CONTENT

Tapping

Tap into savings!

Parlec's Tapping systems provide superior application with the Numertap® system 770 providing the largest range of tapping capabilities available. Rigid, Tension Only and Tension and Compression systems are standard, along with Coolant or Coolant Groove Adapters with up to 6" extension length – just what you would expect from the world-wide leader in tooling, workholding, and presetting solutions.

- **Full Line**
  Three systems for synchronous tapping cycles.
- **Range and Versatility**
  Largest range in a single tapping head (#6 – 1 5/8).
- **Popular Bilz Style**
  Offered in addition to the rugged Numertap systems.
- **Standard Options**
  Coolant-groove or coolant-through.
- **Adapters**
  Extended-length adapters for special applications.
- **Flexibility**
  Tap collets available for use in tapping heads and collet chucks.

SYNCHRONOUS

With the advent of 32 bit microprocessors, modern machine tools have the capability of synchronizing the spindle rotation and spindle feed. This has made it possible to eliminate the spring compression and tension stroke utilized in traditional tapping heads. The advantage that this brings to threading is the speed the cycle can operate. The cost of building tapping heads has also been reduced by the elimination of the axial float mechanism.

Radial float is still a very important component of your threading operation. The absence of radial float will restrict the tap's ability to follow the drilled hole. The lack of radial float will force the tap to flex to meet the hole, or to cut like a mill, causing premature tap wear.

Parlec offers many solutions for synchronous tapping cycles. We recommend the use of our tension only tapping heads. This system will allow the tap to hard start, has radial float, a tension stroke to compensate for any spindle over rotation, and quick change of tap adapters. Any Parlec TA style tapping head can be adjusted or purchased as a tension only (TT). Parlec offers TR (tapping rigid) or FS (fixed shank) tapping heads in all of our non-torque controlled systems. These units have no tension or compression stroke but do offer radial float and quick change tap adapters. In addition, Parlec offers ER style tap collets with no float, and with tension and float. These are available to use with standard ER collet chucks and with ER tap collet adapters. (Use with a Numertap collet adapter provides radial float).

TENSION & COMPRESSION

Tension and compression tapping heads have been the main stay of machine tool tapping for many years. Parlec offers a wide range and style of these heads. We offer the widely used BILZ-style as well as the rugged NUMERTAP systems. Identified as (TA) in the part number.

TORQUE CONTROL

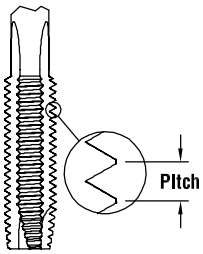
Torque control tapping is still the best solution for protecting your taps and work pieces from tap breakage. Bottom tapping or close blind hole tapping where chip evacuation is a concern, are prime operations for torque control tapping. Parlec offers torque control tapping from #4 through 1-3/8". Refer to the following pages for more detailed information: Numertap 80, 700 and BILZ-style 1,2, and 3 with torque-controlled adapters.

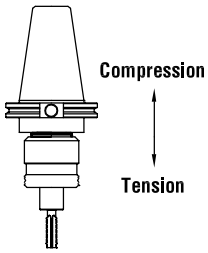
RIGID

ER tap collets are available for use with NUMERTAP adapters as well as with standard collet chucks. Loss of radial float will result with use in standard collet chucks. Poor tap life and thread quality may result. Parlec tapping units are also available as rigid or fixed shank units (TR, FS). These units provide radial float and quick-change adapters but are rigid in the axial stroke. Unlike standard collet chuck systems, they will still yield the benefits of quick change and radial float.

AXIAL FEED

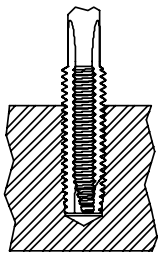
A thread is an inclined plane that is rolled into a cylinder. The distance between a point on the plane and the point directly above is the pitch of the thread. To cut a good thread the tap must be fed into the workpiece precisely on pitch. This makes a tap the only tool in metalworking in which the feed rate and the speed must be perfectly synchronized. For each revolution the tap makes it must advance the pitch. Retarding the tap's advance or pushing the tap will result in an incorrect thread form.





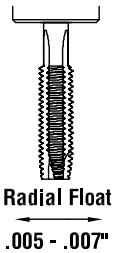
TENSION STROKE

The tap is a precision ground cutting tool. To allow the tap to cut on pitch, NUMERTAP tapping attachments feature a free floating tension stroke. When properly applied, the feed rate of the machine is slightly less than the pitch. The tension stroke in the NUMERTAP will allow the tap to pull itself into the workpiece exactly on the pitch of the tap. This insures that the threads will gage properly.



TORQUE CONTROL

A tap in one revolution must advance the pitch. If the tap is at the bottom of the hole or chip build-up blocks the hole and an effort is made to rotate the tool, catastrophic failure will result. The tool will break because there is no room to advance. To prevent this problem when tapping blind holes, select NUMERTAP units 80 and 700, featuring torque control. Torque control tapping heads feature tension and compression strokes and perform best when programmed to underfeed. Refer to programming information in the back of this section.



RADIAL FLOAT

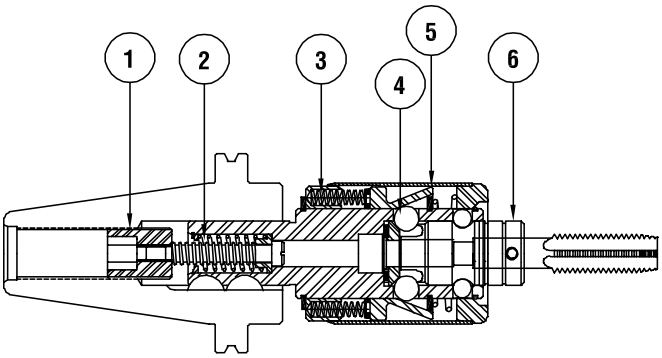
Radial Float allows for misalignment between the machine spindle and the hole to be tapped. It also allows the tap to follow a drilled hole, reducing tap flank rub. This is included with all Parlec tapping heads.

TENSION ONLY (SYNCHRONOUS & DEPTH CONTROL)

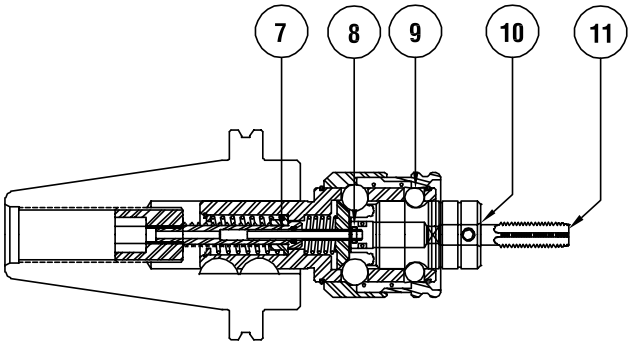
The NUMERTAP, 100, 200, 300, and 770 units can be purchased as tension only units. (TT). Tension only is the best solution for synchronous tapping. The tension stroke will not affect the cycle during its normal operation but will add a safety margin for tap elongation or spindle over-rotation. In a normal tapping cycle, tension only will improve thread depth control by creating a positive start system.

AXIAL COMPRESSION

The compression stroke cushions the tap as it enters the workpiece. This feature also allows holes to be retapped. This is particularly helpful when setting up a job. The compression stroke is adjustable from .00" to .250" to maximize depth control. Refer to next page.



Numertap C50-70TA5, Torque controlled, non-coolant



Numertap C50-77TA4C, Positive Drive, Coolant-Fed

ADJUSTABLE LENGTH COMPENSATION

Available on all 700/770 and Bilz-style tapping attachments with machine tapers.

TENSION & COMPRESSION

Tap position returns +/- .001 after each cycle. Standard with all tapping attachments. Also available as tension only or rigid for synchronous tapping.

TORQUE SPRING

Torque is controlled by spring pressure. This is standard on 80 and 700 units.

TORQUE DRIVE BALL

Standard on 80 and 700 torque controlled systems. Scallop size on the adapter pre-calibrates torque setting.

TORQUE SLEEVE

Automatically controls the amount of torque transmitted to the adapter. Makes torque adjustments unnecessary.

TAP ADAPTER, NON-COOLANT

Available for all standard tap sizes. Square drive ensures positive tap drive.

SEALS IN COOLANT FED ADAPTERS

COOLANT FEED TUBE Feeds coolant directly to the tap. Keeps coolant from contaminating the attachment's internal components. Restrictor allows for up to 800 PSI. Keeps coolant from back feeding into attachments.

RETENTION BALL

Retains adapter in the attachment while maintaining quick release during changeover. Acts as drive ball for positive drive adapters.

COOLANT-FEED

Feeds coolant along the tap shank. Reduces the need for expensive coolant through taps.

COOLANT-THROUGH FEED

Feed from coolant through taps.

TAP SIZE

		ANSI Size							
Shank	Square	Inch	Npt	Sti	Metric	Metric	ERT Collets	Collets	ER11 Collets
.098	.083	–	–	–	–	DIN	–	ERXX-0118	ER11-0118
.110	.083	–	–	–	–	DIN	–	ERXX-0118	ER11-0118
.110	.088	–	–	–	–	ISO	–	ERXX-0118	ER11-0118
.124	.098	–	–	–	–	ISO	–	ERXX-0157	ER11-0137
.138	.106	–	–	–	–	DIN	–	ERXX-0157	ER11-0157
.141	.110	#0, #1, #2,#3, #4, #5, #6		#4	–	M1.6, M1.8, M2, M2.2, M2.5, M3, M3.15, M3.5	–	ERXX-0157	ER11-0157
.158	.118	–	–	–	–	DIN	–	ERXX-0196	ER11-0177
.157	.126	–	–	–	–	WES-1	–	ERXX-0196	ER11-0177
.168	.131	#8	–	–	M4	–	ERTXX-#8	ERXX-0196	ER11-0177
.177	.134	–	–	–	–	DIN	–	ERXX-0196	ER11-0196
.185	.139	–	–	–	–	NUT	–	ERXX-0196	ER11-0196
.194	.152	#10	–	#6	M4.5, M5	–	ERTXX-#10	ERXX-0196	ER11-0196
.197	.157	–	–	–	–	ISO, WES-1	–	ERXX-0236	ER11-0216
.216	.169	–	–	–	–	DIN	–	ERXX-0236	ER11-0216
.217	.177	–	–	–	–	WES-1	–	ERXX-0236	ER11-0236
.220	.165	#12	–	#8	–	–	ERTXX-#12	ERXX-0236	ER11-0236
.236	.177	–	–	–	–	WES-1	–	ERXX-0236	ER11-0255
.236	.193	–	–	–	–	DIN	–	ERXX-0236	ER11-0255
.240	.180	–	–	–	–	NUT	–	ERXX-0275	ER11-0255
.244	.197	–	–	–	–	WES-1	–	ERXX-0275	ER11-0255
.248	.197	–	–	–	–	ISO	–	ERXX-0275	ER11-0255
.255	.191	#14, 1/4	–	#10	M6, M6.3	–	ERTXX-025	ERXX-0275	ER11-0275
.276	.216	–	–	–	–	DIN	–	ERXX-0315	ER11-0275
.276	.217	–	–	–	–	ISO, DIN, WES-1	–	ERXX-0315	ER11-0275
.286	.214	–	–	–	–	–	–	ERXX-0315	–
.294	.220	–	–	–	–	NUT	–	ERXX-0315	–
.312	.234	–	1/16-27 1/8-27-Small	–	–	–	–	ERXX-0315	–
1/8-27-Small	–	–	–	–	ERXX-0315	–	–	ERXX-0315	–
.315	.236	–	–	–	–	WES-1	–	ERXX-0315	–
.315	.244	–	–	–	–	DIN	–	ERXX-0315	–
.315	.248	–	–	–	–	ISO	–	ERXX-0315	–
.318	.238	5/16	–	1/4	M7, M8	–	ERTXX-031	ERXX-0354	–
.323	.242	7/16	–	–	–	–	ERTXX-043	ERXX-0354	–
.335	.256	–	–	–	–	WES-1	–	ERXX-0354	–
.354	.276	–	–	–	–	DIN, WES-1	–	ERXX-0354	–
.354	.280	–	–	–	–	ISO	–	ERXX-0354	–
.367	.275	1/2	–	3/8, 7/16-20	M12, M12.5	–	ERTXX-050	ERXX-0393	–
.381	.286	3/8	–	5/16	M10	–	ERTXX-037	ERXX-0393	–
.393	.315	–	–	–	–	DIN	–	ERXX-0393	–
.400	.300	–	–	–	–	NUT	–	ERXX-0433	–
.413	.315	–	–	–	–	WES-1	–	ERXX-0433	–
.429	.322	9/16	–	3/8, 7/16-20	M14	–	ERTXX-056	ERXX-0433	–
.433	.354	–	–	–	–	DIN, WES-1	–	ERXX-0433	–
.437	.328	–	1/8-27–Large	–	–	–	ERTXX-012N	ERXX-0472	–
.441	.354	–	–	–	–	ISO	–	ERXX-0472	–
.444	.333	–	–	–	–	PULLEY	–	ERXX-0472	–
.472	.354	–	–	–	–	DIN	–	ERXX-0472	–
.480	.360	5/8	–	1/2-13	M16	–	ERTXX-062	ERXX-0511	–
.492	.394	–	–	–	–	ISO, WES-1	–	ERXX-0511	–
.507	.380	–	–	–	–	–	–	ERXX-0511	–

