACTORY				

\*Also Requires Flange 42400

## Tru-Grip Tap Collets



Tap Type	Size
Fractional	1/4" -1-1/8" (M6-M27)
Pipe	1/8"-3/4" NPT
Pulley	7/16"-3/4" (M10-M18)
Nut	3/8"-1" (M8-M24)

When ordering, see Catalog Series 54800 (4F).

**CAUTION:** All Tapping Heads with a Tie Rod "H" (torque bar) must have these bars secured between two parallel fixed members to insure no clockwise or counter clockwise 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.

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