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PROCUNIER SAFETY CHUCK CO.

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**Universal
Type Multiple
Drilling and
Tapping
Attachments**

*Series 33000
thru 40000*

INSTRUCTION MANUAL

INSTRUCTIONS

INTRODUCTION:

The PROCUNIER Universal Type Multiple Drill and Tapping attachments are precision made and will give long service when treated properly. **Care should be taken to insure that the limits of the head are not exceeded.**

MOUNTING FOR DRILL HEADS:

The Multiple Drill Head comes equipped with a quill clamping type cover with separable driver. Attaching the multiple head to a drill press is accomplished in the following sequence:

1. Remove the drill chuck and stop rod arm assembly. The quill clamp cover includes a flange which may have to be drilled to match the hole in the stop rod arm.
2. Insert the taper driver (either M.T. or C.T.) into the spindle of the drill press. Be sure both parts are clean and free of chips.
3. Slide the head onto the quill of the drill press making sure the driver tang is engaged with the slot in the adapter. Drop the head so that there is $1/32''$ clearance between driver and adapter. Tighten socket screw in flange, locking the entire assembly in place. The head should clamp on at least $3/4''$ of the quill of the drill press.

MOUNTING FOR TAPPING HEADS:

1. Place bolts in base (BA-7) hand tight.
2. Set balance springs (BA-5) by raising or lowering the position clamp (BA-6) until the adapter (GG) is held firmly in the lead screw assembly. Both balance springs should be set at equal heights with enough pressure to overcome weight.
3. Make sure driving flats on adapter (GG) are engaged in slot in lead screw assembly.
4. Check alignment by moving multiple head down manually against the balance springs. The multiple head should return to the same position by spring pressure only as was obtained in step #3.
5. Tighten trugrip nut on lead screw when alignment and checking are satisfactory.
6. Tighten bolts in base.
7. Run taper thru complete cycle and check to make sure that adapter (GG) does not move up in the reverse mode while the multiple head stands still. If this condition is present, repeat steps 1 thru 7 until eliminated.
8. After spindle assemblies are installed, some slight adjustments may be needed on balance springs to offset extra weight.

LAYING OUT HOLE PATTERN:

Arm Type Spindle Assemblies – Each unit comes with one Tem-plate as standard equipment. Lay out the hole pattern to be drilled on the Tem-plate by using the layout sheet provided. On 1:2 heads center driver revolves at 1:1 ratio. **Care should be taken to keep angularity of the universal at a minimum.** Excessive angle will cause joint to fail. Bore holes in Tem-plate to fit locator on spindle assemblies as follows:

#OCS – .500 dia. #5CS – .750 dia. #2CS – 1.000 dia.
#OCA – .500 dia. #5CA – .750 dia. #1TS – .688 dia.
#OCC – .500 dia. #5CC – .750 dia. #1TA – 1.000 dia.
#OCT – .500 dia. #5CT – .750 dia.

Cartridge Type Spindle Assemblies – These assemblies do not require the use of a Tem-plate. Instead they are designed to be mounted in a $1\frac{1}{2}''$ thick bar which is mounted to the outer ring of the gear case casting. Holes are positioned in

the bar using the layout sheet provided. On 1:2 heads center driver revolves at 1:1 ratio. **Care should be taken to keep angularity of universal at minimum.** Bore holes in plate to fit cartridge on spindle assemblies as follows:

#OBS – .500 dia. #5BS – .750 dia. #2BS – 1.000 dia.
#OBA – .500 dia. #5BA – .750 dia. #1BS – .688 dia.
#OBC – .500 dia. #5BC – .750 dia. #1BA – 1.000 dia.
#OBT – .500 dia. #5BT – .750 dia.

Drill and tap $5/16-18$ in plate to lock in cartridge.

ATTACHING ARM TYPE SPINDLE ASSEMBLIES:

1. Mount Tem-plate to drill head using flat head screws. Tem-plate mounts only in one position.
2. Position the spindle assembly such that the locator bearing fits into the hole in the Tem-plate, and bolt the spindle assembly to the housing, selecting the mounting hole in the housing closest to the center of the slot in the spindle arm. Lock securely making sure there are washers at the head and nut of the bolt.
3. Insert drill into collet or drill driver, then into spindle. Secure by locking collet in place with wrenches provided or engaging taper. Be sure parts are free of chips, that tangs are engaged in slots and collets are locked but not over-tightened. **Use tang type drills over $1/8''$ diameter.**
4. Insert upper universal joint onto hex of spindle gear. Snap lower universal joint (small booted end) onto hex of spindle assembly. Check that angularity is at a minimum. Maximum allowable is 28 degrees.