Collet Part Number example: ERT16-#10 Tap Collet or ER20-0275 Regular Collet. Refer to page 173

TAP SIZE

		ANSI Size						
Shank	Square	Inch	Npt	Sti	Metric	Metric	ERT Collets	ER 16-40 Collets
.512	.394	-	-	-	-	WES-1	-	ERXX-0551
.542	.406	11/16	-	-	M18	-	ERTXX-068	ERXX-0551
.551	.433	-	-	-	-	DIN, WES-1	-	ERXX-0551
.551	.441	-	-	-	-	ISO	-	ERXX-0551
.562	.421	-	1/4 – 18	-	-	-	ERTXX-025N	ERXX-0590
.590	.442	3/4	-	-	-	-	ERTXX-075	ERXX-0590
.591	.472	-	-	-	-	WES-1	-	ERXX-0630
.630	.472	-	-	-	-	DIN	-	ERXX-0630
.630	.492	-	-	-	-	ISO	-	ERXX-0630
.633	.475	-	-	-	-	-	-	ERXX-0669
.652	.489	13/16	-	-	M20	-	ERTXX-081	ERXX-0669
.669	.512	-	-	-	-	WES-1	-	ERXX-0669
.687	.515	-	1/2 – 14	-	-	-	ERTXX-050N	ERXX-0708
.697	.523	7/8	-	-	M22	-	ERTXX-087	ERXX-0708
.700	.531	-	3/8 – 18	-	-	-	ERTXX-037N	ERXX-0708
.708	.551	-	-	-	-	WES-1	-	ERXX-0708
.708	.571	-	-	-	-	DIN	-	ERXX-0708
.748	.591	-	-	-	-	-	-	ERXX-0748
.759	.569	-	-	-	-	-	-	ERXX-0787
.760	.570	15/16	-	-	M24	-	ERTXX-093	ERXX-0787
.787	.591	-	-	-	-	WES-1	-	ERXX-0787
.787	.630	-	-	-	-	DIN	-	ERXX-0787
.800	.600	1”	-	-	M25	-	ERTXX-100	ERXX-0826
.866	.709	-	-	-	-	DIN	-	ERXX-0866
.882	.709	-	-	-	-	DIN	-	ERXX-0905
.896	.672	1 1/16, 1 1/8	-	-	M27	-	-	ERXX-0905
.906	.669	-	-	-	-	WES-1	-	ERXX-0944
.906	.679	-	3/4 – 14	-	-	-	-	ERXX-0944
.984	.748	-	-	-	-	-	-	ERXX-0984
.984	.787	-	-	-	-	DIN	-	ERXX-0984
1.021	.766	1 3/16, 1 1/4	-	-	M30	-	-	ERXX-1023
1.102	.827	-	-	-	-	-	-	ERXX 1063
1.102	.866	-	-	-	-	DIN	-	ERXX-1063
1.108	.831	1 5/16, 1 3/8	-	-	M33	-	-	ERXX-1102
1.125	.843	-	1”- 11 1/2	-	-	-	-	ERXX-1141
1.233	.925	1 7/16, 1 1/2	-	-	M36	-	-	-
1.260	.945	-	-	-	-	DIN	-	-
1.305	.979	1 5/8	-	-	M39	-	-	-
1.312	.984	-	1 1/4 – 11 1/2	-	-	-	-	-
1.417	1.142	-	-	-	-	DIN	-	-
1.430	1.072	1 3/4	-	-	M42	-	-	-
1.500	1.125	-	1 1/2 -11 1/2	-	-	-	-	-
1.519	1.139	1 7/8	-	-	-	-	-	-
1.575	1.260	-	-	-	-	DIN	-	-
1.644	1.233	2”	-	-	M48	-	-	-
1.772	1.378	-	-	-	-	DIN	-	-
1.875	1.406	-	2” – 11 1/2	-	-	-	-	-
1.894	1.420	2 1/4	-	-	M56	-	-	-
1.968	1.535	-	-	-	-	DIN	-	-
2.250	1.687	-	2 1/2 – 8	-	-	-	-	-

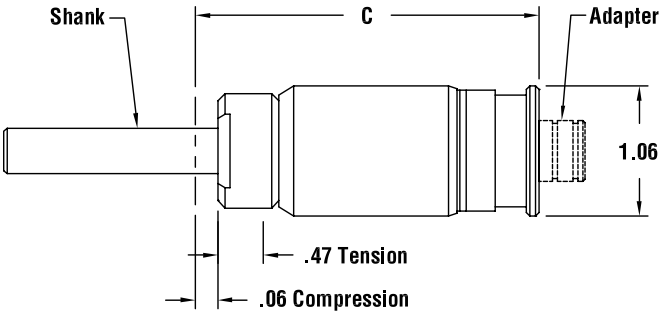
Collet Part Number example: ERT16-#10 Tap Collet or ER20-0275 Regular Collet. Refer to page 173

Numertap 80 S37-80TA3 shown here.

Torque-controlled for bottom tapping on manual machines, tension and compression.

FROM #4-1/4" (0-80 IN/LBS.)

- Very sensitive, calibrated torque control prevents tap breakage when bottom tapping.
- Short compression stroke allows holes to be retapped and ensures depth control.
- Rugged alloy steel construction for long trouble-free service life.
- Free-floating ball bearing tension stroke ensures thread size and quality.
- Small outside diameter allows tapping near shoulders without tap extensions.
- Short gage length provides more clearance on vertical machines.
- Quick-change system allows dull taps to be replaced without removing unit from the spindle.
- Radial float improves thread quality and tap life.



TORQUE-CONTROLLED TAPPING

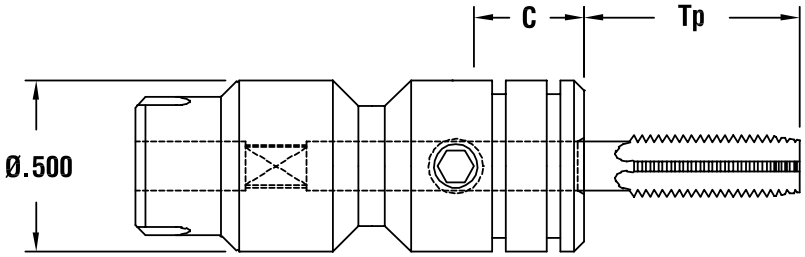
Part Number	Shank	C	Approx. Weight
S37-80TA3	3/8" Straight	3.00	9 oz.

Part numbers in **bold face** are in-stock items.
*Special Adapters available to #00. Order Adapters Separately.

■ For use in Numertap 80 Attachments.

Numertap 80 Tap Adapter 8401-#10 shown here.

At Parlec, the phrase “measurably better” isn’t just a slogan. It’s a commitment to you. Our philosophy of providing “measurably better” products to our customers guarantees that you will be able to meet all of your quality, cost and delivery requirements.



TAP ADAPTERS

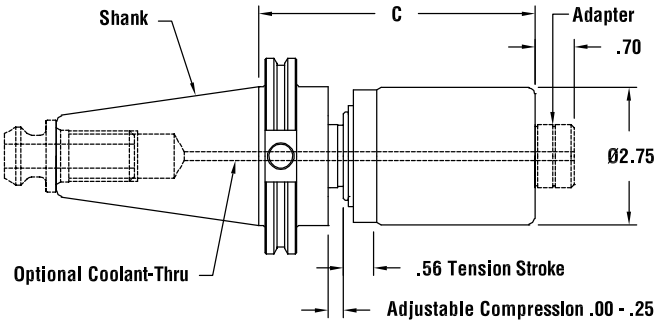
Part Number	Tap Size	C	Tp	Metric Tap Size (ANSI)
8401-#10	#10	.38	1.18	M5
8401-#12	#12	.38	1.16	-
8401-#4	#4	.38	.87	M2.5
8401-#6	#6	.38	1.00	M3.5
8401-#8	#8	.38	1.00	M4
8401-025	1/4	.38	1.25	M6

Part numbers in **bold face** are in-stock items.
Other sizes and lengths available on request.

Numertap 700 C50-70TA5 shown here.

Torque-controlled for bottom tapping, tension and compression on CNC machines. Pre-calibrated torque for #6 to 1" taps in non-ferrous materials and#6 to 3/4" taps in ferrous materials.

- Large work range eliminates the need to purchase several units.
- Radial float improves thread quality and tap life.
- Precalibrated torque control prevents tap breakage when bottom tapping.
- Free-floating tension stroke ensures thread size and quality.
- Adjustable compression stroke ensures depth control.
- Rugged alloy steel construction for long trouble-free service life.
- Through-spindle coolant option available gets coolant into the hole and flushes chips.
- Quick-change system allows taps to be quickly exchanged.



Order Torque Calibrated Adapters separately (see next page).
Order Retention Knob separately (see pages 98-101).

TORQUE-CONTROLLED TAPPING

Part Number	Coolant Fed	Shank	C	Approx. Weight
A11-70TA7	-	1.062 Automotive	6.30	5 lbs
A14-70TA7	-	1.375 Automotive	6.30	7 lbs
B40-70TA5	-	BT40	5.90	7 lbs
C40-70TA5	C40-70TA5C	CV40	6.28	7 lbs.
C50-70TA5	C50-70TA5C	CV50	5.46	11 lbs.
C60-70TA5	C60-70TA5C	CV60	6.03	28 lbs.
N40-70TA5	-	NMTB40	6.40	7 lbs
N50-70TA5	-	NMTB50	5.46	11 lbs

Part numbers in **bold face** are in-stock items.
PC6 and PC7 modular attachments available upon request.
*For positive drive adapters, see pages 172-176.