LUBRICATION:

Gear Case – It is necessary to regrease the gears and bearings in gear case after 2000 hours of operation. This is accomplished by opening the gear case as per instructions under disassembly.

Spindle Assembly – Each spindle assembly is provided with a grease fitting. A good grade of bearing grease should be inserted weekly. Cartridge type spindles are pre-packed and must be changed after 2000 hours of operation.

Universal Joint – The booted type joints require no lubrication. When boots are removed, the joint should be oiled daily. (The lower boot must be removed in some cases for close center work.)

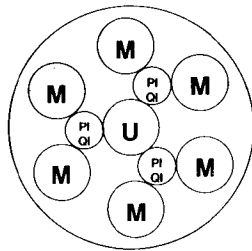
DISASSEMBLY:

Gear Case – In order to disassemble the drill head for parts replacement or lubrication, use the following procedure:

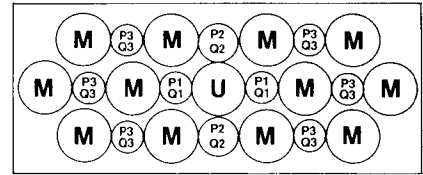
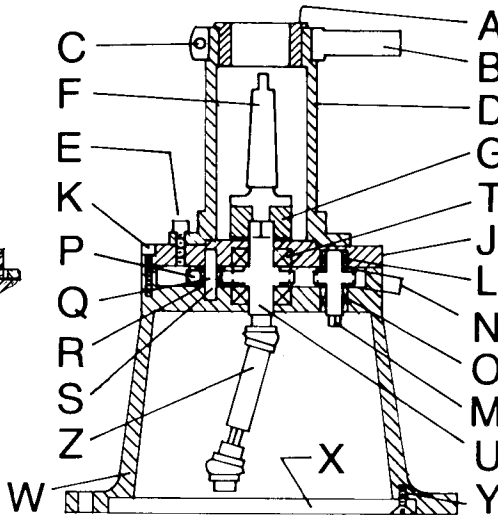
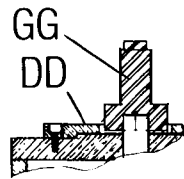
1. Remove the universal joint assemblies (Z).
2. Remove the six (6) socket head cap screws (E).
3. Take off cover (D).
4. Remove six (6) screws (K).
5. Insert two (2) of the six screws removed in the two tapped holes next to the counter bored holes. Tighten screws to act as jack and separate plate (J) from housing (W).
6. All parts are easily slipped out except dowels and bearings which are press fit.
7. When reassembling, check that thrust washers (R) are on top and bottom of spindle (M) and idler gears (P). Line up dowels with holes and press plate in position.

Spindle Assembly – The spindle assembly must be removed from the drill head for disassembly. Simply remove the snap ring or lock nut (SA-1); the spindle (SA-7) and thrust bearings (SA-2 and SA-6) will slip out. The SA-3 and SA-5 bearings are pressed in.