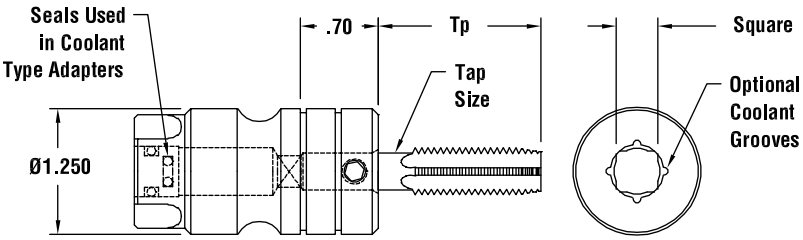
CAPACITY

Torque-Capacity Materials

Ferrous	Non-Ferrous	Positive Drive Capacity
#10 – 3/4"	#10 – 1"	#6 – 1 5/8
1/16" – 1/2" NPT	1/16" – 1/2" NPT	1/16" – 1 1/4" NPT
M5 – M20	M5 – M25	M3.5 – M33

- For use in Numertap 700 Attachments.
- Coolant or Coolant Groove Adapters must be used when coolant is fed through Numertap Attachments.

Numertap 700 Tap Adapter 7711-025 shown here.



TAP ADAPTERS

Part Number	Coolant**	Coolant Groove**	Tap Size	Metric Tap Size (ANSI)	Tp	Shank	Square
7711-#6	7711C-#6	7711CG-#6	#6	M3.5	.94	.141	.110
7711-#8	7711C-#8	7711CG-#8	#8	M4	1.00	.168	.131
7711-#10	7711C-#10	7711CG-#10	#10	M5	1.37	.194	.152
7711-#12	7711C-#12	7711CG-#12	#12	-	1.34	.218	.155
7711-025	7711C-025	7711CG-025	1/4	M6	1.44	.255	.191
7711-031	7711C-031	7711CG-031	5/16	M7,M8	1.59	.318	.238
7711-037	7711C-037	7711CG-037	3/8	M10	1.75	.381	.286
7711-043	7711C-043	7711CG-043	7/16	-	2.00	.323	.242
7711-050	7711C-050	7711CG-050	1/2	M12	2.19	.367	.275
7711-056	7711C-056	7711CG-056	9/16	M14	2.34	.429	.322
7711-062	7711C-062	7711CG-062	5/8	M16	2.50	.480	.360
7711-068	7711C-068	7711CG-068	11/16	M18	2.41	.542	.406
7711-075	7711C-075	7711CG-075	3/4	2.56	.590	.442	-
7711-081	7711C-081	7711CG-081	13/16	M20	2.53	.652	.489
7711-087	7711C-087	7711CG-087	7/8	M22	2.79	.697	.523
7711-093	7711C-093	7711CG-093	15/16	M24	3.01	.760	.570
7711-100	7711C-100	7711CG-100	1*	M25	3.15	.800	.600
7714-006	7714C-006	7714CG-006	1/16 NPT (1/8 NPT)	-	1.00	.312	.234
7714-012	7714C-012	7714CG-012	1/8 NPT	-	1.00	.437	.328
7714-025	7714C-025	7714CG-025	1/4 NPT	-	1.25	.562	.421
7714-037	7714C-037	7714CG-037	3/8 NPT	-	1.31	.700	.531
7714-050	7714C-050	7714CG-050	1/2 NPT	-	1.50	.687	.515

Part numbers in **bold face** are in-stock items.
*For DIN, ISO, or Imperial Metric Shanks, please call Parlec or your local Parlec representative.
**Coolant requires oil hole tap. Coolant groove uses standard taps. Both require coolant-fed unit

NUMERTAP torque controlled adapters require no adjustment. Each adapter is calibrated for approximately 80% of the tap breakage torque for most standard hand, plug, or bottom taps.

Numertap 770 C50-77TA4 shown here.

Tension & Compression, Positive Drive, type for through-hole tapping on CNC machines, with traditional tapping cycles.

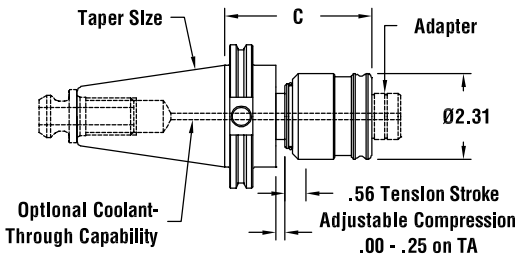
FROM #6 – 1 5/8" HAND AND 1/16 – 1 1/4" PIPE

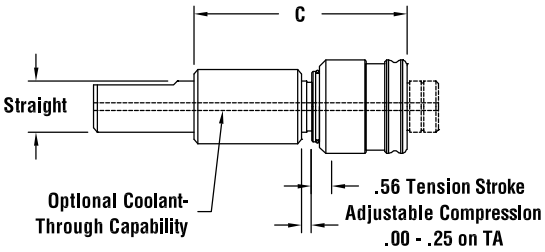
- Large work range eliminates the need to purchase multiple units.
- Short projection maximizes workpiece size.
- Adjustable compression stroke ensures accurate depth control.
- Free-floating tension stroke ensures thread size and quality.
- Through-spindle coolant option gets coolant into the hole and flushes chips.
- Rugged alloy steel construction for long trouble-free service life.
- Radial float improves thread quality and tap life.

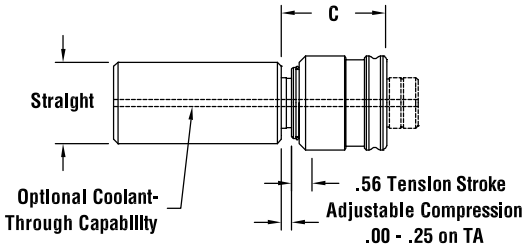
TEN/COMP TAPPING

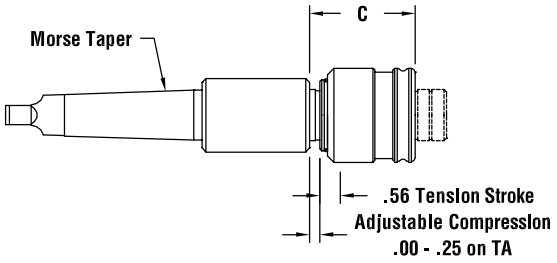
Part Number	Coolant Fed	C	Shank Type	Style	Approx. Weight
B40-77TA4	B40-77TA4C	4.99	BT40	1	5 lbs.
C40-77TA4	C40-77TA4C	4.85	CV40	1	5 lbs.
C50-77TA4	C50-77TA4C	4.04	CV50	1	9 lbs.
N40-77TA4	-	4.85	NMTB40	1	5 lbs
N50-77TA4	-	4.04	NMTB50	1	9 lbs
PC6-77TA5	PC6-77TA5C	5.16	PCG	-	5 lbs
S10-77TA5	S10-77TA5C	5.25	1" Straight	2	4 lbs.
S12-77TA5	S12-77TA5C	5.25	1 1/4" Straight	2	4 lbs.
S15-77TA5	S15-77TA5C	5.25	1 1/2" Straight	2	4 lbs.
S20-77TA2	S20-77TA2C	2.75	2" Straight	3	4 lbs.

Part numbers in **bold face** are in-stock items.









Order Retention Knob Separately (see pages 98-101).
Order Adapters Separately (see pages 172-176).

CAPACITY

Tension and Compression
#6 – 1 5/8" Hand
M3.5 – M36
1/16" – 11/4"NPT

Numertap 770 C40-77TR4 shown here.

Tension-Only for Synchronous and Blind Hole tapping on CNC machines. Synchronous (Rigid) tapping on machines with 32 bit microprocessors. Quick-change tap adapters and radial float ensure good tapping quality.

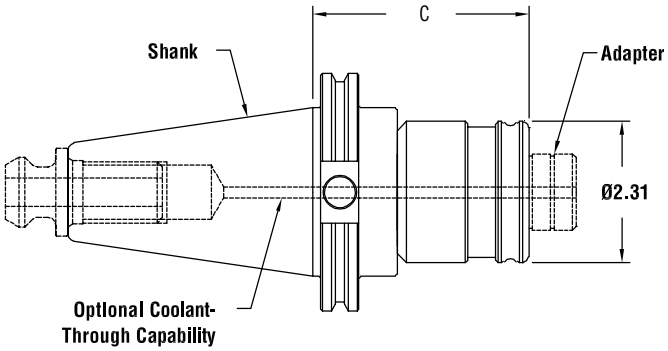
For best performance in synchronous tapping cycles, use tension only attachments. These attachments will help eliminate tap elongation, common in synchronous tapping.

FROM #6 – 1 5/8" HAND AND 1/16 – 1 1/4" PIPE

- Tension only (TT) allows synchronous tapping on machines so equipped.
- Solid design with no tension or compression (TR, FS).
- Quick-change tap adapters ensures quick, easy tap changeover.
- Radial float allows tap to follow the hole.
- Large work range maximizes workpiece size and eliminates need to purchase multiple units.
- Short projection.
- Through-spindle coolant option gets coolant into the hole and flushes chips.
- Rugged alloy steel construction for long trouble-free service life.

CAPACITY

Tension-Only and Rigid
#6 – 1 5/8" Hand
M5 – M33
1/16" – 1 1/4" NPT



Order Adapters Separately (see pages 172-176).

Order Retention Knob Separately (see pages 98-101).

TENSION-ONLY TAPPING

Part Number	Coolant Fed	C	Shank Type	Approx. Weight
B40-77TR4	**B40-77TT4C**	4.99	BT40	5 lbs
C40-77TT4	**C40-77TT4C**	4.85	CV40	5 lbs
C50-77TT4	**C50-77TT4C**	4.04	CV50	9 lbs
PC6-77TT5	**PC6-77TT5C**	5.16	PC 6	5 lbs
S10-77TT5	S10-77TT5C	5.25	1" Straight	4 lbs
S20-77TT2	S20-77TT2C	2.75	2" Straight	4 lbs

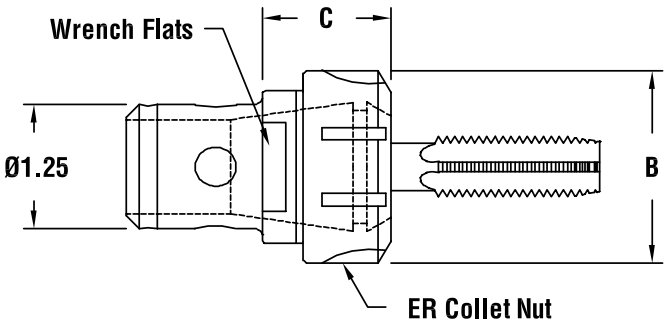
Part numbers in **bold face** are in-stock items.

RIGID TAPPING

Part Number	Coolant Fed	Flange-Entry Coolant	C	Shank Type	Approx. Weight
B40-77TR4	-	-	3.75	BT40	5 lbs
C40-77TTR4	**C40-77TR4C**	**C40B-77TR4C**	3.75	CV40	5 lbs
C50-77TR4	**C50-77TR4C**	**C50B-77TR4C**	3.75	CV50	9 lbs
C60-77FS4	C60-77FS4C	-	4.66	CV60	28 lbs
N40-77FS4	-	-	4.85	NMTB 40	5 lbs
PC6-77FS5	**PC6-77FS5C**	-	5.16	PC 6	5 lbs
S10-77FS5	S10-77FS5C	-	5.25	1" Straight	4 lbs
S20-77FS2	-	-	2.75	2" Straight	4 lbs

Part numbers in **bold face** are in-stock items.

ADAPTERS FOR USE WITH SQUARE DRIVE COLLETS & ANSI (INCH & METRIC) TAP SHANKS



ER COLLET TAP ADAPTERS

Part Number	Collet Size	Tap Size Range	B	C	Collet Nut	Collet Nut Wrench	Open End Wrench*
7716-ER16	16	#8 - 1/4	1.26	1.54	**16ERHPN**	**ECN20W**	**ECN20W**
7716-ER20	20	#8 - 3/8	1.38	1.58	**20ERHPN**	**20ERHNW**	**ECN20W**
7716-ER25	25	#8 - 5/8	1.65	1.50	**25ERPN**	**25ERNW**	**ECN12W**
7716-ER32	32	#8 - 13/16	1.97	2.34	**32ERPN**	**32ERNW**	**180CNW**
7716-ER40	40	1/4 - 1"	2.48	2.34	**40ERPN**	**40ERNW**	**180CNW**

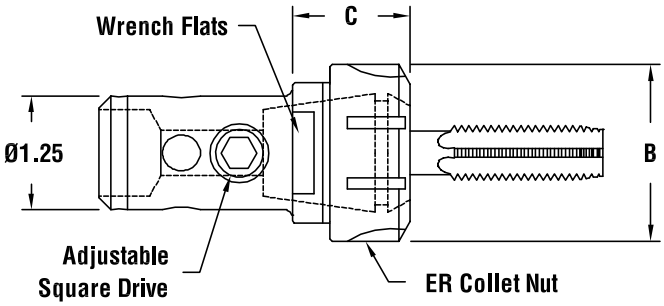
Order Wrenches separately (see page 41).

Coolant versions use coolant nut seals (see pages 44 & 45).

ADAPTERS FOR USE WITH DIN, ISO, JAPANESE & ANSI (INCH & METRIC) TAP SHANKS

Numertap 770 ER Tap Adapter 7716-ER32U shown here.

Adjustable drive plug for any square size in the tap range. Use standard ER Collets, refer to tap size chart., pages 164 & 165



- For use in synchronous tapping cycles on DIN, ISO, Japanese or ANSI (inch and metric) tap shanks.
- Provides flexibility for any tap shank size.

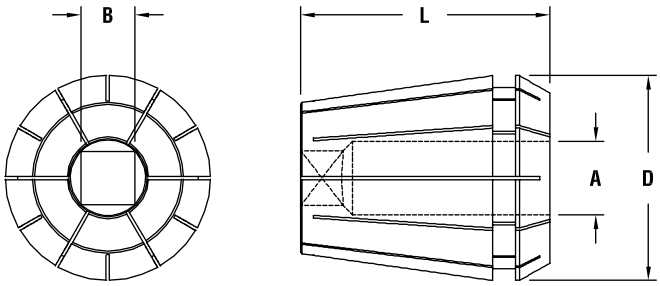
UNIVERSAL ER COLLET TAP ADAPTERS

Part Number	Coolant	Collet Size Range	Tap Size	B	C	Collet Nut Wrench	Collet Nut Wrench*	Open End
7716-ER16U	**7716-ER16UC**	16	#6-3/8	1.26	1.71	**16ERHPN**	**ECN20W**	**ECN20W**
7716-ER20U	**7716-ER20UC**	20	#10-5/8	1.38	1.93	**20ERHPN**	**20ERHNW**	**ECN20W**
7716-ER32U	**7716-ER32UC**	32	9/16-15/16	1.97	2.43	**32ERPN**	**32ERNW**	**180CNW**
7716-ER40U	**7716-ER40UC**	40	*1.0-1.375	2.48	3.54	**40ERPN**	**40ERNW**	**180CNW**

Par Part numbers in **bold face** are in-stock items.
*Fine Pitet taps only
**Use on wrench flats to assist in tightening collet nut.

Numertap 770 ER Tapping Collet ERT32-056 shown here.

- For use in Numertap 770 Attachments when synchronous tapping.
- Provide maximum concentricity with positive driving force.

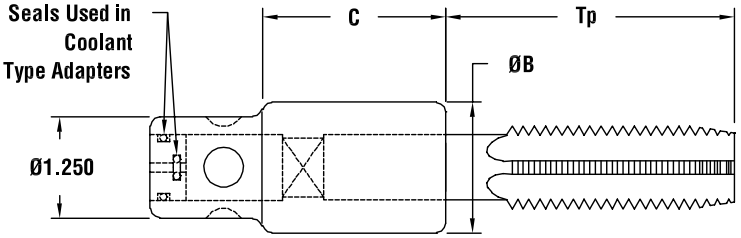


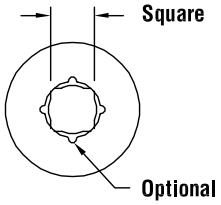
770 PGT/ER COLLETS

			ER Tapping Part Numbers						
Part Number	A	B	D = 16mm L = 27. 5mm	D = 20mm L = 31.5mm	D = 25mm L = 34mm	D = 32mm L = 40mm	D = 40mm L = 46mm	Inches	ANSI Metric
100PGT-#8	0.168	0.131	**ERT16-#8**	**ERT20-#8**	**ERT25-#8**	**ERT32-#8**	-	#8	M4
100PGT-#10	0.194	0.152	**ERT16-#10**	**ERT20-#10**	**ERT25-#10**	**ERT32-#10**	-	#10	M4.5,M5
100PGT-#12	0.220	0.165	**ERT16-#12**	**ERT20-#12**	**ERT25-#12**	**ERT32-#12**	-	#12	-
100PGT-012N	0.437	0.328	-	-	-	**ERT32-012N**	**ERT40-012N**	1/8 NPT	-
100PGT-025	0.255	0.191	**ERT16-025**	**ERT20-025**	**ERT25-025**	**ERT32-025**	**ERT40-025**	1/4	M6,M6.5
100PGT-025N	0.562	0.421	-	-	-	**ERT32-025N**	**ERT40-025N**	1/4 NPT	-
100PGT-031	0.318	0.238	-	**ERT20-031**	**ERT25-031**	**ERT32-031**	**ERT40-031**	5/16	M7,M8
100PGT-037	0.381	0.286	-	**ERT20-037**	**ERT25-037**	**ERT32-037**	**ERT40-037**	3/8	M10
100PGT-037N	0.700	0.531	-	-	-	-	**ERT40-037N**	3/8 NPT	-
100PGT-043	0.323	0.242	-	**ERT20-043**	**ERT25-043**	**ERT32-043**	**ERT40-043**	7/16	-
100PGT-050	0.367	0.275	-	**ERT20-050**	**ERT25-050**	**ERT32-050**	**ERT40-050**	1/2	M12,M12.5
100PGT-050N	0.687	0.515	-	-	-	-	**ERT40-050N**	1/2 NPT	-
100PGT-056	0.429	0.322	-	-	**ERT25-056**	**ERT32-056**	**ERT40-056**	9/16	M14
100PGT-062	0.480	0.360	-	-	**ERT25-062**	**ERT32-062**	**ERT40-062**	5/8	M16
100PGT-068	0.542	0.406	-	-	-	**ERT32-068**	**ERT40-068**	11/16	M18
100PGT-075	0.590	0.442	-	-	-	**ERT32-075**	**ERT40-075**	3/4	-
100PGT-081	0.652	0.489	-	-	-	**ERT32-081**	**ERT40-081**	13/16	M20
100PGT-087	0.697	0.523	-	-	-	-	**ERT40-087**	7/8	M22
100PGT-093	0.760	0.570	-	-	-	-	**ERT40-093**	15/16	M24
100PGT-100	0.800	0.600	-	-	-	-	**ERT40-100**	1	M25

Part numbers in **bold face** are in-stock items.
For ER11 collets, see pages 42 & 43. For #2 - #6 taps, use ERXX-0157, square drive not required.

Numertap 770 Tap Adapter 7716-144 shown here.





Can be used to extend the range of N/C 700s. Will result in loss of torque control.

- Positive-drive, standard length for use in Numertap 770 Attachments.

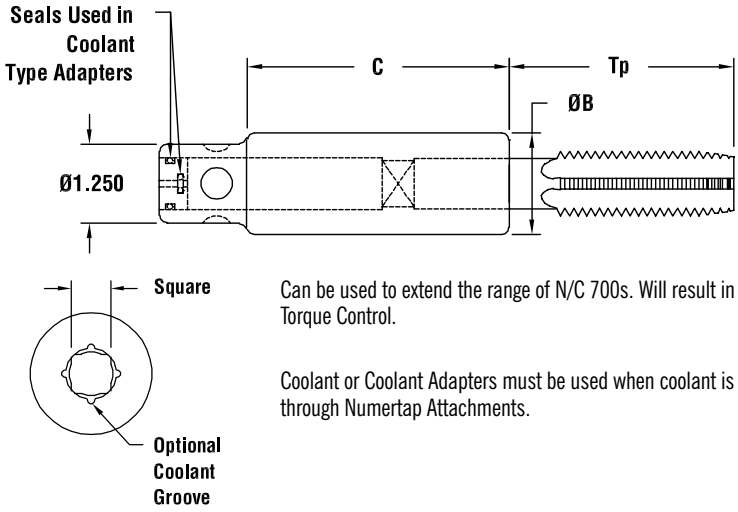
770 TAP ADAPTERS

Part Number	Coolant	Coolant Groove	Tap Size	Metric Tap Size (ANSI*)	B	C	Tp
7716-#6	7716C-#6	**7716CG-#6**	#6	M3.5	1.25	2.10	1.19
7716-#8	7716C-#8	**7716CG-#8**	#8	M4	1.25	2.10	1.27
7716-#10	7716C-#10	**7716CG-#10**	#10	M5	1.25	2.10	1.51
7716-#12	7716C-#12	**7716CG-#12**	#12	-	1.25	2.10	1.51
7716-025	7716C-025	**7716CG-025**	1/4	M6	1.25	2.10	1.63
7716-031	7716C-031	**7716CG-031**	5/6	M7,M8	1.25	2.10	1.79
7716-037	7716C-037	**7716CG-037**	3/8	M10	1.25	2.10	2.00
7716-043	7716C-043	**7716CG-043**	7/16	-	1.25	2.10	2.06
7716-050	7716C-050	**7716CG-050**	1/2	M12	1.25	2.10	2.23
7716-056	7716C-056	**7716CG-056**	9/16	M14	1.25	2.10	2.40
7716-062	7716C-062	**7716CG-062**	5/8	M16	1.25	2.10	2.03
7716-068	7716C-068	**7716CG-068**	11/16	M18	1.61	2.25	2.17
7716-075	7716C-075	**7716CG-075**	3/4	-	1.61	2.25	2.32
7716-081	7716C-081	**7716CG-081**	13/16	M20	1.61	2.25	2.52
7716-087	7716C-087	**7716CG-087**	7/8	M22	1.61	2.25	2.71
7716-093	7716C-093	**7716CG-093**	15/16	M24	1.61	2.25	2.60
7716-100	7716C-100	**7716CG-100**	1"	M25	1.61	2.25	3.05
7716-106	7716C-106	**7716CG-106**	1 1/16 & 11/8	M27	1.61	2.25	2.99/3.30
7716-118	7716C-118	**7716CG-118**	1 3/16 & 1 1/4	M30	1.61	2.25	2.56/2.88
7716-131	7716C-131	**7716CG-131**	1 5/16 & 1 3/8	M32	1.98	2.25	2.84/3.16
7716-144	7716C-144	**7716CG-144**	1 7/16 & 1 1/2	-	1.98	2.25	4.06/4.37
7716-162	7716C-162	**7716CG-162**	1 5/8	-	1.98	2.25	4.67
7717-006	7717C-006	**7717CG-006**	1/16 NTP - 1/8 NTPss	-	1.25	1.375	1.06
7717-012	7717C-012	**7717CG-012**	1/8 NTP	-	1.25	1.375	1.06
7717-025	7717C-025	**7717CG-025**	1/4 NTP	-	1.25	1.375	1.18
7717-037	7717C-037	**7717CG-037**	3/8 NTP	-	1.25	1.375	1.06
7717-050	7717C-050	**7717CG-050**	1/2 NTP	-	1.61	2.25	1.53
7717-075	7717C-075	**7717CG-075**	3/4 NTP	-	1.61	2.25	1.64
7717-100	7717C-100	**7717CG-100**	1" NTP	-	1.61	2.25	1.93
7717-125	7717C-125	**7717CG-125**	1 1/4 NTP	-	1.98	2.25	2.00

Part numbers in **bold face** are in-stock items.