PARTS LIST



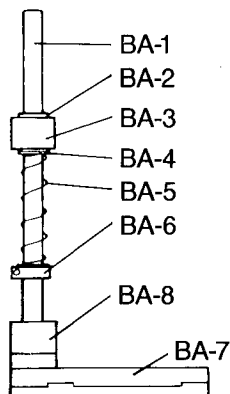
Round Style



Rectangular Style

GEAR CASE

Code No.	Description	Qty.	Series 33000		Series 34000		Series 35000		Series 36000		Series 37000		Series 38000		Series 39000		Series 40000	
			MJ 1:1	MJ 1:2	MK 1:1	MK 1:2	Qty.	ML 1:1	ML 1:2	MM 1:1	MM 1:2	Qty.	MN	MO	Qty.	MP	MQ	
A	Split Collar	1	See Unit List				1	See Unit List				1	See Unit List					
B	Flange	1	42400	42400	42400	42400	1	42400	42400	42400	42400	1	42400	42400	1	42400	42400	
C	Screw #5/16-18 x 2 SHC	1	42401	42401	42401	42401	1	42401	42401	42401	42401	1	42401	42401	1	42401	42401	
D	Cover (Drilling)	1	See Unit List				1	See Unit List				1	See Unit List					
DD	Cover Plate (Tapping)	1	33125	33125	33125	33125	1	33125	33125	33125	33125	1	33125	33125	1	33125	33125	
E	Screw #10-32 x 1/2 SHC	6	11223	11223	11223	11223	6	11223	11223	11223	11223	6	11223	11223	6	11223	11223	
F	Shank	1	See Unit List				1	See Unit List				1	See Unit List					
G	Adapter (Drill Head Only)	1	33215	33215	33215	33215	1	33215	33215	33215	33215	1	33215	33215	1	33215	33215	
GG	Adapter (Tapping)	1	33211	33211	33211	33211	1	33211	33211	33211	33211	1	33211	33211	1	33211	33211	
*	Gear Case Ass'y. (Incl. J-W)	1	33221	33222	34221	34222	1	35221	35222	36221	36222	1	37221	38221	1	39221	40221	
J	Plate	1	33224	33224	34224	34224	1	35224	35224	36224	36224	1	37224	38224	1	39224	40224	
K	Screw #10-32 x 3/4 SHC	6	21274	21274	21274	21274	8	21274	21274	21274	21274	8	14223	14223	6	14223	14223	
L	Upper Needle Bearing	6-8	14282	14282	14282	14282	8-12	14282	14282	14282	14282	12-16	14282	14282	9-16	14282	14282	
M	Spindle Gear	6-8	33227	33228	33227	33228	8-12	33227	33228	33227	33228	12-16	37227	37227	9-16	37227	37227	
N	Thrust Washer	12-16	14281	33231	14281	33231	16-24	14281	33231	14281	33231	24-32	33231	33231	18-32	33231	33231	
O	Lower Needle Bearing	6-8	33234	33234	33234	33234	8-12	33234	33234	33234	33234	12-16	33234	33234	9-16	33234	33234	
P1	Idler Gear	3-4	33235	33236	34235	34236	2	33235	33235	34235	34236	6-8	34235	34235	3-4	34235	34235	
P2	Idler Gear	-	-	-	-	-	2	-	33235	33236	34236	-	-	-	-	-	-	
P3	Idler Gear	-	-	-	-	-	4-6	34235	35235	34235	35235	2-4	33235	33235	0-8	-	33235	
Q1	Idler Bearing	3-4	33244	33245	33245	33245	2	33244	33244	33245	33245	6-8	33245	33245	3-4	33245	33245	
Q2	Idler Bearing	-	-	-	-	-	2	-	33244	33245	33245	-	-	-	-	-	-	
Q3	Idler Bearing	-	-	-	-	-	4-6	33245	33245	33245	33245	2-4	33244	33244	0-8	-	33244	
R	Thrust Washer	6-8	33246	33247	33246	33247	16-20	33246	33247	33246	33247	16-24	33246	33246	6-24	33246	33246	
S	Idler Stud	3-4	33250	33250	33250	33250	8-10	33250	33250	33250	33250	8-12	33250	33250	3-12	33250	33250	
T	Ball Bearing	2	11221	11221	11221	11221	2	11221	11221	11221	11221	2	11221	11221	2	11221	11221	
U	Drive Gear	1	33251	33251	33251	33251	1	33251	33251	33251	33251	1	37251	37251	1	37251	37251	
W	Housing	1	33253	33253	34253	34253	1	35253	35253	36253	36254	1	37253	38253	1	39253	40253	
X	Turn-plate	1	33261	33261	34261	34261	1	35261	35261	36261	36261	1	35261	36261	1	33261	34261	
Y	Screw #10-32 x 5/8 FH	5	33268	33268	33268	33268	7	33268	33268	33268	33268	7	33268	33268	5	33268	33268	
Z	Universal Joint Ass'y.	-	33270	33270	33270	33270	-	33270	33270	33270	33270	-	33270	33270	-	33270	33270	



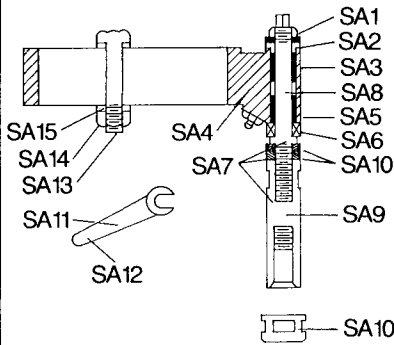
BASE

Code No.	Description	Qty.	Round Style	Rectangular Style
	Assembly	1	33510	35510
BA-1	Guide Rod	2	33601	33601
BA-2	Ball Bushing	2	33605	33605
BA-3	Adapter Bar	1-2	33608	35608
BA-4	Spring Washer	4	33611	33611
BA-5	Spring	2	33612	35612
BA-6	Position Clamp	2	33613	33613
BA-7	Base w/Boss	1	33615	35615
BA-8	Boss	2	33616	33616

UNIT LIST

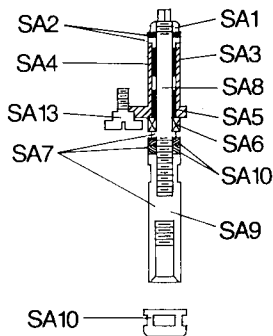
Unit Number	Unit Number	Unit Number	Unit Number	Cover	Collar	Shank
33011, 33012 & 39011	34011, 34012 & 40011	35011, 35012 & 37011	36011, 36012 & 38011	33140	42421	33208
33013, 33014 & 39013	34013, 34014 & 40013	35013, 35014 & 37013	36013, 36014 & 38013	33140	42423	33207
33015, 33016 & 39015	34015, 34016 & 40015	35015, 35016 & 37015	36015, 36016 & 38015	33140	42423	33208
33017, 33018 & 39017	34017, 34018 & 40017	35017, 35018 & 37017	36017, 36018 & 38017	33140	42424	33208
33019, 33020 & 39019	34019, 34020 & 40019	35019, 35020 & 37019	36019, 36020 & 38019	33140	42424	33209
33021, 33022 & 39021	34021, 34022 & 40021	35021, 35022 & 37021	36021, 36022 & 38021	33140	42425	33208
33023, 33024 & 39023	34023, 34024 & 40023	35023, 35024 & 37023	36023, 36024 & 38023	33140	42426	33208
33025, 33026 & 39025	34025, 34026 & 40025	35025, 35026 & 37025	36025, 36026 & 38025	33140	42427	33208
33027, 33028 & 39027	34027, 34028 & 40027	35027, 35028 & 37027	36027, 36028 & 38027	33140	42429	33208
33029, 33030 & 39029	34029, 34030 & 40029	35029, 35030 & 37029	36029, 36030 & 38029	33140	42434	33208
33031, 33032 & 39031	34031, 34032 & 40031	35031, 35032 & 37031	36031, 36032 & 38031	33140	42435	33208
33041, 33042 & 39041	34041, 34042 & 40041	35041, 35042 & 37041	36041, 36042 & 38041	33162	42427	33202
33043, 33044 & 39043	34043, 34044 & 40043	35043, 35044 & 37043	36043, 36044 & 38043	33188	42432	33202
33045, 33046 & 39045	34045, 34046 & 40045	35045, 35046 & 37045	36045, 36046 & 38045	33162	42434	33202
33047, 33048 & 39047	34047, 34048 & 40047	35047, 35048 & 37047	36047, 36048 & 38047	33162	42435	33202
33049, 33050 & 39049	34049, 34050 & 40049	35049, 35050 & 37049	36049, 36050 & 38049	33162	-	33202
33053, 33054 & 39053	34053, 34054 & 40053	35053, 35054 & 37053	36053, 36054 & 38053	33153	-	33202
33055, 33056 & 39055	34055, 34056 & 40055	35055, 35056 & 37055	36055, 36056 & 38055	33188	-	33202
33057, 33058 & 39057	34057, 34058 & 40057	35057, 35058 & 37057	36057, 36058 & 38057	33157	-	33202
33061, 33062 & 39061	34061, 34062 & 40061	35061, 35062 & 37061	36061, 36062 & 38061	33161	-	33202
33063, 33064 & 39063	34063, 34064 & 40063	35063, 35064 & 37063	36063, 36064 & 38063	33163	-	33202
33065, 33066 & 39065	34065, 34066 & 40065	35065, 35066 & 37065	36065, 36066 & 38065	33165	-	33202
33071, 33072 & 39071	34071, 34072 & 40071	35071, 35072 & 37071	36071, 36072 & 38071	33183	-	33203
33075, 33076 & 39075	34075, 34076 & 40075	36075, 35076 & 37075	36075, 36076 & 38075	33185	-	33203
33077, 33078 & 39077	34077, 34078 & 40077	35077, 35078 & 37077	36077, 36078 & 38077	33187	-	33203
33081, 33082 & 39081	34081, 34082 & 40081	35081, 35082 & 37081	36081, 36082 & 38081	33188	-	33203