Numertap 770 3" Tap Adapter 7716-3-075 shown here.

- Positive-drive, extended length for use in Numertap 770 Attachments.



Can be used to extend the range of N/C 700s. Will result in loss of Torque Control.

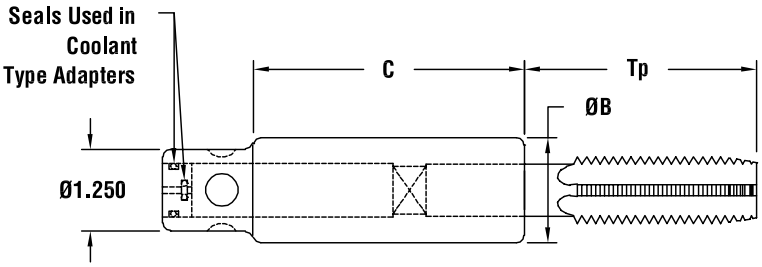
Coolant or Coolant Adapters must be used when coolant is fed through Numertap Attachments.

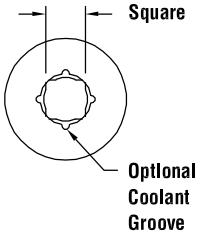
770 3" TAP ADAPTERS

			Metric Tap Size							
Part Number	Coolant**	Coolant Groove**	Tap Size	(ANSI*)	B (QR)	B	C	Tp	Shank	Square
7716-3-#6	7716C-3-#6	**7716CG-3-#6**	#6	M3.5	.75	.75	3.70	1.06	.141	.110
7716-3-#8	7716C-3-#8	**7716CG-3-#8**	#8	M4	.75	.75	3.70	1.13	.168	.131
7716-3-#10	7716C-3-#10	**7716CG-3-#10**	#10	M5	.75	.75	3.70	.138	.194	.152
7716-3-#12	7716C-3-#12	7716CG-3-#12	#12	-	.75	.75	3.70	1.34	.220	.165
7716-3-025	7716C-3-025	**7716CG-3-025**	1/4	M6	.75	.75	3.70	1.44	.225	.191
7716-3-031	7716C-3-031	**7716CG-3-031**	5/16	M7,M8	.88	.75	3.70	1.59	.318	.238
7716-3-037	7716C-3-037	**7716CG-3-037**	3/8	M10	.88	.88	3.70	1.75	.381	.286
7716-3-043	7716C-3-043	**7716CG-3-043**	7/16	-	.88	.88	3.70	2.00	.323	.242
7716-3-050	7716C-3-050	**7716CG-3-050**	1/2	M12	.88	.88	3.70	2.19	.367	.275
7716-3-056	7716C-3-056	**7716CG-3-056**	9/16	M14	1.25	1.00	3.70	2.35	.429	.322
7716-3-062	7716C-3-062	**7716CG-3-062**	5/8	M16	1.25	1.00	3.70	2.50	.480	.360
7716-3-068	7716C-3-068	7716CG-3-068	11/16	M18	1.25	1.25	3.70	2.40	.542	.406
7716-3-075	7716C-3-075	**7716CG-3-075**	3/4	-	1.25	1.25	3.70	2.56	.590	.442
7716-3-081	7716C-3-081	7716CG-3-081	13/16	M20	1.25	1.25	3.70	2.53	.652	.489
7716-3-087	7716C-3-087	**7716CG-3-087**	7/8	M22	1.25	1.25	3.70	2.68	.697	.523
7716-3-093	7716C-3-093	7716CG-3-093	15/16	M24	1.61	1.50	3.70	2.90	.760	.570
7716-3-100	7716C-3-100	**7716CG-3-100**	1"	M25	1.61	1.50	3.70	2.81	.800	.600
7716-3-106	7716C-3-106	**7716CG-3-106**	1 1/16 & 1 1/8	M27	-	1.61	3.70	2.75/3.06	.896	.672
7716-3-118	7716C-3-118	**7716CG-3-118**	1 3/16 & 1 1/4	M30	-	1.61	3.70	2.94/3.25	1.021	.766
7716-3-131	7716C-3-131	**7716CG-3-131**	1 5/16 & 1 3/8	M33	1.98	1.61	3.70	3.19/3.50	1.108	.831
7716-3-144	7716C-3-144	**7716CG-3-144**	1 7/16 & 1 1/2	-	1.98	1.98	3.70	3.44/3.75	1.233	.925
7716-3-162	7716C-3-162	**7716CG-3-162**	1 5/8	-	1.98	1.98	3.70	4.06	1.305	.979
7717-3-006	7717C-3-006	7717CG-3-006	1/16 NPT & 1/8 NPT	-	1.00	1.00	3.70	1.00	.312	.234
7717-3-012	7717C-3-012	**7717CG-3-012**	1/8 NPT	-	1.00	1.00	3.70	1.00	.437	.328
7717-3-025	7717C-3-025	**7717CG-3-025**	1/4 NPT	-	1.00	1.00	3.70	1.25	.562	.421
7717-3-037	7717C-3-037	**7717CG-3-037**	3/8 NPT	-	1.25	1.25	3.70	1.31	.700	.531
7717-3-050	7717C-3-050	**7717CG-3-050**	1/2 NPT	-	1.25	1.25	3.70	1.50	.687	.515
7717-3-075	7717C-3-075	**7717CG-3-075**	3/4 NPT	-	1.61	1.61	3.70	1.44	.906	.679
7717-3-100	7717C-3-100	7717CG-3-100	1" NPT	-	1.98	1.61	3.70	1.88	1.125	.843
7717-3-125	7717C-3-125	7717CG-3-125	1 1/4 NPT	-	-	1.98	3.70	1.81	1.312	.984

Par Part numbers in **bold face** are in-stock items.
*For DIN, ISO, or Imperial Metric Shanks, please call Parlec or your local Parlec representative.
**Coolant requires oil hole taps. Coolant groove uses standard taps. Both require coolant-fed units.

Numertap 770 6" Tap Adapter 7716-6-025 shown here.





- Positive-drive, extended length for use in Numertap 770 Attachments.

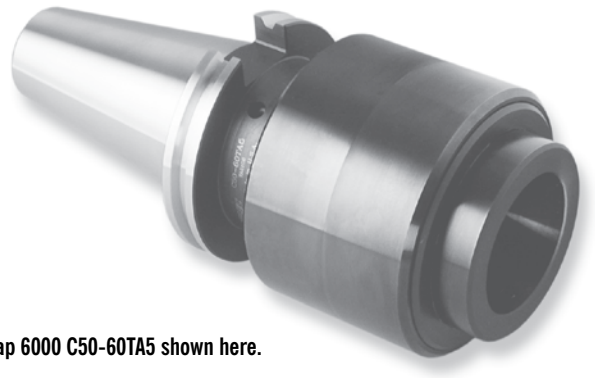
Can be used to extend the range of N/C 700s. Will result in loss of Torque Control.

Coolant or Coolant Adapters must be used when coolant is fed through Numertap Attachments.

770 6" TAP ADAPTERS

Part Number	Coolant**	Coolant Groove**	Tap Size	Metric Tap Size (ANSI*)	B	C	Tp	Shank	Square
7716-6-#6	7716C-6-#6	**7716CG-6-#6**	#6	M3.5	.75	6.70	1.06	.141	.110
7716-6-#8	7716C-6-#8	**7716CG-6-#8**	#8	M4	.75	6.70	1.13	.168	.131
7716-6-#10	7716C-6-#10	**7716CG-6-#10**	#10	M5	.75	6.70	1.38	.194	.152
7716-6-#12	7716C-6-#12	**7716CG-6-#12**	#12	-	.75	6.70	1.34	.220	.165
7716-6-025	7716C-6-025	**7716CG-6-025**	1/4	M6	.75	6.70	1.44	.255	.191
7716-6-031	7716C-6-031	**7716CG-6-031**	5/16	M7,M8	.75	6.70	1.59	.318	.238
7716-6-037	7716C-6-037	**7716CG-6-037**	3/8	M10	.88	6.70	1.75	.381	.286
7716-6-043	7716C-6-043	**7716CG-6-043**	7/16	-	.88	6.70	2.00	.323	.242
7716-6-050	7716C-6-050	**7716CG-6-050**	1/2	M12	.88	6.70	2.19	.367	.275
7716-6-056	7716C-6-056	**7716CG-6-056**	9/16	M14	1.00	6.70	2.35	.429	.322
7716-6-062	7716C-6-062	**7716CG-6-062**	5/8	M16	1.00	6.70	2.50	.480	.360
7716-6-068	7716C-6-068	**7716CG-6-068**	11/16	M18	1.25	6.70	2.40	.542	.406
7716-6-075	7716C-6-075	**7716CG-6-075**	3/4	-	1.25	6.70	2.56	.590	.442
7716-6-081	7716C-6-081	**7716CG-6-081**	13/16	M20	1.25	6.70	2.53	.652	.489
7716-6-087	7716C-6-087	**7716CG-6-087**	7/8	M22	1.25	6.70	2.68	.697	.523
7716-6-093	7716C-6-093	**7716CG-6-093**	15/16	M24	1.50	6.70	2.90	.760	.570
7716-6-100	7716C-6-100	**7716CG-6-100**	1"	M25	1.50	6.70	2.81	.800	.600
7716-6-106	7716C-6-106	**7716CG-6-106**	1 1/16 &1 1/8	M27	1.61	6.70	2.75/3.06	.896	.672
7716-6-118	7716C-6-118	**7716CG-6-118**	1 3/16 & 1 1/4	M30	1.61	6.70	2.94/3.25	1.021	.766
7716-6-131	7716C-6-131	**7716CG-6-131**	1 5/16 & 1 3/8	M33	1.61	6.70	3.19/3.50	1.108	.831
7716-6-144	7716C-6-144	**7716CG-6-144**	1 7/16 & 1 1/2	-	1.98	6.70	3.44/3.75	1.223	.925
7716-6-162	7716C-6-162	**7716CG-6-162**	1 5/8	-	1.98	6.70	4.06	1.305	.979
7717-6-006	7717C-6-006	**7717CG-6-006**	1/16 NPT & 1/8 NPT	-	1.00	6.70	1.00	.312	.234
7717-6-012	7717C-6-012	**7717CG-6-012**	1/8 NPT	-	1.00	6.70	1.00	.437	.328
7717-6-025	7717C-6-025	**7717CG-6-025**	1/4 NPT	-	1.00	6.70	1.25	.562	.421
7717-6-037	7717C-6-037	**7717CG-6-037**	3/8 NPT	-	1.25	6.70	1.31	.700	.531
7717-6-050	7717C-6-050	**7717CG-6-050**	1/2 NPT	-	1.25	6.70	1.50	.687	.515
7717-6-075	7717C-6-075	**7717CG-6-075**	3/4 NPT	-	1.61	6.70	1.44	.906	.679
7717-6-100	7717C-6-100	**7717CG-6-100**	1" NPT	-	1.61	6.70	1.88	1.125	.843
7717-6-125	7717C-6-125	**7717CG-6-125**	1 1/4 NPT	-	1.98	6.70	1.81	1.312	.984

Par Part numbers in **bold face** are in-stock items.
*For DIN, ISO, or Imperial Metric Shanks, please call Parlec or your local Parlec representative.
**Coolant requires oil hole taps. Coolant groove uses standard taps. Both require coolant-fed units.