ARM TYPE SPINDLE ASSEMBLY



Code No.	Description	Qty.	OCS	OCA	OCC	OCT	2CS	1TS	1TA	5CS	5CA	5CC	5CT
	Assembly Less U/J		33403	33407	33411	33415	33423	33419	33427	33431	33433	33435	33437
SA1	Lock Nut or Snap Ring	1	33631	33631	33631	33631	33633	33632	33633	33686	33686	33686	33686
SA2	Upper Thrust Washer Ass'y.	1	33634	33634	33634	33634	33636	33635	33636	33687	33687	33687	33687
SA3	Upper Bearing	1	33637	33637	33637	33637	33639	33638	33639	33649	33649	33649	33649
SA4	Arm	1	33640	33640	33640	33640	33642	33641	33642	33688	33688	33688	33688
SA5	Lower Bearing	1	33637	33637	33637	33637	33645	33638	33645	33649	33649	33649	33649
SA6	Lower Thrust Bearing	1	33646	33646	33646	33646	33648	33647	33648	33690	33690	33690	33690
SA7	Spindle Complete (8-10)	1	-	33651	33656	33657	-	-	-	-	33692	33696	33696
SA8	Spindle Only	1	33650	33652	33658	33658	33664	33665	33666	33691	33693	33697	33697
SA9	Collet Adapter	1	-	33653	33660	33660	-	-	-	-	33694	33699	33699
SA10	Adjust or Spindle Nut	2-1	-	33654	-	-	12287	-	-	-	33695	-	-
SA11	Spindle Wrench	1	11288	11288	11288	11288	12288	-	-	33675	33675	33675	33675
SA12	Collet or Nut Wrench	1	11288	11288	11288	11288	12288	-	-	33675	33675	33675	33675
SA13	Bolt	1	33677	33677	33677	33677	33677	33677	33677	33677	33677	33677	33677
SA14	Nut	1	33678	33678	33678	33678	33678	33678	33678	33678	33678	33678	33678
SA15	Washer	2	33679	33679	33679	33679	33679	33679	33679	33679	33679	33679	33679

CARTRIDGE TYPE SPINDLE ASSEMBLY



Code No.	Description	Qty.	OBS	OBA	OBC	OBT	2BS	1BS	1BA	5BS	5BA	5BC	5BT
	Assembly Less U/J		33443	33447	33451	33455	33463	33459	33467	33471	33473	33475	33477
SA1	Lock Nut or Snap Ring	1	33631	33631	33631	33631	33633	33632	33633	33686	33686	33686	33686
SA2	Upper Thrust Washer Ass'y.	1	33634	33634	33634	33634	33636	33635	33636	33687	33687	33687	33687
SA3	Upper Bearing	1	33637	33637	33637	33637	33639	33638	33639	33649	33649	33649	33649
SA4	Cartridge	1	33671	33671	33671	33671	33673	33672	33673	33689	33689	33689	33689
SA5	Lower Bearing	1	33637	33637	33637	33637	33645	33638	33645	33649	33649	33649	33649
SA6	Lower Thrust Bearing	1	33646	33646	33646	33646	33648	33647	33648	33690	33690	33690	33690
SA7	Spindle Complete (8-10)	1	-	33651	33656	33657	-	-	-	-	33692	33696	33696
SA8	Spindle Only	1	33650	33652	33658	33658	33664	33665	33666	33691	33693	33697	33697
SA9	Collet Adapter	1	-	33653	33660	33660	-	-	-	-	33694	33699	33699
SA10	Adjust or Spindle Nut	2-1	-	33654	-	-	12287	-	-	-	33695	-	-
SA11	Spindle Wrench	1	11288	11288	11288	11288	12288	-	-	33675	33675	33675	33675
SA12	Collet or Nut Wrench	1	11288	11288	11288	11288	12288	-	-	33675	33675	33675	33675
SA13	Lock Screw	1	33682	33682	33682	33682	33682	33682	33682	33682	33682	33682	33682