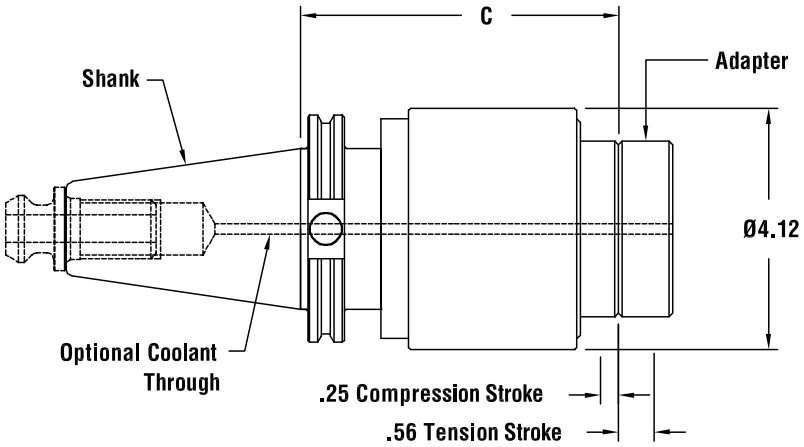


Numertap 6000 C50-60TA5 shown here.

Tension & Compression, Positive Drive, type for through-hole tapping on CNC machines.

FROM 3/4" – 2 1/2" 4-PITCH AND 3/4" – 3 1/2" 6 OR 8-PITCH TAPS

- Large work range eliminates the need to purchase multiple units.
- Compact, lightweight design can be changed by most tool changers.
- Rugged alloy steel construction for long trouble-free service life.
- Short compression stroke allows holes to be retapped and facilitates depth control.
- Free-floating tension stroke ensures thread size and quality.
- Through-spindle coolant option gets coolant into the hole and flushes chips.



Order Retention Knob separately (see pages 98-100).

Order Adapters separately (see next page).

CAPACITY**

Synchr/Tens & Comp
3/4 – 2 1/2" Hand
1/2 – 2" PIPE
M19 – MS6

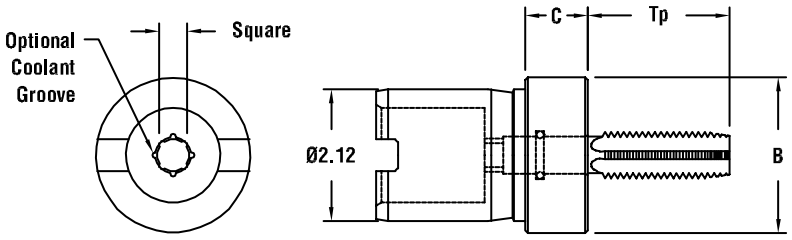
SYNCHRONOUS/TENSION & COMPRESSION TAPPING

Part Number	Coolant Fed	C	Shank Type	Approx. Weight
C50-60TA5	**C50-60TA5C**	5.62	CV50	21 lbs.
N50-60TA5	-	5.62	NMTB 50	21 lbs
S20-60TA5	S20-60TA5C	6.00	2" Straight	17 lbs.

Part numbers in **bold face** are in-stock items.
PC6 and PC7 modular attachments available upon request.
*For Synchronous Tapping cycles, use (TT) for Tension-Only or (FS) for Fixed Shank, Part Number example: C50-60 (TT)5.
**Larger capacity available for 8-pitch taps. Please contact Parlec or your local Parlec representative.

Numertap 6000 Tap Adapter 6-150N shown here.

■ For use in Numertap 6000 Attachments.

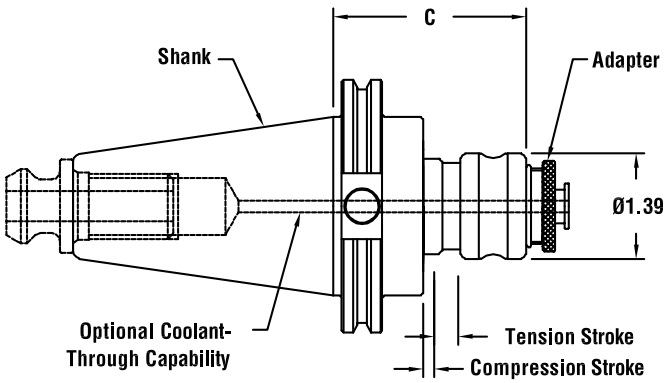


6000 TAP ADAPTERS

Part Number	Coolant**	Coolant Groove**	Tap Size	Metric Tap Size (ANSI*)	B	C	Tp	Shank	Square
6-075	6-075C	6-075CG	3/4	M19	2.50	1.00	2.21	.590	.442
6-081	6-081C	6-081CG	3/16	M20	2.50	1.00	2.43	.652	.489
6-087	6-087C	6-087CG	7/8	M22	2.50	1.00	2.59	.697	.523
6-093	6-093C	6-093CG	15/16	M24	2.50	1.00	2.61	.760	.570
6-100	6-100C	6-100CG	1	M25	2.50	1.00	2.76	.800	.600
6-106	6-106C	6-106CG	1 1/16 & 1 1/8	M27	2.50	1.00	2.70/3.01	.896	.672
6-118	6-118C	6-118CG	1 3/16 & 1 1/4	M30	2.50	1.00	2.84/3.15	1.021	.766
6-131	6-131C	6-131CG	1 5/16 & 1 3/8	M33	2.50	1.00	3.09/3.40	1.108	.831
6-144	6-144C	6-144CG	1 7/16 & 1 1/2	M36	2.50	1.00	3.34/3.65	1.233	.925
6-162	6-162C	6-162CG	1 5/8	M39	2.50	1.00	3.96	1.305	.979
6-175	6-175C	6-175CG	1 3/4	M42	3.20	1.00	4.15	1.430	1.072
6-187	6-187C	6-187CG	1 7/8	M45	3.20	1.00	4.46	1.519	1.139
6-200	6-200C	6-200CG	2	M48	3.20	1.00	5.13	1.644	1.233
6-212	6-212C	6-212CG	2 1/8	-	3.20	3.10	5.50	1.769	1.327
6-225	6-225C	6-225CG	2 1/4	M56	3.20	3.10	5.71	1.894	1.420
6-237	6-237C	6-237CG	2 3/8	-	3.20	3.10	5.96	2.018	1.524
6-250	6-250C	6-250CG	2 1/2	-	3.40	3.10	6.15	2.100	1.585
6-037N	6-037NC	6-037NCG	3/8 NPT	-	2.50	1.00	1.06	.700	.531
6-050N	6-050NC	6-050NCG	1/2 NPT	-	2.50	1.00	1.50	.687	.515
6-075N	6-075NC	6-075NCG	3/4 NPT	-	2.50	1.00	1.56	.906	.679
6-100N	6-100NC	6-100NCG	1 NPT	-	2.50	1.00	1.89	1.125	.843
6-125N	6-125NC	6-125NCG	1 1/4 NPT	-	2.50	1.00	1.96	1.312	.984
6-150N	6-150NC	6-150NCG	1 1/2 NPT	-	2.50	1.00	2.05	1.500	1.125
6-200N	6-200NC	6-200NCG	2 NPT	-	3.20	3.10	2.20	1.875	1.406

Part numbers in **bold face** are in-stock items.
*For DIN, ISO, or Imperial Metric Shanks, please call Parlec or your local Parlec representative.
**Coolant requires oil hole taps. Coolant groove uses standard taps. Both require coolant-fed unit.

Numertap C40-10TA3 shown here.



FROM 0 – 9/16" HAND AND 1/16 – 1/8" NPT

- For use with popular Bilz style size and adapters.
- Utilizes existing adapter inventory.
- Rigid and tension-only shank available for use with synchronous tapping cycles.
- Radial float improves thread quality and tap life.
- Short projection maximizes workpiece size.
- Adjustable short compression stroke ensures accurate depth control.
- Free-floating tension stroke ensures thread size and quality.
- Rugged alloy steel construction long trouble-free service life.

Order Retention Knob separately (see pages 98-100).
Order Adapters separately (see page 182)

100 SYNCHRONOUS/TENSION & COMPRESSION TAPPING

Part Number	Coolant	Taper	Compression	Tension	C
B40-10TA3	**B40-10TA3C**	BT40	0 - .250	.56	4.08
B40-10TR3	**B40-10TR3C**	BT40	Rigid	Rigid	3.83
C40-10TA3	**C40-10TA3C**	CV40	0 - .250	.56	3.96
C40-10TR3	**C40-10TR3C**	CV40	Rigid	Rigid	3.96
C50-10TA3	**C50-10TA3C**	CV50	0 - .250	.56	3.15
C50-10TR3	**C50-10TR3C**	CV50	Rigid	Rigid	3.15
N40-10TA3	-	NMTB 40	0-.250	.56	3.96
N50-10TA3	-	NMTB 50	0-.250	.56	3.96
S10-10FS4	**S10-10FS4C**	1" Straight	Rigid	Rigid	4.43
S10-10TA4	**S10-10TA4C**	1" Straight	.250	.56	4.43

Part numbers in **bold face** are in-stock items.
PC6 and PC7 modular attachments available upon request.
*For Synchronous tapping cycles, use (TT) for Tension-Only, or (TR) or (FS) for Fixed Shank, I.E. C50-10(TT)3.
Coolant-through for up to 250 lbs. of pressure.

CAPACITY

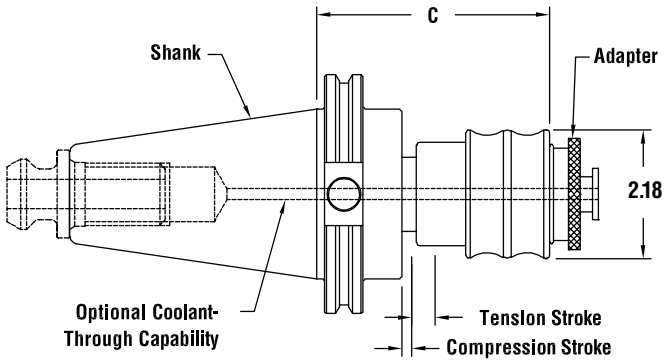
Synchr/Tens & Comp
#0 – 9/16" Hand
1/16" – 1/8" NPT

Numertap 200 C50-20TA4 shown here.

FROM 5/16 – 7/8" HAND AND 1/4 – 1/2" NPT

- For use with popular Bilz style size and adapters.
- Utilizes existing adapter inventory.
- Rigid and tension-only shank available for use with synchronous tapping cycles.
- Radial float improves thread quality and tap life.
- Short projection maximizes workpiece size.
- Adjustable short compression stroke ensures accurate depth control.
- Free-floating tension stroke ensures thread size and quality.
- Rugged alloy steel construction long trouble-free service life.

Order Retention Knob separately (see pages 98-101).
Order Adapters separately (see page 182).



200 SYNCHRONOUS/TENSION & COMPRESSION TAPPING

Part Number	Coolant	Taper	Compression	Tension	C
B40-20TA4	**B40-20TA4C**	BT40	0 - .250	.56	5.19
B40-20FS4	**B40-20FS4C**	BT40	Rigid	Rigid	3.05
C40-20TA4	**C40-20TA4C**	CV40	0 - .250	.56	5.06
C40-20TR4	**C40-20TR4C**	CV40	Rigid	Rigid	3.86
C50-20TA4	**C50-20TA4C**	CV50	0 - .250	.56	4.25
C50-20TR4	**C50-20TR4C**	CV50	Rigid	Rigid	4.25
N40-20TA4	-	NMTB40	0 - .250	.56	5.06
N50-20TA4	-	NMTB50	0 - .250	.56	4.25
S10-20TA5	**S10-20TA5C**	1" Straight	.250	.56	5.46
S10-20FS5	**S10-20FS5C**	1" Straight	Rigid	Rigid	5.46
S12-20TA5	**S12-20TA5C**	1 1/4" Straight	0 - .250	.56	5.46
S20-20FS3	**S20-20FS3C**	2" Straight	.250	.56	5.93
S20-20TA3	**S20-20TA3C**	2" Straight	Rigid	Rigid	5.93

Part numbers in bold face are in-stock items.
PC6 and PC7 modular attachments available upon request.
*For Synchronous tapping cycles, use (TT) for Tension-Only, or (TR) or (FS) for Fixed Shank, I.E. C50-10(TT)3.
Coolant-through for up to 250 lbs. of pressure.

CAPACITY

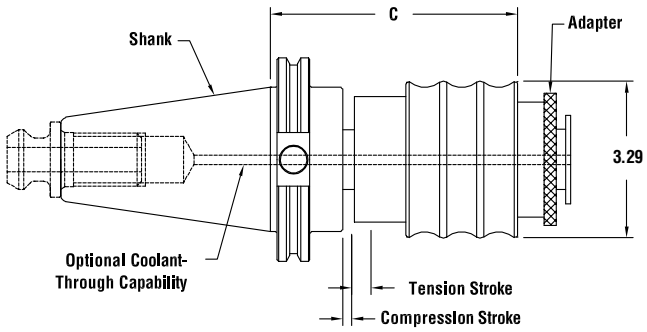
Synchr/Tens & Comp
5/16" – 7/8" Hand
1/4" & 1/2" NPT

Numertap 300 C50-30TA5 shown here.

FROM 13/16 – 1 3/8" HAND AND 3/4 – 1" NPT

- For use with popular Bilz style size and adapters.
- Utilizes existing adapter inventory.
- Rigid and tension-only shank available for use with synchronous tapping cycles.
- Radial float improves thread quality and tap life.
- Short projection maximizes workpiece size.
- Adjustable short compression stroke ensures accurate depth control.
- Free-floating tension stroke ensures thread size and quality.
- Rugged alloy steel construction long trouble-free service life.

Order Retention Knob separately (see pages 98-101).
Order Adapters separately (see page 182).



300 SYNCHRONOUS/TENSION & COMPRESSION TAPPING

Part Number	Coolant	Taper	Compression	Tension	C
C40-30TA5	C40-30TA5C	CV40	0 -.250	.56	6.46
C40-30FS5	C40-30FS5C	CV40	Rigid	Rigid	6.46
C50-30TA5	**C50-30TA5C**	CV50	0 -.250	.56	5.65
C50-30FS5	**C50-30FS5C**	CV50	Rigid	Rigid	5.65
N50-30TA5	-	NMTB50	0-.250	.56	5.56

Part numbers in bold face are in-stock items.
PC6 and PC7 modular attachments available upon request.
*For Synchronous tapping cycles, use (TT) for Tension Only, or (FS) for Fixed Shank.

Tap Adapter
10-025

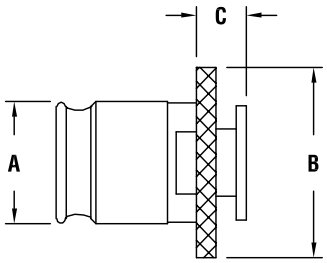
Tap Adapter
20-075

Tap Adapter
30-100

- For use in Numertap 100, 200 & 300 Attachments.

TAPPING ADAPTERS

Model	A	B	C
100	.75	1.18	.280
200	1.22	1.89	.430
300	1.89	2.75	.550
100T	.75	1.26	.98
200T	1.22	1.97	1.34
300T	1.89	2.83	1.77



100, 200 & 300 TAP ADAPTERS

	Size 1: Numertap 100 Attachment			Size 2: Numertap 200 Attachment			Size 3: Numertap 300 Attachment		
	Positive Drive			Positive Drive			Positive Drive		
Tap Size	Part No.	Coolant Groove	Torque Controlled	Part No.	Coolant Groove	Torque Controlled	Part No.	Coolant Groove	Torque Controlled
#0 - 6	**10-#0-6**	10CG-#0-6	10T-#0-6	–	–	–	–	–	–
#8	**10-#8**	10CG-#8	10T-#8	–	–	–	–	–	–
#10	**10-#10**	10CG-#10	10T-#10	–	–	–	–	–	–
#12	**10-#12**	10CG-#12	10T-#12	–	–	–	–	–	–
1/4	**10-025**	10CG-025	10T-025	–	–	–	–	–	–
5/16	**10-031**	10CG-031	10T-031	**20-031**	20CG-031	20T-031	–	–	–
3/8	**10-037**	10CG-037	10T-037	**20-037**	20CG-037	20T-037	–	–	–
7/16	**10-043**	10CG-043	10T-043	**20-043**	20CG-043	20T-043	–	–	–
1/2	**10-050**	10CG-050	10T-050	**20-050**	20CG-050	20T-050	–	–	–
9/16	**10-056**	10CG-056	10T-056	**20-056**	20CG-056	20T-056	–	–	–
5/8	–	–	–	**20-062**	20CG-062	20T-062	–	–	–
11/16	–	–	–	**20-068**	20CG-068	20T-068	–	–	–
3/4	–	–	–	**20-075**	20CG-075	20T-075	–	–	–
13/16	–	–	–	**20-081**	20CG-081	20T-081	**30-081**	30CG-081	30T-081
7/8	–	–	–	**20-087**	20CG-087	20T-087	**30-087**	30CG-087	30T-087
15/16	–	–	–	–	–	–	**30-093**	30CG-093	30T-093
1"	–	–	–	–	–	–	**30-100**	30CG-100	30T-100
1 1/8	–	–	–	–	–	–	**30-106**	30CG-106	30T-106
1 1/4	–	–	–	–	–	–	**30-118**	30CG-118	30T-118
1 3/8	–	–	–	–	–	–	**30-131**	30CG-131	30T-131
1/16 NPT	**10-006N**	10CG-006N	10T-006N	–	–	–	–	–	–
1/8 NPT	**10-012N**	10CG-012N	10T-012N	–	–	–	–	–	–
1/4 NPT	–	–	–	**20-025N**	20CG-025N	20T-025N	–	–	–
3/8 NPT	–	–	–	**20-037N**	20CG-037N	20T-037N	–	–	–
1/2 NPT	–	–	–	**20-050N**	20CG-050N	20T-050N	–	–	–
3/4 NPT	–	–	–	–	–	–	**30-075N**	30CG-075N	30T-075N
1" NPT	–	–	–	–	–	–	**30-100N**	30CG-100N	30T-100N
SET (1 EA.)	**10-S012**	10CG-S012	10T-S012	**20-S013**	20CG-S013	20T-S013	**30-S009**	30CG-S009	30T-S009

Part numbers in **bold face** are in-stock items.

TAP DOES NOT START

Check the following:

Program depth:	Compression stroke may use up the entire program depth.
Tap drill size:	Check for tap drill size.
Tap sharpness:	Check for dull tap.

PREMATURE TORQUING OF UNIT

Check the following:

Tap sharpness:	Dull taps require more driving torque than sharp taps. NUMERTAP systems sense dull taps. Replace to prevent possible breakage.
Tap drill size and adequate drill depth:	Check for correct size and depth.
Tap sharpness:	Check for dull tap.

OVERSIZED THREADS

Check the following:

Feeds and speeds:	Oversized threads mean that the space between adjacent teeth is too large. This is caused either by forcing or retarding the feed rate with respect to the speed. Check program feed versus tap pitch.
Tension stroke of tapping head:	Check to ensure that the tension stroke does not stick.

POOR THREAD QUALITY

Check the following:

Feeds and speeds:	Oversized threads mean that the space between adjacent teeth is too large. This is caused either by forcing or retarding the feed rate with respect to the speed. Check program feed versus tap pitch.
Tap sharpness and condition:	Check for dull tap or broken teeth. Replace as required.

Consult NUMERTAP Tap Guide for proper tapping speeds, lubricants, geometry, and tap drill sizes for specific H limits and specific materials. If you are not using NUMERTAP taps, consult the tap manufacturer.

TAPPING SPEEDS

Material	Tapping Speed (SFM)
Aluminum	90 - 110
Brass	80 - 100
Bronze	40 - 60
Copper	70 - 90
Copper-Beryllium	40 - 50
Inconel, Hastalloy, Waspalloy	5 - 15
Iron-Cast	65 - 75
Iron-Malleable	30 - 60
Magnesium	90 - 110
Plastics	60 - 90
Steel-Cast	30 - 40
Steel-Free Machining	50 - 80
Steel-Chromium	25 - 40
Steel-Alloy	20 - 35
Steel-Stainless	15 - 30
Titanium	10 - 25
Zinc-Die Cast	80 - 120

$$RPM = \frac{3.82 \times SFM}{\text{Tap Diameter}}$$

$$FEED\ (IPR) = \frac{1}{\text{Pitch}}$$

FEED (IPM) = Feed (IPR) x Speed (RPM)

Tapping speeds are for general purpose taps. Consult tap manufacturer for high geometry taps.

TORQUE REQUIREMENTS

Tap Size	Brass	Aluminum and Leaded Brass	200 BHN Steel	300 BHN Steel	400 BHN Steel	Approximate Breaking Torque
#6	4	2	7	9	10	8
#8	4.5	2.25	8	10	11	30
#10	8.5	4.25	15	19	21	42
1/4	16	8	28	36	40	106
5/16	24	12	42	54	60	180
3/8	37	18.5	65	83	93	240
7/16	54	27	94.5	122	135	500
1/2	68	34	119	153	170	700
9/16	88	44	154	198	220	850
5/8	119	59.5	208	268	298	1000
3/4	170	85	298	383	425	1500
7/8	238	119	416	536	595	2100
1"	337	168.5	590	758	842	2700
1 1/4	544	277	970	1246	1385	3000+
1 1/2	850	425	1488	1912	2125	3000+
1 3/4	1411	706	2471	3177	3530	3000+
2	1904	952	3332	4284	4760	3000+
2 1/4	2159	1080	3780	4860	5400	3000+
2 1/2	2975	1488	5208	6996	7440	3000+
2" - 8	533	267	933	1199	1333	3000+
2 1/2" - 8	663	332	1160	1492	1658	3000+
3" - 8	1139	570	1995	2565	2850	3000+
4" - 8	1411	706	2471	3177	3530	3000+
5" - 8	1768	884	3094	3978	4420	3000+
6" - 8	2125	1063	3720	4784	5315	3000+

All values in table above are in inch/lbs. Approximate values based on sharp, 4 Flute coarse pitch hand taps at 65% thread height. Dull taps require approximately 50% more torque. For 55% and 75% thread heights, multiply above values by .75 and 1.25 respectively. Torque values for helical flute taps are approximately 70% of those shown. Torque values for chip drive taps are approximately 60% of those shown. Torque values for fine pitch threads are approximately 50% of those shown.

Experience has shown that a tap will cut the best quality threads when allowed to act as its own lead screw, feeding precisely on pitch to exactly the required depth of thread. The machine must be prevented from forcing the tap to do anything else or the thread quality will suffer or the tap may break. The tension stroke in the NUMERTAP® provides the freedom required to cut the best quality threads with the least risk of breakage.

NUMERTAP Systems can be used on any suitable machine tool which has a reversing spindle. Effective choices of spindle speeds and feeds for particular tapping requirements can be made by the following the sample calculations: Tapping a 3/4 –10 thread, 1" deep in mild steel:

TAPPING A 3/4 THREAD 1" DEEP IN MILD STEEL:

RPM = (12 x SFM)/(3.82 X SFM)/D where D is the tap diameter.
Use the chart on the previous page to find the tapping speed in SFM.
RPM = (3.82 x .50)/.75 – 255 RPM
Tap Feed Rate = Pitch x RPM = .100 x 255 = 255 = 25.5 inches/minute.
Feed in and out at the same feed rate.

When using a conventional tapping cycle, optimum performance is insured by slightly underfeeding the tap, normally by 2% - 10%. This forces the tension stroke of the tapping head to be used and eliminates any effect of the machine tool. The Z axis feed distance must be reduced by this same percentage. The axial float in the NUMERTAP takes up the difference between the required thread depth and the programmed depth. If a 10% underfeed was selected, the calculations would be as follows:

Program Feed Rate = .90 x on pitch feed rate = .90 x 25.5 = 22.95"/minute.
Spindle Z-Axis Travel = .90 x required depth = .90 x 1.000 = .900".
Axial Float used = 1.000 - .900 = .100"
Do not allow the Axial Float used to equal the tension stroke length (.56).

If the tapping cycle is controlled by a "canned" program which calculates its own feed rates from an input of pitch and speed. The desired underfeed can be obtained by deliberately entering a reduced value of pitch or an increased value of threads per inch as follows:

Actual TPI = 10 (pitch = 1/10 = .100")
Input TPI = 11 (pitch = 1/11 = .091")
Program Feed Rate = .091 x 255 = 23.2"/minute
Program Feed Depth = .91 x 1.000 = .910"

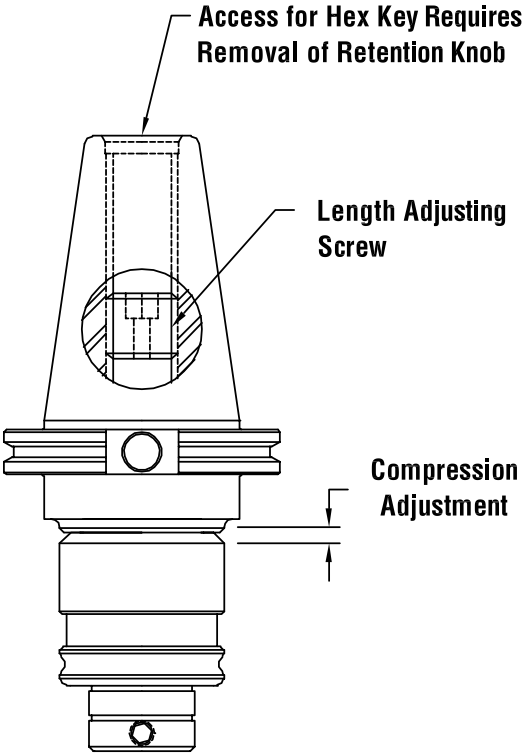
If the CNC machine has a slow spindle reversal, the program must compensate for any drive system inertia by including a dwell not long enough for the spindle to come to a full stop when the tap has reached full thread depth. If the spindle has not stopped when the program calls for it to feed out, the tap could break or be pulled out of the adapter, or the threads could be ruined. These problems can be rectified using a program similar to the following:

Spindle clockwise
Feed to depth (incorporating underfeed)
Spindle stop

When using a synchronous tapping cycle, the drive system inertia may create the undesirable effect of tap elongation, or thread distortion. The best answer to this problem is the use of tension only tapping heads. Refer to the selection guide (pages 161-162).

NUMERTAP 100, 200, 300, 700 & 770 UNITS

The NUMERTAP® 100, 200, 300, 700 and 770 series tapping attachments with machine tapers, feature a length adjustment screw. This allows the compression stroke to be reduced or eliminated, if desired, to provide more accurate depth control. Adjusting the compression stroke to zero will result in a tension only set-up, the best solution for synchronous tapping. Turning the length adjustment screw counterclockwise reduces the compression stroke but does not affect the tension stroke.



The projections of the unit can be adjusted by turning the screw in either direction until the desired length is reached. Changing the length in this manner does not affect the tension stroke. This is an important feature if redundant tools are being set or if reground taps are being used in existing programs.

Adjust the compression stroke counterclockwise until the tapping attachment body contacts the shank. This will set for tension only. This is recommended to eliminate or avoid tap elongation in synchronous tapping cycles.

TENSION-ONLY, THE BEST SOLUTION FOR SYNCHRONOUS TAPPING

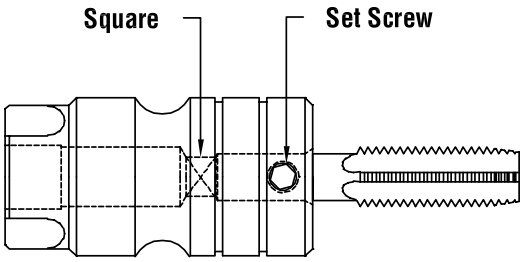
The NUMERTAP 100, 200, 300, 700 and 770 units can be purchased as tension only units (TT) or can be adjusted to tension only units by following the instructions above. Tension only is the best solution for synchronous tapping. If the unit is purchased as a TT, the tension spring is eliminated during assembly.

The unit will be the same length as a TA unit. If a TA unit is adjusted to eliminate the compression stroke, the unit will be 1/4" shorter than its original projection length. NUMERTAP 700 units can be adjusted for tension only, but cannot be used in synchronous tapping cycles.

NUMERTAP 80, 88, 700, 6000 & 6500 ADAPTERS

1. Loosen the set screw in the tap adapter.
2. Insert the tap into the adapter and twist until the square on the tap is aligned with the square in the adapter. Push back until the adapter is fully seated against the shoulder of the square.
3. Do not grind grooves or flats on the tap shank

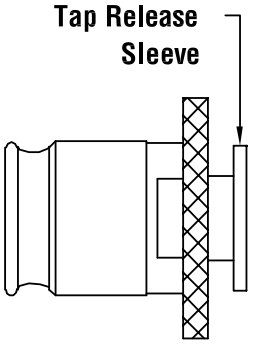
.If, for some reason a tap sticks in a hole, the set screw will allow the tap to pull out of the adapter without damaging the part, tapping head or tap. Grinding flats on the tap shank overrides this safety feature.



NUMERTAP 100, 200, 300 & 7716QR ADAPTERS

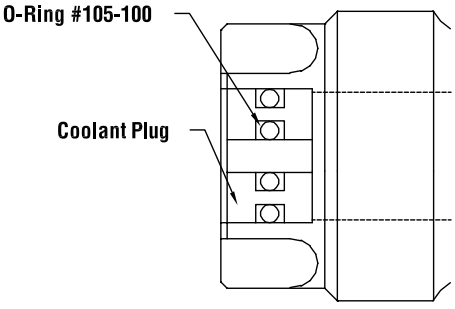
1. Push back the tap release sleeve.
2. Insert the tap into the adapter and twist until the square on the tap is aligned with the square in the adapter. Push back until the adapter is fully seated against the shoulder of the square.

Both fine and course pitch taps are used in the same adapters. Left or right hand taps can be used in any NUMERTAP system without alteration.



COOLANT FED 700 & 770 ADAPTERS

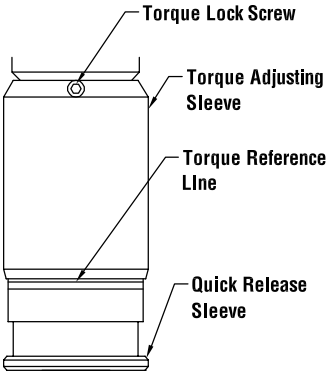
When used in through-spindle-coolant applications, coolant fed NUMERTAP units must be used with coolant fed tap adapters. Coolant fed tap adapters feature a sealing plug at the back. The "O" ring in the ID of the plug should be periodically checked for cuts or tears. If damage is noted, the "O" ring should be replaced.

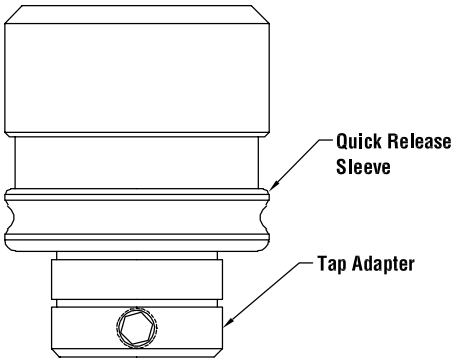


NUMERTAP 80, 700 & 770 ADAPTERS

To install a tap adapter into a NUMERTAP 80, 700 or 770:

1. Pull back the quick-release sleeve.
2. Insert the tap adapter into the unit and push back until it seats. A slight twisting motion while pushing will ensure proper seating.
3. Release the quick release sleeve. It should return to its normal position. If it does not return, the adapter is not seated. Twist and push back until it seats.

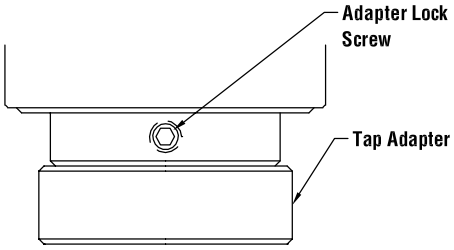




NUMERTAP 6000

To install a tap adapter into a NUMERTAP 6000:

1. Loosen the adapter lock set screw.
2. Insert the tap adapter into the unit and push back until it seats. A slight twisting motion while pushing will ensure proper seating.
3. Tighten the adapter lock screw.



NUMERTAP 80

The factory setting for the torque adjusting sleeve is at maximum torque. In this state, the first (closest to the tap) torque reference line will be barely visible. This setting provides a large safety factor against tap breakage and should not need to be changed unless low tensile materials are being tapped.

When tapping soft materials, particularly with small taps, it is advisable to use less torque to prevent thread distortion when the tap bottoms.

To adjust the torque, loosen the torque lock screw and rotate the torque adjusting sleeve to its upper limit. All three torque reference lines will be visible. Take a test cut. If the tap does not cut, increase the torque by turning the adjusting sleeve. When the proper setting is reached and there is enough torque pressure, turn the torque adjusting ring another 1/8 turn and secure the lock screw. Always adjust the torque to coarse pitch when using more than one tap in the same tapping head.

CONTACT INFORMATION

For quick response, just photocopy this page, complete all information (please include Part Print where appropriate) and simply FAX back to Parlec at 1-800-866-5917

Company

Contact Name Title

Business Address City State Zip

Phone Fax Email

MATERIAL TO BE TAPPED

Tap Size _____ Number of Tapped Holes _____

Tap Coating _____ Tap Class _____

Thru - Hole _____ Blind Hole _____

Tapping Depth _____ Tap Drill Sizer _____

% of Thread Tap _____ Drill Depth _____

Tap Style:

- ☐ Hole Through ☐ Partial Hole
- ☐ No Hole ☐ No Hole
- ☐ No Hole

Tap Material

- ☐ Hole Through ☐ Partial Hole
- ☐ No Hole ☐ No Hole

Tap Manufacturers Recommended SFM _____

Tap Manufacturer _____

☐ Torque Control Tapping ☐ Extended Reach Length

MACHINE CENTER INFORMATION

Machine Center Make _____

Model Number _____

- ☐ Synchronous (Rigid Tapping
- ☐ Tension/Compression Tapping

Machining Center Configuration

- ☐ Horizontal
- ☐ Vertical

Cooling (Cutting Fluid) Type _____

Coolant Pressure _____

Retention Knob _____

Manufacturer _____

Shank Style

- ☐ Hole Through ☐ Partial Hole
- ☐ No Hole ☐ No Hole

Other _____

Notes